

DRAFT IWEA Response to “Principles of Dispatch and the
Design of the Market Schedule in the Trading and Settlement
Code”

SEM -09-073



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MEMBERS DRAFT

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1.0 Introduction

The SEM Committee has published a consultation paper entitled Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code” (“the Paper”). This Paper deals with a wide variety of issues and outlines a number of options and proposals. There has been informal debate and discussion around many of the more important issues for several years and the initiation of the current process to resolve these issues is both welcome and necessary.

The Irish Wind Energy Association (IWEA) is the national association for the wind industry in Ireland and has over 400 members representing interests in Ireland and Northern Ireland. IWEA has recently formed a joint Northern Ireland Committee with the British Wind Energy Association to deal with issues that relate exclusively to Northern Ireland. IWEA has engaged significant economic and legal input from Pöyry Energy Consulting and Eversheds O’Donnell Sweeney. The input and reports from these bodies are separately published for transparency. IWEA’s views on the Paper are set out in this document and while the external advice has assisted IWEA in forming its views this advice does not necessarily represent the views of IWEA on these matters.

IWEA has serious concerns that the scope of the Paper has become unduly large. The Paper has raised questions around some of the fundamental principles of the SEM market, for example, the separation of TSO managed constraints which may be incentivised and generator controlled constraints which are subject to market forces. While these questions are very valid from an economic efficiency viewpoint they are so fundamental to the dynamics and operation of the market they should not be subject to frequent review. As the SEM market is in operation less than two years IWEA believes it is unduly early to raise fundamental questions around its design philosophy in the absence of strong evidence that the market is not functioning correctly. IWEA also believes that any substantial review of SEM must consider the potential development of regional markets in more detail.

IWEA believes that the scope of the current consultation should be constrained by three factors:

- 1) National Energy Policy in both jurisdictions must be respected.
- 2) The proposals must comply with relevant national and EU law.
- 3) The SEM Committee should have regard to the degree of risk proposals and changes may create.

We believe that these three factors should also be included in the proposed assessment criteria outlined on page 11 of the Paper.

In this response IWEA will first outline the relevant background considerations which we believe should be included and outline the impact of these factors on the scope of solutions proposed. Section 2 will outline these considerations and our understanding of the fundamental issues under review. Section 3 will describe IWEA's views on all the proposals included in the Paper in the form of an integrated alternative option. This response addresses issues outside the scope of the current Paper for completeness.

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2.0 Background

2.1 National energy policy

The current consultation completely ignores national energy policy. There is a 40% target for renewable electricity in Ireland and it is expected that Northern Ireland will shortly adopt a similar target in its Strategic Energy Framework¹. In addition the development of a renewable energy industry is a key focus of Ireland's framework for economic renewal published by An Taoiseach in 2008.² These targets are based on national energy and economic policies arising from climate change, energy security, price stability and international commitments. For Ireland these targets are embedded in international treaties and commitments. Failure to meet the 40% renewable electricity target may result in the EU taking infringement proceedings against Ireland. In the event that Northern Ireland fails to meet its targets the overall efforts by the United Kingdom to meet its international commitments will be more difficult.

IWEA believes that it is incumbent on the regulators in both jurisdictions to have regard for national energy policy as developed by democratically elected governments. IWEA agrees that the primary responsibility for meeting targets rests with the relevant government departments, however, it is vital that the actions of the regulators do not frustrate these initiatives.

The proposals in the consultation paper would have a very serious impact on the costs of meeting national energy targets. Some of the proposals would actively prevent support systems from acting as intended in the market or in physical dispatch. IWEA believes that any proposed changes arising from this consultation must allow support systems to operate as intended. In the event that the supports are inadequate or overly generous this then becomes a matter for the relevant government department. However, if the ability of support systems to influence investment is compromised by the market rules it will become more difficult to meet national policy objectives.

¹ <http://www.detini.gov.uk/cgi-bin/downutildoc?id=2470>

² http://www.taoiseach.gov.ie/BuildingIrelandsSmartEconomy_1_.pdf

2.2. Legal Requirements

The principles of priority dispatch and access are most recently set out in Directives 2009/28/EC of 23 April 2009 (the “Directive”). Under Article 28 of the Directive, it entered into force on the 20th day after its publication in the Official Journal of the European Union. IWEA understands that the Directive was published in the Official Journal on 5 June 2009. Under Article 27 Member States must transpose the Directive into national law by 5 December 2010.

