

**ESB International Ltd**  
Stephen Court, 18/21 St Stephen's Green, Dublin 2, Ireland  
**Telephone** +353-1-703 8000 **Fax** +353-1-703-7097  
www.ESBI.ie

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Mark Needham  
**Eirgrid**  
The Oval, 160 Shelbourne Road  
Ballsbridge, Dublin 4,

Raymond Skyllen  
**SONI**  
Castlereagh House  
12 Manse Road, Belfast

**Ref: SEM-09-060 Methodology Options Proposal about Location Signals  
on the Island of Ireland**

Dear Mark and Raymond,

I attach ESB International (ESBI) response to the above consultation

Kind regards

Ramón Cidon  
**Market Strategy Manager**  
**Independent Generation**  
**ESB International**



ESBI Response to Methodology Options to be considered  
for the Implementation of Location Signals on the Island of  
Ireland (**SEM-09-060**)

# 1. Introduction

ESBI appreciates the opportunity to comment on this consultation paper. We have no objection to all or part of it being published by the Regulatory Authorities (RAs). This response is submitted on behalf of ESBI's SEM generation business and its NI and ROI independent supply businesses.

ESBI has carefully reviewed the proposals contained in the Consultation Paper.

It is unlikely to find the ideal methodology which meets with all the objectives proposed, (efficiency, transparency, predictability, volatility, short term efficient dispatch, cost reflective and consistency between generation and demand methodologies), so it may be necessary to establish which are the most important of these objectives.

Additionally ESBI wants to remark, that the positions and the reasoning taken in this response are purely theoretical because the consultation paper doesn't bring any estimated tariff for each option. Our view is that it is necessary for the System Operator (SOs) to develop estimated tariffs for a short list of options after receiving the industry answers at this stage. We aren't able to define our final position without these tariff estimates and consider that any final decision shouldn't be taken at this stage with the current available information. Once we have been provided with this information and analysed estimated tariffs (with a forecast of future tariffs for a minimum period of 3 years) we would feel comfortable with sending a more definitive response.

We agree with the position of the Regulatory Authorities (RAs), that the objective is to establish a location signal methodology which is economically efficient. But ESBI suggests that is even more important to send stable location signals to the market that will help to increase the future investment in generation capacity.

Regarding TLAF methodology, ESBI suggest that it is very important to establish short term location signals that optimize the operation, reducing as much as possible the losses in the transmission system, so the final TLAF methodology chosen should

give greater importance to the short term efficiency than to be stable or transparent. It is very important also to establish a TLAF methodology with as little volatility as possible, so ESBI prefers the “*Zonal Losses Adjustment Factors*”, but this is just our theoretical position, because the paper doesn’t provide any estimated TLAF tariff for this methodology or provide enough information for the ESBI to model them.

With regard to TUoS methodology, ESBI considers that since the energy business is based on assets which require very important investment and need a high number of years of operation to recover those investments, the long-term interests of the electricity supply industry in Ireland and of its customers would be best served by having stable long term location signals which will ensure security of supply at a fair and sustainable cost.

One additional issue that ESBI wants to raise is about renewable policy and its relation with transmission location signals. Since the Government policy in both SEM jurisdiction is to promote the investment in these energies, it should be very important to establish a TLAF and TUoS methodologies which doesn’t discourage renewable investment in any way. Generally the wind farms are located in mountain and rural areas where the wind resource is available but there may be deficiencies in the transmission lines, so, if a nodal methodology is applied, wind farms could have high and unpredictable TLAF and TUoS charges. This scenario won’t encourage future investment in this technology.

Our point of view is that in order to encourage the investment in the Irish market it is very important to reduce the volatility of the long term location signals, so the final TUoS methodology chosen should be simple and predictable trying to mitigate year-on-year tariff volatility and unpredictability.

If the TUoS methodology is chosen to give economically efficient location signals and that will require developing complex calculations to obtain nodes or area factors, it will introduce high complexity and volatility and will increase uncertainty and risk for investors in the Irish electricity market.

ESBI doesn't agree with the statement in the consultation paper that coordination of investment in generation and networks will be achieved through efficient network pricing mechanisms.

ESBI notes that during the process to decide the location of a new power plant many aspects are studied, between others, availability of water and enough capacity to connect the plant to the nearer electricity and gas lines, to get environmental and local permissions and authorizations, etc.

The location signals associated with a site are a factor that should be taken into account, but in the end, it is just one of the factors to be considered and usually it is not the most important.

We believe that the objective of promoting that future generators locate their power plants in the sites with lower reinforcement costs associated and the least cost system development would be better promoted through the investment plans of the TSO's.

