

**System Operators'**  
**Review of Locational Signals**  
**On the Island of Ireland**  
**Workshop, Questionnaire and Industry**  
**Paper Overview**

Revision 1.0



## Locational Signals Document

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# Results of Questionnaire

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## 1. Introduction and Background

This document outlines the results of the research, which was conducted amongst all customers who use the Transmission Systems in Ireland and Northern Ireland regarding Tariffs and Losses. The research or fact-finding process is part of the Investigation phase for the All-Island Locational Signals Project and comes in three parts. Firstly, there was a workshop, which was held in Dundalk on March 3<sup>rd</sup> at which customers and other industry groups had an opportunity to express their views on the project. Secondly there was an on-line questionnaire and thirdly there was a call for industry papers from customers who may have detailed considerations in written form. The research findings will be used to develop an improved all-island arrangement during the Design and Implementation phase of the project.

The questionnaire is being used as a tool to identify opinion trends amongst organisations with regard to the locational signals aspects of current and potential Tariff and Losses schemes. The survey was completed by 35 of the 75 organisations targeted during February and March 2009. Of the 35, approximately three fifths (21) were generators and 14 were demand respondents. A full listing of the organisations who have participated in the questionnaire is listed in Appendix E. It is the understanding of the Project Team that the results of the questionnaire reflect the corporate positions of the respondents and not any personal opinions held by those parties who completed the survey.

The findings from the questionnaire will be used to prioritize those characteristics and criteria which are of utmost importance to the organisations surveyed. The Dominant and Secondary trends as well as Outlier views are all included in order to fully reflect the totality of opinions held. The results will provide an important input to the work that is being done on the project.

## 2. Workshop

The purpose of the March 3<sup>rd</sup> half day locational signals workshop was to give customers the opportunity to voice their opinions on locational signals through tariff and losses schemes. There were a number of questions and comments that were raised during the workshop in addition to the presentations, which were made by:

- IWEA
- AES
- EirGrid
- SONI
- CER & NIAUR

A list of the noted questions and responses is included in the Appendices.

### **3. Response to call for Industry Papers**

A number of industry papers with commentary on locational signals, tariffs and losses were received by EirGrid and SONI from the following organisations:

- IWEA
- Viridian Power and Energy
- Synergen
- ESBIE
- Saorgas
- SWS (email position)

The ideas in these papers in addition to the other sources of feedback will be taken into consideration by the project team during the design phase of the project. The papers are not included in this document but are posted individually in addition to the document.

### **4. Questionnaire**

An online form was used to reduce time spent in the collation of data and reduce the time spent by users in processing data.

A number of question types were used in the questionnaire. Where relevant a 4 point scale was used to measure the extent of a particular opinion. In other cases, a single preference was sought.

In keeping with the equality ethos of the system operators, each respondent's opinion carried the same value in terms of quantitative and qualitative analysis.

## 4.1. Questionnaire Results

### 4.2. Commentary on quantitative analysis

Each response received has been collated and included in this paper. Where the response has been part of a quantitative question, it is included in graphical form in section 4.9. The accompanying comments are in the Appendices however, a general commentary is included.

### 4.3. Comments

A full listing of each and every comment made by respondents is included in the Appendices.

### 4.4. Questions and Responses

Section 4.9 includes full listing of the quantitative analysis of each and every question.

### 4.5. Completion Rate

35 customers completed the questionnaire from a potential 75 giving a response rate of 47%. Note that certain representative organisations e.g. IWEA have completed the questionnaire on behalf of a number of its members who did not complete the questionnaire themselves.

### 4.6. Location and Business

The location of the respondents is included in Figure 1. In certain cases and where possible, the respondents chose not to respond to certain questions.

4. Business Location:		
	Response Percent	Response Count
Northern Ireland	17.1%	6
Republic of Ireland	54.3%	19
Both Northern Ireland and Republic of Ireland	28.6%	10
	<i>answered question</i>	35
	<i>skipped question</i>	0

Figure 1: Responses by location of main business

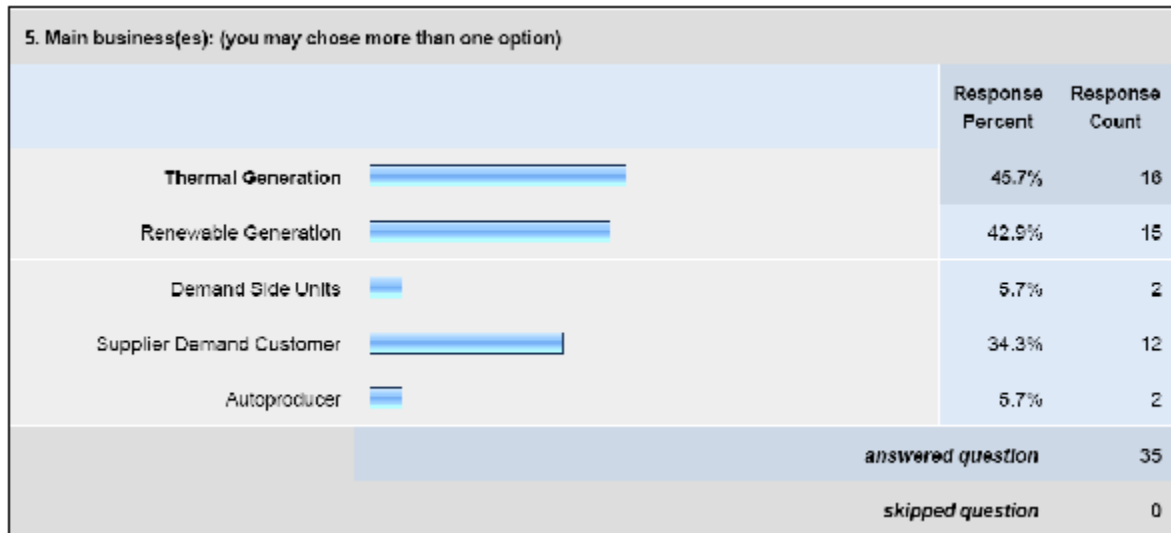


Figure 2: Main business of respondents

#### 4.7. Quantitative Results

Certain questions used in the questionnaire allow quantitative analysis to be used to measure the extent to which a particular opinion is held by the body of customers. These questions are presented in the report in graphical form with supporting analysis.

#### 4.8. Qualitative Results

One feature of the questionnaire and the tariff/losses development process as a whole, is the need to reflect diverging and at times unique perspectives on the locational signals issue. Each question that contained a box has its entire list of comments included in the Appendices.

#### 4.9. Results

The following sections provide a graphic representation of the answers to individual questions relating to Generation Tariffs, Demand Tariffs and Losses.

##### 4.9.1. Generation Tariffs

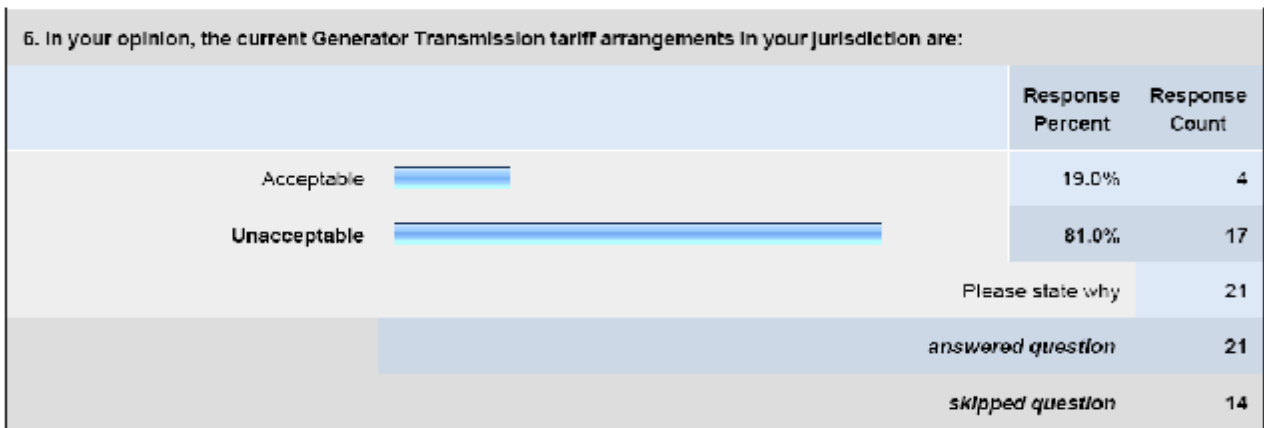


Figure 3: Acceptability of current tariff arrangements

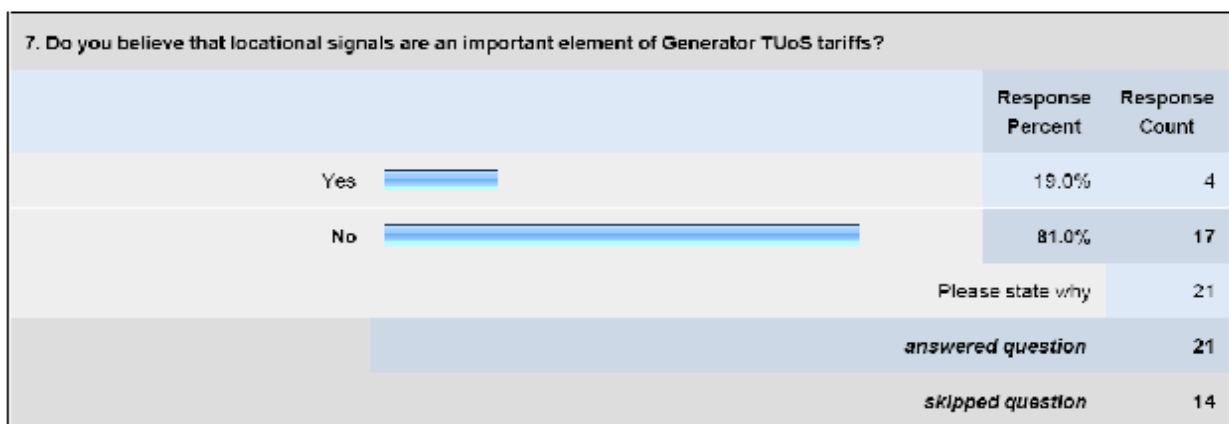


Figure 4: Significance of Locational Signals



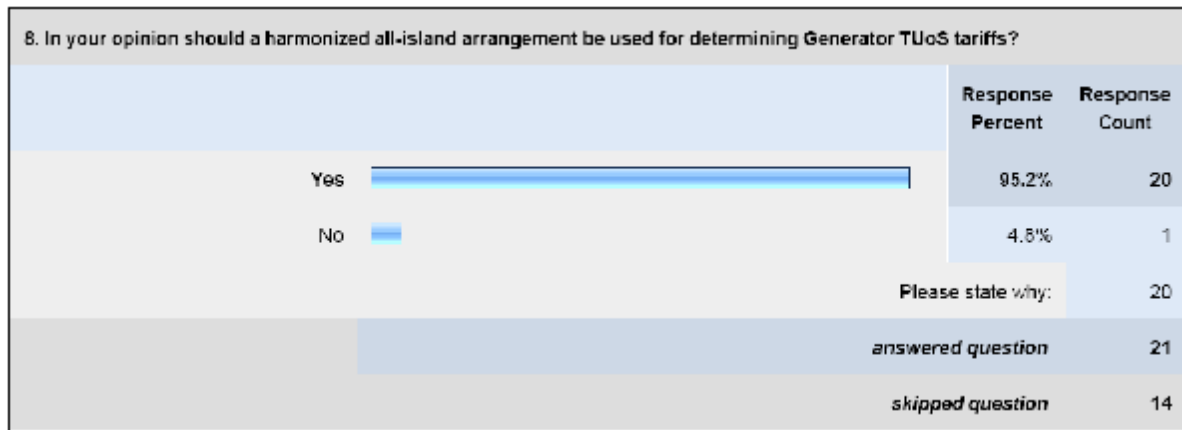


Figure 5: Need for harmonization between Northern Ireland and Ireland

9. Please rate the Importance of the following objectives in setting Generator Tariffs on the Island of Ireland:					
	Not Important	Slightly Important	Important	Very Important	Response Count
Transparency	0.0% (0)	4.8% (1)	28.6% (6)	66.7% (14)	21
Stability (Low volatility)	0.0% (0)	0.0% (0)	14.3% (3)	85.7% (18)	21
Predictability	0.0% (0)	0.0% (0)	14.3% (3)	85.7% (18)	21
Fairness/Equity	0.0% (0)	4.8% (1)	33.3% (7)	61.9% (13)	21
Cost Reflective	4.8% (1)	33.3% (7)	42.9% (9)	19.0% (4)	21
<i>answered question</i>					21
<i>skipped question</i>					14

