

Single Electricity Market Committee

**Implementation of the European Target Model for the
Single Electricity Market
Next Steps Decision Paper**

SEM/13/009

15 February 2013

1. Introduction

On 24th January 2012, the SEM Committee published a Consultation Paper on Implementing the European Electricity Target Model in SEM.¹ The consultation closed on 20th April and 22 interested parties responded.²

Since the end of April, the regulatory authorities' project team has been considering the responses received and the issues raised by respondents; discussing next steps with the Department of Communications, Energy and Natural Resources (DCENR) in Ireland and the Department for Enterprise, Trade and Investment (DETI) in Northern Ireland (collectively 'the Departments') in the light of the responses to the Consultation paper; pursuing further the topics outlined in the Consultation Paper, particularly central vs. self-dispatch; and keeping abreast of and contributing as appropriate to developments in Europe, through ACER and in Great Britain, through Ofgem.

As stated in the Consultation Paper, given the overarching policy and legislative responsibilities of the respective Government Departments in Ireland and Northern Ireland in establishing the SEM and considering EU Member States' adoption of the Third Package, any decision that would lead to re-designed wholesale electricity market arrangements will be made by means of the SEM Committee making a recommendation to the Departments.

Subsequently, on 9 November 2012, the SEM Committee published its paper on Next Steps in the Target Model implementation process as a Proposed Decision (SEM-12-105a).

In conjunction with the Proposed Decision, the SEM Committee also published a report by the TSOs on the Dispatch Model for the All Island System and a review of the TSOs report compiled by the SEM RAs independent expert consultant ('dispatch reports') (SEM-12-105b,c).

Comments were invited from interested Stakeholders on the Proposed Decision and dispatch reports, in particular on the SEM Committee's recommendation to government on High Level Principles for redesign of the SEM to implement the Target Model. A total of 19 responses were received and 18 of these were deemed to be non confidential and are accordingly published with this paper.

Views expressed by respondents to the proposed decision have been fully considered by the SEM Committee in reaching its final decision as outlined in this Paper. In addition, the SEM Committee's response to the main issues raised by respondents to the draft decision paper is also published in a document accompanying this decision paper.

The SEM Committee fully understands the importance of this project to the delivery of energy objectives on the island of Ireland and as such its importance to both market participants and consumers. It is imperative that the project delivers benefits for all at least cost. We are committed to best practice in relation to project management in terms of having an appropriately resourced inclusive well planned inclusive process.

¹ See SEM-12-04

² See http://www.allislandproject.org/en/TS_Current_Consultations.aspx?article=41f5681a-ef37-41ca-ab7d-7a1bdd7db385&mode=author

We would like to acknowledge upfront the views expressed by respondents on project governance and stakeholder engagement and the importance of these to the success of the project to implement the Target Model. We are committed to clear and transparent communication between all stakeholders involved (RAs, Departments, market participants, consumers groups TSOs) as we move forward towards the 2016 implementation deadline.

In order to deliver this complex and challenging project it is critical to follow the principles of regulatory best practice including an effective consultation process that gives all stakeholders an opportunity to input their views. We see stakeholder engagement as a two way process and look forward to working with market participants in a constructive manner, whereby all parties use best endeavours to foster positive working relationships and adhere to best practice in project delivery.

Also, it is importance to establish a clear timeline that all are committed to. We have published this at the end of the paper and will expand on it in future more detailed project documentation which will be published also.

The purpose of this Decision Paper is

- to set out the SEM Committee's view on the issues raised by respondents to the consultation and the proposed decision.
- to discuss developments in the SEM Committee's thinking and its decisions on a number of issues; and
- to outline SEM Committee recommendations to the Departments on next steps in the process which, following discussion, have been fully considered and accepted by both DETI and DCENR .

Section 2 of this paper summarises the responses received on the Consultation paper and the SEM Committee's views on those responses. It also considers further issues raised by respondents to the SEM Committee's Proposed Decision on Next Steps. The paper details where particular comments and SEM Committee responses relate to the consultation paper and where others relate to the Proposed Decision

Section 3 sets out the developments in thinking since the Consultation paper was published, particularly on the issue of central vs. self-dispatch and the compatibility of a centrally dispatched market with the European target Model as well as views on a capacity mechanism and treatment of renewables. It also summarises respondents' views of these issues and sets out the SEM Committee's response to those views and revised decisions resulting from these responses.

Section 4 discusses the governance of the market integration project and project management issues, including new working arrangements being finalised with Ofgem. It also summarises respondents' views on the proposed governance arrangements and sets out the SEM Committee's response to those views.

Section 5 of this paper sets out the SEM's Committee's recommendations to the Departments on the next steps in the process of implementing the European Target Model in Ireland/Northern Ireland.

Section 6 sets out the SEM Committee's decisions on a range of issues discussed in the paper, in particular central dispatch, capacity payments, renewables and regulatory stability. Some of these decisions have been reviewed following consideration of respondents' views on the Proposed Decision Paper.

2. Summary of Responses and SEM Committee Views

The Consultation Paper asked interested parties to respond to a number of specific questions. These have been summarised here into four thematic areas, namely:

1. The market integration project and the performance of the SEM to date
2. High level objectives and the appropriate assessment framework
3. The European Target Model
4. Options for a re-designed SEM

Respondents' views are first outlined under each area; this is followed in each case by a SEM Committee response.³

2.1 Market Integration Project and the Performance of SEM to Date

Consultation Issues and Respondents' Views

The Consultation Paper began by outlining the overall context, goals, methodology and progress of the SEM Market Integration Project, within the context that implementing the European Target Model is a positive development that will bring significant benefits to the consumers and producers of electricity on the island of Ireland. The Consultation Paper also set out a brief description of the origins, operation and development of the SEM to date. The SEM Committee asked for views on whether the SEM had met its objectives and how current workstreams should be coordinated with the Market Integration Project.

Respondents were of the view that the Consultation Paper was a good first step in understanding the challenges and the complexities of integrating the SEM into the single European market in electricity; and that eliciting views from respondents on the appropriate next steps added value to the process. A majority thought that the project process in general, and the work done thus far - the inclusive approach through workshops and on-going communication with stakeholders in particular - were useful and expressed a wish for the process to remain inclusive. Many respondents stressed the need for adequate project resources given the importance of the project to the future development of the SEM.

Most respondents were of the view that a 'step back' from the detail of design options as presented in the paper was now needed. The dominant view was that to achieve compliance of the SEM with the European Target Model through a series of modifications to the existing market rules would be too complex a process and would risk compromising the integrity of the market architecture. Summarising this view, one respondent pointed out that *'reusing some of the SEM IT platform does not amount to minimising operational complexity, risk and cost for participants and ultimately the consumer'*. A majority of respondents argued that the next phase of the project should be a re-affirmation of the principles and objectives to be used in the development of the SEM and to establish an adequately resourced project to design a coherent market from the top down that meets these principles and implements the

³ For detailed responses on each issue, please refer to individual responses published on the AIP website. Annex 1 also contains a fuller summary of responses received.

Target Model. Confirmation of the principles and objectives going forward should then set the context governing re-designing the SEM to comply with the Target Model.

Most respondents expressed the view that the SEM had achieved its objectives and had been a success since its inception in 2007. However, many respondents argued that the SEM now needed to be re-designed to comply with the European Target Model and to meet future challenges, including high and increasing levels of wind penetration on the island.

Respondents drew attention to the significant changes planned or underway to the electricity market in Great Britain, specifically the Electricity Market Reform (EMR) proposals being driven by the Department of Energy and Climate Change (DECC) and a number of Ofgem-led initiatives to develop the BETTA market to facilitate the efficient implementation of the European Target Model in Great Britain. It was argued that the SEM Committee and the Departments should coordinate their plans with those of DECC and Ofgem in GB.

Some participants questioned the powers of the SEM Committee to implement the European Target Model, on the grounds that their duties were limited to the SEM and implementation of the European Target Model was effectively a regional market decision.

SEM Committee Response to Consultation Paper Views

SEM Performance to Date

The SEM Committee agrees with participants' views that the SEM has performed well to date and met its statutory objectives by delivering cost reflective prices to consumers that are reflective of the long run cost of producing electricity. The SEM Committee will continue to ensure that the SEM performs in accordance with its objectives and delivers value for money to all island electricity consumers during the period of transition to the European Target Model.

Project Approach and Governance

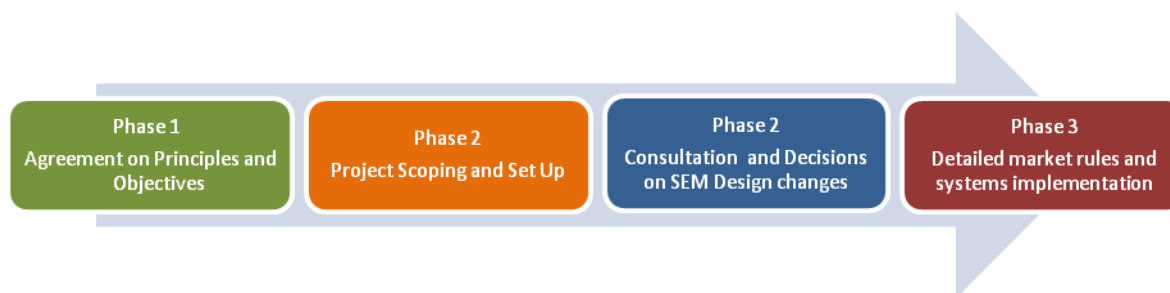
The SEM Committee is encouraged by the positive comments made by respondents on the usefulness and transparency of the market integration project approach to date and undertakes to continue this open and consultative approach in the next phase.

The SEM Committee acknowledges the points raised by respondents regarding the options presented in the paper for modifying the SEM design to meet the European Target Model (the so-called 'evolutionary options'). It was clear from the Consultation Paper that these options were not intended to be a description of detailed market rules for a re-designed SEM. But we acknowledge that they were also not coherent high level descriptions of a re-designed market. As such they suffered from providing too little detail for the former and too much detail for the latter.

It is also evident that these options did not offer clarity on a number of fundamental design pillars (such as treatment of renewable generation, capacity payments etc.) that market participants require before being able to assess and evaluate how their business strategies and investment plans would be affected. For similar reasons, from a regulatory perspective, the SEM Committee acknowledges that it would not have been able to assess the differing 'evolutionary' options against national policy objectives and the requirements of European internal market rules.

However, the work undertaken on the evolutionary options by SEMO and the TSOs, as presented in the Consultation Paper, served a valuable purpose. The SEM Committee is encouraged that many respondents have developed their thinking, in part as a result of the complexity of issues highlighted by the evolutionary options and that the understanding among respondents of the European Target Model has developed considerably as a result. Nonetheless, it is evident that a 'bottom-up' approach of modifications to the SEM design to meet the Target Model is not in the interests of consumers and risks overcomplicating and compromising the principles of the SEM.

For this reason, the SEM Committee takes the view that a 'top-down' approach is the most efficient means of re-designing the SEM to comply with the European Target Model. The SEM Committee agrees with the majority of respondents that the optimal approach (as shown below) now is that used for the design of SEM itself, i.e., to re-design the SEM in the following order: agreement on principles and objectives; project scoping and set up phase; consultation and decisions on design changes required to SEM, within the framework of agreed principles and objectives; followed by the development of detailed market rules and accompanying systems in an inclusive manner



It is clear that the implementation of the European Target Model is a constraint that has to be observed in re-designing the SEM. It cannot, however, be considered in isolation. The Target Model does not cover many issues related to market design (for example capacity mechanisms, forward energy products and market power mitigation) which cannot be ignored when reviewing or designing an electricity wholesale market. The task is therefore not merely compliance with a European Regulation but to implement the Target Model in line with the duties of the RAs. Clearly, implementation of the Target Model must be done in a manner that is consistent with government policy in Ireland and Northern Ireland. Our working assumption is that SEM redesign shall in the next phase take place under the aegis of the existing All Island Energy Framework and the Memorandum of Understanding between the Governments of Ireland and the United Kingdom⁴. Under this framework, the regulatory authorities were given lead responsibility for the development of the all island wholesale electricity market design within the context of the EU Internal Electricity Market. The programme of work to make fundamental changes to the SEM design to implement the European Electricity Target Model will require endorsement by both governments as well as continuing supervision by the Joint Steering Group. In addition any legislative changes will be initiated by the Departments.

⁴ <http://www.dcenr.gov.ie/Energy/North-South+Co-operation+in+the+Energy+Sector/North-South+Co-operation+in+Energy.htm>

Section 5 sets out further the SEM Committee's recommendation on governance and project arrangements and our response to the issues on governance and stakeholder engagement raised by respondents to the Proposed Decision Paper.

2.2 High Level Objectives and Assessment Framework

Consultation Discussion and Respondents' Views

A number of respondents to the Consultation Paper made the point that the next phase of the project should be a re-affirmation of the principles and objectives and the criteria against which to judge a re-design of the SEM; and that detailed work on a high level re-design should start only after the principles have been endorsed by the Departments and agreed with participants.

As most respondents agreed that the SEM could be judged a success in meeting the objectives set for it back in 2005, they felt that it a good way of proceeding would be to use the assessment framework that was employed in 2005 in coming to a final decision on the high level design of the SEM. The Commission for Energy Regulation and the Utility Regulator (NIAER as it was then) developed the following primary objective for the SEM, in light of their statutory duties and functions:

The wholesale electricity trading arrangements should deliver an efficient level of sustainable prices to all customers, for a supply that is reliable and secure in both the short and long-run on an all-island basis.

This primary objective was then supplemented in the proposed high level decision paper of 5th March 2005 by the following eight criteria:⁵

- i. *Security of supply*: the chosen wholesale market design should facilitate the operation of the system that meets relevant security standards.
- ii. *Stability*: the trading arrangements should be stable and predictable throughout the lifetime of the market, for reasons of investor confidence and cost of capital considerations.
- iii. *Efficiency*: market design should, in so far as it is practical to do so, result in the most economic (i.e., least cost) dispatch of available plant.
- iv. *Practicality/Cost*: the cost of implementing and participating in the wholesale market arrangements should be minimised; and the market design should lend itself to an implementation that is well defined, timely and reasonably priced.
- v. *Equity*: the market design should allocate the costs and benefits associated with the production, transportation and consumption of electricity in a fair and reasonable manner.
- vi. *Competition*: the trading arrangements should promote competition between participants; incentivise appropriate investment and operation within the market; and should not inhibit efficient entry or exit, all in a transparent and objective manner.

⁵ See AIP/SEM/06/05

- vii. *Environmental*: while a market cannot be designed specifically around renewable generation, the selected wholesale market design should be conducive to renewable energy generation involvement.
- viii. *Adaptive* The governance arrangements should provide an appropriate basis for the development and modification of the arrangements in a straightforward and cost effective manner.

Those respondents to the consultation paper who addressed the question of the assessment criteria also said that:

- compliance with the Target Model should be an initial screen for all design assessments;
- non-discrimination and promotion of efficient use of interconnection should be added to the list of criteria; and that
- any new market design must ensure a stable future for renewables.

SEM Committee Response to Views on Consultation Paper and Proposed Decision

The SEM Committee welcomes the constructive views expressed by participants during the consultation. These views have informed the SEM Committee position on what high level principles and objectives should govern the project in the next phase.

SEM Committee Statutory Objectives

Many respondents commented on the various weighting of the assessment criteria proposed in the Consultation Paper in relation to SEM Committee decision making going forward. We recognise that a successful regulatory framework for assessing market design changes requires an appropriate balance between competing principles. Guidance and context in this regard is provided by the SEM Committee's Statutory Objective rather than explicitly prioritising one assessment principle over another, the SEM Committee will continue to be guided by its statutory objectives, as set out in primary legislation in Ireland and Northern Ireland as it makes decisions. It is appropriate to recap on these objectives here:

SEM Committee Statutory Objectives

Principle Statutory Objective:

The Principal Objective of the SEM Committee is to protect the interests of consumers of electricity in Ireland and Northern Ireland supplied by authorised persons, where appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the sale or purchase of electricity through the Single Electricity market.

The SEM Committee's is required to consider a number of issues in furthering its principal objective to protect the interests of consumers. These duties are:

- To secure that all reasonable demands for electricity in Ireland and Northern Ireland are met
- To secure that authorised persons are able to finance their activities
- To secure a diverse, viable and environmentally sustainable long-term supply in Ireland and Northern Ireland
- To consider the effect on the environment in Ireland and Northern Ireland of the activities of authorised persons
- To promote the use of energy from renewable energy sources
- To ensure that decisions are transparent, accountable, proportionate, consistent and targeted only at cases where action is needed.

It is worth noting that the SEM Committee's statutory objectives are almost identical to those of Ofgem, which should facilitate optimum cross border cooperation between GB and the SEM regulators⁶.

In response to the three specific points made by respondents on the high level assessment and SEM objectives, the SEM Committee would make the following observations:

⁶ For Ofgem's Statutory Objectives, see DECC's Final Report on their Ofgem Review, page 20: <http://www.decc.gov.uk/assets/decc/11/meeting-energy-demand/energy-markets/2151-ofgem-review-final-report.pdf>

First, the SEM Committee agrees that compliance with the European Target Model is the primary objective of re-design options for SEM.

Second, the Regulatory Authorities have a statutory duty not to discriminate. For example, one of the functions of the CER is to ensure “no unfair discrimination between applicants for or holders of licences, consents and authorisations or between them and State-owned operators.” and the principal objective of the Utility Regulator in carrying out its electricity related functions is: ‘to protect the interests of consumers of electricity supplied by authorised suppliers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the generation, transmission, distribution or supply of electricity’. So there is no need for a separate criterion of non-discrimination in this context.

Third, the rationale for the Third Package and the various Network Codes that will be adopted is the establishment of an effective internal European market in electricity. A necessary condition for this is to ensure that interconnectors are used efficiently in the interests of consumers and producers of electricity. There is therefore no need for an explicit criterion related to the efficient use of interconnectors. Compliance with the Target Model is sufficient.