The main policy objectives are set out in recital 1 of the Directive which states, *“The control of European energy consumption and increased use of energy from renewable sources, together with energy savings and increased energy efficiency, constitute important parts of the package of measures needed to reduce greenhouse gas emissions and comply with the Kyoto Protocol to the United Nations Framework Convention on Climate Change ...”*

In recital 25 it also goes on to state that *“one important means to achieve the aim of this Directive is to guarantee the proper functioning of national support schemes...in order to maintain investor confidence and allow Member States to design effective national measures for target compliance”*.

In recital 26 it further states that *“it is desirable that energy prices reflect external costs of energy production and consumption, including, as appropriate, environmental, social and health care costs”*

In recital 60 of the Directive it goes on to state that, *“Priority access to the grid provides an assurance given to connected generators of electricity from renewable energy sources that they would be able to sell and transmit the electricity from renewable energy sources in accordance with connection rules at all times whenever the source becomes available. In the event that the electricity from renewable energy sources is integrated into the spot market, guaranteed access ensures that all electricity sold and supported obtains access to the grid, allowing the use of a maximum amount of electricity from renewable energy sources from installations connected to the grid. However, this does not imply an obligation on the part of Member States to support or introduce purchase obligations for electricity from renewable sources”*.

Finally, under recital 61 it states the following: *“In certain circumstances it is not possible fully to ensure transmission and distribution of electricity produced from renewable energy sources without affecting the reliability or safety of the grid system. In such circumstances it may be appropriate for financial*

compensation to be given to those producers. Nevertheless, the objectives of this Directive require sustained increase in the transmission and distribution of electricity produced from renewable energy sources without affecting the reliability or safety of the grid system. To this end, Member States should take appropriate measures in order to allow a higher penetration of electricity from renewable energy sources, inter alia, by taking into account the specificities of various resources and resources which are not yet storable. ... In order to accelerate grid connection procedures, Member States must provide for priority connection or reserve connection capacities for new installations producing electricity from renewable energy sources”.

Article 16.1 of the Directive states:

“Member States shall take the appropriate steps to develop transmission and distribution grid infrastructure, intelligent networks, storage facilities and the electricity system in order to allow the secure operation of the electricity system as it accommodates the further development of electricity production from renewable energy sources”.

Under Article 16.2(b) it goes on to state:

“Member States shall also provide for either priority access or guaranteed access to the grid system of electricity produced from renewable energy sources”.

And in Article 16.2(c) it goes on to say:

“Member States shall ensure that when dispatching electricity generating installations, transmission system operators shall give priority to generating installations using renewable energy sources in so far as the secure operation of the national electricity system permits and based on transparent and non-discriminatory criteria”.

In Article 16.2 it is stated that the above commitments are only subject to the requirement to maintain the reliability and safety of the grid by the system operator.

To facilitate a thorough response to this consultation IWEA has secured legal advice (separately published) on the compliance or otherwise of the Paper with the requirements of the directive. Our legal advice notes:

“that the main policy considerations in implementing this Directive are to increase the use of energy from renewable sources and to enable the European Union to comply with its climate change obligations under the Kyoto Protocol.

Under the well known rules of interpretation of legislation, terms must be given their ordinary meaning unless they are defined in some other fashion or are terms of art which have a particular industry meaning.

Having reviewed the recitals to the Directive as set out above and the language of Article 16, it is clear that the European Union through this Directive intends that renewable energy generators are given priority access to the national grid and priority dispatch of their electricity on to that national grid over and above other generators of electricity save where the secure operation of the national electricity system does not permit such priority access and dispatch.

It is important to note that the Directive stresses the need to take into account the holistic cost of generating electricity and also that the main policy objectives are not simply economic but also include environmental and healthcare issues as set out above. To this end I would draw your attention to recital 61 which suggests that financial compensation ought to be paid if renewable energy generators are curtailed for non secure operation reasons. You might also note the reference to this concept in Article 16.2 (c) of the Directive

Finally, I note that the Directive has to be implemented into Irish Law on or prior to 5 December 2010. Having regard for the principle of Direct Effects (as set out in the Van Duyn –v- Home Office (1974 ECR1337)) I would be of the view that post 5 December 2010 persons within the Irish State would enjoy rights under the Directive against any emanation of the State in the event that this Directive is either not implemented into Irish Law or is not implemented correctly into Irish Law.