Figure 6: Importance of various generator objectives

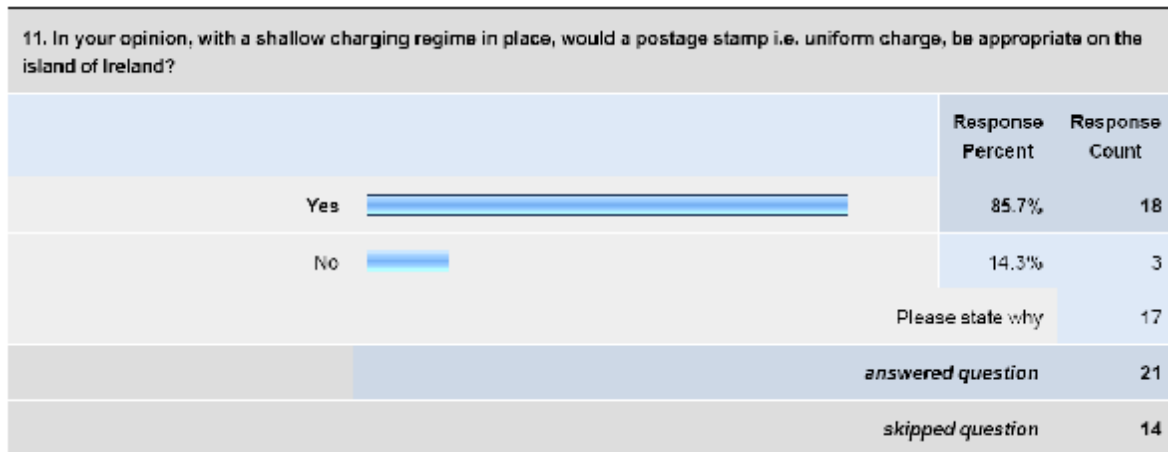


Figure 7: Appropriateness of a shallow charging regime



Figure 8: Significance of Generation Tariff on choice of location

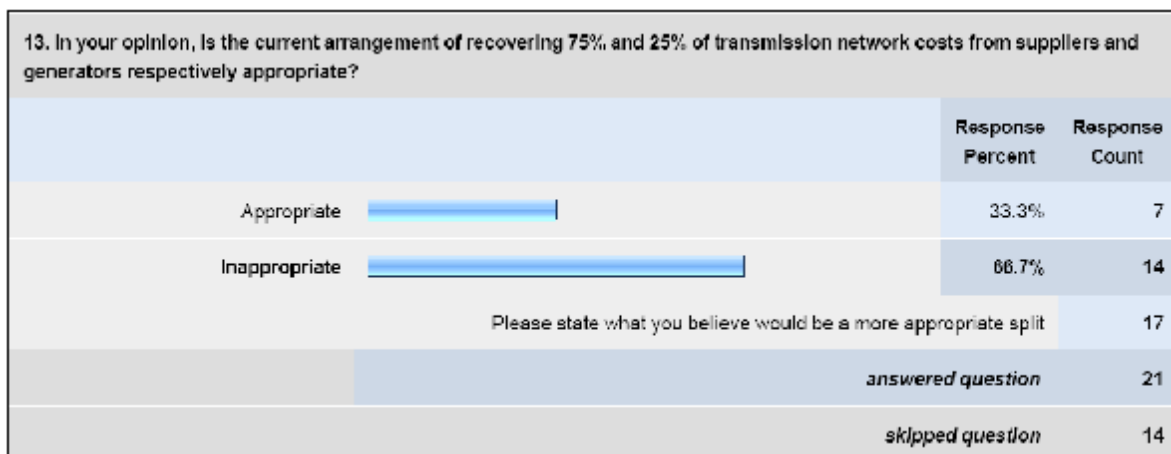


Figure 9: Generator's response regarding split between Suppliers and Generators

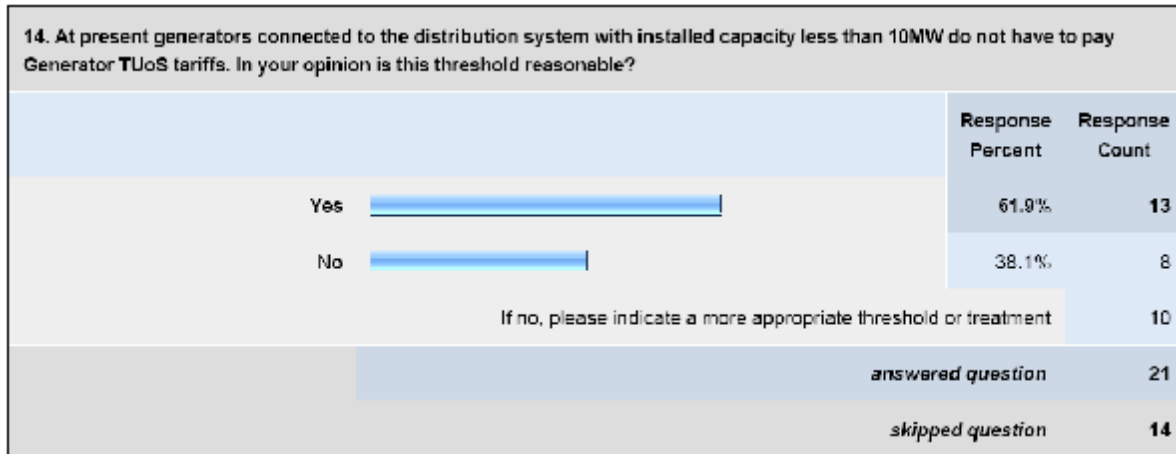


Figure 10: Threshold Limit

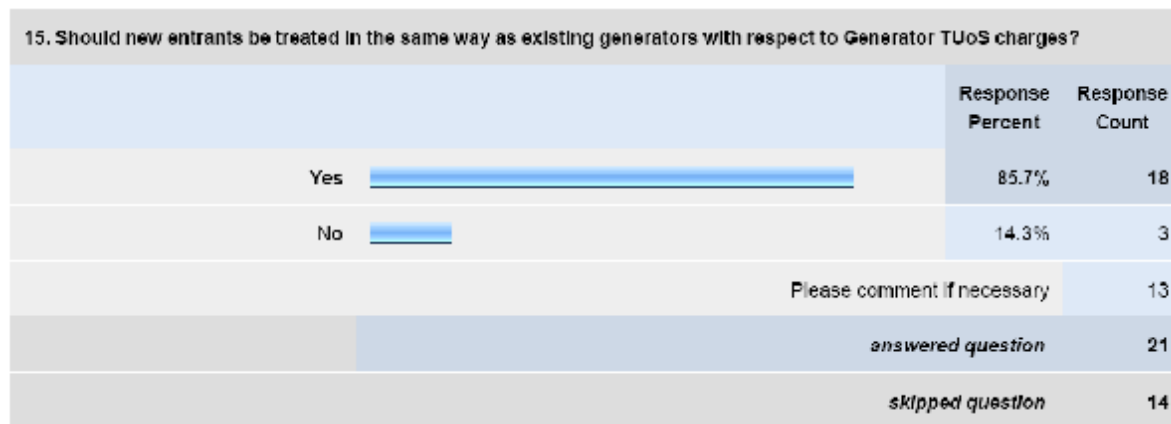


Figure 11: Treatment of existing and new entrants

#### 4.9.2. Demand Tariffs

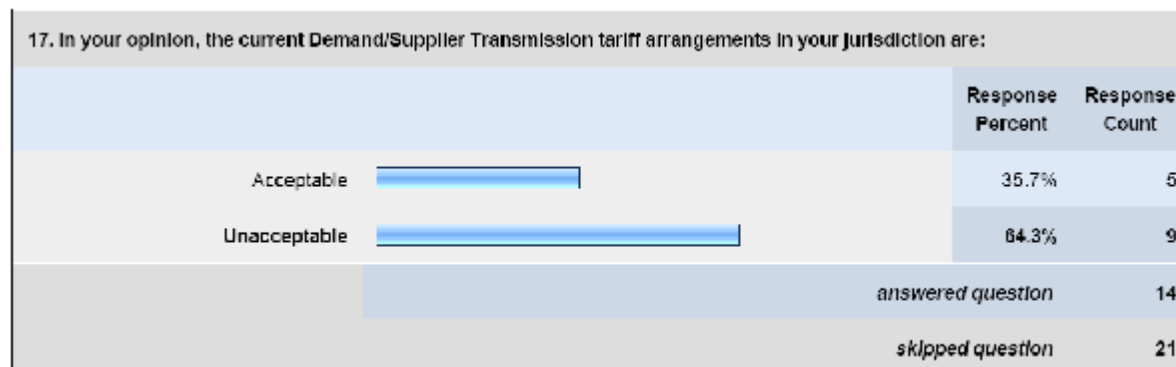


Figure 12: Acceptability of current Demand Tariff arrangements


19. In your opinion should a harmonized all-island arrangement be used for determining Demand/Supplier TUoS tariffs?			Response Percent	Response Count
Yes			100.0%	15
No			0.0%	0
Please state why:				12
<b>answered question</b>				<b>15</b>
<b>skipped question</b>				<b>20</b>

Figure 13: Harmonization of Demand/Supplier Tariffs

20. Please rate the importance of the following objectives in setting Demand/Supplier Tariffs on the island of Ireland:					
	Not Important	Slightly important	Important	Very Important	Response Count
Transparency	0.0% (0)	0.0% (0)	13.3% (2)	86.7% (13)	15
Stability (Low Volatility)	0.0% (0)	0.0% (0)	46.7% (7)	53.3% (8)	15
Predictability	0.0% (0)	0.0% (0)	46.7% (7)	53.3% (8)	15
Fairness/Equity	0.0% (0)	6.7% (1)	40.0% (6)	53.3% (8)	15
Cost Reflective	6.7% (1)	13.3% (2)	20.0% (3)	60.0% (9)	15
<b>answered question</b>					<b>15</b>
<b>skipped question</b>					<b>20</b>

Figure 14: Importance of various Demand/Supplier objectives

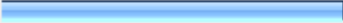
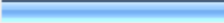
22. In your opinion, with a shallow connection charge regime in place, would a postage stamp i.e. uniform charge, be appropriate on the Island of Ireland?			Response Percent	Response Count
Yes			60.0%	9
No			40.0%	6
Please state why:				8
<b>answered question</b>				<b>15</b>
<b>skipped question</b>				<b>20</b>

