

Single Electricity Market (SEM)

Capacity Remuneration Mechanism

2026/27 T-4 Capacity Auction Parameters & Annual Run Hour Limited Plant De-Rating Factor

> Decision Paper SEM-22-044

11 August 2022

1. Executive Summary

On 13 June 2022, the SEM Committee consulted on the parameters for the 2026/27 T-4 Capacity Auction.

A total of sixteen responses were received, two of which were marked as confidential.

Having considered these responses, the SEM Committee has decided to retain many of parameter values as published within the consultation paper. There are however, some changes in relation to a new way of de-rating New Capacity with Annual Run Hour Limits (ARHL). An additional derating factor of 0.14 will apply to New Capacity with an ARHL of less than or equal to 500 hours, and an additional derating factor will apply to New Capacity, with an ARHL of more than 500 hours, but less than or equal to 1,500 hours. No additional ARHL derating factors will apply in respect of any Existing Capacity. The SEMC will imminently be consulting on the introduction of a new emergency CMC modification to facilitate this change. The SEMC is minded to completing the consultation and making a decision, prior to the issue of the Initial Auction Information Pack (IAIP). It is anticipated that an emergency modification proposal will be issued in the coming days, with a view to issuing the IAIP within three to four weeks.

An adjustment to the Level 1 and Level 2 constraint areas has been made to reflect new LCC areas for North and South Dublin in the Greater Dublin area. To achieve this outcome, and to maintain the minimum constraint at the Greater Dublin area, we have set the Greater Dublin Area and Rest of Ireland (now referred to as Ireland) as Level 1 constraints, along with Northern Ireland. The Level 1 Greater Dublin area will be subdivided into the two Level 2 constraints, namely North Dublin and South Dublin, with these areas to be defined in the IAIP. The Level 2 constraints for North and South Dublin are to be set as a maximum amount to be procured for these regions, as well as conventional minimums.

There is a possibility that the Celtic interconnector could be complete in time to provide capacity in 2026/27, so the SEMC may approve an External Market Derating Factor (EMDF) for France, for inclusion in the IAIP. The France EMDF may be different to the EMDF of 60% for GB. The SEMC has also asked the TSOs to calculate a marginal

derating factor appropriate for a unit the size of the Celtic interconnector, for publication in the IAIP.

The SEMC has approved a value of €146,920/ derated MW/ yr for inclusion in the IAIP. The SEMC is currently undertaking a new Best New Entrant Net CONE study, which may be complete prior to the issue of the Final Auction Information Pack (FAIP). Depending on the outcome of that study, the SEMC may choose to revise the Auction Price Cap before the auction.

These decisions are summarised in the later chapters of this document.

The conventional parameters are summarised in the following table:

Parameter	Proposed Value for 2026/27 T-4 Capacity Auction	
	To be set frozen as per the T-4 2024/25 Capacity Auction,	
	except for in the case of:	
De-Rating Curves, defining De-Rating Factors by unit Initial Capacity and by Technology Class (including for Interconnectors)	 DSUs with a run-hour limit of less than 6 hours, where an additional multiplier of 0.75 will be applied to reduce derating factors by a further 25%; and New Capacity, subject to ARHLs, as set out above; and The introduction of a new derating factors to support the potential inclusion of the Celtic interconnector to France 	
Capacity Requirement	To be determined by System Operators prior to publication of Initial Auction Information Pack.	
Indicative Demand Curve	 The Demand Curve shape chosen for this auction is as per Option 1 of the consultation paper. For the avoidance of doubt, the description of this curve is: Horizontal at the Auction Price Cap from 0MW to 92.5% of the adjusted Capacity Requirement. 	

	adjusted Ca through the 100% of the	oacity Re point at v adjustec	equirement where the v I Capacity	o 115% of the t. The line passes volume is equal Requirement and 2,300 / de-rated
Auction Price Cap	1.5 times Net CONE rated MW / year ¹ , bu outcome of new BNE	ut may be	e revised, o	depending on the
Existing Capacity Price Cap	0.5 x Net CONE i.e.	€46,150)/de-rated	MW /year.
New Capacity Investment Rate Threshold	€300,000 /de-rated MW / year.			
Annual Stop Loss Limit Factor	1.5			
Billing Period Stop Loss Factor	0.5			
Indicative Annual Capacity	To be determined by System Operators prior to			
Exchange Rate	publication of Initial	Auction I	nformatior	n Pack.
Increase Tolerance and Decrease Tolerance by Technology Class	Technology Class All Except DSUs DSUs		rease nce (%) 0 0	Decrease Tolerance (%) 0 100
Performance Security Posting Dates / Events	Date / Even From Capacity Au completion to 24 n prior to the beginn the Capacity Y	uction nonths ning of	Performa	nce Security Rate (€/MW) 10,000

¹ The APC value proposed is inclusive of the inflation as outlined in SEM-21-110 <u>SEM-21-110 Information Note</u> <u>on indexation of Auction Price Cap.pdf(semcommittee.com)</u>

	24-13 months prior to the beginning of the Capacity Year	20,000	
	From 13 months to beginning of Capacity Year	30,000	
	From beginning of Capacity Year	40,000	
	Date / Event	Termination Charge Rate (€/MW)	
Termination Charges	From Capacity Auction completion to 27 months prior to the beginning of the Capacity Year	10,000	
	27-13 months prior to the beginning of the Capacity Year	20,000	
	From 13 months to beginning of Capacity Year	30,000	
	From beginning of Capacity Year	40,000	
	Short Term Reserve	Administered Scarcity	
Full Administered Scarcity Price and Reserve Scarcity	(MW) Demand Control	Price (€/MWh) 25% of VOLL	
Price Curve		25% of VOLL	
	500	DSU Theoretical Price	
Anticipated values to be applied in determining the Strike Price	Current formula and inputs remain as previously determined		

These parameters are included within the Initial Auction Information Pack for the auction, which is scheduled to take place in February 2023. A detailed timetable for the auction is

also available², although the SEMC have asked the TSOs to consider slight revisions to the timetable, to accommodate the consultations on the emergency modifications.

