CPM Medium Term Review, Work Package 7
BNE Calculation Methodology

Synergen's response to SEM-10-068

1 Introduction

This paper is Synergen's response to the consultation paper SEM-10-068 published by the RAs on 7th October 2010. Synergen has no objection to this response being published.

2 Initial Observations

In SEM-10-068 the RAs discuss their present thinking on options to reduce the perceived volatility of the BNE cost element that feeds into the determination of the Annual Capacity Payment Sum (ACPS). Synergen does not share this concern nor this perception of volatility in the CPM within the SEM. Thus, whilst we have in the past commented on particular aspects of the CPM consulted on by the RAs, and will continue to do so, our concerns regarding CPM outputs relate to the degree of influence that the RAs have over the key cost drivers within the CPM. Our analysis has not indicated anything that is demonstrably not working within the existing regime, and our view is that the RAs' proposal to reduce "perceived volatility" in the CPM is intended solely to exert downward pressure on the total level of rewards of the CPM. We do not believe that perceptions, which are qualitative, should be the basis of changes in market rules, which should be based on quantitative analysis.

Given the linked rewards between CPM, and IMRs through energy payments, it is vital that the CPM is set as "correctly" as possible. The objective of the ACPS determination must thus be to set the correct level of payments in the correct timeframe i.e. the correct sum each year noting that this may lead to variance year on year. If this objective cannot be fully met, the fallback must be to, as a minimum, pay out the correct sum over a given (longer) time period – recognising that there will be some distributional inefficiencies. Our concerns regarding the options set out in SEM-10-068 are that:

1. There is nothing within the proposals that would make the CPM more mechanistic and rule based (i.e. less susceptible to regulatory influence) and this applies to Options 1 and 2 as set out in Section 4; and

2. Options 2, 5 and 6 (set out in Section 5 of the consultation paper) (a) are susceptible to RA influence; (b) do not ensure that the correct sum is paid at the right time; and (c) do not ensure that the correct sum is paid over time.

The remainder of this section discusses two questions:

- first, is the BNE price volatile? and

- second, is the variability in year on year values a cause for concern?

2.1 The question of volatility, or not…

Within SEM-10-068 the RAs continually refer to "perceived volatility" without any demonstration why the RAs (or other stakeholders) perceive the BNE calculations within the CPM to be volatile. Thus, as a starting point it seems reasonable to consider whether the CPM data demonstrates a high degree of volatility, or not. Before setting out an assessment of volatility, it should be noted that any statistical analysis is limited given that there are only 5 data points in the series.

In order to consider the volatility perceived by the RAs, Synergen considers that the correct data item to assess is the total pot, i.e. ACPS, as this is annual figure seen by both generators and suppliers. The data presented in Figure 1 provides a breakdown of the key components that create this value and includes the coefficient of variation for various data items as this metric is a commonly used as an assessment of volatility[1]. By way of comparison, Synergen would consider SMP to be volatile[2] given the coefficient of variation is in the order of 0.5.

Figure 1 – CPM Related Data

Source	Year	Plant Costs (€/kW/yr)	Ancillary Services (€/kW/yr)	IMR (€/kW/yr)	BNE Peaker Cost (€/kW/yr)	Capacity Requirement (MW)	Annual Capacity Payment Sum (€m)	ACPS excluding IMR (€m)
AIP-SEM-07-188	2007	85.04	(6.12)	(14.19)	64.73	6,960	450.52	549.28
AIP-SEM-07-458	2008	85.95	(6.18)	0.00	79.77	7,211	575.22	575.22
SEM-08-109	2009	93.81	(6.69)	(0.0007)	87.12	7,356	640.85	640.85
SEM-09-087	2010	85.58	(4.84)	0.00	80.74	6,826	551.13	551.13
SEM-10-053	2011	83.14	(4.41)	0.00	78.73	6,922	544.96	544.97
	Mean	86.70	(5.65)	(2.84)	78.22	7,055	552.54	572.29
	Standard Deviation	4.12	0.97	6.35	8.22	220	68.52	40.10
	Coefficient of Variation	0.05	(0.17)	(2.24)	0.11	0.03	0.12	0.07

From this data, Synergen concluded that ACPS is not volatile given that the coefficient of variation is 0.12 compared to a value in excess of 0.5 for SMP. Furthermore the only component that is volatile is IMR and this volatility is driven by the relationship with SMP; indeed excluding the subtraction of IMR from the BNE Peaker Cost reduced the coefficient of variation by more than 40% to 0.07. Also, given that capacity represents something in the region of 10% of overall end customers' bills[3] the impact on customers of any volatility in ACPS is very limited. Any concerns over volatility can thus only lie with generators, or the RAs.

