



**Response by Energia to the Regulatory
Authorities Consultation Paper SEM-11-088**

*Single Electricity Market CPM Medium Term Review
Draft Decision Paper*

12 January 2012

1. Executive Summary

Energia welcomes the opportunity to respond to above draft decision of the CPM Medium Term Review which began over two years ago in a dramatically different environment. In response to SEM-11-019 we stressed the importance of the new context, characterized by the delayed penetration of renewables, the emerging European Target Model, the depressed economic conditions and challenging financing environment. Subject to the correct methodology being used and implemented, as suggested in this response, we are pleased the RAs have taken on board our comments to some degree and have proposed stabilising the CPM by fixing elements of the BNE calculation for 3 years. Given the stated rationale for this to also be cognisant of 2016 European Integration timelines we strongly suggest extending the fixed duration further, until at least 31 December 2016 as this will dovetail better with the **end** 2016 deadline for SEM compliance with the EU Target Model. We also strongly advocate continuation of the existing capacity mechanism beyond 2016.

It is always important to get the CPM calculation correct given the established methodology and existing market design objectives. Hence it should be mechanistically and transparently applied based on:

- (a) Realistic, evidence-based assumptions that reflect prevailing market conditions and that are founded in real world experience; and
- (b) A stable methodology, avoiding any material change or ad-hoc adjustments from the status quo unless clearly warranted and justifiable on objective, robust economic grounds.

On this note we are deeply concerned and disappointed to see a proposed decision for an ill-justified and radical change in methodology for calculating the notional infra marginal rent (IMR) that is deducted from the BNE price, this is in contradiction to the stated RA preference for stability and minimal change. The materiality of this proposed change (which would reduce the size of the capacity pot by around 9%); its poor justification; and its profound flaws (as will be discussed later in this response); unavoidably create the impression of selective intervention to suppress the size of the capacity pot. This will have detrimental consequences for lender confidence and future investment, will increase the perception of regulatory risk (increasing the cost

of capital), and will place existing generators under significantly increased financial stress.

It is worth highlighting that CPM is very well understood by banks and is relied upon as a fundamental aspect of the market when evaluating projects. The current economic environment and ongoing banking crisis has depleted the pool of banks that are active in this area and many of these are increasingly risk-averse. Any change in the CPM methodology will immediately be ceased upon by these banks and justification for the change will be sought from their clients. Therefore, change to the CPM, especially when ill-justified and flawed, will have significant knock-on effects for investors and new investment.

At a very practical level, the proposed option for calculating IMR is based on generators being compensated at market price consistently reaching PCAP for 8 hours of lost load per annum, in reality this is very unlikely to happen. Loss of load events are generally as a result of local network constraints (for example South – North flow restrictions) and do not result in price spikes. It is also contrary to the rationale for the CPM in the first place - i.e. that an energy market is generally unable to realise a true value of lost load (VOLL)¹. The proposed approach will therefore remove efficient entry signals and will undermine the compensatory function of CPM in the context of SRMC bidding principles and BCoP in the energy market, contrary to the objectives of CPM.

In the above context the remainder of this response provides detailed comments regarding: (1) IMR deduction; (2) forced outage probability (FOP); (3) weighted average cost of capital (WACC); and (4) flattening power factor (FPF). The key conclusions are as follows:

- (1) **IMR** – It is Energia's considered view that the administratively derived IMR, as per Option 2 in SEM-10-046, is unjustified, incorrect, totally unrealistic, and very damaging to the effective functioning of the CPM. This proposal must be rejected to retain credibility in the CPM.

- (2) **FOP** – Energia welcomes recognition from the RAs that the existing FOP value used in the CPM calculation of 4.23% is overly optimistic. This is recognition that

¹ See section 1.1.2 of NEAI response reproduced in detailed comments below.

the CPM has been undervalued since the start of the SEM due to unrealistic and ill-conceived FOP decisions. However, the proposed 5.91% FOP value is not well founded in practice or justifiable as a target value, based on the evidence presented in the consultation paper, this needs to be in the region of 8%-9% to reflect forced outage rates observable in practice. Note that current forced outage rates for major plant are likely to increase due to increased plant cycling associated with high wind penetration.

