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1. Introduction

Art Generation Ltd. wishes to thank the Regulatory Authorities and the SEM Committee for the opportunity to comment on their recent consultation (SEM-09-073) “Principles of Dispatch and the Design of the Market Schedule in the Trading & Settlement Code”. Our comments follow our bilateral meeting with the Regulatory Authorities in Belfast on Thursday 3rd September in Belfast. Art Generation Ltd. has interests in both new entrant wind generation and peaking generation. Our perspective is therefore focussed on providing certainty to the generator investor.

This paper is a very important consultation. We emphasise the fact that generator investors with Gate 3 wind project have been waiting for up to five years to understand how their connection offers will be processed and firm access allocated through the ITC programme. This consultation now discusses the very meaning of this firm access in both dispatch and the market schedule. A decision to alter the reasonable expectations of a generator investor – particularly within the Gate process – in terms of access to the market schedule and likely levels of constraint would be devastating to the stability of the current generator investment environment within the SEM. The wind industry in Ireland has by our estimation roughly €4 billion (replacement value) of investment secured or in operation. Given the current financial climate, decisions which add risk jeopardise this existing investment, and make further investment most difficult.

We acknowledge that the SEM Committee’s primary duties are towards protecting consumers and competition with due regard to security of supply and the environment

(“the regulatory objectives”). In the short term, it is possible to set policy whereby these regulatory objectives are achieved where the environment for generation investment is adversely affected to an inappropriate degree. *In the long term*, however, a stable generation investment scenario is necessary to achieve the regulatory objectives of low cost and competitive market. This is the challenge of this consultation; to set down rules which strike a balance between the achievement of the regulatory objectives in the short term, while giving appropriate long-term signals for an efficient generation portfolio which are necessary to achieve the regulatory objectives in the long term. It is our view that the SEM Committee has therefore a duty to have due regard for the practical consequences on the investment conditions for generation.

We are encouraged that the SEM Committee has framed their consultation within such a long-term investment scenario context. Nevertheless, it is Art Generation Ltd.’s view that the detail of the paper is overly focussed on the short-term achievement of the SEM regulatory objectives. Generator investors are left to consider the consequences of this shorter-term policy focus rather than – as we believe to be appropriate – being an integral part of discussion in the consultation to achieve the long-term aspect of the regulatory objectives.

In general we are also surprised that the tool chosen to resolve *long-term* locational investment signals is through increasing short-term locational competition to inframarginal rent within the market schedule. Generators are being asked to react to an investment signal (inframarginal rent) that is limited by the market generation entry (as currently) and now also by the location of that entry (new risk). An efficient generator investor cannot control the location of other connecting generator investors. A new tranche of unmanageable risk has been placed with the SEM generator investor, and in parallel an important signal for network investment (cost of constraints) is diluted. We believe that the existing market schedule is not the tool to strengthen such signals to the generator investor. The market schedule’s core other purpose other than the allocation of inframarginal rent, is to set a transparent competitive market price for generators. The market schedule should not set a global market signal (System Marginal Price) which reacts to localised export constraints.

We believe investment signals should occur within a stable capacity payment and ancillary service revenues (linked as they are through the setting of the capacity pot), along with non-volatile locational losses and use-of-system charging.

Further to the above concerns, the consultation is incomplete in scope. It is not possible to discuss the competition for firm access rights between generators behind a constraint without understanding – or consulting on – either the grandfathered access rights of existing generation, or the planning considerations of the transmission system operators in defining an export constraint. The consequences to commercially active projects of some of these decisions have not been assessed, and could lead to considerable costs in renegotiation and in extremis, failure of projects to service their debt and the consequences that brings.

Our response paper is set out as follows.

- A key summary of what we believe the consultation paper should achieve in line with the SEM High Level Design and other ongoing parallel consultations

- A 10-point list detailing our position on finer aspects of the proposal
- A section discussing how this paper could be viewed as altering the context and integrity of the overall consultation process
- Two general discussions on dispatch and the allocation of access rights which place further context to the positions above
- Finally a table of direct responses to the proposals

There is a necessary element of repetition in our response. We felt this necessary to place emphasis on the key issues and the also give this important consultation its required due in terms of a detailed response. We take this opportunity to once again state our support for this consultation process, but caution that its successful timely conclusion – in light of all the other ongoing consultations – requires that we follow the SEM design, and not a re-imagining of the intent of the market.

2. Key Summary

This paper consults on the idea of using the reallocation of inframarginal rents to correct modelled inefficient future outcomes of the SEM design. This constitutes a core imagining of the SEM High Level Design (see Section 6). Irrespective of whether the allocation of inframarginal rents is more correct, risk to generator investment has been increased, both in the general sense of the market design being recast in the middle of a consultation process (see Section 4), and specifically with localised competition for inframarginal rent.

Furthermore, the splitting of the market into areas of sub-competition must yield higher system marginal prices. Localised issues will therefore impact the competitive signal seen by the entire market. One might argue that if transmission effects are to be included in the pricing algorithm that there are market designs (locational marginal pricing) and financial tools (financial transmission rights) which can more appropriately set those signals and allow generators to appropriately manage that risk. The solution proposed here, while it has been argued with limited examples to be more economically correct at the micro-level, yields unnecessary, unmanageable and therefore excessive risk to the generator investor. Such micro-level correctness in the face of such risk is not sufficient for the development of an efficient macro-level generation portfolio.

The locational / investment signal chosen by the SEM Committee is the most volatile, difficult to model aspect of the market, subject to the most input assumptions and consequentially the most stress testing in project financing. Further risk has been added to this signal as the location of new generator entry has been added to the list of considerations. Furthermore, the paper does not take the opportunity to provide any more certainty in generator dispatch. There are simpler, more workable alternatives.