Figure 15: Postage stamp option for island of Ireland

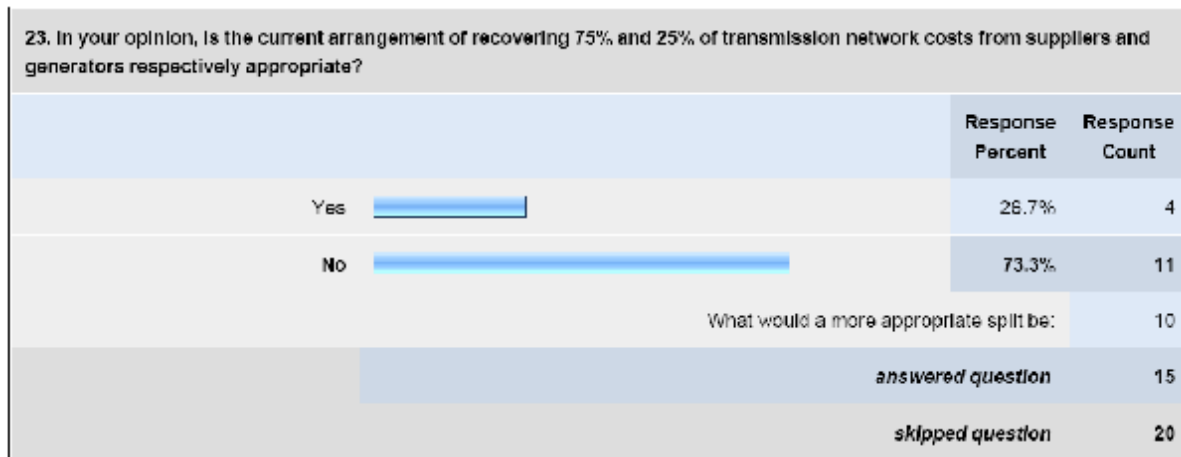


Figure 16: Split between suppliers and generators

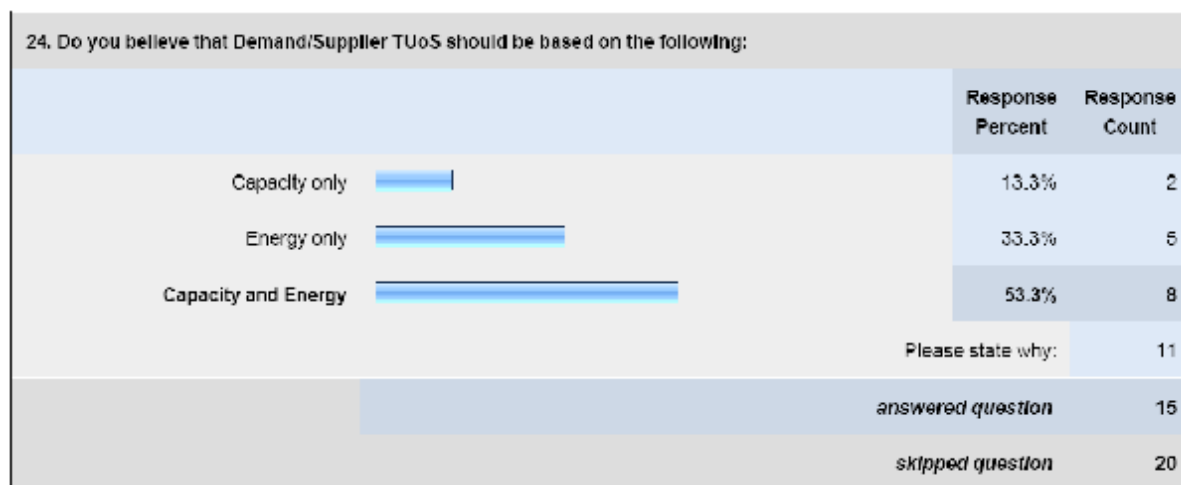


Figure 17: Capacity/Energy Split

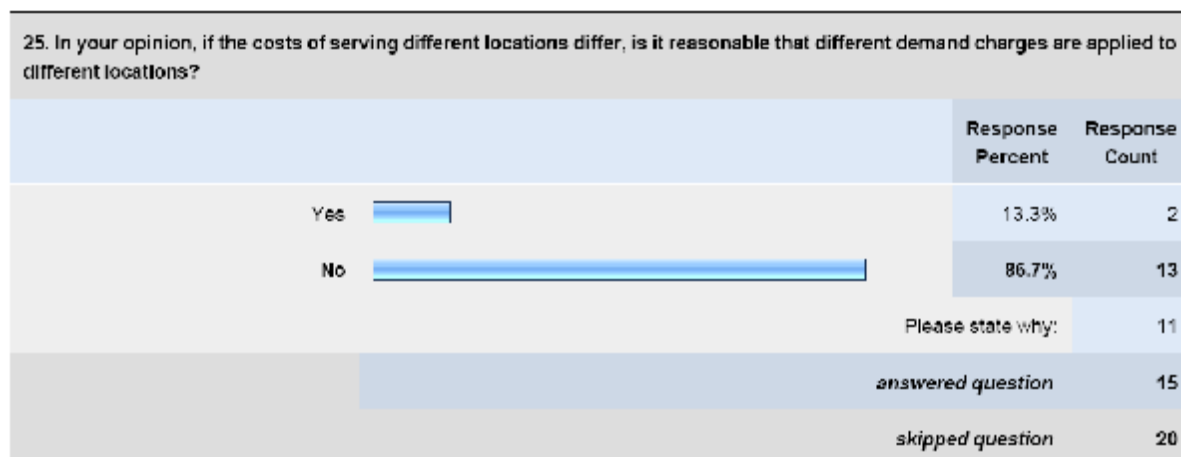


Figure 18: Different Demand charges for different regions

### 4.9.3. Losses

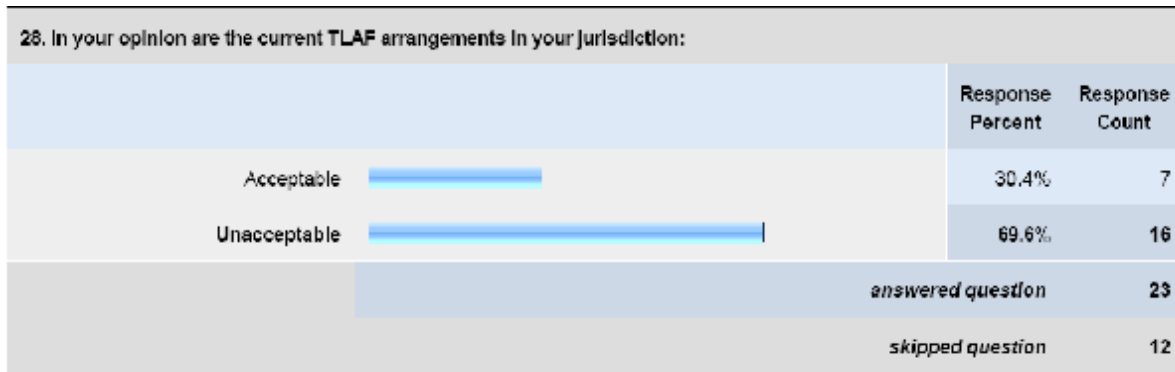


Figure 19: Current Losses arrangements

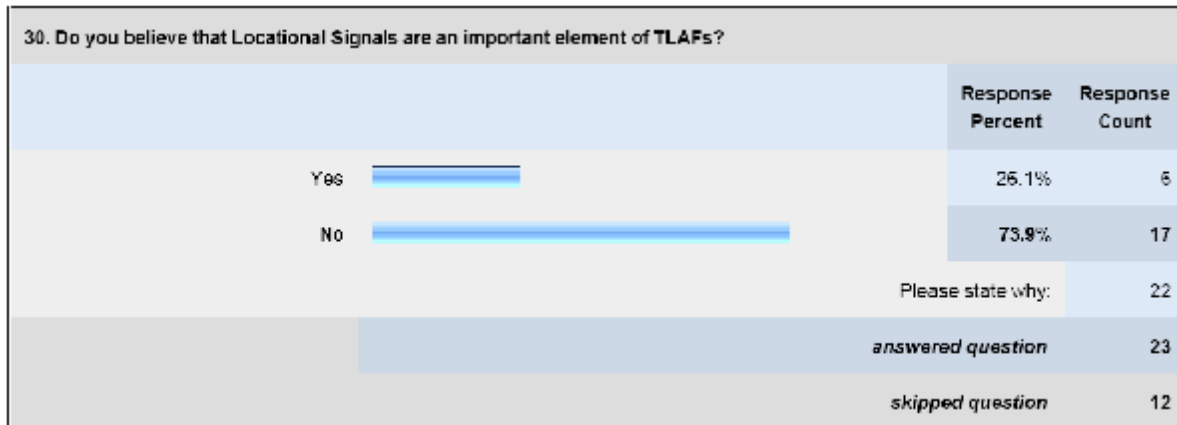


Figure 20: Importance of locational signals

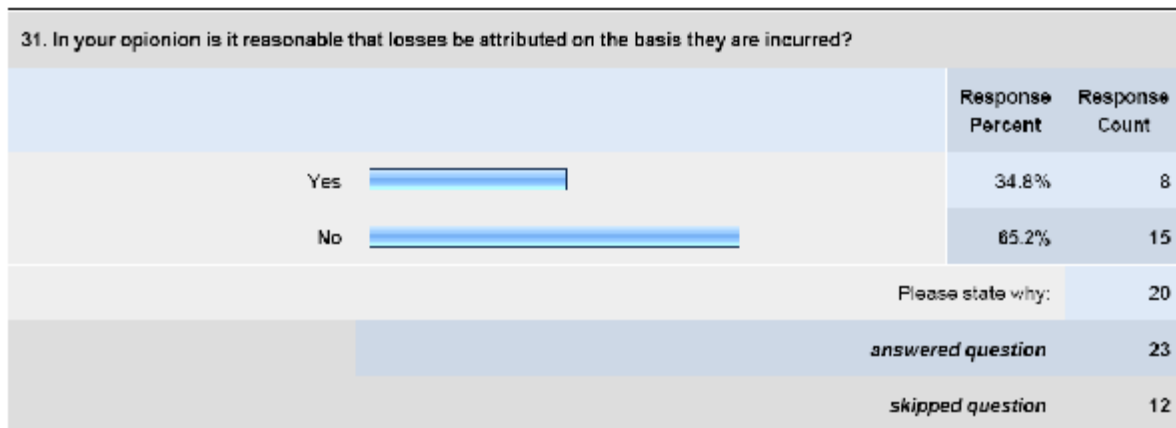


Figure 21: Basis in which losses are attributed

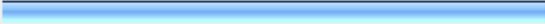

32. In your opinion, should a harmonized all-island arrangement be used for determining TLAFs?			Response Percent	Response Count
Yes			95.7%	22
No			4.3%	1
Please state why:				21
<i>answered question</i>				23
<i>skipped question</i>				12

Figure 22: Harmonization of TLAFs

33. Please rate the significance of the following objectives in setting TLAFs on the island of Ireland:					
	Not Important	Slightly Important	Important	Very Important	Response Count
Transparency	0.0% (0)	0.0% (0)	34.8% (8)	65.2% (15)	23
Stability (Low Volatility)	0.0% (0)	0.0% (0)	18.2% (4)	81.8% (18)	22
Predictability	0.0% (0)	0.0% (0)	21.7% (5)	78.3% (18)	23
Fairness/Equity	0.0% (0)	4.3% (1)	34.8% (8)	60.9% (14)	23
Cost Reflective	8.7% (2)	39.1% (9)	30.4% (7)	21.7% (5)	23
<i>answered question</i>					23
<i>skipped question</i>					12

Figure 23: Importance of various Losses objectives





35. In your opinion, how significant an impact would locational signals through TLAFs have on the choice of location? Tick as appropriate:			Response Percent	Response Count
Not Significant			56.5%	13
Slightly significant			17.4%	4
Significant			21.7%	5
Very significant			4.3%	1
<i>answered question</i>				23
<i>skipped question</i>				12

Figure 24: Significance of locational signals on choice of Demand/Supplier location




36. In your opinion, should transmission losses be allocated to:			
		Response Percent	Response Count
generators entirely		8.7%	2
demand/suppliers entirely		43.5%	10
shared between generators & demand/suppliers		47.8%	11
If shared what should the ratio be between generators and demand/suppliers			11
<i>answered question</i>			23
<i>skipped question</i>			12

Figure 25: Allocation of losses.



## Appendix A

### Comments Raised During Workshop on March 3<sup>rd</sup>

<u>Name</u>	<u>Organisation</u>	<u>Query/Comment</u>
Iain Wright	Airtricity	<ol style="list-style-type: none"> <li>1. How do TLAFs give a locational signal at all as they change the incentive from year to year?</li> <li>2. On NI TUoS – [Airtricity] struggle to understand the benefit of the degree of granularity in the current methodology.</li> <li>3. Should the System Operators consider moving away from charges on a legacy network to MEA method</li> <li>4. Also noted that with further interconnection on the Island, would benefit UK and further afield therefore costs should not fall entirely on Irish consumers.</li> </ol>
Garrett Blayney	Viridian	<p>There are 2 decisions made in the life cycle of the plant – (i) to execute a CA (ii) to close a plant when no longer economic</p> <ol style="list-style-type: none"> <li>1. [Viridian] don't feel that the current tariff structure formed part of either decision</li> <li>2. In the current climate with capital in short supply, risk has a large impact on the cost of capital, and hence an impact on the consumer</li> </ol>
Peter Harte	SWS	<ol style="list-style-type: none"> <li>1. [SWS] asked about the possibility of providing a forward projection of total Transmission spend to help with transparency</li> <li>2. There was no mention of Grid25 in the project introduction, which was introducing decisions on where to build the network and care should be taken to ensure that the locational signal didn't counteract the area being developed and therefore disable the ability of the developer to accept a CA due to a poor TLAF for example.</li> </ol>
Shane Lynch	AES	<ol style="list-style-type: none"> <li>1. Why is a signal so poor for Kilroot for example when it is within 13 miles of a large load centre like Belfast (0.97 on avg vs 1.0 avg ROI)</li> <li>2. Would it be possible to have a working party for the project to ensure close engagement</li> <li>3. The €4bn investment under Grid25 was an EirGrid/RA decision. Decisions on cost control are not with the generators.</li> </ol>
Paddy Larkin	Moyle	<ol style="list-style-type: none"> <li>1. In correction to S Lynch comment – Moyle imports pay TUoS to get on/off GB system and exports pay TUoS pay TUoS to get off Irish system</li> <li>2. Referred to Reg 1228/2003? Which states that there are no costs for the NI-ROI flow as this would pose a barrier to competition</li> </ol>
A number of other comments made		Would it be possible to address if the Shallow connection methodology would be revisited

<u>Name</u>	<u>Organisation</u>	<u>Query/Comment</u>
where the speakers name was not given		

## Appendix B

### Comments on Generation Questions

<u>In your opinion, the current Generator Transmission tariff arrangements in your jurisdiction are:</u>	<u>Response</u>
Acceptable	AAL consider that the Autoproducer tariff category is an acceptable arrangement for this company. However, in general, it is considered that since the cost is ultimately borne by the consumer of the electricity, the TUOS would be better levied on the consumer, to cut out administrative cost.
Acceptable	These are in operation for the past nine years and are generally regarded as satisfactory to date. However, with the high level of wind penetration they may need to be modified, but we haven't given this serious consideration. In general, they should only be changed if there is strong reason for doing - change for the sake of change should not happen. On an operational level there is an argument for bringing the transmission MIC TUoS charges (expressed in kW) into synch with the distribution MIC DUoS charges (expressed in kVA); they should both be expressed in kVA terms
Acceptable	Acceptable as based on the historic costs of the network that is socialised across generators. However, even without locational signals being imposed, there is a risk to incumbents from significant spends on upgrading the network. Currently, it is our understanding that these would be passed through to generators. However, as TUoS is regarded as a fixed cost, there is no opportunity to pass any additional costs through and they are therefore they are a direct hit on the generators bottom line. It is this type of future risk that makes investment decisions more difficult and risky with the knock-on issues of higher capital risk / costs.

<p><b><u>In your opinion, the current Generator Transmission tariff arrangements in your jurisdiction are:</u></b></p>	<p><b><u>Response</u></b></p>
<p>Acceptable</p>	<p>They ensure costs incurred in the jurisdiction are recovered from participants in the jurisdiction and therefore raise no issues with regard to political or regulatory obligations (and costs) imposed in the other jurisdiction (e.g with regard to renewables arrangements, planning requirements, etc.) are not passed across to participants and/or customers in the jurisdiction. This is particularly relevant where there are EU obligations on member states which may be implemented differently with differing impacts on transmission investment costs.</p>
<p>Unacceptable</p>	<p>The current framework produces highly volatile factors that have a disproportionate impact on participants. They are not based on an enduring network so cannot send meaningful investment signals. The risk they create adds to the investment cost of all players.</p>
<p>Unacceptable</p>	<p>Localised charges serve no purpose except to increase the project risk for new generation.</p>
<p>Unacceptable</p>	<p>The locational signal has now become dysfunctional and current arrangements significantly increase investment risk.</p>
<p>Unacceptable</p>	<p>locational signalling of this nature does not work with this type of application. It would be much better to return to the model whereby UoS charging is applied to the demand customer - this is ultimately who pays for it in any event and it avoids all the current unnecessary complexity</p>
<p>Unacceptable</p>	<p>Please see separate response to consultation.</p>

<p><b><u>In your opinion, the current Generator Transmission tariff arrangements in your jurisdiction are:</u></b></p>	<p><b><u>Response</u></b></p>
<p>Unacceptable</p>	<p>The costs should be uniform and not locationally based. 1. Location-based charging has the effect of penalising wind-generation, given that the resource is by its nature, far from the areas of better-developed infrastructure. 2. The fact that the grid is weak in certain areas is not the fault of those who are looking to connect to the grid. It is the fault of the system developer (ESB). Therefore, it is not justifiable to try to re-coup costs incurred for an historical failure from prospective users, be they generators or consumers. 3. Investment conditions are weakened by having an arbitrarily variable parameter that has a direct effect on revenue.</p>
<p>Unacceptable</p>	<p>The current arrangements are based on socialising fixed opex costs and fixed (and sunk) capex costs on a jurisdictional basis, allocated 75%/25% between generation/demand respectively. We support the jurisdictional allocation of these fixed costs because (i) each jurisdiction will have different regulatory price controls (e.g. different allowed rates of return) and (ii) different network investment programmes designed to facilitate both local energy policy and other local public policies like regional economic development (e.g. as highlighted in Grid 25). We support socialising fixed and sunk costs because (i) to do otherwise would result in a loss of static economic efficiency (these costs do not change if a generator or customer changes its location), and (ii) all users enjoy the benefit of the entire network at some time or other. There does not appear to be any economic basis for the 25%/75% split and we do not support this. All fixed and sunk network costs must ultimately be paid for by customers. It is more statically efficient to directly levy 100% of these fixed and sunk costs on demand rather than indirectly via the energy market and CPM. We understand that this is the approach adopted in many other markets.</p>

<p><b><u>In your opinion, the current Generator Transmission tariff arrangements in your jurisdiction are:</u></b></p>	<p><b><u>Response</u></b></p>
<p>Unacceptable</p>	<p>The current Generator Transmission tariffs are unpredictable and volatile. For a new generator entering the market there is no way of predicting the TUoS costs one will incur. There is a wide disparity between contestable and non contestable costs which feed into the calculation of TUoS charges and this is difficult to understand. Significant year on year volatility of TUoS charges increases regulatory risk and uncertainty and therefore increases commercial risk.</p>
<p>Unacceptable</p>	<p>The primary difficulties we have with the current generator transmission tariff arrangements are their year on year volatility, and the lack of predictability associated with them. When making long term generation investment decisions it is crucial that all cost inputs may be accurately modelled over a long period. Under the current system of TUoS charges it is impossible to predict what the tariff for a given generator will be annually, as they can be subject to significant and unpredictable change each year. These swings can have a substantial impact on projected returns.</p>
<p>Unacceptable</p>	<p>Primarily the arrangements in the RoI cannot form an acceptable basis of generator transmission charging whilst they are not harmonised with those in NI – especially when the future harmonisation of the arrangements was one of the underpinning principles of the SEM when implemented.</p>
<p>Unacceptable</p>	<p>They significantly increase investment risk for generators, and do not provide a locational signal. We suggest that locational signals should be provided by a clear connection agreement policy, where generators are only given firm connections when deep works are complete, and that generators with firm connections are dispatched in advance of non-firm generators.</p>
<p>Unacceptable</p>	<p>The process by which the charges are calculated is not transparent and brings about charges that are not predictable, nor stable.</p>
<p>Unacceptable</p>	<p>PG considers that a review of Generator TUoS tariffs is timely</p>

