



**Response by Energia to SEM Committee
I-SEM Consultation Paper
SEM-18-025**

***Capacity Remuneration Mechanism (CRM) T-4
Capacity Auction for 2022/23
Best New Entrant Net Cost of New Entrant
(BNE Net CONE)***

15 June 2018

1. Introduction

Energia welcomes the opportunity to respond to this important consultation on the Best New Entrant (BNE) Net Cost of New Entry (Net CONE) for the ISEM Capacity Remuneration Mechanism (CRM) T-4 Capacity Auction for 2022/23.

This consultation represents the SEM Committee's first attempt to calculate the cost of the BNE in the wholly different context of ISEM. Consequently, there has been a change in the SEM Committee's approach, with a move away from the hypothetical peaking unit based approach to calculating the cost of the BNE under SEM's Capacity Payments Mechanism (CPM), to an approach that has as its primary focus an intention to reflect the types of costs and decisions a rational investor would face when considering an investment in ISEM. Key to this should be a recognition of the significantly increased risk profile for generators in ISEM; regulatory risk, market risk and risk associated with the Reliability Option (RO). Unfortunately, the SEM Committee consultation paper and accompanying Poyry report both fall significantly short of achieving this objective by relying on a number of unsupported and arbitrary, intuitively incorrect assumptions, contradictory statements and a process that is not of the standard required for such important decisions.

Unless there are significant changes to the approach taken in the consultation, it would evidence a disregard for the SEM Committee's statutory duty towards investors and for the realities of the system. If adopted, the approach taken in the consultation would be inconsistent with the approaches applied to other assets regulated by the respective regulators, particularly the financial assumptions, and, would be damaging to the reputation of both the market (ISEM) as a place to invest and the SEM Committee, who have created these issues by design.

Energia agrees with the review by Frontier Economics, commissioned by the Electricity Association of Ireland (EAI), which accompanies this response. This review highlights serious errors with the approach and assumptions used by Poyry and adopted by the SEM Committee. A reasonable and prudent regulator should act on these findings and fully adopt the recommendations of the report before taking any decision on this matter. Should the SEM Committee fail to take full account of the recommendations they will further exacerbate the flawed decisions [purported to address market power] that are at the heart of the ISEM and will do unprecedented damage to security of supply and investor confidence in this new market.

2. General Comments

In this section, three items are specifically addressed; (1) the new intended focus of the BNE for ISEM, (2) the principles apparent in the SEM Committee and Poyry papers, and (3) the approach of Poyry/SEM Committee to the assessment undertaken.

The role of the BNE in ISEM

The SEM Committee are explicit and clear on the primary focus of the BNE in ISEM;

It is the SEM Committee's view that the primary focus for the BNE assessment going forward is that it should more generally reflect the technology and cost decisions a rational investor would take within the new all-island market.¹

The apparent rationale for this change in approach is further outlined in the consultation paper;

The CRM moves to procuring a pre-defined capacity requirement as part of a competitive process and therefore sends both exit and investment signals.²

In essence, the CRM must reflect reality as it has significant real-world implications for current or new, long-term, substantial investments. In order to reflect the decisions that a rational investor would take, as a valid signal for entry or exit in market, the assumptions, inputs and approach to this assessment must, as far as possible, be rigorously determined and approximate real-world investment opportunities. If the resulting assessment does not adhere to this approach, particularly if shortcuts are taken that underestimate the cost of the BNE, then the SEM Committee fail in achieving the BNE's "primary focus", as the outcome will not reflect a decision taken by a rational investor in ISEM.

The current consultation paper, in relying on the report undertaken by Poyry, falls significantly short of achieving this objective. A number of important assumptions underpinning the results of the assessment are fundamental abstractions from reality, particularly around the location of the unit, the timing of construction, the assumed energy market revenue and the rate of return. The cost of BNE assessment undertaken and the BNE Net CONE proposed are inconsistent with the primary focus and stated objective of the SEM Committee, and as such must be revised.

Issues of principles

As highlighted in the Frontier Economics report, there are a number of issues of principle in the approach taken by Poyry to the choice or reference technology. It is Energia's view that some of these issues of principle extend to other aspect of the assessment undertaken, principally in relation to WACC. At almost all available opportunities in the paper, the SEM Committee favour, without justification, the least cost option or value from a range of values to incorporate into the cost of the BNE calculation. This approach systematically underestimates the cost of required capacity in ISEM and is unsustainable.

