ESB PG Response to "Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code"

General Comment

ESB PG welcomes the opportunity to respond to the consultation on "Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code". We consider this proposed position paper to be a critical milestone in market development as SEM evolves to accommodate increased wind penetration on the island of Ireland, to further our potential in attaining our 2020 renewable energy targets.

ESB PG is aware and supportive of the NEAI response to this consultation but has the following additional comments.

In meeting this important objective, ESB PG considers that any amendments to SEM should as much as possible lead to long term benefits for end consumers and should strive for provision of lower and more competitive prices that are sustainable in the long run. In order for end consumers to benefit in this manner, ESB PG would consider it fundamental that lower wholesale prices be derived from efficient dispatch combined with lower costs and risks to generators. It is also of key importance that incentivisation mechanisms ensure location of new build in areas to support both efficient network development and achievement of our renewable energy targets. ESB PG is of the opinion that in certain instances, the policies being proposed by the RAs fail to address these issues adequately, and in some instances, run the risk of exacerbating the very problems that are anticipated.

The RAs have addressed a number of issues in this consultation. ESB PG has comments in respect to some specific areas and these are presented below.

Specific Comments:

Overview of Themes Emerging from Responses:

We agree that the RAs have reasonably interpreted the broad themes arising from the responses to the previous consultation. However the need to address matters in a holistic manner and to conduct a Cross Issue Impact Assessment is correctly espoused, but no evidence is provided of it taking place for the specific issues addressed in this paper.

Issue 1 and Issue 2: Alignment of Market Schedule and Dispatch and Allocation of Infra-Marginal Rents located behind Export Constraints

The RAs have stated that they are seeking to ensure minimal divergence of the dispatch schedule from the market schedule in order to reward units that they consider to be of value to real time operation of the system, minimising constraint costs. No changes are to be made until a material harm test has been applied, the basis of which is to be determined. Several options are also proposed for more effective management of access to the market schedule for generators located behind export constraints. ESB PG has very carefully considered each of the options put forward by the RAs. It is noted however that the RAs have advised that 'its thinking at this stage is to favour option 1 over the other options'.

Option 1

Option 1 presented by the RAs proposes to more closely align the market and dispatch schedule through ignoring the firm access rights of generators located behind export constraints. The rationale for doing so is to "incentivise new generation which is coincident with network development and create greater efficiency and competition at generator level" and to also minimise the cost of constraints, presumably to lower the cost of energy in the consumers' interests. This objective of minimising costs may be met in the short run, for any given mix of generation plant and therein lies the initial attraction of this option for the RAs. However, the main difficulty this option poses is that it creates a more risky investment environment, which itself is a deterrent to new and efficient entry, which in the longer run will lead to higher energy costs (due to sub-optimal plant mix) and ultimately to security of supply concerns. Investment decisions, which have an economic life of circa 15 years are already very difficult to predict and model in SEM. Issues to be considered include economic uncertainty, regulatory uncertainty, predictions on level of wind penetration entry and as yet unspecified flexibility requirements of conventional generators to facilitate renewables. To consider the loss of firm access rights in addition to such a scenario, significantly increases the financial uncertainty and risk that <u>all</u> generators would face in SEM and impact on the bankability of all future generation projects which will be required for ensuring security of supply and achieving the 2020 renewable targets. To obtain financing for new investments in

SEM, firm access rights are an essential requirement of lenders and provide greater certainty of the financial feasibility of potential projects. Removing firm access rights from generators, increases the risk premium for potential projects to such a point, that decisions are likely to be delayed until such time as security of supply would be threatened.

ESB PG is also strongly opposed to this proposal as it penalises generators for management of constraints on an on-going basis which is beyond their control, increasing their exposure to financial uncertainty and volatility at times when they may not be in the market schedule, even when they may be in the 'unconstrained' merit order. This makes revenues far more difficult to forecast in the medium to long term, significantly increasing the risk profiles of both new and existing projects. We would consider it more appropriate for constraint risks to be borne by parties who are best positioned to manage this risk i.e. the TSOs.

The power industry is a capital intensive industry with significant variable operating costs. With the increase in the level of renewables on the system it is becoming even more capital intensive, with variable operating costs decreasing as a whole. In such a scenario, once an investment is made, as it cannot be easily unwound or relocated it thus it would appear appropriate to ensure that any access regime would focus on ensuring plant entry and exit was efficiently incentivised on a locational basis.

Firstly, we would like to address the issue of incentivising efficient entry and we would very much question the usefulness of this option in incentivising new plant entry in areas beneficial to efficient network development and support of wind generation. We consider that a rational investor would seek to locate in the area which provides the biggest return on investment and this proposed solution does not align investors' motivations with consumers' interests.

