

IWEA response to the SEM Committee consultation on:

**Treatment of Curtailment in
Tie-Break Situations**

24 May, 2012

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1. Executive Summary

IWEA welcomes the SEM Committee consultation and the opportunity to review the allocation of curtailment which is a critical matter to be addressed to provide a stable policy framework to allow the wind industry move forward. IWEA continues to contend that linking curtailment to firm access will result in the required level of new wind not materialising which will negatively impact the consumer and prevent both Ireland and Northern Ireland from reaching their 2020 renewables targets.

Energy policy must reflect legal obligations under the RES-E Directive and the response to this consultation, while focused on the allocation of curtailment, would be incomplete without highlighting the urgent need to advance progress on mitigation measures to minimise and reduce curtailment. Mitigation measures are crucial in realizing the full cost and social benefits of the investment in renewable energy. IWEA's position remains that all generators should be compensated for curtailment and we will strongly resist any move to reduce or remove the levels of compensation to generators for curtailment. Our proposal accepts the limited compensation under the current market rules at this stage, but we would like it clearly noted that this does not alter our position that all curtailment should be compensated.

IWEA's analysis and independent assessment of a number of scenarios provides important evidence of the negative consumer impact of grandfathering curtailment. The understanding of this evidence is a key component of any regulatory impact analysis.

IWEA contends that the following principles are fundamental to the delivery of an option that will match all the decision making criteria as set out in the SEM Committee consultation paper:

- There is a need to break the link between firmness (FAQ) and curtailment.
- Any policy decision should at the very least allow 2020 targets to be achieved.
- A risk of overbuilding well past targets could represent a difficulty in obtaining finance.
- It should be recognised that with the trajectory towards the EU Target Model and the current uncertainty as to the future market structure, it may be difficult to set curtailment allocation policy past 2020.
- A scheme should ideally adapt to changing policy (e.g. introduction of 2030 targets) and changing technical environment (e.g. curtailment mitigation measures, increases in demand or new technology).

IWEA proposes that the most appropriate means of both achieving targets while minimising costs to the customer, is a variant of the proposed Option 3. The core principles of this option are as follows:

- A. There should be a tranche of projects required to deliver the MW required to meet the 2020 targets in each jurisdiction independently, which would be curtailed for the operational lifetime

of the project on a pro-rata basis. These projects would be protected from higher curtailment as a result of further connections.

- B. Any projects connected and exporting power by a cut-off date (no earlier than 1 January 2018 or at a later date if targets are unlikely to have been met by this time), will be in this first tranche.
- C. This tranche could in principle grow in size, but in a controlled fashion as curtailment mitigation measures arrive such that its projects do not incur higher curtailment than would otherwise have been expected.
- D. The treatment of new projects post the achievement of the 2020 targets will need to be defined at a later date.
- E. Projects being developed explicitly for export should not add to the curtailment of projects that contribute to 2020 targets.

2. Background to the Irish Wind Energy Association

The Irish Wind Energy Association (“IWEA”) is Ireland’s leading renewable energy representative body representing more than 250 members involved in wind energy development in Ireland and also in Northern Ireland, through NIRIG, set up in collaboration with Renewable UK. IWEA represents members with projects across the spectrum, in operation, under construction and awaiting connection. In Ireland IWEA members are involved in the majority of pre Gate 3 connected projects but also involved in more than 85% of the MW of contracted projects in Gate 1, 2 and Gate 3.

Through NIRIG we represent more than 25 company members that have developed over 85% of renewable generation operational in Northern Ireland today and who will contribute a significant majority of renewable energy required to deliver the 2020 targets.

The IWEA membership base includes all large, medium and many small developers as well as financial, legal advisory, consultancy, contractors and other service providers involved in the renewables sector in Ireland and Northern Ireland.

3. Context for Our Response

The IWEA response to this consultation is focused on the questions posed, primarily regarding the allocation of curtailment to wind energy generators. It is important however to note that our position on the issue of allocation is recognised as sitting within the overall context of the policy framework surrounding curtailment in its entirety and we wish to reiterate the following in that context:

- 1) Up until December 2011, there existed a reasonable expectation that curtailment would be allocated on a pro-rata basis. This fact is acknowledged in the consultation paper itself, which states “it is clear from the ‘Scheduling and Dispatch’ consultation process that up until SEM-11-063 the SEMC favoured a pro-rata approach to tie-break decisions”.
- 2) The focus within the RAs needs to be strengthened in relation to the minimisation of curtailment and an overall strategy and plan needs to be put in place. Minimisation of curtailment includes and extends past the DS3 programme.
- 3) The RES-E Directive outlines a number of obligations on the member state to enable the integration of renewable energy and to minimise curtailment and these need to be recognised.

3.1 History of the Consultation Process

It is important to recognise that the treatment of curtailment has existed in somewhat of a policy vacuum for some time however it has been acknowledged for almost 10 years now and indeed has been an item under consultation for more than four years.

The 2003 Garrad Hassan report for the RAs detailed the impact of increased levels of wind penetration on the Irish and NI Systems. Although its conclusions have been superseded by more accurate modelling work, it highlighted that curtailment would be a material issue at high penetration levels – “*At approximately 4000 MW of wind generation, the curtailment of the last wind turbine will be such that it will operate for only a few hours per year*”. The 2010 System Operators ‘Facilitation of Renewables’ studies highlighted that curtailment levels of 5% could be expected at the levels of renewables required to meet the renewable targets.

At no stage over this 10 year period was the industry made aware of any proposals that curtailment would be grandfathered. In fact, any analysis presented on curtailment over this period had been on the basis of pro-rata figures, for example the 5% referenced in the above paragraph is a pro-rata figure. EirGrid’s Gate 1 and Gate 2 constraint reports did propose that constraint would be grandfathered but there was no reference to curtailment in these reports.

In the SEM Committee ‘Wind in the SEM’ consultation from 2008 to August 2011 the allocation of curtailment is proposed as pro-rata on numerous occasions as outlined below:

- *SEM/08/102 - recognised that Tie-break rules are required.*
- *SEM/09/073 - proposed de-loading of wind generation done on a pro-rata basis.*
- *SEM/10/060 - proposed de-loading of wind generation done on a pro-rata basis, both constraint and curtailment*
- *SEM/11/062 –notes that firm access and curtailment are not related.*
- *SEM/11/063 - proposed curtailment was to be carried out on a pro rata basis.*

In December 2011 a decision was issued from the SEM Committee indicating that curtailment would be grandfathered based on firm access.

Given the history of this issue IWEA's clear view was that proposals to pro-rata curtailment would be endorsed by SEM Committee given that no other proposal was presented in the long history of this consultation process.

Given that the SEM Committee decision on the 21 December 2011 was divergent to that consulted on, IWEA commissioned a detailed and thorough impact analysis and with this result, our membership believe the decision was seriously flawed. The impact of this decision was so significant that it would lead to serious issues in both jurisdictions and would prevent Ireland reaching its legally binding EU RES targets by 2020. For example our impact analysis shows that non-firm and partially-firm projects will be facing curtailment levels of more than 23-26% in Ireland in 2020 with projects in Northern Ireland even higher at 28-33% with also significant impacts in the short term where curtailment is an even greater burden. Curtailment of this magnitude will render non/partially firm wind projects completely unviable and would be hugely detrimental to the entire sector.

IWEA appreciated the opportunity to present this new material evidence as shown in our analysis to the SEM Committee in February 2012 and welcomes the re-opening of this important consultation for further consideration.

3.2 Curtailment mitigation

IWEA would like to note that in any analysis of the treatment of curtailment, the best overall solution to this problem is the minimisation of curtailment.

In the years up to 2020 there are a number key initiatives that are all underway which are required and indeed expected to deliver significant results in curtailment mitigation. These initiatives include:

- Increasing DS3 limit to 75%
- Decreasing levels of must-run generation
- Effective operation of interconnectors to export at times of high wind

Post 2020 there are a number of key areas also which will also contribute positively to curtailment mitigation. These include:

- Further interconnection
- Storage
- Demand side management including electric transport and heating

While some progress is being made with these initiatives IWEA are concerned with the lack of urgency on some mitigation measures and contend that the market must reflect and reward participants who provide services to facilitate renewables in line with the responsibility as set out in the RES-E Directive (Directive 2009/28/EC).