The SEMC recognise that the TSOs have undertaken a significant amount of good work to update the ISAC model which is used to produce derating factors. The fact that the SEMC has chosen to continue to freeze derating factors is in no way a reflection on the quality of the work undertaken by the TSOs. However, the SEM Committee are concerned that the full impact of the changes were not fully known and understood at the time of the consultation. On balance, the SEM Committee are of the view that further testing and consultation on the changes is appropriate at this stage. We therefore request the TSOs consult further on the changes to ISAC, including the introduction of 8-hour storage units if possible. This process should be completed in time for the next capacity auction where we would expect it to be applied.

² CAT2627T-4-2026-2027-T-4-Capacity-Auction-Timetable.pdf (sem-o.com)

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3. Background

Decisions made in this document reflect requirements set out in the Capacity Market Code (CMC), which sets out the arrangements whereby market participants can qualify for and participate in auctions for the award of capacity in the Capacity Remuneration Mechanism (CRM) in the SEM.

The settlement arrangements for the CRM form part of the revised Trading and Settlement Code (TSC) (SEM-17-024³) published in April 2017.

The introduction of the CRM involved formal notification to the European Commission (EC) of the proposed mechanism for purposes of State aid consent. This process was led by Department of Communications, Climate Action & Environment (DCCAE) and Department for the Economy (DfE) who together with the Regulatory Authorities (CRU and UR) engaged with the EC in advance of the notification and during the notification process.

The EC approved the CRM on 24 November 2017. The first Capacity Auction took place in December 2017 to cover the period from I-SEM go-live to 30 September 2019, i.e. for the Capacity Year (CY) 2018/19. The Parameters as set out in this document relate to the T-4 CY2026/27 Capacity Auction.

The T-4 auction for CY2026/27 is planned for February 2023. A detailed timetable for the auction is also available⁴.

On 13 June 2022, the SEM Committee issued a consultation on parameters for the 2026/27 T-4 Capacity Auction (SEM-22-015⁵). Within the consultation, the SEM Committee proposed, alongside the usual tranche of Auction parameters, a new way of de-rating Annual Run Hour Limited (ARHL) plants for the 2026/27 T-4 Capacity Auction. The SEM Committee also published an Annex drafted by the TSOs setting out their proposals for re-adoption of the outputs from their Capacity Adequacy model, with associated views on the need to address the impact of Annual Run-Hour Limited plants in the CRM.

³ I-SEM Trading and Settlement Code Amendments Decision Paper | SEM Committee

⁴CAT2627T-4-2026-2027-T-4-Capacity-Auction-Timetable.pdf (sem-o.com)

⁵ SEM-22-015 CRM Parameters Consultation for the T-4 2026/27 Capacity Auction | SEM Committee

The purpose of this decision paper is to:

- Set out the decision for the T-4 CY2026/27 Capacity Auction parameters;
- Set out the decision, applicable to future capacity auctions occurring after T-4 CY2026/27 auction, for the enduring de-rating methodology for Annual Run-Hour Limited Plants (ARHL) and other capacity providers who are subject to any runhour limitations;
- Set out the decision relating to Locational Capacity Constraints (LCC), outlining the creation of Level 2 Dublin North and South Areas and moving the greater Dublin Area and Rest of Ireland (now referred to as Ireland) as Level 1 constraints, along with Northern Ireland. The Level 2 Dublin areas will have a maximum limit applied to the volumes that can be procured in these areas, as well as minimum volume requirements.

Parameters to be determined

Paragraph D.3.1.3 of the CMC requires the Regulatory Authorities to determine the following parameters for each Capacity Auction, and provide them to the System Operators for inclusion in the applicable Initial Auction Information Pack:

- the De-Rating Curves, defining De-Rating Factors by Technology Class, (including for Interconnectors);
- (b) the Capacity Requirement;
- (c) an indicative Demand Curve;
- (d) the Auction Price Cap;
- (e) the Existing Capacity Price Cap;
- (f) the €/MW rate of the New Capacity Investment Rate Threshold;
- (g) the Annual Stop-Loss Limit Factor;
- (h) the Billing Period Stop-Loss Limit Factor;
- (i) the indicative Annual Capacity Payment Exchange Rate;
- (j) the Increase Tolerance and Decrease Tolerance by Tolerance Class that may be applied by a Participant in its Application for Qualification to Capacity Market Unit de-ratings;

- (k) in respect of Performance Securities:
 - (i) the final Performance Security Posting Dates/ Events applicable to Awarded Capacity allocated in the Capacity Auction; and
 - (ii) for each Performance Security Posting Date/ Event, the final €/MW rate to be applied in setting Performance Securities applicable to Awarded Capacity allocated in the Capacity Auction;
- (I) the €/MW fee rates for calculating Termination Charges;
- (m) values for the Full Administered Scarcity Price and the Reserve Scarcity Price; and anticipated values for the parameters to be applied in determining the Strike Price.

4. Summary Of Proposals In The Consultation Paper

4.1 Parameters to be Determined

Below is the table on the Parameters to be Determined as printed in the Consultation Paper:

Parameter	Proposed Value for 2026/27 T-4 Capacity Auction
De-Rating Curves, defining De-Rating Factors by unit Initial Capacity and by Technology Class (including Interconnectors)	The Initial Auction Information Pack ("IAIP") will provide the final De-rating factors. This paper contains a number of proposals in addition to the 'freezing' of derating factors, as applied in the last number of capacity auctions.
Capacity Requirement	To be determined by System Operators prior to publication of Initial Auction Information Pack.
Indicative Demand Curve	 The Demand Curve for the 2026/27 T-4 auction shall be set as the following: Horizontal at the Auction Price Cap from 0MW to 92.5% of the adjusted Capacity Requirement. Slopes down to 115% of the adjusted Capacity Requirement. The line passes through a shallow

	adjusted Ca	apacity Requireme	s equal 100% of the ent and the price e-rated MW / year ⁶).
Auction Price Cap	€146,920/ de-rated	MW ⁷ .	
Existing Capacity Price Cap	0.5 x Net CONE i.e.	€46,150 / de-rated	d MW /year.
New Capacity Investment Rate Threshold	€300,000 /de-rated	MW / year.	
Annual Stop Loss Limit Factor	1.5		
Billing Period Stop Loss Factor	0.5		
Indicative Annual Capacity Exchange Rate	To be determined by System Operators prior to publication of Initial Auction Information Pack.		
Increase Tolerance and Decrease Tolerance by Technology Class	Technology Class All Except DSUs DSUs	Increase Tolerance (%) 0 0	Decrease Tolerance (%) 0 100

