

**Single Electricity Market
Scope of
CPM Medium Term Review

Information Paper**

17 November 2009

SEM/09/105

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2 INTRODUCTION

On 8 April 2009 the SEM Committee (SEMC) published a consultation paper (SEM-09-035)¹, documenting the scope of work that the SEMC proposed to carry out in relation to a medium term review of the Capacity Payment Mechanism (CPM). The main purpose of this review is to examine if the current design of the CPM can be further improved to optimally meet the objectives of the CPM.

The SEMC considers the CPM as a key feature of the SEM design. The SEMC believe that extensive analysis and consultation on this topic took place prior to SEM Go Live and that the concept of the CPM should remain in place. The SEMC wishes to satisfy that the correct signals and appropriate incentives or rewards are inherent in the design, so as to meet its objectives optimally. In particular the SEMC are mindful that CPM provides signals for new entry/investment and should reward plant and capacity in accordance with its performance.

The objectives of the CPM, as defined in the paper 'Capacity Payment Mechanism and Reserve Charging High Level Decision Paper' (SEM-53-05)² are:

1. Capacity Adequacy/ Reliability of the system

The CPM must encourage both the construction and maintained availability of capacity in the SEM. Security of the system, in both the long and short-term will be the core feature of any CPM.

2. Price Stability

In order to maintain sufficient capacity adequacy and system reliability, prices may sometimes have to spike to levels well in excess of short run marginal costs (SRMC). This is particularly true of energy-only markets but these spikes may also be necessary in markets with an explicit CPM. It is desired that any CPM should take some volatility out of the energy market by shifting the revenue required from price spikes to revenues paid to generators through another mechanism. Since this other mechanism should result in a more stable and less volatile payment to generators, this should ultimately lower the risk premium required by investors in generation.

Stable prices are also necessary to facilitate the trade of large users who participate directly in the pool so the economy is not disrupted at peak times. Acceptable prices will need to have a transparent basis to customers and government. The prices that are necessary to maintain the required capacity adequacy of the system and that could arise from an energy-only market, might not meet these requirements.

3. Simplicity

The CPM should be transparent, predictable and simple to administer, in order to lower the risk premium required by investors in generation. A complex mechanism will reduce investor confidence in the market and increase implementation costs.

¹ http://www.allislandproject.org/en/cp_current-consultations.aspx?article=4dde96cc-fdda-458b-9a3c-dc4a00692ac5

² <http://www.allislandproject.org/en/capacity-payments-decision.aspx?article=aa084bc6-3d33-4c7f-91a4-903a34011106>

4. Efficient price signals for Long Term Investments

In theory it would be possible to incentivise vast amounts of capacity over and above that necessary for system security in the SEM, although the cost of implementing such a scheme may be unacceptable to customers. The CPM should meet the criterion in this section at the lowest reasonable cost. Revenues earned by generators should still efficiently signal appropriate market entry or exit.

5. Susceptibility to Gaming

The chosen CPM should provide market participants with incentives to act in their own best interests and produce outcomes that are consistent with the other criteria in this section. If participants act in their own best interests and the chosen CPM produces results that are inconsistent with the CPM criteria, then the mechanism is susceptible to gaming.

6. Fairness

The CPM should not unfairly discriminate between participants. A CPM will result in cost increases for customers when capacity is scarce but will result in decreased costs for customers when capacity is not scarce. An appropriate CPM will maintain reasonable proportionality between the payments made to achieve capacity adequacy and the benefits received from attaining capacity adequacy. Buyers in the SEM should pay in proportion to the benefits they receive.

A report was published on 5 December 2008³ by Douglas McIlldoon regarding a review of the tariff setting process in Northern Ireland. This report included concerns in relation to the CPM design and operation. The CPM Medium Term Review will take into consideration all of the areas of concern expressed in the report in relation to the CPM.

The areas under consideration in the consultation paper are detailed below. Each of these areas is discussed later in this paper:

- Assessment of CPM in SEM (historical analysis)
- Impact of CPM on Customers
- Incentives for Generators Capacity
- Payments when Capacity is needed
- Distribution of Capacity Payments
- Capacity Requirement Calculation
- WACC Methodology
- Infra Marginal Rent & CPM
- Impact of Exchange Rate in CPM
- Treatment of Wind in CPM
- Treatment of Interconnector in CPM
- Relationship of CPM with Ancillary Services
- Impact on Diversity of Generation & Security of Supply

In addition, on 9 March 2009 the SEMC published a consultation paper *'Fixed Cost of Best New Entrant Peaking Plant Calculation Methodology'* (SEM-09-023), presenting options to introduce further stability in the CPM. An

³ http://www.niaur.gov.uk/uploads/publications/McIlldoon_Review_051208.pdf

information note on this topic (SEM-09-085)⁴ highlighted a number of options that will be given further consideration in the CPM medium term review. These are discussed later in this paper (see Section 17).