<p><b><u>In your opinion, the current Generator Transmission tariff arrangements in your jurisdiction are:</u></b></p>	<p><b><u>Response</u></b></p>
<p>Unacceptable</p>	<p>As wind penetration levels rise, the need for a more [system needs] driven set of signals will be required to steer the new generator investment decisions away from the current [ flat rate] type decision making process. This may require some quite strong early signals to make an impression on the market. If the SO is serious about securing complementary generation plant to match off the peculiarities of wind then short medium and longer term signals need to be published setting out the scale of the potential cost involved in following BAU approach V.S. a differential Generator TUoS approach. Assuming the cost of both the capital investment in transmission assets and the operational uplift associated with a BAU approach can be estimated from the ITC modelling.</p>
<p>Unacceptable</p>	<p>There are two significant issues with the current methodology (i) The 'scenario' approach to estimating 'use of system' does not reflect real dispatch patterns, and in particular, has the potential to discriminate against units with low annual load factors (ii) The levels of cost for new network infrastructure are very high, and in particular, the increase in the levels of these costs which are suggested in the 2008 paper on proposed all-island tariffs suggesting increases of more than 100% on the current RoI methodology. A new system will have to address these issues, and in particular allow for some independent estimate of network infrastructure costs.</p>

<p><b><u>In your opinion, the current Generator Transmission tariff arrangements in your jurisdiction are:</u></b></p>	<p><b><u>Response</u></b></p>
<p>Unacceptable</p>	<p>Not properly recoverable through the SEM, as bids cannot reflect TUoS charges. BNE methodology provides contribution through capacity charge, but it is wrong to have to recover differences via inframarginal rent. Postalisation is far more straightforward and ensures economic signals are consistent throughout the commercial market arrangements. There is also an argument that all charges are paid by customers in the end, so demand users should pay all Transmission charges.</p>
<p>Unacceptable</p>	<p>too volatile and do not provide a suitable locational signal. You cannot predict the charges in the future. It is not necessarily fair that some generators have high charges and some have no charges</p>

<p><b><u>Do you believe that locational signals are an important element of Generator TUoS tariffs?</u></b></p>	<p><b><u>Responses</u></b></p>
<p>Yes</p>	<p>Yes, but only because they are unhelpful. Nodal charging, based on complicated mathematical studies may have many theoretical attractions, but attribution of the resulting calculated costs, in a complex system with many participants, is a joint cost allocation problem. As such cause, effect and timing are by no means as clear cut and fair as the theoreticians might hope.</p>
<p>Yes</p>	<p>The locational signals incentivise new generator entrants with regard to locating new plants. Both the locational capacity charges and the TLAFs rightly give the right signals; this is right for Ireland Inc in terms of reducing transmission losses and the cost of grid infrastructure.</p>

<p><u>Do you believe that locational signals are an important element of Generator TUoS tariffs?</u></p>	<p><u>Responses</u></p>
<p>Yes</p>	<p>To influence the choice of, electrical characteristics of and fuelling options for the incoming fleet of new generators that will be required up to and beyond 2030.</p>
<p>Yes</p>	<p>It is acknowledged that Locational signals are important to efficiently focus planning and construction of generators. However the current volatility of the TUOS is unlikely to be of use to investors. Furthermore the complexity of determination of the TUOS charge make it difficult to forecast for the purposes of investment planning</p>
<p>No</p>	<p>The Irish energy market is being centrally planned through the connection process. Participants are not reasonably in a position to respond to these signals. Also the signals take no account of strategic grid development goals and lack stability. There have been significant year on year changes to existing participants which only serves to increase the risk profile of future projects.</p>
<p>No</p>	<p>The locational signalling is much too crude to have the desired effect in this type of application</p>
<p>No</p>	<p>Generator TUoS charges do not provide locational signals to new generators which would cause them to actually act on such signals in practice. Please see separate response to consultation</p>
<p>No</p>	<p>The location of a generator should not be reflected in the Use of System charges. This penalises renewables in favour of fossil-fuel burning plants, when the stated objective of the government is the opposite. It introduces a direct and blatant policy contradiction.</p>
<p>No</p>	<p>As regards new entrants there are far bigger factors than TUOS that go into choosing a proposed site. One of the biggest being the possibility of a grid connection in a reasonable time. The Grid 25 is largely planning where best to put new generation. Consequently Localised TUOS charging doesn't send out any signal that parties can respond to.</p>



<p><u>Do you believe that locational signals are an important element of Generator TUoS tariffs?</u></p>	<p><u>Responses</u></p>
<p>No</p>	<p>The objective is to encourage generators to locate where the incremental capex for network reinforcement is least. To answer the question, we must therefore consider if locational TUoS signals will ensure this outcome. Firstly, network reinforcements in the RoI will be proactively decided via Grid 25, rather than reactively in response to connection applications. Grid 25 will build the network based on pre-determined assumptions about where generators (thermal and renewable) will locate. Therefore locational signals are effectively redundant. Furthermore, having published and implemented this plan, it should be very obvious to generators where they should locate. If generators insist on locating where additional reinforcement is required (beyond the Grid 25 plan) then they should be charged the deep reinforcement cost, or at least some form of cost/benefit Grid Investment Test should be carried out. We note that this review appears to rule out a change to the current shallow connection policy, but no explanation has thus far been given for this approach. We consider this to be a major shortfall and would encourage an early review of this decision. Secondly, a locational signal is only effective if it is derived from the right information. In this case, what matters is minimising future reinforcement costs. However, these are not even considered for different potential injection nodes in deriving locational TUoS charges. Rather the signal is based on existing sunk costs. As we have seen from the Kilroot example which we presented at the recent workshop, this can result in perverse outcomes. There is significant evidence in the literature to support this point. Finally, for a small system like Ireland, entry/exit movements and centrally planned grid reinforcement will result in material volatility in year-on-year TUoS charges. This combined with a lack of transparency and subjectivity around dispatch scenarios, etc. results in a lack of trust and confidence. This in turn requires significant regulation and increases the cost of capital.</p>
<p>No</p>	<p>TUoS charges are a factor in choice of location in Generation. However other factors such as land,</p>

<p><u>Do you believe that locational signals are an important element of Generator TUoS tariffs?</u></p>	<p><u>Responses</u></p>
	<p>access to water and proximity to the electricity grid and gas network are more important factors. In the case of wind the location of the site in sufficiently windy areas is the critical factor and not the strength or weakness of the grid or localised loads</p>
<p>No</p>	<p>In the current climate of investment in both generation and the transmission and distribution network it is hard to justify the inclusion of locational signals as part of the TUoS tariffs. Wind generators have little real choice as to where they locate on the system for two main reasons:</p> <ul style="list-style-type: none"> <li>• The primary locational factors for wind generators are the availability of the wind resource, and planning permissions. The location of the best wind regimes cannot be altered, so generation must move to these areas.</li> <li>• When wind generators apply to be connected to the network in a given location they are instructed as part of the gate process of connection by Eirgrid/ESB Networks as to which node on the system they must connect to. With the current gates as they stand even if the generator wishes to move to an area with a better locational signal (i.e. more favourable TUoS charges and TLAF) they will effectively be precluded from doing so for years, as the gates are processed in date order, and the generators new application will be at the back of the queue. The real choice of the generator is very limited by these long connection lead times.</li> <li>• Further to this, if the generator were finally successful in moving location to an area with a better signal, there is every chance that this signal could have changed significantly for the worse by the time the generator is actually connected to the system.</li> </ul> <p>The above factors are the main locational drivers for generators, and it is fair to say that the locational element of generator TUoS tariffs have minimal impact on the decisions of generators. It is difficult enough for generators to locate their sites according to the above criteria, without the additional penalising factors of volatile locational signals being applied through use of system charges.</p>
<p>No</p>	<p>They have only limited bearing on the investment decision and if they are volatile, may only serve to</p>

<p><u>Do you believe that locational signals are an important element of Generator TUoS tariffs?</u></p>	<p><u>Responses</u></p>
	<p>increase the cost of capital and hence overall cost for customers. We also consider that the "shallow connection policy" has a much larger bearing on the matter and we believe that as well as reviewing the GTUos and TLAF issues, the decision to adopt a shallow connection policy should also be re-opened. The strategic objective must be to minimise the cost of electricity for customers. It is not clear that by adopting a shallow connection policy, it leads to the most efficient (least cost) investment decisions when the often the party making the decision is not seeing the full cost. Therefore we recommend that all transmission factors are reassessed.</p>
<p>No</p>	<ul style="list-style-type: none"> <li>• Long term historic locational decisions have been taken – locational charging through TUoS has no impact on existing decisions, and provides no signal an existing player can react to.</li> <li>• Regarding new investment, TUOS is at best a second order determinant for a new entry's choice of location.</li> <li>• The Grid 25 initiative represents an increasingly centrally planned approach to connecting new generation schemes. In this context, locational signals through TUOS for existing and new entrants appears to be an increasingly marginal signal.</li> </ul>
<p>No</p>	<p>Their volatile and opaque nature creates a non-diversifiable risk that increases generator cost of capital but does not provide a stable locational signal.</p>
<p>No</p>	<p>Locational signals aimed at encouraging generation investment to specific areas cannot work when the investment period for a generator is taken into consideration. Locational signals are transient and change as rapidly as the transmission system changes and therefore provide no relevant signal to an investor.</p>
<p>No</p>	<p>Locational signals are important, but not necessarily in this format</p>
<p>No</p>	<p>For a thermal generator there are more significant / overriding locational elements such as: - -            Planning Consents (Article 39) including environmental considerations - Fuel supply / replenishment -</p>

<u>Do you believe that locational signals are an important element of Generator TUoS tariffs?</u>	<u>Responses</u>
	Cooling water supply and adequate heat sink for rejected heat. - Existing infrastructure It is our belief that when all these locational factors are satisfied, it is highly unlikely that there will be a choice of sites available where locational TUoS charges would be a deciding factor.
No	The duration of the grid connection process and project development life cycles coupled with the granularity of the market which gives rise to significant volatility in TUoS and TLAFs, as new units come online, old units are retired, and new grid infrastructure is rolled out, completely undermine the basis for these mechanisms giving an effective locational signal
No	For wind generation there is not a substantial choice in the location of the best wind sites

<u>In your opinion should a harmonized all-island arrangement be used for determining Generator TUoS tariffs?</u>	<u>Response</u>
Yes	There should be an all-island strategy for investment and development.
Yes	Harmonization of charges across both jurisdictions is part of the objectives of the AIM. .
Yes	An all-island harmonised approach should create a more stable investment case.
Yes	Equity and fairness
Yes	Schedule & Dispatch of generation is harmonised to reflect the operation a single pool arrangement for generation pricing - so it seems to make sense that the same is done for TUoS pricing.
Yes	This is the ideal, but the detail of this would need to be agreed so as to ensure the criteria below are met.
Yes	There is no reason not to have an all-island arrangement. Indeed, it should strengthen the infrastructure.

<u>In your opinion should a harmonized all-island arrangement be used for determining Generator TUoS tariffs?</u>	<u>Response</u>
Yes	<p>Yes, considering that we have an all-island market, this makes eminently good sense. However, it is understandable that a different jurisdiction would want to structure its own tariffs to suit itself and this might be at odds with the interests of RoI. But assuming there will be progressive integration in the future then a harmonized arrangement should be pursued.</p>
Yes	<p>On balance, yes, because this means that stakeholders only need to understand one system. However, harmonisation is not necessary to achieve economic efficiency. We are dealing here with fixed and sunk costs which do not affect the dispatch process. Therefore the different jurisdictions could adopt different allocations for cost recovery if they wanted to do so. For example, the RoI has decided to invest in the network to facilitate a 40% renewable target and regional economic development. TUoS price increases are estimated at 20-30%. Given this significance, it is possible that NI and RoI may well wish to adopt different cost recovery allocations.</p>
Yes	<p>For the SEM to function effectively arrangements should be harmonised in an equitable and fair manner.</p>
Yes	<p>As we are now in an all island market for both energy and capacity it is appropriate that all market charges be applied on an island wide basis. In the interests of fairness, and to demonstrate full commitment to an all island approach, it is appropriate that a common approach is taken, where there is convergence of elements that are not yet harmonised.</p>
Yes	<p>This was a set RAs policy and we believe that it should be implemented as soon as practically possible. There is no rationale for not harmonising arrangements based on historic network configurations – or other jurisdictional factors. There are many other costs / prices within the SEM that could be set more efficiently on a jurisdictional basis (i.e. regional energy pricing) but have been rejected. Consistency and equity dictate that common TUoS</p>

<u>In your opinion should a harmonized all-island arrangement be used for determining Generator TUoS tariffs?</u>	<u>Response</u>
	<p>arrangements should be implemented with the minimum of delay.</p>
<p>Yes</p>	<p>An all-island approach will limit jurisdictional differences and create a bigger, more stable, market for generators to invest in.</p>
<p>Yes</p>	<p>As generators are now competing commercially on an all-island basis, it follows that all charges levied on generators be calculated according to a common methodology. A harmonized approach to determining charges would prevent generators from being disadvantaged by less penal levies being charged in a neighbouring jurisdiction.</p>
<p>Yes</p>	<p>Since the market is harmonised/ being harmonised in most other areas, TUoS tariffs should also be harmonised</p>
<p>Yes</p>	<p>In order to balance out any supplier driven incentive to enter CfD's with a generator which will induce an imbalance across any interconnection, thus producing the basis for a constraint payment that would not otherwise have arisen.</p>

<u>In your opinion should a harmonized all-island arrangement be used for determining Generator TUoS tariffs?</u>	<u>Response</u>
<p>Yes</p>	<p>As far as possible, all generators should be competing on an equal footing. We appreciate that different locations may necessitate different infrastructure costs such as extensions to transmission network, gas transmission network etc. We believe these costs should ideally be socialised or at least be a one-off cost that they can be built into a projects construction cost and hence be assessed as part of the overall project viability. It is unacceptable to us that an incumbents margin is eroded significantly due to the actions of others (i.e. under the harmonised proposals, another generation project could significantly increase TUoS charges).</p>
<p>Yes</p>	<p>Any mechanisms associated with the market, which could give rise to distortion of the market through different treatment in the two jurisdictions should be harmonised, where possible.</p>
<p>Yes</p>	<p>Only if the methodology is sensible, fair and can maintain these attributes in a developing system. The SEM operates as an all-island system and the TSO's are supposed to co-ordinate operation across the jurisdictions, so it would be perverse to create different economic signals north and south.</p>
<p>No</p>	<p>As previously noted, there may be different political objectives behind much of the new transmission investment and it is not clear how harmonised arrangements can be developed which ensures the costs of these decisions are bounded within the jurisdictions making those decisions. It may be fine if both jurisdictions were to adopt common policies but that has not been the case to date (e.g. plans to meet renewable &amp; CO2 targets).</p>



**In addition to the list above, what other objectives should be taken into account when determining the Generator TUoS methodology?**

The signals should ideally reflect costs but there is no point in making an attempt at this in a way that does not really reflect the underlying cost properly and ends up introducing spurious volatility. Do not add additional and unnecessary risk to generation projects as this only increases the cost to finance the projects and therefore the cost to the consumer.