 $^{^6}$ This value will remain at €92,300/MW unless the SEM Committee decides to implement the outworkings of the separate BNE study, in which case the new updated value for the BNE and therefore Net CONE will be set out in the Parameters Decision Paper. ⁷ As per <u>SEM-21-110 Information Note on indexation of Auction Price Cap.pdf (semcommittee.com)</u>

	Date / Event	Performance Security Rate (€/MW)
	From Capacity Auction completion to 27 months prior to the beginning of the Capacity Year	20,000
Performance Security Posting Dates / Events	27-13 months prior to the beginning of the Capacity Year	30,000
	From 13 months to beginning of Capacity Year	40,000
	From beginning of Capacity Year	50,000
Termination Charges	Date / Event	Termination Charge Rate (€/MW)
	From Capacity Auction completion to 27 months prior to the beginning of the Capacity Year	20,000
	27-13 months prior to the beginning of the Capacity Year	30,000
	From 13 months to beginning of Capacity Year	40,000
	From beginning of Capacity Year	50,000

Full Administered Scarcity Price and Reserve Scarcity Price Curve	Short Term Reserve (MW) Demand Control 0 500	Administered Scarcity Price (€/MWh) 25% of VOLL 25% of VOLL RO Strike Price
Anticipated values to be applied in determining the Strike Price	Current inputs to be re-applied.	

4.2 Derating Factor Calculation and Energy/Time-Limited Units

The consultation paper featured an annex by the TSOs setting out their proposals for these units to:

- Adopt the outworkings of the updated ISAC model, along with consideration of a separate de-rating factor for storage with a duration of 8 hours or greater to further incentivize longer duration storage.
- Failing that, apply a multiplier of 0.5 if we revert to the T-4 24/25 DSU de-rating factors.

4.3 Annual Run-Hour Limits and Associated Warrant Scheme

Within the consultation paper, the RAs proposed a new framework for reflecting the limitations defined under the EC Implementing Decision 1442 impacting upon security of supply on the island. The framework is based on applicants declaring at the time of qualification what limits, if any, their capacity will be subject to.

The RAs proposed three choices of Warrant within the Application template; in summary these were:

- Warrant A: No ARHL (i.e., the unit will not be limited in the sum of hours it may operate each year)

- Warrant B for CMUs with 1,500hrs per year
- Warrant C for CMUs with less than 500hrs per year

The applicant must then select one of these options for their application to be valid.

When calculating the de-rating factor to be assigned to each CMU, the TSOs would then apply an additional de-rating multiplier to units under each Category as follows:

Warrant Type	ARHLdf
Warrant A	1.00
Warrant B	0.43
Warrant C	0.14

Upon choice of Warrant and associated de-rating factor, a basic formula would then apply to calculate the Candidate De-rated Capacity

Candidate Derated Capacity = Nameplate Capacity x DRF x ARHLdf

4.4 Treatment of Constraints

For all auctions completed ahead of the CY2026/27 T-4 Auction, there have been two Level 1 LCCAs (Northern Ireland and Ireland) and one Level 2 LCCA (Greater Dublin, associated with the Ireland Level 1 constraint).

A Level 2 LCCA for the rest of Ireland outside Greater Dublin was included for the 2024/25 T-4 auction.

The SEM Committee looked for feedback as to whether there may be merit to the development of further LCCAs by the TSOs, for example, by splitting Dublin further into two Level 3 LCCAs - North Dublin and South Dublin.

The intent of this would be to allow the auction to more finely reflect the constraints that exist between these two areas in reality such as the maximum capacity that can be facilitated in those areas.

5. Summary of Responses

We received 16 responses to the consultation, two of which were marked as confidential. The 14 responses summarised here include:

Bord Na Mona – BnM Bord Gais – BG Demand Response Association Ireland – DRAI Electricity Association of Ireland – EAI Eirgrid and SONI – TSOs Energia – Energia Energy Storage Ireland – ESI ENEL-X ESB GT – ESB Federation of Energy Response Aggregators – FERA GridBeyond – GB Mutual Energy – Mutual PowerHouse / CoolPlanet – PHC SSE - SSE

5.1 Derating Factors

SSE viewed the impact of application of both a de-rating factor for ARHL plant and the perceived downward trajectory of De-rating Factors (DRFs) for energy-limited plants created an exit signal to industry.

They state that there is a question as to why those plants that make up a large amount of the capacity at auction are being limited in such a fashion, by what they see as a discriminatory factor.

SSE argue that the proposals are not the optimal method to encourage entry for capacity into the auction. In addition, SSE noted that the RAs should be incentivising investment through an acknowledgement that the project related costs are significant; consequently they should be reasonably de-risked to some level to encourage projects to enter, deliver and operate.

PHC feel that the proposals are overly constraining energy limited plants such as DSUs and give numerical examples to justify this, concluding that between the T-4 23/24 and T-4 25/26 auction there was a 37% reduction in de-rating factors for a DSU with two hour minimum down time.

PHC go on to state that this would represent a 37% reduction in Capacity Revenues for a 10MW DSU with a minimum down time of 2 hours between the two auctions noted above. They state that the TSOs have further compounded this by unjustifiably suggesting a further reduction of 0.5 on top of these.

GB argue that the SEM Committee are, in proposing to heavily derate DSUs and Energy Storage, at odds with helping to deliver Capacity Adequacy. They state that the TSO paper severely undermines the contribution of DSUs in particular by failing to include important characteristics such as unit size (MW) and duration and call for the consultation to be reviewed as it is not aligned with EU requirements for non-discriminatory treatment between different classes of participants.