Overall 16 responses were received from market participants to the consultation paper on the CPM Medium Term Review. The parties, whose responses are published with this paper, are listed below. One respondent requested that their response was not published.

- Airtricity
- Bord Gais Energy
- Bord na Mona
- EirGrid & SONI combined response
- Endesa Ireland
- Energy Generation Infrastructure response
- ESB Customer Supply
- ESB International
- ESB Power Generation
- IBEC
- IWEA
- Moyle Interconnector Ltd
- NIE Energy - PPB
- NIE Energy Supply
- Synergen
- Viridian Power & Energy Limited

Overall market participants have welcomed the review although some did raise concerns that it was too early in after the implementation of the SEM to be carrying out a review.

The SEMC have now completed four iterations of calculating the capacity pot. The SEMC believe that the SEM is now well enough established and there is sufficient historical data and opinions collated from the various consultation processes to allow the RAs to carry out a review of the CPM.

The RAs will assess the objectives of the CPM to ensure they are being met in an appropriate manner. Any options proposed will be considered in terms of whether they would significantly change the design of the SEM and if they will compliment the objectives of the SEM. The SEMC are mindful not to propose options that are disproportionately expensive or different to the current design relative to the benefits the changes would create.

This paper summarises the views of respondents in the main areas proposed for the medium term review. The RAs acknowledge the detailed responses provided by respondents and these will be given due consideration as part of the detailed work. The objective of this paper is to provide clarity on the final scope of the CPM Medium Term review and provide a high level view of the approach and timelines for the completion of the review.

⁴ <http://www.allislandproject.org/en/capacity-payments-consultation.aspx?article=4be505c5-4157-4a70-95e5-7cd1524e42b3>

3 AREAS UNDER CONSIDERATION IN MEDIUM TERM CPM REVIEW

In the CPM Medium Term Review Scope Consultation Paper, a number of areas were proposed for inclusion. Each of these areas is considered in turn in the following sections and the comments received from respondents have been considered. For each area, the RAs have determined firstly if the area should be included in the medium term review and then have defined the scope of work. Any cross dependencies within this area of work and with other work streams have also been identified.

Finally, the RAs have included a time line detailing the expected durations of activities and the periods for further consultations on the topics under review within the CPM Medium Term Review. The RAs intend to carry out 2 consultations on the CPM Medium Term Review. The first consultation will be on aspects of the current CPM process. The second consultation will be on possible enhancements to the CPM. Further details on the work packages proposed and timelines for consultation can be found in Section 18.

4 ASSESSMENT OF CPM IN SEM

The RAs proposed to analyse the data relating to the CPM from SEM Go Live to determine whether the CPM is meeting the current objectives. Specifically the RAs proposed to look at:

- The effect of the distribution of capacity payments on availability, particularly at times when capacity is needed most.
- The effect of the scheme on incentives/signals to enter and exit the market.
- The effect of the scheme on the type of plant planned or being built.
- The effect of the scheme on the diversity of generation.
- The effect of the scheme on use of the Moyle interconnector.

The RAs proposed that this activity should be carried out first as the findings from this investigation may act as an input into the other areas of work described below.

4.1 RESPONSES TO ASSESSMENT OF CPM IN SEM

A number of respondents noted that the proposed historical analysis may be of benefit in determining the distribution of the payments and availability levels, however most queried whether any meaningful conclusions could be drawn in relation to incentives and investment signals. One respondent proposed that an area worth considering is identifying the statistical relationship between availability and generation margins.

A number of respondents requested that any analysis carried out by the RAs should be published.

4.2 FURTHER WORK ON ASSESSMENT OF CPM IN SEM

The RAs accept that due to the relative short time that SEM has been in place there are limited conclusions that could be determined in relation to incentives/signals to enter and exit the market and the type of plant planned or being built as well as the diversity of generation.

The RAs therefore intend to assess the distribution of capacity payments on availability, particularly at times when capacity is needed most. The RAs also acknowledge the request for any data or findings to be published and will do so if significant findings are determined.

4.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

5 IMPACT OF CPM ON CUSTOMERS

Following on from the scope detailed in section 7.1, the RAs proposed to investigate the impact that the CPM has had on customers and the retail market. This will be based on initially assessing the historical data on the CPM. The RAs will also assess the calculations being used to determine the capacity payments applied to suppliers.

5.1 RESPONSES TO IMPACT OF CPM ON CUSTOMERS

A number of respondents stated that they did not see any reason for amending the existing methodology for payments by suppliers. However, a number of respondents proposed that capacity payments could be shaped such that suppliers/customers consuming at peak trading periods pay more than those consuming during other trading periods. In relation to this, number of respondents proposed that the impact on customers should also consider the wider demand side activity in the market. Another respondent proposed that the profile for half-hourly weighting should match the payments to generators so that the cost to suppliers reflects the payments to generators.

5.2 FURTHER WORK ON IMPACT OF CPM ON CUSTOMERS

The RAs acknowledge the comments received and the concerns raised in relation to the 'shaping' of capacity payments for suppliers. The RAs agree with the concerns raised regarding demand side activity and the impact that the capacity payments could have on this as well as exploring the possibility of giving the demand response an active role in a future CPM mechanism.

