

**IWEA Response to SEM-09-107 Preferred Options to be considered for the Implementation of  
Locational Signals on the Island of Ireland**



**Date: 8<sup>th</sup> January 2010**

## **1. Introduction**

The Irish Wind Energy Association (IWEA) welcomes the review of the All Island Transmission Use of System Charging and Loss Factors currently underway and appreciates the opportunity to comment. However, at the outset we would like to raise a serious concern regarding the short time available for comment on this very significant and lengthy paper (193 pages). Given the importance of the issues raised in this paper the timetable for response is inadequate.

Following the workshop on this paper on the 9<sup>th</sup> December 2009 the closing date for comment was the 8<sup>th</sup> January 2010. This allows approximately 3 weeks to comment given the Christmas break. While we recognise that the paper was available shortly before this date, not all information was clear until the workshop. This period is too short to allow a comprehensive analysis of the different options presented and so it proves difficult to comment upon them in a meaningful and constructive manner. It is important to note that the paper includes options never considered before which warrant more time to analyse in the context of the other options considered. IWEA submitted a request for a short extension on behalf of its members to allow a more complete review of the proposals. This request was refused by the CER. We are very disappointed that such a short period is made available to industry to respond to new proposals in the context of an important process that is likely to run for over one year. We also note that our response below is created in the context of the short time available.

As indicated in all previous consultations on this matter, the volatility and lack of transparency of the current methodology of the All-Island Transmission Use of System Tariffs and Losses are a matter of serious concern to IWEA members. In particular the current methodology of transmission charging contains a set of volatile and arbitrary tariffs that seem to unduly discriminate against wind generators. It is unclear how these signals are linked to the objective of efficient development of the energy infrastructure on the island. With the industry on the cusp of significant investment over the next ten years there is significant benefit in having a joined up approach to network planning and generation development. The current methodology is a large step away from this type of strategic development approach and as such imposes additional costs on consumers by increasing risk to developers without delivering any apparent benefit to transmission development.

The consultation paper does not address issues which have been raised continually in previous years by IWEA and its members. IWEA represents approximately 400 members and, in particular, represents members with interests in approximately 72% of Gate 3 projects comprising approximately 85% of the MW in Gate 3. IWEA also represents most wind

developers in Northern Ireland, many of whom have existing projects and many of whom have projects coming out of the planning process in 2010.

## **2. General Comments**

### **Lack of Industry Viewpoint Consideration**

The consultation paper is overly focussed on academic analysis of the treatment of locational charging within its own context only. IWEA believes that the narrow focus does not properly consider the impact of these proposals on the overall costs of developing or operating a power system.

### **Issues regarding Volatility, Predictability and Transparency not addressed**

It is noted that the paper presents a number of methodology objectives each ranked with relevant objective weightings to evaluate each option.

IWEA does not believe these reflect the relative importance placed on each objective by industry. The paper presents Volatility, Predictability and Transparency all as non-economic factors. This is a grave concern and substantially undermines the analysis of the proposals identified. IWEA has repeatedly raised these factors as the primary issues industry face with the current system and to see them now included but to be given a lesser importance in terms of options weighting is concerning.

The design of the current system attempts to be cost reflective. However, this is at the expense of stability and predictability. The options weightings as presented do not seem to try to address this issue despite repeated calls from industry to do so.

None of the solutions presented in this paper address Volatility. Given the information provided it would seem to be impossible for a potential generation investor to predict, at the time of the investment decision, the likely TLAF which would apply to their station at the date of commissioning, let alone throughout the years of operation.

Wind Farm investment decisions are not made in a two to three year timeframe but are made across a 15 year timeframe. In this context the need for a stable and predictable signal is a point we feel is not being given fair and due consideration.

It is also important to note a point raised in previous responses by IWEA that TLAFs for existing generators can be significantly impacted by the appearance and disappearance of load which leads to huge lack of predictability in the system. Losses are also impacted by the actions of the

TSO and the network owners. There appears to be minimal monitoring or analysis of actual transmission losses, distribution losses or residual demand from profile variations. It is unreasonable to apply a very strong and volatile signal to one segment of the energy market for the full marginal losses where these are heavily influenced by other parties' actions and those other parties face no signals or incentives. If there is to be a serious effort to reduce losses then there may be more benefit in considering the impacts of delays in the delivery of network reinforcement. We have not seen recognition of this in the paper presented.