Finally, given the RAs' focus with SEM-10-068 is the reduction of volatility within ACPS, Synergen believes that the RAs should clearly state those metrics that the RAs will use moving forward to assess volatility and importantly highlight the point at which the RAs will stop perceiving that ACPS is volatile.

[1] This was reported in relation to SMP in SEM-09-066 and is the standard deviation divided by the mean.
[2] It should be noted that in the context SMP volatility is managed by a range of hedging contracts.
[3] For example refer to See NIE Energy Supply's 1 October 2010 Tariff Review - A Regulatory Briefing - http://www.uregni.gov.uk/uploads/publications/Electricity_Tariff_Announcement_-_Retail_Tariff_Background_Briefing_-_Sept_10_FINAL.pdf.

2.2 Is price variability a cause for concern?

As a starting point, Synergen is not necessarily concerned about elements of price variations within the market. If elements of the market exhibit price volatility, this would only be a concern if this was (a) counterintuitive – i.e. not in line with market fundamentals; (b) un-manageable – particularly the risks could not be hedged; and (c) unpredictable. Assuming the existing methodology is applied objectively and consistently, Synergen does not consider that the variances in BNE outcome would be a concern. In short, there is no problem that requires fixing **except** the uncertainty arising from the RAs' determination of key cost drivers, for example changes in the assumptions made over the financing periods of plant with no consequential changes to WACC assumptions. Thus, Synergen's primary concern is not volatility, but uncertainty – which results from the RAs' direct control of the outcomes under the existing regime and current proposals to change without a clear demonstration of a need for change.

Synergen does not believe that there is any evidence to suggest that there is a project financing risk associated with any "perceived volatility" of the CPM. This is also the view of other players within the generation sector with whom Synergen has discussed this question. The view that Synergen has heard expressed is more that any financing uncertainty is more driven by regulatory uncertainty around the CPM (such as the existing reviews) than by year-to-year price variations.

This concern also links to the general uncertainty within the market regarding a number of significant regulatory initiatives at the present time that may lead to material (and disruptive) changes to the SEM. This includes the considerations of the principles of scheduling and dispatch. Synergen is concerned that given the RAs' stated intention to adopt a holistic approach to market reforms there is no reference in this paper to SEM-10-068 and the issues that it raises.

Given that the SEM rewards are based primarily on IMR and CPM, it would seem incumbent on the RAs in this process to consider whether the economic basis of the SEM reward streams to generators are robust given potential combinations of change to the allocation of IMRs and CPM payments. In the absence of such an assessment Synergen does not consider that the RAs are in a position to propose far-reaching changes – and Synergen urges the RAs to produce worked up analysis of these inter-linked changes with supporting regulatory impact assessments – including a fully set out Cost Benefit Assessment.

SEM-10-068 does not refer to other related workstreams – notably the scheduling and dispatch paper. RAs thus fail to consider any implications of alternative approaches to CPM on other workstreams.

3 International Experience – Observations

Synergen has a limited number of observations on Section 3 of SEM-10-068.

Fundamentally, wholesale electricity market designs reflect the industry structure, sector maturity, the need for investment, macro-economic and, occasionally, the explicit political objectives of governments and the policy objectives of regulatory bodies. Those that are robust and enduring strike a balance between structural issues and economic efficiency. Consequently, international experience has to be viewed primarily in the context of the situation in each market – and the relationship of any capacity payment scheme to other elements of market design. Consequently, whilst the overseas markets referred to demonstrate alternative approaches, they do little to inform possible reforms in the SEM.

