



# **Consultation on the Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code**

**SEM/10/060**

**NEAI Response**

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## EXECUTIVE SUMMARY

The National Electricity Association of Ireland (NEAI) welcomes the opportunity to respond to CER proposals contained in the Consultation paper on Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code (SEM/1/060).

NEAI is the sector association representing the common interest of the electricity industry on the island of Ireland. Our mission is to contribute to the development and competitiveness of the electricity industry in Ireland by representing the interests of our members at national and European levels and to advance the role of electricity in support of social and economic development.

NEAI believes that the SEM as currently constituted has performed well and provides the correct economic signals for producers and prospective investors. Any changes to the SEM should be part of a holistic, clear, consistent and consultative direction. NEAI supports the call from IWEA for a 'policy pathway' for the SEM and from the IBEC-CBI Joint Business Council for industry involvement in augmenting the strategic development of the SEM.

This response focuses on Issue 2: Allocation of Inframarginal Rents behind Constraints given the fundamental importance of this issue to the investment viability of the SEM into the future.

We welcome the clarity brought to the by the SEMC to the objectives that any change should achieve: These are given as:

- i. Reduce constraint costs
- ii. Ensure timely delivery of grid infrastructure
- iii. Promote competition and entry of new more efficient generation

It is the unanimous view of NEAI's members that Option 1 would not achieve these objectives. On the contrary, we believe it would serve to seriously undermine them. In addition, NEAI believe the proposal would have adverse effects under several headings:

- SEM Design
- Bankability of Generation Investment Projects
- Regulatory Risk
- CfD liquidity
- Practical Concerns

We set out our reasoning in detail below. In addition we set out ways that the three objectives above set out by the SEMC can in our view be effectively addressed, including the incentivisation of infrastructure delivery.

We are available to meet the SEMC to discuss the matters in this paper. We look forward to engagement with the SEMC and the RAs in this important work.

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## Introduction

The NEAI is pleased to respond to the above proposed position paper and would like to give the regulatory authorities (RAs) credit for hosting an engaging workshop in Dundalk on 12<sup>th</sup> October 2010 to discuss some of the fundamentally important issues raised and for also granting an extension to the consultation paper.

We note from the debate at the workshop in Dundalk on 12<sup>th</sup> October 2010 that any decision to remove (or disregard) firm financial access rights would considerably frustrate achievement of renewable targets as well as deter investment in conventional plant thereby threatening security of supply and potentially increasing the cost of energy supplied to customers. At the workshop it was particularly interesting to hear Eirgrid's views, which were described as 'expert and independent' by the RAs, supporting the principle of firm financial access rights. Overall the debate was useful and constructive but key stakeholders were necessarily put in a position of reacting to certain proposals that would undeniably constitute a fundamental change to SEM design and the financial models investors use to assess it.

Undoubtedly the power system on the island of Ireland is going through a period of considerable transition at the moment with the advent of large amounts of renewable and conventional generation connecting to the system and new interconnection forthcoming. The NEAI recognises that accommodating a high penetration of renewables consistent with government targets will present new and unique challenges for system operators and asset owners, market operators, interconnectors, investors, market participants, and regulators alike. The only way these challenges can be addressed is by openly and constructively working together towards shared objectives. The NEAI is concerned that the required level of direction, collaboration and coordination is currently lacking as evidenced by this and recent workstreams on issues fundamental to SEM design. The NEAI would therefore support the IWEA's call for a 'policy pathway' to bring transparency, structure, consistency, and direction to what is currently a patchwork approach to market reform. The NEAI also shares the IBEC-CBI Joint Business Council's recent request to the SEM Committee (SEMC) for greater industry involvement in augmenting the strategic development of the SEM. The NEAI has a significant contribution to make in this regard and for now would suggest the following:

- a. Recognition from the SEMC that achieving regional integration and market coupling with the European target model will ultimately require the SEM to evolve (probably fundamentally) in future (Day 3).