The RES-E Directive outlines a number of obligations on the member state to enable the integration of renewable energy and to minimise curtailment. Article 16.2(c) states:

*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. Member States shall ensure that **appropriate grid and market-related operational measures are taken in order to minimise the curtailment of electricity produced from renewable energy sources**. If significant measures are taken to curtail the renewable energy sources in order to guarantee the security of the national electricity system and security of energy supply, Members States shall ensure that the responsible system operators report to the competent regulatory authority on those measures and indicate which corrective measures they intend to take in order to prevent inappropriate curtailments.*

It is absolutely essential that this obligation is given due consideration and that there is attention paid and sufficient engagement on the processes involved to ensure curtailment levels can be mitigated.

While IWEA welcomes the RA's support for the DS3 programme in the consultation paper it is important to recognize that minimization of curtailment extends past the important DS3 programme. Although EirGrid have a detailed plan for the implementation of DS3 there is no overall strategy that coordinates the implementation of all mitigation measures required to reduce curtailment. IWEA believes that a stronger emphasis should be placed on this area and that the regulators should play a more active role in ensuring that curtailment is mitigated as required by the RES-E Directive. Incentives should be introduced to ensure curtailment mitigation measures are introduced in a timely manner.

3.3 RES-E Directive obligations

It is important to recognise that we are all working towards a 2020 target of 40% renewable generation and we need to collectively act to ensure the attainment of this mandatory target in the most efficient and cost effective way.

As previously outlined, the RES-E Directive outlines a number of obligations on the member state to enable the integration of renewable energy and to minimise curtailment. The principles of priority dispatch and access are set out in Directive 2009/28/EC of 23 April 2009 (the “Directive”, as transposed in Ireland by S.I. No. 147 of 2011).

In recital 60 of the Directive it states 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.

Recognising the intent of the Directive, it is imperative that all stakeholders work to better optimise the grid to deliver the full benefits of the renewable targets and to minimise the inefficiencies of the investments that have been and are being made in renewable generation capacity. Having reviewed the recitals to the Directive 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.

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. Article 16.2(c) also states that Member States need to ensure that dispatching renewable electricity generating installations is carried out using transparent and **non-discriminatory** criteria. IWEA would challenge if Option 1 satisfies this criteria.

It is important to note that the Directive stresses the need to take into account the holistic costs of generating electricity and also that the main policy objectives are not simply economic but also include environmental, social and healthcare issues as set out above. To this end we would draw your attention to recital 61 above which suggests that financial compensation may be paid if renewable energy generators are curtailed for the safe and reliable operation of the grid. The underlying assumption is that curtailment should not happen other than in these circumstances. This underlying assumption however would provide a case for compensation for curtailment when curtailed inappropriately or unfairly or on a discriminatory basis.

The intent of the Directive clearly recognises that the costs of curtailment should not act as a barrier to entry for the connection of renewable generation.

4. Inconsistencies in Consultation Paper

IWEA would like to raise a number of inconsistencies with regard to previous SEM Committee decisions and recommendations in the context of this consultation paper.

- 1) IWEA believes that consistency of treatment for constraints and curtailment is not an appropriate criterion for assessing the different options. The consultation paper seems to infer that constraint will only be allocated using grandfathering based on firmness. As per SEM-11-105 the SEM Committee have decided that some regions will have constraints grandfathered and in other regions pro-rata used. The precedence of the constraints decision infers that it is possible to differentiate the treatment of constrained units and as such IWEA does not see the relevance of this criteria and position with respect to curtailment.
- 2) IWEA is very surprised that option 4 has been brought forward by the SEM Committee at this stage. This proposal to not compensate a certain class of generator that is in the market schedule but is not dispatched would be a fundamental redesign of the SEM principles and rules. This aspect of the structure of the market schedule was discussed in detail in the wider “Wind in the SEM consultation” and as recently as the August 2011 decision the SEM Committee decided to not change the structure at this stage. Regulatory stability and certainty is key for any sector not only wind energy and this proposal resurfacing in a consultation paper having just been closed by the SEM Committee only a number of months ago is highly concerning for a sector with such significant potential looking to encourage investment.
- 3) In the SEM Committee review of the pro-rata option 2, it is stressed that it is the combined levels of constraint and curtailment that will make non-firm windfarms unviable. This is not necessarily the case for many Gate 3 windfarms in ROI. EirGrid’s PGOR reports have shown that for many areas constraint will reduce to zero before the projects are ready to connect, and in many cases long before their firm date. This is due to the conservative approach to the allocation of firm access compared with actual constraints.

The same is true for NI where the SONI consultation on firm access indicates that in the majority of cases that constraint levels will be insignificant (<1% in some cases) when compared to significant projected curtailment figures.

Therefore constraints are not always a material issue for non-firm windfarms but the project could still be unviable if curtailment is grandfathered based on firmness.

- 4) In Option 2, criteria 5 it states that constraints is a network issue whereas curtailment is a market issue. Curtailment like constraint is an electrical issue but rather than being a network issue it is a power system issue. It is important to recognise that the EU targets are driving the construction of additional generation, not economic market forces, therefore it is unreasonable to state that curtailment is purely a market issue.

5. Consultation Analysis

5.1 *Analysis carried out by the RA's*

IWEA is aware that the SEM Committee have committed to undertaking a piece of analysis to gauge any consumer impact of a number of the options within the consultation paper.

IWEA is concerned that despite requests since publication of this consultation paper, that there is no information shared as to the scope of this analysis work, scenarios and assumptions used. IWEA commissioned an independent consultant, Redpoint Energy Limited (“Redpoint”), to carry out a significant piece of analysis looking at the impact on the consumer and has made all of the assumptions and scenarios fully available to the SEM Committee.

IWEA has on a number of occasions offered that Redpoint meet with the RA's to outline the work in much more detail and to answer any questions but this offer was not availed of.

In the interests of understanding the full regulatory impact of the proposals presented we believe

1. There should be transparency in the RA's analysis framework
2. Opportunities to address any queries re any evidence and analysis presented should be available

Given that the consultation has closed without analysis being presented, it should, as a minimum, be included as part of any proposed decision to provide transparency and demonstrate the rigor of any proposed decision.

5.2 *Redpoint Analysis*

In January 2012, IWEA commissioned Redpoint to analyse in particular the consumer impact of the Tie Break decision of December 2011.

This work was presented to the SEM Committee in February 2012. On publication of this current consultation paper IWEA has commissioned Redpoint to extend this work to include any support scheme impact and also include Dispatch Balancing Costs impact to provide a more holistic result.

The objectives of this Redpoint study were to:

- Consider the implications of a grand-fathering approach for partially firm and non-firm wind generators in the Single Electricity Market (SEM)
- Estimate the key economic impacts of different options for allocation of curtailment in 2020

Redpoint have sought to quantify multiple consumer impacts in 2020 for the three scenarios modelled:

1. Market Schedule & wholesale price impacts

- Higher penetration of wind reduces wholesale prices in the SEM where it displaces plant with higher short run marginal cost
- 2. Dispatch Balancing Costs
 - Increasing the output of conventional generators to replace curtailed wind leads to higher constraint costs
- 3. PSO support costs
 - REFIT payments to wind generators in ROI are a function of market revenues and post-curtailment output levels

The results of this analysis are outlined in the following sections and the full report is included as an addendum to this paper. As always, IWEA remains available as do Redpoint to fully discuss any aspects of this study in more detail.

5.2.1 Curtailment Study – Scenario Definition

The Redpoint study has focused on three key wind build out rate scenarios in its analysis:

- **Scenario 1** –grandfathering of curtailment, as per Option 1 under which IWEA extensive analysis outlines that only ~26% of electricity will be reached from wind energy by 2020 as under this scenario projects build at latest of Calculated Operational Date (COD) and FAQ. (Firm Build Only)

This scenario will result in 3983MW of wind generation on the island, approximately 744MW in Northern Ireland and the remainder in Ireland.

Note due to the limitations under this Option there will only be approximately 26% of electricity from renewable sources, well short of the required 40% target in both jurisdictions.

Please see section 7.1.5 on firm access where further information is supplied on the levels of firm access that we believe will be available by 2020

- **Scenario 2** –pro rata of curtailment, where we believe the target can be reached.