In the context of the SEM experience to date, and the merits of price and quantity based capacity mechanisms, Synergen observes that:

- the omission of energy-only markets in the assessment / analysis reflects a lack of balance;

- conclusions regarding each form of capacity market (price and volume) providing for new entry more effectively than an implicit capacity mechanism is presented as a conclusion, but is unsupported by evidence, and is thus no more than an opinion; and

- the track record of the SEM is not long enough to draw any meaningful conclusions regarding whether it has attracted the “right” type and volume of new entry, particularly since the economy and hence electricity demand has been depressed for most of the SEM’s history, which would have a significant impact on entry decisions for non-subsidised generation.

4 Options 1-3 (SEM-10-068 Section 4)

This section discusses the central basis of the determination of the BNE peaker price – essentially between a LOLP / VoLL calculation (Option 1) or by means of a bottom up assessment (Option 2). Synergen believes that if Option 1 were selected by the RAs then Options 1-6 in Section 5 would not need to be considered, although some issues over indexing would remain.

4.1 Options 1 (SEM-10-068 Section 4)

This option was rejected at CPM start. At the time of responding to SEM-126-06, Synergen was concerned that that this option was too sensitive to the determination of key parameters, notably VoLL. Given that Synergen does not believe that the year on year variance in BNE under the existing methodology is an issue, there does not appear to be a compelling reason to now change to this option. Our main concerns are set out below.

- This method would either under or over recover capacity costs depending on the level of VoLL. However, VoLL is not objectively determined at the present

time – although the ways in which VoLL is utilised under the T&SC means that costs and revenues are not overly sensitive to this under most circumstances. Under Option 1 VoLL would need to be set at a correct level and this would be potentially contentious.

- The calculation would be susceptible to manipulation (up or down) through RA changes to VoLL. In the context where the RAs are showing an increased desire to control costs down in the competitive sector, the fear is that CPM is not set in a stable impartial manner, but has the potential to be set partially to reach broader objectives on cost – and this is inconsistent with the underpinning economic rationale of the SEM and the imposed BCoP as generators are prohibited from increasing bids to compensation for CPM suppression.

- Determination of FOP is other key variable. As with VoLL this could be overtly controlled (for example this could continue to be set by the RAs – and thus may continue to reflect a target not outcomes).

- Indexing (for example increases in RPI) to VoLL may, over time, diverge from the bottom up costs assessed under Option 2. Whilst the values determined by Option 2 and Option 1 fall within the same bounds when considered since SEM start, there is no sensitivity analysis to consider around any potential divergence. It is Synergen's view that the costs of new capacity are not driven solely by CPI / RPI costs. Some costs drivers may reduce capital costs over time (through innovation and new technologies) whilst others are dependent on materials, fuel and carbon costs (which would influence the IMR of the BNE peaker under Option 2). It is thus unlikely that an indexing of an initial VoLL value would be robust – and thus step changes to VoLL through re-baselining may be required (and this leads to further regulatory uncertainty).

In addition, regarding concerns over manipulation by generators, as cited for the pre-BETTA England and Wales Pool, there would seem to be no scope for manipulation given the annual assessment and thus is not a concern. Any such approach, as it is simple, could be wholly codified and set outside the control of the RAs. This would be a prerequisite.

Synergen does not favour option 1 as set out in SEM-10-068 Section 4.

4.2 Options 2 (SEM-10-068 Section 4)

Synergen favours the retention of the existing approach – Option 2. This is a known approach, and Synergen's reservations regarding it are based on the execution of aspects of it by the RAs, rather than the theoretical approach itself.

Synergen notes that year on year variances are greater than the MCR approach – but as discussed earlier, we do not consider these to be either volatile, or of undue concern. Further, there is no evidence presented to suggest that the BNE outcomes are wrong (or any more wrong than Option 1 could be). Synergen also notes that there is no suggestion in the paper that any variances in year-to-year values have a major impact on costs to customers – although we believe that there are distributional impacts on generators. In short, there is no compelling case to move

from the existing approach, and some significant risks involved in doing so (with no demonstrated economic benefit).

Synergen favours retaining Option 2 as set out in SEM-10-068 Section 4.