We considered where a rational investor would be most likely to locate. We consider that option 1 would incentivise location of a new generator close to that of an existing generator with a slightly lower efficiency, ideally not located near any existing wind generation. If the new and existing generator were located behind an export constraint, the existing generator with only a slightly lesser efficiency would be displaced from the market schedule, earning no Infra Marginal Rent. Such a scenario is of no benefit to the end consumer and hinders progress towards meeting our 2020 renewable targets. A more detailed account of this analysis is presented in the attached Appendix.

The RAs seem to have not taken into account that the existing access regime already has a number of strong locational incentives built into it. The current TUoS charging regime is locational by nature, and if amended to incorporate the extended (future) network as provided for in the public consultation on same will send even more efficient entry (and exit) signals.

Another means by which the current access regime provides a location entry incentive signal is through the timing of access afforded to parties looking to connect to the transmission system. Parties looking to connect to the transmission system in an already congested part of the network will have to wait a number of years to acquire firm access, whereas parties looking to connect where there is spare capacity will acquire firm access potentially many years earlier. It can be argued this is at least as effective a locational signal as the charging regime.

The second issue to address in respect of Option 1, is that the RAs have endeavoured to ensure that SEM operates in a manner so as not to incentivise inappropriate exit and that plant that is needed to operate the system can make sufficient return. There is no question that Option 1, conceptually addresses this issue, however it probably does so in a most costly manner by raising the SMP unnecessarily. Detailed modelling would be required to establish the cost implications of such a move. It should also be noted there are other means by which these ‘constrained on plant’ could be compensated, which may not be as costly. Two proposals that would merit further consideration in this regard are provision of System Support Contracts with the TSOs and/or provision of a small margin to constrained on generators (i.e. they receive their offer price, plus a small margin).

It should be noted that other European countries, are grappling with similar issues to do with meeting stretching renewable targets with limited transmission capacity and are taking different approaches to option 1 as favoured in SEM.

For example, in GB they have moved to a Connect and Manage regime, whereby once the shallow connection is built, the generators effectively have firm access to the transmission system, with the TSO responsible for dealing with the constraints that arise in the balancing mechanism. In Spain, the regime for qualification for eligibility to the support mechanism for renewable developments is effectively tied in with confirmation of the availability of transmission capacity. Both of these regimes strengthen the firmness of access, not it's removal.

Finally, ESB PG would also question the legal standing of option 1. Having sought legal opinion on the matter, we have been advised that unilateral implementation of this option would be legally dubious as it reneges upon contractual agreements already in place.

In summary option 1, does little to promote the RAs stated objectives, it does however undermine our core understanding of risks within SEM making new generation investments virtually unbankable.

Option 2

Option 2 put forward by the RAs proposes that the market schedule only include generators having firm access rights with introduction of a rule for new generators, not allowing them in the market schedule unless and until they have firm access. ESB PG is in favour of this option as it provides much greater financial surety to investors, ensuring financial viability of new and existing projects. As outlined in the discussion on option 1 above, ESB PG considers that option 2 naturally provides a beneficial long term signal to investors to locate in areas needed for promotion of renewables and network support. We believe that such incentivisation will lead to a more efficient network and allow for long term benefits to the end consumer, especially if the measures suggested above are adopted relating to ensuring inappropriate exits do not occur (i.e. System Support contracts and/or provision of a small margin to 'constrained on' generators).

Option 3

Option 3 set out by the RAs which is a variant of option 2, respects the concept of firm access but reallocates any "residual capacity" behind an export constraint to non-firm generation on the day. ESB PG has no principled objections to this option as it still provides financial surety to investors, however we consider that a fuller analysis may be required before this option be adopted due to the significant changes it could enforce upon MSP software.

Issue 4 & Issue 8: Interpreting Priority Dispatch

We have not expressly sought legal opinion on the interpretation of provision of priority dispatch to renewables. It would appear from the consultation that the RAs have sought to comply with the spirit of the legislation and ESB PG welcomes this provided it is not coupled with a general move towards non-firm access We also welcome the proposal by the RAs to allow priority dispatch to hydro units in flood situations where there is an imminent threat to public safety. We agree that safety should be a key priority and find this proposal to be very much in line with ESB PG's statutory obligations as well as our internal health and safety procedures.

In respect of hybrid plant, ESB PG is disappointed that the RAs did not take the opportunity to provide more clarity at this point.