- b. In the meantime only interim steps should be taken as necessary to ensure system security, facilitate renewable targets and to address revenue adequacy problems. It would be wholly inefficient and irresponsible to fundamentally change central aspects of SEM design (at considerable cost to the consumer) to deal with transitional problems, only to unwind these changes or move in a different direction in line with the European target model in future. It is vital that any interim changes fully respect fundamental aspects of SEM design, including firm access rights. .
- c. The SEM Committee has consistently resisted ‘fundamental change’ in SEM design without defining what this means. It would be useful to know what constitutes ‘fundamental change’ and the NEAI would encourage the SEMC to clarify this at the earliest opportunity in the form of a consultation- i.e. the SEMC should set out the key features of the SEM that must be retained to preserve the existing SEM design. It should be noted that the NEAI believes that changes such as removing the financial firmness of the SEM constitute fundamental change to the design of the market. The NEAI believes that such major change should only be contemplated as part of an open, transparent root and branch review of the market with the engagement of all key stakeholders.
- d. The NEAI supports the need for a holistic approach and welcomes the SEMC’s commitment to this. However, the more difficult and vital question is how this will be achieved in practice. The NEAI would suggest the following:
  - i. Greater transparency and industry involvement in SEM market development, as discussed above.
  - ii. Consistency of approach and implementation – principles, objectives and approach should be adhered to across workstreams and in decision making in a consistent manner.
  - iii. Publication of a roadmap of interacting consultations / workstreams relevant to primary generator revenue streams, including ancillary services and SEM design.
  - iv. Commitment to a sustainable market is needed along the lines of providing bankable structures and revenue streams for conventional and renewable generation to interact and perform in delivering renewable targets and ensuring security of supply.
  - v. Recognition of dependencies - the SEM design architecture relies on the consistency and interaction of its constituent parts and it is therefore crucial to recognise dependencies across workstreams and that ‘fundamental change’ in SEM design could be the culmination of ostensibly less significant changes across a number of workstreams such that the SEM is no longer internally consistent. As a practical step to address this concern we suggest that every

significant consultation includes a risk assessment noting how it interacts with other important workstreams and the combined effect of this.

The remainder of this response will largely focus upon the allocation of access rights given the considerable threat to renewable targets, security of supply and escalating consumer costs of what is being proposed in the position paper. Related issues of grid infrastructure, TSO transparency, and the proposed 'material level of harm' test are also covered in this response.

## The proposed allocation of access rights

Of primary concern to NEAI is the RAs position on the allocation of infra marginal rents (IMRs), for which they have stated that they are minded to no longer respect the concept of firm access for generators located behind export constraints once a materiality threshold, which is yet to be determined, is breached.

We acknowledge the SEM Committee's statement on page 30 of the position paper that it *"is not setting out a proposed approach to addressing allocation of IMRs behind constraints at this juncture"*. However, the RAs and SEMC have otherwise confirmed (in the position paper and at the aforementioned workshop) that their 'current thinking' favours Option 1 (to include export constraints in the market schedule and disregard firm access) should a 'material level of harm' arise and this would be subject to the proportionality principle. It is concluded on page 30 of the position paper that: *"The SEM Committee finds the arguments supporting Option 1 persuasive and considers that it may be the best approach on balance to address the over allocation of IMRs behind constraints whilst serving to delivery on the SEM objectives"*.

We note that only 2 (out of 29) respondents to the preceding consultation (SEM-09-073) favoured Option 1 but recognise that the RAs need to balance the interests of all stakeholders (notably customers) in formulating regulatory policy therefore we consider the strength and validity of the arguments that have been made for Option 1 purely on their merits, as detailed below.

### SEMC's stated reasons for supporting Option 1

- 1. It incentivises the timing of new generation entry such that it is coincident with or follows delivery of network, hence reducing constraint costs –**

Including constraints in the market schedule and disregarding firm access will actually have the opposite effect because it will mean new generators could become indifferent to associated deep reinforcements as they will have equal access to existing infrastructure. Removing firm access would lead to financial defaults of existing generators whose banking covenants are based on firm access, and would make further projects unbankable. Timing of new generation is already incentivised to coincide with expected delivery of deep reinforcements because non-firm access prevails until deep reinforcements are completed, with this being especially the case without deemed firm access.