It is acknowledged that the charges are to recover the cost of capital and maintenance on the network however the period over which the cost is recovered for ROI should be minimum 30 years and not 10 years, because realistically the lifetime of the asset is longer than 10 years. Furthermore ROI should make maximum use of any infrastructural funding from EU to cover network upgrade projects

Ease of application

Cost minimisation - Very Important Direct and relevant costs only included - Important

Promotion of renewables. This is supposed to be the primary objective of the country's energy policy.

It should be logical - there should be some broadly-based rationale. Players find it difficult to understand matters when they see parties "making it up as they go along"; the process loses respect in these circumstances

Economic efficiency - do they serve to minimise investment costs in both generation (cost of capital) and network reinforcement?

Long term view - the methodology should be designed for the Irish Grid of the future which will incorporate a diversity of generation across the island of Ireland. This long term view should incorporate government policy on decentrisation of industry so that there is a more integrated approach to the grid developing in less developed areas. This development of industry could then be complementary to Generation (specifically Wind) as it is generally in areas of low industry concentration. The corollary being a potential reduction in system losses and greater grid

**In addition to the list above, what other objectives should be taken into account when determining the Generator TUoS methodology?**

utilisation.

The objective of aiding the achievement of Government and EU renewable generation targets should be taken into account when determining the methodology used. The locational constraints placed on wind generation should also be borne in mind.

An key objective must be to ensure the tariff can deliver the desired behaviours and outcomes, e.g. if it an objective is to signal the best location to locate, can/does the tariff in isolation deliver that outcome?

Synergen does not believe that a locational signal is required in the TUOS charging arrangements (see responses to other questions). However, if there were to be a locational signal, the net benefit of any locational signal should be demonstrated – i.e. it should be shown that the differential allocation of costs: • drives future locational decisions; • reflects underlying cost imposed; and • generators are able to fully reflect such cost in their bids under the bidding rules (i.e. the price signal can be responded to). This relates to the recovery of TUOS charges by generator – which is via CPM payments. The present arrangements account for TUOS charges in the establishment of BNE costs (such costs being locational). Recovery of these locationally differentiated costs on generators is then via CPM payments (which are not locational). Hence, there is an inconsistent approach to locational signals between the calculation of BNE and the recovery of TUOS charges (based on availability – which is not locationally rewarded).

Methodology should be simplified

If Ireland is to be a high wind system, up to and beyond the 43% level then the high desirability [assuming that it is desirable] of locating peaking type plant alongside or close to the windfarm should be signalled. A further Objective should therefore include a wind maximisation objective.

There must be clarity around what elements are included. for instance: - - Is it only the current asset base. - How are future enhancements to be treated. - What is the rate of return for the asset owner.

**In addition to the list above, what other objectives should be taken into account when determining the Generator TUoS methodology?**

It is very important that we address the issue of Network Efficiency or Value for Money. This objective should address the questions, Are we developing the grid to achieve the best value in capital expenditure, to ensure adequate safety and security of supply? Is the TSO adequately incentivised to make best use of the grid through appropriate dispatch patterns? and Is it appropriate that every plant should require the levels of grid reinforcements to allow full firm financial access, regardless of the load factor of the plant?

Need to maintain a balance between grid charging that tries to control generation and the wider national imperatives that require generation development. Also need to ensure that generators are not penalised for changes in demand

<b><u>In your opinion, with a shallow charging regime in place, would a postage stamp i.e. uniform charge, be appropriate on the island of Ireland?</u></b>	<b><u>Response</u></b>
No	A uniform charge would not include the locational signals generated by the current system
No	The quasi vertically integrated entities would invest on a non system optimal basis.
No	This option needs further investigation but should not be discounted at this stage
Yes	Unless it is possible to develop a stable mechanism that provides investment signals that a generator can respond to and that meaningfully reflect the expected roll out of grid then any signal is only adding volatility.
Yes	Localised charges serve no purpose except to increase the project risk for new generation. A postage stamp approach would significantly reduce risk and a level playing pitch for all

<p><u>In your opinion, with a shallow charging regime in place, would a postage stamp i.e. uniform charge, be appropriate on the island of Ireland?</u></p>	<p><u>Response</u></p>
	<p>players. The current regime favors portfolio players who can distribute their TUOS charge risk.</p>
<p>Yes</p>	<p>This is the only way to promote investment in areas where the infrastructure is weak. Otherwise the system will be developed to cater for a market that has ceased to exist.</p>
<p>Yes</p>	<p>I say yes, but am unaware of whether this breaches the principle of cost reflectivity. So, difficult to answer this but leaning to yes.</p>
<p>Yes</p>	<p>The question appears to imply that if generators are not charged deep reinforcements costs, then a locational charge must be applied. A locational charge can act as an alternative to charging for deep reinforcement costs but this is only effective if the charge is based on relative incremental capex costs at each node. The SEM proposal is based on existing sunk capex costs.</p>
<p>Yes</p>	<p>A uniform charge would be appropriate with the continuation of the shallow charging regime.</p>

<p><u>In your opinion, with a shallow charging regime in place, would a postage stamp i.e. uniform charge, be appropriate on the island of Ireland?</u></p>	<p><u>Response</u></p>
<p>Yes</p>	<p>A uniform type charge would help to reduce the volatility of the TUoS charges, as a postalised type tariff would be spread over the whole system, and should vary less year on year as incremental changes are made to the network as a whole. Additionally, as mentioned in previous questions, the influence of the locational signal provided by the TUoS tariff is largely irrelevant to decisions made by wind generators when they decide where to locate. Other factors are much more relevant and as such the TUoS revenue would be better collected under a postalised tariff. The success of postalised transmission tariffs can be seen in the national gas transmission network. This type of tariff should be calculated using a simple methodology, and could be more easily modelled and predicted by generators.</p>
<p>Yes</p>	<p>A generator or customers generally only makes 2 decisions, to locate at a particular location and to cease operation. For the duration of time between these 2 decisions, the user cannot change matters other than to expedite the closure decision. However that is not generally a feasible option when the initial investment is usually a substantive one (e.g. to construct a generating station). Hence locational signals between these 2 critical events are largely nugatory.</p>
<p>Yes</p>	<p>As already stated we are not convinced that the existing charging regime in the context of the SEM design and regulation provides an efficient price signal that drives the locational decisions it seeks to influence. See comments regarding question 2.5 on the recovery of TUOS costs by generators.</p>
<p>Yes</p>	<p>Because it will increase stability and reduce investor risk, thus reducing the cost of building new generators.</p>

<u>In your opinion, with a shallow charging regime in place, would a postage stamp i.e. uniform charge, be appropriate on the island of Ireland?</u>	<u>Response</u>
Yes	More analysis is required on this, but it seems likely that postalised charges are more appropriate for this market
Yes	Please see Q3.
Yes	A postage stamp approach is preferred to a locational charge, which is not effective for the reasons previously stated, and has the potential to be unfair to developers who have committed financially to a project, and are penalised for issues that are not of their making. Non with-standing the method of apportioning charges, the absolute level of network costs, and the efficient use of the capital spend on grid infrastructure are critical objectives which have to be addressed
Yes	in my opinion yes

<u>In your opinion, is the current arrangement of recovering 75% and 25% of transmission network costs from suppliers and generators respectively appropriate?</u>	<u>Response</u>
Inappropriate	Since all costs revert eventually to the supplier (and hence the end consumer of electricity), there is only value in applying them to generation if there is some value gained (e.g. a better dispatch). The administration costs of the TLAF and TUoS system should be taken into account in this split. Consideration should be given of simply allocating these charges to

<u>In your opinion, is the current arrangement of recovering 75% and 25% of transmission network costs from suppliers and generators respectively appropriate?</u>	<u>Response</u>
	demand.
Inappropriate	Suppliers should pay 100%.
Inappropriate	costs should be 100% supplier
Inappropriate	100% cost to end users
Inappropriate	100% demand customer
Inappropriate	100% to Suppliers, or min of 90%. Greater Transparency achieved.

<u>In your opinion, is the current arrangement of recovering 75% and 25% of transmission network costs from suppliers and generators respectively appropriate?</u>	<u>Response</u>
<p>Inappropriate</p>	<p>Renewable generators are already subsidising the development of grid infrastructure through the group processing scheme. 25% is too high.</p>
<p>Inappropriate</p>	<p>There is no economic foundation for this. The costs recovered are 100% fixed and sunk. Generators ultimately have to recover costs from customers. Therefore it is more economically efficient to charge customers 100% of the costs directly.</p>
<p>Inappropriate</p>	<p>100% from Suppliers assuming no postalisation - The capacity POT at present incorporates TUoS. If the split was to be amended to 100% from Suppliers it would reduce the capacity POT with the net result being no impact on customers. The purpose of this would be to smooth the Capacity POT for Generators and increase price stability.</p>
<p>Inappropriate</p>	<p>90:10</p>
<p>Inappropriate</p>	<p>50/50 but only so long as the generator is correctly signalled.</p>
<p>Inappropriate</p>	<p>Synergen would prefer to see all TUOS costs allocated to suppliers – a 100:0 split. It does not believe that TUOS charges seen by generators are well recompensed through CPM and cannot be bid in. To the extent that charges are passed on, the initial charging to generators in an un-necessary step pre socialisation via retailers. To the extent that these costs are not recovered, this is inequitable and restrictive to an efficient generator. If the split remains 75:25 Synergen would favour a postage stamping of TUOS based on registered capacity (as network costs need to reflect the capacity of a generator, not its annual output).</p>
<p>Inappropriate</p>	<p>100% allocation to suppliers who can accurately pass cost through.</p>



<u>In your opinion, is the current arrangement of recovering 75% and 25% of transmission network costs from suppliers and generators respectively appropriate?</u>	<u>Response</u>
Inappropriate	100% on suppliers if their is a flat charge
Appropriate	
Appropriate	Given that it is largely driven by the EU requirements, there must be a split. However it is difficult to comment on the precise proportion.
Appropriate	
Appropriate	Split would appear to be appropriate, although there may be a case for suppliers to pay a larger percentage of network costs.
Appropriate	
Appropriate	Assuming the locational charge structure is changed
Appropriate	

<p><u>At present generators connected to the distribution system with installed capacity less than 10MW do not have to pay Generator TUoS tariffs. In your opinion is this threshold reasonable?</u></p>	<p><u>Response</u></p>
Yes	
Yes	
Yes	
Yes	
Yes	
Yes	<p>There has to be some cut off point; 10 MW is quite low so it seems reasonable.</p>
Yes	
Yes	

<p><u>At present generators connected to the distribution system with installed capacity less than 10MW do not have to pay Generator TUoS tariffs. In your opinion is this threshold reasonable?</u></p>	<p><u>Response</u></p>
<p>Yes</p>	
<p>Yes</p>	<p>For generators just over the 10MW threshold, a graduated scheme should be considered</p>
<p>Yes</p>	
<p>Yes</p>	
<p>Yes</p>	
<p>No</p>	<p>The threshold for Large Scale Versus Small Scale wind generation under REFIT is 5MW and as such this threshold of 5MW is suggested to be a more appropriate threshold for the application of generator TUoS charges.</p>

<p><u>At present generators connected to the distribution system with installed capacity less than 10MW do not have to pay Generator TUoS tariffs. In your opinion is this threshold reasonable?</u></p>	<p><u>Response</u></p>
<p>No</p>	<p>It should be based on the energy generated, not the capacity to generate. The idea that smaller wind-farms are subsidised by larger ones does not make business sense. Also, it creates a market anomaly at the threshold and encourages development of windfarms of 9.99MW.</p>
<p>No</p>	<p>In this situation BGE are unsure as to who is paying how much. There may be a large number of generators connected to the distribution system with installed capacity less than 10MW who do not pay Generator TUoS tariffs, consequently they may be benefiting disproportionately due to size. It would be informative if these figures were available. Also it should be considered to what degree the generator is embedded in the local network. In the case of CHP we believe a derogation should apply assuming it is serving local load. Further to this with the recent introduction of a feed in tariff for Micro Generation as the system moves more towards distributed generation the burden for TUoS will fall to a greater extent on a smaller number of large generators</p>
<p>No</p>	<p>An appropriate threshold is zero MW, i.e. all generators should pay TUoS charges. If a postalised tariff is adopted, then all generators should be treated equally.</p>
<p>No</p>	<p>It is not clear what may be reasonable and it will depend on the potential connection policies in future. For example if there is a lot of small renewables all connected at a distribution level but which in aggregate export via the transmission network, then this may not represent cost-reflective charging.</p>

<p><u>At present generators connected to the distribution system with installed capacity less than 10MW do not have to pay Generator TUoS tariffs. In your opinion is this threshold reasonable?</u></p>	<p><u>Response</u></p>
<p>No</p>	<p>Synergen believes that the threshold should be significantly lower, perhaps as low as 100kW.  Rationale: • 10MW is not capable of being robustly defended – historic figure that probably seemed “about the right level” and cut out only a small number of players at the time it was established. • Increasing levels of smaller schemes shifts the balance of total cost spayed by larger players going forwards – this is not equitable. • If small players get CPM payments directly (or should sensibly capture such benefits via sales prices to retailers) then they should be exposed to the cost of the network in the same manner as other players. By this Synergen means where an off-market sale reduces a suppliers pool volumes, and thus its CPM costs. NB – for clarity, Synergen’s position is that (a) TUOS should be all on the demand side, but IF it is not, then there should be only very limited exclusions on the generators side from contributing to the generators share.</p>

<p><u>Should new entrants be treated in the same way as existing generators with respect to Generator TUoS charges?</u></p>	<p><u>Response</u></p>
<p>Yes</p>	<p>Fairness /Equity is key; having differing arrangements for new entrants would contradict this key principle.</p>
<p>Yes</p>	
<p>Yes</p>	

<u>Should new entrants be treated in the same way as existing generators with respect to Generator TUoS charges?</u>	<u>Response</u>
Yes	
Yes	Avoids undue discrimination.
Yes	
Yes	The objective is to minimise incremental network investment costs whilst serving demand and maintaining security of supply. All generator entry and exits should be considered on this same basis.
Yes	Investment choices were taken using the present charging methodology despite its volatile nature. New entrants should not be unduly penalised under a new methodology.
Yes	In the interests of fairness all generators should be treated in the same manner. It is difficult to envisage a scenario where new entrants could justifiably be treated differently.
Yes	In general yes. However, as previously noted, we believe the matter of deep vs shallow connection policies should be re-appraised as it is not clear the current model delivers the least cost overall outcome.
Yes	
Yes	
Yes	
Yes	

<u>Should new entrants be treated in the same way as existing generators with respect to Generator TUoS charges?</u>	<u>Response</u>
Yes	Our ideal model would be one where all generators pay a socialised charge that is predictable and stable. Where there are significant costs associated with enhancements to the network or other factors that increase the overall cost of the network these should be passed through to the customer. This is on the basis that these additional costs are approved by the Regulatory Authorities and therefore will either be necessary spends in terms of network integrity or will be enhancements to the network. Similarly, if the investment signals are correct, a new entrant should be beneficial to customers. It would seem to us to be a distortion that a new entrant should be penalised or, worse still, incumbents are forced to pick up the costs of connecting a new entrant. We would therefore propose a system based on generators paying a flat TUoS charge and any additional costs are passed to customers through suppliers.
Yes	In principle, if the appropriate market structures are working efficiently, there should be no need to give new generators special treatment, as this could potentially distort the market
Yes	Any other approach is discriminatory
Yes	This is required for fairness
No	No – new entrants should not have the ability to unfavorably move TUoS charges for existing generators through poor locational drivers or decisions. TUoS charges for a generator should not be able to rise the year after construction starts - ideally there should be a hold period of perhaps 10 years to protect investment decisions.
No	The old stock has historic inflexibilities that are neither cost effective or necessary at this point in time to be changed. New entrants must be guided / incentivised or penalised into coming up with solutions that meet the needs of the system both electrically and economically.