- (3) **WACC** – The WACC calculated for Northern Ireland in particular is seriously flawed because of its reliance on generic GB fundamentals. This does not reflect the reality that any rational investor locating in Northern Ireland will factor in sector specific risk associated with the SEM, and consequently RoI. This weakness is particularly concerning in light of the proposal to embed WACC in the fixed BNE calculation for several years and the significant divergence that has emerged in recent years between RoI and GB fundamentals as a result of the sovereign debt and euro crisis. Given its significance, this anomaly in current practice, which was less apparent when the scope of the CPM review was determined, can no longer be ignored and can be easily addressed in the BNE calculation for 2013.
- (4) **FPF** – Energia is strongly opposed to the proposed increase in the flattening power factor (FPF) from 0.35 to 0.5. We consider this poorly justified, contrary to the direction of change required for enhanced market integration, and primarily of benefit to large portfolio players. We strongly urge the RAs to re-consider their minded to position to increase the FPF, especially given the need for stability and the effective functioning of existing arrangements according to independent observers.

We provide more detail in support of the above conclusions in the detailed comments below and in important respects we draw from the NEAI response which Energia has contributed to and strongly supports. We also endorse the IWEA response.

Given the importance of the issues under consideration Energia requests a meeting to discuss this response and we look forward to further constructive engagement.

2. Detailed Comments

(1) **IMR** – As noted in the Executive Summary, Energia has consistently opposed in principle the continued deduction of IMR from the BNE price. This has always been Energia's position for the following good reasons. It is perverse in nature because it reduces capacity payments when needed most and is susceptible to forecasting errors. On the latter note, our modeling has consistently and accurately predicted zero IMR for peaking plant and therefore deducting notional IMR from the BNE price adds no value but instead creates a perception of risk that it could be material due to forecasting errors and hence discourages efficient investment. The solution is not to instead calculate IMR based on an infeasible and totally unrealistic theoretical scenario and we strongly contest the stated rationale in the draft decision paper for revising the methodology used to calculate IMR.

The administratively derived IMR, as per Option 2 in SEM-10-046, is unjustified, incorrect, totally unrealistic, and very damaging to the effective functioning of the CPM. We therefore urge the RAs to reject this proposal. The National Electricity Association of Ireland (NEAI) has responded in detail on this issue and Energia supports the NEAI position, reproduced below for completeness.

Selected Extract from NEAI response:

1.1 *Infra Marginal Rent (IMR) Deduction*

NEAI members consider that the SEMC draft decision would constitute a significant change to the CPM, and our members have serious concerns regarding it as conceived. The following sections set out these concerns.

1.1.1 *Option 2 is a solution to a non-existent problem*

The proposed move to Option 2 is a remedy to a problem that our members do not accept exists in reality. Our members fundamentally contest the SEMC's assertion that the existing regime is volatile² and are prepared to share modelling which

² “...The implications of a change in estimated real IMR are thus significant and represent genuine volatility in the CPM calculations. The SEM Committee wishes to remove this level of volatility if possible. While one possibility would be to simply not deduct the IMR, it is the RA's view that at

illustrates that a continuation of the status quo for the calculation in IMR is unlikely to lead to any volatility in the short to medium term – and certainly not during the period in which the BNE price is proposed to be fixed. We acknowledge that Option 2 would counter volatility that could arise in theory but have fundamental concerns around the economic rationale underpinning Option 2 (as detailed below) and do not accept 'theoretical' volatility as a credible basis for change as this does not reflect the reality of the situation on the ground. The NEAI believes that such an approach could greatly undermine the CPM and would argue strongly for the maintenance of the status quo which we believe will not be volatile and will provide price stability (which are the two stated grounds that the SEMC have espoused as reasons for justifying the proposed change). There is no evidence that Option 3 has not functioned as intended to date, or that it is conceptually flawed. Whilst well founded changes to the SEM are to be expected, and are indeed desirable, changes such as the one proposed give rise to significant regulatory risk and this is very damaging to investor and lender confidence.