We believe that the appropriate method of incentivising the correct type and location of generator entry is through the combination of the capacity payment and ancillary service revenues (linked as they are through the setting of the capacity pot) and locational stable loss and use-of-system charges. Both of these tools can be adjusted

within the SEM High Level Design. System operator incentivisation for appropriate network build forms the final part of the picture.

We propose four key points (discussed in greater detail later in the paper) which in our view serve to reduce generator uncertainty, maintain competition, reduce long-run costs to the consumer.

- a) Inframarginal rents continued to be allocated to the most efficient plant *system-wide* that have either firm access, or can be dispatched if non-firm. Price Takers (both variable and predictable) should be treated equitably to Price Makers.

This leaves a signal in place (cost of constraints) for the system operator to review their assumptions behind the GDS to ensure that they are appropriate for developments in demand and generation entry

It also maintains SMP at a competitive level, far more representative of the cost of generation rather than blended with the cost of constraints.

- b) All things being equal, generators with firm access allocated to it through the ITC programme are dispatched first. This allows for certainty for generation running schedules, in terms of existing extra-market renewable subsidies, purchase of fuel contracts, and any future potential bilateral market trading arrangements. This does not contradict the System Operator's economic dispatch licence requirements.
- c) As generators have reduced ability to influence network development through their location decisions, firm access should be granted under the timeframes as assumed under the ITC programme to those generators which follow the assumptions of the GDS.
- d) Priority dispatch should be afforded as per legislation unless the costs incurred mean that there is demand which would prefer to be dispatched off instead.

We believe that these proposals strike a fair balance between generator certainty and cost to the consumer. These proposals do not require a re-evaluation of existing financing arrangements of recently operational generation.

3. Ten Key Positions

To summarise this response's key positions – which are discussed in detail later – of this response are set out below. We are not taking it as a matter for consultation that firm access shall be allocated as decided by the ITC Programme on a date order basis. We stress that any market rule which undermines the purpose of this allocation cannot be considered consistent with previous consultations. This consultation, through the redefinition of access to the market schedule, can undermine the intent of that previous decision.

- 1) **Care must be taken not to create such a degree of uncertainty (either in the established rules, or ongoing consultations on the rules) whereby out-of-market generator competitions are once again required to achieve security of supply.** We seek commitment that the SEM High-Level design will not be altered through this process. We seek commitment to establishing a set of conditions that need to be fulfilled before such a wide ranging set of consultations are undertaken again (section 4). Furthermore, we draw attention to what we believe are the appropriate scope of consideration of this consultation, including the operation of such schemes as REFIT within the context of the proposed dispatch rules (section 4.1).
- 2) **The core new idea of this paper - the allocation of inframarginal rents to generators which are “of real-time value to the system” – adds new locational uncertainty to generator investment,** and is contrary to the parallel aims of the use-of-system consultation (SEM-09-060) which states that those tools – and by inference not the market schedule – should set the locational signal for generation investment within the market¹. The allocation of inframarginal rents to generators which are “of real-time value to the system” strikes at the core of the all-island nature of the SEM design and is contrary to the parallel operation of the capacity payment mechanism which pays long-run investment costs to non-firm plant. The original SEM design has been re-imagined anew by the consultation paper to an extent that would require an entirely different consultation process on the principles of the market design (section 6.1).
- 3) **The definition of “real-time value to the system” needs clarification as if it is related to export constraints, then with the North-South transmission limitations, no plant on the island is truly “firm”.** We request that a full suite of discussed examples are used to support the logic contained within the consultation. Without examination of the impact of competing firm and non-firm windfarms, discussion of the scenarios whereby constraints may be shared, and so forth, it is difficult to clarify exactly what is being proposed, and the SEM Committee is not fully informed of the consequences of their decisions on the investment environment (section 6.1)
- 4) **If new “system technical constraints” are introduced into the market schedule, then these must take the form of a co-optimised product within the market schedule and a transparent measure of materiality must be determined for its inclusion.** We believe that the correct structure under these circumstances would involve new formal co-optimised products that would best allocate revenue to the useful plant, and not raise the price paid to all generation, including those alleged to have caused the technical issue. Again, re-introducing co-optimisation of products with serving demand raises the potential of an entire market philosophy design (section 6.1)
- 5) **The signal to the market (through constraint payments) to realign the transmission system development on the ground with successful efficient**

¹ SEM-09-060. Page 10, Paragraph 1. “During the High-Level Design stage of the SEM, it was determined that transmission locational signals in the market would be given through the treatment of losses and use of System charges.”

generation entry and any emerging planning constraints disappears if inframarginal rents are paid solely to useful generation. All emphasis is placed on generators choosing the optimal time and place to locate on the system. This implies that the transmission system shall no longer have the same signal to react to generation entry; instead generators shall react to the assumptions within the Grid Development Strategy (GDS) for the best areas to locate². We understand some assumptions have to be made on the location of new generation for the GDS process to work. The question of what happens if those GDS assumptions are incorrect is not raised (section 6.1).

- 6) **Generators whose combined output is limited by an export constraint requiring deep network reinforcement, should not be subject to localised competition for access rights to the market schedule;** to do so increases generator investment uncertainty. Generators would then face localised competition as well as the risk of reinforcement assets not being built. The only competition for access rights behind a constraint should occur for generators which have been given no guarantee through the allocation of firm access, i.e. co-located non-firm plant. The recent consultation on use-of-system charging states that locational signals should be sent through use-of-system charging and losses (section 6.2).
- 7) **Deemed firm access should be granted to generation, given the set assumptions of network build in the Grid 25 programme, and in particular if it is decided to use network build as a meaningful signal for generator entry.** The only reason why a commitment to asset build (and hence a commitment to a date for firm access) would not be considered is if there is material unmanageable risk that the assets will never be built. It seems odd that consumers are being protected from the risk that the network shall not be built, while simultaneously touting the network build schedule as an appropriate stable signal for generators. Overall, this is incongruous with the new Grid25 development which assumes certain transmission assets being completed at certain time (unlike the transmission forecast statement which could adapt interactively with generator location decisions). Generation is being told where the network access will develop over the next 15 years in one hand, with no recourse if assets fail to be built for whatever reason. Generators no longer have the choice to negotiate location decisions with network development – that potential to manage network development risk, albeit limited, is now completely gone (section 6.3).
- 8) **Firm and non-firm access – all other issues such as the generators cost of production, priority dispatch, etc. – being equal – should be taken into consideration within dispatch** (section 5.1).
- 9) **Priority dispatch should be qualified economically when the cost of providing it reaches raises cost to a level whereby customers choose not to consume – nominally the Value of Lost Load** (section 5.2).