<u>Should new entrants be treated in the same way as existing generators with respect to Generator TUoS charges?</u>	<u>Response</u>
No	I have lobbied the CER for several years in relation to this point (TLAF). I think the CER took my view on board in Clause 9 of the terms of contract for Tynagh. I have consistently maintained that an existing or new generator should not have its TLAF worsened by the arrival of a further new entrant; this breaches the principle of the polluter pays, i.e. if the most recent new entrant causes higher losses then it should bear the cost of these through its TLAF
No	In principle, all users of the network should pay a certain level of charges, in line with their peers, regardless of size. Such users could pay an alternative tariff structure, as is the case with smaller gas consumers in relation to Use of System charges for gas capacity
No	Nat Grid in GB has found that increasing embedded generation has affected flows on the transmission system. All generation has an effect – even if it is just displacing imports to the Distribution system. All generation should contribute to Transmission costs.



## Appendix C

### Comments on Demand/Supplier Questions

<u>In your opinion, which aspects of the current Demand/Supplier TUoS methodology should be:</u>	<u>Retained</u>	<u>Removed</u>
	Postalised approach	All TUoS charges should be recovered from demand customers
		The 25% - 75% split should be made 100% levied on demand customers
	No comment	No comment
	Energy charge	Capacity charge
	charges should remain in place	locational charges should be revised
	Tariff level effect	
	Keep tariffs socialised on a jurisdictional basis. There is a contradiction however if nerator TUoS is locational.	Increase the 75% allocation to 100%
	No Comment at this time	No Comment at this time
	n/a	
	postalised approach	all TuOS should be recovered from demand customers as this is a more stable signal
		Generator 25 % / Supplier 75% recovery split

<p><u>In your opinion, which aspects of the current Demand/Supplier TUoS methodology should be:</u></p> <p><u>Retained</u></p>	<p><u>Removed</u></p>
Service charges	Infrastructure charges
na	na
Retain Energy Charges	
Incentives required to use system effectively. A charge should be levied based on demand at system peak	<p>CMC and site-specific demand. Portfolio effect matters, not individual sites.</p> <p>Suppliers will pass on demand impact through tariffs. T charges should deliver T objectives. Currently T charges address gen capacity issues as well, but there is an SEM with demand side and other options</p>

<p><u>In your opinion should a harmonized all-island arrangement be used for determining Demand/Supplier TUoS tariffs?</u></p>	<p><u>Response</u></p>
Yes	Consistant with SEM objectives
Yes	

<p><b><u>In your opinion should a harmonized all-island arrangement be used for determining Demand/Supplier TUoS tariffs?</u></b></p>	<p><b><u>Response</u></b></p>
<p>Yes</p>	<p>This is the ideal but must be subject to the criteria set out below and subject to industry consultation on the actual detail</p>
<p>Yes</p>	<p>We all gain from having a bigger system, so we should all pay for this equally.</p>
<p>Yes</p>	<p>Benefit to infrastructure</p>
<p>Yes</p>	<p>Consistency is important to avoid any anomalies between the two jurisdictions which may arise from two different systems.</p>
<p>Yes</p>	<p>On balance, this would be simpler for stakeholder understanding. However, it is not essential. As set out earlier, different policy objectives may exist in each jurisdiction for network development and therefore different cost allocation may be appropriate.</p>
<p>Yes</p>	<p>For the SEM to function effectively arrangements should be harmonised in a equitable and fair manner.</p>
<p>Yes</p>	
<p>Yes</p>	<p>To meet SEM objectives</p>
<p>Yes</p>	<p>To minimise possibility of developing unnatural constraint payments.</p>
<p>Yes</p>	<p>They are interconnected</p>

<p><b><u>In your opinion should a harmonized all-island arrangement be used for determining Demand/Supplier TUoS tariffs?</u></b></p>	<p><b><u>Response</u></b></p>
<p>Yes</p>	
<p>Yes</p>	<p>It would make it easier to offer Customers a similar product both sides of the border</p>
<p>Yes</p>	<p>Different approaches in the two jurisdictions would distort dispatch and pricing in the SEM - through TLAFs. TLAFs are part of TUoS charges because they levy significant costs on generators.</p>

<p><b><u>In addition to the list above, what other objectives should be taken into account when determining the Demand/Supplier TUoS methodology?</u></b></p>
<p>Stable allocation to suppliers, clearly defined settlement process</p>
<p>Cost Minimisation - very important Direct and relevant costs only included - important</p>
<p>The tariff should be as simple and easily understood.</p>

<b><u>In addition to the list above, what other objectives should be taken into account when determining the Demand/Supplier TUoS methodology?</u></b>
Renewables promotion.
Economic efficiency - see earlier.
An Objective to maximise the uptake of wind onto the system through a possible rebalancing of Generator / Supplier ratio with a pass back arrangement to wind generators that can be dispatched. [Assuming technological developments prove up in time]
Suppliers/customers should be able to understand the incentives in the tariff, otherwise they cannot be expected to respond. Objectives of charging structure need to be clear and simple.

<b><u>In your opinion, with a shallow connection charge regime in place, would a postage stamp i.e. uniform charge, be appropriate on the island of Ireland?</u></b>	<b><u>Response</u></b>
Yes	The nature of the application/model is one that is best suited to a postalised methodology
Yes	
Yes	See. 5. above
Yes	As stated earlier, locational charging will not deliver on the stated objective if it is based on sunk costs.
Yes	Refer to Generator TUoS comments.
Yes	We are not convinced with the merits of shallow connection charging generally, but for consistency reasons if it does not apply for generators, then it should

<p><u>In your opinion, with a shallow connection charge regime in place, would a postage stamp i.e. uniform charge, be appropriate on the island of Ireland?</u></p>	<p><u>Response</u></p>
	<p>not apply for demand customers.</p>
<p>Yes</p>	
<p>Yes</p>	
<p>Yes</p>	<p>See answer to previous question. What purpose is served by complexity that is not easily understood? What does cost-reflectivity mean in the context of a large, shared facility with costs that are almost entirely fixed?</p>
<p>No</p>	
<p>No</p>	<p>Facilities in remote places should pay more than those local to where the network is strong.</p>
<p>No</p>	
<p>No</p>	
<p>No</p>	<p>Loss of signal power.</p>
<p>No</p>	

<u>In your opinion, is the current arrangement of recovering 75% and 25% of transmission network costs from suppliers and generators respectively appropriate?</u>	<u>Response</u>
No	100% from suppliers who can accurately allocate the costs
No	100% demand/supplier
No	100% to Suppliers, or at least 90%. Better Transparency achieved
No	50% and 50%
No	A higher charge for suppliers, as generators already subsidise the development of the grid through group processing
No	Should be 100% on customers for reasons of economic efficiency.
No	100% Supplier - assuming customers are cost neutral as a result of a reduction in the capacity Pot as per the comments on Generator TUoS.
No	
No	100% from suppliers who can accurately pass the cost through
No	50 / 50 but pass back to firm delivery wind generators
No	50-50
Yes	
Yes	

<p><b><u>In your opinion, is the current arrangement of recovering 75% and 25% of transmission network costs from suppliers and generators respectively appropriate?</u></b></p>	<p><b><u>Response</u></b></p>
<p>Yes</p>	
<p>Yes</p>	

<p><b><u>Do you believe that Demand/Supplier TUoS should be based on the following:</u></b></p>	<p><b><u>Response</u></b></p>
<p>Capacity and Energy</p>	<p>Promotes demand with better load factor, allows fair treatment of recovery of costs for demand customers with low consumption but high maximum demand.</p>
<p>Capacity and Energy</p>	<p>The regime as exists today. Similar to the gas regime on the Island. No strong argument to change.</p>
<p>Capacity and Energy</p>	<p>An incentive is required to encourage users to use the network efficiently; ie to maximise their load factor and avoid unnecessary peaks. All users need to make a contribution towards operational costs and these are reasonably attributable to usage. Therefore a tariff that contains both elements can incentivise both peak demand and consumption efficiency. Introduction of smart metering will increase flexibility of individual customer response to pricing signals, so T tariff structure must allow customers to benefit from responding to T tariff incentives.</p>



<u>Do you believe that Demand/Supplier TUoS should be based on the following:</u>	<u>Response</u>
Capacity and Energy	Revenue recovery should relate to fixed and variable costs.
Capacity and Energy	
Capacity and Energy	Promotes demand with better load factor, allows fair treatment of recovery of costs for demand customers with low consumption but high maximum demand.
Capacity and Energy	Need to encourage firm wind power.
Capacity and Energy	
Capacity only	The wires business is by its nature a capacity business. The costs to any T&D business have little reflection on the amount of energy that flows assuming things like overloading and losses are disregarded in the context of this question. MWh type parameters currently used in UoS are simply

<u>Do you believe that Demand/Supplier TUoS should be based on the following:</u>	<u>Response</u>
	derived from source MVA or MW parameters.
Capacity only	Costs are fixed and largely sunk. They do not vary with demand.
Energy only	
Energy only	We should pay for what we transport through the system.
Energy only	Energy is not about potential generation, the amount used is the important number. The charges are called Use of System charges, so that is what they should charge for. If they are based on capacity, they become a development charge.
Energy only	To facilitate ease of application to customer tariffs

<u>In your opinion, if the costs of serving different locations differ, is it reasonable that different demand charges are applied to different locations?</u>	<u>Response</u>
Yes	
Yes	Facilities in remote places should pay more than those local to where the network is strong.

<p><u>In your opinion, if the costs of serving different locations differ, is it reasonable that different demand charges are applied to different locations?</u></p>	<p><u>Response</u></p>
<p>No</p>	<p>Approach would be unstable</p>
<p>No</p>	<p>Whilst the intuitively correct answer is 'yes' the more important thing is that TUoS charging simply lends itself to a postalised approach.</p>
<p>No</p>	<p>Very complex to implement such a system, if a regime could be agreed as to how to achieve it. Further given the sparse population distribution throughout the Island such a regime would unduly burden some, and favour others. In the gas regime on the island no such regime is utilised.</p>
<p>No</p>	<p>Because that is a mechanism that will penalise development of any type in areas that have a poor electrical infrastructure. The fact that the system developer has failed to produce a grid that is uniformly adequate should not be a driver or barrier to industrial development in particular areas. The grid operator needs to take responsibility for failures in certain areas, not those who wish to create employment.</p>
<p>No</p>	<p>A geographical retail tariff would be extremely difficult to implement and may impact particular groups of customers who are not in a position to do anything to mitigate any resulting additional cost</p>
<p>No</p>	<p>For reasons of fairness if the costs of serving different locations differ demand charges should not be applied on this basis as this would geographically discriminate against these locations which are located further away from the grid. This would go against the regulatory authorities stated principle that the</p>

<p><u>In your opinion, if the costs of serving different locations differ, is it reasonable that different demand charges are applied to different locations?</u></p>	<p><u>Response</u></p>
	<p>methodology be non-discriminatory.</p>
<p>No</p>	
<p>No</p>	<p>We understand the broader societal benefits of having a postalised approach. The unstable nature of locational signals could result in inequity between customers. It is also appropriate however that the same equity is afforded to generators.</p>
<p>No</p>	
<p>No</p>	
<p>No</p>	<p>Assumption that modelling reflects reality. Joint cost allocations are arbitrary. Issues of policies on social cohesion. Potential for unintended outcomes. etc etc.</p>

**Please add any other comments that you think should be considered by the System Operators in relation to Demand/Supplier TUoS tariff arrangements.**

We understand the broader societal benefits of having a postalised approach. Unstable locational signals could result in inequity between customers. It is also appropriate however for the same equity to be afforded to generators.

To the extent there are similar issues on the gas regime what has been done in the gas regime should be looked at and considered, given that a common approach to gas and electricity appears correct in relation to some issues.

none

We have set out why we think locational charges are not appropriate. However, if they are to be continued, then there must be a consistent approach across both generation and demand.

"Triad" charges are one way of charging for capacity. The effect is felt more widely because customers are uncertain as to when the peaks will happen and therefore moderate their consumption when they fear they will be hit by charges. However there is an argument that more than three charging periods are required to maintain the load reduction incentive over the whole winter period (or perhaps to control demand during other periods when network capacity is constrained). This mechanism would avoid the need for complex and administratively onerous winter peak demand reduction schemes, where there is always a possibility of customers being paid for something they would do anyway.