**2. It exerts pressure for delivery of underlying infrastructure from existing generators who are in merit on a system wide basis and from new entrants seeking to maximize revenues under the market schedule**

At present there is no penalty or incentivisation for TSO grid providers to deliver grid infrastructure on a timely basis. Given the scale of the challenge, there is an opportunity to further liberalise grid connection / development to ensure access to market. The regulated entity incentives on the TSOs within the control of the RAs would need to be coupled with scope for competitive entry. Option 1 leaves existing generators with firm access exposed to the cost of actions beyond their control<sup>1</sup>. This is not a valid argument for removal of firm access rights from generators. Furthermore in the July 2009 consultation, the RAs recognised that new entrants are arguably a more effective lobby to ensure completion of network reinforcement than existing generators and we concur with this view and do not understand the basis for the latest SEMC view that under Option 1, existing generators and new entrants will exert pressure to deliver new the infrastructure. The only parties who will have an incentive will be those excluded from the schedule but once the new generation assets have been built, the leverage to hasten network investment will be greatly reduced (e.g. employment opportunities will already be history, etc).

**3. It promotes competition and entry of new, more efficient generation by facilitating new entrants to compete behind export constraints in the same manner that they do on a system wide basis at present and earn IMRs to the extent that they can do so –**

Under current arrangements, in the unconstrained dispatch schedule lower marginal cost plants will be dispatched ahead of higher cost plants. However when the constrained schedule is run constraints are taken into account, reflecting the reality of the network. Lower cost plant will be dispatched ahead of the higher cost plant, but to the extent the higher cost plant has firm access rights, it will be compensated as constrained off. This has a cost to it, but the solution to reducing this cost comes from removing the network constraint by building more infrastructure or adding new generation onto the network, not by the removal of firm access rights from existing generators. The problem for a new generator is that without firm access rights, it will be difficult to finance the project. Removal of the constraints is the correct approach to deal with this.

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<sup>1</sup> Take for example the issue of export constraints. Assuming it is normal export capacity constraints, excluding transient constraints due to outages etc that will be used, this creates a risk over how the TSOs determine the level of constraint and whether their modeling is correct, the level of prudence they adopt and so on which is a whole new area of risk and subjectivity that generators would be exposed to.

Furthermore we strongly suggest the RAs need to be mindful of the perverse incentives that would be created by implementation of Option 1 which would encourage new generation where it is not needed providing no net benefit to the consumer. The principle of this perverse incentive can be clearly illustrated by means of an example which a member of NEAI has provided in Appendix 1.

As demonstrated, the above arguments favouring Option 1 are weak at best but they at least helpfully clarify the objectives of reform, namely to:

- iv. Reduce constraint costs
- v. Ensure timely delivery of grid infrastructure
- vi. Promote competition and entry of new more efficient generation

We return to these objectives later in the response but for now it is important to set out the NEAI's considered and unanimous views regarding Option 1. We strongly urge the SEMC to take these into account and consider these informed and experienced views from the constituent investor and market participant members of the NEAI.

### **NEAI views on Option 1**

Our comments fall into two categories, first, and primarily, our objections in relation to market design and second, points of practicality. For the avoidance of doubt, addressing the practical issues set out would not address the in principle objections that we have to Option 1. The practical issues are thus included as supporting reasons why Option 1 should not be pursued – highlighting why it is likely to be infeasible as well as undesirable.

### ***SEM design***

In the SEM the mixture of risks and rewards are finely balanced, and broadly aligned with each other. Removing the concept of financial firmness removes a central cornerstone of the market design and throws its economic integrity into question. In the absence of financial firmness for the existing holders of such rights, we consider that the SEM arrangements would need to be revised on a root and branch basis. In essence, the SEM design as presently conceived and implemented would be fundamentally undermined, and alternative arrangements would need to be developed to replace the existing regime.