² Indeed, allocating inframarginal rents to useful generation will hide the cost of constraints to the market, blending constraint costs into the market schedule yielding a higher system marginal price.

- 10) **Tie-break rules should be published to reduce uncertainty for generators,** and while the system operators should be required to review and correct any deviation from those rules, the system operator should not be liable for non-persistent non-negligent deviation from those rules (section 5.1).

4. Consultative Process

There are several other important relevant consultations ongoing, about to occur, or recently finished in this market, two of which are referenced in sections 4.14 and 4.15 of the consultation paper:

- Capacity Payment Mechanism and Ancillary Services
 - Also, capacity payment medium term review in SEM-09-035 and discussion of capacity payment volatility SEM-09-023.
- System Operator and Asset Owner Incentives
- Use of system charging and loss factors are under review under SEM-09-060
- The Gate 3 connection process, the GDS and ITC programmes.

Art Generation recognises the natural tension between issuing tractable consultations, and allowing the industry to analyse the end-to-end impact of the policy decisions from individual papers. For this process to work in a timely fashion, it is our contention that there must be a framework under which each consultation is carefully held. We believe that framework to be the high-level principles of the SEM and Capacity Payment Mechanism and Ancillary service design (AIP/SEM/42/05 and AIP/SEM/53/05, subsequently amended by SEM-08-13). With such care, we believe it is possible to deliver coherent decisions in a timely manner – something which is vital within the context of forthcoming Gate 3 connection offers.

An example of such interaction is with regards to maintaining the stability of the capacity payment mechanism. In SEM-09-023, we favoured option 6 – the payment of a fixed capacity price to new entrants – as we argued it would significantly de-risk the generation environment to achieve a more suitable balance of generation types in the market to best accompany a high wind system. We had understood that the SEM Committee were considering the capacity payment mechanism as the “tool for change” to address their concerns. In this paper, there also discussion, however, of using the allocation of the energy market’s inframarginal rent to achieve those same ends as well. Part of the coordination of these papers is stating what roles each of the various parts of the SEM design are meant to achieve. It is not at all necessary to redesign the purpose of the market schedule, where the same results are also being achieved elsewhere in a parallel consultation.

We acknowledge that there is always language open to interpretation and unforeseen circumstances which may arise that create conflict or gaps in high level policy design documents. The ultimate decisions from this consultation – which may clarify, complete, refine, or change detail from those previous policy documents – should

better meet the overall objectives of the SEM³. More importantly, however, any potential decision which directly challenges SEM design principles, or is justified based on a misrepresentation of those principles, should be rejected.

By means of example, in one area in section 3 of the consultation paper, we do not believe that the description of the Principles of the Single Electricity Market Design – the role of the market schedule – is accurately described. Indeed, we find it difficult to reconcile it within the terms of reasonable interpretation of the policy papers described above. We will discuss this specifically in the section dealing with the allocation of access rights (section 6).

In conclusion on the overall consultative process, if further consultations are to challenge the core policy of the SEM design, then a new overall market consultative process is required. We do not believe that such a market-wide consultation is either “proportionate” or “limited to [that which is] necessary and appropriate”⁴ based on any evidence (including the modelling work in the appendices) presented.

Whether the SEM Committee accepts our difficulty with the specific example in the consultation paper’s section 3 regarding the role of the market schedule or not, we seek a commitment that all consultation papers in this overall process should follow the high-level policy of the SEM. It is our contention that this is the only way to gain a coherent end-to-end market design in a timely manner from parallel interrelated consultations. We also seek an understanding of the criteria employed by the SEM Committee whereby such a review may be undertaken again.

Given the overall complexity of the consultation process, we recommend that the next steps are that a further consultation is issued, a further workshop is held, and a final decision can be made within the context of all previous and yet-to-be held consultations. Our suggestion of the further consultation is an acknowledgement of the difficulty and importance of this process. We believe it is worth iterating this process further – despite the delays involved – to avoid the potential for decisions to be made whereby respondents have responded in favour of particular options without all considerations being on the table. We also believe that respondents should be given a number of end-to-end coherent designs (including dispatch, market scheduling, etc.) to support. Breaking the consultation into a number of questions on highly inter-related areas makes it more difficult to determine respondents’ viewpoints if misunderstanding of the text have occurred in a particular area.

Furthermore, given that the SEM is still a young market, that it is currently functioning appropriately, and there are still another number of years before the Gate 3 projects shall be operational, it is recommended that the outcome of the current consultations should be implemented together as a package, and not in a staged basis. We all want this market to work in attracting appropriate inward generation investment while accommodating generation that also relies on external subsidy.

³ The following “equity, cost minimisation, value reflective pricing, competitiveness, transparency, security of supply” are being used as particular guiding principles for this consultation.

⁴ SEM/08/002

4.1 Scope of Consultation Process

As stated in the introduction, we feel that generator investors are left to manage the consequences of whatever regulatory decision is made, rather than being a core consideration of the consultation. Generators are given signals to react to, without due consideration – insofar as we can read from the paper – of the investment environment in which they operate.