Finally, the SEM Committee acknowledges that the achievement of the ambitious targets as committed to by Departments in both Ireland and Northern Ireland for renewable generation will be a consideration in the development of any re-design of the SEM. EU and national governments’ twin overarching policies of creating the internal electricity market and moving toward a low carbon generation mix (which includes government targets for renewable energy and other provisions of the Renewables Directive) cannot be delivered without an efficient market design. From a regulatory perspective, we are satisfied that High Level Principle on Environment and the SEM Committee’s statutory duty to promote renewable energy sources adequately reflect this key policy objective.

The SEM Committee is satisfied that the principles and criteria set out above, which are identical to those used in 2004 and 2005 to assess the high level design of the SEM, with the addition of compliance with the European Target Model and as published in the Consultation Paper, adequately encompass the points raised by respondents. The SEM Committee have endeavoured to clarify what the SEM Committee means by these principles and is confident that they will be a useful benchmark for assessing market designs in the next phase of the project.

These same eight criteria should therefore be used now to evaluate changes to high level market designs, together with the addition of a ninth criteria:

Implementation of the Target Model: a binding constraint on the replacement for the SEM is that it will be able fully to comply with the European Target Model, as set out in the various Network Codes.

We welcome the strong support from respondents for our proposed recommendation on High Level Principles for the Market set out in the Proposed Decision. Given this broad support we do not see any reason to revisit these principles further in this final decision paper.

In conclusion the SEM Committee recommend to the Departments that changes to the design of the SEM in the next phase of project will be developed that meets the principles set out in the box below and that these principles will be considered in light of the statutory objectives of the SEM Committee.

The Departments have accepted the SEM Committee's recommendation and confirmed that the Regulatory Authorities shall now begin work on the redesign of the SEM high level design that best meets these objectives. The next steps involved in that process are set out in Section 4.

SEM Committee Recommendation: High Level Principles for the Market

In conclusion, the SEM Committee makes the following recommendation to the Departments on the high level principles for re-design of the SEM that is chosen to implement the Target Model in Ireland and Northern Ireland:

- i. **Security of supply:** the chosen wholesale market design should facilitate the operation of the system that meets relevant security standards.
- ii. **Stability:** the trading arrangements should be stable and predictable throughout the lifetime of the market, for reasons of investor confidence and cost of capital considerations.
- iii. **Efficiency:** This refers to efficient short term operation. Market design should, in so far as it is practical to do so, result in the most economic (i.e., least cost) dispatch of available plant. This shall include cross border TSO balancing arrangements that are at least cost to consumers.
- iv. **Practicality/Cost:** the cost of implementing and participating in the wholesale market arrangements should be minimised; and the market design should lend itself to an implementation that is well defined, timely and reasonably priced.
- v. **Equity:** the market design should allocate the costs and benefits associated with the production, transportation and consumption of electricity in a fair and reasonable manner.
- vi. **Competition:** the trading arrangements should promote competition between participants; incentivise appropriate investment in generation and demand reduction as well operation within the market; and should facilitate efficient entry or exit, all in a transparent and objective manner.
- vii. **Environmental:** while a market cannot be designed specifically around renewable generation, the selected wholesale market design should promote renewable energy sources and facilitate government targets for renewables
- viii. **Adaptive:** The governance arrangements should provide an appropriate basis for the development and modification of the arrangements in a straightforward and cost effective manner.
- ix. **The Internal Electricity Market:** the market design should efficiently implement the European Electricity Target Model and ensure efficient cross border trade.

It is recommended that the relative priority of these assessment principles will be determined by reference to the SEM statutory objectives as set out in legislation in Ireland and Northern Ireland.

2.3 European Target Model

Consultation Discussion and Respondents' Views

The Consultation Paper set out the overall European policy context and implementation vehicles for the creation of the internal market and gave an overview of the European Target Model for electricity and the 'shadow' European standard electricity market design on which it is based. It also examined the issues faced by the SEM in implementing the European Target Model, including differences between the Target Model and the current SEM design and placed the SEM in the context of the broad spectrum of market designs.

The majority of respondents took the view that the SEM in its current form was incompatible with the requirements of the European Target Model and therefore needed to be re-designed from the 'top down', but that this should not be done in isolation from other key national and EU energy policies.

Others argued that, owing to the lack of clarity surrounding some aspects of the European Target Model, it would be unwise to redesign the SEM now and risk losing or compromising the success that SEM has achieved. Rather, these respondents took the view that the SEM Committee should wait until the Target Model was fully in place and operational in the rest of Europe before embarking on a market redesign, rather than risk trying 'to meet a moving target'.

One respondent mentioned the issue of bidding zones and questioned whether it would be possible to retain the current design of the SEM if there were bidding zones on the island.

Other issues relating to market design raised by respondents in response to the consultation were central/self dispatch, capacity payments, imbalance pricing, spot market liquidity, forward hedging, market and settlement timelines and gate closure.

SEM Committee Response to Consultation Paper Views

Certainty and the European Target Model

The SEM Committee appreciates the views expressed by many participants that there was a perceived lack of clarity on how the European Target Model will operate in practice and the difficulty in relating to some of the terminology used in the Framework Guidelines and Network Codes, owing to the many differences between the SEM and its counterparts in the rest of Europe.

Some participants also emphasised that the Target Model relates only to cross border trade and therefore should not affect the design of national wholesale electricity markets. While this may be true, we intend to implement the European Target Model in a manner that most efficiently protects the long and short term interests of electricity consumers and not merely achieves compliance with the Network Codes and Third Package. The latest developments with regard the internal European electricity market, the key pillars of the Target Model and how their provisions relate to other areas of national energy policy are set out below. Market design itself is considered further in Section 2.5.

We recognise respondents' concerns with regard to uncertainty with the Target Model but we also recognise that high level design of the European day ahead and intra day markets

has been clear for a number of years. As a result, the SEM Committee believes that, in complying with the European Target Model, we are not attempting to hit a moving target. It is to be expected that the European single market in electricity will evolve over time and that there will be initial implementation issues to overcome (such as the delayed progress in the NWE intraday project) but these factors should not be used as an excuse to delay. Such delays would impact adversely on electricity consumers on the island of Ireland by

- denying them the benefits of more efficient use of the capacity of the 1,000MW of interconnection with GB;
- limiting international competition; and
- inhibiting the ability of Ireland and Northern Ireland to influence the development of the internal European market in electricity going forward.

We appreciate that any re- design of the SEM inevitably involves a period of uncertainty for participants and investors. Nonetheless, the codification of the European Target Model through the Network Codes will provide market participants with some clarity on how the future market on the island of Ireland will look in the longer term. In the short to medium term, the SEM Committee has secured a transitional period for the island of Ireland to implement provisions of the CACM Network Code. Article 96 paragraph one of the CACM Network Code, as submitted to ACER in September 2012, states that:

'The requirements of this Network Code shall not apply to Transmission System Operators in Ireland and Northern Ireland, operating island systems with central dispatch, until 31 December 2016'⁷.

This provides market participants with a fixed point at which the market arrangements will change from the current SEM and provides adequate medium term stability. In that regard the SEM Committee is also committed to maintaining the current design of the SEM until that point. Notwithstanding this, the Modifications Committee of the SEM Trading and Settlement Code will continue to operate and any individual has the right to raise a modification to the market rules through this forum. The SEM Committee will continue to consider any modifications recommendation reports that are presented to it and will measure the costs and benefit of any proposal against the TSC objects and the SEM Committee objectives. If a modification proposal is judged to be a material change, we will expect that it will consider the new market arrangements and interfaces with the Target Model as well as the current SEM rules. The decisions set out in the rest of this paper set out a broad framework for market integration and as we expect further clarity on the high level design is developed during phase 2.

Accordingly, we would suggest that if participants or new entrants wish to propose material changes to the market the most efficient way to do this is through inputting into the market integration project.

⁷ For the full provisions of the draft wording for the transitional arrangements for the island of Ireland see: http://www.allislandproject.org/en/TS_Current_Consultations.aspx?article=41f5681a-ef37-41ca-ab7d-7a1bdd7db385&mode=author

What are the key elements of the Target Model for SEM?

The Consultation Paper described in some detail the legislative process for the Target Model and the roles and responsibilities of the various stakeholders in this process. Since the publication of the Consultation Paper in January, a number of important developments have taken place in this area. These include ENTSO-E's consultation on the CACM Network Code and ACER's consultation on the Electricity Balancing Framework Guidelines. Given these developments and the points made by respondents to the consultation on the Target Model, it is worth restating here the essential elements of the European Target Model which SEM future design will incorporate.

To provide further clarity, the five main features of the Target Model and how they relate to the Market Integration Project are set out below:

Capacity Calculation and Zones

The CACM Framework Guidelines and Network Code require a review of European Bidding Zones (i.e. the network area within which market participants submit their energy bids) to determine whether the current bidding zones should be maintained or whether an alternative configuration should be implemented. The review may be launched by National Regulatory Authorities or by System Operators with the approval of National Regulatory Authorities. The CACM FG provides that when defining bidding zones, *'the principle of economic efficiency should be the guide including all economic, technical and legal aspects of relevance such as socio economic welfare, liquidity, competition, network structure and topology, planned network reinforcement and redispatching costs'*.

The SEM is currently a single bidding zone. As part of the implementation of the Target Model, we will ensure a review takes place on the bidding zone configuration for Ireland and Northern Ireland to apply from 2016. An evaluation of the merits of such, by applying the criteria for assessing the efficiency of options for bidding zones configurations is set out in the CACM Network Code.

If the GB market were to split into two zones before 2016, we will also need to consider the implications of this on the SEM, since the CACM Network Code stipulates that any reconfiguration of bidding zones in a particular control area would need to take into account any adverse effects of internal transactions on neighbouring bidding zones⁸. But this possibility is independent of the re-design of the SEM and can be done in tandem with the process of re-design in the period to 2016⁹. Arrangements for SEM RAs and Ofgem to work together on such issues of mutual interest are discussed later in the paper.

⁸ For more on bidding zones see the recent report by Frontier Economics for the BundesNetzAgentur on Bidding Zones in Germany:
http://www.bundesnetzagentur.de/SharedDocs/Downloads/EN/BNetzA/Areas/ElectricityGas/Special%20Topics/StudyPriceZone/StudyPriceZoneLong.pdf?__blob=publicationFile

⁹ It is worth noting that market splitting is relatively common in other markets in Europe (e.g. the MIBEL in Spain and Portugal, the Nord Pool market between Scandinavian countries and GME which operates a zonal market in Italy. Other markets, such as those in France and Germany constitute one large zone). Therefore, market designs can accommodate a variety of zone configurations.

Forward Markets

Since finishing the CACM Network Code in September 2012, ENTSO-E have informally begun work on the Forward Markets Network Code, also under the aegis of the Framework Guidelines on Capacity Allocation and Congestion Management.¹⁰

The Forward Markets element of the European Target Model covers two main areas:

- Forward (cross border) risk hedging products. These can be either physical transmission rights (PTRs), as currently on Moyle and East West), or financial transmission rights (FTRs), which are rights to congestion revenues arising from price differences between price zones) or contracts for difference (CfDs), which provide a price hedge for differences in prices between price zones in the same market, as in the Nordic market.¹¹ The choice between PTRs, FTRs or CfDs is made on border by border basis by the two NRAs concerned. Until day ahead market coupling is in place, PTRs are the only option.
- Harmonisation of cross border capacity allocation rules. The European Target Model provides that these should be harmonised and a regional (and eventually pan-European) auction platform should be established for the allocation of all cross border long term capacity rights, be they FTRs, PTRs or CfDs.

On 21 September 2012 ENTSO-E was officially invited by the European Commission to start developing a Network Code on Forward Capacity Allocation. ENTSO-E expects to launch a consultation on the Code in Q2 2013 with submission to ACER by Q4 2013. The Forward Markets Network Code will be binding by 2014, but some of its elements will not be implementable in Ireland/Northern Ireland until 2016.

Day Ahead Market

The Network Code on Capacity Allocation and Congestion Management was submitted by ENTSO-E to ACER in September 2012. Subsequently, on 27 December 2012, ACER issued its reasoned opinion on the ENTSO-E's draft Network Code. It is expected that ACER will shortly issue a recommendation to the European Commission on the CACM Network Code. The EC is also considering how to merge the Governance Guidelines for the Day Ahead and Intra Day market with the CACM Network Code. Following the ACER recommendation and the incorporation of the Governance Guidelines it is expected that the EC will submit the Network Code to comitology in 2013.

European-wide price (or market) coupling at the day ahead stage is the centrepiece of the European internal market in electricity.

With market coupling the available cross-border transmission capacity at the day ahead stage across Europe will not be explicitly auctioned, but will implicitly be made available via

¹⁰ Notably for Ireland, ENTSO-E have appointed EirGrid as lead drafter (or convenor) of the Forward Markets Network Code. ENTSO-E were recently formally invited by the EC to draft the Forward Markets Network Code. A first draft of the Network Code is available here: <https://www.entsoe.eu/resources/network-codes/forward-capacity-allocation/>

¹¹ Contracts for difference allow market participants in Nord Pool to hedge against the risk that prices in the price area or zone where the market participant is physically located will differ from the system wide price. New forward contract types based on area prices would have been a way of accomplishing this goal. However, this method would have split total liquidity among several products and was rejected. A separate product, a CfD, was therefore introduced.

energy transactions on the power exchanges on either side of the border (hence the term implicit auction). So participants on a power exchange benefit automatically from cross-border exchanges without the need to explicitly acquire the corresponding transmission capacity; participating power exchanges can be coupled in a way that requires them to make minimal changes to their market rules; and day ahead cross border prices will automatically be equalised, provided sufficient cross border transmission capacity is available, thus guaranteeing a genuine European internal market in electricity.

To implement market coupling across Europe:

- each Member State will be required to designate a Nominated Electricity Market Operator and a Market Coupling Operator.
- the Nominated Electricity Market Operator will be required to adopt the European-wide single price coupling algorithm that is approved by ENSTO-E
- TSOs will be required to submit all available cross border capacity at the day ahead stage to the Market Coupling Operator
- market participants who submit bids and offers into the implicit auction through their Nominated Electricity Market Operator will be required to use products compatible with the price coupling algorithm.

The Consultation Paper recognised that, in common with other power pools around the world, the SEM uses a system of complex bids where generators submit their costs (including non-convex costs such as start-up costs) to a central price coupling algorithm. As most power exchanges have relatively simple bid/offer requirements, the existing complexity of technical and commercial offer data used in the SEM may not be acceptable to the exchange-based price coupling algorithm that is currently being developed by the power exchanges as part of the NWE pilot day ahead market coupling project, and which was due to launch at the end of 2012.

SEMO has been doing some preliminary work since the Consultation Paper was published on the components of SEM bids that may be accommodated by the price coupling algorithm. For these purposes the day ahead price coupling algorithm was assumed to be the Price Coupling of Regions (PCR) algorithm. SEMO note that power exchanges initially accepted only simple price/quantity orders. But over time, sophisticated orders have emerged that increasingly reflect similar characteristics to those used in complex orders. Examples include standard blocks or profile blocks. Blocks, in addition to a simple price and quantity, also specify a period over which the price/quantity offer is valid. Other examples of sophisticated orders include minimum income conditions, which allow a participant to specify the minimum income it would be prepared to accept over the trading day were its price/quantity offers to be accepted. Both block bids and minimum income condition offers would allow participants to reflect non-convex costs. However, the PCR algorithm is characteristically different from the MSP Software, since generator units are not explicitly represented in the algorithm. Instead, only the orders themselves are represented.

SEMO concluded that many of the SEM order components can be, or may be, catered for by the PCR order structures. However, there are some that are almost certainly unlikely to be accommodated, such as those related to the current SEM bidding mechanism for pumped storage bidding.

Other elements of the day ahead market, such as whether participation is mandatory or voluntary, are not currently specified and may be determined on a national or regional basis.

Intra Day Market

The intra day implicit continuous market will operate up to one hour ahead of real time, with gate opening times to be determined. This market will be useful for market participants to respond to within day changes in anticipated supply and demand such as forecast errors for intermittent generation, plant outages or unexpected changes in demand or in fuel prices.

Some aspects of the intra day Target Model are yet to be determined, in particular:

- How congestion pricing will operate with continuous implicit trading
- How implicit intra day auctions of the sort used in the central dispatch markets in Spain and Portugal can be combined with implicit continuous trading.

The NWE pilot project for intra day has recently suffered a delay in implementation of the interim solution. Nonetheless, the enduring NWE intra day solution with congestion pricing is due to be in place by 1 January 2014.

SEM RAs continue to be informed on NWE developments through interactions with Ofgem and through EirGrid attending relevant NWE meetings.

Balancing

ACER has now consulted on draft Electricity Balancing Framework Guidelines. These provide for the cross border sharing of balancing and reserve arrangements which will bring important benefits for the island of Ireland, owing to its high penetration of intermittent generation. The Framework Guidelines provide that the Electricity Balancing Network Code must take into account systems with central dispatch and it is expected that the terminology used in the Framework Guidelines will be adapted in the Network Code to suit central dispatch systems. Examples of this include 'Balancing Responsible Party' and 'Imbalance Settlement' which may not be meaningful concepts in those centralised markets in Europe which have spot markets integrated with the pricing of imbalances and ancillary services (as is the case with the SEM).

ACER approved and adopted the Electricity Framework Guidelines on 18 September 2012. ENTSO-E has now received a formal invitation to begin drafting the Balancing Network Code. It is anticipated that the Network Code will come into effect in stages, with initial implementation expected in 2015.