### ***Bankability of access rights***

NEAI is firmly opposed to Option 1 as we believe it significantly increases the financial uncertainty and risk that all generators (incumbent and new developers, conventional and renewable) face in the SEM. This would certainly lead to financial default for some existing generators and will clearly have a detrimental impact on the bankability of all future generation projects which will be required for ensuring security of supply and achieving the 2020 renewable targets. The critical importance of financial access rights is that they entitle the holder to financial compensation where the generator suffers constraints. To obtain financing for new investments in the SEM, firm access is an essential requirement of lenders and provides essential certainty of the financial feasibility of potential projects. Removal of firm access rights from existing financed generators will lead to financing defaults of operational generators, which have been banked on the basis that firm access rights entitle the generator to be kept whole from the financial impact of constraints once the firm access period has commenced. If existing projects default because of a removal of firm access rights, then future projects will not be bankable as this will be seen as a fundamental, detrimental and unpredictable ex-post change to the SEM.

It is clear that this potential change, if implemented, would have a severely adverse impact on generators financial arrangements such as debt covenants and on re-financing of existing investments, where required. Generators, once they have made an investment decision, are not in a position to manage constraints and thus transferring the risk of constraints to generators on an on-going basis (as opposed to on a temporary basis when first connecting to the transmission system as is currently the case) is inefficient and clearly counterproductive. This risk should be borne by the party best positioned to manage the risk i.e. the TSOs.

The above clearly illustrates the need to provide bankable access rights and Option 1 does not meet this criterion.

### ***Regulatory Risk***

The SEM arrangements were explicit when instigated regarding the rights falling upon generator participants – notably the firm access rights. These were made clear during the SEM's development and are set out in the trading and settlement code (T&SC). It is commercially prejudicial to firm generators to remove such rights – rights that some parties have paid for as firm connection charges. Regarding new entrants coming into the SEM in advance of the transmission build necessary to afford it firm access the expectation had been of potentially entering on a non-firm basis for a time limited period - and then access becoming firm. Whilst large incumbents may lose firm access - this equally applies to smaller new entrants in successive Gates - a risk clearly elicited at the workshop.

This regulatory risk impacts the cost of capital and thus is likely to severely prejudice new entry and any re-financing of existing projects. To the extent that increased risks exist, the risk premia charged by generators would (in a market) increase and be faced by customers. In the SEM, such costs cannot fall within SRMC bidding rules, so would need to be included in the CPM. We have little confidence that such risks would be adequately factored into the CPM - there is thus likely to be a bottom line cost - and this makes the SEM a more risky, and less attractive, place to invest.

Furthermore, apart from increasing the cost of capital, the increased regulatory risk associated with Option 1 would strike more generally at the bankability and hence viability of financing new and existing projects as highlighted earlier. This would in turn threaten the ability of the two jurisdictions to achieve their binding and challenging renewable targets.

### ***CfD Liquidity***

We are concerned that Option 1 would limit the scope for generators to offer CfDs given the uncertainty that would arise in relation to IMR allocation. In short, any volumes that may be scheduled off behind a constraint would not be offered into the contract market as the price / volume exposure for a generator that was physically short of its contracted volumes would most likely be unacceptable – or at the minimum be associated with significant risk premiums.

## **Practical concerns**

In addition to the issues around the integrity of the market design, its internal consistency, and the financial stability of the SEM outlined above, there are major questions surrounding the practical implementation of Option 1.

NEAI notes that the TSOs (at the Dundalk workshop) viewed Option 1 as unworkable using their present systems. This related both to the ambiguity over the definition of export constraint and but also recognised that simplifying assumptions may be required to implement such an approach. To the extent that these simplifications would have material impact on participants, there are clearly concerns over how this simplification may be undertaken, and participants would require high degrees of transparency and auditability of both inputs and outputs of any such process. The definition of an export constraint was seen as being a question of implementation, and thus there is uncertainty regarding the precise nature of an export constraint, and the role of the TSO in their determination.

At the present time generators primary financial interest is in their market schedule position, against which they are financially firm. If there was a move to determine schedule eligibility through the potential to dispatch plant, then this would require full visibility of the process adopted. There would thus need to be assurances regarding input data, the model used, and output validation.

