



**Energia Response to SEM Committee
Consultation Paper SEM-22-076**

***Consultation on the Best New Entrant Cost of New
Entry (BNE-Net CONE)***

30th November 2022

Executive Summary

The Net CONE figures proposed in SEM-22-076a are based on unsupported and incorrect assumptions. They are not realistic estimates that would be recognised by a rational private investor, as required by the ACER methodology for calculating Net CONE. If accepted unadjusted by the SEM Committee, the proposed Net CONE figure would reduce the likelihood of new entry into the capacity market and increase the likelihood of early exit of existing generators. Therefore, it would further exacerbate Ireland's already challenging security of supply position as set out in the TSO's Capacity Outlook 2022-2031 report.

Energia has consistently expressed the view that the current restrictions on bidding in capacity auctions, particularly for existing capacity, continue to have a negative impact on the supply of capacity in Ireland. To reduce Net CONE by 37% for the T-4 2026/27 capacity auction sends precisely the wrong signal to investors at a time when Ireland urgently needs additional capacity.

The uncertainty surrounding the future direction of Net CONE is exacerbated by the statement in the consultation that the relationship between Net CONE and the Auction Price Cap may need to be considered. Energia has consistently argued that the Existing Capacity Price Cap is too restrictive – any changes to address this would be welcomed, but any changes that would further disadvantage existing capacity would be extremely counter-productive.

Energia agrees with the points made by Frontier Economics in their review, commissioned by the Electricity Association of Ireland, which accompanies this response. This review catalogues a series of shortcomings in the CEPA analysis which ultimately leads to a gross underestimation of Net CONE and threatens to reduce future supply of capacity.

The most impactful of these shortcomings is the treatment of Infra-Marginal Rents (IMRs) for Closed Cycle Gas Turbines (CCGTs). The basic assumptions used in the CEPA analysis do not recognise the impact of legally required increased renewable penetration and a CCGT's relative position in the merit order. The result is that the IMRs are grossly over-estimated and would not be recognisable by a rational investor considering investing in new generation in the market.

In addition to the IMRs, the assumptions regarding the DS3 revenues are entirely unsupported and once again lead to a gross over-estimation. The assumption of a flat 20% reduction in tariffs is not reflective of what could realistically happen to DS3 services when a competitive auction process is brought in, expected around the time of the 2026/27 capacity auction.

In addition to the projected revenues, the CEPA analysis makes a number of unrealistic assumptions] in its Gross CONE calculation. As per the Frontier report, the EPC assumptions are relatively unsupported, and, in any case, need a further uplift to account for recent price increases. Several other costs are based off the EPC and are therefore likely to be underestimates. The Weighted Average Cost of Capital (WACC) should be raised, as should assumptions regarding future inflation, to account for the current high-rate environment.

Overall, the CEPA analysis sets Net CONE far too low, which will send out precisely the wrong signal to investors at a time when Ireland needs to retain existing capacity and incentivise new entry. If implemented, it will exacerbate the existing issues that have contributed to the capacity shortfall projected by the TSOs for the decade ahead.

1. Introduction

As an active and experienced supplier of capacity in Ireland, Energia welcomes the opportunity to respond to the consultation (SEM-22-076) on the Best New Entrant Study 2022 as written by CEPA. The correct calculation of Net Cost of New Entry (Net CONE) is a critical component for attracting and retaining sufficient capacity for the T-4 2026/27 auction and beyond.

Energia is fully supportive of the conclusions of Frontier's review of CEPA's analysis, as commissioned by the Electricity Association of Ireland (EAI). Energia will make reference to Frontier's analysis throughout this response.

This response will start by making some general comments relevant to this consultation. Energia wishes to emphasise the signalling impact of Net CONE to current and potential investors in the capacity market in Ireland. The proposed reduction in Net CONE, combined with uncertainty regarding the relationship between Net CONE and bid limits, are making it more difficult to address Ireland's forecast capacity shortfall.

This response will then turn to the details of CEPA's calculation of Net CONE. Rather than responding to each component of Net CONE in order of priority, this response will follow the outline used by CEPA in their report.

The calculation of Gross CONE suffers from unsupported figures for EPC costs, which in any case have not been sufficiently adjusted to account for price increases in the sector. This error is compounded by the fact that multiple other costs are calculated as a percentage of EPC costs. There are additional errors in some of the other fixed costs, most notably with regards to land costs. Finally, the inflationary assumptions are too low in the current environment.

Gross CONE is further under-stated through erroneous assumptions included in the WACC, which ultimately lead to an underestimate of the WACC that an investor would use, particularly in the Republic of Ireland.