Approach to the assessment undertaken

The Poyry assessment is replete with opaque assumptions that are adopted unquestioningly by the SEM Committee. The absence of any dispatch or energy system modelling is a remarkable omission from the process, an issue that is compounded by the arbitrary and unsupported assumptions around CCGT utilisation

¹ SEM-18-025 at para 1.2.5

² Ibid at 2.1.3

that are intuitively wrong, and that have a profound impact on the findings in the Poyry paper and the conclusions of the SEM Committee.

The lack of transparency in Poyry's approach is something also remarked upon by Frontier Economics, who have recommended that the SEM Committee make Poyry's underlying calculations available for review; we fully support this recommendation. This issue also gives rise to a fundamental procedural question if the SEM Committee continue to adopt the Poyry report, as it is not possible to appropriately consider a number of the findings or comparatively assess them, as outlined by Frontier Economics.

Energia considers it to be an absolute requirement, in the context of the serious implications this consultation and subsequent decision can have, that the SEM Committee make an evidence-based decision that is supported by detailed modelling and realistic market-based assumptions. The current consultation paper and accompanying report are materially deficient in this regard and rely on overly simplistic and unjustified assumptions that materially affect the outcomes of the assessment and impeach their robustness.

In summary, these general comments on the consultation paper and the Poyry report highlight material shortcomings in the assessments undertaken and an inconsistency between the stated primary focus and approach adopted in calculating the BNE. Should the SEM Committee make a decision in line with the proposed consultation paper, it would suggest a disregard for both their statutory duties and good regulatory process. The paper, like a number of other decisions taken by the SEMC will result in the SEMC having engineered a particular outcome, separated from the reality of competitive market outcomes, the reality of being able to finance generation activities and from the realities of the electricity system, while repeatedly paying lip-service to ISEM being something other than a highly-regulated set of arrangements that frustrate price discovery and the legitimate interests of investors and ultimately consumers.

3. Reference Technologies

In principle, Energia does not have a view on the exclusion of particular technologies from consideration or the inclusion of a CCGT unit, alongside an OCGT unit, in the assessment of the BNE cost. However, it is necessary, for the technologies included, that appropriate, realistic inputs and assumptions are used in the assessment undertaken; this has not been done by Poyry or corrected by the SEM Committee in the consultation paper.

In terms of both the OCGT and CCGT reference projects, it is unrealistic to assume that planning permission could be obtained, in the relevant timeframe, on agricultural land for either project. As the experience in SEM is referenced elsewhere in the Poyry paper, it should be apparent that this assumption has little to support it based on historic investments, current planning timelines for energy infrastructure projects, or the consistency of this assumption with other locational assumptions applied within the paper, particularly for the CCGT project. The CCGT project is assumed to be at a site that is:

1. On the coast using direct once through seawater cooling with the cooling water intake located at site boundary (shoreline) and cooling water outfall located 500m offshore.
2. 5km from an existing electrical substation to allow for a 5km long double circuit overhead line and a two bay extension to the existing substation. It should also be noted that Poyry appear to have erroneously assumed the NI CCGT connection at 110kV.
3. 1km from a pressurised town's water supply mains.
4. <2km from the existing gas transmission network, with pressure >30bar. It should be noted that the gas transmission pressure in NI cannot consistently meet this requirement, without significant further investment.

The collective outcome of adopting this unrealistic approach, and of the apparent errors in a number of the assumptions, is that the estimated costs for both the OCGT and CCGT projects are inappropriately low and don't provide a basis from which a rational investor could or would make a decision.

Frontier Economics further remark that placing any (considerable) weight on the type of past investments that were made in SEM may well be a fallacy and instead, the focus should be on what the rational investor would do today (forward looking), noting the changed market and energy system which is emerging. Furthermore, Frontier Economics cite the experience of other regulate markets – ISO NE, PJM, GB – and the outcome of similar assessments in those jurisdictions. It is noteworthy that the assessments undertaken in these jurisdictions have been supported by detailed modelling and the decisions are evidence-based. The experience of PJM is particularly relevant in this regard, with regulatory and investor certainty apparently tipping the balance in favour of an OCGT BNE. Such matters have been ignored by the SEM Committee to date, whose attentions have been exclusively and over-zealously focussed on short term cost minimisation.