We note that Option 2 was not the preferred option of any of the respondents to the original consultation (SEM/11/019) and, notwithstanding the view of some members that IMR should not be deducted, of the options presented in the consultation paper; our membership unanimously supports Option 3.

Further, it could be perceived that the SEMC's intention in proposing Option 2 is to suppress the level of ACPS. This would lead to generators as a class under-recovering revenues as variable cost recovery is subject to the BCoP provisions. The NEAI considers that the SEMC needs to ensure that ACPS is set at the correct level given the established methodology and existing market design objectives.

1.1.2 Option 2 suffers from the same flaws that led the SEMC to adopt a CPM in the SEM

In the development of the SEM, the RAs recognised that a fundamental failing of an "energy only" market was that it failed to ensure generation adequacy, primarily because the required VOLL prices never materialised. This was set out in Section 3 of the paper AIP/SEM/124/06 and is repeated in the first paragraph in Section 7.1 (Theory of the CPM) of the draft decision, which quotes:

"... in practice many electricity markets have found that a pure energy price alone is insufficient to ensure generation adequacy owing to issues surrounding price volatility (generally resulting in the energy market being unable to realise a true value of lost load (VOLL))..."

By definition the energy price can only be VOLL when load is lost and therefore, in such markets, the main problem was that load was not shed for the requisite number of hours to enable sufficient occurrences of VOLL prices to fund investment.

Option 2 relies on the assumption that at "equilibrium", IMR will be earned from prices being set at PCAP for 8 hours. In the same way as for VOLL in an energy only market, this will happen when customer demand is not met for 8 hours in a year.

It is wholly inconsistent and not credible for the SEMC to deduct IMR revenues, determined from PCAP revenues being captured for 8 hours when the market is in

equilibrium the BNE does earn infra-marginal rent and this should be deducted from the Annualised Cost per kW of the BNE" (p. 15)

“equilibrium”, when this was recognised by the RAs as a fatal flaw in an energy only market (i.e. customers disconnections and hence VOLL never occurred for 8 hours) and which led to the decision to develop the CPM as a fundamental element of the SEM.

It is therefore clear that, on the basis of the original premise that VOLL cannot be reached on sufficient occasions, PCAP would similarly not be captured and hence revenues will not be sufficient to deliver investment when required. The NEAI notes that there has been no PCAP price event in the SEM.

When assessing a potential investment, investors will be cognisant of the fact that there is a high level of risk (political, regulatory and other 3rd party risks) to revenues dependent on load shedding events due to a shortage of generating capacity, as reliance on Option 2 requires. A review of historic performance in Ireland would highlight few, if any, occurrences of such events in the last 25 years (i.e. the period equating to the economic life assumed for the BNE Peaker)] and hence the scope for such revenues would be disregarded by potential investors and therefore investment would not occur when needed under Option 2.

1.1.3 Option 2 is economically inconsistent and not applicable in SEM

Firstly, the original decision of the SEMC was that IMR should be calculated on the basis of the ‘current competitive system state’ and not from an artificial scenario (SEM-07-187). Furthermore, the SEMC has noted in its draft decision that the profits to be deducted from the fixed costs of a BNE peaking plant are those which a plant can “reasonably expect” to earn in the energy and ancillary services markets. These ‘reasonably expected’ profits would appear to be more consistent with the retention of Option 3 rather than on the basis of an artificial scenario.

Aside from the practical reality outlined in section 2.1.2 above, the NEAI has concerns regarding the economic rationale for Option 2 – notably whether “equilibrium” as described is correctly conceived from a theoretical point of view under SEM design.