The RAs will investigate both these areas during the medium term review, but will not propose any changes until the latter stages of the review.

5.3 DEPENDENCIES WITH OTHER WORK STREAMS

The RAs agree that the impact of the CPM on customers should be considered in relation to demand side activity. There is a project recently initiated within the RAs to look at Demand Side Management issues. This work will be considered by the CPM team during the review.

6 INCENTIVES FOR GENERATORS

Currently under the CPM, generators are paid almost wholly based on Eligible Availability. This means that two generators who have the same EA value get the same⁵ payments regardless of the other parameters that make up the generator. The flexibility of the generator is not taken into consideration.

The RAs proposed that there is the potential to expand the criteria that could be used to determine how the capacity pot is paid out. However, before trying to design any incentive scheme, it will be necessary to clearly define what is the “product” or service that the generators are supposed to provide to consumers in exchange for the CPM payment. It seems safe to say that this “product” consists of two major components: maintaining an adequate volume of installed generation capacity to meet the expected peak demand with some prescribed margin –i.e. adequacy–, and having this capacity ready to be used whenever the power system is in need of available generation to meet the demand –i.e., firmness–. Among the multiple operational parameters that contribute to this firmness one can mention:

- Fast Start
- Reliable Start
- Short Minimum Up and Down times
- High Ramp Rates

although they rather belong to the realm of the ancillary services. Firmness is directly related to the type of fuel contract, the plant maintenance schedule or the management strategy of the reservoir of storage hydro plants.

The RAs understand that with the increase in intermittent generation on the island of Ireland, the requirement for more flexible plant will also increase. Therefore there is the option of creating the incentives via the CPM to attract the appropriate mix of plant and reward accordingly. An incentive mechanism will also act as an exit signal for those inefficient and underperforming plants that do not provide a value-add to the changing generation portfolio.

As well as incentives, there is also the option to introduce charges in the event that any committed firmness is not forthcoming when required or dispatched by the TSOs.

⁵ A small adjustment is made to distinguish the price of unscheduled quantities but it has diminishing effect compared to the weighting of Eligible Availability

This area of consideration could enhance the CPM Objectives relating to Capacity Adequacy, Efficient price signals for Long Term Investments and Fairness; however, it could reduce the predictability and simplicity of the Calculations for the CPM. One possible enhancement of any CPM scheme consists of incorporating the demand as an active element in the provision of system adequacy and firmness, with the corresponding remuneration.

6.1 RESPONSES TO INCENTIVES FOR GENERATORS

A large number of respondents were not in favour of the introduction of incentives for generators into the CPM. Many felt that the Ancillary Services Mechanism was the correct place to reward flexibility. In their opinion, the CPM should incentivise and reward capacity availability and adequacy on the system. One respondent suggested that a design objective for revision of the CPM must be to reward energy price suppression as well as flexibility and contribution to capacity security. One respondent flagged a concern where over-incentivising plant because of its flexibility, could signal the inappropriate type of plant mix being built. They also suggested an option to change the balance between the amount of money disbursed through the CPM and the Ancillary Services markets.

One respondent provided an example of how an incentive mechanism could be introduced into the CPM.

6.2 FURTHER WORK ON INCENTIVES FOR GENERATORS

The RAs recognise the concerns raised by market participants regarding the potential overlap between CPM Incentives and Ancillary Services incentives. The RAs are minded that generators should be remunerated for the provision of Ancillary Services, which do not seem to be the products –adequacy and firmness– that fall squarely under the CPM. The RAs will consider in its CPM review the available mechanisms to attract appropriate plant mix and flexibility of plant.

6.3 DEPENDENCIES WITH OTHER WORK STREAMS

The RAs will liaise closely with the Ancillary Services team within the RAs and the TSOs on this area, as there is an overlap of areas where incentives could apply.

7 TIMING & DISTRIBUTION OF CAPACITY PAYMENTS

An area that the RAs have proposed that needs to be given due consideration and could be linked with the concept of incentives is that Capacity Payments should reward generators for being available when the capacity is needed most.

It has been suggested that the current scheme does not adequately reflect the differing value of capacity through the day, week and season. The RAs intend to investigate the impact of when capacity payments are made and determine if a more appropriate distribution of the pot is possible.

In addition, the RAs propose to determine whether the split of the pot into 12 monthly pots is a correct method to use and whether it sends out the appropriate signals to plants for availability. For example, plant maintenance periods are generally in the summer period when the capacity pot is smaller. This may result in reduced capacity being available in the summer period. The algebra that is used to split the pot into 12 monthly sub-pots ignores the LOLP in each month, instead profiling over a smooth load-following shape.