IWEA do recognise the need for efficient development and utilisation of the transmission network. Consideration of long term effective and strategic development is key to delivering a 21st century energy system in an efficient manner. It is estimated that there will be over €16bn invested in renewable generation projects and several billion in transmission over the next decade. A strategic approach to development has the potential to greatly increase the pace and efficiency of delivery of this infrastructure. However, the application of highly volatile "signals" that do not properly link into more general strategic development significantly damages efficient investment signals. The options presented in the paper lack the specifics and the detail, however, they seem to retain the complexity of the current model. EirGrid are the only party that can complete studies and projections, therefore the methodology lacks transparency and predictability. IWEA are also concerned that transparency in particular is presented as of lesser importance.

As Volatility and the lack of Predictability and Transparency are all factors that will increase future generation costs, and therefore the cost to the consumer, IWEA request that these factors should be deemed as economic factors and given a greater weighting in the final analysis.

### **Continued focus on a perceived need for a Locational Signal**

This paper focuses strongly on the perceived need for a locational signal in the areas of loss factor allocation and transmission charging. However, this is not part of a co-ordinated strategy for the efficient development of transmission and generation. The proposals do not provide a certain signal that generators could use in investment decisions and hence purely act to add costs to entering the SEM.

One of the key principles behind the concept of TLAFS was that they would promote the efficient location of generating plant. Historically the TLAF system has been ignored by developers as it is volatile and unpredictable. 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 10-15 years have already chosen a location and been assigned a grid queue position either in Gate 3 or post Gate 3 in Ireland, or are in the planning system in Northern Ireland. As indicated many times previously, locational signals indicated by TLAFs are in direct contradiction to the Gate 3 process which is based on connection application date and specifies precisely where the generation is to be located. From our discussions with developers, developers could not take TLAFs into account when selecting particular sites over others.

Given the volatility and unpredictability of the current methodology and the long term uncertainty created by the current proposals it is highly unlikely that specific signals will have a constructive influence on the decisions made to accept or not accept connection offers by generators in Gate 3. If it were concluded that these generators should consider locational impacts in deciding whether to accept an offer or not it would be necessary to provide a robust, dependable and predictable signal in sufficient time. The current proposals and the current approach do not do this, rather they simply add a significant risk premium to all prospective developments. Applying random risk factors and charges to generators after they have made their locational decision does not promote efficient development; it simply makes SEM a less attractive market for investors.

IWEA have argued to date that the cost of losses should be socialised for Wind Generators as the TLAF does not achieve its purpose as a locational signal and generator sites have already been decided through the Gate process in Ireland. As such, the relevance of cost reflectiveness as a primary objective is diminished and should not be a deciding factor in terms of methodology selection as it would be unfair to discriminate between adjustment factors for generator losses when developers were unable to take this consideration into their investment decision due to wildly unpredictable volatility.

### **Lack of concrete analysis or consideration of the Financial Impact of proposals**

It is our belief that there is a lack of appreciation by the TSOs and the RAs of the financial impact of the current system of locational charging. Nowhere in this paper of preferred options are the commercial realities addressed. There is no quantifiable monetary value assigned to any option anywhere. The impact of any proposal on both existing and new generators needs to be addressed.

As previously indicated, generators have experienced unexpected changes of 10-15% in TLAFs in recent years. Changes of this magnitude have the potential to eliminate the financial viability of generation projects and may lead to bankruptcy. The risk of these swings is now being priced in to the financial assessments of all projects and this is significantly increasing the overall costs of all generation development on the island.

Individual wind developers can supply the RAs with information on the financial impact of TLAF declines in recent years which have resulted in significant financial losses. There are many wind farms, including those coming out of support that cannot withstand losses of such significant magnitude that are currently being experienced. The paper as presented does not recognise the situation being faced by the wind industry today. It is very likely that the current policies could lead to bankruptcy for a number of operating projects. This would seriously impinge on the Irish energy industry's ability to finance future developments.

### **Continued requests for a Cost/Benefit Analysis ignored**

Since early 2009 and in all previous consultation responses, IWEA have been calling for a cost benefit study of TLAFS and locational TUoS charging to be carried out. Despite this we were disappointed to see no efforts to carry out this piece of work and no reference to this piece of work referred to in this consultation paper.