Interactions between the European Target Model and other areas of Energy Policy

Respondents to the Consultation Paper raised a wide range of issues related to wholesale electricity markets that they considered should be considered in the context of the implementation of the European Target Model in SEM. Some of these fall under the aegis of Government policy while others are regulatory issues related to aspects of the design of a wholesale market. Some of the issues raised by respondents in this regard were:

Government Policies:

- Renewable support schemes
- Provisions of the Renewables Directive

Regulatory Issues:

- Capacity payments mechanism and rewarding flexibility
- Ancillary services and the DS3 Project
- Demand side participation
- Market power mitigation
- Contract liquidity
- Locational signals

The above areas are strictly speaking outside the scope of the European Target Model and the Third Package Network Codes and fall within the respective remits of national governments and regulatory authorities. However, we recognise the importance of joined up thinking and a coherent and stable regulatory framework. The re-designed SEM will not only need to meet the requirements of the European Target Model but will also need to take into account other important areas of energy policy that fall within the remit of regulators and objectives of national energy policies.

We consider in section 3 the interactions between the Target Model and the areas of renewables, capacity mechanisms, market power mitigation and liquidity. Regarding other regulatory workstreams such as locational signals and demand side participation, we recognise the importance of joined up thinking and a coherent and stable regulatory framework. We agree that locational signals are an important feature of the market design and we will consider whether these need to be reviewed as part of the consideration of zones delimitation in the SEM.

Therefore, in assessing the possible ways in which the SEM could be re-designed to comply with the European Target Model, we commit to carrying out an assessment to judge the compatibility of each candidate design with other elements of Government and regulatory policy.

2.4 Impact Assessments and Cost Benefit Analyses

Summary of Comments by Respondents to Proposed Decision

A number of respondents raised issues in relation to impact assessment and cost benefit in the next project phase. SEM Committee therefore considers it appropriate to address this issue. In the proposed next steps decision paper we said that:

The redesigned SEM shall be subject to a regulatory impact statement consulted upon and a cost benefit analysis, where appropriate, that take into account the key energy policies that are materially affected by the wholesale electricity market.

Of the nineteen respondents to the next steps proposed decision paper, nine made comments on the issue of impact assessments (IAs) and cost benefit analyses (CBAs). All seven welcomed the commitment on the part of the SEM Committee to undertake regulatory impact assessments and cost benefit analyses during the integration project.

However, concerns were expressed in particular about the use of the words “*where appropriate*” and “*key energy policies*” in the paper, which appeared to some respondents to limit both the scope and frequency of such assessments. In their view, it was important that such assessments should be robust and that they be conducted before any key decisions were made, particularly when evaluating market design options against viable alternatives.

Moreover, respondents thought that the scope and terms of reference for the IAs and CBAs should:

- capture the totality of the re-design;
- consider the entire spectrum of costs and benefits, including market participants' costs;
- consider the effect on investments made under the current regime and on investor confidence.

SEM Committee Response to Respondents Views on Proposed Decision

The SEM Committee welcomes the comments made by respondents on this issue and reaffirms its commitment to undertake an impact assessment, including *financial and economic analysis*, before any key decisions are made. It is the intention that such assessments will identify and set out the full range of impacts, costs and benefits of what is being proposed, using the criteria set out in SEM-12-105a.

Good regulatory practice requires that decisions are evidence based, justified against transparent criteria and subject to consultation and regulatory impact assessment. It is instructive, in this context, to point to the extensive work that has been carried out in the UK and Ireland as well as at EU level on impact assessment and best practice in regulatory decision making¹². We take particular guidance from recent Ofgem guidelines on regulatory impact statements and the place of monetised cost benefit analysis in that process:

'Ofgem does not take its decision simply on the basis of a narrow CBA alone. In cases where there are wide ranges of uncertainty associated with costs and benefits.....we would expect to rely more on principles such as the promotion of competition and avoiding undue discrimination and qualitative rather than quantitative analysis'.

In their recent paper reviewing their guidelines on impact assessment, Ofgem identify three aspects of an impact assessment:

- Monetised aggregate CBA
- Social and distributional impacts
- Qualitative (strategic and sustainability) issues

We intend to follow this format but would note that conducting a 'robust' impact assessment, which includes not only monetised costs and benefits in a CBA but also a consideration of distributional effects (e.g., between consumers and producers or between regions) and strategic issues, will not necessarily be a straightforward exercise. This is for a number of reasons:

¹² For more on impact assessment and regulatory decision making see:

<http://webarchive.nationalarchives.gov.uk/+http://www.bis.gov.uk/policies/better-regulation/improving-regulatory-delivery/principles-for-economic-regulation> and:

<http://www.ofgem.gov.uk/About%20us/BetterReg/IA/Documents1/GUIDANCE%20ON%20IMPACT%20ASSESSMENTS.pdf>

http://www.taoiseach.gov.ie/eng/Publications/Publications_Archive/Publications_2011/Revised_RIA_Guidelines_June_2009.pdf

First, in any impact assessment (which is taken here to include a CBA) the definition of the alternative (or counterfactual) is fundamental and has a major impact on how the costs and benefits are viewed. In most cases, the alternative is ‘business as usual’ – the continuation of whatever policy or market design is currently in place. This was the approach followed in the CBA of the SEM, carried out in 2006.¹³ But in the case of implementing the target model, which will effectively be embodied in a series of EU regulations governing trade across the interconnectors, business as usual – the continuation of the SEM in its current form – is not a viable alternative. This means that there will be a range of alternatives to whatever high level design is initially proposed.

Second, quantification of the costs and benefits of the proposed high level design by comparison with a chosen alternative will be challenging. Ordinarily an electricity market model of the kind routinely used by modellers in the sector might be relied upon to produce estimates of the effect of a change in the market rules on wholesale prices and production costs. In this case, however, models such as these will be unlikely to differentiate in a meaningful way between two alternative coherent market designs, since the underlying optimisation techniques will likely ensure that the cost outcomes are the same in both cases.

So, while quantification of costs and benefits may not always be possible to produce in the case of re-designing the SEM to comply with the European target model we commit nonetheless to best practice approach at all key decision making points to ensure that our analysis is robust. The test of a good *ex ante* impact assessment is not necessarily whether it comes up with an accurate estimate of *ex post* costs and benefits but whether it provides clarity on the implications of the chosen high level design. The SEM Committee considers that impact assessments will always be a mixture of qualitative and quantitative assessments; and that it is important to avoid producing spurious quantification which could create a false impression of certainty. In cases where there are wide ranges of uncertainty associated with costs and benefits, as will be the case here, the SEM Committee would in any case expect to rely more on qualitative analysis, such as the ease with which a chosen high level design will promote competition or avoid undue discrimination, than on quantitative analysis.

In summary, good regulatory practice requires that decisions are evidence based and justified against transparent criteria (such as SEM objectives, High Level Design Principles) and subject to a regulatory impact assessment. While we intend to make use of various best practice and recognised analytical techniques, including cost benefit analyses, during the course of implementing the Target Model, we will not rely solely on these in our decision making. In order to best meet our principal duty of protecting the interests of the consumer, we will provide clear reasons for our decision and impact assessments to support these including an assessment of costs and financial and economic impacts on consumers and where appropriate, cost benefit analysis. We expect in line with best regulatory practice and in close contact with Departments that an impact assessment will be carried out before reaching a final decision on any aspect of the new high level design.

¹³See:http://www.detini.gov.uk/a_cost_benefit_study_of_the_single_electricity_market_a_final_report_for_niaer_and_cer_december_2006_.pdf

SEM Committee Decision: The European Target Model will be implemented in the SEM by 2016 in a coherent and stable manner

In this regard, the SEM Committee makes the following Decision:

- **Target Model:** At a minimum, changes to the high level market design of SEM must provide for the following five pillars of the Target Model by 2016 (as set out in the ACER Framework Guidelines for Capacity Allocation and Congestion Management and the ACER Framework Guidelines on Electricity Balancing):
 - Capacity Calculation and zones delimitation including a review of the bidding zones in the SEM and potential interactions with locational signals
 - Cross Border Forward Hedging and Harmonisation of allocation rules
 - Day Ahead Market Coupling
 - Intra Day Continuous Trading
 - Cross Border Balancing
- **SEM Design Stability to 2016:** We commit to maintaining the current structure of SEM until 2016.
- **Impact Assessment:** The redesigned SEM shall be subject to an impact statement that is in line with best practice and a cost benefit analysis, where appropriate, that takes into account the key energy policies that are materially affected by the wholesale electricity market.

2.5 Options for a re-designed SEM

Consultation Discussion and Respondents' Views

The Consultation Paper presented four 'evolutionary options' that sought to preserve some of the fundamental characteristics of the SEM. These options ranged from very significant modifications to the market design (Options 1 and 3) to moderate but nonetheless significant changes (Option 2) to relatively modest/small changes (Option 4).

The Consultation Paper also examined a full scale replacement of the SEM, a decision which ultimately would involve the respective Departments. It considered the key attributes of the two broad classifications of market design – centralised and decentralised - and how these measured up against the SEM Committee's assessment criteria set out in Section 2.2. It also considered the option for further integration between the market arrangements in Ireland/Northern Ireland and the wholesale market in Great Britain (BETTA). The Paper also considered other market designs in place in Europe such as the Nordic and Iberian markets (MIBEL) and presented a preliminary evaluation of these against the proposed assessment criteria. The Consultation Paper also looked at the potential costs of replacing the SEM as opposed to developing it, as outlined in the 'evolutionary' options section.

Most respondents did not support any of the evolutionary options presented in the paper and suggested that the distinction between ‘revolutionary’ and ‘evolutionary’ paths was unclear and should be abandoned going forward.

There was limited endorsement of Option 3 (limited bi-laterals with forward pool), with two respondents noting that it seemed to provide compliance with additional trading opportunities. However, this support was heavily qualified and in one case the respondent clearly did not favour any of the four options, while commenting that option three appeared to offer closest compliance to the day ahead and intra day elements of the European Target Model.

One respondent argued for a move to bilateral trading arrangements to replace the SEM on the grounds that it would mean closer market integration with Great Britain and beyond. It pointed out that both self and central commitment are possible under a central dispatch regime and that market design options based on self-commitment need to be more fully evaluated so as to achieve the full benefits of market integration. The response provided detail on the price reductions that occurred at the time of the move from the old England Wales Pool to the New Electricity Trading Arrangements (NETA), which the respondent claimed was a result of the change in market design. It signalled its support for the ‘expanding BETTA’ option and urged the RAs to explore this further.

No respondent favoured an outright adoption of the MIBEL or Nord Pool markets, though many were of the view that they should be considered once the high level principles and objectives for the market design had been established by the RAs.

A number of respondents argued strongly for preserving as much of the SEM as possible and indicated a preference for evolutionary option 4 (minimal change to the SEM, with CfD trading in the day-ahead and intraday markets).

Many respondents also pointed to the ongoing importance of the mitigation of market power and that this should be a key consideration when considering any design changes to the market.

Many respondents emphasised the importance of considering the impacts of design changes to SEM to implement the Target Model on renewable generators going forward and in particular intermittent generation. Key issues raised in this respect were:

- the exposure of intermittent generation to penal imbalance pricing;
- efficient market signals for import and export;
- reference prices; and
- Incorporation of priority dispatch

SEM Committee Response

Evolution and Revolution

The SEM Committee acknowledges that the level of detail in the evolutionary options was too detailed for a high level design and insufficient for a consultation on detailed market rules, while also making a number of implicit assumptions about the high level principles that would be used to choose a new market design. The SEM Committee also acknowledges that, given the fundamental design changes involved in all of the so called evolutionary

options, the distinction between evolutionary and revolutionary was moot. As discussed in Section 2.1, there was a strong preference among respondents for a top down approach rather than gradual modification to the current SEM rules.

Based on the views expressed by respondents and having considered the options further, we do not see merit in further developing any evolutionary options. In particular, we are concerned that Options 1-3 risk overcomplicating the market and may not meet the requirements of the European Target Model.

We also recognise that Option 4 (the 'Contracts for Difference Option') is not a fully coherent market design though some elements of this option may be worth revisiting during phase 2 of the project. It is useful to note that a financial day ahead market combined with a real time spot market that is integrated with the pricing of imbalances and ancillary services similar to the centrally dispatched markets in the United States (such as PJM, New York and New England) would, in principle, be compatible with the European Target Model.

With respect to the revolutionary options – either replacing the SEM with a bilateral contracts market along the lines of BETTA or merging the market on the island of Ireland with BETTA. In considering these options, the following considerations are noteworthy:

- the findings of the TSOs report and the RA's consultant's review of the dispatch model for the island of Ireland that central dispatch is the optimal means of dispatching the All Island system¹⁴. In addition Target Model implementation does not require a BETTA style market in SEM.
- the SEM's success in producing transparent prices that reflect the long run costs of producing electricity, while also addressing market power concerns.
- The BETTA market is changing. As well as their Significant Code Review (reforming the Cash Out mechanism that is central to BETTA) and Liquidity projects¹⁵, Ofgem have also consulted on whether to launch an overall project to implement changes to GB market to implement the Target Model¹⁶.
- It is the intention of SEM RAs to finalise working arrangements to work together to enable the efficient implementation of the Target Model both in SEM and BETTA including introducing design changes are needed to either market

SEM Committee therefore is of the view that either joining BETTA or adopting a similar market to BETTA or adopting a market model similar to other European Member States, does not necessarily arise at this stage as we are all working to implement a common European electricity market which facilitates efficient cross border trade. The SEM Committee views on market design are further set out in Section 3.1. Issues relating to renewable generation and market design are dealt with in Section 3.2.

¹⁴ The issue of self v central dispatch is discussed further in Section 3.1

¹⁵ Ofgem has been investigating poor liquidity in the GB forward, futures and short time market for some time. It is considering a mandatory auction for forward physical contracts. Interestingly all of the big six now engage in gross bidding of at least 30% of their portfolios in a day ahead power exchange auction (SSE's figure is 100%). Furthermore, forward financial contracts are increasing – reaching 12TWH so far in 2012. These developments are changing the shape of BETTA and moving it closer to the Target Model and the SEM.

¹⁶ <http://www.ofgem.gov.uk/Europe/Documents1/EU%20Target%20Model%20open%20letter.pdf>

SEM Committee Decision: Evolution and Revolution

Regarding future market design changes, the SEM Committee's Decision is that:

- The 'evolutionary options' described in the consultation paper should not be pursued further.
- The SEM RAs will work jointly with Ofgem and other NRAs/ACER on efficiently implementing the Target Model in SEM and BETTA, acknowledging the changes which potentially may take place in either market to facilitate this.

3. Developments in Thinking

The Consultation Paper was intended as the first step in the process of implementing the European Target Model in the SEM by 2016 and was designed to stimulate debate among market participants. It was acknowledged that further work was needed in certain areas before a decision on the best approach to changing the design of the SEM (to implement the Target Model) could be consulted on and made. Explicit reference was made to the further exploration of issues raised in the Consultation Paper, including but not limited to

- the implications of the day ahead and intraday Target Models for central dispatch;
- the treatment of renewables in any future all island market; and
- the compatibility of a capacity payments mechanism with the Target Model.

This further work, in advance of a SEM Committee decision on next steps, was intended to inform the SEM Committee's decision on what options might be pursued in the light of the response to the Consultation Paper, particularly if that further work had implications for the particular design for an all island electricity market to replace the SEM.

This section briefly discusses these four areas in turn, beginning with central dispatch.

3.1 Dispatch and Market Models

The Dispatch Model in the SEM

The EirGrid/SEMO/SONI paper that accompanied the Consultation Paper noted that many of the arrangements for the Target Model were developed around larger interconnected electricity systems in mainland Europe; and that many of the larger European systems operate a self-dispatch model with generators and suppliers effectively managing exchanges of power between them with the System Operators only dispatching balancing plant. This raised a concern that central dispatch was incompatible with the Target Model.

EirGrid and SONI have been looking further at this issue since the publication of the Consultation Paper in January 2012. The conclusions of that work are that the island of Ireland has a unique combination of physical/technical attributes which mean that central dispatch makes sense in the all island context¹⁷. These attributes include:

- the size of the largest infeed relative to the size of the demand is a measure of the granularity of the system. On the all-island system, the loss of a large CCGT or the East West interconnector could result in a loss of up to 20% of the controllable generation that is running at the time. This means that the system operators need to dispatch all generation on the system to provide reserve (potentially constraining their output) and that if the largest infeed should trip then all that reserve needs to be called upon either automatically or through the issue of dispatch instructions;

¹⁷ The TSOs report on the Dispatch Model for the All Island Market was published alongside the Proposed Decision Paper on 9 November 2012:

http://www.allislandproject.org/en/TS_Current_Consultations.aspx?article=41f5681a-ef37-41ca-ab7d-7a1bdd7db385

- the level of intermittent generation on the island of Ireland can already reach up to 50% of system demand adding unique operational challenges not experienced in other power systems. Centralised control of the output of all generation on the island is required to manage this intermittency.
- because of the relative size of generators to system demand, transmission constraints on the all-island system, planned or unplanned, can have a significant impact on the technically feasible generation pattern that requires centralised control of the output of all generation.

EirGrid/SONI also argue that:

- self-dispatch is not a requirement of the Target Model and central dispatch is an efficient way to optimise a market with the unique characteristics of the all island market;
- if the market on the island of Ireland was to move to self-dispatch, the system operator would have to intervene to a significant extent to maintain system security and to balance the system, arguably taking away the self-determination and firmness of position that market participants would be trying to achieve through self-dispatch. According to EirGrid/SONI, system operator intervention in the SEM amounts to about 30% of the total system energy demand over a typical week. In other words, 30% of what they believe to be a normal and efficiently matched set of transactions could not be physically delivered firm owing to a mixture of system services provision, constraint management and plant unavailability;
- compensation mechanisms can be designed to keep market participants whole while running a centrally dispatched market which can in essence leave participants indifferent to the financial impact of the dispatch model chosen.

EirGrid/SONI conclude that there can be no doubt that the SEM will have to change to comply with the Target Model; but that central dispatch is not one of the factors that is required to change or that it would be sensible to change. They also point out that the SEM in its current form cannot facilitate continuous intra-day trading and that this is a problem all markets are facing.