Single Electricity Market Consultation Paper dated 8 July 2009 regarding Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code:

I confirm that I have reviewed the above consultation paper and in particular paragraph 4.8 dealing with priority dispatch. In paragraph 4.8 two scenarios are suggested, the first being “Absolute Priority” and the second being “Qualified Priority”.

In the section relating to Qualified Priority, two possible arguments are set out to support the notion that the principle of priority dispatch set out in the new Directive is of a qualified nature. The first is in relation

to the legal principle of proportionality and the second suggests that the priority dispatch principle should not be read in isolation to the rest of the Directive. The authors of the consultation paper go on to state that the Directive has other requirements including (1) The TSO does not have an obligation to purchase electricity (2) that no particular price is guaranteed and (3) that the system operation is a valid factor to take into account.

While I would agree that the priority dispatch principle is not absolute as secure operation must be taken into account I see no validation in the rest of the Directive to suggest that other factors need or can be taken into account. The overwhelming purpose of the Directive is to promote the use of renewable energy within the European Union for the reasons set out above. As a result, I believe that while the second argument has some merit to it, it is an over simplistic view of the law

Furthermore, I do not believe that the legal principle of proportionality is appropriately used in the consultation paper. The legal principle of proportionality is a civil law concept and is typically used to challenge EU decisions which extend beyond the requirements of the various European Treaties. Therefore, the main circumstance in which this principle is evoked is where individual rights have been restricted through legislative action over and above what is required by the European Union Treaties. The second circumstance is where a penalty imposed by European Law is excessive.

As a result, I struggle to see why the SEM, as a policy implementer, would use this legal principle to interpret a European Directive which is reflective of existing Irish Government policy.

In the section dealing with Absolute Priority the authors of the consultation papers state that “it is arguable that the requirement for Member States to give priority in dispatching generation for renewable energy sources is absolute.” They also go on to state that this would imply certain scenarios occurring.

For the reasons I have set out above I do not believe that the principle of priority dispatch is absolute. However, I feel obliged to respond to the 4 scenarios suggested in the paper and I have set these responses out below:

1. “There is no need for the renewable generator to have a prior purchaser” – the Directive has made clear that there is no obligation on a system operator to buy electricity. Further, given the structure of the single market I see no practical relevance to this point.

2. *“The system operator may not take merit order into account when dispatching renewable, even if they are expensive” – clearly the single electricity market will set the price by which electricity is bought and sold. Therefore, reference to “expensive” electricity is not relevant. However, I would be of the view that the correct interpretation of the Directive would lead you to the conclusion that the statement that “the system operator may not take merit order into account when dispatching renewables” is correct.*

3. *“The system operator would take any action to run a renewable generator or prevent dispatching it down... even if this meant for example incurring large start up costs” – from a review of the new Directive I believe that this is a correct statement of the legal position save obviously where secure operation of the grid could not be achieved.*

4. *It implies an obligation to build huge amounts of transmission system and invest heavily in static equipment to provide the necessary reactive compensation, inertia, etc. – while I am not entirely certain as to the technical implications of this statement it is quite clear under Article 16.1 of the Directive that Member States are obliged to take appropriate steps to develop transmission and electricity grid infrastructure in order to allow secure operation of the electricity system as it accommodates the increased development of renewable energy sources.*

Conclusion:

As set out above I believe the intent and wording of the Directive is clear and gives Priority Access and Priority Dispatch to renewable generators save in the case where secure operation can not be achieved. I am also of the view that from an overview of the Consultation Paper, the authors appear not to take sufficient cognisance of the legislative framework in which a single electricity market operates. Admirably, its authors are focused on the efficiencies that might be achieved if the rules were amended. However, this focus does not appear to take into account the binding obligations of the EU Legislative Framework.

Finally, it is clear that Governments when implementing of the Directive, should guarantee the proper functioning of national support schemes in order to maintain investor confidence and allow Member States to design effective national measures for meeting the mandatory EU targets on renewable energy generation. I would be of the view that investor confidence in the Irish market must be maintained during this consultation also.”

Based on this advice IWEA believes that many of the proposals considered in the paper, in particular the concept of “Qualified Priority Dispatch” where cost may be considered do not comply with relevant EU law. We believe that it is essential that any proposals arising from this process must have a sound legal footing.