Another area the RAs proposed to review is the weightings of the three streams (fixed, variable & ex post sums) to consider if these should be rebalanced to reward the provision and availability of capacity more accurately. Of the monthly pot, currently 70% of the Pot (30% Fixed + 40% Variable) is determined on an ex ante basis which provides a high level of stability for generators and investors. However, the actual Loss of Load Probability (LOLP) is only used in calculating 30% of the pot.

7.1 RESPONSES TO TIMING & DISTRIBUTION OF CAPACITY PAYMENTS

A number of respondents suggested that the current mechanism relating to timing and distribution of the capacity payments are satisfactory. Other respondents flagged concerns over the distribution of the pot to ensure the correct investment signals are sent (fixed + ex ante) and the ability to reward availability appropriately (ex post). Some respondents requested the fixed payments to be increased while other respondents felt the ex post payments should have a larger proportion.

One respondent suggested a method to introduce sub categories into the ex post payments to reward different types of plant depending on their level of availability.

The TSOs highlighted the analysis carried out in Mod_44_08 relating to a second Flattening Power Factor to the distribution of payments in the CPM. They requested that this analysis should be included in this review.

7.2 FURTHER WORK ON TIMING & DISTRIBUTION OF CAPACITY PAYMENTS

The RAs see this area of work as one of the most important on the CPM Medium Term review. The RAs will use the results of the historical analysis to build up a number of scenarios and then use these to determine the impact of changing the timing and distribution of the capacity payments. The RAs are aware of the requirement to balance investment signals and reward availability, in particularly when needed and will give this full consideration in the analysis. The RAs are cognisant of the industry views relating to stability of revenues. Any proposed changes will be considered in conjunction with stability considerations which also form part of the Medium Term Review.

In addition, the RAs will consider the option of a secondary Flattening Power factor in the analysis.

7.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

8 CAPACITY REQUIREMENT CALCULATION

As well as calculating the value for a 'Best New Entrant' Peaker plant, the RAs are also responsible for determining the Capacity Requirement. This is done in conjunction with the Transmission System Operators (TSOs).

Based on the experience to date, the RAs see merit in reviewing the process in order to improve the accuracy of the calculation and the level of transparency. Suggested areas for the RAs to investigate are:

- a. Calculation of Capacity Requirement Methodology – The RAs will revisit the methodology used to calculate the capacity requirement to ensure it is the most optimal method and the original assumptions used in the methodology remain valid.
- b. CREEP Algorithm⁶ – The RAs will look at working with the TSOs on improving the transparency of the overall methodology.
- c. Forced Outage Probability (FOP) – The RAs have received a number of comments about the setting used in the calculations and the variance from what has occurred in reality. Some participants believe that the current setting of 4.23% is too low. The RAs propose to revisit the setting of this parameter.

8.1 RESPONSES TO CAPACITY REQUIREMENT CALCULATION

The majority of respondents raised concerns over the lack of transparency in relation to the Capacity Requirement Calculations. They requested that a full consultation should take place on these calculations and that the inputs should be provided to allow market participants to replicate the calculations. A workshop with the TSOs was also suggested.

The main area of concern was in relation to the calculation of reserve margin, which respondents suggested was too low. Related to this was the level of Forced Outage Probability, which a number of respondents felt that this had been set at an unachievable level. A number of respondents suggested that historical averages of the Forced Outage Probability values should be used in the calculations. One respondent proposed that a benchmarking exercise of international levels of unit availability should be carried out.

8.2 FURTHER WORK ON CAPACITY REQUIREMENT CALCULATION

The RAs acknowledge the comments in relation to the Capacity Requirement. The RAs are keen to ensure that the process for the Capacity Requirement calculation is as transparent as possible. With this in mind, the RAs intend to hold a workshop on the Capacity Requirement calculation in Q4/2009. The intention of this is to address some of the transparency concerns and discuss the inputs to be used for the 2011 Capacity Requirement Calculations.

The RAs will cover the following specific areas of concern raised in the CPM Medium Term Review:

⁶ CREEP is an adequacy assessment program used by the TSO to derive the scheduled outages forecast. It is a critical tool in determining the Capacity Requirement.

- Improving the transparency of the calculation process
- Access to the Inputs used in the Capacity Requirement Calculation
- Forced Outage Probability
- Treatment of Wind and the Wind Capacity Credit used
- Running of the CREEP (Adcal Model)

The RAs intend to address the specific concerns regarding the Forced Outage Probability and Margin and will consult on this, as well as the other inputs to the calculation, ahead of setting the Capacity Requirement for 2011. It is anticipated that a consultation will take place in Q1/2010.

In addition, the RAs will also investigate the impact of high wind penetration on the Capacity Requirement to ensure that the methodology provides for sufficient thermal generation to mitigate against wind intermittency.

8.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

9 WACC METHODOLOGY

In the BNE calculations, the calculation of WACC is a key area that historically has resulted in a lot of comments from Market Participants. The RAs intend to look at the methodology used in calculating the various WACC parameters to ensure the approach is fully transparent and that all assumptions used are clear and understood. This work will be carried out for both jurisdictions within the SEM.