Compliance with the day ahead requirements of the Target Model should pose no problems for a centrally dispatched market, since the day ahead implicit auction of the Target Model is essentially a centralised market (on the assumption that the bidding formats (i.e., simple vs. complex) are compatible).. By this we mean that day ahead market coupling involves a central party accepting bids and offers from market participants (albeit through local power exchanges) using a standardised set of parameters and an algorithm to match demand and supply and maximise social welfare, while satisfying a number of constraints, such as indivisibility and load gradient constraints.

However, the same cannot be said of continuous intra-day trading (IDT), which poses problems of timing; such that new functionality is required much closer to real time than is currently the case in the SEM. These requirements could be difficult to implement in a centralised market because of the need to incorporate continuous implicitly-determined cross border trades in physical dispatch decisions close to real time, such that market participants in the re-designed SEM will be able to reschedule physical flows on the DC

interconnectors with Britain up to one hour before real time. But these new requirements will present challenges to implement regardless of which market model is used.

For the reasons set out above, EirGrid and SONI are of the view that, given the physical and technical characteristics of the all island market, central dispatch is an important principle to maintain for the re-designed market. They are continuing to work in detail on how a centralised market could be made compatible with the intraday and balancing market requirements of the Target Model, to ensure that a centralised market design can comply with the various Network Codes, while meeting the other objectives the SEM Committee has for the all island market, including security of supply, mitigating market power, promoting renewables and efficiency of dispatch.

The RAs are engaging with their counterparts in Italy and Spain, which also have centralised markets, to better understand how the authorities propose to adapt their markets to comply with the Network Codes.

The SEM Committee engaged an independent expert consultant to challenge the TSOs findings and recommendations relating to system operation issues and in particular the dispatch model for the island of Ireland in the context of the European Electricity Target Model. The consultant's report is published alongside this paper and its main conclusions were:

- There is no compelling reason to change the method of electricity system operation on the island of Ireland from a central dispatch to a self dispatch model
- Such a change is not required for compliance with the Target Model.
- While a system of self dispatch would be feasible on the island of Ireland, the advantages of moving to self dispatch anyway would not outweigh the disadvantages for the following reasons:
 - Complying with the requirements of the Target Model will cost broadly the same regardless of whether a central dispatch or a self dispatch model underlies the trading arrangements
 - Moving to a self dispatch model would incur significant additional costs that would not be incurred by staying with central dispatch
 - There is widespread agreement that the SEM with central dispatch has been a success and has served the island of Ireland well. There is a risk that moving to trading arrangements based on self dispatch would not serve the needs of the island of Ireland as well as the current arrangements do
 - Physical firmness cannot be guaranteed by either self or central dispatch
 - Financial firmness is financially equivalent to physical firmness and is available under either central or self dispatch. Under self dispatch implementation of side payments would be necessary to ensure financial firmness and this could increase market costs.
 - Central dispatch was evaluated five years ago as being the best choice for the island of Ireland and nothing appears in the meantime to have changed that conclusion
 - As wind penetration reaches high levels it points increasingly to central dispatch which provides the maximum availability of dispatchable thermal generation necessary to maintain system control
 - Market power mitigation would be problematic under self dispatch.

For a detailed discussion of this matter see the TSOs and consultants report which are published with this paper.

Summary of Comments by Respondents to Proposed Decision

All nineteen respondents to the Next Steps Proposed Decision Paper, commented on the decision on central dispatch and related issues of market design. Some pointed to a lack of clarity as to the SEM Committee decision and others as to whether now was the appropriate time in the project to reach this particular decision on central dispatch. While many respondents welcomed the decision others strongly argued that the decision was premature. Most requested clarification of what was meant by the working assumption of central dispatch and whether it included central scheduling and commitment.

Some respondents took the view that it was worth pursuing further either the design of a bilateral contracts market on the island of Ireland or the creation of an all island market between GB and the island of Ireland based on the BETTA design. There was a high level of support from respondents for the continuance of market power mitigation measures and a general concern about a risk of discrimination against Irish participants participating in the EU internal market vis-a-vis their European competitors.

Four respondents (AES, Energia, Viridian and SSE) were of the view that the RAs should assess the suitability of a decentralised market design with self commitment in parallel with that of a centralised market as part of the development of the High Level Design, with the decision on the preferred market model made at a later point.

Another respondent (TEL) argued that elements of the SEM and central dispatch are not compatible with the CACM Network Code and Balancing Framework Guidelines. They also pointed out that in their report on dispatch, the TSOs failed to consider that the Target Model requires a firm ex ante schedule and therefore it is not evident that the divergence between this and real time dispatch would be any lower than in a self commitment market.

Other respondents (ESB, BGE, BnM, Paul Gorecki, RES Ltd. Northern Ireland and Shannon LNG) broadly welcomed the proposed decision on central dispatch but nonetheless asked for clarity as to the SEM Committee's meaning.

A number of respondents also pointed to the requirements of the CACM Network Code on intra day gate closure and continuous intra day trading and questioned how these would be compatible with central dispatch.

ESB, in their response to the Proposed Decision, stated that their views on bilateral trading arrangements were not properly represented in the SEM Committee's Proposed Decision Paper and that they would not support 'a specific bilateral market for SEM'; rather they urge the RAs to give serious consideration to the 'expanding BETTA option as a valid design option' should the working assumption of central dispatch become untenable.

SEM Committee Response to Respondents Views on Proposed Decision

Stakeholder Engagement on Dispatch Issue

Many of the issues consulted on in the SEM Committee's Consultation Paper on the Target Model Implementation (SEM-12-004) related to the matter of centralised or decentralised market design and the related question of self/central commitment. Most respondents commented on these issues in their responses and further in their responses to the proposed decision paper, where participants were given an opportunity to express their views on the TSOs report and the RAs consultant's critique of that report.

We have attempted to address respondents' views by clarifying the decision set out in this section and acknowledging the link between the dispatch model and market design. The SEM Committee, having considered all respondents views, is satisfied that the decision set out below is appropriate to make at this point.

Clarification of Terminology

The SEM Committee acknowledges that clarification is required on the terminology used in its decision on central dispatch and that the relationship between this decision and the market design should also be clarified.

In their report, the TSOs use the following definitions of central and self dispatch:

'Central Dispatch is defined as a dispatch arrangement where the TSO determines the dispatch values and issue instructions directly to generators (or demand). The TSO determines the dispatch instructions based on prices and technical parameters provided by the participating parties in order to minimise the system production cost while minimising security requirements'.

'Self Dispatch is where generators determine a desired dispatch position for themselves based on their own economic criteria to provide commercial independence within a market. The dispatch determination may or may not have a requirement to have a balanced position with demand. The physical dispatch can be either carried out by the generators directly, tracking their desired output nomination or by following dispatch instructions from the TSO which have been determined on generators' nominations.

The TSOs also note that *'central dispatch is currently combined with centralised unit commitment scheduling in the SEM market. In a centrally scheduled market participants are given their position based on a central decision'* and that *'self nomination could be combined with central dispatch'*

Some respondents have made the point that all electricity markets are subject to central dispatch in the sense that it is ultimately the TSO who issues dispatch instructions to generators in real time. We agree with this and, given the confusion around terminology, we consider it appropriate to recast the SEM Committee decision in clearer terms.

We have used central and self dispatch interchangeably with central commitment and self commitment and this may have caused confusion. Central and self dispatch are terms widely used in Europe to describe centralised and decentralised market arrangements and central dispatch is referred to in both the Framework Guidelines on Capacity Allocation and Congestion Management and the Framework Guidelines on Electricity Balancing. Given the concerns over the clarity of the term 'central dispatch' we consider it more appropriate to use

the term 'centralised unit commitment and least cost dispatch' for the working assumption set out below. We also consider it appropriate to be clearer on what this working assumption means for development of the High Level Design.

Market Design

Clearly, there is a relationship between the unit commitment and dispatch model and the market design. The SEM Committee Consultation Paper (SEM-12-004) set out a spectrum of market designs from a centralised gross pool with central dispatch and central commitment on the one hand to the decentralised physical bilateral contracts market with self-dispatch and self-commitment on the other. It is worth noting that in the literature, these two main models of electricity market designs are referred to as centralised (or integrated) and decentralised trading models.¹⁸ Variants on these models exist and an array of terminology is employed to describe these in different publications.

The European Target Model may assume, but does not impose, a market design. At least three other centralised markets exist in Europe and are planning to implement the European Target Model by 2014. While some elements of the Target Model may be more straightforward to implement for decentralised markets (physical transmission rights and nominations in the forward market and continuous trading at the intra day stage for example) other elements are more in line with centralised arrangements (the day ahead pan-European implicit auction, forward financial products). So, as with self/central dispatch, the Target Model does not require that Member States have a decentralised (or, indeed, centralised) market.

Specifically regarding the compatibility of central dispatch/commitment with the Balancing Framework Guidelines and Network Code we point respondents to the reference to central and self dispatch in the scope of the FG. It is now the responsibility of ENTSOE to develop a network code that is compatible with both models and this will be a key part of ACER's assessment of the Network Code. We do not agree that the Balancing Framework Guideline requires generators to be responsible for their own imbalances. On the CACM intra day requirements, we agree that this is a challenging area for centralised markets and we will continue to work with stakeholders across Europe who are facing similar challenges (Spain, Portugal and Italy) on this issue. As referred to in section 2.3 a number of elements of the intra day Target Model have yet to be worked out and implemented and we will be actively engaging at ACER level to ensure that there is sufficient flexibility for centralised markets in this regard.

Many respondents considered it premature to rule out the decentralised physical bilateral contracts model at this point without fully considering it and evaluating its merits through a monetised cost benefit analysis. Some respondents also argued that if the centralised market/central dispatch option proves to be unworkable at a certain juncture, it may be too late by then to achieve compliance with the Target Model by 2016.

We are conscious of some respondents' views that all options should be kept open at this point and that the SEM Committee should not make early decisions on any aspect of the

¹⁸ For more see: Sally Hunt, *Making Competition Work in Electricity*, Wiley, 2002; Stephen Stoft, *Power System Economics, IEEE, 2002* and Sioshansi R., Oren S. & O'Neill R. in *Chapter 6 of Competitive Electricity Markets: Design, Implementation, Performance* (ed. Sioshansi, F.P.)

market design. However, as with the future of the capacity mechanism discussed in the next section, we are also conscious of our obligations to provide a stable regulatory environment. Leaving open such a wide spectrum of market models would in our view be detrimental to investment in the SEM. To continue to proceed with an approach where the whole range of market models are on the table may be an easier decision to make at this time, but we are of the view that this would seriously jeopardise the ability of the SEM Committee and the Departments to meet their obligations in implementing the Target Model by 2016. Coupled with this, the centralised market design chosen for the island of Ireland in 2005 has proved a success and has broadly met its objectives so the drivers for change from this model are not evident.

We also have concerns about a return to a decentralised physical bilateral contracts market on the island of Ireland. Given the small, relatively isolated nature of the island system (and related factors set out in the two dispatch reports above) and the unprecedented levels of non-synchronous generation, it would not be prudent to contemplate such a fundamental change in the dispatch model for the island at this point. Furthermore, we are conscious of our primary duty to protect the long and short term interests of consumers through the promotion of competition. In our view, to move from a centralised, mandatory, gross pool to the decentralised model based on trading arrangements that are designed to discourage imbalances could serve to incentivise vertical integration and impair the instruments that small generators and renewables currently have to manage their risks.

It is also worth pointing out that an increasing proportion of generation on the island will qualify for Priority Dispatch and therefore will not be subject to centralised unit commitment and least cost dispatch (though under current rules they may choose to be by registering as a price maker and submitting commercial offers). Thus, in the coming years, the fleet of dispatchable synchronous generation as a percentage of demand that will be available to the TSOs to manage the system in a safe, secure and reliable manner will be more limited than it is today. As argued in the TSOs report on dispatch, it would be imprudent to move the core market to self commitment/dispatch, while attempting to manage a system with some 40% of electricity consumption from priority dispatch generation by 2020.

Given the planned increase in intermittent generation in both Ireland and Northern Ireland, coupled with the coming of the European internal market and the SEM Committee's primary objective to protect consumers through the promotion of competition, we see no compelling reason to explore further a decentralised physical bilateral contract market.

As previously stated we also consider it instructive to consider how other centralised markets in Europe are planning to implement the Target Model (in particular MIBEL in Iberia and GME in Italy). These semi-coordinated markets (or voluntary pools) are centrally dispatched, though the power exchange is separate from system operation and there are separate balancing and ancillary service markets. The bidding structures are simplified compared to the SEM though some sophisticated bids allow participants to reflect non-linear costs.

Furthermore, wholesale electricity markets in the United States are based upon a central dispatch / commitment and allow participants the option of self commitment¹⁹.

In conclusion, we intend to preserve the core of the centralised nature of electricity wholesale trading arrangements on the island of Ireland. We see this as being in line with the Target Model and conducive to the commercial operations of different market players. Our position is therefore that the market will be based on centralised trading arrangements and will not rely on participants entering into matched physical bilateral contracts and facing financial penalties for failing to do so. This does not mean that options for self commitment or more flexible bidding and scheduling processes are being ruled out (indeed they may be necessary to meet elements of the Target Model) though market power considerations would have to be fully borne in mind when considering these options.

As stated above, the intention of making a working assumption on this matter in advance of detailed work on the high level design is to build on the success of the SEM, provide a stable regulatory environment and set the broad framework within which all stakeholders will work to implement the Target Model

Finally, market power mitigation will remain an important consideration for the redesigned SEM. While we do not propose to design a market around market power measures, it would be unwise to develop the design without the requirement to mitigate market power in mind. The three pillars of market power mitigation in the SEM (the bidding code of practice/market monitor, directed contracts and ring-fencing) will need to be reviewed and developed to take into account the new market arrangements.

Some respondents pointed to the importance of the forward market and adequate hedging opportunities as being an important part of the Target Model implementation and considerations of market design. We refer to the SEM Committee Decision on Market Power and Liquidity for a more in depth discussion on this²⁰. At a high level, we see the European internal market as important for the development of liquid forward markets through such measures as:

- day ahead market coupling where liquidity in the short term markets is a key requirement for developing liquidity in longer term financial markets and
- the development of coordinated cross border hedging products for the forward market (Physical Transmission Rights, Financial Transmission Rights and CfDs).

Regarding the further exploration of an all islands market, we do not consider this an appropriate course of action now. We will continue to work with Ofgem in efficiently implementing the Target Model and in the fullness of time - as more interconnection gets built across the region - we expect both the island of Ireland and Great Britain to become further integrated into the European internal market.

¹⁹ Markets such as PJM, New York and New England, are successful and efficient market designs (not dissimilar to the SEM) that share many features of the Target Model - day ahead firm contracts, forward markets supplemented by financial transmission rights, an intraday re-bidding market and a real time balancing mechanism for deviations from day ahead contracted positions. Notably, these US markets, while based on central dispatch/commitment, allow participants the option of self commitment

²⁰ http://www.allislandproject.org/en/market_current_consultations.aspx?article=682a98fe-9c18-4c73-8fa3-57e75d24d85e&mode=author

In conclusion, implementing the Target Model with the below working assumption will, of course, be challenging. Nonetheless, it is the SEM Committee view that this decision should be made at this point and we look forward to the constructive input of all stakeholders in meeting this challenge.

SEM Committee Decision: Dispatch and Market Model

The SEM Committee's Decision is that there will be a working assumption:

- that the SEM high level design will continue to be based on transparent centralised trading arrangements, least-cost dispatch of total system load and centralised unit commitment. It will not rely on a process whereby market participants are required to enter into matched physical bilateral contracts and where there are financial penalties imposed for not doing so.
- Options for self commitment may be permitted within this high level design, taking into account the particular characteristics of the electricity sector on the island of Ireland, including the need to mitigate market power.
- There will continue to be market power mitigation measures in the SEM for as long as market power is considered to be an issue.

3.2 Renewables

Both Ireland and Northern Ireland have ambitious renewable targets of 40% of electricity consumption from renewable sources by 2020²¹.

To facilitate this, EirGrid and SONI have established the Delivering a Secure Sustainable Electricity System (DS3) programme, which is designed to manage the achievement of Ireland and Northern Ireland's RES-E targets from a grid perspective. The programme includes enhancing generation portfolio performance, developing new operational policies and system tools to efficiently use the generation portfolio to the best of its capabilities and regularly reviewing the needs of the system as the portfolio capability evolves.

It is also worth noting that wind resources in Ireland and Northern Ireland represent a significant export opportunity and it is in that context that:

- the Irish Government is committed to working with the UK Government, under the auspices of the British Irish Council, to create the framework and conditions for renewable energy export, using the co-operation mechanisms provided for in the Renewables Directive (Directive (EC) 2009/28/EC).
- the North Seas Offshore Grid Initiative, of which both Ireland and the UK are members, is working to maximize the potential of the renewable energy resources of

²¹ These compare with an outturn total in Ireland of just under 15% in 2010 and in Northern Ireland of 10%

the Northern Seas.²² Part of this work includes consideration of market rules and cross border trade

- The UK Government has announced reforms to the UK's electricity market to help achieve its decarbonisation targets, which involve substantial investment to develop a mix of clean energy sources in the years to come. These reforms, which will affect Northern Ireland, include:
 - a capacity payments mechanism in the form of a capacity market;
 - the system operator (i.e., National Grid) delivering a feed-in tariff with Contracts for Difference (FiT CfD) and the capacity mechanism; and Northern Ireland has received a derogation from the UK carbon floor carbon price subject to review by the European Commission on state aid grounds.

Given these UK and Irish targets the design of the all island electricity market should accommodate efficiently the increased penetration of renewable sources of energy in the coming years.

EirGrid and SONI have carried out pioneering studies over the past number of years to better understand the changing behaviour of the power system and examine the technical challenges with integrating significant volumes of wind power generation. The results of these studies can be found in the 'Facilitation of Renewables'²³ and 'Ensuring a Secure, Reliable and Efficient Power System in a Changing Environment'²⁴ reports. The key message from these studies is that the 2020 renewables targets are achievable; however, significant challenges to the operation of the system will have to be overcome.