2.3 Regulatory Stability

The current SEM market is dominated by payments for energy. All energy that clears a market schedule is paid the marginal cost of production for the full system. Producers that have a lower cost of production than the marginal price (the SMP) collect an infra-marginal rent (the difference between the SMP and their cost of production). This rent contributes to the cost of their installed capacity and their required rate of return.

Under SEM the concept of a market for energy and physical dispatch are treated separately. The market for energy is a place where producers compete on price and flexibility to meet demand. Issues relating to system stability do not intrude on this and are separately treated through dispatch by the TSOs.

Some generation that is in the market schedule may not be able to run in real time (for example, if it is behind a transmission constraint). Other generation outside the market schedule may be required to run (for example, to support the network voltage in remote parts of the system). This will lead to generation dispatch differing from the market schedule. Generators are held cost neutral to these dispatch decisions and receive constraint payments that essentially mean they are in the same net commercial position as though they had been dispatched to the market schedule quantity.

This means that if Generator A is dispatched at a lower level than indicated in the market it still earns the inframarginal rent on the full quantity in the market schedule. If Generator B is dispatched at a higher level it only receives its bid price for the additional output and hence earns no contribution to its capacity costs or expected rate of return on the additional production.

There is an exception to the above when a generator has non firm access. In this case the generator’s market schedule quantity is capped at its dispatch quantity. However, there is a further exception to this in the case where a wind unit registers as a Variable Price Taker.

Financial models for new generation projects are firmly based on the principles above. Revenues are predicted based on fuel price predictions, demand forecasts, entry and exit assumptions and data from financial markets. The risk that a generator with a firm connection may be financially exposed to a shortage of transmission is not considered. By introducing the possibility that generators may be impacted by transmission issues, the validity of these financial models may be questioned. In other markets where generators are exposed to transmission risks they are generally provided with a framework of financial instruments that allow this risk to be managed. This consultation has introduced a perception of significant increased risk in SEM. As the market is dependent on international banks and investors to support future developments this has the potential to be very damaging and to significantly increase costs for consumers. IWEA recommends that the current model where market and transmission issues are treated separately is retained and that any review is performed in the context of a larger scale review of SEM at an appropriate time.

2.4 Impacts of Increasing Renewable Penetration in SEM

The Paper examines the changes that might be needed to address some changes in the underlying market for energy. The current SEM market appears to be functioning broadly as intended and IWEA are not aware of significant demands for changes from market participants or customers. However, the market does not account for long term externalities including, fuel security, climate change and sustainability. In accordance with EU policy the UK and Ireland have agreed to promote increased use of renewable energy through support systems outside the SEM and BETTA markets. If these support systems are allowed to function correctly they will result in a larger share of renewable generation in the electricity market than the current market forces acting alone may have secured.

This external action will have a number of consequences for the proper functioning of SEM and IWEA believes that the main object of this consultation process is to develop appropriate strategies for dealing with these consequences. This section outlines the main consequences and our proposed mitigation measures are described in Section 3.

2.4.1 Renewable Energy Reduces Energy Prices

Regardless of assumptions around fuel prices a market with more renewable energy will have a lower average SMP than one with little renewable energy. This is due to the lower marginal production cost of renewable energy such as wind relative to conventional generation units. In SEM where most revenue is from energy payments this will lead to revenue adequacy issues for all players. Under the current rules the PSO levy and ROC payments will pick up the gap for renewable producers and some others. However, most large conventional plants will not be in a position to collect sufficient infra marginal rent from the energy market to meet the cost of capital of their investments.

2.4.2 Significant level of new Generation entry

Changing the long term fuel composition of the energy system requires many new generators be developed. , This in turn creates a need for new connections and a modern transmission grid to allow these renewable generators to run. These new units will generally be in a position to develop faster than the transmission network. In the current rules generators are allowed to connect ahead of re-inforcements (with a non firm connection offer) and earn profit on any output that the network can accommodate. When the network is fully reinforced they move to firm access and earn infra-marginal rent on any output in the market schedule. The Paper considers the impacts of a substantial programme of Generator investment happening faster than network upgrades.

3.0 IWEA Proposals

This Section provides a set of integrated policy proposals developed by IWEA. These proposals aim to deliver an efficient framework for the delivery of national energy targets in Ireland and Northern Ireland.

3.1 Incentivise the development of transmission

Many of the issues raised in the paper relate to transitional issues that will occur as generation development leads transmission development by a number of years. This is strongly demonstrated by the sharp drop in constraint levels forecast in the SEM Committees modelling of 2025 by which time it is assumed that substantial Network development will have been completed. IWEA believes that the transitional issues could more productively be addressed by the introduction of strong incentives to complete grid developments in the required timeframe.