In Section 7.2 the SEMC sets out that “*a key point in the selected design of the CPM within the broader theory of remunerating generators in the SEM is to consider the circumstances in which the market is at equilibrium.*”

In Section 7.5 “SEM Committee’s Response” the SEM Committee (SEMC) clearly sets out the underpinning rationale to support their preference for Option 2, essentially to deduct 8 hours of IMR at an assumed PCAP level. It is thus critical that the SEMC’s approach is economically sound in the context of the SEM design in general, and the CPM design in particular. The following two SEMC statements are therefore central to understanding the rationale for equilibrium:

- “*At equilibrium the peaker will set the market price (whenever it is scheduled) as it has the highest variable costs. Also within this system:*
 - *There must be some hours with non-served energy and a marginal price equal to VoLL, since otherwise the system cannot be in equilibrium.*”

The SEMC position is thus, very clearly, that equilibrium **only** exists if there are hours of un-served load (assumed to be 8 hours) and that marginal prices equal VoLL (currently set at an arbitrary level of €10,519.75). If equilibrium does not exist as described by the SEMC, Option 2 as described by the SEMC falls away.

The NEAI believes that equilibrium is not possible given the existing SEM and CPM designs. It considers that:

1. It is not possible for the SEM to deliver a price for unserved energy and a "marginal price equal to VoLL". Energy prices are capped at PCAP, and thus by definition within the market rules, unserved energy cannot be priced at VoLL.
2. In practice, it is not possible for the market price (SMP + CPM) to reach VoLL. This arises because:
 - i. The adoption of PCAP, which limits the energy payment available in any trading period.
 - ii. The CPM payment mechanism itself. The allocation of CPM payments into ex-ante and ex-post revenue streams by month and current value of BNE costs contrasted against the level of VoLL makes it infeasible for the CPM regime to allocate sufficient CPM rewards into a single trading period to give an overall price outcome where $SMP + CPM = VoLL$.

Consequently, a VoLL price is not achievable under the SEM either in the manner described by the SEMC or as a result of SMP + CPM monies calculated for a trading period under the Trading and Settlement Code. Reliance on this concept is thus flawed under SEM design and as it provides a basis for Option 2, that option should be rejected.

1.1.4 A long run equilibrium solution cannot be applied to a short term timescale

An economically neutral application of Option 2 would assume that the market design and the CPM in particular, would run unchanged over an investment timeframe. It is not plausible that this would be the case, notably given the uncertainty around market arrangements post 2016. It is thus inappropriate to apply a long run theoretical equilibrium position, which is flawed in any event as outlined in 2.1.1 – 2.1.3 above, to a limited time window of the investment horizon. This would inevitably cause mechanistic under or over recovery. Where arrangements are more fluid, as is the case with market designs in general and the CPM at this time in particular, the current, more dynamic, assessment of the IMR is more appropriate.

1.1.5 Summary

Any of the above stand-alone arguments, summarised below, is more than sufficient to reject option 2.

- NEAI categorically does not accept the stated need for Option 2 that it removes volatility in the IMR deduction and its members are willing to share modelling results demonstrating this – this is sufficient grounds to reject Option 2.

- NEAI believes that the IMR revenues deducted from the BNE price under Option 2 are not feasible for the same reasons that the RAs specified in 2006 when they rejected an energy only market (effectively because customer disconnections never happened in practice as required) – this is sufficient grounds to reject Option 2.
- NEAI strongly maintains that Option 2 is infeasible in the context of SEM and CPM design – this is sufficient grounds to reject Option 2.
- NEAI considers Option 2 an ill-justified, incorrect and infeasible long-run equilibrium solution that is furthermore incorrectly applied over a short time horizon. The application of any long run equilibrium approach to a time limited period within an investment timescale is fundamentally flawed, and will lead to an artificially suppressed CPM – this is sufficient grounds to reject Option 2.

Moving to Option 2 is a radical change in the context of the CPM, and contrary to the RAs preferred “minimum change” approach adopted in other areas. In line with this ‘minimum change’ approach and lack of justification for adoption of Option 2, the NEAI supports Option 3, preservation of the status quo.