ESB claim that they are not in a position to determine whether a set of new multipliers are acceptable or not, they feel that a full consultation from the SEM Committee is needed in this regard.

ESI are very concerned over the proposals for energy storage, given that the TSOs modelling seems to indicate that they assumed a 77% availability for storage when storage assets are more than 97% available today. They are further concerned that the TSOs' approach overvalues the contribution of fossil fuel generators to capacity adequacy and specifically targets technologies such as energy storage and DSUs in terms of lower deratings.

ESI support the notion of including longer duration storage assets into the market, and hope the TSOs consider assets of longer duration than 8 hours to incentivise investment.

Energia caution against making substantial changes towards storage units de-rating, given impact in investment signals and noting limits in energy and DS3 markets.

Enel-X argue that introducing a de-rating which sharply reduces the value of new DSU capacity would affect future participation in T-1 Auctions.

They argue that DSUs can still on-board new demand sites within a matter of months; but they feel there will be no financial incentive to seek out and secure new demand response clients for future auctions if further de-rating is applied to DSUs.

BnM highlight that the consultation paper includes several proposed changes to de-rating factors and that the rationale for these proposals appear to be linked to a concern around reaching a saturation point for units with energy and/or run-hour limitation. Given the current outlook for generation capacity for the mid 2020's, BnM are of the view that additional consideration needs to be given to Security of Supply.

BGE do not agree with the proposed approach to the calculation of the de-rating factors (DRFs) for energy limited units and DSUs. Instead, BGE are of the view that an improvement in the DRF methodology for these units is required to better reflect their true value in contributing to capacity adequacy particularly at times of "near scarcity". BGE go on to set out the context for an improvement in the methodology applied in deriving values for de-rating factors in the CRM.

The DRAI's assessment of the impact of additional de-rating, if implemented, would be to jeopardise the future provision of DSU capacity and other alternative sources of generation through the use of new additional de-rating factors on an already downward trending set of de-rating factors, as observed in each IAIP.

The DRAI refer to the 'blunt application' of the further 0.5 scalar, that will further marginalise DSUs in each capacity auction.

The EAI state that some of their members have significant concerns about the proposed changes to energy limited and ARHL plant and are of the view that if de-rating is going to be applied in the manner proposed, this must be reflected in uplifted bid limits to enable such units to participate in future capacity auctions and contribute to security of supply.

The EAI argue that there is little evidence or justification for withholding volumes from the T-4 auction, and request increased transparency in the derivation of the final Demand

Curve, arguing that its formulation remains opaque and ill-evidenced relative to the Capacity Requirement set out in the IAIP.

The TSOs strongly support the full implementation of the recommendations set out in the paper they provided as an annex to the consultation. They explain that the evolution of the ISAC de-rating model outcomes is in line with the tenets within the High Level Design, and advocate for a return to the adoption of these outputs over continuing 'freezing' of de-rating factors used in the 2024-25 auction.

5.2 Existing Capacity Price Cap and Auction Price Cap

On the Auction Price Cap (APC), SSE welcome the continued approach of the SEMC, given decisions made in SEM-21-110 (inflationary factor of 6.12% continuing...). However, SSE wish to make it clear that there are significant increases in construction costs that the SEMC must be aware of, and must be reflected in the inflationary increases to the APC.

Energia felt that the Existing Capacity Price Cap (ECPC) is currently set too low and should be adjusted upwards. Inflationary impacts are also applicable to Existing Units and uplifts should be applied. The APC inflationary uplift proposed is historic and should be reviewed and applied.

Energia welcome that there is a proposed review of BNE / Net CONE. However, they have concerns that changes from this study are set to be implemented without consultation and industry input.

BnM welcomed the SEMC decision to review the Net CONE, highlighting its influence on the Auction Price Cap. Further to this, BnM stated that they were of the view that the proposed Auction Price Cap is insufficient to adequately remunerate new investment.

They referred to *SEM-21-110⁸* which proposed that the cap would increase by 2% per year for the period between the award of the RO and the start of the Capacity Year to

⁸ https://www.semcommittee.com/sites/semc/files/media-files/SEM-21-

^{10%20}Information%20Note%20on%20ind exation%20of%20Auction%20Price%20Cap.pdf

reflect inflation as has been the case in the previous auction. They stated that whilst this goes some way in addressing the financial exposure of developers, they believe the measure is arbitrary and not reflective of the current economic conditions.

BnM highlighted that the fundamental need to increase the Auction Price Cap beyond what is proposed should be the key takeaway from their consultation response.

BGE request that the level of indexation of costs for inflation should be reflective of public source that is reflective of current industry norms. They elaborated that the 6.12% value, suggested in December 2021 (SEM-21-110), is based on an annual inflation level of 2% which is tracking well below the inflation levels being seen by industry.

They are further of the view that the RAs should apply inflation uniformly to the Demand Curve by adjusting Net CONE for inflation instead of the proposed indexation adjustment of only the Auction Price Cap (APC).

The EAI express concern that the potential review of the BNE and subsequent Net CONE does not feature an explicit plan for consultation with industry ahead of its implementation in the auction.

They further argue that indexation of the APC for inflation should be re-calculated in light of increasing inflation and not simply held over from the previous exercise, and that the indexation should also apply to the ECPC.

5.3 Capacity Requirement and Indicative Demand Curve

SSE feel that withholding capacity at such a time of uncertainty is difficult to understand, and that the notion of topping up with a T-1 is overly confident at a time when there have been several terminations and difficulties in attaining new investments delivering on their promise to show up at auction.

Energia state that there should be no capacity withholding by the RAs in T-4 auctions. Any adjustments to the Capacity Requirement requires greater transparency and consultation.

BGE believe that the shape of the Demand Curve for the CY2026/27 T-4 Capacity Auction should be changed by increasing the amount of the adjusted Capacity Requirement to be procured at the APC to help ensure security of supply for the SEM later in the decade.

Further to this, they propose that the horizontal line at the Auction Price Cap from 0MW continues to at least 95% of the adjusted Capacity Requirement to ensure more capacity is procured in the T-4 auction than that proposed in this consultation.