3.2 Do not change firm access rights

The current firm access rights regime where participants are financially neutral to dispatch decisions and transmission constraints is fundamental to the structure of SEM and the financial models investors use to assess it. This should not be changed to deal with transitional issues arising from a temporary shortage of grid. It is also recommended that revenue adequacy issues are tackled directly as market issues rather than indirectly through tweaking of access rights. Changing access rights would be likely to be challenged legally and would introduce high levels of risk into the market. Including transmission in the market schedule would represent a fundamental change to access rights and would be a significant change in the market philosophy.

The current market model separates generator and TSO constraints. This allows clear identification and incentivisation of TSO costs while allowing market forces to operate on generator issues.

Unless transmission is included in the market schedule a significant divergence from dispatch is unavoidable until significant network upgrades are completed. While there are benefits in having a single schedule used for both dispatch and market settlement there are also advantages and clarity in the separation of market and system operator issues in the current model. IWEA believes that there is a significant risk in including some TSO constraints on a selective basis and arriving at a schedule that can not be used to bring market signals to bear on dispatch and also lacks the clarity of definition to permit robust incentivisation of costs.

3.3 Ensure fair treatment for small providers

A significant number of small generation companies are expected to join the market between now and 2020. In particular more than 35% of applicants within the Gate 3 process are for projects under 5MW. It is essential to ensure that SEM rules are fair and proportionate for these players. In particular any proposal should be stress tested for its impact on sub 10MW and sub 5MW generators. For example, the restrictions on Variable Price Makers appointing an intermediary in SEM places an undue burden and restriction on small generators.

3.4 Introduce more flexible trading with BETTA

Many of the issues raised in this paper relate to situations where there are excessive generation events. One of the most effective measures to deal with these would be to export the additional generation at these times. While it is recognised that this may not always be commercially or technically feasible the market arrangements should not in of themselves prevent additional trade. In particular the ability to execute short term trades between SEM and BETTA should be introduced.

3.5 Deal with Revenue Adequacy Issues directly

As discussed above the SEM market acting alone will find an equilibrium share for renewable, peaking and baseload plants. However, this equilibrium will not reflect the importance of various long term externalities that are addressed with support systems. As the Paper identifies, this will result in lower SMPs and revenue adequacy issues for some providers, notably baseload plants that are not covered by support systems. The Paper examines a range of options surrounding generator access rights to address this issue. However, IWEA believes that this is a very indirect approach that does not tackle the core issue. If it is attempted to address the issue through access rights additional risk will be introduced to all providers and the core issue will remain largely unresolved. IWEA recommends that the revenue adequacy issue is tackled directly by ensuring that total market revenues are not allowed to be artificially reduced from equilibrium levels. This should ensure that the total costs to consumers are not increased while allowing generators to earn a market based return.

IWEA believes that this could be best implemented by modelling the difference between forecasted SMPs in the equilibrium market and comparing those with the expected SMPs. Any difference in revenue should be added to the Capacity Payments or Ancillary Services funds. This will ensure a long term stable set of market based revenues for all providers. This re-allocation should not allocate additional costs to consumers.

3.6 Continue to allow Non-firm access

Non firm access currently allows generation to connect ahead of transmission reinforcements being completed. This allows for more efficient usage of existing network capacity. To ensure that generators with firm rights are not disadvantaged they should be dispatched ahead of non firm where a relevant transmission constraint is active unless priority dispatch determines otherwise. Non-firm generators should be included in the market schedule with an availability level set up to their Dispatch Quantity. It is recognised that this is not a perfect means for identifying when relevant constraints are active but it is a pragmatic first step. This should also apply to Variable Price Takers. This ensures that generators with non-firm access may enter the Market Schedule and earn infra marginal rent at times when

network capacity is available but that they do not infringe on the rights of firm generators when relevant constraints are in force. While this arrangement will lead to some un-economic outcomes in the short term it leads to a more stable investment climate and more efficient long run outcomes.

3.7 Introduce Deemed Firm Access

Generation developers currently face 100% of the risk of delays to transmission development; this includes risks specifically within the control of the asset owner and/or operator. It is clear that the generator has minimal powers to influence or manage these risks. IWEA believes that deemed firm dates should be introduced to better align risk with the party that may control it. These deemed firm dates should reflect a “reasonable” date for completion of reinforcements for a specific project. This will allow more efficient project management by developers and network companies and will assist them in prioritising works that have the most significant economic impact.