A number of facets of market design were highlighted by respondents to the consultation as being important for renewables. We deal with these in turn below.

Imbalance settlement

At a broad level, compliance with the Target Model should accommodate rather than hinder the exploitation of the island of Ireland's wind resources, since it will allow the use of spare capacity on the interconnectors for accommodating deviations between forecast and actual wind generation closer to real time. On the other hand, there are aspects of the Target Model which will potentially be more challenging for the development of the island of Ireland's wind resources. One example is how to manage the treatment of an exposure of wind generators to imbalances between firm day ahead and intraday physical positions and metered generation.

Currently in the SEM, there is no issue with the accuracy of the availability profiles of wind generators as actual availability values are used to calculate *ex post* prices. Moving to market arrangements where *ex ante* prices and quantities at the day ahead and intraday stages are firm, as mandated by the Target Model, will require the use of forecast information at both the day ahead and intraday stages. While this is true of all generators, i.e., all units are subject to unforeseen failure, the volume of forecast wind generation error between day-ahead, intraday and actual availability can be significant²⁵. Ways of

²² Comprising the North Sea, English Channel, Irish Sea and Atlantic.

²³ <http://www.eirgrid.com/media/FacilitationRenewablesFinalStudyReport.pdf>

²⁴ http://www.eirgrid.com/media/Ensuring_a_Secure_Reliable_and_Efficient_Power_System_Report.pdf

²⁵ For November 2012, the normalised mean absolute wind forecast error for EirGrid was 12.2% and for SONI 10.1%.

approaching this issue in market design will be consulted upon above during the next phase of the project.

Priority dispatch

The re-designed SEM will need to be measured against the objectives and provisions of the Renewables Directive. The Renewables Directive does not deal explicitly with the design of wholesale electricity markets. But it includes a number of provisions that need to be incorporated into the new market design. The main provision is that of priority dispatch.

Article 16(2)(c) of the Directive states that *'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'*.

The SEM Committee has decided to adhere to an 'absolute' interpretation of priority dispatch whereby economic factors are taken into account only in exceptional situations and only where this can be done in a manner that does not threaten the delivery of renewables targets.²⁶ The SEM Committee has also now decided that this decision will also apply in a re-designed SEM.

Curtailement

Curtailement of wind generation is an unavoidable consequence of high levels of wind penetration. Curtailement occurs when there is excess wind generation available to meet system demand when taking account of system operation restrictions. In situations such as this, the TSOs must "turn down" some of this wind generation. This is due to there being insufficient quantities of the system services necessary to run a safe and secure electricity system, including adequate capacity in flexible plant. A market design that accommodates renewables should therefore provide efficient signals for appropriate investment in flexible plant and demand side management. As with efficient import/export signals, an efficient market design that delivers accurate price signals in this regard should reduce the need for curtailement of wind generation.

The treatment of curtailement in a tie-break situation involves dividing up the total level of system curtailement between different wind generators. In December 2011, the SEM Committee decided to treat curtailement issues in a tie-break situation on a firm access quantity basis, i.e. applying a grand-fathering approach to curtailement issues. Subsequently, the SEM Committee decided that further consultation was necessary to provide an additional opportunity for all members of the industry and the public to comment on the merits of the options for the treatment of curtailement issues in a tie-break situation.²⁷ Following the consideration of responses to that consultation, a proposed decision was made public on 3 October 2012²⁸.

²⁶ <http://www.allislandproject.org/GetAttachment.aspx?id=5d635a6f-f9b4-494c-bd3a-722af770354c>

²⁷ See SEM-12-028, 26th April 2012

²⁸ http://www.allislandproject.org/en/transmission_current_consultations.aspx?article=85a37c0a-9082-43e4-bc2f-ee2584649993&mode=author

In conclusion, the EU and national governments' twin overarching policies of creating the internal electricity market (see section 2.3) and moving toward a low carbon generation mix (which includes government targets for renewable energy) will be best delivered by an efficient market design on the island of Ireland. From a regulatory perspective, we are satisfied that the High Level Principles set out in recommendation two are the most appropriate framework through which to assess the efficiency of such a market design in protecting the short and long term interests of electricity consumers on the island.

Summary of Comments by Respondents to Proposed Decision

Of the nineteen respondents to the next steps proposed decision paper, all made comments on the proposed decisions on renewable energy. In particular, respondents were unclear as to the intention of the wording 'changes to the SEM High Level Design should promote, where appropriate, the use of energy from renewable energy sources, as set out in legislation'. Clarity was sought as to what exactly 'where appropriate' means in this context and many questioned when it would not be appropriate to promote renewable energy sources given European legislation and national targets for the promotion of energy sources. Further, some argued that this wording should be stronger and that renewable energy sources should be supported 'where technically feasible'.

Four respondents (BGE, IWEA, RES Ltd., Saorgus) supported the SEM Committee Decision that an 'absolute' interpretation of priority dispatch priority would apply in the new market arrangements. IWEA argued that priority dispatch should be included as one of the High Level Principles for the new market. Others took the view that rules for priority dispatch would be best considered at the design stage of the new market arrangements.

Three respondents (BGE, IWEA and SSE) argued that it was too early to make any decisions on tie break/curtailment rules applying to the new market arrangements. One participant (PPB) argued that renewables (and interconnectors) are permitted to self schedule in the SEM which is discriminatory against other participants.

Several respondents (RES Ltd. Northern Ireland, IWEA) commented on the issue of reference prices for renewables support schemes and urged the SEM Committee to consider this link and the timing of strike prices in their decision making

Finally, several respondents (IWEA, etc.) argued that introducing penal imbalance prices as part of the revised market design would 'be significantly detrimental to the renewables sector'.

SEM Committee Response to Respondents Views on Proposed Decision

We welcome respondents' views on the interactions between the Target Model project and renewable energy sources on the island of Ireland. Given the importance of government renewable energy targets and the broader decarbonisation of the electricity sector, we are committed to ensuring that the wholesale market arrangements on the island of Ireland and their integration with the European internal electricity market are robust to the challenges of facilitating high penetration of renewable energy sources. As previously stated, we consider decarbonisation and market integration as being complementary policy goals, with increased interconnection and cross border trade as a necessary complement to high levels of renewable capacity as a percentage of demand (see SEM-09-096).

Regarding the wording of the proposed decision, we appreciate that there may have been some misunderstanding as to the SEM Committee's intention here. The need to have regard to, where appropriate, the promotion of renewable energy sources, is a statutory duty of the SEM Committee, CER, UR and both Departments and is provided for in the Electricity Regulation Act 1999 in Ireland and the Electricity (Single Wholesale Market) Order 2007 in Northern Ireland. The term 'where appropriate' simply reflects the wording in legislation and refers to the legal powers that the regulatory authorities have in this regard. In restating that this statutory objective will continue to apply in the new market arrangements, we were seeking to assure stakeholders of our commitment to the promotion of renewable energy sources.

On the issue of the treatment of curtailment, the SEM Committee will publish its decision on the treatment of curtailment in tie break situations shortly. This paper will deal with both the SEM Committee's proposed decision for the treatment of curtailment in dispatch and the eligibility of curtailed wind for DBC payments. As previously stated, a market design that delivers accurate price signals for cross border exchanges should reduce the need for curtailment of wind generation.

Furthermore, we are encouraged by the positive responses received on the proposed decision to adhere to the absolute interpretation of priority dispatch set out in SEM-11-062 and look forward to exploring with stakeholders the interactions between this and the implementation of the Target Model.

Finally, whilst renewable support schemes are the remit of government in both SEM jurisdictions, we agree that a robust market reference price against which feed in tariffs and other support schemes are referenced is important for renewable generation. Ensuring that there is efficient wholesale market design with transparent price formation and a liquid spot market is critical to role of the RAs in the promotion of renewable energy sources.

SEM Committee Decision: Renewable Energy Sources

The SEM Committee's Decision is that in the revised market arrangements to implement the Target Model:

- The absolute interpretation of Priority Dispatch will remain as set out in SEM Committee Decision Paper SEM-11-062
- Changes to the SEM High Level Design should, in line with our statutory duties, promote, where appropriate, the use of energy from renewable energy sources, as set out in legislation.

3.3 Capacity Payments

One key theme in the responses to the consultation was the importance of the capacity payment mechanism to the SEM because of its advantageous effect on the financeability of generation projects. The SEM Committee is of the opinion that a capacity payment mechanism of some form should remain in place as part of the design changes to the SEM.

At the same time, it is important to note that capacity payment mechanisms are now the subject of review at European level, although as it stands, the European Target Model neither requires (nor prohibits) a capacity payment mechanism from being put in place.

A Capacity Payment Mechanism (CPM) should work alongside the electricity market in conjunction with the other revenue schemes in the electricity market. A capacity mechanism may be used to increase investment and improve security of supply and be interlinked with considerations in the energy market and ancillary services framework to cover the total revenue requirement to maintain an effective long term adequate capacity balance.

There are a number of varieties of capacity mechanisms. Examples of implicit and explicit capacity payments exist in markets around the world; their choice and design being influenced by different market frameworks, generation mixes, stakeholder interests, and the mix of political, regulatory and economic characteristics relevant to that market. The current capacity payments mechanism in the SEM was chosen for a number of reasons: stable cash flows, reduced risks for new entrants and greater transparency. The prospect of more stable prices was established through short run marginal pricing, which in turn mitigates dominance in the generation market as generators with market dominance are forced to bid their SRMC even in periods of reduced system margin.

Over the coming years, the generation mix on the island of Ireland and across Europe will change as part of the EU's goals of decarbonisation of the electricity sector and creation of the internal electricity market (see the EU's 2050 Roadmap). While the percentage of thermal generation is expected to decline, the percentage of renewable generation (such as wind) and cross border interconnection will significantly increase. This portfolio change will influence revenues from the energy market and may drive the creation of an explicit capacity mechanism or changes to existing capacity mechanisms in many Member States. A revised capacity payment framework in Ireland and Northern Ireland must be very closely interlinked with changes to the energy market and the ancillary services framework in order to reward flexibility and maintain an effective long term adequate capacity balance. It will also be important to avoid double payments for the provision of capacity.

To date and as we move towards 2014, different countries within the EU will have differing capacity issues with regard to adequacy and firmness of their own generation mix and this will evolve with increasing renewable penetration. These issues may impact the reference prices associated with the ability to trade with neighbouring member states.

Other countries in Europe have capacity payments mechanisms (Spain as well as Sweden, the Netherlands and Greece); and several other countries are now thought to be looking at introducing measures to address concerns about the adequacy and firmness of their generating capacity (France, Germany, Italy and the UK). The form of capacity payment mechanism differs from market to market. The mechanism in SEM is centralised and regulated while other markets may opt for a more market based approach

European Commission Consultation

On 16 November 2012, the European Commission (EC) published its Communication on the Internal Energy Market. Along with the Communication, the EC also published a consultation paper on security of supply and generation adequacy in the internal market. In this consultation paper the European Commission ask whether and how we can work better

together to ensure a more co-ordinated approach to assessing generation adequacy and security in the internal electricity market. They also ask for views on different types of capacity payment mechanism (CPM) and more detailed criteria, based on the principles of necessity and proportionality, which capacity mechanisms and other interventions should meet. Depending on the outcome of this consultation, the EC have indicated that they may propose follow up measures. The closing date for comments to the EC consultation was 7th February 2013.

The EC proposes a set of criteria that it will use to assess if CPMs are distortive and therefore in breach of internal market competition rules:

- Necessity of the capacity mechanism should be clearly established
- Effectiveness of the capacity mechanism in addressing the identified market failure should be demonstrated and that this is additional to what would have occurred under normal market rules
- The duration of the application of the capacity mechanism should be clearly limited and clearly specified
- Any capacity mechanism should be open to electricity undertakings operating in other Member States and should not act as a barrier to cross border trade or competition in the internal market
- To be non-discriminatory a capacity mechanism should:
 - Be allocated after an open competitive bidding process
 - Allow demand response and energy efficiency solutions to be included on an equal basis to generation
 - Not be confined to any particular generation technology
- Capacity mechanisms should not be confined to any particular generation technology and should be at least cost
- Costs should be allocated to beneficiaries of secure energy supplies in a non-discriminatory manner

Summary of Comments by Respondents to Proposed Decision

All respondents made comments on the SEM Committee's proposed decision on a capacity payments mechanism. There was wide support (all respondents) for the SEM Committee's proposal to retain a form of capacity mechanism in the SEM, since this was seen as vital to investment and security of supply., though many respondents requested clarification on the impact of the recent EC's consultation on capacity mechanisms in the internal market.

SEM Committee Response to Respondents Views on Proposed Decision

We acknowledge respondents' views on capacity mechanisms and agree with the need to ensure a stable regulatory environment for investment by setting out a high level framework for the development of the revised market arrangements. The SEMC consider there could be value in a capacity mechanism and will consider if this can be implemented in a manner consistent with the internal electricity market and the implementation of the Target Model.

The SEM Committee notes the European Commission's consultation on generation adequacy and the points raised about the need to avoid distortions in the internal market. Through their membership of the Council for European Energy Regulators, the RAs have conveyed their views on the issues raised in the consultation to the EC as part of a common regulators position. This responses has been published²⁹. The European Commission's intentions are not clear at this stage and the Consultation Paper published in November 2013 covers a broad range of issues from generation adequacy assessment to possible criteria for the implementation of capacity mechanisms. ACER and the CEER have also initiated a workstream to assess the impacts of capacity mechanisms on the internal electricity market with a particular focus on any cross border trade implications. The results of this workstream will be available in 2013 and will be shared with the European Commission.

In summary, the SEM Committee notes that the capacity payment mechanism in the current SEM design has been acknowledged to add significant value and that capacity mechanisms are at various stages of consideration and implementation in a number of European electricity markets. We are see it as important that the total remuneration from energy payments, capacity payments and ancillary services is sufficient to ensure security of supply but acknowledge that any capacity mechanism must be consistent with the internal electricity market rules. We look forward to the constructive input of all stakeholders in exploring further the interactions between capacity mechanisms and the Target Model implementation.

SEM Committee Decision: Capacity Payment Mechanism

The SEM Committee's Decision is that:

- It is important that the total remuneration from energy payments, capacity payments and ancillary services is sufficient to ensure security of supply.
- Any capacity payment mechanism must not provide double payments to generators
- The capacity payments mechanism will need to avoid distortions in the internal market and comply with relevant EU rules

²⁹

http://www.energy-regulators.eu/portal/page/portal/EER_HOME/EER_PUBLICATIONS/CEER_PAPERS/Electricity/Tab2/CEER_Response_CRM_and_IEM_7February2013.pdf

4. Governance and Project Management

The Roles of Government and Regulatory Authorities

It is important to recognise both the role of Government in setting the overall energy policy framework and initiating primary legislation and the strengthened role of national regulatory authorities under the Third Package.

As stated in the Consultation Paper, given the overarching policy and legislative responsibilities of the respective Government Departments in Ireland and Northern Ireland in establishing the SEM and considering EU Member States' adoption of the Third Package, any decision that would lead to new electricity market arrangements will be made by means of the SEM Committee making a recommendation to the DCENR in Ireland and DETI in Northern Ireland. This paper serves that purpose and accordingly, Section 5 of this paper sets out the SEM's Committee's Recommendation to Departments on the next steps in the process of implementing the European Target Model in Ireland/Northern Ireland.

Legislative Framework

The SEM has its origins in the All-Island Project (AIP) which was established in 2004 by the Minister for Enterprise, Trade and Investment in Northern Ireland and the Minister for Communications, Marine and Natural Resources in Ireland. The aim of the project was to create and establish a single market in natural gas and electricity on the island of Ireland. In November 2004, both governments, NIAUR and the CER ('the RAs') jointly published a Development Framework for an All Island Energy Market, setting out the dates by which they expected to achieve these unified markets.

The first phase of the All-Island Energy Market is the Single Electricity Market (SEM), which comprises a single competitive wholesale electricity market on the island of Ireland. On 5 December 2006, the government of the United Kingdom and the Government of Ireland signed a Memorandum of Understanding (MoU) on the establishment and operation of the SEM. The MoU set out the broad objectives of the SEM along with high level guidelines on the structure of the new wholesale market. This provided the legislative basis upon which the SEM was to be established in both Ireland and Northern Ireland. The subsequent legislation then established the SEM Committee, the sub-committee of both CER and NIAUR which has sole jurisdiction to make decisions on SEM matters on behalf of the RAs. This primary legislation set out the objectives of the SEM Committee, when developing and making policy decisions on the SEM.

On 1st November 2007 the Single Electricity Market (SEM) went live, commencing the trading of wholesale electricity in Ireland and Northern Ireland on an All-Island basis. The SEM Committee was established on the same day, as the all-island decision making body for all SEM matters.

Since 2007, the government of Ireland and the government of the United Kingdom have adopted the Third Electricity Package. This provided for the creation of the internal electricity market through network codes that are annexed to Regulation (EC) No 714/2009 and as such will be directly applicable across in Member States from 2014. In order to meet the requirements of these Network Codes, as part of phase 2 of this project to implement the Target Model in SEM further engagement will be required on the legislative basis for the

changes to design which may be required. Phase 2 can proceed with this as a workstream, as was the case when SEM developed. The timing of delivery of legislation initiated by the Departments will be crucial given commitments made by Departments and SEM RAs to deliver implementation of the Target Model in SEM by 2016. Potential issues in a legislative workstream are:

Primary Legislation

- The SEM Committee principal objectives as stated
- SEM Committee *vires* for implementing the Target Model and the definition of a SEM matter
- New arrangements on regulatory cross border cooperation.
- New cross border functions for the market operator

Secondary legislation

- Amendments to secondary legislation such as Statutory Instrument 406 of 2007 in Ireland

Intergovernmental Agreements

- Memorandum of Understanding descriptions of the SEM

Joint Regulatory Arrangements – SEM Committee and Ofgem

The Third Package has created a reinvigorated impetus for regulatory cooperation going forward. To date the integration project has already required close cooperation between SEM RAs and ACER colleagues, primarily at times, Ofgem. The SEM Committee is committed to strengthening and formalising this cooperation in the future as SEM RAs and Ofgem seek to implement efficiently the Target Model in both markets.