In this context, NEAI believes that the transparency of TSO operations is becoming increasingly important and that there is a strong need for a higher level of transparency regarding the weekly nature of transmission constraints. We believe that the RAs should develop proposals to require the TSOs to publish ex-post constraint data on a weekly basis and provide commentary on differences between the schedule and dispatch outcomes for plant.

### **NEAI conclusions on Option 1**

In summary, we consider that as wind penetration increases, investment in suitable plants that are capable of accommodating the intermittent nature of wind is essential in meeting the 2020 renewable targets. Reaching these targets will require appropriate incentive signals set by the RAs to ensure adequate return to investors (both conventional and renewable) and therefore, we believe, sufficient certainty and stability would not be provided if Option 1 was to prevail as the preferred direction of the market.

## The problem re-visited another way

Returning now to the objectives identified in section X of this response, namely:

- i. Reduce constraint costs
- ii. Ensure timely delivery of grid infrastructure
- iii. Promote competition and entry of new more efficient generation

Clearly timely delivery of grid infrastructure is a key pre-requisite to reducing constraint costs and to promoting competition and entry of new more efficient generation. And more generally timely access to the grid is essential to meet renewable targets, increase competition and enhance security of supply. In addition, it is relevant to note Eirgrid's views on the above as follows: *"it is clear that the ultimate solution of many of the issues raised by the SEMC is related to the timely and appropriate construction of transmission network assets. Developing adequate grid infrastructure is a pre-requisite both for the connection of sufficient plant to maintain security of supply and for the delivery of renewable targets of both governments. Eirgrid reiterates its call for the support of all stakeholders in the development of transmission grid"* (Executive summary of Eirgrid response to SEM-09-073).

On the latter note, NEAI recognises the existence of serious barriers to grid development that are not fully within the TSOs control such as planning objections and the cumbersome planning process and we second EirGrid's call for the support of all stakeholders in addressing these problems. At the same time, we believe there is scope for the TSOs to be more proactive in targeting resources in the most efficient way and deliver the infrastructure that is of most benefit to facilitate the connection of renewable generation. A practical way forward is to set appropriate incentives for the TSOs to reward early delivery of infrastructure to accommodate new generation and to disincentivise late delivery relative to defined connection dates.

### Grid Incentivisation

The proposed position paper states that *"The SEM Committee is aware of the importance of the timeline and efficient delivery of infrastructure to support the progression of the SEM in a manner that meets the stated objectives. The SEM Committee notes that whilst this is a key issue, it is not the sole driver of all of the issues set out in the consultation paper. The SEM Committee agrees that incentivisation of timely and efficient delivery of this infrastructure is necessary. It is noted [contrary to a key argument in favour of Option 1] that*

*incentivisation is a matter for the CER and the NIAUR as regulatory authorities. In Ireland, this matter is being progressed in the context of the consultation on TSO and TAO transmission revenue for the period 2011 to 2015. Incentivisation options will be considered by the NIAUR in the forthcoming price control for NIE T&D for the period 2012 onwards.”*

NEAI agrees that this is not the sole driver of all the issues set out in the consultation paper, yet, as the SEMC has stated, it is a key issue. The delivery of the infrastructure to support the progression of the SEM in a timely and efficient manner is key to ensuring that Ireland’s targets for renewable generation are met, to reducing transmission constraints thereby ensuring that constraint payments are kept to an appropriate level and to ensure new generators are able to connect to the transmission network on a firm basis. In short, delivery of infrastructure will resolve many of the issues raised in the consultation paper, such that the SEMC can determine that it is not necessary to implement the changes to the design of the market schedule in the proposed position paper.

It is for this reason that NEAI has significant concerns about the incentivisation of the SOs for delivery of Grid25. To date, there has been no published project plan for Grid25 and it is not possible to determine if EirGrid are on schedule with this project - this contrasts with frequently published progress updates on the East West Interconnector available online on [www.interconnector.ie](http://www.interconnector.ie) which is currently on schedule for delivery by 2012 as planned.

The proposed position paper notes that CER has progressed the development of incentives for EirGrid in the context of the consultation on TSO and TAO transmission revenue for the period from 2011 to 2015.