3.8 Tie break rules must respect prior commitments

The current proposal on tie breaking is overly simplistic. It will be necessary to provide for a hierarchy between different generators with priority access. IWEA believes that the current practise applied by the system operators where wind has priority over hydro which in turn has priority over indigenous fossil fuels is pragmatic. However, the detailed implementation of a hierarchy between Variable price makers and variable price takers warrants further consideration.

The tie break rules must also recognise the financial framework assumed in the offer process. Constraints reports issued by the TSOs are relied on by investors and financial institutions assume that early projects will have priority over later ones in the event of a shortage of transmission during non-firm operation. These assumptions apply equally in both jurisdictions. In the event that this priority is not allowed many projects built and under construction face substantial additional risk. It is highly likely that a legal challenge would result from changing the priority rules used in constraints reports.

3.9 Remove Conflict between REFIT and SEM

CER decision 08/170 outlines the detailed calculations to be used to calculate the ex post correction factor for generators under the REFIT support system. The calculation of revenues in this paper is based on the market schedule quantity (MSQ) of a generator while the calculation of costs relies on the metered generation. The decision provides for payments from the PSO to the generator in the event that the costs so calculated exceed the revenues. The mismatch between MSQ and metered generation means that where a generator has been constrained down different quantities will be used in each calculation. IWEA believes that this can lead to situations where the calculations do not operate as intended. See Appendix A.

Of more relevance to the current consultation is the perverse incentive that this decision provides for generators. In a year where the SMP is anticipated to be below the REFIT floor there is a strong incentive on generators to produce as many MWs as possible regardless of the costs to the system, as they will only be made whole by the REFIT on the MWs they actually produce. A direct interpretation of the priority dispatch provisions under the directive will facilitate generators in achieving these ends.

However, this is clearly an un-economic outcome for the consumer and may in some cases result in higher emissions. IWEA believes that it will be much easier to implement priority dispatch in practise if this perverse incentive is removed. This may be achieved by replacing MSQ and metered generation with actual availability in the calculations described above. This will better reflect the economics of renewable generation and allow the TSOs to operate the system in a more efficient manner. This change would provide an incentive on generators to bid a number close to zero to maximise their cash flow position between SEM and the PSO.

This change would not impose additional costs on the consumers as the State Aid decision (N571/2006 Ireland) determining the appropriate rates for REFIT assumes an average capacity factor of 34%. This clearly does not make any allowance for reduced output due to constraints. As this tariff is set to ensure a level of investment consistent with national targets it is reasonable to assume that if the current decision stands and generators are in receipt of the floor price for levels of output below their available capacity factor that an increase in the rate will be required to compensate for this. As the levels of reduced payment will be uncertain it will be necessary to price in a risk factor into such an amended REFIT rate. This would be more expensive to the end customer than allowing the REFIT arrangements to

operate on the basis envisaged in the State Aids submissions. It will also provide more economic signals for SEM.

As the ROCs support system pays a price based on market forces it can naturally respond to levels of reduced output should they occur. As the price of a ROC reflects the economic value of complying with national energy targets it is believed that this value should be applied in SEM. It is essential that parties are allowed to reflect the impacts of support systems in their bidding behaviours.

3.10 Implement Priority Dispatch

Priority dispatch is a matter of law and must be implemented in SEM. It is recommended that all generators entitled to priority dispatch should have the rights to operate as a price taker. However, while not strictly necessary there may be merit in applying a price other than minus infinity to all price takers.

In the event that the changes envisaged above are implemented there will be a strong economic and financial incentive on participants in Northern Ireland to register as Price Makers and submit a bid price of around minus the value of a ROC. For generators in Ireland there would be an incentive to register as a price maker and submit a bid of around zero or -€8/MWhr depending on their contractual arrangements. Renewable generators outside support systems would also be incentivised to bid zero. As many players will seek to register as price makers to maximise their financial position the problems envisaged in the Paper of large numbers of generators acting as price takers are unlikely to occur.

Any barriers to registration as a price maker should be investigated. In particular the restrictions around appointing intermediaries should be removed.