5.4 Performance Bonds and Termination Charges

SSE welcomes the idea of prohibiting new investments to easily terminate, yet they are not so sure the increase in charges would deter a speculative small scale capacity provider.

Secondly, they wonder if Planning Permission should be made a Qualification requirement, meaning that there would be a greater certainty that capacity awarded will become capacity energised.

PHC believe that there is insufficient information contained within the consultation to justify the increases in Termination Charge and Performance Securities, but they understand that it may be a reaction on the part of the RAs to the ever increasing number of terminations seen over the last few auctions.

They go on to state that they think a distinction should be made in relation to short and long term capacity planning, and that the bonds and charges generation companies must post would be reflective of the planning needs of each individual project.

GB feel SEM-22-015 significantly reduces the revenues for DSU via a combination of heavy de-rating factors and increases in financial burden through the bonds and charges DSU owners need to pay, in light of the proposed increases to both of these.

They recommend the SEM Committee only increase Bonds and Charges for long-term capacity projects.

FERA state that justification is needed from the SEMC with regards to the increase in the bonds and Charges as set out in the consultation. They find the first milestone increasing 100% a special financial burden that will severely impact smaller generation companies.

ESB agree with the notion of increasing Performance Securities and Termination Charges, since if they are set too low, then they may not be enough of a deterrent or lack adequate penalties to deliver on agreed capacities.

They go on to say that there is insufficient evidence that the increases are justified, especially in the context of a market that is short on capacity.

Energia support additional Security/Termination Charge that will potentially deter speculative new capacity projects and non-delivery, and suggest that further steps are needed such as greater scrutiny at qualification stage.

BGE believe that the proposed higher Termination Charges and Performance Security rates should exist in conjunction with separate sanctions for units who clear in an auction yet terminate their New Awarded Capacity contracts only to bid the same units in successive auction(s).

They suggest that the application of separate sanctions to units should, for example, include a bid cap for the unit in successive auction(s) to the level of the previous award to ensure units do not unduly profit from terminating Awarded Capacity contracts. It is BGEs preference for the application of these types of sanctions, rather than just higher levels of Termination Charges.

The EAI consider that a change to the Performance and Termination levels and timings may be warranted, but that not enough justification or rationale was provided.

5.5 Treatment of Constraints and LCCAs

SSE understands the inclusion of a North v South Dublin constraint if indeed this is the constraint set required, rather than just an example created. They would rather see the

need for maximums removed altogether via an adequate grid investment, to ensure capacity providers can 'loosen the shackles' of being hidden behind a constraint.

PHC state that the current process for determining and approving LCCs lacks transparency, is potentially open to manipulation and potentially even corruption.

They are concerned that the determination of the LCCs and their underlying methodology is outside the scope of work for the independent auction monitor and thus go unaudited.

PHC wish to see a more open set of transparent documents relating to each LCC and the unedited reason(s) for their inclusion. They are frustrated at the fact that the LCCs are published following Qualification in the Initial Auction Packs that do not allow for any industry comments relating to them.

They are not opposed to the creation of a North / South Dublin zone but they feel the above issues should be addressed well before any other constraint regions are determined.

Mutual reference the Modification CMC_08_22 by Eirgrid and SONI and note that caution should be adhered to in regards to the gas transmission constraints that should not, in their view, be a barrier to new gas projects going live under this new modification to the CMC. Since long term auctions are four years ahead, consideration must be given to those projects that would require investment and upgrade to the existing gas network.

FERA state that whilst they recognise the SEM Committee's need for ensuring minimum levels are not breached in the Dublin zones, those generation units already in those zones will receive a 'free pass' to participate within an auction.

Energia feel that there is a lack of detail supporting the new LCCA proposal and it needs to be explained in detail and consulted upon. They do not support allowing New Capacity seeking a multi-year contract to compete with Existing Capacity for a pay-as-bid Reliability Option.

BGE do not support the proposal for additional Local Capacity Constraint Areas (LCCAs) in the Greater Dublin area and believe that the market needs to be allowed operate insofar as possible before grid-limiting conditions come into play.

BGE are of the view that the proposed addition of level 3 LCCAs deflects from the physical issue of operational constraints on the grid that should be addressed by the TSO and believe this is overdue.

They are also of the opinion that this will introduce a level of complexity to the market for participants to understand whether the Level 1 (all-island) minimum requirements are being met and delivered by the respective LCCAs.

Some members of the EAI consider that introduction of maxima is not within the stated aim or purpose of constraints within the CMC, and that further analysis should be conducted or provided to support this idea.

EAI go on to call for renewed focus on the relief of the physical network constraints that exist in reality, which give rise to this problem.

The TSOs were in support of the introduction of maximum constraints into the auction problem to address the risk of too much capacity clearing in a given location.

5.6 Annual Run-Hour Limit Warrant Framework

SSE are strongly opposed to the introduction of the warrant framework, and question why the CRM should be used to enforce an area of compliance that falls under the EPA. They argue that the existing self-assessment arrangements are valid and should be retained.

Mutual state that the RAs proposal seems reasonable to ensure that ARHL plant can be appropriately de-rated and hope their inclusion can enhance security of supply and ensure that adequate capacity is procured and delivered on time.

Mutual hope that should the Warrant framework be approved by the SEMC, the framework should be applied to Existing Capacity as well as New, as without this, the benefit from Existing Capacity would be knowingly overstated to the detriment of the Security of Supply (SoS).

FERA state that the SEMC would not view as an acceptable approach the changing of technical operating parameters in order to achieve BAT requirements, such as MinGen above Grid Code requirements. It would therefore be suggested that all derogations from Grid Code should be examined to see if just such positions exist.

ESB state that they cannot comment on whether they agree or disagree with the proposals contained within the consultation as the settings on the Warrant Framework is unclear. ESB give some numerical examples to justify their claim that the proposed settings under the Warrant Framework would result in new run-hour limited units unable to recover their costs under the APC settings.

Energia support the proposal for ARHL derating, as DRFs for all participants should reflect their effective capacity contribution. This should apply to Existing and New Capacity.