9.1 RESPONSES TO WACC METHODOLOGY

The majority of respondents welcomed this area and were generally content with the use of the CAPM model. One participant suggested that a financial model using a discounted cash flow approach should be considered. The majority of respondents requested further transparency in the calculations and assumptions used. A number of respondents noted that the assumptions and parameters used need to be realistic and achievable and reflect the financial conditions facing generation in Ireland. One respondent proposed that the weighted average cost should be calculated over the lifetime of the investment and not solely for one year of that investment.

9.2 FURTHER WORK ON WACC METHODOLOGY

The RAs welcome the comments and note that they reflect the concerns that have also been raised in previous consultations on the BNE Peaker costs. The RAs have endeavoured to make the 2010 BNE Calculations as transparent as possible and published extensive data on the WACC parameters as determined by external consultants (CEPA/PB report).

The RAs will seek to make the WACC calculations for the 2011 BNE Calculations as transparent as possible and will look at methods of reducing the level of volatility by continuing the work described in 'Fixed Cost of Best New Entrant Peaking Plant Calculation Methodology' (SEM-09-085). (See section 17 below).

9.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

10 INCLUSION OF INFRA MARGINAL RENT IN CPM

One area that the RAs proposed to investigate is Infra Marginal Rent for the BNE Peaker. Infra marginal rent did occur in the 2007 pot, however, in 2008 and 2009, there were no infra marginal rent deductions from the capacity pot.

The RAs are aware that there is new plant due to commission over the next 2 to 3 years and it would be useful to determine the impact this may have on the infra marginal rent costs in the BNE peaker calculations.

10.1 RESPONSES TO INCLUSION OF INFRA MARGINAL RENT IN CPM

The majority of respondents strongly oppose the deduction of Infra Marginal Rent from the BNE peaker. A large number of respondents raised the concern that the BNE will only earn Infra-marginal rents in times of scarce capacity. It would be a perverse signal to reduce capacity payments in times of scarcity when capacity and investment is most need on the system.

10.2 FURTHER WORK ON INCLUSION OF INFRA MARGINAL RENT IN CPM

The RAs note the concerns raised and will revisit the rationale leading to the decision to deduct the Infra marginal rent from the BNE Peaker Calculations.

10.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

11 IMPACT OF EXCHANGE RATE IN CPM

The RAs intend to look at is the impact the exchange rate has had on CPM payments and the options available to reduce any impact that exchange rate fluctuation may have on the CPM. The RAs will initially look at the historical payments and use this to determine if any improvements can or needs to be made in this area.

11.1 RESPONSES TO IMPACT OF EXCHANGE RATE IN CPM

A number of respondents suggested that this is an area that does not need to be considered in the medium term review, as exchange rate risk is an everyday risk managed and hedged by both generators and suppliers operating in a cross-jurisdictional market. A number of respondents proposed that the impact of fluctuations in the exchange rate could be reduced by setting the Capacity Exchange Rate on a monthly basis, rather than annually. Another responded suggested that CPM market segmentation could be introduced resulting in separate RoI and NI capacity pots.

11.2 FURTHER WORK ON IMPACT OF EXCHANGE RATE IN CPM

The RAs acknowledge that there will always be some element of risk associated with currency exchange rates. However, the RAs do feel that it is worth considering the impact of setting the capacity exchange rate on a monthly basis, rather than annually. The RAs need to consider the practicalities of such a change and the impact on areas such as tariff setting.

The RAs do not agree with the proposal to have jurisdictional pots and will not be considering this suggestion further.

11.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

12 TREATMENT OF WIND IN CPM

Following on from the Wind Information note published in December 2008 (AIP-SEM-08-177), the RAs propose to continue the work undertaken and progress the next steps as defined in the information note.

'It is recognised that further analysis is required in advance of consulting further on correction of this overpayment. To this end, the following are the next steps that the RAs will carry out. Further analysis as follows:

- calculation of Study-Inferred Capacity Credits for wind generation on the island based on actual data for the first twelve months of the SEM;*
- calculation of Study-Inferred Capacity Credits for all other generation types on the island, including Demand Side Units, based on actual data for the first twelve months of the SEM, and*
- completion of analysis regarding the remuneration of all generation types and Demand Side Units for the first twelve months of the SEM similar to that completed for the first eight months of the SEM, the findings of which are presented here.'*

The ongoing work will be taken into consideration to allow the RAs to make an informed decision on any proposed changes.

12.1 RESPONSES TO TREATMENT OF WIND IN CPM

A number of respondents made the point that the market should reward all generators (including wind generators) equitably for the capacity and energy that they provide and no element of discrimination should be introduced to the CPM. This aligns with the CPM objective of fairness. One respondent requested that the treatment of pumped storage units should also be considered in the review.

However a number of respondents also made the point that the capacity revenue received by all generators should reflect their contribution to generation adequacy in the long term and also their availability to meet demand at times of low capacity margin on the system. One respondent noted that capacity credit should be taken into account when determining capacity payments. Another raised a concern that a potential over-payment (of wind) may act to block the development of the complementary conventional generation needed to maximise the electricity generated from this wind capacity.