3.11 Use a Jurisdictional Application of Non Dispatch

As the support systems in the different jurisdictions are unlikely to be harmonised in the short term, IWEA believes that non dispatch must be applied on a jurisdictional basis. If this is not addressed then

there will be a persistent bias in renewable dispatch decisions between jurisdictions. This may require disproportionate efforts to meet national targets in one or other jurisdiction.

This will be difficult to implement in practice as renewable units registered as price makers will bid different prices depending on their support system.

3.12 Technical Constraints

IWEA welcomes the Paper's proposal that more information and transparency around technical constraints should be provided. We also note that the system operators have engaged the industry very constructively in this regard. We believe that there are significant benefits to be gained from a constructive approach that is focussed on developing solutions.

Increasing the levels of compliance with the Grid Code will be an essential part of delivering solutions. It is also necessary to review the provisions of the Grid Code to ensure that adequate flexibility is required of all generators.

3.13 More clarity on hybrid plants

IWEA believes that more clarity on the definition of hybrid plant is required to allow a full assessment of the proposals to be made. It is important that these regulations do not create a situation where non renewable plant may use priority dispatch provisions to be dispatched ahead of renewable plant.

3.14 Treatment of Excessive Generation Events

Proposals 10 and 11 on price setting where demand is met by price takers seem reasonable. However, these would be contingent on a number of administrative and technical issues being addressed.

4.0 Conclusions

IWEA has outlined a proposed set of measures that we believe will enable SEM to function efficiently as more renewable generation joins the market. These are an integrated set of proposals. We would encourage the SEM committee to allow further consultation with industry on this matter by issuing either a revised consultation or a proposed decision ahead of any final outcome. We also believe that any decision should complement work by the Government Departments in developing the National Renewable Energy Action Plans and the Strategic Energy Framework in Northern Ireland.

Appendix 1 Costs to PSO of Changing Export Correction factor calculation

The following is an estimate of the cost of setting the REFIT R-Factor calculation such that it is based on Available Power rather than as currently calculated on metered generation (MG) or market schedule quantity (MSQ).

There would be broadly 3 different times when the Available Power would diverge from the MG and/or MSQ.

1. When a non-firm behind an export constraint needs to be restricted in its output (assuming option 3 in the SEM-09-073 consultation is implemented)
2. When a firm or non-firm wind farm has its MSQ scaled back proportionally so that during an excessive generation event (i.e. more variable price taker than min demand taking into account minimum generation levels)
3. When a firm or non-firm wind farm is dispatched away from its MSQ for example for ramping, inertia, voltage control, economics of starting thermal plant or other system reasons.

IWEA has always expected that there should not be compensation for item 1 above (since generators had the choice of not connecting until their deep reinforcements were ready), but that there should be payment for items 2 and 3, at least for all wind farms needed to meet the 2020 renewables target. That payment should also be floored by REFIT (since the market price is likely to be zero or negative during these periods). The question therefore arises as to whether it would be a significant cost to the PSO if this principle was to be implemented. The price would likely consist of the REFIT floor (around €65/MWh in 2008 money terms, plus the 15% supplier uplift of €10/MWh). Only in years where the SMP was low enough that the REFIT floor was being called on would the 6.5c/kWh come into play, but the 15% would be payable on the curtailed energy every year. Current indications are that fossil prices will cause the SMP to be well above REFIT by 2020.

In order to estimate the volume, Pyory published their Implications of Intermittency report recently in which they studied the question of how much wind is "de-loaded". Their list of reasons for what might cause this includes both excessive generation, economic dispatch of thermal plant, or transmission constraints. As such it includes all scenarios listed above, including point possibly some non-firm constraint. It can therefore be considered a worst case number (since in practice some transmission constraints would not be paid for and the total bill to the PSO would be lower).

The total cost to the consumer would be the REFIT price times the volumes identified by Pyory as shown below:

Year	Pyory Deloaded (GWh)	Cost to PSO low SMP year (€/annum)	Cost to PSO high! SMP year (€/annum)
2010	0	0	0
2015	34	2.5	0.3
2020	287	21.5	2.8

Note: Pyory do show higher amounts of de-loaded wind in 2025 and 2030, (and many REFIT contracts will remain in force in that period), but this lost energy is as a result of an assumed further 2GW of wind is installed in Ireland. This would be in well excess of current 2020 targets, and curtailment for this level of installation is another day's discussion.

The discussion above was worded for REFIT, as this is likely to be the support scheme for 80% of the wind generation installed to meet 2020 targets, and most AER contracts are likely to be concluded before 2020.

DRAFT