The SEM has been built up as a central commitment market. Through the provision of constraint payments, generators are considered to be relatively dispatch indifferent. In reality, however, all generators care how they are dispatched to greater or lesser degrees. Conventional generators face different fuel costs and cycling regimes depending on how they are dispatched. Renewable generation under tie-break scenarios in particular – depending on the decision made from this consultation – may or may not receive their renewable subsidies, resulting in an increased cost of capital, and increased level of equity and more onerous requirements to meet debt service ratios. In effect, we are requesting that any proposed outcome of this consultation is stress-tested against typical investment scenarios.

Furthermore, the impact on operational contracts, (AER, REFIT, and potentially other PSO contracts) need to be a consideration and not a consequential signal of the final design. There is a wider context at play here. During the SEM development existing generators were given considerable time to evaluate the impact on their existing business, and this formed part of participant readiness for go-live. These clarifications around dispatch have the equivalent potential to disrupt existing commercial arrangements, and the intent of renewable support schemes in line with government objective. We understand that the SEM Committee and the Regulatory Authorities are not responsible for governmental renewable targets and schemes. The current consultation paper does not demonstrate, however, that the test of due regard for these targets schemes has been applied.

By means of example, take a Gate 2 wind generator under REFIT. It has been granted firm access under the terms of its connection agreement, but there is no more generation capacity available at that location. It has been given a favourable constraint report by the System Operators and has financed itself on that basis. Now, a further connecting Gate 3 wind generator will result in a pro-rata reduction in the output of the Gate 2 generator under the proposed tie-break rules. The Gate 2 generator may be put under pressure to finance its debt. That generator investor will not be in as free a position to proceed with further generator developments. The consumer will not see any increase in renewable generation meeting demand (reducing prices, achieving renewable targets, reducing fuel imports and increasing security of supply) than if the second wind generator was not built. Without consideration of the wider context in which the SEM operates, it is possible to make decisions which will not further regulatory objectives, not have due regard for the governmental schemes leading to generator investment, and may drive efficient generation out-of-business.

5. Dispatch

5.1 Firm Access & Tie-Breaking

It is proposed by the consultation paper that system operator dispatch should occur “*disregarding any concept of firmness within the dispatch process*”⁵. This is done so that the system operators can continue to dispatch the system “*to minimise the cost of production of generation*”⁶.

The SEM is designed so that Price Maker generators yield control of their generation running to the central control of the System Operator, but are compensated in a manner that leaves themselves dispatch indifferent⁷. The cost of constraints measures the total cost of the non-idealities of the generation dispatch and transmission system meeting the load in every half-hour. The System Operator is free to achieve its economic dispatch in the manner it best sees fit.

The consideration of individual generator’s allocated firm access within dispatch is presented in the consultation paper a distortion to the system operator’s discretion in achieving a safe, secure, economic dispatch. We agree with this presentation in the example cited, where an expensive firm generator is dispatched ahead of a non-firm generator. The consultation paper does not consider, however, the case where two identically priced generators, one firm and the other non-firm, are co-located. This particular scenario is likely to be quite commonplace in the near future, where wind generation in the Gate 3 process begin to consider taking up their connection offers.

There is nothing contrary to the established principles of obtaining a safe, secure and economic dispatch to dispatch firm plant before non-firm plant. The only cost to the consumer is the development of more detail within the system operator’s real-time tie-break rules for dispatching economically equivalent plant. This adds long-term security to renewable generation in that it:

- codifies an individual generator’s contribution to renewable targets, transmission system permitting, and grants that generator certainty in the context of equivalent later generation entry;
- therefore provides those generators who rely on external subsidy for reaching those targets with a more secure revenue stream;
- lowers the cost of capital to generators with firm access;
- lowers the amount of network reinforcement (and the risk of its delivery) when fewer generators are required to reach the renewable targets.

It does not take much of a leap to see how these benefits to the generator translate directly into long-term cost savings for the consumer.

Overall, therefore, we strongly urge consideration of using the firm access allocated under the ITC programme as a tie-breaker – all other things being

⁵ Section 4.7

⁶ Section 4.7

⁷ There are some exceptions to this rule: dispatch of non-firm plant increases their availability to the MSP software, and dispatch of non-participant generators is not accounted within the demand target in the MSP software, e.g. windfarms between 5MW and 10MW in size trading below de minimus.

equal – within dispatch. The principle of minimising production cost is there to make the most efficient use of resources, thus maximising long-term benefit to society at the least cost. It would seem incongruous if our proposed tie-breaking rule is not implemented, as not to do so undermines the reason for minimising the cost of production in the first place.

On the subject of tie-breaking rules, the consultation paper proposes “*de-loading should be instructed on a pro-rata basis in a manner determined by the TSOs*”⁸. **We support that when all generators are equal (and a non-firm plant is not equal to a firm plant), that a pro-rata de-loading basis for tie-breaking is appropriate, but we request that the manner in which the pro-rata is to be performed is to be defined.** We have some concern that the phrasing “*as a matter of detailed implementation for the TSOs*”⁹ may be viewed to imply a level of discretion for the TSOs on a case-by-case basis. Such discretion only increases uncertainty for the renewable generation community in particular, as argued above.

Normally, the TSOs are only required to follow high-level dispatch principles and have not been required to state precise rules for the dispatch of the generation portfolio. Ideally, we would prefer that such precise dispatch rules are set down, but we accept however that there is a certain level of pragmatism in this lack of transparency. Indeed, the overall structure has operated successfully for the electricity consumer (noting the absence of trying system operator incentivisation to provide a counterfactual).

That said, as the connections queues for windfarms increase, we believe that the definition of tie-breaking rules is of such increasing importance for renewable generation and of sufficiently tractable scope, that it is appropriate and possible to deliver a tie-break rules set to the industry.