## Appendix D

### Comments on Transmission Loss Adjustment Factors & Losses

<u>Which aspects of the current TLAF methodology, if any, do you believe should be retained or removed?</u>
Marginal loss signal is too volatile, and should be removed. Generators that reduce losses may be penalised. The current methodology is too complex and EirGrid are the really the only party that can complete studies and projections, therefore the methodology lacks transparency and predictability. In addition there is no meaningful investment or operational signal provided. Currently there is a danger is that if you listen to a signal, you could be punished by causing a reverse flow which cannot be predicted, and we believe that the signal has been broken since the start of the wind industry in Ireland. There is a case for retaining the TLAF signal for price making plant to gain a better dispatch, but there would need to be much more granular and uncorrected loss data available to ensure this was applied fairly. The cost of creating this level of detail should be compared with the benefit of a slightly improved dispatch.
Localised TLAF serve no purpose except to increase the project risk for new generation.
The locational component is too unstable and unpredictable and TLAF's increases cost to consumers by raising generator investment costs.
Like TUoS charges losses in the Tx system should be postalised. There is no justification for complexity around the current methods because it does not achieve the desired effect
The current TLAF regime is unsuitable for the current environment on the Island. The current arrangement is inaccurate and unfair as it applies marginal losses to all volumes. Please see separate response to consultation
Remove locational charging.
N/A
See my earlier comment

**Which aspects of the current TLAF methodology, if any, do you believe should be retained or removed?**

We believe that the current locational TLAF methodology should be abandoned and all generators given the same average TLAF because: 1. Determination, based on modelled marginal flows for assumed dispatch scenarios is very inaccurate and therefore unfair. Also results in uneconomic dispatch. 2. Volatility, lack of predictability and subjectivity results in a higher cost of capital and the need for a high degree of regulation. At a very minimum, because 50% of the losses are fixed, these should be socialised across all demand. If the other 50% is to be localised, then demand must also be included (the proposal for BETTA has 55% of these costs localised across demand).

The volatility element of the TLAFs should be removed. Where investment choices are made based on a TLAF provided by the system operator, those TLAFs should be maintained for the life of the project. Large annual adjustment of TLAFs introduces unacceptable regulatory and commercial risk to investments.

When making long term generation investment decisions it is crucial that all cost and revenue inputs may be accurately modelled over a long period (10+ years). The only time that a generator can respond to a locational signal is at the time the investment is made, i.e. when the generator is constructed and commissioned. Once this has taken place, it is then impossible to further respond to a locational signal. Similar to TUoS charges, under the current system of TLAF charges it is impossible to predict what the TLAF for a given generator will be annually, as they could be subject to considerable change each year. The potential reasons for such change in local TLAF are largely out of the control of the generator – for example more generation could be commissioned in the locality, or there could be a large reduction in demand locally. This potential volatility makes it very difficult for generators to accurately determine what their TLAF is likely to be over a period of time, and leads to increased uncertainty at the time of making investment decisions. Additionally, once the generator is commissioned it's revenue stream is then at the mercy of these swings in TLAF, over which it has no influence, at which time it is too late to change it's locational behaviour. The aspects of the methodology that contribute to this volatility should be reduced or removed. It is imperative that whatever methodology is put in place the TLAF is reasonably predictable for long periods, and is stable.

As we have commented upon in all consultations on TLAFs, the current factors seem to disproportionately disadvantage NI generators with no offsetting benefit for NI customers. We consider all locational elements should be removed and consideration given to unitising TLAFs

Remove the 100% loading on generators and allocate some element of losses to suppliers and TSOs / SOs.

n/a

**Which aspects of the current TLAF methodology, if any, do you believe should be retained or removed?**

The locational nature of TLAFs is increasing cost to consumers by raising generator investment risks. The locational component is not possible to accurately predict and is a non-diversifiable risk.

Methodology needs to be completely reworked

None

none

The year on year volatility of TLAFs is unacceptable, and needs to be addressed in the harmonised all-island mechanism

The lack of transparency and variation year on year should be removed. TLAFs should be predictable and more stability needed.

Some adjustments based on a Carbon weighting could be introduced.



<u>Do you believe that Locational Signals are an important element of TLAFs?</u>	<u>Comment</u>
<p>No</p>	<p>Locational signals indicated by TLAFs are in direct contradiction to the Gate 3 process which is based on connection application date which specifies precisely where the generation to be located. It does not seem to make sense to try to overlay carefully selected Gate 3 offers with an additional and sometimes contrary locational signal. Historically the TLAF system has been so broken that developers have ignored it, and even if the locational signal aspect was fixed now (by making it less volatile and more predictable), all the wind farms that are going to be developed for the next 15-20 years have already chosen a location, and been assigned a grid queue position, either in Gate 3 or Gate 4. From our discussions with developers, none of the developers took TLAF into account when selecting particular sites over others. It is important to note that the current mechanism is adding significantly to the cost of generation development in Ireland. This is completely out of proportion to the potential benefit of the signal. A cost benefit study of TLAFS could show: Benefits: - Reduction of losses by an average of xMW per hour. Costs: - Time required by EirGrid to calculate, publish check input to settlement and deal with queries on TLAFS? - Time required by industry to analyse model, forecast, explain to investors. Increase in the risk factor applied to all projects that their TLAF might decrease. It is difficult to see how this could lead to an overall benefit even if the method fully achieved its objectives.</p>
<p>No</p>	<p>Like TUOS charges the uncertainty around the calculation only goes to increase project risk. A simple method could greatly reduce project risk</p>
<p>No</p>	<p>Above</p>
<p>No</p>	<p>There is only so far that you can go with this type of approach - its the wrong approach for the application</p>

<u>Do you believe that Locational Signals are an important element of TLAFs?</u>	<u>Comment</u>
No	Stronger locational signals are given by (i) TSOs grid reinforcement plans (e.g. Grid25) (ii) wind generators locating where wind blows best (iii) due to planning and connection restrictions the redevelopment of brown field sites are favoured. Please see separate response to consultation
No	The answer above is meant to be interpreted in the sense that they should not be an element of TLAFs. The question should have been structured so. They are currently an important element and this should not be the case. The grid operator needs to develop the grid in a forward-looking fashion, and that should not penalise those who wish to develop renewable energy generation stations in areas where the grid is weak and under-developed.
No	They will only be effective if generators have confidence in them and they are stable and predictable. For a small system however it is very difficult to achieve this without losing economic efficiency. In any case, the decision on where best to locate has already signalled by EirGrid via its Grid 25 investment programme.
No	Presently other signals such as land, access to water, proximity to the electricity grid and gas network are more important locational signals than TLAFs as the current TLAF methodology is ineffectual for investment purposes. Using TLAFs as a locational signal is inappropriate particularly in the new environment due to the necessity of wind to locate in certain areas. Incumbent Generators, who have a large geographical spread, will have a competitive advantage over new entrants.
No	In the current climate of investment in both generation and the transmission and distribution network it is hard to justify the inclusion of locational signals as part of TLAFs. Wind generators have little real choice as to where they locate on the system for two main reasons: <ul style="list-style-type: none"> <li>• The primary locational factors for wind generators are the availability of the wind resource, and planning permissions. The location of the best wind regimes cannot be altered, so</li> </ul>

<u>Do you believe that Locational Signals are an important element of TLAFs?</u>	<u>Comment</u>
	<p>generation must move to these areas • When wind generators apply to be connected to the network in a given location they are instructed as part of the gate process of connection by Eirgrid/ESB Networks as to which node on the system they must connect to. With the current gates as they stand even if the generator wishes to move to an area with a better locational signal (i.e. more favourable TLAF and TUoS charges) they will effectively be precluded from doing so for years, as the gates are processed in date order, and the generators new application will be at the back of the queue. The real choice of the generator is very limited by these long connection lead times. Further to this, if the generator were finally successful in moving location to an area with a better signal, there is every chance that this signal could have changed significantly for the worse by the time the generator is actually connected to the system.</p> <p>The above factors are the main locational drivers for generators, and it is fair to say that the locational element of generator TLAFs tariffs have minimal impact on the decisions of generators. It is difficult enough for generators to locate their sites according to the above criteria, without the additional penalising factors of volatile locational signals being applied through use of system charges. It is worth considering a postalised type loss factor for TLAFs. This would reduce volatility, and would be a more equitable means of recouping losses, given that as outlined above, the locational element of TLAFs have minimal influence over where generators actually locate.</p>
<p>No</p>	<p>TLAFs have no impact once a generator locates and under the current regime, a generator has no control over how the TLAF may vary over time and is subject to the decisions of others (be they demand exit, generator entry or transmission investment)</p>

<u>Do you believe that Locational Signals are an important element of TLAFs?</u>	<u>Comment</u>
No	For reasons set out in q2 above.
No	As per TUoS charges locational TLAFs attempt to impose a deterministic solution on a variable problem. Generators cannot respond to changing locational signals and should not be punished as a result.
No	They are superseded by other strategies
No	As per TUoS charges, the duration of the grid connection process and project development life cycles coupled with the granularity of the market which gives rise to significant volatility in TUoS and TLAFs, completely undermine the basis for these mechanisms giving an effective locational signal
No	TLAFs are based on a deterministic solution to a stochastic problem. The calculation is opaque and the scenarios are arbitrary. Joint cost allocation problems are ALWAYS subjective. If there is any alteration to the losses attributed to one generator due to new generators at the other end of the island, then the marginal losses actually belong to the send generator and not to the first, but this is not how the process is operated. Also it is unfair to apply marginal losses to the entire output of a generator if the system becomes constrained at some level of output near the maximum export level. System capacity includes the concept of firmness, which gives priority to those generators connected first. TLAFs are inconsistent with this approach, since they penalise both generators at a node, even if one of them was in place long before the second. See also answer to previous question

<u>Do you believe that Locational Signals are an important element of TLAFs?</u>	<u>Comment</u>
No	They are currently too volatile and do not work, that the two new CCGTs in Cork as an example, when they decided to construct in this area and it is now negative because they did locate there.
No	Other locational signals take priority such as planning and environmental consents.
Yes	Yes, as if the financial impact of the transmission network is not factored into generator siting decisions, consumers will be obliged to pay for network improvements without any mechanism for motivating generators to minimise the associated cost impact.
Yes	Yes, in the absence of LMP, then TLAFs represent a static type of LMP; as stated earlier locational give the right economic signals and this makes good sense when energy efficiency is a primary concern (lower transmission losses)
Yes	In a market that seeks to adopt cost reflective principles (as in some respects the SEM seeks to) so that the differential values of generation that meets demand (i.e. its delivered value to customers) and the cost of taking demand locationally are reflected in the payments to providers of services and consumers of electricity. Under the SEM design, the generator sale occurs at the commercial boundary – and it has no control over the costs of delivery beyond that point. This consequently represents the limit of a locational signal that can be sent to a generator.
Yes	n/a

<u>Do you believe that Locational Signals are an important element of TLAFs?</u>	<u>Comment</u>
Yes	To encourage a more optimal system assuming that wind remains the most economic source of bulk renewable energy
Yes	

<u>In your opinion is it reasonable that losses be attributed on the basis they are incurred?</u>	<u>Response</u>
No	TLAFs for existing generators can be significantly impacted by the appearance & disappearance of load which leads to huge lack of predictability in the system. Losses are an inevitable consequence of running an electricity system, as for example are ancillary services, which are not attributed on the basis they are incurred. You could just as easily argue that the load is in the "wrong" place. They can also be impacted by the actions of the TSO and other generators. It is not clear if there is any monitoring of actual transmission losses and the "basis that they are incurred". If this were to be the case the increased losses caused by delays in network reinforcement should also be considered.
No	Good economic theory would require that losses be attributed on the basis they are incurred however in practice this is extremely hard and appears to lead to counter intuitive results.
No	Allocation of losses for individual generators involves too many fudge factors.
No	As per a previous answer the intuitively correct answer is yes but doesn't fit the correct overall methodology. The total Tx losses can be calculated and should be applied in a postalised approach
No	There is no simple answer to this question. Please see separate response to consultation
No	They are not the fault of the user (generator or consumer). They are the fault of the grid being developed without adequate planning. Because of the location of the weaknesses in the National Grid, to do so will penalise and hinder the development of wind generation, which is contrary to the Department of Communications, Energy and Natural Resources' position and Ireland's stated position in Europe.

<p><b><u>In your opinion is it reasonable that losses be attributed on the basis they are incurred?</u></b></p>	<p><b><u>Response</u></b></p>
<p>No</p>	<p>Unless we can accurately meter losses, it is not reasonable or fair to attribute costs based on modelling which is materially flawed. The main reason for this is that the modelling is not based on populating the network from the ground up with blocks of generation. The marginal approach results in generators in a particular location being "tarred with the same brush" for all load blocks. Also the dispatch scenarios do not represent real life. Finally, there is a fundamental error in populating the network and then measuring TLAF for each generator by varying aggregate demand by 5 MWs (we explained this point in an earlier e-mail).</p>
<p>No</p>	<p>Losses should not be attributed as they are incurred because there are fluctuations in factors which are outside the control of the generators e.g. new connections which alter the demand in particular areas. This would also be inappropriate in the developing Irish energy market due to the fact that renewable generation must locate where the wind is and should not be penalised for doing so.</p>
<p>No</p>	<p>There is generally a rationale for attributing costs where they lie. However as losses are dynamic and will vary with each additional unit produced or consumed, the complexity of determining losses as they are incurred may be such that a simpler solution is more appropriate.</p>
<p>No</p>	<p>In principle it is fair to say that losses should be attributed according to how they are incurred. In terms of priorities however this is less critical than the need for predictability and reduced volatility. Arbitrary changes in the network after a generators investment decision is made can then lead to disimprovement their TLAF and/or TUoS charges. As mentioned in previous answers generators have little real choice as to where they locate, and if they are in certain areas, they could be very heavily penalised by their TLAF changing for example, and once commissioned, they cannot change their behaviour in relation to locational signals. So while in principle the</p>



<u>In your opinion is it reasonable that losses be attributed on the basis they are incurred?</u>	<u>Response</u>
	sentiment is reasonable, in practice it is difficult to implement this in a manner that enables generators to make long term investment decisions based on predictable revenue streams.
No	While the total historic loss in the system is relatively easy to measure, the allocation of these losses to individual generators is, in our opinion, suspect.
No	It is impossible to meter losses and therefore attribute them accurately and fairly
No	More analysis required to confirm this
No	Simple loss attribution may cause an outweighing of a systemic advantage signalled through the TUoS.
No	It is unreasonable to attribute losses incurred by a generator, where significant changes in the network topology, due to new generation, unit retirements, grid developments and changes in the geographical pattern of consumption which have occurred since that generator commenced operations have impacted negatively on his marginal loss factor
Yes	
Yes	Let the polluter pay
Yes	This is a complex nested problem and therefore answering this question with a straight "YES / NO" isn't appropriate. Whilst, at the highest level, it may seem reasonable for losses to be attributed on the basis that they are incurred, the application of this principle will be problematic with respect to both the overall level of losses, and any costs reflective dynamic allocation. The