As explained above, ESBI considers that the TUoS methodology should be as transparent, simple and predictable as possible. Our preliminary preference is a TUoS methodology like the "*Postage Stamp with Incentive Discount*", methodology chosen in Britain. Nevertheless, this is just a theoretical position, because the paper doesn't bring any estimated TUoS tariffs.

ESBI would like to remark that a deeper analysis is needed about demand TUoS charges. All the costs supported by the generators will be transferred to the bids in the SEM market, so at the end, the consumers will have to pay all these costs. So, we suggest further study in this area.

Our comments on the specific Consultation Points raised in the paper are set out below.

## 2. ESBI Comments on TLAF methods proposed

ESBI agrees with the RAs about the approach that the TLAF methodology should reflect the cost of losses and to send location signals that will modify the dispatch of the different power plants.

It will result in a reduction in fuel costs, given that in cases where two generators located on different sites can both serve a particular demand, the one situated closer to the demand, which will incur a lower volume of losses, will be the unit dispatched.

When fewer losses are incurred on the system, less energy has to be produced to satisfy demand, so at the end, the system will need to consume lower quantity of primary energy and the emissions will be lower.

This, in theory, should provide a signal for generation to site closer to demand and depending on whether losses are allocated to suppliers also, a signal for demand to locate closer to generation. It is possible that the allocation of losses could provide a long-term signal for units in their choice of location.

ESBI wants to stress the importance of sending signals as stable and predictable as possible. We consider that the best way to achieve this objective is to avoid highly complex calculations associated to nodal factors. ESBI notes that if a nodal methodology is used, the model to calculate TLAF factors should be an “*harmonized all island model*” in order to don’t create distortions in the SEM market.

Moreover, the island demand is predictable along the year and the areas in Ireland with higher and lower losses factors use to be stable. Hence, different areas in Ireland with different losses factor shouldn’t be too much difficult to locate.

Considering all the reasoning detailed above, the theoretical ESBI position is the following:

ESBI considers that the best theoretical option could be “*Zonal Losses Adjustment Factors*”, where within the same zone all the generators receive the same loss factor.

The loss factors should be stable along the year and could vary daily and even seasonally. Moreover the number of zones should be as lower as possible (one for NI and two-tree in ROI)

This methodology sends location signals that should help to get the optimal dispatch and are enough stable and predictable.

The areas considered with high loss factors should focus the investment efforts by the TSO's and also if a generator decides to set this next investment in this area should be aware that his bids to SEM market will be penalised.

This solution could be easily linked with the investment plans of Eirgrid and SONI.

The areas and the loss factors associated could be revised in the medium term, for example every five years (the typical period needed to develop reinforcements in the transmission networks)

ESBI wants the RAs to consider the possibility of calculating the TLAF factors with two terms, one fixed (due to the losses in the transmission networks have a fixed origin due the voltage) and one variable. This approach could help to reduce the volatility of the TLAF tariffs.

Nevertheless, it RAs chose a methodology to calculate the TLAF tariffs that requires using a complex model, ESBI considers that the next conditions should be met.

- The models for deriving TLAF should be published in a format which allows participants to replicate the calculations and perform their own scenario modelling and projection of likely future values.
- The process/methodology published for deriving TLAF should include details of how and when changes to the network will be reflected in the models. Examples of such network data changes could include:
  - Updating of transmission line, transformer and generator models when measured data of installed components becomes available (where previously only calculated data was available)

- Additions or changes to the proposed network being brought forward, delayed or cancelled (or previously unknown/unconsidered network developments being included)
- Change to the expected load magnitude or composition in particular areas or globally (e.g. change in predicted system or local load growth)
- Changes to assumed generation dispatch (i.e. changes to the "average dispatch" assumed for the day/night/monthly TLAF calculations)



### **3. ESBI Comments on TUOS methods proposed**

ESBI agrees with most of industry participants who answered previous consultancy papers about the need for further transparency in how TUoS tariffs are calculated.

ESBI doesn't totally agree with the statement that there needs to be a close link between network planning and pricing through an efficient pricing method.

ESBI's point of view is that in order to encourage the investment in the Irish market it is very important to reduce the volatility of the long term location signals, so the final TUoS methodology chosen should be simple and predictable trying to mitigate year-on-year tariff volatility and unpredictability.

ESBI considers that TUoS charging generally does not provide a significant locational signal to generators due the following reasons:

- TUoS charging has no effect on existing generator and provides no signal an existing player can react to.
- New generators will be more influenced by availability of suitable sites, electricity connections, access to fuel sources, or by the local wind conditions. TUoS is at best a second order determinant for a new entry's choice of location.
- The "Grid 25" initiative indicates an increasingly centrally planned approach to connection of new generation. In this context, locational signals through TUoS for existing and new entrants appears to be a increasingly weak signal.