Ofgem published an Open Letter on the Implementation of the European Electricity Target Model in Great Britain on 28th March 2012 and is expected to publish a follow up in early 2013.³⁰ Given the links and complementarities between the SEM Committee and Ofgem projects it makes sense to ensure that there is close working cooperation between the SEM RAs and Ofgem going forward to deliver SEM / BETTA coupling as required by Target Model. Cooperation between us is further emphasised by the ever closer cooperation between the UK and Irish Governments on energy matters through such *fora* as the British Irish Council, the Isles Initiative and the North Seas Offshore Grid Project.

Recognising this, the SEM Committee and Ofgem are developing joint regulatory working arrangements for implementing the Target Model in Ireland/Northern Ireland and in Great Britain.

Roadmap to ACER

As part of the two year derogation secured for SEM in relation to complying with the Capacity Allocation and Congestion Management Network Code the Regulatory Authorities (SEM RAs and Ofgem) are committed to cooperating to agree and publish a joint roadmap outlining how day ahead and intraday arrangements and other relevant provisions will be

³⁰ See <http://www.ofgem.gov.uk/Europe/Documents1/EU%20Target%20Model%20open%20letter.pdf>

implemented in SEM by 2016. The roadmap is to include clear milestones and responsibilities and there will be quarterly reporting by SEM RAs and Ofgem of progress achieved as part of ACER regional initiatives programme.

This roadmap was due to be provided to ACER by the end of 2012 and will be drawn up upon finalisation and publication of this next steps paper. The recommendation to government set out in Section 5 and the draft timetable in Annex 3 will provide the basis for this roadmap. Quarterly updates on the project will be provided to ACER by SEM RAs and Ofgem.

Project Resourcing

Most respondents made the point that given its potential scale and importance the Regulatory Authority-led Market Integration project should be adequately resourced and supported by independent market expertise.

The SEM Committee agrees that both Regulatory Authorities (RAs) should devote adequate resources to the project as well as procure market design consultancy and other relevant expertise. One of the recommendations set out below is the establishment of a Project Office within the RAs with overall responsibility for implementing the Target Model and this will be done. As is best practice, and as happened for SEM originally, a project initiation document will be drafted and published for the next phase of the project. This document will outline the project scope and workstreams, reporting and governance arrangements, projects risks and resources. A procurement strategy will also be required.

Implementation Costs

In the Consultation Paper indicative implementation costs were presented associated with a number of design options. Adopting a top down approach, going forward the SEM Committee in proposing and implementing required design changes to SEM will seek to minimise costs in the interests of customers while efficiently implementing the Target Model.

Role of SEMO and the TSOs in implementing the European Target Model

A number of respondents commented on the role of the TSOs and SEMO in the Market Integration Project to date. There was a general concern that both parties had been given a privileged position relative to that of market participants in the project and were exerting an inappropriate level of influence.

The SEM Committee is aware of market participants' concerns regarding the role played by the TSOs and SEMO thus far and potential or perceived conflicts of interest that might arise given the various roles that the EirGrid Group has in the SEM (System Operator, Market Operator, Interconnector Owner) and the development of the Target Model at a European Level (EirGrid and SONI are active members of ENTSO-E and have been appointed to the drafting teams of various Network Codes). For the purposes of this project, the SEM Committee has conveyed these concerns to the TSOs and SEMO and asked that the TSO consider their different roles being EirGrid Interconnector Limited, EirGrid Transmission System Operator and the Single Electricity Market Operator.

The SEM Committee is also conscious of the important role that EirGrid and SEMO have at the European level through their membership of ENTSO-E and Europex respectively. The Third Package established a clear structure for implementing the European Target Model where ACER sets the high level guidelines for the internal market (the so called Framework Guidelines), ENSTO-E drafts the detailed cross border market rules (the Network Codes) and the power exchanges/market operators and market participants feed into this process through bespoke liaison groups (such as the AESAG or its predecessor AHAG³¹). Furthermore, the Governance Guideline for the day ahead and intra day market currently being developed by the European Commission in conjunction with the Capacity Allocation and Congestion Management (CACM) Network Code will give power exchanges a formal role in the internal market. Finally, the Network Codes, once approved by the European Commission, go through the comitology process before becoming law.³²

This structure should be mirrored on a national level to ensure consistency in European representations and the implementation of the European Target Model on the island. In view of this and considering the existing licensing, regulatory and policy framework in which the TSOs and SEMO operate, the SEM Committee intends that there should continue to be a close working relationship between the RAs' project team and their counterparts in the SEMO and the TSOs. The TSOs role in system dispatch, DS3 and the integration of renewable generation into the system and other key areas that impact on the market design means that their input will continue to be invaluable.

Stakeholder Engagement

The SEM Committee is committed to ensuring that both current and prospective market participants are fully involved in the implementation of the Target Model and considers their input to be essential to the success of the project. The establishment of a formal project office within the Regulatory Authorities will ensure that industry participants and consumer groups are given as much opportunity as possible to contribute their expertise and views. A specific forum for stakeholders to engage with the RAs and the TSOs/SEMO on the various Network Codes and development of the Target Model will be established as part of this project structure.

Given the nature of electricity markets, it will always be appropriate and in the interests of consumers and competition for the Regulatory Authorities to engage with the TSOs/Market Operator on a bilateral basis at certain junctures. The SEM Committee will ensure that this engagement and the SEM Committee's decision making process will continue to be transparent and consultative.

Communication Strategy

SEM Committee is committed to continuing its inclusive approach to this project and this will be facilitated as outlined below and further expanded upon in the project initiation document.

³¹ AESAG is the ACER Stakeholder Advisory Group and AHAG was the Ad-hoc Advisory Group of Stakeholders that proceeded it

³² Comitology refers to the committee system which oversees the delegated acts implemented by the European Commission. The European Parliament and the Council of the European Union can confer such powers on the European Commission, but the Commission must act in conjunction with committees of representatives of Member States who have the power to block the Commission's proposals and refer the matter to the Council.

Summary of comments by Respondents to Proposed Decision and SEM Committee responses

Of the nineteen respondents to the Next Steps Proposed Decision Paper, fourteen made comments on the issue of stakeholder involvement.

The proposed decision paper said that:

The SEM Committee is committed to ensuring that both current and prospective market participants are fully involved in the implementation of the Target Model and considers their input to be essential to the success of the project. A specific forum for stakeholders to engage with the RAs and the TSOs/SEMO on the various Network Codes and development of the Target Model will be established as part of this project structure.

Given the nature of electricity markets, it will always be appropriate and in the interests of consumers and competition for the Regulatory Authorities to engage with the TSOs/Market Operator on a bilateral basis at certain junctures. The SEM Committee will ensure that this engagement and the SEM Committee's decision making process will continue to be transparent and consultative.

The SEM Committee then concluded that the following would be established

- A DCENR – DETI Sub Committee of the Joint Steering Group
- A UK-Ireland Steering Committee on European Market Integration
- A Regulatory Authority Project Office for the implementation of the European Target Model.
- Joint Regulatory Arrangements with OFGEM.
- A SEM Stakeholder Forum on the European Internal Market

Stakeholder engagement

Those stakeholders who made comments on the proposed governance and project arrangements generally welcomed the SEM Committee's decision to establish a range of Committees and arrangements to ensure co-ordination between DCENR, DETI, DECC and Ofgem. However, it was pointed out that the proposals made no explicit provision for formal industry engagement within the SEM integration project. Respondents interpreted the paper as proposing to reduce the involvement of industry stakeholders to mere participation in a forum to discuss network codes and other EU policy developments.

As stated in the introduction, the SEM Committee fully understand the importance of this project to the delivery of energy objectives on the island of Ireland and as such its importance to both market participants and consumers. It is imperative that the project delivers benefits for all at least cost. We are committed to best practice in relation to project management in terms of having an appropriately resourced inclusive well planned process. We would like to acknowledge upfront the views expressed by respondents on project governance and stakeholder engagement and the importance of these to the success of the project to implement the Target Model.

In order to deliver this complex and challenging project it is critical to follow the principles of regulatory best practice including an effective consultation process that gives all stakeholders an opportunity to input their views. We see stakeholder engagement as a two way process and look forward to working with market participants in a constructive manner, whereby all parties use best endeavours to foster positive working relationships and adhere to best practice in project delivery.

The decision on governance arrangements were presented at a high level and the intention was that the detail would follow in the project documentation. The forum on network code and other policy developments at the European level was intended to be in addition to, not a substitute for, the arrangements that would normally be in place in the process of determining significant changes to the trading arrangements, e.g., as followed during the course of developing the intraday trading arrangements in the SEM or as followed by the regulatory authorities in 2004/05 in the lead up to the decision on a high level for the SEM and by Ofgem in a significant code review.

SEM Design Governance

The Regulatory Authorities (RAs) held a series of bilateral meetings in autumn 2004 with market participants to discuss views on the appropriate market model for the SEM. These meetings were informed by responses to the CER's questionnaire of June 2004 and responses to an NIAER consultation in September 2004. The RAs then made a presentation to a meeting of interested parties on 31 January 2005, at which the RAs noted that there were a number of issues that required further consideration. Bilateral meetings were subsequently held between the RAs and interested parties to discuss these issues further. The RAs published a paper in March 2005 setting out their preferred design, which went out for consultation for a period of eight weeks. Workshops were held during that period. A decision on the HLD was published in June 2005.

Ofgem Review Process

Ofgem are currently undertaking a review of the cash-out or balancing arrangements in the GB market. Ofgem first published an issues paper in November 2011 that sought views on a range of concerns with the existing arrangements, whether it should conduct a significant code review (SCR) and the scope of a potential SCR. After considering responses to that paper, Ofgem published an open letter in March 2012 signalling its intention to launch an SCR in summer 2012, which it did with the publication of paper setting out a range of reform options. This was consulted on for a period of twelve weeks, during which four all-day workshops were held, each concentrating on a separate issue or option. A final decision will be published in the spring of 2013.

The omission of any reference in the paper to stakeholder involvement during the course of the development of a new high level design was not intended to imply that they would be abolished or otherwise allowed to lapse. The list in the proposed decision paper of groups to be established referred to new or additional arrangements. As the proposed decision paper said, the SEM Committee is committed to ensuring that both current and prospective market participants are fully involved in the implementation of the target model and considers the input of stakeholders to be essential to the success of the project, as has always been the case.

In terms of project resourcing we also agree with respondents that it is imperative to have a fully resourced RA led project that harnesses consultancy support from international market design expertise as well as project management expertise. The former is key to a successful market design that meets the high level principles and the latter is essential to ensuring that the RAs have adequate time to properly engage and involve stakeholders. Accordingly, we have made the procurement of these resources a major priority for the coming months.

In its response, which a number of other respondents explicitly referred to and agreed with, the EAI pointed out that:

- sufficient time was needed to allow participants to formulate opinions;
- the views of stakeholders should be considered in advance of key decisions;
- industry should be afforded fair and balanced engagement, such that the commercial impacts of design decisions were given equal status with system issues.

The EAI then made the following recommendations

- The addition of a SEM Integration specific stakeholder group to the project governance arrangements to incorporate:
 - A 'project' stakeholder forum, inclusive of government departments, regulatory authorities, industry participants and system operators, to meet monthly or more often as necessary, to receive reports on the progress of the project;
 - A 'design' stakeholder forum to discuss the various and specific topics under consideration both before and during the formal consultation process;
- A project work programme detailing timelines, milestones, key activities and consultation periods, along with the appointment of an experienced and dedicated programme manager.

The EAI also suggested that the project team would benefit from the use of a SEM practitioner familiar with the commercial and operational aspects of the market from a supply and generation perspective. This resource would provide expertise and would report to the project as any other resource. The resource need not be an EAI member.

Another respondent's recommendations were:

1. To set up industry expert groups. The groups' roles would be primarily to shadow the project office, receiving documents from the project office and review them from an industry perspective.
2. Commit to a regular workshop schedule to work through the issues of market integration.
3. Employ an economic consultant with broad and deep electricity market design experience, to advise specifically on the commercial aspects of electricity market design.

We welcome these observations and constructive proposals. As for the establishment of a SEM integration stakeholder group or of expert groups, the SEM Committee intends now to follow the same process as was followed in the stage leading up to a decision on the high level design of the SEM, namely:

- the establishment of a project office;
- the retention of consultants with the necessary expertise in market design and the European target model;
- The establishment of a stakeholder forum for the market integration project that communicates project updates to stakeholders and involves market participants and consumer groups in the development of the market design and implementation of the design
- the formulation of options for a re-designed SEM that would be compliant with the European Target Model in all four timeframes (forwards, day ahead, intraday and real time) and which would meet the objectives set out in SEM-12-105a;
- consultation on those options for a twelve week period, during which a series of workshops will be held with stakeholders; and
- publication of a decision on a high level design.

At that stage, once the project moves into the detailed design phase, it may be appropriate to set up more bespoke industry expert working groups on particular topics, as was done in 2005/06 with the SEM (i.e. market power, capacity payments).

Market participants recommended that a ‘SEM practitioner’ could be seconded from an IEA member body to the project office. We do not favour such a secondment and believe that the project office should be resourced by the RAs and its specialist consultants.

Market participants will be afforded the opportunity to input into the design and implementation stages of this project and to bring their substantial expertise to bear. We are also very keen on involving consumer groups, who generally are less versed in the detail of electricity market design, in this process. It is important to ensure that regulatory decision making is not unduly influenced by any particular stakeholder or group of stakeholders.

In conclusion, we are committed to strong stakeholder engagement throughout the next stages of this project and will bear in mind the level of engagement that took place during the development of the SEM together with our experience since 2007 as well as European level mechanisms for stakeholder input into the Target Model.

Following publication of this paper we will issue a project initiation document setting out in detail the form and timetable for the overall framework of stakeholder engagement and project management. For information we are publishing a high level milestone plan for implementation of the target model with this paper based on the one produced by DCENR, DETI, CER, UR, EirGrid and SONI for the SEM in 2005 (AIP-SEM-51-05). A full project timetable will be published by the RAs in due course.

Stakeholder Forum on Electricity Network Codes

One industry representative group (EAI) also welcomed the establishment of the proposed Stakeholder Forum on Electricity Network Code Developments and recommended that:

- the Forum should be inclusive of the entire internal market development process - dealing appropriately with framework guidelines, network codes and comitology issues;
- a joint chair arrangement should be adopted whereby the chair is linked directly to specific item(s) under discussion (i.e. chaired by RAs when discussing framework guidelines, TSOs for the network codes, and government departments for the comitology stage) with attendance by a representative of the RAs, TSOs, Departments, at each meeting;
- at the time of Network Codes consultation, the forum should go through the draft codes on a line by line basis where appropriate;
- engagement should be on a regular as well as timely basis particularly in advance of key development points in the process.

The SEM Committee notes that the first meeting of the Forum took place on 17th January.

Involvement of the TSOs

Some respondents raised concerns about the influence of SEMO and the TSOs within the process, given that EirGrid had both technical and commercial interests in relation to the East West interconnector.

As stated above, we are aware of the concerns of some market participants as to the level of input and influence that they perceive the TSOs and market operator have had to date in the market integration project. Some respondents pointed out that the TSOs, as market participants should not be given a privileged position of influence over other market participants, particularly given EirGrid's ownership of the East West interconnector.

The TSO, SEMO and East West Interconnector are separate licensed entities. We do not consider there to be conflicts of interest between either of the interconnector owners and the TSOs in their respective roles in the market. The TSOs are not market participants (they are Parties but not Participants under the TSC accession rules) and the principle of the Third Package is to separate the functions of transmission from the competitive areas of generation and supply. Neither are the interconnectors full market participants bidding any capacity into the market to compete with generation or contract with supply companies; rather the interconnectors provide the route to competitive pressures from neighbouring markets, the very principle of the EU internal market.

Having said that, however, we are committed to ensuring that there is no undue discrimination *vis-a-vis* cross border participants and that a level playing field is provided for all.

We are also committed to monitoring the role of the TSOs in the process of implementing the Target Model. Given the key role that the TSOs have through the drafting of the Network

Codes and the implementation of many aspects of the Target Model (in particular SEMO's role in implementation of the central market systems) a strong working relationship between the RAs and the TSOs and market participants will be essential to ensuring that the project is a success and is delivered on time. As EirGrid, SONI, SEMO and the East West Interconnector are all regulated entities and do not operate in a competitive environment we are not aware of any conflicts of interest regarding their role in the implementation of the Target Model. However, given the continued concerns of a number of stakeholders in this regard, we will keep a watching brief on any perceived conflicts of interest that may arise.

The SEM Committee therefore recommends that the following governance arrangements be established.

The Departments have accepted the SEM Committee recommendations and their Governance framework document is published along with this paper.

SEM Committee Recommendation: Governance and Project Arrangements

In conclusion, the SEM Committee recommend that the following be established:

A DCENR – DETI Sub Committee of the Joint Steering Group as the forum for interaction between governments and regulators. This committee should also review the SEM Legislation and ensure that there are appropriate cross border joint regulatory arrangements in place for when the Target Model is implemented by the end of 2016.

A UK-Ireland Steering Committee on European Market Integration chaired by DCENR and DETI, with input from DECC as required. This Committee would meet on a biannual basis to discuss overarching policy issues for the UK and Ireland related to the internal European market in electricity.

A Regulatory Authority Project Office for the implementation of the European Target Model. The RAs will have overall responsibility for the implementation of the European Target Model under the aegis of the all island energy framework.

A Stakeholder Forum on Implementing the Target Model in SEM. This stakeholder forum for the market integration project will communicate project updates to stakeholders and involve market participants in the development of the market design and implementation of the design

Joint Regulatory Arrangements with OFGEM. The SEM Committee and Ofgem will establish formal cross border working arrangements to ensure that the European Target Model is implemented in a consistent and compatible manner in both jurisdictions. These arrangements will complement the FUI regional initiative and will provide a link between the SEM and the NWE region.