This scenario will result in 5250MW on the island, enough to reach the target in both jurisdictions.
- **Scenario 3** –grandfathering of curtailment, as per Option 1 where **for illustration purposes only in the Redpoint analysis**, we are showing the impact on only one year 2020 of reaching the target on a mainly firm only basis. Note we do not believe that this level of MW is in any way achievable under this allocation ruleset.

This scenario assumes in 5250MW on the island.

The build out rates for the scenarios are illustrated below.

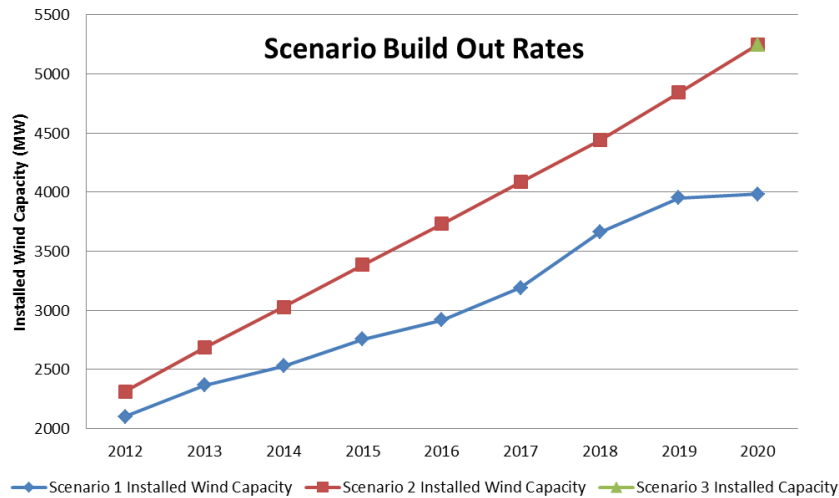


Fig. 1: Scenario Build Out Rates used in Redpoint's analysis.

5.2.2 Curtailment Study Results – ROI

The evidence is clearly there that there is not enough firm capacity to deliver targets under grandfathering and following analysis by Redpoint, under this option we are seeing that if the projects did deliver in a non-firm world they would experience curtailment from 24-28.5%, please see figure below. However a pro-rata approach will give a signal for some non-firm to build and will allow targets to be met.

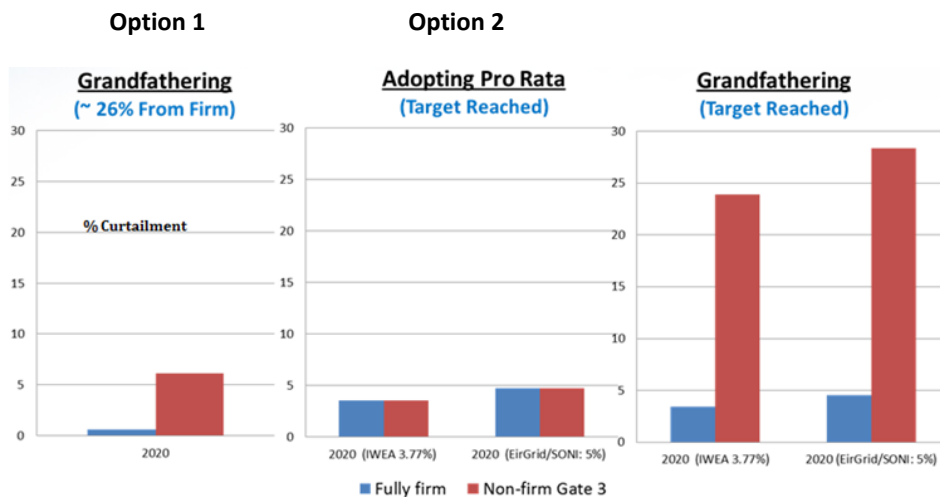


Fig. 2: Impact of Curtailment on Ireland

5.2.3 Curtailment Study Results - NI

The same holds true for Northern Ireland where Redpoint have shown that under Option 1 if projects did deliver in a non-firm world they would experience curtailment from 23-28%. See figure below.



Fig. 3: Impact of Curtailment on Northern Ireland

5.2.4 Curtailment Study Results – 2020 (ROI& NI)

Under Option 1, what is very clear from Redpoint’s analysis is that once total curtailment exceeds approx. 3%, all non-firm categories experience prohibitive levels of curtailment. IWEA believes that with such high levels of curtailments projects will not build until they are firm.

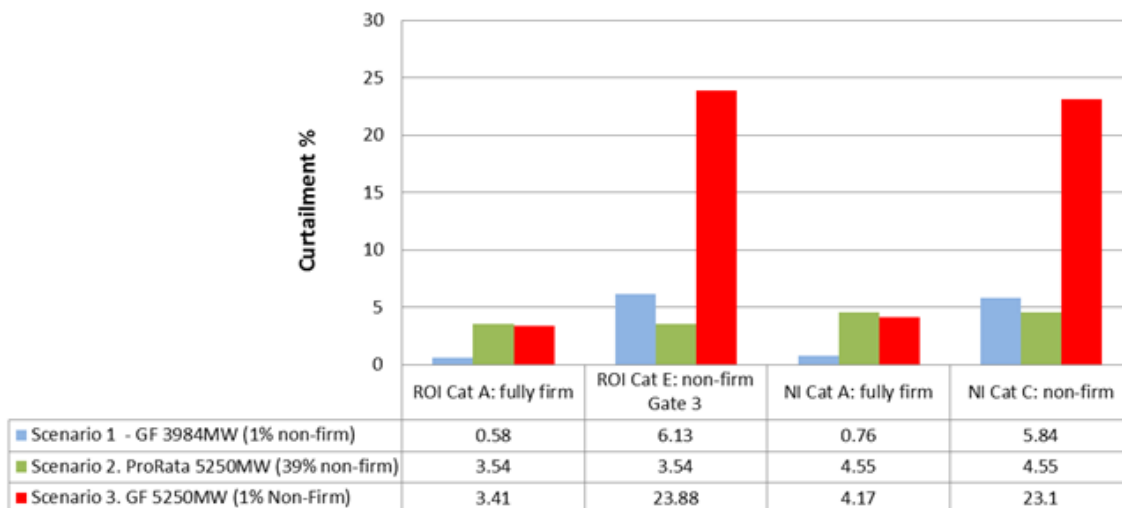


Fig. 4: Summary Results for 2020

5.2.5 Conclusions - Consumer Impact

The detailed analysis from Redpoint clearly shows when comparing the scenario's in 2020 the estimated net consumer impacts are shown below:

Scenario	Curtailement option	Wind RES-E	Impact on wholesale prices of lower wind capacity (€M/yr)	Impact on wholesale prices of non-firm curtailment (€M/yr)	Wind replacement cost (€M/yr)	PSO wind REFIT cost (€M/yr)	Estimated net impact (€M/yr)	Estimated impact relative to Scenario 2 (€M/yr)
1	Grand-father	~26%	+68.7	+0.2	+4.5	+46.9	+120.3	+42.0
2	Pro-rata	~35%	-	+5.7	+27.6	+45.0	+78.3	-
3	Grand-father	~35%	-	+0.8	+42.3	+45.0	+88.1	+9.8

The results of the Redpoint analysis conclude that:

- Option 1, i.e. grand-fathering based on firm access (as per the SEM-11-105 proposed decision) could inhibit financing of non-firm generators subject to material levels of curtailment
 - This could compromise meeting 2020 RES-E target
- Redpoint's analysis indicates that the pro rata approach leads to lower consumer costs in 2020
 - If there was no investment in non-firm generation, net costs to consumers in 2020 are estimated at ~€42M/year (comparing Scenarios 1 and 2) as wholesale price increases are likely to outweigh savings from replacing curtailed wind
 - Sensitivity analysis implies that average SMP levels would need to fall by more €20/MWh and replacement costs rise by more than €10/MWh for additional PSO and curtailment costs under Scenario 2 to outweigh the potential wholesale price benefits of meeting the RES-E target
 - Further modelling could be conducted to quantify consumer impacts in more detail, but the analysis conducted in this study suggests that the direction of the effect is clear

6. Financial Framework

It is clear that Ireland needs to attract significant funding to deliver the renewables targets on an all-island basis. This funding will now come from both raising debt and access to equity finance. Many specialist renewables energy funders are deploying their capital across Europe and it is important that Ireland continues to retain its share of this funding. It is clear that for existing and future funding institutions to remain active in the Irish market place, the regulatory arrangements underpinning the SEM, need to deliver a stable policy and investment environment to achieve an acceptable level of certainty on future cash flows for future and existing projects. Any retroactive regulatory policy will significantly affect the perceived risk around the market and therefore the risk premium for investors seeking financing.