Again at the workshop on 9 December 2009 IWEA repeated the importance of carrying out such a piece of work. While there may be a case for retaining the TLAF signal for price making plant to gain a better dispatch, 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. 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. The IWEA continues to recommend that the current review include a cost benefit study of TLAFS and locational TUoS charging. In our previous responses we outlined some high level detail on how such a calculation could be formed which we again repeat below:

### **Benefits:**

**Dispatch Benefit:** Consider two thermal plants, with similar heat rates, but one located more remote from load. Only when these two similar plant are the marginal plant, and the losses criteria chooses one over the other, will there be a saving through having a better dispatch by considering losses. For arguments sake assume that the remote plant has 5% higher losses than the local generator. Say this marginal plant makes up around 10% of the generation in that period, then the saving, as a percentage of system load in that trading period will be 0.5%. But this race may only happen 10% of the year, for the rest of the year, the TLAF adjustment is not enough to change the marginal generator. So we are expecting to save perhaps 0.05% of the energy traded in the market annually. This is roughly **€2m** per annum.

**Locational Benefit:** Consider that Gate 3 has already been set, and all the existing thermal fleet have already chosen their location. In fact, all of the Gate 3 thermal generation required for 2020 is already in the application queue, some with significant development money already committed to the locations already chosen, and it is likely that most developers (as with Gate 3 wind) are well past the point they could listen to a locational signal. Suppose 500MW of thermal generation listens to a locational signal and locates in an area where it causes 5% fewer losses in the long run. Suppose this generation is flexible mid-merit, running 1000hrs a year. Then it produces 500GWh per annum, and at €50/MWh, its losses are worth around **€1.25m per annum**.

**Costs:**

We don't know how many resources are employed at EirGrid and CER, but we suspect that once you take into account the knock on effects of TLAFs on many areas within the market, including planning and pricing areas, that there could be up to 5 extra people employed indirectly as a result of the pervasive complexity introduced by TLAFs. Roughly speaking this could be around **€0.5m** in annual salaries etc.

We understand that a change to the market is going to be required to incorporate TLAFs into the start-up costs of thermal plant. This is a retrospective change, requiring a modification approval, software testing, configuration control etc., all of which could run to **€5-10m** in fees and related costs at a rough guess, although this is a one-off cost.

There are only 1-2 companies outside EirGrid who profess to be able to calculate TLAFs, and even they admit that they can't go more than one year ahead. One of our members was quoted €50,000 to complete a TLAF study. Let us assume that under the new rules the calculation was possible for 5-15 years ahead. If each of the 200 wind farms in Gate 3 required this (and banks will always ask for a study if it is technically possible) then the total cost to the wind industry alone would be **€10m**, again a one-off cost.

Lastly, and this is by far the biggest concern, both debt and equity investors in generation projects require a higher return if they are exposed to risk that they cannot hedge. Short of owning all (or a share) of all the generators in Ireland, it is not possible to hedge locational signals. The capital asset pricing model should allow a full economic assessment in terms of the change in beta, but let's assume that debt providers wanted to be unaffected by a 10% swing in TLAFs. This might swing a project from 80:20 to say 70:30 debt:equity split. If debt is 6% and equity is 15% for both cases, then the WACC could be increased by 1-2%. This would increase the cost of wind generation by 5-10%. If we have 4000MW of Gate 3 wind on the system built

under these conditions, then it would be producing around €500m worth of energy, and so the additional cost would be in the region of **€25-50m per annum**.

It appears that the costs are one to two orders of magnitude larger than the benefits. Of course our numbers are very rough estimates, but they are unlikely to be 10x off their actual value. Our intention was only to demonstrate to the RAs and the TSOs that it is possible to complete a cost benefit analysis, and indeed this should surely be the starting point for any fundamental review of a charging structure. The CER and EirGrid could, with relatively little effort, refine the numbers above, and if, as we believe, it turns out that the costs far outweigh the benefits, this is surely a critical input to this review.

We were extremely disappointed to see that this fundamental piece of analysis has yet to be carried out which we believe would strongly indicate the right direction for this project. Since IWEA raised this issue again at the workshop of the 9<sup>th</sup> December, we understand that the TSOs now do intend to carry out this study however no timeframes have been clarified.

We request that this work is prioritized and a timeline of Q1 for its results to be agreed. This work should be completed prior to any further work on this process.

### **SEM High Level Design**

It is also noted that the consultation paper again indicates that a uniform loss adjustment approach would not be compatible with the June 2005 SEM High-Level Design, however it is also understood that the SEM will require a modification to deal with the TLAFs going forward and so, in adopting the uniform TLAF approach, it is important to recognise that changes required to the SEM will be less complex and therefore contribute to possible savings.