Enel-X do not wish to see any additional DRFs included in the forthcoming auction.

BnM consider the introduction of a Warrant framework inappropriate.

BGE suggest that the proposal on the application of ARHL de-rating needs to be further developed to determine multipliers that link the run hour operational levels from the Best Available Techniques (BAT) conclusions to government set carbon budgets.

The DRAI note that it is possible that some Individual Demand Sites (IDSs) which make up an aggregated Demand Side Unit could have some individual assets within that DSU that may be subject to run hour limitations. DRAI state that it may be complex task to determine the effect that IDSs impacted by ARHL could have within a DSU and how this may vary with the DSUs load following adjusted awarded volume over time. The DRAI also stated their view that a more extensive consultation on the rationale and methodology for calculating the de-rating and its potential applicability to some DSUs should be carried out. A view was expressed that simply multiplying the ARLH de-rating factor by the other proposed DSU de-rating factor would be excessively punitive and represents a significant "double counting" in terms of impact. The TSOs welcomed the proposal to capture the impact of Annual Run Hour Limits on a unit's contribution to reliability by apply a further de-rating factor (DRF) multiplier commensurate with the number of hours that the unit can run for.

They view the presence of additional de-rating factors for Annual Run Hour Limits to be an important signal for investment in new capacity such that the contribution of units that do not have Annual Run Hour Limits is appropriately valued.

The TSOs went on to suggest that there may be smoother options for the implementation of the Warrants, for example by simply creating a set of unit Technology Classes that map to each of the three ARHL statuses proposed (i.e. no limit, <=1500hrs, <=500hrs).

5.7 Parameters Determining the Strike Price

On the 15% question in relation to FTHEORYpu, it is SSE's view that this is the efficiency of a Best New Entrant (BNE) plant, and as such, they would assume that the new BNE study would provide such a value. They see no justification why this is arbitrarily being changed at a general T-4 auction.

FERA believe the current choice of €500/MWh as a DSU theoretical price is outdated and needs review, arguing that the notion that DSUs only incur costs when turning off is outdated and is at odds with the fact that they incur costs when starting up alternative generation.

ESB do not support the idea of changing the value of FTHEORYpu from 15%, and that a robust calculation is required to fundamentally understand what a change to a lower or higher efficiency unit would entail.

The EAI consider the proposal to review the 15% multiplier for peaking efficiency as a back-door method to adjust the Strike Price. Without sufficient justification their members feel unable to adequately comment on this and call for a more fullsome and transparent review of the BNE.

BGE believe the current value of 15% for the Peaking Unit Theoretical Efficiency for the Capacity Year is providing an effective balance between RO strike events in the market at a level that naturally result from high commodity prices. Further to this they advise that

they do not want to see any of the parameters altered that could result in unpredictable strike events not rationally correlated to real strike price issues, and so believe the existing parameter value is sufficient.

6. SEM Committee Decisions

6.1 Derating Factors

The SEM Committee recognises the concerns raised by many respondents relating to the changes to de-rating factors advocated by the TSOs which were put forward for consideration in the consultation paper.

Taking these concerns into consideration, the SEM Committee has decided to continue to 'freeze' the de-rating factors for the T-4 2026/27 auction. In addition to freezing the derating factors, we have decided to accept the TSO proposal to apply a multiplier to the DSU de-rating factors, which would reduce the derated capacity of energy/time limited DSUs. The SEMC have decided to apply a multiplier of 0.75 (i.e. or a reduction of 25%). This is to balance the need to reflect observed trends in DSU availability, whilst recognising ongoing work that should enhance DSU availability going forward. The SEM Committee decided not to apply the full 0.5 derating factor suggested by the TSOs for this auction.

We are of the view it is much preferred that the de-rating factors be set via data and evidence-driven models, subject to satisfactory cogency and confidence in those models.

During the course of the consultation, the RAs have liaised with the TSO modelling team, who have carried out an extensive review of the ISAC model used to derive the de-rating factors and Capacity Requirement. The SEM Committee is of the view that the TSOs have undertaken a significant amount of good work in updating the ISAC model, and that the new model is likely to:

- Do away with several ex-post adjustments by making logically derived modifications to input outage rates;

- Reflect the contribution of energy and time limited technologies to adequacy by modelling the net demand after renewables have been accounted for;

However, the SEM Committee are concerned that the full impact of the changes were not fully known and understood at the time of the consultation. On balance, the SEM Committee are of the view that further testing and consultation on the changes is appropriate at this stage. We therefore request the TSOs consult further on the changes to ISAC, including the introduction of 8-hour storage units if possible. This process should be completed in time for the next capacity auction where we would expect it to be applied.

The SEM Committee will ask the RAs to liaise with the TSOs to continue to develop this methodology, particularly regarding a review of the appropriateness of marginal de-rating factors over the previously used approach.

The approved de-ratings and Capacity Requirement are contained in the Initial Auction Information Pack that will be published by the TSOs . In terms of the de-ratings, these will be a roll back to the T-4 2024/25 auction, with the exception of the application of the application of additional derating factor for energy/time limited DSUs, and for New Capacity with ARHLs, as discussed below.

The SEM Committee have also decided that **energy/time limited DSUs will be subject** to a multiplier of 0.75.

The Capacity Requirement will be calculated by the TSOs in the usual manner, using the usual adopted methodology.

6.2 Existing Capacity Price Cap and Auction Price Cap

The SEM Committee acknowledge the points made by a number of participants regarding the recalculation of the BNE. While it is not ideal for this process to operating separately alongside the auction process, the SEM Committee consider that it is preferable that out workings from the review are able to be included in this auction. As a result a traditional consultation on the contents of the BNE review will not be possible, unless its out workings were to be deferred to a future auction exercise. In this context, the SEM Committee also note the points raised regarding the inflation of the APC, but considers that it is not appropriate to make further indexations to this parameter or the ECPC given the review of the BNE that is ongoing as detailed above.

Subsequently the SEM Committee have **decided to retain the values** for APC and ECPC proposed in the consultation paper.