When such a rule-set is put in place, some may say this raises the possibility of liability accruing to the system operator if one party (non-firm windfarm A) has been dispatched ahead of a different party (firm windfarm B). Windfarm B may seek redress if the tie-break dispatch rules are not followed. Recourse to legal redress would serve the industry, the system operator, and ultimately the consumer badly. **We believe that reviews of the actual operation of the tie-break rule-set should be published, with identification of where the rule-set was not followed, and corrective actions taken. We believe that the System Operator should be required to partake proactively in this process, but should not face liability for any non-persistent and non-negligent operation if the tie-break rules.**

5.2 Priority Dispatch

The consultation paper sets out a number of options regarding the treatment of priority dispatch. It particularly discusses the concepts of absolute and qualified priority, and mentions the potential for a distinction between the scheduling and real-time dispatch timeframes to which priority dispatch may apply.

⁸ Section 4.13

⁹ Section 4.13

Priority dispatch is afforded to renewable generation to facilitate countries to reach their renewable targets, stated as a percentage of served demand. Any qualification of priority dispatch must be cognisant of this purpose for priority dispatch, i.e. if priority dispatch is qualified it should not undermine the rationale for priority dispatch's creation within the EU directive.

Art Generation Ltd. accepts that priority dispatch must not come at an extreme cost to electricity consumers. Much of section 4.8 discusses the potential of picking various different costs at which priority dispatch generation might be considered to be offered into the market. We agree with the spirit of option (2d) – if not its implementation – whereby priority dispatch may be foregone only in the event whereby its inclusion would raise the marginal cost of production beyond a level where demand would seek not to consume, namely the value of lost load (VOLL) or some other contract value. **Under the spirit of the EU renewables directive we believe it may be acceptable to curtail renewable generation where there is no impact on percentage of demand served by renewable generation. This position would require detailed legal review.**

- For example, in the case where renewable generation exceeds demand, 100% of demand is met by renewable generation. Renewable generation can be constrained down with no adverse effect to the achieved renewable percentage penetration.
- Where the price exceeds VOLL and a combination of “must run” non-priority generation and priority generation meet demand, some demand would seek to deschedule itself. It is acceptable to deschedule that demand with a concurrent reduction in renewable output.

To summarise, *demand* should be considered (or procured) to offer in its willingness not to consume at a price – currently nominally set at the regulated VOLL. When the demand is dispatched down, the system operator may concurrently deschedule renewable generation with priority dispatch in lieu of conventional plant to maintain the supply-demand balance, while maintaining the same percentage of demand served by renewable generation.

Operationally, this would require the system operator to procure demand response at a price near VOLL, or some competitively set value. This has been achieved before in “day-ahead dispatch form” in Ireland by the PowerSave scheme.

Whatever solution for priority dispatch of renewable generation is chosen, under no circumstances should it be set at a commercial value which can be out-competed by renewable generation registering as a Price Maker offering their short-run marginal cost.

6. Market Scheduling

6.1 Construction of the Market Schedule

Section 3 and section 4.2 of the consultation speaks of the appropriate allocation of inframarginal rents to plant which is of “real-time value to the system” in meeting demand. Allocating inframarginal rents to any generation that cannot serve demand is claimed to be inefficient. The source of the inefficiency is placed at the door of the generator for locating at an incorrect location on the transmission system, or an incorrect time in the transmission system’s development. It is also stated that system wide constraints, such a fault infeed levels or system inertia, should be considered within the creation of the market schedule.

These proposals are wide ranging and strike to the heart of the SEM design. The following key points are made:

- The SEM design did not favour a market splitting model. This was considered a weaker form of locational marginal pricing¹⁰. The proposal splits the market into potentially several competitive areas, behind which firm and non-firm plant that can run compete for the right to recover their long-run costs. The SMP price will now reflect the cost of constraints.
- The introduction of this competition behind constraints for firm plant is contrary to the spirit of the SEM which sought to deliver a market with “greater stability, less volatile prices, and greater security of supply”¹¹. Investment stability in the SEM would be directly challenged if inframarginal rents were subject to increased local competition.
- Within the contract of the SEM T&SC, capacity payments are made to non-firm plant as well as firm plant, far in excess of the capability of any export constraint. Indeed the capacity payment mechanism allocates an amount of revenue to the market which would be required by a BNE peaker to recover its long run costs in an energy only market. Therefore, the capacity payment mechanism is a method of stabilising consumer prices while providing equivalent inframarginal revenue to generators as if an energy only market applied. It is difficult to reconcile the design of the CPM with the proposal to only allocate inframarginal rents to generation with immediate benefit to meeting load.
- The addition of system inertia constraints or fault feed-in levels to the market represents the effective “market procurement” of ancillary services through a co-optimised basis within the market schedule. There have been concerns about market procurement of these services in the past¹². Any global technical constraints which are input into the market schedule should cause a rise in SMP which is paid out to all generators. Introducing these constraints,

¹⁰ AIP/SEM/42/05, section 3.4

¹¹ AIP/SEM/42/05, section 3.12

¹² SEM/08/013 section 5.4.5

yet not going the whole way in paying generators who provide the required services, provides no signal for appropriate generation entry.

Consequently, we do not support the proposal that inframarginal rents should be allocated to plant which is only useful for meeting instantaneous demand. We also find consideration of system wide constraints a fundamental change to the concept of an unconstrained market schedule with perfect foresight. This consultation's scope is broader than just examining dispatch and scheduling within the context of the SEM design. It seeks to alter the principles of the SEM. Art Generation Ltd. does not support such a fundamental rethink of the SEM design in this manner. **Given the parallel consultations in train, the consultation process itself not tractable without established ground-rules underpinning all consultations. This paper has set down principles of SEM operation which are at odds with previously established context. Therefore we cannot support proposals in this paper which our analysis indicates to be a fundamental re-imagining of the SEM design as to do so reduces our ability to coherently engage in the consultation process.**

All emphasis is placed on generators choosing the optimal time and place to locate on the system. This may imply that the transmission system shall no longer react to generation entry; instead generators shall react to the assumptions within the Grid Development Strategy (GDS) for the best areas to locate. We understand some assumptions have to be made on the location of new generation for the GDS process to work. The question of what happens if those GDS assumptions are incorrect is not raised. The signal to the market (through constraint payments costs) to realign the transmission system development on the ground with successful efficient generation entry and any emerging planning constraints disappears if inframarginal rents are paid solely to useful generation.