4. Capital & Annual Fixed Costs

For the reasons already given in relation to the locational assumptions of both prospective units, as well as the issues outlined by Frontier Economics on the EPC estimate for the OCGT and on Interest During Construction (IDC) costs, Energia considers the cost estimates provided to be both unrealistic and under-estimates of the appropriate level of costs facing a rational investor in ISEM.

Furthermore, Poyry have benchmarked a significant proportion of the capital and annual costs off of the EPC contract price, without justification. This approach is not just arbitrary and opaque but it compounds any error in the estimation of the EPC contract price.

It is necessary that the SEM Committee review these costs and assumptions to align with the stated change in objective for the BNE calculation.

5. IMR& DS3 Revenues

Adopting the conclusion of Frontier Economics, Energia agrees with the requirement to revise downwards the relevant LOLE standard for an OCGT in Northern Ireland to 4.9 hours, for the purpose of the calculation of IMR. For DS3, we again adopt the Frontier Economics analysis and conclusions such that;

1. The DS3 revenue figures assumed are opaque and cannot be evaluated in detail;
2. The revenue assumed appears to ignore the recent scalars decision.
3. The revenue assumed ignores the interaction between DS3 and the energy market, such that DS3 and IMR cannot be regarded as separate, distinct deductions as to adopt such an approach would exaggerate the benefit to a rational investor who would reasonably discount this income. We understand from work done elsewhere that this interaction is a widely expected feature of ISEM and cannot be ignored.

The approach and assumed IMR for the CCGT is arbitrary and unsupported. Given the importance of this assumption to the overall assessment, it is completely inappropriate that detailed modelling was not undertaken by either Poyry or the SEM Committee. Given the relatively small size of the all-island market and lumpiness of CCGT investments, as well as further, significant renewable capacity investments and possible interconnection, it is intuitively incorrect to assume that the CCGT would have an average utilisation rate of 65% at the end of the 10-year contract. It is also materially inconsistent with the experience of 10-year old CCGTs in the market today that have little or no in-market utilisation, with the exception of Dublin Bay to whom the CRU have given preferential treatment, that the experience of this real-world CCGT project would have a materially different outcome. Finally, it is remarkable that the Poyry paper provides no basis for this assumption and that the SEM Committee have allowed it to go unquestioned into the consultation paper and to have such a material impact, and one which is driven primarily by uncertain gas and carbon price assumptions.

Overall, albeit to different degrees, the calculation of IMR and DS3 deductions undertaken by Poyry and adopted by the SEM Committee could not, as is, inform the decision of a rational investor as they are unrealistic and/or wrong.

6. Cost of Capital – WACC

Once again Energia adopts the findings of the Frontier Economic review in relation to the financial parameters that make up the CAPM WACC calculation undertaken by Poyry.

At the outset of Poyry's assessment of the financial parameters, they stress the following:

The different parameters of the WACC, as described throughout this section, have been defined based on a wide range of market evidence and regulatory precedent. We do however need to stress that some regulated assets, and the corresponding WACC determinations, are not directly comparable to the cost of

capital for a merchant generating unit. There is much more limited precedent of regulators setting a cost of capital for a generating unit, when compared to WACC determinations of infrastructure projects or other natural monopolies. As a result, we do, at times, diverge from other regulatory decisions.³ (emphasis added)

Energia endorses Poyry's recognition that the rates of return for merchant generating units are different (higher) than they are for other (network) assets regulated by the respective regulators. This statement, and the stated intention to reflect these differences in the analysis, is welcomed as such an approach is necessary to achieve the SEM Committee's stated objective(s). However, it would appear from the subsequent analysis presented by Poyry and the review undertaken by Frontier Economics that Poyry had no regard to their stated intention and relied almost exclusively "on recent regulatory decisions for utility networks and similar regulated assets with a very different risk profile to those faced by merchant generators"⁴. This approach has led Frontier Economics to conclude that, "Poyry has materially underestimated nominal pre-tax WACC for the purpose of new generation investment"⁵ and "the under-estimate could be of the order of 2.5 – 3.5 percentage points, with the higher figure applicable to CCGT technology"⁶. This is inconsistent with the intended approach and with the approach adopted by the respective regulators to the regulation of other regulated assets.