5 Options 1-6 (SEM-10-068 Section 5)

Notwithstanding the RA view that only 2, 5 and 6 should be considered, we believe that there has been insufficient consideration of all 6 options to date, with SEM-09-085 providing only limited assessment of the options. In particular, Synergen believes that it is unreasonable to exclude Option 1 from further consideration at this stage, as it is the existing methodology. By seeking to limit comment to Options 2, 5 and 6 the RAs seem to be taking a *prima facie* position that the existing arrangements need to be changed – and there is no substantive case presented in SEM-09-085, or subsequent papers, to demonstrate that the current regime is fundamentally flawed. The dismissal of Option 1, which seeks in theory to pay the right level of CPM at the right time, and replace it with mechanisms that are either seeking to "smooth" or potentially discriminatory.

Synergen supports Option 1 i.e. retention of the existing annual calculation methodology and further would encourage improvements such that the methodology is less directly controlled by the RAs.

Synergen also notes that in Section 17 of SEM-09-105, which dealt with "output from cost of BNE peaking plant calculation" and set out the RAs intention to take forward Options 2,5 and 6 within the Medium Term Review the RAs also undertook to include within that review:

> *"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 long-term availability.*

Synergen does not consider that the RAs have fulfilled this undertaking in SEM-10-068, and this is the paper that we would have expected to see these matters explored in, as they were clearly set out in the section of SEM-09-105 in the context of the BNE calculation.

Synergen requests that the RAs explicitly comment on when and how these matters will be consulted on, and explicitly fulfil their undertaking to consider them – presumably in the form of consultation.

6 Option 2 (SEM-10-068 Section 5)

As set out previously, Synergen believes that ACPS must pay out the correct sums of money (over time) and ideally at the right time. Synergen does accept that considerations such as stability may, on balance, lead to payments being smoothed over time (indeed this is an element of the existing arrangements) but the explicit nature of the CPM arrangements, coupled with the BCoP, requires that the CPM provides revenue adequacy.

Synergen considers that Option 2 will under / over recover over each fixed period, even with some indexing method applied to some cost elements, with others being reviewed annually. The trade-off being sought by the proponents of Option 2 is that the benefits of stability outweigh those of a more frequent (and this assumed to be more accurate) assessment of costs. There is no evidence presented on this in terms of financing costs, and thus the case is unproven.

Synergen has concerns over the RAs' existing influence over BNE cost driver determination. There is nothing in Option 2 to make the approach more hands off (by the RAs) and more rule based, indeed the opposite may be true. Synergen has significant concerns that such an approach would be influenced by the RAs' desire to deliver lower costs in the short term.

Synergen believes that as there is no guarantee of right money over time, Option 2 would require (at a minimum) a K factor adjustment to give the right money in the ACPS, even if not at the right time.

Synergen does not support Option 2 as set out in SEM-10-068 Section 5.

7 Indexing

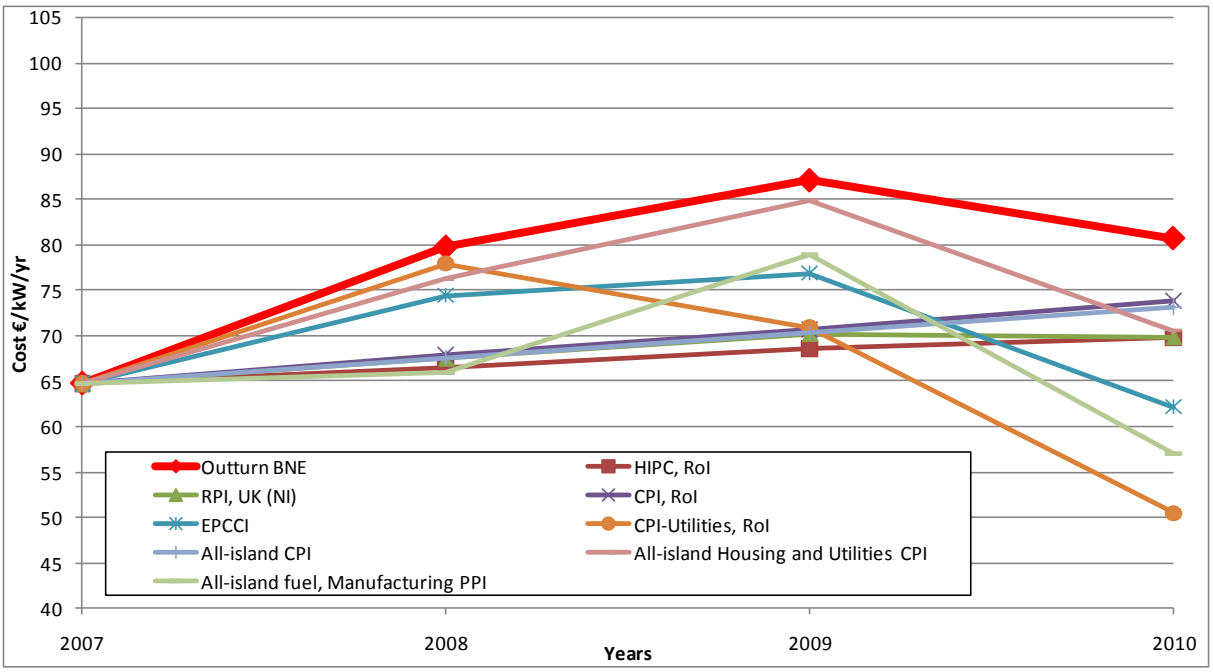
Notwithstanding that Synergen does not support Option 2, we have the following observations on indexing options and approaches.