As a result of the economic crisis in Europe capital markets are constrained, the flow of capital across almost all sectors has been damaged and this is even more evident in those sectors that have perceived or actual poor regulatory practice. The wind sector across Europe remains relatively unscathed at present however capital is mobile and will move to markets that provide the greatest certainty for long term investment. To date, Ireland has done well in securing our requisite share of capital to deliver the required sector growth, however for future investment to be achieved and, based on the prevailing economic condition, financial institutions now more than ever need to be able to quantify future capital risk.

IWEA is of the view that any proposed decision taken by the SEM Committee should have regard to assisting developers, investors, financial institutions and utilities bring needed capital into the industry. This is the reality of what is required if we are serious about meeting targets in both Ireland and Northern Ireland.

The correct option for the allocation of curtailment needs to deliver market clarity and from this will flow investor confidence and hence project finance.

An input to this consultation is the considered views of the long-term investors who are now actively examining Irish projects which will allow the industry to meet targets. It is clear that curtailment is a challenge for the industry and, if it cannot be reasonably quantified and predicted over the longer-term, then the key long-term investors needed to deploy capital into the Irish and Northern Irish markets will simply deploy their capital elsewhere.

It is important to also recognise that there can be no question of any of the options representing a retrospective change. There has been at worst a policy vacuum in this area. It would not be appropriate for certain groups of projects to seek retrospective benefit, for example by grandfathering particular operational projects, which had no reasonable expectation of being 100% protected from curtailment caused by future build.

It is also important that the materiality of any impact of a preferred solution is understood. IWEA is of the view, in line with the SEM Committee, that all participants need to have regard for the bankability of

generation investments. This can only be achieved if participants take a holistic view of the appropriate criteria to guide a stable policy and regulatory framework.

This output of this consultation process should deliver a strong signal to the market place that regulatory certainty has returned, curtailment risk can be reasonably quantified and Ireland and Northern Ireland are committed to meeting their targets at least cost to the consumer.

7. Assessment of Options

7.1 Option 1 – Grandfathering

IWEA is strongly opposed to the allocation of curtailment by grandfathering with respect to firm access. Curtailment is a system wide issue caused by excessive generation compared to demand, or for reasons of system security. Firm access is determined by the development of grid infrastructure and therefore has no connection to the issue of curtailment. IWEA believes that linking curtailment to firm access is inappropriate. We believe that curtailment is a system/market issue and should be addressed as such.

There are a number of reasons for this which are highlighted in the following sections.

Common to all the impacts below is IWEA's view that non-firm generators will simply be unable to build if curtailment is grandfathered to protect firm projects. Our modeling has shown that if overall curtailment levels of 3-5% are required, non-firm projects will experience over 20% curtailment, which will effectively prevent them from constructing.

7.1.1 Impact to Existing Projects in ROI

The introduction of grandfathering linked to firm access is likely to have a detrimental impact on projects that have already built and connected on a non-firm, partially-firm or temporary basis. These projects had no way of anticipating that curtailment would be allocated based on firm access at the time of investment. These projects would be the first to be curtailed in all situations and without compensation may experience significant project financial risk. This outcome would send a very negative message about the industry to potential investors. Having created high levels of investor uncertainty, it would have a serious impact on the future investment pipeline, and would not fulfil the criterion of a stable investment environment.

- Approximate Status of Existing Connected Projects in ROI
 - 374 MW – Older Generators not expected to be controllable due to project size and derogations
 - **85 MW - Temporary connection**
 - **133 MW - Gate 2 & 1 non-firm**
 - **98 MW - Partially firm**
 - 921 MW - Firm Access

- EirGrid have confirmed that average curtailment for 2011 rose to almost **2%**
 - Some windfarms experienced > 10% of constraints/curtailment in 2011.
 - Though we do recognise that only 626 MW (approx. 40%) of connected wind-farms were controllable in 2011, we acknowledge that work is ongoing to ensure that all wind farms that should be controllable are controllable so this number should increase by the end of 2012.

- Modelling conducted by IWEA members suggests that under the Grandfathering option (Option 1), assuming an average curtailment of just 2%, the immediate impact could be as follows:
 - Non-firm Gate 1 & 2 - curtailment of up to **9%**
 - Temporary connections - curtailment of up to **13%**

Without any reservation we see a severe and immediate impact on existing non-firm or partially-firm projects. There would also be a serious impact on projects that are ready to invest as investment to date is undermined by the decision. It is noted that a significant number of projects that were ready to go are now on hold. These projects represent over €500 million of investment. They are potentially being subjected to a massively unstable investment and regulatory environment. The investors in these projects will be the same investors asked to invest further in the Irish power generation market in the future. In short, in making this decision it is imperative that the Regulatory Authorities instil confidence in the regulatory arrangements and environment for investors such that it will guard the long-term interests of the market, its investors and ultimately its customers.

7.1.2 Regulatory Impact

Option 1 is very clearly **not** in compliance with the overall SEM market design. The SEM High Level design¹ clearly states that the market facilitates a generator to

“connect prior to the completion of deep reinforcements.”

This is also supported in the Market Connection Policy² which clearly states that

¹ AIP/SEM/42/05 - Single Electricity Market High Level Decision Document-10th June 2005

² AIP/SEM/114/06 – Single Electricity Market Generation Connection Policy, Decision Document-September 2006

“an amount of capacity that is physically firm and an amount that is physically non-firm”.

The SEM market has clearly strongly supported non-firm connection policy where in fact >90% of all offers in ROI are made on a non-firm basis. PGOR reports sent a clear market signal to build when constraints peaked and reduced to nearly zero, resulting in a project’s financial status becoming “sufficiently firm”. FAQ dates are often completely unrelated to “sufficiently firm” dates in PGOR reports.

It is also important to note that as recently as August 2011 the SEM Committee concluded in the Dispatch and Scheduling decision document³ that firm access and curtailment are unrelated.

*“The SEM Committee highlights that the generators who are the subject of this discussion are Price Takers and that, therefore, a tie break exists from a price perspective. However, **the SEM Committee also notes that firmness, whilst having a financial meaning in the SEM, is derived with reference to the physical ability of the network to accommodate output under normal circumstances and not with reference to system operator decisions regarding ‘curtailment’.”***

In summary, the guiding principles of SEM include the provision of non-firm access. This option clearly re-addresses these rules. Creating an arbitrary artificial link between firmness and curtailment leads inevitably to inefficient results whereby low constraint projects with a late firm date can’t build and high constraint projects with an early firm date can’t build. Regulatory certainty and stability is key for this sector to be able to function.

7.1.3 Development Reality

Linking firmness to curtailment does not reflect the wind energy industry development reality. Windfarm development is based on delivering several key components in parallel e.g. Grid, Finance, Planning, Land access etc. Should a project then have to wait for firm access before it could proceed it will be faced with a number of significant challenges including but not limited to:

- Expiring planning permissions
- Resource capability to deliver will be absent
- Increased uncertainty
- Very limited development
- Investment goes elsewhere

³ SEM/11/062 – Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code August 2011, pg 26

- “Stop Start” delivery

It is important to recognise clearly that firm access does not consider:

- planning consents
- project funding
- shallow grid connection costs and timelines.

From a project development reality, **linking curtailment to firm access is inappropriate.** Firm Access is not an appropriate filter to determine the health and status of a viable project.

7.1.4 Insufficient Quantity of Firm Access to meet 2020 Targets

IWEA has used a number of published information sources when reviewing the quantity of firm access that maybe available between now and 2020 which are outlined below:

- January 2010 - Gate 3 FAQ dates (based on 2009 Grid 25 build programme).
- Dec 2011 - EirGrid published Gate 1 and 2 FAQ dates (based on 2011 view of grid build).
- May 2012 – further uncertainty presented by EirGrid on actual Firm Access levels for connected, contracted and Gate 3 projects.
- Currently 1631MW operational (approx 921MW is firm) in ROI and 400MW in NI.
- NI firm dates are based on October 2011 SONI consultation document.