NEAI welcome the development of appropriate incentives and consider that this will be essential in ensuring timely delivery of the assets. We would note that the TSO/TAO transmission revenue consultation paper referred to the development of network delivery incentives for the TSO. However, these incentives were not set out in the consultation paper. We would be concerned that the incentives would be effective in providing the correct commercial context for the TSO in timely delivery. In addition NEAI believe that the Commission should set out a medium to long term policy intention to maintain these incentives over the lifetime of Gate 3 and Grid25.

A comprehensive and effective incentive program must be developed which should include incentives for the timely delivery of the deep connection works that will be required for new generation capacity. A consultation on the development of such an incentive programme

should be published as a priority, such that a decision can be reached and the programme can be finalized and implemented in 2011. We would strongly urge that market participants in Northern Ireland are invited to comment on this paper, as Grid25 will have a significant impact on the entire market. In addition, NEAI would urge the Regulatory Authorities to ensure that the incentives developed for EirGrid in each jurisdiction are consistent, such that perverse incentives are not created, resulting in market distortions due to better income opportunities for EirGrid in one jurisdiction over the other.

Finally, we would ask CER to require EirGrid to establish a steering group for Grid25, comprising representatives from industry, government and EirGrid to ensure this project is delivered on time. By bringing stakeholders together, impediments to timely delivery can be analysed and workarounds can be developed, using the best available minds. It is essential that all resources are utilised as this project is critical to the development of the entire market.



## Conclusions

It is the NEAI's considered and experienced assessment that the arguments in favour of Option 1 for Issue 2: Allocation of Inframarginal Rents behind Constraints are not sustainable and are significantly outweighed by the arguments against this course. This was the unanimous view of our membership. Among the considerations weighing against the proposal are the following:

- In our view, implementing Option 1 would seriously compromise the bankability and hence the viability of financing for existing and new thermal and renewable projects. It would in effect remove a central pillar of the (unconstrained) market and threaten the internal consistency of the SEM. This increased risk would increase the cost of capital and make the SEM a more risky and less attractive place to invest.
- This increased risk ultimately feeds through to the end customer as an increased cost of electricity.
- It would result in the inefficient allocation of risks and could undermine CfD liquidity, not to mention create perverse incentives (as illustrated in appendix 1).
- It would also be difficult to implement in practice and would, because of its commercial consequences, require a high degree of transparency and auditability of TSO decision making and processes, and could be considered an expropriation of firm access rights.

This is the unanimous view of our membership.

To proceed with Option 1 subject to a 'material level of harm test' is extremely inadvisable because of the damage this would have on the bankability of future wind and thermal investments vital to the success of meeting 2020 renewable targets, protecting the integrity of the power system, and ensuring security of supply. As noted earlier, signaling that Option 1 might be triggered depending on the outcome of a test, albeit subject to proportionality and other sensible considerations, will be considered a material regulatory risk that - no matter how remote - will feature as a definite event in financier models and the damage will be done.

Instead we suggest the focus should be on delivery of grid infrastructure and more engagement with industry.

The NEAI considers that the current SEM rules are internally consistent and continue to provide appropriate economic signals in the event that transmission constraints exist on the system for the TSOs to accelerate delivery of the necessary reinforcements. The NEAI clearly recognises that accommodating a high penetration of renewables consistent with government targets will present new and unique challenges for system operators and asset owners, market operators, interconnectors, investors, market participants, and regulators alike. The only way these challenges can be addressed is by openly and constructively working together towards shared objectives. The NEAI would therefore support the IWEA's call for a 'policy pathway' to bring

transparency, structure, consistency, and direction to what is currently a patchwork approach to market reform. The NEAI also shares the IBEC-CBI Joint Business Council's recent request to the SEM Committee (SEMC) for greater industry involvement in augmenting the strategic development of the SEM.

## Appendix 1: ESB PG Analysis of “Option 1” and Investor Decision

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 areas in which there is no additional capability available i.e. areas 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 IMR, 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 Area 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.

## Area C

Given the improvement in efficiency of .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 in an area, such as Area B, where there is spare transmission capacity and which allows for the lowest pool revenue.