This response then considers the revenue assumptions that are used to calculate Net CONE. These assumptions have the greatest impact in arriving at the final figure of €58.3 per de-rated KW. The assumption of flat IMRs over the course of 10 years is totally unrealistic considering the projected RES-E to come onto the system over the next decade. Furthermore, the DS3 projections potentially grossly underestimate the impact that the forthcoming competitive auction framework will have on tariffs. Critically, projections of IMR and DS3 must be credible from a rational private investor's perspective taking into account all of the risks and uncertainties associated with a 5 year+ forecast horizon.

2. General Comments

In this section, three items will be addressed: the importance of Net CONE as a signal to investors in capacity in Ireland, the relationship between Net CONE and the auction bid limits, and the principles followed by CEPA in their report.

Net CONE as a signal

In responding to this consultation, it is impossible to ignore the wider context of the capacity market in Ireland. The Ireland Capacity Outlook for 2022-2031 put it in stark terms:

“There is no question that the current outlook, based on the best information available is serious. It is likely that in the coming years we will experience system alerts and will need to work proactively to mitigate the risk of more serious impacts”.

The TSO has identified a capacity shortfall of 2GW over the next decade. Through commissioning the EY Review (SEM-22-054A), the SEM Committee has recognised that there are fundamental issues with how the capacity market is operating, and the serious impact this has for security of supply in Ireland¹.

Given this well-established context, it is counter-intuitive that the CEPA report should propose a 37% reduction in Net CONE. At exactly the point at which SEMC needs to focus on attracting additional investment in the capacity market and ensuring existing capacity does not exit prematurely, it is proposing to reduce the extent to which investors can recover their costs in the capacity market. This is in spite of the fact that there is no evidence that the costs of investment, operations and maintenance are decreasing (the opposite is in fact the case), or that the forecast revenues, particularly from thermal generation are expected to be stable and predictable.

Before considering the CEPA assumptions in depth, it was clear from the outset that the outcome of a 37% reduction in Net CONE was intuitively wrong. CEPA come close to acknowledging this in their report, when they state that some of their assumptions may be “overly optimistic”. But SEM should be aware of the signal they are sending to potential and current investors in capacity by consulting on a proposal that is so at odds with the reality faced by a rational investor.

Net CONE and the ECPC and APC

As stated in the consultation paper, the primary purpose of Net CONE is to calibrate the Auction Price Cap (APC) and the Existing Capacity Price Cap (ECPC). The consultation paper makes reference to the fact that the APC may be reviewed prior to the auction. In the conclusion the consultation is even more explicit:

“The SEM Committee notes that given the level of uncertainty around some of the components of Net CONE, the relationship between Net CONE and the Auction Price Cap for the T-4 2026/27 and subsequent auctions may need to be considered”.

In responses to multiple consultations (SEM-16-073, SEM-18-028, SEM-20-006, SEM-22-054), Energia has consistently expressed the view that the ECPC multiplier is set too low and does not enable a rational investor to cover their Net Going Forward Costs

¹ Energia has responded separately to the EY review

(NGFC). This has an impact not only on the continuance and upgrade of existing capacity, but also on investment in new capacity.

On that basis, a review of the APC multiplier relative to Net CONE would be welcome, and indeed is necessary, but such a review also needs to be extended to the ECPC multiplier to address the existing bias in favour of new capacity against existing capacity.

However, it would be a mistake for the SEM Committee to believe that setting a Net CONE that was too low could be offset by changes in the bid limit multiples or through the USPC process. As well as reviewing the bid limits multiples, the SEM Committee needs to set Net CONE at a level that is consistent with reality, which CEPA's proposal is not. Otherwise, any signal sent to investors through revising the bid limit multiples would be lost through the uncertainty created by reducing Net CONE.

Principles used by CEPA in their report

In Energia's response to the last revision of Net CONE (SEM-18-025), we noted that at almost all available opportunities the least cost option or value from a range of values in the Net CONE calculation was chosen. Our view at the time was that this was unsustainable and significantly underestimated the cost of required capacity.

A similar issue pervades CEPA's report and our view remains the same. On multiple occasions, particularly with regards to revenues, CEPA uses highly optimistic assumptions. This is not the approach that a rational investor would take, as the BNE is designed to reflect, and leads to a Net CONE that is unrealistic. In calculating Net CONE, SEM needs to ensure that it has adopted sufficient conservatism, similar to what would be expected of a rational investor.

3. Reference Technologies

This section focuses on the selection of reference technology in the CEPA report, whereas the specific capital costs are covered in the next section.

Energia is in broad agreement with the reference technologies chosen for Net CONE: an Open Cycle Gas Turbine (OCGT), Closed Cycle Gas Turbine (CCGT), Reciprocating Engines, and Battery Energy Storage System (BESS). Nor does Energia have any specific comments regarding the models or efficiency standards chosen for the reference plants.