The concern arising from the RA analysis presented is the divergence of the indices from BNE outturn. The analysis would thus support the retention of Option 1, as it demonstrates the material divergences of the historic BNE figures and the range of indices even over a short time period.

Synergen concurs with the RA observation that general, economy wide, indices do not capture specific power sector costs and are thus unlikely to be appropriate indices for assessing the capital costs of power plant. Consequently the European Power Capital Cost Index appears to be the preferable starting point. Given the range of plant portfolios in Europe, we would favour inclusion of all plant types, as the exclusion of one technology (be that nuclear or otherwise) may give rise to unintended outcomes.

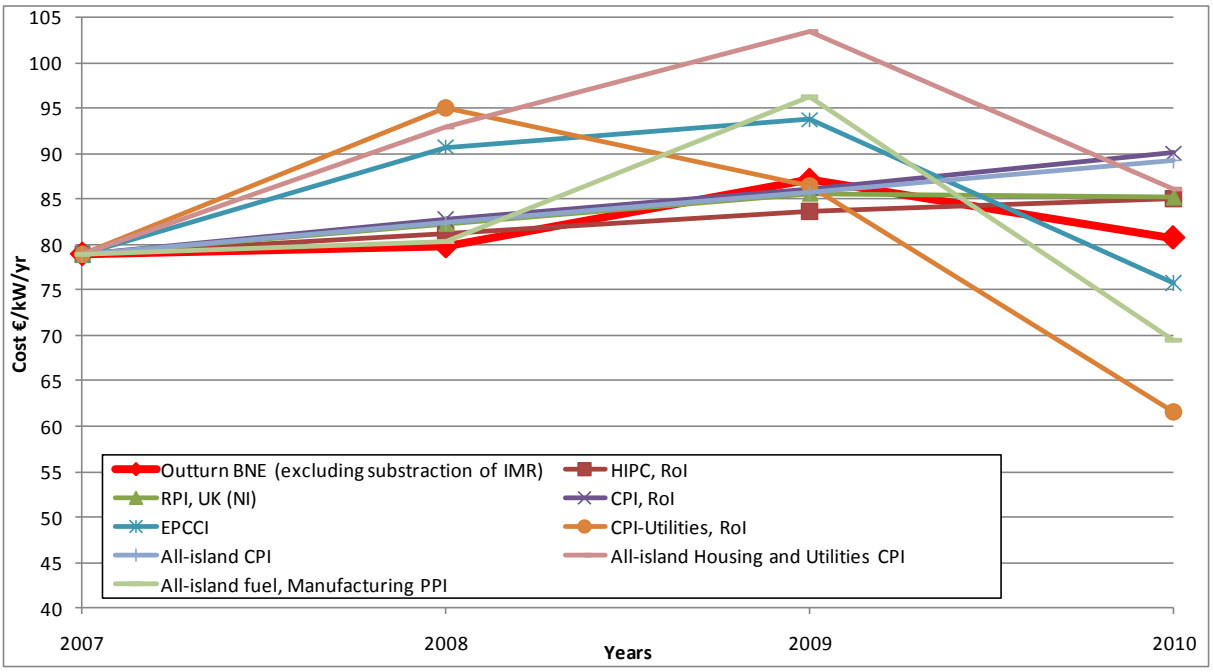
The analysis of indices presented in SEM-10-068 Figure 7-2 and Figure 7-3 has serious failings as its uses the BNE value for 2007 as the starting point and thus is skewed by the subtraction of IMR in that one year compared to other years.