Following review by IWEA we believe that in both Ireland and Northern Ireland there will not be enough firm capacity in place by 2020 to deliver projects or reach targets with the grandfathering option.

EirGrid stated at their customer forum on the 17th May 2012 that the current available firm access is roughly as follows:

Gate 1 – 90% firm

Gate 2 – 50% firm

Gate 3 – 10% firm

This information shows that a decision to allocate curtailment by grandfathering with respect to firm access would mean that only 10% of Gate 3, assuming they have all other development requirements in place such as planning, finance, land etc., would currently be able to connect to the system without being subjected to prohibitively high levels of curtailment. If the wind industry is to be able to develop with a view to meeting the 2020 targets and beyond under this option, there would need to be significantly more firm access available on the system. As the

Gate 3 FAQ analysis is being re-run, there is currently no clear indication of the amounts of firm access that will be available in sufficient time to enable projects to build to meet the targets, and when the dates do become available, there are no assurances that these dates will actually be met. However what we do know is that EirGrid have updated industry that the present ITC run is showing less firm access available than what was available in the previous run in 2010. This is mainly due to delays to infrastructure timelines, up-rating schedules and demand.

Infrastructure delays

While IWEA fundamentally disagrees with linking curtailment to firm access as a principle, there are other concerns relating to firm access that we would like to highlight. The delivery of firm access is beyond the control of the developer and therefore the associated risk cannot be managed by a developer. Infrastructure delivery is a challenging process and there is always a risk that the timelines for infrastructure build will be delayed.

A recent example of this was a communication from EirGrid in February 2012 outlining a revised schedule for a number of 220kV transmission stations planned in the South West showing delays up to 2/3 years for some connections. There are approximately 30 wind farms connecting into these stations, and this is likely to have a significant effect on their connection timeline.

The communication noted that customers may be impacted in one of three ways:

1. The station may form part of their shallow connection method for a project and as such the energisation date of the customers project could be delayed.
2. The station may form the permanent connection for a customer currently on a temporary connection.
3. The station may be an associated deep reinforcement for a project thus delaying the date that the project is deemed firm – if it is the longest lead time.

Another recent example that clearly illustrates the risk of delays to deep reinforcements and FAQs in Ireland and Northern Ireland is the delay to the new 400kV North-South interconnector. In EirGrid's 2010 Gate 3 FAQ analysis it was assumed that the North-South interconnector would be in place in 2012/13 but it is now scheduled for 2016/17 at the absolute earliest. A delay that has a significant impact on a large number of projects to connect between now and 2020 in both jurisdictions.

Taking the above evidence on board IWEA has developed a likely view of the amount of firm access that will be available in 2020. Given experience to-date in the delivery of grid infrastructure, IWEA is of the view that this is a credible forecast and that any regulatory impact analysis needs to both recognize the delays in delivery of firm access and take them into account.

IWEA has reviewed the deep reinforcements associated with each wind farm project. The deep reinforcements for each project were categorised as being low, moderate or high risk. Low, moderate and high delay scenarios were then associated with the deep reinforcement

categories. For example a windfarm associated with a new 110kV circuit was categorised as medium risk. The scheduled timeline to complete the new 110kV circuit would be 5 years. Delays of 2 years (low), 3 years (medium) and 4 years (high) were assumed in the analysis. When you consider that works on new 110kV circuits in both West Galway and Co. Donegal started in the mid 1990s and are now only scheduled to be complete in 2013 and 2014, a timeline of 9 years under the high risk is still reasonably optimistic.

It should be noted that FAQ and curtailment levels are only two of many factors that have to be in place before a project can commence construction. To clearly illustrate this point there are pre-gate windfarms that have had grid connection offers and firm access since pre-2005 but are only connecting in 2011 and 2012. However to ensure the analysis is conservative it has been assumed that it will take only one year for a project to connect after it has obtained firm access.

This analysis is outlined in the following graph.

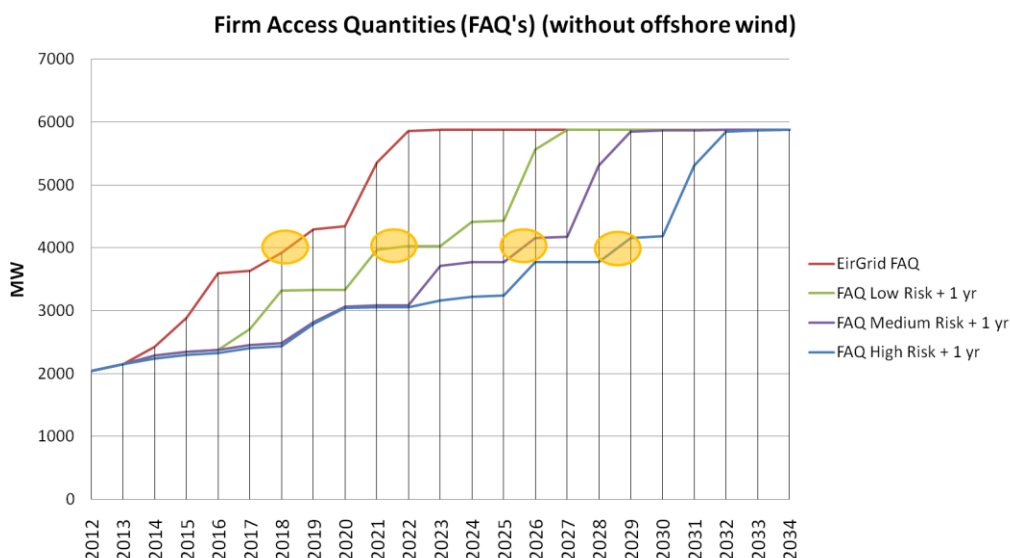


Fig. 5: Risk Analysis of FAQs for Windfarms in Ireland

Assuming it will take approximately 4000MW to achieve the 2020 renewable target in ROI, this analysis clearly shows that there will not be sufficient firm access available to achieve the target (and assuming non-firm generators find they can't build under grandfathering option). In the medium delay scenario it will be 2025 before there are sufficient windfarms connected to meet the renewable target. It should also be stressed that this analysis is conservative.

From a review of firm access in Northern Ireland it is very clear that there is not sufficient firm access to achieve the 2020 renewable targets. In SONI's Connection Process consultation in October 2011 the analysis of FAQs for windfarms concluded that there is only 730MW of firm access for windfarms after NIE complete their medium term 110kV works. As the majority of the other windfarms with planning or in the planning process are in the West of Northern Ireland, these projects will not receive firm access until some or all of the Renewable Integration

Development Programme (RIDP) 275kV works are complete. Based on the same risk analysis as carried out for Ireland, it will be 2024 to 2029 before these projects receive firm access. If no more than approximately 800MW of onshore windfarms can connect before 2020 it will be very difficult to achieve the 2020 renewable targets in 2020. Considering that approximately 1600MW of renewables could be required to meet the 2020 target in Northern Ireland it would be completely inappropriate at this early stage for this decision to restrict the other 800MW to being met by other forms of renewables.

7.1.5 Poor Utilisation of Grid 25 Infrastructure

Wind farms connect to the grid when (assuming all other permits are in place) their predicted constraint levels have dropped to a manageable level as a consequence of grid reinforcements coming online. They have to date been disinterested in their actual firm date. In many cases the 2010 PGOR reports indicated that constraints had dropped to 1% anywhere up to 8 years before the project's scheduled firm date. The effect of using firmness to grandfather some projects in a curtailment situation would result in projects that could otherwise build waiting until their firm date until they proceeded to construction. This would effectively mean that although EirGrid or SONI had completed sufficient reinforcements to bring constraints below 1%, this infrastructure would not be utilized until every last reinforcement required to make the project firm had been completed. This would appear to be a very inefficient use of expensive and long lead time Grid 25 infrastructure.

7.1.6 Specific Northern Ireland Impacts

All of the above key points relate equally to Ireland and Northern Ireland. However there are also a number of significant Northern Ireland specific impacts and concerns that we feel it is important to highlight:

- **Significant shortfall with regards to NI specific target**

Northern Ireland requires between 1250 and 1600MW of wind generation to meet the 40% target as per the most recent EirGrid and SONI All-Island Transmission Forecast Statement 2012-2018⁴. Current wind generation levels are approaching 500MW. It is difficult to see under the proposed grandfathering option how this figure would exceed 800MW by 2020. This presents a significant shortfall in the development required in Northern Ireland.