<p><u>In your opinion is it reasonable that losses be attributed on the basis they are incurred?</u></p>	<p><u>Response</u></p>
	<p>overall level of losses Given that the overall level of losses is driven not just by the location of generation but also by the location of centres of demand as well as by actions by the TSOs / SOs e.g. constraint management. Consequently, Synergen believes that there needs to be appropriate incentives on the TSOs to minimise losses – where it is efficient to do so i.e. (a) minimising losses did not give rise to incurring other costs (where there is no incentive to minimise such costs) and (b) that any cost incurred by the TSO were not ultimately recovered from participants through TSO charges. This could be through specific price controls, or potentially the TLAF cost allocation. Exposure to “losses as incurred” Regarding the allocation of losses “as incurred” this principle could be interpreted in a number of ways, but implies a full dynamic allocation of costs (potentially on a marginal basis). Synergen would not favour this because, as noted above, the level of losses and the differentials in marginal losses particularly, could be driven by factors (a) outside the control of the generator, (b) reflect constraint costs that arise in part through the energy pricing mechanism, and (c) occur beyond the commercial boundary. Subject to incentives to reduce losses Synergen believes that TLAFs should seek to reflect locational values (at the commercial boundary) equally between generation and demand. For the avoidance of doubt, Synergen would not be in favour of dynamic losses.</p>
<p>Yes</p>	
<p>Yes</p>	
<p>Yes</p>	<p>Losses can be included in generators energy bid. Under the current system, TLAFs are relatively easy to model and therefore their impact can be accounted for as part of a generators</p>

<p><u>In your opinion is it reasonable that losses be attributed on the basis they are incurred?</u></p>	<p><u>Response</u></p>
	<p>investment assessment.</p>
<p>Yes</p>	<p>Absolutely the case - if it could be done correctly. But no-one can unequivocally attribute losses on a complex system, where demand changes as well as generation and dispatch depends on fuel price relativities that can change significantly. Application of a subjective, scenario-based model to this type of problem lacks any credibility. As previously stated, just because a sum can be done doesn't mean it's the right sum to do. TLAFs are nice in theory, but unfair and random in practical impact. They add risk to projects. If TLAFs were stable they MIGHT influence locational decisions. See previous comments on the value of randomly variable incentives in the context of long term investment decisions.</p>
<p>Yes</p>	<p>It would be reasonable if the signal was predictable, low risk, simple.</p>

In your opinion, should a harmonized all-island arrangement be used for determining TLAFs?	<u>Comment</u>
Yes	Where harmonisation of arrangements are possible, then that should always be the objective, and clearly two otherwise equal price making generators located north and south should not be advantaged or disadvantaged solely on their choice of jurisdiction.
Yes	Harmonization of charges across both jurisdictions is part of the objectives of the AIM.
Yes	in line with SEM policy
Yes	Same as a previous answer
Yes	This is an ideal, assuming the criteria below are met, and the regime is subject to industry consultation as to the detail.
Yes	A larger grid will be less susceptible to volatility. Due diligence should be undertaken if it is to occur, to ensure that the systems are compatible and that weaknesses do not exist on a system being integrated into the National Grid.
Yes	Consistency is important to avoid any anomalies between two jurisdictions which may arise from two different systems.
Yes	I suggest that in order to get best out of the SEM we should harmonise as many aspects as possible. This seems the right thing to do from an intuitive sense - but perhaps all-island system modelling would should otherwise - but I don't think so.

In your opinion, should a harmonized all-island arrangement be used for determining TLAFs?	<u>Comment</u>
Yes	Given that transmission losses are variable costs, they affect dispatch and dynamic economic efficiency. Therefore, we must apply the same approach all-island.
Yes	As already stated in Section 2, Question 3 and Section 3, Question 3, for the SEM to function effectively arrangements should be harmonised in an equitable and fair manner.
Yes	As we are now in an all island market for both energy and capacity it is appropriate that all market charges be applied on an island wide basis. In the interests of fairness, and to demonstrate full commitment to an all island approach, it is appropriate that a common approach is taken, where there is convergence of elements that are not yet harmonised.
Yes	It is important that as payment mechanisms are harmonised, the treatment of elements of market design that impact on competitive position of generators, or their settlement revenue streams.
Yes	
Yes	To promote SEM objectives
Yes	As per TUoS charges, since generators are competing on an all island basis, the greater the harmonisation of charges levied in each jurisdiction, the better.
Yes	As the current market is harmonized, TLAFs should be similarly harmonized
Yes	In the interests of market equity.
Yes	
Yes	All competing on an equal footing.

In your opinion, should a harmonized all-island arrangement be used for determining TLAFs?	<u>Comment</u>
Yes	The same principle applies here as for TUoS charges, we should avoid any potential market distortions that may occur due to maintaining separate legacy mechanisms for TLAFs
Yes	Both jurisdictions should be treated the same for losses, otherwise dispatch and price formation will be distorted.
Yes	we now have an island market, it is only fair that as many rules and policies are harmonised
No	Again, many different factors, both legacy and future policy decisions may affect the losses in each jurisdiction and hence it may be difficult to establish equitable harmonised arrangements that do not involve some form of inter-jurisdictional transfer/subsidy

<b>In addition to the list above, what other objectives should be taken into account when determining the TLAF methodology?</b>
Impact and interaction with the Strategic Grid Development through Grid 25 and the Gate 3 process. Both of which are mechanisms in place already that provide locational signals, or in fact prescribe the location of generation. The overall impact of the scheme on investment cost and administrative overhead should also be considered.
none
Cost minimisation - very important Direct and relevant costs included only - important System operators should be incentivised to minimise system losses.
The promotion of Renewable Generation needs to be the primary objective of the system operator in order for it to be in compliance with the position of the Minister with responsibility for Energy policy in Ireland.
Economic efficiency - see earlier. If the modelling assumptions and methodology are "rubbish" to begin with, then the results will also be "rubbish". Furthermore, there is a lack of transparency about how (and indeed if) generators are including TLAFs in bids. They also have only one marginal TLAF for all block loads and have to apply a variable loss which occurs after the station gate (unlike all other variable costs in bids). The net result is that dynamic economic efficiency is not achieved.
Long term view - please refer to Generator TUoS section 2- Q.5. The development of a new methodology for TLAFs must consider the impact on previous and committed investments as well as the future for the Irish Grid development and future industrial landscape.
The objective of aiding the achievement of Government and EU renewable generation targets should be taken into account when determining the methodology used. The locational constraints placed on wind should also be borne in mind.
n/a
Reduced complexity; based on reality e.g. real dispatch; reduced administrative costs

**In addition to the list above, what other objectives should be taken into account when determining the TLAF methodology?**

The TSO's role in minimising system losses through appropriate dispatch patterns should be addressed.

Credibility with users. Effectiveness in delivering a rational locational signal. Whether the effect of load changes can be isolated. The point at which system capacity constraints create a sudden increase/decrease in marginal losses and creation of an appropriate adjustment mechanism to correct "loss overcharge". Mechanism for ex-post reconciliation of outturn losses with attributed losses and settlement of the error. Full system metering to ensure accurate calculation of overall losses.

it should be simple, the existing methodology is rocket science



<u>In your opinion, should transmission losses be allocated to:</u>	<u>Comment</u>
demand/suppliers entirely	
demand/suppliers entirely	The cost of losses will eventually, and irrespective of the regulatory rules, arrive at the end customer. As they are priced in to generator bids customers currently pay for the cost of marginal losses. Allocating them to demand would be cheaper for consumers and simpler for generators.
demand/suppliers entirely	
demand/suppliers entirely	
demand/suppliers entirely	
demand/suppliers entirely	
demand/suppliers entirely	
demand/suppliers entirely	If 100% allocation to demand is not acceptable, at the very least follow the BETTA proposal. This is 50% (fixed losses) allocated to demand and remaining 50% variable losses allocated by location; 55% to demand and 45% to generation.
demand/suppliers entirely	

<u>In your opinion, should transmission losses be allocated to:</u>	<u>Comment</u>
shared between generators & demand/suppliers	It should be borne more by the demand/suppliers, given that wind-generators are developing the system at cost as part of the group processing scheme and that it is the fault of neither user.
shared between generators & demand/suppliers	Generators:demand/suppliers about 5:1
shared between generators & demand/suppliers	50:50
shared between generators & demand/suppliers	
shared between generators & demand/suppliers	40:40 with the remainder allocated to TSOs / SOs.
shared between generators & demand/suppliers	25-75%
demand/suppliers entirely	
shared between generators & demand/suppliers	A similar ratio to TUoS charge allocation could be applied
shared between generators & demand/suppliers	10% generator and 90% supplier.
shared between generators & demand/suppliers	
shared between generators & demand/suppliers	50:50

<u>In your opinion, should transmission losses be allocated to:</u>	<u>Comment</u>
shared between generators & demand/suppliers	75/25 is as good as any split, but there is a good argument that demand users pay all costs in the end, so consideration should be given to a 100/0 split as a more accurate representation of reality.
generators entirely	
generators entirely	

<u>Please add other comments that you believe should be considered by the system operators in relation to Transmission Loss Adjustment Factors.</u>
It no longer makes sense to incentivise development of renewable generation in windless population centres instead of in locations with rich wind resources. IWEA call for the removal of these non-value added location transmission connection incentives in context of strategic grid development.
N/A
As customers ultimately pay for costs related to the operation of the system, applying any costs related to system losses to the demand/supplier side entirely gives greater transparency.
Consideration needs to be given to the nature of wind farm development in terms of getting finance and the difficulty that an arbitrary parameter imposes. The cost should be borne equally on an output basis. It seems that the application of TLAFs is disproportionate, given the size of the grid.

**Please add other comments that you believe should be considered by the system operators in relation to Transmission Loss Adjustment Factors.**

Suppliers in general are not significantly impacted by the allocation of transmission loss factors. However, this is not the case with Error Supplier Units. A side effect of the setting of transmission loss factors is that the effect is magnified onto the error units. This has not been taken into consideration in this questionnaire, but is a very important issue.

Regarding Q9 above, generators have by far more flexibility in terms of influencing the TLAF and transmission losses; however, demand customers through their location have some impact on this (but to a lesser extent - simply because load moves only incrementally while gens can be large blocks e.g. 440MW). On a separate point there will be serious thought to TUoS and TLAFs for wind; I suggest the same logical principles should apply, i.e. if a windfarm happens to be located close to a major load centre then it should enjoy the benefit of this through a higher TLAF. The windfarm that sites in a remote location to take advantage of high wind speeds should not feel disadvantaged by having a lower TLAF. If windfarms are to be compensated/.supported by other mechanisms there no problem - but it makes sense to have a single set of rules (subject to de minimus).

In BGE's opinion the current TLAF methodology is volatile, it undermines previous and current investment and is a disincentive to any future investment. It is impossible to predict what TLAF costs a generator will incur in the long run and consequently TLAFs cannot be used as a signal at the time of deciding on an investment location. For new investment we believe that a generator should maintain the TLAF in its location prior to its investment. If this is not feasible we believe a form of volatility mitigation is essential to support the development of a robust Generation and Supply electricity network. We rank our preferred solutions from 1-3 as follows; - New Investments maintain TLAF at time of investment decision (e.g. as of grid connection offer date) 1. Use the system average 2. Develop Zonal TLAFs for fixed periods 3. Develop Range for TLAFs with a Cap & Collar

In summary, ESB Wind Development believe that a uniform type TLAF should be applied across the SEM, rather than the current locational type methodology, as locational signals are largely irrelevant to where generation will actually be located. This is consistent with the connection methodology used in gate 3, where generators are connected in accordance with date of application, and no locational factors are applied. As outlined in previous answers, it is important to be conscious of the fact that generators cannot alter their locational behaviour once they are commissioned, and should not be subject to volatile TLAFs and TUoS charges after they have made their investment decision. A postalised/uniform type of methodology should be easier to implement, more transparent, and most importantly, stable and predictable over a

Please add other comments that you believe should be considered by the system operators in relation to Transmission Loss Adjustment Factors.

long period (10+ years).

A further factor that may need to be considered is the trading point, i.e. if all losses were allocated to demand, does that require the trading point to be moved to a virtual transmission busbar point.

Whilst Synergen has answered the "acceptable / unacceptable" and "yes / No" questions, it is concerned that the stark choices set out do not fully reflect its views, nor the complexity of the issues. For example, Synergen has stated that the present TLAF arrangements are "acceptable" on the basis that it considers the arrangements to be broadly sensible albeit that Synergen has suggested changes to the TLAF arrangements.

We could also have answered "unacceptable" to such a question on the basis that changes were suggested.

A small change in TLAFs can totally alter the merit order of a conventional generator. A more efficient unit may end up behind less efficient units due to changes in TLAFs. This very significant impact should be taken into consideration. TLAFs should be transparent, predictable and stable.

Is there a benefit in maintaining the daytime and night-time TLAF structure? The current structure adds a level of uncertainty and risk to generator bidding, particularly for lower merit plant with unpredictable market dispatch patterns.

Stop flogging a dead horse. TLAFs have no credibility and do not provide any incentive for generators to do anything in particular. In the past TLAFs may have been useful, but in a world of significant new generation and grid development, they are highly volatile and consequently have no real credibility. They do not now provide any incentive for generators to do anything in particular. They provide an illusion of intellectual rigour that has no means of ex-post validation. See previous comments on project risk and issues of fairness.

The best option is to remove TLAFs and add it onto demand losses. Demand customers would not be worse off as the TLAF would no longer be included in generators marginal costs and therefore reducing the SMP price to compensate for the increased losses applied to demand metered

Please add other comments that you believe should be considered by the system operators in relation to Transmission Loss Adjustment Factors.

energy

## Appendix E

### List of Respondents

Irish Cement Ltd

Airtricity

IWEA

Constant Energy

Eco Wind Power Ltd

Rusal Aughinish

Energia

ESB

ESB Independent Generation

Saorgus Energy Ltd

ConocoPhillips, Whitegate Refinery

Premier Power Limited

NIE Energy (Supply)

Bord Gais

Enercomm International

AES

ESB Wind Development

NIE Energy Limited, Power Procurement Business

Synergen Power Ltd

Merck Sharp & Dohme

Viridian Power and Energy

Tynagh Energy Limited

Bord na Móna Energy Ltd

Schering Plough (Brinny) Co Ltd

First Electric Ltd

Boliden Tara Mines

Shannon LNG

MASONITE IRELAND

Moyle

ESB Independent Energy

Vayu

SWS

Lisheen Mine

Irish Grid Solutions

Quinn Group