(2) **FOP** – Energia welcomes recognition from the RAs that the existing FOP value used in the CPM calculation of 4.23% is unrealistic and unachievable in the SEM and we would strongly urge the RAs to use a FOP value in the CPM calculation that is fully, transparently and neutrally based on the 3 year (historically observed) rolling average forced outage rate in the SEM (for all plant type and interconnectors) as observed in practice. This would be in the region of 8% – 9% based on the graphs in Figures 6.1 and 6.2 of the draft decision paper which is very difficult to reconcile with the proposed target FOP of 5.91%. There is no explanation or transparency. We consider a subjectively derived ‘target’ FOP entirely inappropriate because there is no evidence this provides an incentive to improve performance towards the target level. On the contrary, suppressing the capacity requirement via the targeted FOP approach can only serve to reduce incentives to be available, and in our view, provides another opaque mechanism through which discretionary influence can be exerted over the size of the capacity pot. We strongly suggest a more realistic FOP be adopted, especially in light of increased plant cycling, and request full transparency in how this is determined.

(3) **WACC** – The WACC calculated for Northern Ireland in particular is seriously flawed because of its reliance on generic GB fundamentals. This does not reflect the reality that any rational investor locating in Northern Ireland will factor in sector specific risk associated with the SEM, and consequently RoI. The

previous approaches used by consultants in the BNE process have been incorrect by not recognising this but it is an error that can no longer be overlooked as the country risk associated with the RoI is much greater than ever before. This is not a change in methodology, but merely the correct implementation of the existing methodology. It is crucial that this and other unrealistic assumptions (notably the debt premium and equity risk premium) be addressed in the BNE calculation for 2013.

- (4) **FPF** – Energia is strongly opposed to the proposed increase in the flattening power factor (FPF) from 0.35 to 0.5. We consider this poorly justified, contrary to the direction of change required for enhanced market integration, and primarily of benefit to large portfolio players. We strongly urge the RAs to re-consider their minded to position to increase the FPF, especially given the need for stability. We should also note, as before in response to SEM-11-019, that independent observers consider CPM to be working reasonably well given current design and distribution of payments, in light of its competing objectives.

There is no compelling evidence or convincing reason to change the distribution of payments via an increase in the FPF or otherwise. This is reflected in the vast majority of respondent comments to SEM-11-019, where only 4 out of 20 published responses suggested an increase in the FPF – we do not understand the RAs interpretation of responses in this respect. It is also worth clarifying that many respondents focused on the split between ex ante and ex post payments and did not explicitly address, at least to the same extent, the FPF question. However, the same arguments apply for **not increasing the FPF** and this was certainly Energia's reasoning which is worth re-producing below from our response to SEM-11-019.

“There is, as the consultation documentation suggests, a balance to be struck between stability/certainty of participant revenues as provided by ex-ante weighting of payments and appropriate incentivisation of participants to be available at times of tight margin. The existing weighting between ex ante and ex post payments is overly ex post weighted. This view is consistent with historic responses to the annual consultation on this issue. We therefore suggest that current weightings be rebalanced towards more ex ante payment streams and would especially caution against any move to increase the ex post weighting of capacity payments on the following grounds:

- *It would be clearly and visibly inconsistent with ex-ante market coupling at the EU level.*
- *It would be clearly damaging to efficient interconnector trades by increasing the 'dead-band' in which trades do not occur.*
- *It would significantly increase the potential for gaming which would be very difficult to monitor and police and would particularly benefit portfolio players, hence discouraging new entry.*
- *It is likely to be very contentious in the context of scheduling generator outages and would give the TSO, via the power to schedule outages, undue influence over matters of a commercial nature. This is of particular concern as the TSO is soon to be an asset owner.*
- *It would significantly increase generator risk and hence cost of capital³*
- *It would not result in any behavioural change – indeed no evidence has been presented to convincingly show that ex post capacity payments based on relative LOLP actually increases availability.*

If anything the distribution allocation should be more heavily ex ante weighted because generators are unable to respond to an ex-post pricing signal, it would reduce the potential for gaming, and it would also be in keeping with the need for day-ahead coupling of the SEM and neighbouring markets under the emerging European Target Model.

For the same reasons stated above in relation to ex post weighting no amendments should be made to the flattening power factor (FPF)".

³ Given the capital intensity and irreversible nature of generation investments minimising the cost of capital is crucial if the overall cost of the system is to be minimised.