12.2 FURTHER WORK ON TREATMENT OF WIND IN CPM

Based on the responses, the RAs see merit in continuing the work started in the paper AIP-SEM-08-177. Some of the analysis may be carried out in the historical analysis discussed in Section 4 above. The RAs intend to expand this area to consider the treatment of all generator types in CPM. The RAs will consult on analysis carried out and proposed changes to the current mechanism.

12.3 DEPENDENCIES WITH OTHER WORK STREAMS

The historical analysis to be carried out (as detailed in section 4 will feed into this area of analysis.

13 TREATMENT OF INTERCONNECTOR IN CPM

As part of the Medium Term review, the RAs will liaise closely with the existing RA work stream working on Interconnector Issues. This is to ensure that relevant proposals made as a result of the CPM review are taken into consideration during the ongoing work in Interconnector area and vice versa.

13.1 RESPONSES TO TREATMENT OF INTERCONNECTOR IN CPM

A number of respondents questioned whether it was appropriate to change the current treatment for Interconnector users in the CPM. A number of respondents reiterated the comments made in relation to wind where interconnector users should be entitled to remuneration from the CPM equivalent to the contribution they make to generation adequacy.

One Respondent (Moyle) included a comprehensive response detailing their concerns with the current mechanism and re iterated a previous proposal for treatment of interconnectors.

Another respondent suggested there is a need for more flexibility on the interconnector with more dynamic trading rules required. Another respondent suggested that much greater use of the interconnector could be made if use-it-or-lose-it capacity allocation were to be allowed and more frequent gate closure introduced.

A respondent highlighted the addition of new interconnectors over the next few years and the arrangements for the CPM need to be robust for all parties, including new interconnectors. Another respondent proposed that the CPM mechanism as currently designed should be limited to payment for existing units. A separate capacity mechanism should be defined for new market entrants, including new interconnectors.

13.2 FURTHER WORK ON TREATMENT OF INTERCONNECTOR IN CPM

The RAs see two main areas to be considered in relation to the Interconnector. One area is the current rules for capacity payments for Interconnectors and whether they remain appropriate. The RAs propose to investigate this as part of the historical analysis and other analysis in the review.

The second area relates to the bidding rules for the interconnector and the introduction of additional interconnectors. As highlighted there is an existing work stream already in place within the RAs and the CPM team will liaise closely with this workgroup to ensure that the CPM is fully considered in any potential changes to the existing market rules for interconnectors.

13.3 DEPENDENCIES WITH OTHER WORK STREAMS

The CPM team in the RAs will liaise closely with the Interconnector workgroup to ensure that the CPM is fully considered in any potential changes to the existing market rules for interconnector and vice versa..

14 RELATIONSHIP OF CPM WITH ANCILLARY SERVICES

As part of the Medium Term review, the RAs will liaise closely with the work stream working on Ancillary Services Harmonisation. This is to ensure that any proposals made as a result of the CPM review complement the ongoing work in Ancillary Services (AS) and vice versa.

There may be opportunities to use the work completed to date on Ancillary Services harmonisation as an input to the CPM Review, while acknowledging that adequacy, firmness and ancillary services are different products. It should be noted that any decisions made on the CPM cannot be agreed without fully considering and assessing the impact of Ancillary Services. This consideration would include ensuring any reward for flexibility within the ancillary services process is taken into account in any CPM changes to ensure that the overall level of award are appropriate in both mechanisms (and cost neutral to customers).

14.1 RESPONSES TO RELATIONSHIP OF CPM WITH ANCILLARY SERVICES

A number of areas of concern were raised in relation to the ancillary services. The first was in relation to the deduction of the ancillary services from the BNE Peaker Calculation. A number of respondents stated that they did not believe it was appropriated to deduct these payments from the BNE Peaker calculation, as they are not guaranteed.

The second area was in relation to the Ancillary Services Contracts where the process should be more transparent, especially in relation to bi-lateral contracts.

A number of respondents proposed that option of re-balancing the amounts of money that are disbursed through the CPM and Ancillary Services mechanisms could be used to more efficiently target the type of new generation that can offer services needed for the optimal running of the transmission system. However, other respondents noted that these payment streams have two very distinct purposes and should be kept separate.

14.2 FURTHER WORK ON RELATIONSHIP OF CPM WITH ANCILLARY SERVICES

In relation to the deduction of Ancillary Services payments from the BNE peaker, the RAs believe that this is appropriate and the RAs will investigate this along with the proposed work on Infra marginal rent.

The RAs cannot to address the concerns relating to the transparency of bi lateral contracts within the CPM Medium Term Review. There is a work stream for Ancillary Services Harmonisation which is more appropriate for addressing this issue.

The RAs acknowledge that the CPM and Ancillary Services are separate mechanisms but will liaise closely with the Ancillary Services Team in the RAs and the TSOs to ensure that the parallel work is efficient and not contradictory.