⁴ <http://www.soni.ltd.uk/upload/All-Island%20Transmission%20Forecast%20Statement%202012-2018.pdf>

- **Consumer cost**

Cluster substations should be cost neutral i.e. sufficient generation should connect to ensure that in the medium term there is no cost to the consumer associated with the construction of these clusters. The Utility Regulator has already approved the concept of the consumer helping to fund clusters until sufficient generation is connected to allow full cost recovery. Grandfathering introduces a real risk that projects facing unacceptable curtailment levels will not proceed, leaving excess capacity at cluster substations funded by the consumer. In addition to this infrastructure cost, the analysis conducted by Redpoint for IWEA shows that grandfathering is more expensive for customers.

- **Negative investment signal to NIE**

Deep reinforcements have long timelines associated with design and construction. NIE needs to be given clear signals in the short term that there will be sufficient generation to justify the installation of such infrastructure. Grandfathering sends the opposite signal. Crucially, in the context of the SEM, deep reinforcement of the NI grid infrastructure is of critical importance to a significant number of ROI projects, therefore a failure to deliver infrastructure in NI may negatively impact the prospects for achievements of RE targets in both jurisdictions.

- **Displacement of investment to GB**





Great Britain has a similar but more stable regime for renewable electricity with curtailment much less likely in the short term. Many companies operating in NI have an international presence and would be confident to invest in the GB market in preference to NI. This would result in the loss of inward investment, jobs and economic activity in Northern Ireland. Redpoint analysis commissioned by NIRIG has demonstrated that renewable energy generation in NI is one of the most cost effective methods of helping to meet the UK EU energy targets and has the potential to create significant annual savings on a UK basis when compared to more expensive generation technologies. The net result of grandfathering curtailment will be reduced renewable generation in NI which would therefore be a missed opportunity to make a net positive contribution to the UK energy economy.


- **Negative signal regarding offshore development**

There is already evidence that this issue has given a number of developers cause for concern in terms of the Crown Estate NI leasing round. Offshore development provides significant wider opportunities for NI – the delivery of a local offshore project will have much wider implications in terms of developing expertise and supply chain. Grandfathering could stop development before it even starts with a “not open for business” message to the offshore development sector.

In summary, there are a number of specific significant concerns in particular for Northern Ireland in relation to Option 1 that cannot be ignored as their impact will negatively impact on the economy, the industry and the consumer in Northern Ireland.

7.1.7 Assessment criteria

	Assessment Criteria	Comment	Rating
1.	Impact on the consumer and Dispatch Balancing Costs (DBC)	Redpoint analysis illustrates a negative impact on the consumer of €42m/yr in 2020.	
2.	Facilitation of Ireland and Northern Ireland 2020 Renewable Targets	IWEA strongly believes that this option will not facilitate the Ireland and Northern Ireland 2020 renewable targets.	
3.	Efficiency of Entry Signal	A strong entry signal should not be confused with an efficient entry signal. Grandfathering clearly sends a strong signal for non-firm generation not to connect. But an efficient signal would surely not seek to artificially link the concept of curtailment to firmness.	
4.	Stable Investment Environment	This option exposes existing non-firm projects to high levels of curtailment (including partially firm, non-firm and temporary connections). There are a number of projects	

		connected to the electricity system on a non-firm or temporary basis. At the time of development these projects had no indication that curtailment would be allocated on grandfathered basis with respect to firm access. As curtailment is a system wide issue and not linked to system constraints there could have been no expectation that there would be any association between firm access and curtailment. This option is likely to have the effect of seriously damaging these projects resulting in extremely high levels of curtailment. This would be seen as retrospective step and open to challenge.	
5.	Consistency of treatment for constraints and curtailment	As outlined in Section 4 of this response, IWEA believes that this assessment criterion is not appropriate as constraints are to be managed on a grandfathered basis in some areas and on a pro-rata basis outside these areas. The treatment of curtailment under this option is not consistent with that.	

7.1.8 Summary of IWEA Position on Option 1

In summary, IWEA rejects Option 1 in its entirety for a number of reasons as outlined below:

1. Cost to the consumer:

Analysis carried out by Redpoint indicates that grandfathering curtailment will negatively impact the consumer by ~€42M/Yr in 2020

2. Balance of risk changed:

Instead of the consumer receiving the benefits of projects before they become firm (i.e. reduced SMP), they will now have to carry additional risk as project will not deliver until at least 1+ years after firmness.

3. Expected build rate will not materialise:

The risks are too high for build to materialise with significant curtailment levels for non firm or partially firm projects will not send a signal to the market to build. There will be insufficient firm access available and 2020 renewable energy targets will not be achieved.

4. SEM Design:

In contradiction to the SEM guiding principles this option does not now facilitate non-firm access.



7.2 Option 2 – Pro Rata




While the IWEA proposed Option (“Option 3b”) is our preferred solution, IWEA supports the high level principles of pro-rata allocation of curtailment for a number of reasons including the following:

- This option is easily implementable (already pro rata of constraints outside of groups).
- There is protection against overbuild as there is an argument that there are other policy levers in place e.g. REFIT, to control excess build out and effectively create a de facto cap.
- There is likely to be a natural cap on investment when predicted curtailment levels exceed a manageable amount.

Notwithstanding this, we acknowledge the perceived risk of uncapped curtailment in the event of unfettered wind development and are open to alleviating this potential risk to avoid any negative consequences for the future of the industry. We also recognize at this point in 2012 that there is particular uncertainty on curtailment levels post 2020. The period 2020-2030 represents the majority of the debt term for most new windfarms. While it is possible to estimate build rates in the next 8 years to 2020, there is much less certainty in estimating build rates post 2020.

7.2.1 Assessment criteria

	Assessment Criteria	Comment	Rating
1.	Impact on the consumer and Dispatch Balancing Costs (DBC)	Redpoint analysis illustrates a savings for the consumer of €42m/yr in 2020	
2.	Facilitation of Ireland and Northern Ireland 2020 Renewable Targets	This option will allow renewable targets to be met in Ireland and Northern Ireland as the levels of curtailment applied to new projects will not be as severe as under Option 1. Efficient projects will be able to connect ahead of their firm access dates.	

3.	Efficiency of Entry Signal	<p>This option provides a reasonably efficient entry signal as the most efficient projects are able to go ahead. There will be natural caps on the level of development associated with REFIT and market signals.</p>	
4.	Stable Investment Environment	<p>The assumption to date and throughout the consultation process has been that curtailment would be allocated on a pro-rata basis. However there is uncertainty associated with the curtailment levels beyond 2020 and this may cause difficulty for financing projects.</p> <p>However the materiality of the impact is not fully evident to date.</p>	
5.	Consistency of treatment for constraints and curtailment	<p>The comments re this criterion in Section 4 of this response state that IWEA believes that this assessment criterion is not appropriate as constraints are to be managed based on grandfathering in some areas and on a pro-rata basis outside these areas.</p> <p>However the treatment of curtailment under this option remains consistent as treatment of pro-rata is still in place.</p>	




7.2.2 Summary of IWEA Position on Option 2



IWEA is open to the introduction of Option 2, however in order to address some of the concerns associated with this option please see IWEA's alternative proposal for Option 3 in Section 8.

7.3 Option 3 – Temporary Pro-Rata

Option 3 proposes to introduce pro-rata of curtailment for generation required to meet government targets until 1st January 2018, at which stage there would be a change to grandfathering of curtailment based on firm access. The achievement of firm access is beyond the control of the generator and there is still no reliability in the firm access dates which are provided, therefore generators cannot be certain of their status when the changeover occurs. While this may provide certainty in the short term it is completely insufficient for the long-term certainty of these projects and does not significantly improve the bankability of a project. Projects are only likely to connect when they have secured firm access for the same reasons outlined under Option 1. Given the expectations around firm access and the short-term application of this Option, the de facto effect of this proposal (as presented in the consultation paper) is to grandfather curtailment with reference to firm access and therefore it has the same net effect as Option 1 (as presented in the consultation paper).