6.3 Capacity Requirement and Indicative Demand Curve

The SEM Committee notes the views put forward regarding the formulation of the Demand Curve. In particular the Committee acknowledges the timing issues and visibility of the finalisation of the Demand Curve and LCCA minimum quantities.

However, on balance, the RAs intend to as in previous auctions, formulate the Demand Curve for consideration of the SEM Committee following advice from the TSOs once that advice is forthcoming later in the process. The Committee rejects the suggestion that the formulation of LCCA values is vulnerable to or the subject of manipulation or corruption.

While acknowledging views to the contrary, the SEM Committee do not consider the shape of the curve nor the potential withholding of capacity for T-1 auctions to be manifestly wrong and has **decided to retain the settings** for this contained in the consultation paper.

6.4 Performance Bonds and Termination Charges

The SEM Committee note the range of views presented and is considers on reflection that there are arguments both for and against increasing the level of these values.

Increasing the values would, all else equal, help to filter out more speculative projects and reduce the risk of failure-to-deliver by awardees of New Capacity. At the same time, it may reduce investor appetite for participation more generally.

The SEM Committee feel that in order to maintain and encourage participation in the auction, an increase in monetary values at this time would potentially hinder this process

at a stage where new investment is required to ensure security of supply and facilitate the transition to a low/zero carbon power sector.

On balance, the SEM Committee has decided to **revert to the monetary values used in the 2025-26 auction** for each milestone, but to **retain the timings proposed in the consultation paper**, which bring the second milestone forward to land ahead of Substantial Financial Completion being tested.

6.5 Treatment of Constraints and LCCAs

The SEM Committee note the range of views on the subject of whether or not to introduce new constraints to allow maxima to be inserted into the auction problem, with the view to applying this in the Dublin region, including applying constraint separately to North Dublin and South Dublin.

The Committee agree with the TSOs that introduction of the framework for this is the correct and optimal way to ensure that the auction can take place without the need to change qualified quantities for prospective projects, as had been proposed during the 2025-26 T-4 process.

The TSOs have noted that there is no provision within the CMC for the introduction of Level 3 constraints, and have advised that the intent of the proposal can be implemented by:

- Making the previous Level 2 constraints, L2:1 Greater Dublin and L2:2 "rest of Ireland" new Level 1 constraints (whilst renaming "rest of Ireland" as just Ireland. The TSOs have removed the old "whole of Ireland" L1:2 constraint; however, they will still calculate the "whole of Ireland" requirement using adequacy methods and ensure that the sum of "Rest of Ireland" and Greater Dublin Required Quantities will deliver the security standard (currently 8-hours LOLE) for Ireland as a whole.
- Creating new Level 2 constraint areas for North Dublin and South Dublin by allocating nodes in Greater Dublin to one of the two Level 2 areas.

As per the normal process, the nodes defining North Dublin, South Dublin and Greater Dublin will be defined in the IAIP.

The Level 2 constraints for North and South Dublin are to be set as a maximum amount to be procured for these regions, as well as conventional minimums.

The SEM Committee decisions with respect to the LCCs are summarised in the following table.

2025/26 T-4 Locational Capacity Constraint Area Name	2026/27 T-4 Locational Capacity Constraint Area Name	Nested Locational Constraint Area(s), 2026/27 T-4	Form of constraint(s), 2026/27 T-4	Locational Capacity Constraint Area Nodes
L1-1: Northern Ireland	L1-1: Northern Ireland	n.a.	Minimum required volume	All nodes within Northern Ireland
L1-2: Ireland	n.a.		Not applicable, but values for L1:2 and L1:3 will ensure reliability standard met	All nodes within Ireland
L2:2 Rest of Ireland	L1-2: Ireland	n.a.	Minimum required volume	All nodes within Ireland except those in Greater Dublin
L2:1 Greater Dublin	L1-3: Greater Dublin	L2-1: Dublin North L2-2: Dublin South	Minimum required volume	All nodes within Greater Dublin, which, will also be sub-divided into Dublin North and Dublin South Level 2 LCC Areas
n.a.	L2-1: Dublin North	n.a.	Minimum required volume and maximum volume	All nodes in Dublin North to be defined within IAIP
n.a.	L2-2: Dublin South	n.a.	Minimum required volume and maximum volume	All nodes in Dublin south, to be defined within the IAIP

6.6 Annual Run-Hour Limit Warrant Framework

The SEM Committee appreciate the depth of responses on this topic and acknowledge the high impact that introduction of this policy would be likely to have on the CRM and on the trajectory of investments in generation going forward.

The Committee disagree with the view that regulation within the CRM on this matter is uncalled for and/or that the natural self-assessment process currently at play is appropriate. Since the issue of ARHL arose in 2021 and the SEM Committee made its decision to allow self-assessment to drive bidding behaviours for the T-3 and T-4 auctions, around 1200MW of New Capacity has now been awarded from those auctions that may not meet the requirements to operate more than 1500 hours per year.

The SEM Committee view it difficult to justify continuing with the self-assessment framework in light of this fact and the fact that there is also a substantial amount of Existing Capacity on the island that will also not meet the requirements, and in many cases will be limited to only 500 hours of operation per year.

However the SEM Committee acknowledge that the change could be very highly impactful and that the introduction of the de-rating modifiers for existing ARHL plant might best be carried out carefully so as to minimise any shock or sharp effects (notwithstanding that this auction is for 2026-27). To that end, the SEM Committee have decided to apply the multipliers proposed by the TSOs to the base de-rating factor to New Capacity only. This will help to balance the risk of existing units not being able to recover costs in the market and exiting against addressing the issue of better reflecting the contribution that run hour limited plant will make to capacity adequacy. The SEM Committee also notes that the implications of locking in to a potentially 10-year contract for New Capacity with limited run hours are substantially different to locking into a 1-year contract for Existing Capacity with run hour limits.