Art Generation cannot support the payment of inframarginal rent to generation that is only useful in the short term, as it removes any clear commercial market signal for system operators to be incentivised to build the transmission system.

6.2 Allocation of Firm Access Behind Constraints

Currently within the SEM design, firm access delivers a degree of long-run commercial certainty to generators to compete for inframarginal rents on a system-wide basis. (Similarly, the capacity payment is designed to give long-run certainty to generation.) The only generation which competes behind local constraints in the current system is non-firm generation (accepting the impact on the wider market schedule). This "new entrant non firm" localised competition is appropriate in the absence of connection charges reflecting full incremental deep reinforcement costs on newly connecting generators. Endless non-firm generation shall not connect at a particular location given the dispatch competition between themselves for available transmission capacity – that dispatch being their only entry point to the market schedule.

Now it is proposed to open existing firm generation to this localised competition. Art Generation cannot support this concept, primarily as it represents a complete change to the SEM design. There are three options suggested:

- 1. Pure merit order competition for firm access, up to the value of the constraint
- 2. Only firm access plant are allowed access to the schedule, up to the value of the constraint
- 3. Firm access plant, followed by any available capacity given to in-merit non-firm plant

We have taken it as a possibility under all options – in the absence of discussion on the matter – that in-merit generators with firm access may not gain access to the market schedule¹³, depending on decisions regarding TSO planning standards.

In other words, an issue in supporting any of these proposals is that it is unclear what actually defines an export constraint. Is, for example, Northern Ireland in its entirety subject to an export constraint to Ireland and *vice versa*? If so, all of the above three options effectively involve the removal of firm access from generation which may have been within merit up to this time. There is no discussion in the paper if this will entail compensation to these generators for the removal of this commercial benefit.

Option 1 is considered completely untenable given the risks it poses to generation investment to anything other than BNE peakers. Any generator which relies on inframarginal rent to recover long-run costs may be fairly secure in competing *system wide* for a those rents. *Locally*, however, a second slightly more efficient generator locating alongside the first generator may completely alter that commercial situation. This is a volatile locational signal over which the first system-wide efficient generator has no control. Such a volatile locational signal is contrary to the current consultation on the “Methodology Options to be considered for the Implementation of Location Signals on the Island of Ireland”, SEM-09-060. It also renders moot the date order of allocation of firm access within the ITC programme.

All of these options, and in particular option 1, represents unknown risk to any generator investor at this time. Option 3 (allocation of inframarginal rent to firm plant only and allocation of spare capacity to non-firm plant), is the least unpalatable of the three options, as it provides the greatest use of the system to generation while respecting the principle of firm access. In general, however, if any of these three non-supported options are progressed, it would be necessary to understand:

- Definition of the export constraint
- Compensation for loss of firmness for system-wide in-merit generation

¹³ See footnote 29 at the bottom of page 34 which says: “*In many circumstances, the value of the export constraint could be expected thus to equal to the sum of the FAQs that would be normally allocated behind such a constraint. However, where there are two or more generators which, across the scenarios that the planning process requires the TSOs to consider, do not run simultaneously, the planning process may allow those generators to 'share' the constraint. In this case the sum of the FAQs may be higher than the capability of the export constraint*”, and in section 4.5.4: “*In summary therefore, all options would limit the aggregate level of access to the market schedule for generators behind export constraints, and thus ensure that generators on the other side of the constraint (i.e. those actually needed to meet demand at the times when the constraint applies) do have access to inframarginal rents.*”

- What impact, if any, on the shallow use-of-system charging regime for plant which receive temporary firm access, and on the firm charging regime for generators that may temporarily lose access.

We believe that a series of examples, beyond the single case-supporting examples shown, would serve two purposes here.

- It would give the SEM Committee a more in-depth feel for the implications of their final decisions on different classes of existing and new-entrant generator investor; and
- Would illustrate to the reader the full implications and intent of the SEM Committee's proposals.

In summary, firm generators whose combined output is limited by an export constraint requiring deep network reinforcement, should therefore not be subject to localised competition for access rights to the market schedule from non-firm non-dispatched generation; to do so increases generator investment uncertainty and raises long-term costs to the consumer. The only localised competition for access rights behind a constraint should occur for generators which have been given no guarantee through the allocation of firm access, i.e. non-firm plant. The only locational signal within this market should be through stable, predictable use-of-system charges and losses.

Art Generation does support the idea that Price Takers should be treated equivalently to Price Makers with regard to firm access. This corrects a contradiction between the SEM T&SC against the SEM High Level Design.

6.3 Deemed Firm Access

Deemed firm access, where firm access is allocated on an agreed fixed time-schedule, is argued to lead to generation investing ahead of the transmission system's capability to support it. It is also argued that it will lead to allocation of inframarginal rents to generation behind export constraints, and not to the unconstrained generation that meets demand. It is argued that cost to the consumer is raised for both reasons, and that deemed firm access should not be considered.