In relation to Frontier's view on the risk profile of a CCGT investment, the experience of Energia and Huntstown is a prime example of this, with a rational investor likely to take the conservative view that the economic life of such an investment will be unlikely to exceed 10-years. Real investors would therefore not just demand a higher return for investing in CCGT plant but would likely also impose a hurdle rate on the investment such that they could fully recover the investment cost and a reasonable return over the lifetime of the RO contract. The arguments presented by Frontier Economics on "Headroom" in the BNE Net CONE and BNE parameters decisions are relevant here and Energia is in agreement with them.

Overall, Poyry's approach to this section of the paper and the subsequent shortcomings of the SEM Committee's proposals amount to; (1) a failure to be consistent with the stated objective of the assessment, (2) a failure to objectively set financial parameters, (3) a failure to have regard to the risk profile of a rational investor investing in merchant generation and (4) a failure to appropriately benchmark and/or justify the resulting WACC values by reference to other markets.

7. Conclusions

This consultation paper and the accompanying report by Poyry are further evidence of the SEM Committee's disregard for their statutory duties towards investors, for the market and, for good regulatory practice and process. Despite a number of claims to the contrary, the current consultation paper does not represent a material change in

³ SEM-18-025a – Poyry Report – at page 53

⁴ Frontier Economics at para 7.36

⁵ Ibid

⁶ Ibid at para 7.39

approach to the calculation of the BNE. The inclusion of a CCGT into the assessment is new but the approach to estimating its costs and deductions (IMR and DS3) are not realistic and they are unsupported by modelling or robust assessment. It is remarkable that the SEM Committee have accepted the Poyry assumptions around CCGT utilisation in 2032 (65%) and inconceivable that they have done so on the basis of an arbitrary assumption, unsupported by modelling, and seemingly oblivious to the impacts of further investment in renewables, conventional generation, or further interconnection.

The proposed selection of a CCGT as the basis for BNE Net CONE is also contrary to regulatory precedent in the US where PJM have sought to balance cost concerns with principles of good regulation such as certainty and stability, which heretofore have been ignored in this consultation.

This inconsistency between the stated intention and the actual assessment undertaken by Poyry and the proposals put forward by the SEM Committee is further evidenced in the calculation of WACC and the constituent financial parameters. There is an arbitrary focus in this section of both papers towards values at or very close to the minimum in a range of value that are already typically too low, as they are based on regulatory decisions pertaining to network assets with a materially different risk profile. The approach also ignores the additional risk associated with a CCGT investment, a risk that cannot be overstated given Energia's experience with Huntstown and which is likely to materially alter the hurdle rate required by a rational investor.

Abstracting from reality as a means to minimise the calculated cost of the BNE is also evident in the location, planning and construction assumptions taken by Poyry and adopted by the SEM Committee. A rational investor requires, at the very least, reasonable assumptions before making a decision. There is little evidence of reasonable assumptions being employed either by Poyry or the SEM Committee in this consultation.

In terms of recommendations, Energia adopts those set out in the Frontier Economics report and calls on the SEM Committee to do the same:

As a result of our assessment we would recommend that:

- a. a more prudent approach is taken to technology choice, which given the uncertainties and practical issues associated with CCGT technology would imply use of OCGT technology as the reference plant;*
- b. A significant review of the underlying estimates and calculations is needed in order to take account of the issues raised above, and avoid the potential significant consequences associated with materially under-estimating the true value of Net CONE. This applies in particular to the IMR estimates and WACC; and*
- c. In due course fresh thinking at the principles level is needed in relation to the right approach to estimating costs given the purpose of Net CONE and the associated auction price cap in the context of the I-SEM.*

In the interests of transparency, and to allow industry participants an opportunity to fully review the analysis behind the SEM Committee's proposals, we also recommend that the SEM Committee should make Poyry's underlying calculations available for review. From the limited information available, we were unable to reproduce all of their results.⁷

⁷ Ibid at para 1.11-1.12

Appendix A – Report by Frontier Economics

Review of BNE/Net CONE for T-4 Auction, undertaken for the Electricity Association of Ireland, 15th June 2018