7.3.1 Assessment criteria

	Assessment Criteria	Comment	Rating
1.	Impact on the consumer and Dispatch Balancing Costs (DBC)	Redpoint analysis illustrates a negative impact on the consumer of €42m/yr in 2020. (as with Option 1).	
2.	Facilitation of Ireland and Northern Ireland 2020 Renewable Targets	IWEA strongly believes that this option will not facilitate the Ireland and Northern Ireland 2020 targets	
3.	Efficiency of Entry Signal	The consultation paper states that by linking curtailment to firm access provides an efficient entry signal to those in the connection queue. It should be noted, however, that the projects with firm access are not necessarily the most efficient projects and may not have other criteria in place such as planning, finance, land agreements. This option does not provide an efficient entry	

		signal.	
4.	Stable Investment Environment	While this option provides temporary relief to projects that have already connected and projects to connect in the next few years, there is still no certainty around firm dates and the delivery of firm access. Unless this issue is resolved linking curtailment to firm access will not create a stable investment environment.	
5.	Consistency of treatment for constraints and curtailment	<p>The comments re this criterion in Section 4 of this response state that IWEA believes that this assessment criterion is not appropriate as constraints are to be managed based on firmness in some areas and on a pro-rata basis outside these areas.</p> <p>The temporary treatment of curtailment under this option with a changeover in 2018 is not consistent with any treatment of constraint in place and so this criteria is not met.</p>	

7.3.2 Summary of IWEA Position on Option 3

IWEA does not support this option as it still links the grandfathering of curtailment to firm access and raises difficulties around the longer-term viability of projects. However IWEA notes that the paper provides scope to design this option in a number of ways (footnote 14 of the consultation paper) and in this context in Section 8 of this paper IWEA presents an alternative proposal for Option 3 for consideration.

7.4 Option 4 – Pro-rata with generators taking the risk

This option proposes a pro-rata approach to curtailment removing market compensation for curtailment. IWEA does not support this option as it removes market compensation for firm wind generators when they are curtailed. As curtailment is a risk that cannot be managed by the developer, IWEA believes that compensation is appropriate.

IWEA was shocked to see option 4 being brought forward by the SEM Committee at this stage. This proposal to not compensate a certain class of generator that is in the market schedule but is not dispatched would be a fundamental redesign of the SEM principles and rules. This aspect of the structure of the market schedule was discussed in detail in the “Wind in the SEM consultation” where as recently as August 2011 the SEM Committee decided to not change.

The 2009 consultation paper identified the potential for the market schedule to over allocate infra-marginal rents (IMRs) behind an export constraint where generator units that are ‘fully firm’ and units that are ‘non firm’ or ‘partially firm’ are co-located behind that constraint. Where the volume of generation that is in merit nationally behind the constraint and included in the market schedule exceeds what can be accommodated in physical dispatch, over-allocation of IMRs occurs.

In SEM-11-062 the SEM Committee noted that this issue was not a matter that merited immediate action. They stated that a review of the fundamental design features of the SEM may take place at some stage in the medium term in light of European electricity market target model progression however no fundamental changes to the SEM high Level Design were envisaged in the medium term regarding this issue. IWEA believes that Option 4 would be a fundamental move away from this decision as it would involve a fundamental redesign of SEM principles and rules.

It should also be noted that in the UK the Electricity Market Reform (EMR)⁵ process is moving to a position where the Government is minded to pay CfD supported plant **based on availability** where the market reference price drops below zero. There is a clear recognition that negative prices will become increasingly likely in GB as the amount of variable generation on the grid increases. As recently as 22 May 2012, Energy Minister Arlene Foster MLA, confirmed that Northern Ireland will implement a series of measures to ensure UK-wide implementation of EMR.

As stated in previous responses in the “Wind in the SEM” consultation process, IWEA believes that curtailment risk should at a minimum be shared by the wind industry and network operators and certainly not shouldered fully by the wind industry which has no control over the risk. The reasons why non-firm generators are not compensated for constraint are clear but there is no clear reason why a non-firm generator is not compensated for curtailment. Firm access and the reasons for curtailment are not related. The RAs have accepted that firmness is derived with reference to the physical ability of the network to accommodate output under normal circumstances and not with reference to system operator’s decision regarding “curtailment”. It is discriminatory for one group of generators to be

⁵ <http://www.decc.gov.uk/assets/decc/11/policy-legislation/EMR/5358-annex-b-feedin-tariff-with-contracts-for-differe.pdf>

compensated and another not to be compensated when the reasons differentiating the groups are not material to the reason for compensation. It would also put a strong financial focus on the regulators and system operators to minimise curtailment events. Market mechanisms should be put in place to remove this discrimination and ensure non-firm generators are compensated for curtailment.

The RES-E Directive (Directive 2009/28/EC) outlines a number of obligations on the member state to enable the integration of renewable energy and to minimise curtailment. 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”.*


IWEA would strongly resist any move to reduce or remove the levels of compensation to generators for curtailment. Such a retrospective change would be very damaging to investor confidence and undermine any confidence in a stable policy framework.

It is also important to set out some of the myriad of issues and factors that will contribute to the curtailment of windfarms which are outside the control of the windfarm developers, and the reasons why placing further risk on wind generators is wholly inappropriate:





- Lost revenue due to curtailment was not taken into account in the calculation of REFIT or ROC price levels, i.e. compensation for curtailment was assumed to exist. These support structures would both need to be changed to reflect retrospective market changes.
- There is substantial uncertainty on future curtailment levels during the entire financing period for the windfarm. Uncertainty on curtailment levels will be a substantial impediment to financing windfarms and therefore meeting the Government renewable targets.
- Compensating for curtailment provides an economic signal for the implementation of the mitigation measures required as per the RES-E Directive. If the cost of curtailment can be centrally collected the appropriate market products to incentivise the mitigation measures will be easier to implement. Removing this signal will remove the incentive to address the wider issue of mitigation and the optimization of the investment in renewable generation.

- The issue of curtailment has been well flagged (refer to Garrad Hassan 2003 report⁶ for the CER) so the delays in the implementation of mitigation measures cannot be excused.
- The Regulators decided to give interconnectors priority access over renewables in the August 2011 decision on the hierarchy for priority dispatch. While there is an expectation of efficient interconnectors this decision could result in higher curtailment levels for windfarms. As there is uncertainty on the effectiveness of interconnectors to facilitate export flows during times of high wind generation the additional level of curtailment cannot be quantified at this stage but the risks are substantial.
- Also as part of the hierarchy decision it was decided that some non-renewable generators would not be de-committed, i.e. be turned down to zero output during times of high renewables. This includes peat and hybrid plants. Questions have been asked if this is in conflict with the RES-E Directive requirements and notwithstanding that this decision will result in higher curtailment for windfarms.
- The DS3 programme to increase the instantaneous SNSP limit from 50% to 75% has already been delayed. The risk to delay currently only rests with wind generation.
- There does not appear to be a robust and transparent work programme to reduce minimum generation levels for conventional generators and the appropriate market mechanism to encourage new generators with low minimum generation levels with high inertia. It appears that the level of minimum conventional generators could be a major contributor to curtailment levels.
- The enforcement of grid code for conventional generators has been slow. There may also be derogations given to generators that result in high curtailment levels for wind generators.
- There is no overall strategy for the mitigation measures to reduce curtailment levels in the medium and long term. Uncoordinated work is ongoing in a large number of areas.

7.4.1 Assessment criteria

	Assessment Criteria	Comment	Rating
1.	Impact on the consumer and Dispatch Balancing Costs (DBC)	IWEA strongly believes this option does not send a signal for investment therefore the potential savings to the consumer as a result of higher penetrations of wind will not be realised. The overriding additional impacts	

⁶ <http://www.cer.ie/GetAttachment.aspx?id=abd2c93a-3227-44c0-b0ef-bc57acbb1114>

		<p>also cannot be ignored including but not limited to:</p> <ul style="list-style-type: none"> - The impacts from not exploiting our indigenous energy supply in wind and being fully exposed to imported fossil fuel prices, - Impacts of not reaching EU legally binding targets which would result in infringement proceedings and penalties - Impacts to the threat to the security of supply with such high reliance on imported fossil fuels 	
2.	Facilitation of Ireland and Northern Ireland 2020 Renewable Targets	IWEA strongly believes that this option will not facilitate the Ireland and Northern Ireland as this option places additional risk on wind generators.	
3.	Efficiency of Entry Signal	IWEA believes this option would not provide a framework for new investment	
4.	Stable Investment Environment	The removal of compensation would be seen as a retrospective step which reduces investor confidence. This would be a fundamental redesign of the SEM principles and rules	
5.	Consistency of treatment for constraints and curtailment	The proposals in this option are not consistent with the current market rules and the treatment of curtailment and so this criteria is clearly not reached.	