The areas of work above will link in with the incentives for Generations as discussed in section 7 above.

14.3 DEPENDENCIES WITH OTHER WORK STREAMS

This area of work will involve discussions with the TSOs and Ancillary Services team within the RAs.

15 IMPACT ON DIVERSITY OF GENERATION & SECURITY OF SUPPLY

One area of concern within the RAs and the approach to the CPM Medium Term Review is the potential impact any future changes may have on the diversity of Generation and security of supply. Although the RAs do not intend to use the CPM as a method to expand the diversity of generation, they are aware of the high dependence on fossil fuel imports, in particular gas. It is the RAs intention to be cognisant of this concern and consider any impacts on the diversity of generation in the analytical work to be carried out.

15.1 RESPONSES TO IMPACT ON DIVERSITY OF GENERATION & SECURITY OF SUPPLY

Three respondents commented on the diversity of generation and security of supply. One respondent highlighted the development in European thinking on security of supply and the need to exploit indigenous renewable resources as a means of reducing dependency on imported fossil fuels. Another proposed that the review should include the contribution generators with stored fuel capabilities and fuel diversity contribute to security of supply, with a view to including a mechanism for reward for such generators. They proposed that the reward should reflect the contribution these generators make to system security and also the cost incurred by generators for the provision of this service.

15.2 FURTHER WORK ON IMPACT ON DIVERSITY OF GENERATION & SECURITY OF SUPPLY

The RAs realize the need to consider plant type and characteristics required with increasing levels of intermittent generation and will liaise with the TSO in relation to studies they carry out in this regard

The RAs note the comments are of the view that these relate to wider policy issues that do not fall within the remit of the CPM.

15.3 DEPENDENCIES WITH OTHER WORK STREAMS

This is an area where there are no critical dependencies however the RAs will continue to monitor for any dependencies that may arise during the course of the program.

16 OTHER ASPECTS OF CPM

The RAs believe they have captured the key areas of consideration for the CPM Medium Term review within this document. However, the RAs are aware that there may be other market participant concerns that have not been considered or referenced within the above scope. The RAs encouraged market participants to provide any other aspects of the CPM that should be included in the scope of the Medium Term Review

16.1 RESPONSES TO ASPECTS OF CPM

A number of respondents provided comments on additional areas they felt would be appropriate to be included in the scope of the CPM Medium Term Review. These can be broadly categorised in to the following areas:

1) **Generation Adequacy**

With high levels of wind generation penetration in the market, the energy revenue streams, including rent, are reducing and a greater dependency on capacity income has resulted. Since these existing generators, as well as new capacity, are needed on the system in order to ensure generation adequacy, regard should be taken to their overall profitability in the SEM.

2) **Impact of TLAFs**

TLAFs have a very direct affect on a unit's CPM revenues, as Eligible Availability (EA) is loss factor adjusted in the disbursement algorithm

3) **Dual Fuel Options**

A number of participants requested that Dual Fuel Plant be given further consideration in the BNE Calculations.

4) **CPM Year**

One respondent highlighted that is the CPM year which is currently based on a calendar year is out of line with the main tariff year.

5) **Demand Side Participation**

A number of respondents requested that due consideration should be given to demand side participation because of the security of supply, financial and environmental benefits it could bring.

6) **The treatment of Non-firm Generators**

Two respondents noted that the treatment of non-firm generators within the CPM is worthy of analysis. One suggested that such analysis might consider whether payment for capacity is equitable in all cases, particularly if network constraints were such that the generator cannot contribute to security of supply.

7) Capacity Auctions

One respondent proposed that for new build, capacity auctions should be introduced. These capacity auctions will help the SEM move toward a more competitive market. They proposed that capacity auctions should guarantee an annual capacity payment over 10-15 years, sufficient to enable investors to recover their capital

16.2 FURTHER WORK ON ASPECTS OF CPM

The RAs acknowledge the comments in relation to Generation Adequacy and will consider these concerns as part of the planned work package 'Treatment of All Generator Types in CPM'.

In relation to the impact of TLAFs, the RAs have an existing work stream to look at TuOS and TLAF settings in the market. The CPM team will liaise with this work stream to ensure any impact of TLAFs is fully considered in the context of the CPM.

Regarding the Dual fuel options, the RAs highlighted in the consultation paper 'Fixed Cost of a Best New Entrant Peaking Plant & Capacity Requirement for the Calendar Year 2010' (SEM-09-072) the following point:

The RAs note that a variety of short term capacity products from a variety of sources are available in the Republic of Ireland, and a range of short term products as required by EU directive 1775 are also available. However a similar range of products on an uninterruptible/firm basis are currently not available in Northern Ireland, but are planned for delivery under the Common Arrangements for Gas (CAG).