Figure 2 – Indices Data as per Figure 7-2



Data Source: RAs

Figure 3 – Indices adjusted to remove IMR for2007



Data Source: RAs

For example Figure 2 above replicates SEM-10-068 Figure 7-2 and then Figure 3 adjust this figure to apply the percentage indexation against the BNE costs (excluding the subtraction of IMRs) to give a "like for like" comparison. This shows that some indexation options would give higher rewards and others lower rewards and that the selection of a specific index is problematic. Furthermore, for the data in Figure 3, the majority of indexation options would give rise to higher volatility compared to the Outturn BNE (excluding the subtraction of IMR) as per Figure 4.

Figure 4 – Volatility of Indexation Options

Ras' Indexation Options vs BNE	Coefficient of Variation
HIPC, RoI	0.03
RPI, UK (NI)	0.04
Outturn BNE (excluding IMR)	***0.05***
All-island CPI	0.05
CPI, RoI	0.06
EPCCI	0.10
All-island Housing and Utilities CPI	0.12
All-island fuel, Manufacturing PPI	0.14
CPI-Utilities, RoI	0.18

Data Source: RAs

8 Option 5 (SEM-10-068 Section 5)

Synergen does not consider that Option 5 provides any incremental benefits over Option 2. It serves to increase the risks of under / over-recovery and, again, there is no assessment of the benefit that this provides. In short, there is no case presented to take this forward.

Synergen does not support Option 5 as set out in SEM-10-068 Section 5.

9 Option 6 (SEM-10-068 Section 5)

Synergen has fundamental, in principle, concerns over Option 6. Synergen notes that in SEM-09-085 the RAs undertook that *"this option will be included in the CPM Medium Term Review where a full analysis of the option will be completed, taking both policy and legal concerns into account".*

There is no indication that broader policy issues have been considered to date, but the paper states that the RAs will *"look at developing this scenario in line with Poyry and investigating and what impact it would have on a future model of the SEM"*. The legal concerns / issues have not been set out by the RAs.

This option should not be taken forward. Synergen believes that it is discriminatory in nature, and is inappropriate given the reward streams available to generators in the SEM. This is especially relevant in the context where options to remove IMRs from export constrained generators are under serious consideration by the RAs within the review of scheduling and dispatch principles. Where generators are prohibited from increasing bids above SRMC by the Bidding Code of Practice, measures need to be in place to ensure that CPM rewards to existing (as well as new) plant are adequate. If revenues are inadequate under the CPM, plant that should remain on the system will exit at the margin if it cannot increase bids. Consequently, Synergen believes that Option 6 would require the removal of the BCoP.

Synergen does not support option 6 as set out in SEM-10-068 Section 5.

10 WACC calculations

The use of WACC has significant international precedent and Synergen can see no reason to move away from this approach. However, given the scope for regulatory control, Synergen believes that WACC should be placed outside the RAs' control and the RAs should procure an independent forecast by respected experts.

11 Summary

In summary, Synergen concludes that;

1 the output of the BNE calculation methodology (i.e. ACPS) is not volatile;

2 the RAs have not demonstrated that the existing BNE calculation methodology is fundamentally flawed;

3 there are valid concerns regarding the regulatory uncertainty of the BNE calculation;

4 indexation could increase volatility within the BNE calculation methodology and the selection of specific indexation is problematic and so indexation should be rejected;

5 Options 2, 5 and 6 as set out in SEM-10-068 Section 5 should be rejected;

6 the other matters set out in Section 17 of SEM-09-105 should be taken forward by the RAs; and

7 the existing methodology should continue with improvements such that the methodology is less directly controlled by the RAs and becomes more certain, transparent and robust.