If the RAs chose a TUoS methodology model based because they think it is important to send economical efficient location signals and that requires developing complex calculations to obtain nodes or area factors, it will introduce high complexity and volatility and will increase uncertainty and risk for investors in the Irish electricity market. ESBI has studied the different proposals exposed in the consultation paper and in general disagrees with using complex models because they introduce complexity and volatility and reduce transparency.

Additionally, if the final methodology chosen requires the calculation of nodal or area factors, the SOs will have to use a model and to establish some theoretical hypothesis. For example, as described in the consultation paper, the *static model* considers in its calculation a “green field network” that ignores the existing network (all the networks has history and past developments with historic cost associated). And, the *dynamic model* uses forecasts of future developments in generation (commissioning of new or decommissioning of old plant) and growth in demand, and these forecasts could be wrong.

At the end, we will be using models that could give us wrong results derived from incorrect initial hypothesis and also, as it is described in the consultation paper, sometimes these models aren’t able to calculate the real reinforcement cost, so it is needed to recover residual cost through imposing additional non-locational charges.

If we chose any methodology which requires using complex models we will introduce complexity and will reduce the transparency.

So as explained above, ESBI considers that the TUoS methodology should be as transparent, simple and predictable as possible. Our theoretical position is that the TUoS methodology chosen could be “*Postage stamp with Incentive Discount*” applied to firm capacity (we consider that energy usage could benefit some technology with low load rate like wind farms but the networks are designed for the peak points), because we understand that this option collects the biggest number of objectives as listed in the next table:

<b>Postage Stamp with incentive discount</b>	
Cost Reflective	This option offers to the Regulators the flexibility to provide a discount in the TUoS tariff to those generators with investments in areas considered favourable by the System Operators.
Efficient Future investment planning	If this TUoS tariff signal is stable in mid term periods, it could be a very good signal to the generators to choose their future investments locations.  So at the end the cost of the network reinforcement

	<p>will be reduced and these incomes could be used by System Operators to reinforce the networks in these areas.</p>
Transparent	<p>Once it is calculated the TUoS tariff revenue requirement to cover all the networks reinforcement costs, then it is then divided by the total capacity and it is allocated on a pro-rata basis</p> <p>So, under postage stamp methodology the TUoS tariff will be transparent.</p> <p>The process used to calculate the TUoS tariff is simple and easy to replicate.</p>
Predictable	<p>Each generator will be able to predict which will be its own TUoS tariff.</p> <p>The rate charged to each participants just will increase/decrease with the revenue requirement, so it will depend on the forecast of networks reinforcement cost. This cost could be easily estimated through TSO papers.</p> <p>The detailed methodology to allocate the TUoS charges should be published in a format which allows participants to replicate the calculations and perform their own modelling and projection of likely future costs.</p>
Non Volatile	<p>The use of postage stamping results in smoothing out of changes in the revenue requirement across all participants</p>

### 3. Summary

As explained in the previous paragraphs, in order to provide market stability and predictability, ESBI favours the using of the following methodologies:

- TLAF: methodology based in *Zonal Losses Adjustment Factors*

The loss factors of each zone should be stable in a mid term period and could vary daily and even seasonally and could have two terms (one fixed and other variable). The number of zones should be as lower as possible (one for NI and two-tree in ROI)

- TUoS: methodology based in *Postage stamp with incentive discount based on registered capacity* (network costs need to reflect the capacity of a generator, not its annual output)

ESBI wants to remark, that the positions and the reasoning taken in this response are very theoretical because the consultation paper gives high level considerations and doesn't bring any estimated tariff for each option, so that there are steps missing in the process, with more discussion on the implications of each option and detail on how it might work.

We understand that would be necessary for the System Operators to develop estimated tariffs of a short list of options for a short list of options after receiving the industry answers at this stage. We aren't able to define our final position without these tariff estimates and consider that any final decision shouldn't be taken at this stage with the currently available information. Once we have analysed this estimated tariffs (with a forecast of future tariffs for a minimum period of 3 years) we would feel comfortable with sending a more definitive response.

ESBI would also like to remark that it would be needed a deeply analysis and review about demand TUoS charges. All the costs supported by the generators will be transferred to the bids in the SEM market, so at the end, the consumers will have to pay all these costs. So, we consider that it could be very helpful to study this issue.

ESBI considers that it would also be a need to include into the TUoS charges the increasing number of smaller generators (below the 10 MW limit) into the charging regime.