Issue 7: Deemed Firm Access:

It is ESB PG's position that Deemed Firm Access would provide additional certainty to investors looking to connect to the transmission system. The proposed Deemed Firm Date should be linked to a realistic completion date for the scheduled works (and not just some arbitrary period after signing the Connection Agreement) as the date of provision of firm access should provide a reasonable locational signal in itself. The provision of firm access from a deemed date will also provide an appropriate performance incentivisation on the TSOs. It is understood however that TSO performance is only one aspect in achievement of connection dates. The consenting regime coupled with local opposition to transmission infrastructure, represent real challenges that TSO incentivisation alone cannot address.

Issue 11: Tie Breaks

For tie-break situations, the RAs propose that de-loading should be instructed on a pro-rata basis in a manner determined by the TSOs. This is a pragmatic solution and whilst generally supportive of this proposed decision clarity and transparency is required of how this would be applied in practice.

Appendix 1: ESB PG Analysis of "Option 1" for location decisions of Generator Investors

The RAs had advised that current thinking is to favour Option 1 and the rationale for doing so is to "incentivise new generation which is coincident with network development and create greater efficiency and competition at generator level",

ESB PG wished to test if Option 1 would meet the above objective and incentivise the above desired behaviour.

To that end we considered the likely actions of a rational investor seeking to enter SEM. The investor sees a possible gap in the market for a new highly efficient CCGT (and that is assumed fully grid code compliant). There are three possible choices of location available to the investor:

- Site A: This is in an area surrounded by wind turbines (existing and new) and there is only limited access to the transmission system available.
- Site B: This site is in an area is not surrounded by any wind turbines and has sufficient access to the transmission system.
- Site C: This site is in an area where an existing efficient CCGT is present and access to the transmission system is limited. This generator is marginally less efficient than that of new CCGT and in this example it is 0.8% less efficient.

Note: For simplicity of illustration, in this scenario, it was assumed there are no existing 'binding' transmission constraints on the system. There are however sites in which there is no additional capability available i.e. Sites A and C.

ESB PG conducted the following modelling analysis on 2015 Case Studies and can discuss input assumptions etc with the RAs if further clarification is required.

Site A

Given that wind generation has priority access, and that access to the transmission system is limited in that area, a CCGT could expect to rarely (if ever) run in the market. Our simulations showed that SMP on average for this scenario would be

€59.10/MWh and that overall pool revenue could be expected to be €2,428m. Given that the CCGT would be rarely run and is not likely to earn significant Infra Marginal Rent, the gross margin for IPP1 would only be in the range of €26.7m (the assumed payment for the CPM), making this location unattractive.

Site B

Given that there is no wind generation in this area and that there is sufficient spare capacity to facilitate full access to the transmission system, the CCGT could expect to run very frequently in the market, displacing older and less efficient generators from the merit order resulting in reduced overall pool costs. From our simulation results, the SMP would be reduced to €58.00/MWh and total pool revenue would be reduced by €46m compared with Site A. Given that the generator could expect to run frequently in the market and gain Infra Marginal Rent, a gross margin in the region of €77.6m could be anticipated.

Site C

Given the improvement in efficiency of 0.8% over the existing generator in this area and the fact the access to the transmission system is limited, the new CCGT could expect to run very frequently in the market whilst simultaneously displacing the incumbent generator from the market schedule. While there is limited access to the transmission system at the particular node, SMP can be expected to increase slightly due to the fact that an older less efficient plant at a different network location which was not in the merit order prior to the arrival of the new CCGT can now access the market schedule due to the incumbent's lack of firm access rights. Simulation results indicated a value of €58.90/MWh for SMP and a total pool revenue of €2,421m, it is worth noting that total pool revenue is €38m higher than that with Site B.

Conclusion

A summary of our results is shown in Table 1 below:

	Site A	Site B	Site C
SMP	**59.1 €/MWh**	**58 €/MWh**	**58.9 €/MWh**
New Gen's Margin	**€26.7m**	**€77.6m**	**€82.3m**
Total Pool Revenue	**€2,428**	**€2,382m**	**€2,421m**
Preference		Best for Consumers	Best for Investor

Table 1: Summary Table

It is evident that Site C is the most attractive to the Investor as it allows the highest margin of approximately €82.3m to be earned. This option effectively allows the new generator to enter into the market and at the same time 'effectively force close' a competitor's plant for a number of years until the TSO delivers new transmission infrastructure. This scenario effectively provides no benefit to the consumer as all it does is replace one base load plant with another. It does not actually deliver additional useful capacity, but it is what this mechanism would encourage. It is ESB PG's view that investment incentive for plant location should coincide with the interests of electricity consumers. Option 1 fails to fulfil this criterion as it does not encourage investment at a site, such as Site B, where there is spare transmission capacity and which also allows for the lowest pool revenue.