7.4.1 Summary of IWEA Position on Option 4

IWEA does not support this option for the reasons outlined above. In particular IWEA believes that this would be a retrospective change that would be of significant concern to investors in the market. IWEA also notes that this would go against the SEM Committee decision in SEM-11-062 not to change the market structures at this stage.

8. IWEA's Position

IWEA alternative Option 3 proposal – Pro Rata to government targets (referred to as Option 3b)

In the presentation of Option 3 in the consultation paper IWEA notes and welcomes footnote 14 of the consultation paper which outlines some alternative possibilities in relation to the proposals, including that *“grandfathering could be applied once the TSOs have indicated that the 40% targets have been achieved. Alternatively it could be applied from a certain date (e.g. 1 January 2018). Grandfathering could then apply with reference to firmness or with reference to connection date.”*

In this context, IWEA believes that a variation of the RA's Option 3 is more appropriate and this section will present an overview of the variation proposed. The IWEA position remains re the need for compensation for all curtailment however this variation to Option 3, “Option 3b”, is presented in the context of the current market rules re compensation, i.e. market compensation for curtailment for firm projects. Accepting the limited compensation at this stage does not alter our position that all curtailment should be compensated.

IWEA believes that the option of protecting the generation required to deliver government targets is the most appropriate. IWEA proposes that there should be a tranche of projects required to deliver the MW required to meet the 2020 targets which would be curtailed for the operational lifetime of the project on a pro-rata basis **irrespective of firmness**. For clarity, this tranche would also include all existing operational projects.

For the ease of implementation a date could be set that corresponds to the likely timeline of the delivery of generation required to meet the 2020 targets. This would allow developers to manage the timelines of their project more effectively to meet the required date. If the targets are unlikely to be achieved by the date, it should then be extended to enable the delivery of the required projects. It would not be acceptable to bring the date forward if developers are planning their projects to be operational by this date, as this uncertainty would create a substantial risk. This would need to be reviewed on a jurisdictional basis in advance of the date to provide a signal to more projects to build if required. If a date is set appropriately it is unlikely that there will be significant overbuild in terms of the MW required to deliver the targets. It is also important to recognize the myriad of other policy levers that are in place e.g. REFIT approval, that can also be used if required. IWEA believes that this proposal is transparent and predictable.

We note in Option 3 of the consultation document, a date of 1 January 2018 has been proposed as a reasonable proxy for when the government target will be met based on the median expectation of demand calculate by the TSOs. IWEA notes that the paper also suggests the 1 December 2018 as a possible date. IWEA suggests that the later date of 1 December 2018 would be a more appropriate date to be used.

As noted above, this date would need to be reviewed on a jurisdictional basis sufficiently in advance of 2018 to provide a signal to more projects to build if required to meet the 2020 targets.

IWEA believes that the treatment of projects that connect after government targets have been achieved does not need to be decided now, but should respect the high level principle that the projects required to deliver the 2020 targets would be protected from higher curtailment as a result of further connections. We believe it would be useful to have more visibility on the structure of the future market, how the targets are progressing, how the interconnectors are being built and used, how the export market has developed and what the longer term EU and Irish renewable policy objectives are before delivering the rule-set post the achievement of the 2020 targets. The same holds true for a future Gates, e.g Gate 4, should this be brought in in advance of reaching the targets. It is assumed that its definition and market treatment would be decided by means of further consultation.


It should be noted that this group could in principle grow in size, but in a controlled fashion as curtailment mitigation measures arrive such that it doesn't apply higher curtailment than would otherwise have been expected.




These targets would have to be associated with each jurisdiction and it should be noted that the time taken to reach the targets may be different within each jurisdiction.


8.1 The high level principles for Option 3(b) are as follows:

- A. There should be a tranche of projects required to deliver the MW required to meet the 2020 targets in each jurisdiction independently, which would be curtailed for the operational lifetime of the project on a pro-rata basis. These projects would be protected from higher curtailment as a result of further connections.
- B. Any projects connected and exporting power by a cut-off date (no earlier than 1 January 2018 or at a later date if targets are unlikely to have been met by this time), will be in this first tranche.
- C. This tranche could in principle grow in size, but in a controlled fashion as curtailment mitigation measures arrive such that its projects do not incur higher curtailment than would otherwise have been expected.
- D. The treatment of new projects post the achievement of the 2020 targets will need to be defined at a later date.
- E. Projects being developed explicitly for export should not add to the curtailment of projects that contribute to 2020 targets.

8.2 Assessment Criteria

	Assessment Criteria	Comment	Rating
1.	Impact on the consumer and Dispatch Balancing Costs (DBC)	Option 3(b) meets this criterion as it allows the build out of projects which will result in a reduced SMP, thereby providing	

		<p>savings to the consumer.</p> <p>Redpoint analysis illustrates a savings for the consumer of €42m/yr in 2020.</p>	
2.	Facilitation of Ireland and Northern Ireland 2020 Renewable Targets	<p>IWEA believes that Option 3(b) is the best solution to allow the build out of projects to meet government targets. Some projects will be able to build before full firm access is available which will allow the targets to be reached in a more timely manner.</p> <p>Concerns around uncapped curtailment are also addressed by providing protection to the projects required for government targets from higher curtailment as a result of further connections.</p>	
3.	Efficiency of Entry Signal	<p>Option 3(b) provides an efficient entry signal for projects required to meet government targets, while providing a signal for development to be considered once 2020 targets seem achievable or when further mitigation measures, regulatory policies or targets are introduced.</p>	
4.	Stable Investment Environment	<p>This option provides certainty to those within tranche 1 by providing protection from increased curtailment. There would be no retrospective changes in terms of removing compensation for curtailment</p>	

		for firm projects.	
5.	Consistency of treatment for constraints and curtailment	<p>The comments re this criterion in Section 4 of this response state that IWEA believes that this assessment criterion is not appropriate as constraints are to be managed based on firmness in some areas and on a pro-rata basis outside these areas.</p> <p>However the treatment of curtailment under this option remains consistent as treatment of pro-rata is still in place.</p>	

9. Conclusion

IWEA welcomes the opportunity to comment on this important consultation. We wish to reiterate that it is important not to ignore the issue of curtailment which exists but by effectively dealing with the issue of allocation of curtailment, it will allow the industry move forward and reach our targets appropriately.

In summary in responding to this consultation IWEA has outlined our position on the options in the consultation paper noting:

- Option 1 is strongly rejected for a number of reasons but in particular due to the fact that it will prevent renewables targets from being reached, it will have a negative impact on the consumer in the longer term and will undermine the guiding principles of the SEM.
- Option 2 would be acceptable to IWEA but we recognise that it could introduce challenges since it would be difficult to model curtailment given unknown wind installation levels after 2020.
- Option 4 is rejected by IWEA on the basis that it contravenes a fundamental strand to the structure of the SEM and the supporting support schemes. Even the threat of such a change has caused significant concern to investors in the market. It is important to note that the implementation of Option 4 would also require significant changes to market structure, something that the SEM Committee as recently as August 2011 previously rejected.
- Option 3 has merit but as drafted poses difficulties from an industry perspective. The IWEA hybrid solution, “Option 3b”, as proposed represents an industry compromise position which importantly meets all of what we understand as the SEM Committee key objectives and strikes the right balance between addressing the curtailment issue and enabling the renewables industry advance in line with Government and EU policy & targets. We believe “Option 3b” as set out can be supported by the SEM Committee and the industry as well as importantly providing the least impact on the consumer.

In conclusion we would like to thank the SEM Committee for the opportunity to engage on this issue as this consultation is of particular importance to the wind industry given the significant implications it has for the viability of the sector. We believe “Option 3b” as set out can be supported by the SEM Committee and the industry as well as providing the least impact on the consumer. Given the seriousness of the issues presented, IWEA would like to request a meeting with the SEM Committee to discuss our response in more detail.

10. Appendix

The Redpoint curtailment study is amended to this response paper.