## **3. IWEA's View of TUoS Proposals Presented**

### **Reduction in TUoS threshold to 5MW**

IWEA were surprised to note a proposal included within the document to reduce the TUoS threshold from 10MW to 5MW. Section 6.1.8 which covers the rationale for the reduction includes no legitimate reasons on why the change is needed, and again includes no financial information on the impact of the change on TUoS charges or no analysis of the impact it may have on current generation projects between 5MW and 10MW.

We found it somewhat disingenuous to quote from the IWEA response to the July 2009 TUoS paper to justify the TSO proposal. IWEA clearly do not support any reduction in the threshold

to 5MW and it was clear in the context of the full response that our response related to above 10MW only. Introducing this change would have a significant impact on small projects.

The transmission use of system charges should only be charged on the basis of physical use of the transmission system. Wind farms with a Maximum Export Capacity (MEC) less than 10MW will not use the transmission system. In fact we would go further to suggest that wind farms with a MEC greater than 10MW use the transmission system to a very minimal extent, if at all. Therefore the justification of the present application of the full TUoS tariff charges is questioned.

All wind farms between 5-10MW are connected to the distribution network and will ultimately be connected to a 33/38kV substation which may or may not be a transmission node. Considering the capacity factor and the relevant load demand at these substations, export to the transmission network is unlikely.

This is recognised by SONI in the SONI “Statement of Charges- Generator TUoS Charges” paragraph 3 as quoted below:

*‘Where a Generator with contracted capacity less than 10MW, embedded in the distribution system and under contract to a Supplier, exports electricity over the distribution system to exit points, a transmission rebate may be payable to the Supplier to reflect the likelihood that the exported energy will be absorbed by the local distribution system and no use of the Transmission System will be required. The credits applicable are described in Schedule B.*

#### **SCHEDULE B**

##### **TRANSMISSION REBATES**

*A transmission rebate is payable to Suppliers in respect of energy exported from contracted Generators embedded in the NIE distribution system. This reflects the likelihood that all exported energy onto the NIE distribution system will be absorbed by the local distribution system and no use of the Transmission System will be required. Transmission rebates are credited to Suppliers who purchase the export from eligible embedded Generators to offset their use of the Transmission System. Suppliers must apply to SONI for transmission rebates providing the necessary information in relation to nominated distribution Generator sites. The Generator connection must be below 10MW to be eligible for transmission rebate payment and the Generator must not export onto the Transmission System’.*

The TSO proposal cannot be accepted given the paper offers no factual evidence of the impact of generators below 10MW impacting upon the transmission network and indeed SONI itself in its statement of charges says it is unlikely that any power will reach the transmission system.

If the proposal is implemented it will have serious consequences for generators who have in place project financings for their projects, which is the case for the majority of windfarms in the 5MW-10MW category. It is highly likely that the proposed changes would lead to a breach of financing covenants and, in some cases, could even lead to defaulting on the project debt.

What is also concerning is that this proposal was somewhat buried in a complex and lengthy paper as a peripheral issue. This is a very serious issue and it would be completely unacceptable to IWEA for this to be implemented as proposed. It should be noted that many participants at the workshop in Dundalk on 9th December 2009 made the same point and requested a separate consultation on this issue. We note that the system operators agreed in principle to consider this. It is vital that this separate consultation includes a full impact assessment of bringing 5MW-10MW into the charging mechanism.

IWEA welcome the recognition in the paper that there is a need to review how the TUoS threshold shall be applied. IWEA again re-iterate the need to apply TUoS charges to distribution connected generators for capacity in excess of the current 10MW threshold.

IWEA believes that it is incumbent on the Regulators and the TSOs to facilitate market entry by smaller players and to ensure that changes that are likely to impact on them are consulted upon in a manner that facilitates awareness of the proposed changes.

### **Proposed option of 40% postage stamp not resolving issues presented**

As a general point again, it is difficult to take a fully informed view given the lack of detail on the preferred option however, in principal, IWEA would have strong concerns on the proposed option of 40% postage stamp for TUoS charging.

A key principal in the electricity industry is the shallow connection policy. Changing this policy to charge directly for deep reinforcements would be a major barrier to new entrants. This is particularly important for the wind industry given the nature of the investment required. Having large variations in TUoS capacity charges will be equivalent to the reintroduction of deep charging for some generators. It is important that the new tariff mechanism respects the shallow connection policy and does not become a barrier to new entrants.

## **Major concern about the proposal to only include new assets.**

IWEA finds the analysis of different generator TUoS charging approaches to be inadequately assessed. In particular we would highlight the analysis provided on this preferred option which does seem to be based on 2008/09, resulting in very few of the new transmission lines required as part of Grid25 being included in the dynamic analysis. While there is a lack of detail provided, it is possible that the dynamic charge could increase substantially for wind farms when the transmission reinforcements required for 2025 are considered.