It is not entirely clear that the CEPA report has considered the extent to which the reference technology is compatible with the net-zero agenda to 2050. The CEPA report references emissions standards as they are today, but does not consider how those are likely to evolve in the future and what impact this would have for the economic viability of the new plants.

Any of the reference technologies that were to be built for the 2026/27 capacity year could have an economic life of approximately 20 years and potentially longer, meaning they could be online around 2050 when Ireland is legally required to have met net-zero. The Net CONE study cannot be completed in isolation from this reality and should explicitly consider whether the selected reference technology would be compatible in this context.

This may be an issue with the general Net CONE methodology, and something that the SEM Committee can address more explicitly at the next review. However, where possible, the costs associated with ensuring that the selected technology is decarbonised are relevant to the calculation, as will be discussed in the next section.

4. Gross CONE Costs

This section will cover both the capital and annual fixed costs of the reference technologies, as well as the annual recurring costs.

EPC

It is difficult to comment on the specific EPC costs of each of the plants as the CEPA paper does not provide much detail regarding the inputs that went into the calculations other than to cite the software that was used. However, Energia notes the following:

- CEPA note that default cost multipliers were applied to calculate the EPC in GT PRO and PEACE. However, these default multipliers may not capture costs specific to building new plant in Ireland, particularly in the areas where capacity is most needed. On that basis, it would be conservative to include a multiplier to account for this uncertainty.
- The EPC cost of an OCGT plant has decreased significantly since the equivalent figures were calculated by POYRY. This is intuitively incorrect, and SEM should consider carefully whether there is any specific rationale for why this should be the case.
- The EPC costs have only been uplifted for Eurozone inflation to June. As per the Frontier report, inflating the costs using Irish figures to the end of September would result in significantly higher costs.

As the EPC is used as the baseline from which to estimate numerous capital and recurring costs, these issues that lead to the underestimation of EPC have a ripple effect in underestimating a number of other costs across the calculation. These will need to be updated to give a more accurate estimate of Gross CONE.

Site Procurement Costs

We agree with Frontier's assessment that the CEPA report significantly underestimates the site procurement costs for the reference technology. The report uses agricultural land, and a 100% uplift is applied. The report notes that the resulting costs are significantly lower than the previous Net CONE calculation, which used broker estimates from 2009.

While Energia agrees that 2009 estimates would no longer be suitable, the use of the price of agricultural land with an uplift is entirely inappropriate. The majority of agricultural land is not suitable for the reference technologies, and even with the scalar the resulting values are substantially under-priced. A far more robust approach would have been for CEPA to get a number of quotes directly from brokers regularly involved in procuring suitable sites and basing their estimate on these.

The calculation should be redone in order to be far more robust, and to give more credible figures for site procurement costs relative to 2018 and in absolute terms. It

needs to account for the fact that in areas where capacity is most needed, land values are often at a premium and suitable land is difficult to locate.

The Costs of Upgrade and Net-Zero Adaption

As per Section 3 of this response, significant work is likely to be required to any new plant to decarbonise BNE. However, as the Frontier report notes CEPA's analysis makes no attempt to account for these costs that would certainly be relevant to the rational investor.

Energia's view is that this oversight is typical of the SEM Committee's approach to date to upgrades needed to existing capacity. There seems to be a refusal to acknowledge that investors need to be incentivised to upgrade their existing plants (which at one point was new plant) in order to continue to provide capacity. Capital costs do not cease once a plant is built, as technology constantly needs to be upgraded and adapted and the need to replace and upgrade plant components increases with plant age and cycling. In failing to recognise these costs, SEMC is not arriving at an accurate view of Net CONE, or of the costs relevant to existing capacity.

Inflation

All of the costs are updated from 2022/23 to 2026/27 using an inflation assumption of 2%. As per the Frontier report, this is a significant underestimation of the forecast for inflation, and the calculation should be updated with a more realistic outlook for inflation in the UK and Ireland.

It is noted that the electricity generation sector has been particularly badly hit with inflation, with the Celtic Interconnector's costs expected to have risen by 75% since 2019. Cost increases relevant to the new technologies, over and above general inflation, should be considered as would be done by a rational investor.

5. Cost of Capital - WACC

This section will cover the Weighted Average Cost of Capital (WACC) used across the reference technologies and calculated separately for Ireland and Northern Ireland. The WACC is an important determinant of Gross CONE, reflecting the cost of finance for a rational investor.

Energia agrees with the Frontier report that there are several significant issues that if correctly addressed would lead to a significantly higher WACC than has been proposed in the CEPA paper. Specifically:

- **Higher interest rate environment:** The data selected is from the end of July, but rates on government bonds have increased significantly since then and this needs to be reflected in the risk free rate. Furthermore, the rate for the Republic of Ireland should use Irish rather than German bonds. The higher rate environment extends to corporate bonds, where yields are much higher, and this should be factored into the cost of debt. Overall, a rational investor would be looking at a higher-for-longer interest rate environment, and this would be factored into the WACC.
- **A WACC calculation has not been done separately for the different technologies.** Each of the reference technologies has a different risk profile, and therefore it is unrealistic to use the same WACC for each of them.