The first point – that deemed firm access can lead to incentives to generation to invest in advance of the completion of the required network to the detriment of consumers – implies that the planned schedule of transmission build (on which deemed firm access is set out) is materially wrong from the offset, and/or can become materially wrong. In the same consultation paper, it is as an argument for option 2 for the allocation of access rights behind a constraint that *“The lack of infra-marginal rents for new entrants will diminish incentives to connect new plant before the transmission system infrastructure is capable of accommodating the additional output.”*

The quoted sentence speaks as if the transmission system build is predictable enough to incentivise a generator – planning several years in advance – to be ready to generate just as the transmission system has been completed. The entire new idea in this paper that allocating inframarginal rents to useful plant acts as an appropriate

signal for the timing and location of new generation entry is predicated on that principle. Art Generation finds it odd therefore, that the SEM Committee itself has no faith in the stability of this signal, as the granting of deemed firm access is considered to lead to the potential of “increasing costs to customers over the longer-term”.

The second point – misallocation of inframarginal rents – again refers back to section 3 of the consultation paper. Our concerns with this interpretation of the SEM design have been detailed earlier.

Even within the context of previous decisions, where the GDS and ITC programmes now define wire build in advance and allocate firm access accordingly, an unwillingness to give deemed firm access shows a lack of belief in the build timeframe of the GDS programme. Generators are being asked to invest in a transmission system timetable build which meets CER regulatory objectives, but to which the SEM Committee will not expose consumers.

Art Generation believes that claiming the assumptions within the GDS programme act as a credible signal for generation investment, while at the same time saying that deemed firm access based on those assumptions poses a risk to the consumer, is not a reasonable position.

This lack of regulatory faith in the network infrastructure build also undermines the credibility of the proposal whereby allocation of inframarginal rents behind export constraints are an appropriate investment signal.

7. Response to Individual Proposals and Queries

This section also serves as a summary to the discussion points above.

Proposal	Support?	Comments
<p>It is proposed that the RAs should seek to ensure that the construction of the market schedule is such that infra-marginal rents are allocated to generating units that are of value to the real-time operation of the system, and where deemed appropriate to make the necessary changes.</p>	<p>No</p>	<p>We do not support this proposal. Furthermore, we seek clarification on how the RAs shall “make the necessary changes”, and what shall be considered (cost of implementation, etc.) in determining whether those changes are appropriate.</p> <p>Given the parallel consultations in train, the consultation process itself not tractable without established ground-rules underpinning all consultations. This paper has set down principles of SEM operation which are at odds with previously established context. Therefore we cannot support proposals in this paper which our analysis indicates to be a fundamental rethink of the SEM design, for the purposes of providing a coherent response across all consultations.</p> <p>For the avoidance of doubt, we do not support changes related to payment of inframarginal rents to generation that only useful in the short-term, or the inclusion of system-wide constraints in the market schedule. It removes any potential for system operators to be incentivised to build the transmission system, adjusting the GDS assumptions as necessary.</p>

Proposal	Support?	Comments
<p>The TSOs and asset owners should continue to make available information relating to:</p> <p>(a) their understanding of what changes to the scheduling and dispatch of generation are being contemplated in light of the increasing level of renewable generation on the system, including where there may be technical limitations on the quantity of certain types of plant that can be accommodated on the system; and</p> <p>(b) their view of how technical issues (for example system inertia, fault levels etc.) will be resolved.</p>	Yes	<p>We support this proposal in the provision of further information to the industry in relation to dispatch. We note, however, that this proposal has little to do with the discussion text preceding it; that text reintroduces system wide constraints in the market schedule (which we do not support) and a proposal that non-Grid Code compliance should mean removal from trading (on which we seek clarity if this will be examined further).</p>
<p>In relation to the Grid Code; (a) the current initiative from the TSOs to place additional emphasis on enforcing existing Grid Code obligations on incumbent and new generating units should continue; and</p> <p>(b) the TSOs should also keep the Grid Code under review in order to ensure that future generation portfolios continue to support the satisfactory operation of the system.</p>	Yes – Clarification Sought	<p>We support this proposal. We seek clarification if the “additional emphasis” also includes the concept of “recouping any gains the generator may make from not being Grid Code compliant”. We would need to see further detail of this proposal before further commenting on this particular aspect.</p>

Proposal	Support?	Comments
<p>The RAs would welcome views on how access to the market schedule for plant situated behind export constraints should be limited and on the options described in this Section 4.5. Respondents are also invited to propose alternative options to those presented in the above section.</p>	<p>No</p>	<p>We do not support the proposal’s primary contention that the market schedule for plant situation behind constraints should be limited, non-payment of inframarginal rent beyond the level of an export constraint. Firm generators whose combined output is limited by an export constraint requiring deep network reinforcement, should not be subject to localised competition for access rights to the market schedule from non-firm non-dispatched generators; to do so increases generator investment uncertainty and raises long-term costs to the consumer. It is also contrary to the spirit of the all-island competitive nature of the SEM design. The only localised competition for access rights behind a constraint should occur for generators which have been given no guarantee through the allocation of firm access, i.e. non-firm plant. The only locational signal within this market should be through stable, predictable use-of-system charges and losses.</p> <p>Art Generation does supports the idea that Price Takers should be treated equivalently to the existing rules for Price Makers with regard to firm access. This corrects a contradiction between the SEM T&SC against the SEM High Level Design.</p> <p>If further development is to continue on this unsupported area, we would tentatively choose option 3. It provides the most efficient use of the network to generator investors. The following detail would to be understood:</p> <ul style="list-style-type: none"> • Definition of the export constraint • Compensation for loss of firmness for previously in-merit generation • What impact, if any, on the shallow use-of-system charging regime for plant which receive temporary firm access, and on the firm charging regime for generators that may temporarily lose access.