This decision will result in New Capacity having the below discount applied for units that are restricted to a specific number of hours:

- For <=1500 hour units, apply a multiplier of 0.43
- For <=500 hour units, apply a multiplier of 0.14

The SEM Committee are content to proceed with the proposal put forward in the response from the TSOs, such that the warrant framework be implemented via the allocation of the three options into the technology classes within the application templates themselves; and instruct that this be developed in the relevant templates, in liaison with the RAs as appropriate.

Finally, regarding the application of the new framework to DSUs and AGUs; while the Committee acknowledges the challenge that these operators may face delineating which Individual Demand Sites (IDS) are to be limited; this is in effect a core part of the task and motivation for aggregation itself. The Committee does not consider it an undue burden to expect aggregators to make this classification in line with the other operating characteristics of the IDS that should be tracked and known to the aggregator.

6.7 Parameters Determining the Strike Price

The Committee notes the views put forward regarding these settings, particularly regarding the Peaking Unit Theoretical Efficiency. The Committee **has decided not to deviate from the value of 15%** for this parameter for this auction, but will continue to consider the appropriateness of this in context of the out workings of the wider consultation on Administered Scarcity Pricing for the next auction exercise.

6.8 Summary and Remaining Items

The Committee has **decided to retain the other values** contained in the consultation paper, with a few caveats as set out below,

There is a possibility that the Celtic interconnector could be complete in time to provide capacity in 2026/27, so the SEMC may approve an External Market Derating Factor (EMDF) for France, for inclusion in the IAIP. The SEMC is applying the same principles in calculating the EMDF for France as it has applied in the calculation of the EMDF for GB (which is applicable to the existing Moyle, and EWIC interconnectors and will be applicable to Greenlink). The key principle is that the EMDF reflects the risk of coincident scarcity in the two markets, and hence the risk that capacity in the overseas market may not be available to support demand on the island of Ireland. The generation portfolio in France (and its

interconnected markets) is substantially different from that in GB, and the supply demand balance may be substantially different, so the France EMDF may be different to the EMDF of 60% for GB. The SEMC has also asked the TSOs to calculate a marginal derating factor appropriate for a unit the size of the Celtic interconnector, which is expected to be around 700MW. Previous derating factor tables have never been required for units in excess of 500MW (the current largest infeed), so we now need a marginal derating factor applicable to a 700MW unit for publication in the IAIP.

The SEMC has approved a value of €146,920/ derated MW/ yr for inclusion in the IAIP, i.e the same as for the 2025/26 T-4 auction. However, the SEMC is currently undertaking a new Best New Entrant study, which will develop a revised estimate of the Cost of New Entry (CONE). This estimate may be complete prior to the issue of the Final Auction Information Pack (FAIP). Depending on the outcome of that study, the SEMC may choose to adjust the Auction Price Cap for the 2026/27 T-4 Auction.

The Existing Capacity Price Cap (ECPC) will stay fixed at the €46,320/derated MW/year, for the 2026/27 T-4 auction.

Parameter	Proposed Value for 2026/27 T-4 Capacity Auction
De-Rating Curves, defining De-Rating Factors by unit Initial Capacity and by Technology Class (including Interconnectors)	 The Initial Auction Information Pack ("IAIP") will provide the final De-rating factors. They will be frozen as per the T-4 2024/25 Capacity Auction, except for in the case of: DSUs with a run-hour limit of less than 6 hours, where an additional multiplier of 0.75 will be applied to reduce derating factors by a further 25%; and New Capacity subject to ARHLs, as set out above; and The introduction of a new derating factors to support the potential inclusion of the Celtic interconnector to France
Capacity Requirement	To be determined by System Operators prior to publication of Initial Auction Information Pack.

Indicative Demand Curve	 The Demand Curve for the 2026/27 T-4 auction shall be set as the following: Horizontal at the Auction Price Cap from 0MW to 92.5% of the adjusted Capacity Requirement. Slopes down to 115% of the adjusted Capacity Requirement. The line passes through a shallow elbow point where the volume is equal 100% of the adjusted Capacity Requirement and the price equals Net CONE (€92,300 / de-rated MW / year⁹). 	
Auction Price Cap	€146,920/ de-rated MW ¹⁰ , but may be revised, depending on the outcome of new BNE Net CONE study.	
Existing Capacity Price Cap	0.5 x Net CONE i.e. €46,150 / de-rated MW /year.	
New Capacity Investment Rate Threshold	€300,000 /de-rated MW / year.	
Annual Stop Loss Limit Factor	1.5	
Billing Period Stop Loss Factor	0.5	
Indicative Annual Capacity Exchange Rate	To be determined by System Operators prior to publication of Initial Auction Information Pack.	

⁹ This value will remain at €92,300/MW unless the SEM Committee decides to implement the outworkings of the separate BNE study, in which case the new updated value for the BNE and therefore Net CONE will be set out in the Parameters Decision Paper. ¹⁰ As per <u>SEM-21-110 Information Note on indexation of Auction Price Cap.pdf (semcommittee.com)</u>

Increase Tolerance and Decrease Tolerance by Technology Class	Technology Class All Except DSUs DSUs		rease ance (%) 0 0	Decrease Tolerance (%) 0 100
Performance Security Posting Dates / Events	Date / Event From Capacity Auction completion to 27 months prior to the beginning of the Capacity Year		Performance Security Rate (€/MW) 10,000	
	27-13 months prior to the beginning of the Capacity Year		20,000	
	From 13 months to beginning of Capacity Year		30,000	
	From beginning of Capacity Year		40,000	

Termination Charges	Date / Event	Termination Charge Rate (€/MW)		
	From Capacity Auction	10,000		
	completion to 27 months			
	prior to the beginning of			
	the Capacity Year			
	27-13 months prior to the			
	beginning of the Capacity	20,000		
	Year			
	From 13 months to	30,000		
	beginning of Capacity			
	Year			
	From beginning of	40,000		
	Capacity Year			
Full Administered Scarcity Price and Reserve Scarcity Price Curve	Short Term Reserve	Administered Scarcity		
	(MW)	Price (€/MWh)		
	Demand Control	25% of VOLL		
	0	25% of VOLL		
	500	RO Strike Price		
Anticipated values to be applied in determining the Strike Price	Current inputs to be re-applied.			