- **The reduction in the Beta calculation is unaccountably low.** As per the Frontier report, there has been a reduction in the asset beta relative to 2018, and it is not clear whether this is because of the inclusion of lower risk companies in the calculation. More clarity should be provided on this point.

These points should be addressed in the final calculation.

6. IMR and DS3 Revenues

While Energia has in its response highlighted significant concerns with the Gross CONE calculation, our concerns with the revenues that are used to calculate Net CONE are even greater. Energia agrees entirely with the analysis of the revenues in the Net CONE calculation by Frontier. This section will consider in turn the assumptions used to calculate Infra-Marginal Rents (IMR) and DS3 revenues.

Infra-Marginal Rents

The CEPA report uses inflation adjusted IMR calculations from 2025/26 and then assumes that those revenues will remain constant for the next ten years. The CEPA report states:

“We acknowledge that for the gas units this may be an overly optimistic assumption in the context of increasing levels of variable RES generation in the SEM which may reduce the annual run hours of thermal units”.

Energia agrees entirely with Frontier’s analysis that rather than being overly optimistic, the assumptions are entirely unrealistic and should not be used in the primary calculation of Net CONE in CEPA’s report. Specifically, the main problems with the assumption are:

- No detail is provided as to how the IMRs for 2025/26 have been calculated, and therefore it is very difficult to assess whether the initial calculations are realistic or not.
- For any new technology, it is highly unlikely that it will maintain its position in the merit order over a ten-year period, and therefore the assumption that its revenues will remain constant over that period does not hold.
- In this specific scenario, with Ireland planning to reach renewable penetration of up to 80% by 2030, the assumption that a thermal generator will maintain constant IMRs over the period is entirely at odds with reality.

CEPA’s stated alternative assumption, that IMRs fall from their 2026/27 level to zero within ten years, is more appropriate. However, given the importance of IMR projections to the overall projection, CEPA should have offered a comprehensive and detailed methodology for their estimations. This would have included a projection of thermal units share of total IMRs, relative to how much RES-E is expected to be on the system for each of the next ten years.

In the absence of such an analysis, a far more conservative approach needs to be adopted. Otherwise, the final Net CONE will be totally at odds with what a rational investor would rely upon, and will have significant adverse consequences for security of supply in Ireland.

DS3

DS3 revenues are also highly consequential in the calculation of Net CONE. On that basis, it is disappointing that CEPA have not undertaken a detailed analysis and forecast of future DS3 revenues for BNE.

Energia recognises that the outlook for DS3 revenues is uncertain, given the plans to bring forward a new competitive framework for all system services in the years leading up to 2026/27. However, CEPA does not attempt to justify how it arrived at its flat discount of 20% on the 2021/22 tariffs. This is particularly concerning, given that the only source that it cites suggests a discount of 83%.

In the final analysis, SEM should clearly state how it has arrived at the projected DS3 revenues for new technology, and this should be based on the conservative assumptions that could reasonably be expected of a rational investor. To use the assumptions proposed by CEPA would be highly unrealistic and would further contribute to the under-estimation of Net-CONE.

7. Conclusions

The estimation of Net CONE for a T-4 auction is an inherently uncertain process. However, the proposal for a 37% reduction from the current level of Net-CONE is instinctively incorrect and sends precisely the wrong signal to investors at a time when Ireland is facing serious security of supply issues.

This response has detailed where Energia has significant disagreements with CEPA's calculations. Overall, we are concerned that the approach taken does not follow that which would be taken by a rational investor, which is how the BNE process is required to work. Across the report, unjustified and overly optimistic assumptions are used that underestimate costs and overestimate revenues, which goes some way to explaining how CEPA managed to arrive at a Net-CONE figure so out of line with reality.

Energia strongly recommends that the SEM Committee revisit and revise the specific assumptions made by CEPA to arrive at a final Net CONE figure. With regards to costs, many of the assumptions can be updated relative to real-time data (e.g. cost inflation). For revenues, SEMC may have to simply replace the assumptions used by CEPA with assumptions that are more realistic, conservative, and likely to be used by a rational private investor.

Finally, it would be a serious mistake for SEM to expect that they could offset any unjustified reduction in Net CONE with an increase in the APC. Investors are aware that Net CONE is regularly updated, and any unjustified reduction could be repeated in the future at the point at which they may wish to apply for new capacity contracts as existing suppliers. Unjustified and unsupported reductions in Net CONE create an environment of uncertainty, and will put off existing and potential investors precisely at the time when Ireland needs to be encouraging such investment for security of supply.