A Stakeholder Forum on the European Internal Market which will be jointly chaired by the RAs and TSOs. This will meet on a bimonthly basis, or more often if required, with the purpose of discussing the Network Codes and other European Union policy developments related to the Internal Electricity Market. The SEM Stakeholder forum will also hold joint meetings with the DECC-Ofgem Stakeholder forum on an ad hoc basis.

5. SEM Committee Recommendation to Governments

In January 2012, SEM Committee issued a Consultation Paper on Implementing the Target Model in SEM. SEM RAs have hosted a number of workshops on related issues and engaged with stakeholders through a series of bilateral meetings. Discussions have also taken place with Ofgem and ACER colleagues, as required. In addition, SEM RAs have reflected on the 22 responses received to the consultation which we have discussed with the respective Government Departments (DETI and DCENR).

Given the issues discussed in this paper and the acknowledged role of the Departments in creating the SEM legislative framework as described in this paper, the Departments have reflected on the next steps in this project required to achieve compliance by 2016, providing guidance to SEM RAs, as appropriate. The recommendations below from SEM Committee have been accepted by the Departments as a basis to begin the next phase of the project to implement the Target Model in SEM by the target date:

5.1 SEM Committee Recommendation to Departments: High Level Principles for the Market

Following consideration of consultation responses, the SEM Committee recommends the following High Level Principles to govern the redesign of the SEM which are required to implement the Target Model in Ireland and Northern Ireland:

- i. **Security of supply:** the chosen wholesale market design should facilitate the operation of the system that meets all relevant security standards.
- ii. **Stability:** the trading arrangements should be stable and predictable into the foreseeable future, for reasons of investor confidence and cost of capital considerations.
- iii. **Efficiency:** Market design should, in so far as it is practical, result in the most economic (i.e., least cost) dispatch of available plant. This shall include cross border TSO balancing arrangements that are at least cost to consumers.
- iv. **Practicality/Cost:** the cost of implementing and participating in the wholesale market arrangements should be minimised; and the market design should lend itself to an implementation that is well defined, timely and reasonably priced.
- v. **Equity:** the market design should allocate the costs and benefits associated with the production, transportation and consumption of electricity in a fair and reasonable manner.
- vi. **Competition:** the trading arrangements should promote competition between participants; incentivise appropriate investment in generation and demand reduction as well operation within the market; and should facilitate efficient entry or exit, all in a transparent and objective manner.
- vii. **Environmental:** while a market cannot be designed specifically around renewable generation, the selected wholesale market design should promote renewable energy sources and facilitate national and EU targets for renewables

- viii. **Adaptive:** The governance arrangements should provide an appropriate basis for the development and modification of the arrangements in a straightforward and cost effective manner.
- ix. **The Internal Electricity Market:** the market design should efficiently implement the European Electricity Target Model and ensure efficient cross border trade.

It is recommended that the relative priority of these assessment principles will be determined by reference to the SEM statutory objectives as set out in legislation in Ireland and Northern Ireland.

The Departments accept the SEM Committee recommendations on principles and confirmed that the Regulatory Authorities shall now begin work on the redesign of the SEM high level design that best meets these objectives.

5.2 SEM Committee Recommendation: Governance and Project Arrangements

It is the view of SEM Committee that SEM cannot implement the Target Model without significant design changes and this would be most efficiently carried out as part of a dedicated redesign project. Such a project to implement the Target Model (beginning by SEM RAs consulting on the design changes required) should commence as soon as possible in order to meet the target date of 2016 and the Departments may consider it necessary during the project to initiate future legislative changes to the existing SEM framework.

The SEM Committee therefore recommends that the following governance arrangements be established.

- **A DCENR – DETI Sub Committee** of the Joint Steering Group as the forum for regular interaction between governments and regulators. This committee should also review the SEM Legislation and ensure that there are appropriate cross border joint regulatory arrangements in place for when the Target Model is implemented by the end of 2016.
- **A UK-Ireland Steering Committee** on European Market Integration chaired by DCENR and DETI, with input from DECC as required. This Committee would meet on a biannual basis to discuss overarching policy issues for the UK and Ireland related to the internal European market in electricity.
- **A Regulatory Authority Project Office** for the implementation of the European Target Model. The RAs will have overall responsibility for the implementation of the European Target Model under the aegis of the all island energy framework. This will require appropriate resources.
- **A Stakeholder Forum on Implementing the Target Model in SEM.** This stakeholder forum for the market integration project will communicate project updates to stakeholders and involves market participants in the development of the market design and implementation of the design
- **Joint Regulatory Arrangements with Ofgem.** The SEM Committee and Ofgem will establish formal cross border working arrangements to ensure that the European Target Model is implemented in a consistent and compatible manner in both

jurisdictions. These arrangements will complement the FUI regional initiative and will provide a link between the SEM and the NWE region.

- **A Stakeholder Forum on the European Internal Market** which will be jointly chaired by the RAs and TSOs. This will meet on a bimonthly basis, or more often if required, with the purpose of discussing the Network Codes and other European Union policy developments related to the Internal Electricity Market. The SEM Stakeholder forum will also hold joint meetings with the DECC-Ofgem Stakeholder forum on an ad hoc basis.

The Departments have accepted the SEM Committee recommendations and their Governance Framework document is published along with this paper.

For information, in addition to the above recommendations to Government, the following represents the current views of the SEM Committee in relation to issues consulted upon in the paper.

6. SEM Committee Decisions

Following consideration of respondents' views on the next steps proposed decision paper we now make the following decisions as to the implementation of the Target Model in the SEM:

6.1 The European Target Model will be implemented in the SEM by 2016 in a coherent and stable manner

In this regard, the SEM Committee makes the following Decision:

- **Target Model:** At a minimum, changes to the high level market design of SEM must provide for the following five pillars of the Target Model by 2016:
 - Capacity Calculation and zones delimitation including a review of the bidding zones in the SEM and potential interactions with locational signals
 - Cross Border Forward Hedging and Harmonisation of allocation rules
 - Day Ahead Market Coupling
 - Intra Day Continuous Trading
 - Cross Border Balancing

- **SEM Design Stability to 2016:** We commit to maintaining the current structure of SEM until 2016.

- **Impact Assessment:** In addition to these, the final market design shall be subject to an impact statement that is in line with best practice and a cost benefit analysis, where appropriate, that takes into account the key energy policies that are materially affected by the wholesale electricity market.

6.2 Evolution and Revolution

Regarding market design, the SEM Committee Decision is that:

- The 'evolutionary options' described in the consultation paper should not be pursued further.

- The SEM RAs will work jointly with Ofgem and other NRAs/ACER on efficiently implementing the Target Model in SEM and BETTA, acknowledging the changes which potentially may take place in either market to facilitate this.

6.3 Dispatch and Market Model

The SEM Committee's Decision is that there will be a working assumption:

- that the SEM high level design will continue to be based on transparent, centralised trading arrangements with least-cost dispatch of total system load and centralised unit commitment. It will not rely on a process whereby market participants are required to enter into matched physical bilateral contracts and where there are financial penalties imposed for not doing so.
- Options for self commitment may be permitted within this high level design, taking into account the particular characteristics of the electricity sector on the island of Ireland, including the need to mitigate market power.
- There will continue to be market power mitigation measures in the SEM for as long as market power is considered to be an issue.

6.4 Promotion of Renewable Energy Sources

The SEM Committee's Decision is that in the revised market arrangements to implement the Target Model:

- The absolute interpretation of Priority Dispatch will remain as set out in SEM Committee Decision Paper SEM-11-062
- Changes to the SEM High Level Design should promote, where appropriate, the use of energy from renewable energy sources, as set out in legislation.

6.5 Capacity Payment Mechanism

The SEM Committee's Decision on capacity mechanisms is that:

- It is important that the total remuneration from energy payments, capacity payments and ancillary services is sufficient to ensure security of supply.
- Any capacity payment mechanism must not provide double payments to generators
- The capacity payments mechanism will need to avoid distortions in the internal market and comply with relevant EU rules

Annex 1: Summary of Responses to the Consultation

Summary of Market Integration Responses

The RAs received 22 responses to the Consultation on Implementing the Target Model in SEM. The following parties submitted a response: The Joint Business Council (IBEC/CBI), the National Electricity Association of Ireland (NEAI), the Irish Wind Energy Association (IWEA), Meitheal na Gaoithe, AES, Airtricity, Aughinish, Bord na Mona, Bord Gais, Dalkia, Endesa Ireland, Energia, the Electricity Supply Board (ESB), Gaelectric (confidential), Moyle, Power NI, PPB, Tynagh, RES, IDA/ Enterprise Ireland and Forfas, Shannon LNG, ESRI.

The following sets out the key points from the individual responses received:

Industry Associations

Joint Business Council (JBC) representing IBEC and the CBI

The JBC acknowledge progress made to date on the project and the importance of the consultation paper. However they stress that the current process should be ‘augmented’ by having a top down approach where the high level design principles of a new market are set out.

The JBC also calls for quantitative analysis of options for integration and a plan to address the outstanding issues not covered in the consultation (capacity payments, renewables, uplift and central dispatch). They suggest that joint bilateral meetings should be held with Ofgem and DECC on the wider context of market reform in the UK and Ireland.

National Electricity Association of Ireland (NEAI) (Irish Member of EURELECTRIC)

The NEAI welcome the ‘consultative’ approach taken by the RAs in the project to date and that the work done by the RAs to date has been ‘extremely valuable in bringing out some crucial insights into the complexities of the project’. They also note that there is ‘general satisfaction’ with the SEM though a number of changes in energy policy such as the need for new flexible generation to back up wind, the balancing costs of wind generation and intergovernmental plans for the export of renewables from Ireland.

The NEAI do not support any of the evolutionary options presented in the paper and suggest that the distinction between ‘revolutionary’ and ‘evolutionary’ is artificial and should be abandoned. Regarding the evolutionary options The response points out that the options as set out represent significant change, are not easy fixes are ‘reusing some of the SEM IT platform’ and that this approach does not minimise the operational complexity, risk and cost to consumers’. These include an annex of detailed questions on the four options.

The NEAI argue that the RAs should ‘revisit and restate’ the objectives of the modified market and initiate a high level principles paper that set out the objectives of a new market. Such an exercise should be undertaken “holistically” in an RA led project using independent market design experts, they argue. It is also urged that participants are included in the project in a similar fashion to the SEM design process or ACER’s Electricity Stakeholder Advisory Group.

Irish Wind Energy Association

IWEA argues that any new market design must ensure a stable future for renewables. The key issues they identify in this regard are: imbalance pricing, efficient market signals for import and export, reference prices, priority dispatch, modern settlement and credit facilities.

IWEA argue that the RAs should outline ‘the objectives that will govern the redesign process’ and ‘the constraints that will apply to this redesign process’. They point out some of the characteristics of the SEM that they believe should be retained (such as central dispatch, priority dispatch etc.)

IWEA does not support any of the evolutionary options in the paper as adopting a market design based on its impact on central market systems is ‘ill conceived’. In summary, they believe that the evolutionary options in the paper lack commercial perspective.

IWEA caution against adopting a BETTA style imbalance market that would damage investment in renewables. However, they signal that they are not opposed to replacing the SEM in its entirety, providing that this does not disadvantage wind in any manner.

Meitheal na Gaoithe

Meitheal na Gaoithe argue that the implementation of the Target Model on the island of Ireland should: maintain supply security, meet the requirements of the Renewables Directive, keep the market separate from support schemes for as long as possible, incorporate measures to mitigate constraints and curtailment, facilitate the trading and export of renewable electricity and provide for trading as close to real time as possible such that renewables are not penalised in balancing markets.

Market Participants

AES

AES take the view that assumptions on the high level principles need to be presented to participants for them to be able to adequately assess the options. They argue that the possibility of minimal change to the SEM ‘now looks remote’ and as a result urge the SEMC should to set up a holistic project which starts with high market level principles and objectives rather than progressing with the bottom up approach adopted to date.

AES argue that in light of developments since the Project Initiation Document was published in August 2011, the SEMC should review it and reassess its accompanying timetable

Airtricity

Airtricity argue that the SEM has met its objectives but doesn’t meet the objective of the European Target Model – frequent and flexible cross border trade. They argue that the establishment of high level principles based on analysis of Network Code is required. Airtricity argue that the ‘Integration with BETTA should be explored further’.

Aughinish

Aughinish support the European Target Model but caution against abandoning the principles and design of the SEM, which has a number of advantages over bilateral markets. Aughinish support the roll out of a pilot project based on evolutionary option 4 by the end of 2012. They argue that this route 'offers the best value for money to the electricity consumers, by opening the Irish market up to the rest of Europe whilst still maintaining all the stated benefits of the gross mandatory pool'.

Bord na Mona

Bord na Mona (BnM) also argue for a retention of the SEM design. They argue that the Target Model is a 'moving target' and that changes should be made to the SEM only once the final Target Model is in place.

BnM argue that any market redesign must be cognisant of the physical realities of the power system. In addition, the redesigned market must be 'RES friendly' in order to ensure that key EU and National policy objective are met and confidence among existing and prospective investors is fostered.

BnM are strongly of the view that the Capacity Payment Mechanism and the features of Central Dispatch should be retained and that the characteristics of the SEM that promote renewables must be retained, and perhaps enhanced. In addition, financial 'overlays' such as Option 4 in which minimise structural changes to the SEM, must continue to be investigated.

Bord Gais

BGE argue that the European Target Model 'only partially' informs the structure of the new market' and that national policies and requirements should not be compromised in meeting the Target Model.

BGE set out the core market attributes of any redesign as being: efficient pricing mechanisms, market power mitigation, liquidity, an aggregate approach to balancing and an appropriate single reference price.

BGE advise that the appropriate next steps are to re-assess/re-confirm the SEM's HLD principles and set out a project plan linked to related developments in GB and Europe by end 2012.

Energia

Energia stress the need for the current project to be replaced with a comprehensive market design workstream. They give no support to the evolutionary options and argue that the project has suffered from 'undue influence of SEMO/TSOs' that has led to vague, unnecessarily narrow and potentially restrictive options. Energia's main other points are:

- The project needs independent expertise with TSO/SEMO asked to contribute their technical expertise as required but on same footing as other participants
- Market power will continue to need mitigating unless substantial ESB divestment

- Either pool or bilateral market can meet objectives of Target Model and both should be considered
- a number of design principles should be adhered to include separation of market and dispatch, market power mitigation, CPM, Uplift, locational signals

Endesa Ireland

Endesa argue that the project should be approached from first principles and that at this point it would be premature to narrow down options for the future of the SEM. Regarding the Assessment Criteria proposed by the SEM Committee, Endesa suggest that compliance with the EU's Internal Market should be an initial screen for all design assessments. They call for a more in depth description of the assessment criteria and also suggest the addition of 'Non-discrimination' and 'Promotion of Efficient Use of Interconnection'.

Overall, Endesa wish for the Market Integration to remain at a high level at this point, until the Target Model has been fully defined and all the network codes completed. They also question the SEM Committee *vires* to decide on a regional market decision 'as their duties are limited to the SEM'. In this regards they suggest that the requirements and timeframes for legislation and licence changes must be considered as soon as possible. Endesa state that they have a general preference for maintaining (the benefits of) the SEM providing that compliance with the Target Model is guaranteed.

ESB

While acknowledging the work done and industry engagement by the project team, the ESB believe that 'the approach of taken the SEM HLD and incrementing CACM compliance unduly restrictive and fails to take account of the regional market context'. Rather, the ESB proposes an approach with an overriding objective of maximising the benefits of market integration.

The ESB argue strongly for a move to bilateral trading arrangements to replace the SEM on the grounds that it would mean closer market integration with GB and beyond. They point out that both self and central commitment are possible under a central dispatch regime and that market design options based on self-commitment need to be more fully evaluated so as to achieve the full benefits of market integration and the Target Model. The response provides detail on the price reductions that occurred in Great Britain at the time of a move from pool to bilateral market arrangements that the ESB claim was a result of the change in market design. They signal their support for the 'expanding BETTA' option and urge the RAs to explore this further.

The ESB 'has serious misgivings' about the potential commercial implications of the four incremental options set out in the paper and argue that the risk disadvantaging SEM players vis-à-vis other market participants in the European Internal Market.

The ESB also argue for the establishment of a formal project based approach to market integration with formal milestones and regulatory impact assessments. They stress that the project should be RA led with participants and TSOs given equal opportunity to engage.

Gaelectric

(response confidential)

Moyle

Moyle voice support for a solution that meets the Target Model while retaining the key features of the SEM, and while they acknowledge that this may be 'extremely difficult;', they caution against 'throwing the baby out with the bathwater'.

Of the evolutionary options, Moyle favour Option 3 as it includes the benefits of both options 1 and 2 whilst avoiding the negatives.

Overall, Moyle stress the importance of efficient interconnector flows and trading between Ireland and Great Britain and in particular to avoid curtailing wind generation.

Power NI

Like many respondents, Power NI stresses the importance of establishing high level principles for the market design. As non vertically integrated supplier, Power NI is concerned that any new market may reduce available hedging and risk management opportunities. They note that the lack of liquidity in the SEM financial forward market has added a price premium 'that is ultimately paid by consumers'. Accordingly, their response focuses on the importance of the forward market and risk management opportunities and urges that the RAs address this as part of the market integration project.

PPB

The Power Procurement Business call for a reaffirmation of the market design principles that will underpin the new market. They urge that a review be undertaken to 'establish the framework for detailed consideration of the design of a sustainable market' that meets consumers and participants needs.

Regarding the evolutionary options, PPB argue that:

- The proposals don't consider commercial risks
- Many issues are still outstanding
- Limitation of bilateral trading to capacity holders is discriminatory
- Central dispatch debate is diversionary
- All options are significant change

PPB suggest that 'external assistance' should now be procured to identify the most suitable options.