IWEA would be extremely concerned that this could become a barrier to new entrants and suggest that further analysis is completed on the dynamic option considering the available information on Grid25. The paper does not provide any visibility into what the changes would be in 3 / 4 years time when responding to new generation, an issue of concern to IWEA and its members.

It is also not clear what degree of volatility there would be in any option presented if future network scenarios used turn out differently from the assumptions used. It is clear there is insufficient information provided to be able to assess the proposed options.

## **4. IWEA's View of TLAF Proposals Presented**

It is noted that a 3 Step Strategy is presented however, as outlined in the consultation paper, it lacks the necessary detail for IWEA to fully comment on the proposals.

Initially it is suggested that compression is used as a short term solution to volatility. This is a welcome acknowledgement of one of the failings of the current approach. However, if it is to be accepted that the signal is too volatile this solution is arbitrary and while it is a slight improvement IWEA believes that a better approach would be to remove the signal entirely.

Although the medium term and long term steps have proposals for a flat losses factor applied in the market it is commented in the paper on page 98 that:

*"..this does not rule out charging locationally for losses through another means outside of the market e.g. incorporated through an additional component in the TUoS charge."*

No information is provided in the consultation paper on this new locational mechanism except a statement that extensive analysis is required to devise the alternative charge. That locational charging maybe retained without any detail provided is of extreme concern to the industry, as was raised by a number of parties at the workshop on the 9<sup>th</sup> December. The regulatory

uncertainty provided by the lack of detail in this paper is causing widespread concern across generators.

IWEA would have very grave concerns over the protracted timelines & unnecessary complexity presented in the preferred TLAF options. If the ultimate solution desired by System Operators is the TSO Purchase of Losses, why is this 5+ years hence? IWEA believes analysis should be carried out immediately on the methodology required for measurement of losses and that further consultation with Industry is required. We do not believe that implementation of the Purchase of Losses option is contingent on the installation of bulk supply point metering.

Currently it is deemed sufficient that estimated losses are allocated to generators. The question should be asked why these estimated losses could not be similarly purchased by the TSO. If governance of the process of calculation and purchase of estimated losses is an issue then this can be addressed by an independent technical auditor appointed by the RAs.

5 years of regulatory uncertainty is completely unacceptable. The vast majority of Gate 2 and most of Gate 3 wind farms will have to be banked before the industry can see what the long term TLAF is likely to be, and they will have to make 20 year predictions without any good basis for those predictions. What is going to happen is that 3-4GW of wind is going to get a strong locational signal shortly after it could have done something in response. IWEA have serious and strong issue with the impact of such a proposal.

The discussions in this paper may have some merit for Gate 4+ projects, but cannot be applied to existing projects and to be built Gate 2 and Gate 3 projects, which should have a flat TLAF of 1.000 assigned.

## **5. Summary of Key Concerns**

- The paper fails to take into account the industry viewpoint or to analyse the financial impact on the sector
- None of the solutions presented address the concerns raised by industry in relation to Volatility, Lack of Predictability and Transparency
- IWEA question the continued focus on a perceived need for a Locational Signal in the absence of any framework to enable a response to such signals.
- It is unreasonable to introduce 5+ years of regulatory uncertainty
- The belief of IWEA is that there is no positive cost/benefit case for having locational signals applied to renewable generators at all. Despite repeated calls for a cost benefit study to be carried out, it has yet to be done.

- None of the solutions presented help to promote the efficient location of generating plant and are in direct contradiction to strategic grid development

## 6. Conclusion

In conclusion, we would like to strongly re-iterate that the volatility and predictability of TLAF and TUoS is our concern, and having both uniform TLAFs and postalisised TUoS will resolve this. As indicated in all previous responses, it no longer makes sense to incentivise development of renewable generation in windless population centres instead of in locations with rich wind resources. IWEA again call for the removal of these non-value added location transmission connection incentives in the context of strategic grid development.

This is required by Q2 2010 to allow those first applicants receiving offers in Gate 3 to have a stable, predictable certain regulatory framework on which to base future investment decisions.

The IWEA solutions will bring:

- A Stable Investment Framework
- Operating within a Fair, Predictable and Transparent Environment
- All of this together will be consistent with direction and implementation plans of the Grid Development Strategy

Given the widespread concern across the wind industry in relation to this paper, in advance of any decision IWEA request a further consultation by the Regulatory Authorities to address comments raised.