This inconsistency in the two jurisdictions does create an issue of equity in treatment of generators located in both jurisdictions that requires further consideration. Furthermore, the RAs wish to deliberate on this matter in a holistic manner taking into consideration issues such as the bidding principles and the energy market. The RAs are therefore of the view these matters should be included for further consideration in the Medium Term Review of Capacity Payment Mechanism

The RAs will investigate this area further as part of the Medium Term Review.

The CPM year is aligned with the TSC year. Therefore in order to move the CPM year to align with the tariff year may require significant changes to the TSC. As this is a TSC issue, it is deemed to be outside the scope of the CPM Medium Term Review.

The RAs agree that Demand Side Participation should be included within the scope of the CPM Medium Term Review. The RAs will look at the implications of this area as well as the planned analysis of wind and interconnection. In addition, as the RAs are initiating a new work area on Demand Side Participations the CPM team will liaise closely with this work area. The RAs will also consider the role of AGUs and whether they could be considered as the BNE Peaker in future calculations.

The RAs are currently consulting on Principles of Dispatch and the Design of the Market Schedule in the Trading and Settlement Code (SEM-09-073). Within this consultation, this issue of firm and non firm access is being

considered. Therefore the CPM team will liaise closely with this work area to ensure that impacts on the CPM are fully considered.

In relation to capacity auctions for new generation, a similar mechanism was discussed in the paper 'Fixed Cost of Best New Entrant Peaking Plant Calculation Methodology' (SEM-09-085), where 'option 6' covered a fixed price for capacity for new entrants. There RAs therefore consider it appropriate to look at the options for auctions within this area of work.

17 OUTPUT FROM COST OF BEST NEW ENTRANT PEAKING PLANT CALCULATION METHODOLOGY REVIEW (SEM-09-085)

As detailed in the Information paper 'Fixed Cost of Best New Entrant Peaking Plant Calculation Methodology' (SEM-09-085), the RAs identified a number of areas that will be considered with the CPM Medium Term Review. These are detailed below.

Option 2 - Calculate BNEFC on an annual basis but some components cost remain constant for a number of years

Use the current methodology to calculate the BNEFC but with some constituent elements kept unchanged for a period of, 3 or 5 years for example. These elements would include both choice variables, such as the technology of the peaker, the choice of fuel, the siting of the plant, the capacity of the plant, the environmental standards to be met, etc; as well as cost/revenue variables. In principle, the fewer the variables that have to be re-estimated each year, the more stable the BNE cost will be, at least over the 3 or 5 year period.

Option 5 – Calculate the BNEFC and keep it in place for a multiple year period. Make estimates only every 3 or 5 years for the BNEFC either of all the variables or of a subset and index the cost in the intervening years.

Option 6 – Fixed price for new entrants An option that was suggested in the responses to the Consultation Paper for the Fixed Cost of a Best New Entrant Peaking Plant for the calendar year 2009 was to have a separate mechanism for new entrants.

In addition to the above, the RAs will consider the following proposals as part of the CPM Medium Term review:

- A more certain, transparent and robust methodology for the calculation of the Annual Capacity Payment Sum, (ACPS) is required
- A floor-price for the CPM should be set by the RAs, applicable for at least 5 years.
- Allow existing market participants to fully recover their fixed costs, similar to how variable costs are fully recovered
- Have individual pots (or individual floors) for each existing market participant to enable them to fully recover fixed costs, profiled to incentivise short-term availability.

18 TIME LINES FOR CPM MEDIUM TERM REVIEW

As detailed above, there is a considerable scope to the CPM Medium Term Review. The RAs have therefore organised the work into a number of 'work packages' to allow similar areas to be addressed together.

A number of areas of analysis will be complex and require considerable time and resources to fully assess and address the concerns raised. There are also a number of dependencies on other areas of work which need to also be considered in the planned work packages.

The RAs have estimated that the CPM Medium Term project will take 19 months to complete. An additional time may be required before full implementation of any changes, depending on the changes needed to the TSC and Central Market Systems. Taking this into consideration, the RAs anticipate that the Annual Capacity Payment Sum (ACPS) for 2011 and 2012 will use the existing methodology for the calculations.

The RAs have decided upon the following work packages and have provided a high level time line of activities to give market participants visibility of estimated periods for consultation. The RAs have grouped the work into a number of phases covering an Historical Phase and a CPM Enhancement Phase.

Historical Phase:

- Work Package 1 - Historical Analysis of CPM
- Work Package 2 - Review of Capacity Requirement
- Work Package 3 - Deduction of IMR & AS & BNE Peaker Plant Options
- Work Package 4 - BNE Peaker Plant Fuel Options
- Work Package 5 - Exchange Rate for CPM

CPM Enhancement Phase

- Work Package 6 - Treatment of All Generator Types in CPM
- Work Package 7 - BNE Calculation Methodology
- Work Package 8 - Incentives for Generators
- Work Package 9 - Timing & Distribution of Capacity Payments
- Work Package 10 - Impact of CPM on Customers

The timelines for the various work packages are below. It should be noted that based on the timelines, it is anticipated that the annual calculations of the ACPS will be required for 2011 and 2012.