Tynagh

Tynagh argue that it would be premature at this point to rank the various options presented in the paper and caution against focussing overly on minimising the costs of adapting the SEM to the Target Model as this could lead to 'complexity and inefficient results'.

They are of the view that the new market should:

- encourage efficient use of existing interconnectors
- encourage fair competition

- maintain a stable investment environment

Other Respondents

Dalkia

Dalkia, an international energy services company with a significant presence in Ireland, emphasise the importance of retaining a form of capacity payment mechanism in order to encourage investment in flexible generation and 'maintain supply to customers at best price'. If the current SEM capacity mechanism is to be abandoned, they recommend a capacity market along the lines of those in ISO New England and PJM.

Dalkia emphasises the importance of flexibility from demand side participation, aggregated generation and storage and recommend that these are taking into account when implementing the Target Model.

Overall, Dalkia takes the view that the SEM has benefitted consumers and recommends that the SEM design should be retained as much as possible. Their key concern is significant changes to the SEM would reduce investment in flexible generation and increase costs to consumers.

Paul Gorecki (Economic and Social Research Institute)

The ESRI submission sets out the historical problems and challenges that the SEM was designed to address and examines the degree to which integration with the European internal market would tackle or mitigate these. The response summarises and evaluates the options set out in the Consultation Paper.

Regarding the evolutionary options, the response suggests that Option 1 and 3 should not be explored further as they both contain elements of a bilateral market which would compromise the transparency and liquidity of the SEM. The response argues that Option 2 and Option 4 are worth exploring as they retain much of the current SEM. It is suggested that Option 2 could be implemented with a requirement that the forward pool is mandatory while option 4 has a number of issues to be resolved but is nevertheless 'an option worth pursuing'.

Regarding the revolutionary options, the response argues that it is not the appropriate time to contemplate replacing the SEM design. It sets out five reasons as to why:

- The SEM has performed well, delivering competitive prices through mitigating market powers, facilitating energy and providing adequate capacity.
- No clear alternative market design has been identified by the SEM Committee.
- European electricity markets face a number of new challenges in the near future (such as harmonisation of renewable support schemes, capacity payments and incorporation of high levels of renewable generation) that likely to affect wholesale market design and it may be premature to undertake a radical review of SEM before these issues are resolved at EU level.
- A debate over market design took place when deciding on the SEM model in 2005-2007. It is not clear that things have changed significantly to reopen this matter.

- There may not be sufficient time to debate, design and implement a new market. A CBA, new legislation and ACER approval would all be required and it is not clear that all of this can be achieved by 2016.

The response concludes that the best means of implementing the Target Model in Ireland and Northern Ireland would be to adapt the current SEM, possibly using Option 2 or 4 set out in the Consultation Paper and wait until the European internal market is fully operating and the network codes have all been adopted before consider radically revising the market design

IDA/ Enterprise Ireland and Forfas (the Joint Development Agencies)

The Joint Development Agencies stress the importance of ensuring that market design changes deliver efficiencies and least costs to consumers.

The Development Agencies outline a number of areas that require consideration by the SEM Committee:

- Central Dispatch – An in depth assessment should be carried out. Reliability of electricity supply shouldn't be compromised in any model
- Capacity Payments – These should be retained
- Interconnection – interconnectors should be used efficiently but Irish consumers shouldn't subsidise exports

The Development Agencies are of the view that the SEM has been 'a positive development' and that 'retaining the benefits of the SEM but without making the market very complicated and opaque will be very challenging, but is vital for Ireland's future energy competitiveness.

RES

RES, an international renewable energy developer with assets (250 MW) in Ireland and Northern Ireland, signal support for the IWEA position that the SEM C should set out design principles for the market redesign process and 'the constraints' that will apply.

RES are of the view that the SEM has delivered on many of its objectives and that these objectives should remain for the new market. Regarding options for market design, RES caution against adopting market arrangements such as BETTA that have low liquidity, especially so in Ireland where there are a small number of participants and limited competition. RES argue that 'bilateral trading arrangements are unlikely to result in an efficient and fair marketplace for smaller independent participants in the SEM'.

Shannon LNG

Shannon LNG do not favour any particular option in the Consultation Paper at this point. They point out that the SEM has worked well, delivering transparent cost reflective prices with demand on the island met at least cost. It is argues that any new market design should be benchmarked against these.

They also stress the importance of the clear price signal that the SEM has provided to developers of new power generation and express their concern that there will be insufficient

regulatory certainty regarding the market design for developers to progress their projects between now and 2016.

Shannon LNG request clarity on how priority dispatch will work under each option to be considered under the project. This is particularly important given the high levels of priority dispatch generation on the island of Ireland in the future, they stress.

Annex 2: Responses to Proposed Decision Paper

Summary of Responses to Proposed Decision

Electricity Association of Ireland

- Principal concern is with governance of the project.
- Importance of engagement with all stakeholders
- Consideration needs to be given to commercial impacts as well as system issues. This has not been the case to date
- Need for evidence based decision making
- EAI accept SEM C recommendation for High Level Principles but point out that complying with the Target Model should not adversely affect competitiveness on the island of Ireland
- Emphasised the need for a rigorous CBA and need to take into account 'entire spectrum of costs' including market participants' costs.
- Welcomed the commitment to maintain design stability of the SEM to 2016
- Need for inclusion and comprehensive stakeholder forum on internal market issues
- A SEM specific stakeholder forum on TM implementation is also very important. This should include:
 - A Project Stakeholder Forum made up of RAs, Depts, industry participants and TSOs and meets on a monthly or more regular basis for update on project progress
 - A Design Stakeholder Forum to discuss market design topics before and during consultation
- A 'SEM Practitioner' to represent a commercial perspective would be a benefit to the Project Team, they would report to the project directly.
- Query as to what SEM C mean by promoting RES, 'where appropriate'

Joint Business Council

- Costs should deliver tangible benefits to businesses and consumers on the island
- New market must not jeopardise Ireland's energy competitiveness, sustainability goals or energy supply security
- Important to avoid piecemeal changes to market
- More active engagement with stakeholders, particularly large industrial energy users
- Acknowledgement that good progress has been made to date

Irish Wind Energy Association

- Concern about limited communication from RAs in recent months. Need for inclusive and transparent engagement process with market participants but acknowledgement that RAs have been engaging with Depts etc. since April
- Welcome publication of the High Level Principles for the market and emphasise the contribution of RES to other principles than just the environmental one.
- In favour of top down approach
- New market should ensure ease of access for independent and unsupported renewable projects and minimise potential barriers to entry

- Welcome reports on dispatch but asks for further clarification on what is meant by the working assumption of central dispatch and whether it includes central scheduling and commitment and over which timeframes
- Welcomes decision to adhere to absolute interpretation of Priority Dispatch but argues that PD should be included as High Level Principle for the new market
- It is premature and inappropriate to make a decision on treatment of curtailment for new market without having decided on the high level design. This should be left until the detailed design phase
- IWEA request clarity as to meaning of SEM C decision that RES will be promoted 'where appropriate' and request removal of words 'where appropriate' as they cause uncertainty
- Welcome decision to retain a capacity mechanism. CPM should provide correct price signals which facilitate wind exports
- Welcome European Forum but need for Market Integration Forum
- Need for revised timeline, concern that consultation on HLD timeline is rather tight
- Key points on imbalance pricing, efficient signals for import and export, importance of a reference price and Priority Dispatch

Viridian group limited

- Most significant project since SEM establishment, implementation is vital
- Statement within paper that "it is important that the total remuneration from energy payments, capacity payments and ancillary services is sufficient to ensure security of supply" should be broadened to include an efficient, competitive and liquid market – as need for focus on commercial risk management for both generation and supply perspectives
- Concerns that project governance and arrangements do not include a formal and structured interface for industry, participant involvement and engagement – accept that RAs have acknowledged more detail required on this
- Initial proposals too TSO centred and little engagement with participants since close of consultation concerning
- Would have expected more engagement on dispatch issue
- Welcomes decisions to reaffirm the HLD principles in paper recommendations
- Welcomes statement that the target model will be implemented in a coherent and stable manner and that stability of existing market will remain – clarify this is to a fixed point in 2016
- Important that the impacts of any proposed market design be fully assessed against any viable alternatives and CBA concluded taking accounts of risks and costs to market participants
- Welcome decision not to pursue evolutionary options
- Disappointed by the SEM C decisions on central dispatch unclear what this means or that a decision on this is needed at this stage. Viridian wish for this issues to be resolved as part of the design process
- Strongly support the CPM, accept will be influenced by European rules, vital to investment and security of supply – very relevant in a market with high levels of renewables that conventional generation capacity and flexibility is rewarded
- Locational signals should be an integral part of ant market design

- RAs have not engaged properly to draw on expertise within the industry and a collaborative approach should be followed going forward

ESB

- Meaningful and timely engagement is key
- Following suggestions made for future project engagement:
- SEM redesign stakeholder forum in advance of decisions
- Future engagements by TSOs / MO be consulted upon
- CBA be published in advance of consultations as part of decisions
- ESB broadly supportive of SEM C decisions that a working assumptions for changes to SEM HLD be based on central dispatch – however ESB believes that the expanding BETTA options has potential merits which should be explored if SEM C working assumption becomes untenable
- ESB supports retention of BCoP as primary mechanism for mitigating any market power
- What does promoting renewables ‘as appropriate’ mean?
- ESB welcomes SEM C commitment to sufficient remuneration from combination of payments such as CPM / AS and energy.

SSE

- Highlighted key concerns with the process to date – lack of engagement and resources but new urgency needed now to move ahead
- Project roadmap needed and structures and mechanisms for engaging with industry to be communicated
- SSE welcomes reaffirmation of the HLD principles for market to include internal market principle but closer examination of what they mean may be required
- All decisions need to be supported at each juncture by CBAs that cover full costs of the project not just central project costs
- Significant improvement sought with regard to RA project office – industry expert group to shadow the RA project office reviewing the documents / regular workshops schedule / economic consultant to advise on commercial aspects
- Support five pillars of TM implementation being implemented in a coherent and stable manner. Do not support market splitting. Long lead times in SEM will be the key challenge in implementation.
- SSE agrees to design stability to 2016 with no material changes in the interim.
- SSE welcomes dropping of evolutionary options.
- Dispatch needs to be clarified. Distrust of ‘working assumption’ as seems SEM C has decided on a centralised market. Preference for this decision not being made at this juncture.
- Question wording on supporting renewables ‘where appropriate’.
- Welcome statement on CPM.
- Changing treatment of curtailment in a tie break situation may be needed.

Northern Ireland Renewables Industry Group supports the IWEA response

RES Ltd – Northern Ireland

- Wish for a transparent, open and informed process for redesign with changes fully consulted upon.
- RES welcomes the commitment to stability in the market until 2016.
- Support project looking at other aspects of SEM design including TM implementation
- Replication of BETTA should not be considered by SEM – agree that CD is best model for all island system going forward
- Link between the EU target model implementation and the feed in tariff needs to be appropriately considered including timetables for strike price etc.
- Welcome need for continued mechanisms in area of market power and look forward to details
- Support SEM C affirmation of statutory objectives in relation to renewables and environment and look forward to decisions being made on how priority dispatch should be given effect to going forward.
- Concerned at inclusion of ‘where appropriate’.
- Unclear at how CD will operate with IDT – need to be mindful of consequences. Concern at IDT and balancing and consequences for renewables route to market and negative impacts on terms of PPAs.
- Views expressed on approaches to balancing as detailed in the paper – favour central aggregator approach.
- Changing treatment of curtailment in a tie break situation may be needed.

Bord Na Mona

- Primary objectives of redesign should be to ensure its structure allows investors to recover a reasonable rate of return
- Agree that task at hand is not compliance but to focus on implementing the TM in a manner which best serves the interests of consumers and wider energy policy
- Final structure of TM remains a moving target – attention drawn to uncertainty around NWE and GB / commission work on capacity payments
- BnaM welcomes effective freezing of current design until 2016
- BnaM appreciates that nature of paper is high level and cannot detail all issues which will require addressing in design phase.
- Scope of RIA and CBA should fundamentally capture the totality of the redesign.
- Support not pursuing the so called evolutionary options
- Welcome closer working with Ofgem.
- Welcome continued market power mitigation measures
- Ireland best served by CD given renewable ambitions.
- BnaM welcomes the clarification provided at workshop that inclusion of wording ‘as appropriate’ in relation to renewables promotion is superfluous.
- How priority dispatch must be accommodated should be explored in next phase.
- CPM should form a continued part of revenue remuneration in SEM.
- BnaM welcomes renewed level of engagement from RAs following the workshop and recent bi laterals – and is four square behind comments from EAI as to how to facilitate a more inclusive approach going forward.

Power NI

- While it is acknowledged that work has been ongoing within RA offices lack of information shared with industry is a concern. Commitment to establish a fully resourced project office welcomed which will increase engagement.
- Issues facing SEM which will require consideration whole implementing the TM remain – CPM / liquidity / DSM and renewables targets
- As a stand-alone non vertically integrated supplier power NI concerned at impact of any changes on availability of hedging and risk management opportunities.
- More information needed going forward on impacts on suppliers.
- More detail needed in HLD stage to comment on assumption of CD but might adoption of assumptions at this stage limits options.

Gaelectric

(Response confidential)

ESRI – Paul Gorecki

- SEM C decisions seem sensible with two suggested issues for consideration.
- Firstly, when promoting renewables SEM C should consider referring to economic efficiency to manage the risk that such sources of energy would be promoted without due consideration to wider implication for energy system. Secondly, ESRI broadly agree with decision not to pursue the evolutionary options they consider that an option which considers minimal change should be explored further given how well SEM works presently and that the issues with SEM are those which are likely to continue.
- No consensus on appropriate model going forward – seems that redesign might well end up looking like SEM with some modifications. Modest change should remain open as a possibility.

Energia

- Concern over ‘distinct lack of engagement with industry since closure of January consultation’
- Argues that pool and bilateral style markets should be give equal consideration in design phase of project. Working assumption on central dispatch to rule out BETTA style market is premature and ‘has been taken without full consideration and consultation’
- Call for working assumption of central dispatch to be withdrawn and strongly recommend a wide ranging, inclusive, independently informed and unbounded assessment of options for market design
- Reaffirmation of points raised in consultation response
- Supports EAI on process and governance arrangements
- Request that decision on design stability extends to start of new market – CPM
- Support retention of CPM and argue that distortion effect of CPM could be dealt with by removing capacity payments from IC flows

- Request removal of 'where appropriate' from RES decision. Generally support IWEA on res issues but stress that RES integration strategies can be equally effective in pool and bilateral markets
- See retention of market power mitigation measures as key but this should not preclude a bilateral market. Liquidity measures will also continue to be important in new market
- Paper is silent on locational signals. Why?
- Argue that bidding zones should only be reviewed where absolutely necessary
- Support High Level Principles

Bord Gais Energy

- Accept SEM C Decision on High Level Principles and support the weighting of these principles by SEMC legislative duties but need for holistic and balanced interpretation of principles
- Clarity sought on RES Decision 'where appropriate'. When would it not be appropriate, under which criteria?
- Highly commend decisions to retain Priority Dispatch and explore means of protecting RES from penal imbalances. Important for investor certainty
- Central dispatch working assumption is important for promotion of RES. Acknowledge that it is a working assumption that will need to be developed
- Importance of these should not be underestimated in terms of investor confidence
- Decision to remove compensation for curtailment in new market is premature
- Proposals to retain a CPM and market power mitigation measures are welcomed
- Strongly advocates stakeholder forum proposals in the paper. Highly commend
- Need for analysis to underpin all decisions
- Need for project and design forums to avoid delays that have beset SEM projects in the past

Shannon LNG

- Broadly support the proposed High Level Principles
- Shannon LNG agrees that central dispatch is the optimal means of dispatching the all island system
- They agree that a physical bilateral contracts market would lead to serious market power concerns given the nature of the all island market.
- As a potential new power generator investor in the SEM, they welcome the continuance of market power mitigation measures
- Shannon LNG 'completely supports' the working assumption on central dispatch
- Need for inclusion of how market will meet Energy Efficiency Directive provisions on priority dispatch for high level CHP
- They support CPM continuance

Tynagh Energy Limited

- Accept HL Principles but argue that there should be clear obligation of non discrimination between participants based on island of Ireland and in the rest of Europe
- They argue that changes will be required for TM compliance to the RCUC dispatch tool that the TSOs use to dispatch the system and that this should be recognised in the paper
- Wind generators should be made Balancing Responsible parties and be exposed to imbalances
- It unclear how continuous intra day trading and 1 hour gate closure will work with central dispatch

Saorgus Energy

- Welcome Priority Dispatch decision but question 'where appropriate' re.RES
- Question whether the promotion of competition is the best means of protecting consumers and argue that RAs should look to more long term national security approach
- Suggest RES objective not strong enough
- Should consider future merging of GB and Ireland market designs

AES

- Redesign needs to consider highly constrained market, lack of generation investment in NI and high constraint costs
- Support High Level Principles
- Welcome SEM stability to 2016 and top down approach
- Review of bidding zones is a prudent course of action
- Need for robust CBA
- Market power mitigation important but could take different form
- Premature to make decision on central dispatch at the point
- Support CPM
- Endorse EAI position on Project management and governance
- Concern over influence of TSOs over project

Power Procurement Business

- Concern about lack of engagement over last seven months and lack of engagement with market participants on dispatch issue.
- Cost benefit analysis should apply in all circumstances.
- Welcome proposed governance arrangements. Role of Ofgem in redesigned market is unclear.
- No preference at this point for central or self dispatch but are of view unnecessary bounds should not be placed on the market design at the stage. More sensible approach would be 'nothing is confirmed until everything is confirmed'.

- Strongly support the continued inclusion of a capacity payments mechanism in any market redesign.
- Argue that the treatment of renewable generators and interconnectors in the market and dispatch does not meet the high level principles of competition, equity and efficiency.