Proposal	Support?	Comments
<p>The RAs propose that “Deemed Firm Access”, whereby FAQ or MEC is allocated in advance of the completion of necessary transmission system infrastructure reinforcements, should not be introduced to the SEM.</p>	<p>No</p>	<p>Art Generation believes that the credibility of the GDS programme acting as a credible signal for generation investment, while at the same time saying that firm access poses a risk to the consumer, is not a reasonable position.</p> <p>This lack of regulatory faith in the network infrastructure build also undermines the credibility of the allocation of inframarginal rents behind export constraints as an investment signal.</p>
<p>Given that it would represent the most efficient short-term use of available resources, and is consistent with existing dispatch processes, the RAs propose that the TSOs should continue to dispatch the system to minimise production cost of generation, taking into account system security requirements and, as now, disregarding any concept of firmness in the dispatch process.</p>	<p>Yes – but with important qualification</p>	<p>We strongly urge consideration of using the firm access allocated under the ITC programme as a tie-breaker – all other things being equal – within dispatch.</p>

Proposal	Support?	Comments
<p>The Regulatory Authorities welcome comments from interested parties on the options for priority dispatch, as presented in this Section 4.8. Specifically the RAs seek comments on:</p> <p>(a) The case for affording absolute priority or qualified priority to plant having priority dispatch;</p> <p>(b) In the event that qualified priority were to apply, the relative merits of the alternatives posed for the purpose of attaching an effective price or other objective measure for use by the SOs when making dispatch decisions taking account of the proportionality principle;</p> <p>(c) Whether a distinction is to be drawn between the priority to be applied when making a decision to place a generating unit in the dispatch schedule as distinct from subsequently dispatching that unit away from that level of output in real time;</p> <p>(d) The extent to which non-renewable plant (e.g. peat) who are afforded priority dispatch present particular issues which might require that they are treated in an alternative way to renewable generators.</p>	<p>See comments</p>	<p>We support the concept of a qualified priority dispatch, but not on any of the options presented in the paper. Under the spirit of the EU renewables directive we believe it may be acceptable to curtail renewable generation where there is no impact on percentage of demand served by renewable generation. This position would require detailed legal review.</p> <p><i>Demand should be considered (or procured) to offer in its willingness not to consume at a price – currently nominally set at the regulated VOLL. When the demand is dispatched down, the system operator may concurrently deschedule renewable generation with priority dispatch in lieu of conventional plant to maintain the supply-demand balance, while maintaining the same percentage of demand served by renewable generation.</i></p>

Proposal	Support?	Comments
<p>The RAs propose that the rules applying to hybrid plant should depend upon which of the options for treatment of priority dispatch plant are eventually chosen. The RAs welcome views on how the principles of priority dispatch should be extended to hybrid plant as part of the response to this consultation.</p>	<p>See comment</p>	<p>Within the context of our proposed definition of priority dispatch, hybrid plant would be first to be curtailed in entirety. A definition of hybrid plant – akin to that in efficient CHP – should also be defined by the SEM Committee for the purposes of access to priority dispatch and being a price taker within the market.</p> <p>If an alternative definition of priority dispatch is chosen, e.g. a deemed effective offer price, then we would need to re-evaluate our opinion based on the option chosen, e.g. this is something which is best consulted on within the context of a proposed decision.</p>
<p>If any of the options in Section 4.5, for allocating infra-marginal rents behind export constraints, is adopted then that option should apply also to Variable Price Takers. If none of these options is adopted and the existing arrangements for allocating infra-marginal rents being export constraints retained, then Variable Price Takers should be limited in the market schedule to the maximum of actual output and FAQ (or MEC when infrastructure works are complete and the VPT becomes fully firm).</p>	<p>Yes</p>	<p>Art Generation supports that idea that Price Takers should be treated equivalently to the existing rules for Price Makers with regard to firm access. This corrects a contradiction between the SEM T&SC against the SEM High Level Design.</p> <p>This error also exists for predictable price takers as well.</p>

Proposal	Support?	Comments
<p>The RAs propose that if Option 2(a) or 2(c) in Section 4.8 is adopted, SMP should be set using the effective bid prices of the marginal Variable Price-Taking generation, rather than at PFLOOR, in the event that the quantity of price-taking generation exceeds demand and reflecting any external subsidies received by the plant (i.e. it should reflect the price used in the dispatch of the plant by the TSOs). PFLOOR would still be used as a lower limit to SMP.</p>	<p>No</p>	<p>We do not support either option 2(a) or 2(c) in section 4.8. We believe that the price should be set to zero. This reflects the existing decremental price for price takers in the market during constrained down events.</p>
<p>The RAs propose that the quantity of generation charged PFLOOR (or paid at the revised SMP set out in proposal 4.11) in the event of an Excessive Generation Event arising from an excess of Price Taking Generation should not exceed System Demand. The MSQs of Price Taking Generation should, in such circumstances be pro-rated down so that the total quantity is equal to System Demand.</p>	<p>No</p>	<p>We support this proposal, although some care is required in the definition of an “excess of Price Taking Generation”. We have taken the expression to mean where there is no Price Making Generation at all scheduled. It may be possible to have an excessive generation event with scheduled Price Making generation. These pro-rata rules would need to be carefully designed in the event that both Price Maker and Price Taker generation contribute to the generation during an Excessive Generation Event.</p> <p>We consider this particular item to be of particular importance (along with the discussion on PFLOOR above) obtaining project finance for wind projects as the industry develops. Under these circumstances generators may be asked to pay for their generated energy with no access to renewable subsidy (if dispatched to zero) when registered as a Price Taker.</p>

Proposal	Support?	Comments
<p>The RAs propose that where tie-break rules are required, de-loading should be instructed on a pro-rata basis in a manner determined by the TSOs.</p>	<p>No</p>	<p>We strongly urge consideration of using the firm access allocated under the ITC programme as a tie-breaker – all other things being equal – within dispatch.</p> <p>We support that when all generators are equal, that a pro-rata de-loading basis for tie-breaking is appropriate, but we request that the manner in which the pro-rata is to be performed is to be defined.</p> <p>We believe that reviews of the actual operation of the tie-break rule-set should be published, with identification of where the rule-set was not followed, and corrective actions taken. We believe that the System Operator should be required to partake proactively in this process, but should not face liability for any non-persistent and non-negligent operation if the tie-break rules.</p>