

Capacity Remuneration Mechanism (CRM)

Proposal to Introduce Intermediate Length Contracts Consultation Paper

SEM-23-093

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1. Background

1.1 Introduction

Under the current CRM rules, New Capacity investing more than the New Capacity Investment Rate Threshold (NCIRT) can apply to the RAs to obtain a New Capacity Exception and bid for a Reliability Option contract of up to 10 years. The NCIRT is currently set at €300,000 / derated MW (MW_d).

New Capacity investing less than €300,000/MW_d and Existing Capacity can only bid for a 1-year contract. Existing Capacity cannot bid for more than a 1-year contract, although where an existing Capacity Market Unit (CMU) invests to increase the capacity of the CMU¹, the incremental capacity can receive a contract of up to 10 years, where the investment in incremental capacity exceeds the NCIRT.

The SEM Committee has requested the RAs review and implement a 'refurbishment' option in time for the next T-4 auction to be held in 2024. The RAs have also received representation from market participants that it would be prudent at this time to introduce a new, intermediate length contract, where an investor invests a value below the NCIRT. It has been argued that the introduction of an intermediate length contract would better facilitate investment in capacity, at a time when the SEM is short of capacity, experiencing increased forced-outage rates/decreased reliability and is paying prices significantly in excess of the Best New Entrant² cost for new capacity. Promoting investment in existing units should help improve efficiency and availability, decreasing the volumes of new capacity needed, which would be beneficial to consumers.

The approach of allowing intermediate length contracts for intermediate levels of investment would be similar to that employed in other European CRMs, such as in GB, Belgium and Poland.

¹ Although an Existing Unit can obtain a contract of up to 10-years, on incremental capacity (which is deemed New Capacity) where it invests in incremental capacity and that investment is more than the NCIRT per unit of incremental derated capacity.

² The 2023 BNE study is estimated the Best New Entrant cost (Net CONE) at €107.03/kW_d/year

The security of supply circumstances has changed significantly since the original ISEM CRM design was adopted circa 2017. Investors investing in capacity for delivery in the late 2020s and 2030s face a more uncertain environment than in 2017. Key uncertainties include:

- The energy transition and the likely need to invest to convert thermal plants to be capable of handling low-carbon fuels (e.g., hydrogen conversion);
- Challenges in obtaining necessary permissions for new build capacity and connecting new build capacity; and
- The stresses to supply chains that have occurred post-Covid and post-Ukraine war;

Therefore, the RAs are considering the introduction of an intermediate length contract of 3 or 5 years for intermediate levels of investment (i.e., less than the existing NCIRT) for both Existing Capacity and New Capacity.

The SEM Committee may also consider further measures within the CRM to promote investment in low carbon technologies on the island of Ireland.

This document consults on whether to implement the new intermediate length contract, and if so:

- The maximum duration for the intermediate length contract;
- The appropriate investment threshold, i.e., the Intermediate Contract Investment Rate threshold (ICIRT), to be eligible for the intermediate length contract;
- Approaches to prevent gaming of the new arrangements;
- Approaches to promote investment in low carbon technologies;
- Any other CRM reforms which could further promote investment in low carbon technologies and be included in the reforms consulted on in this document.

The RAs propose to issue a decision on this consultation in late January/early February 2024. Following consultation, if the RAs decide to proceed with the intermediate length contract, the RAs will consult on CMC drafting changes necessary to implement any policy changes, with a view to implementing any necessary CMC

modification(s) prior to the issue of relevant operational process documents for the 2028/29 T-4 auction.

2. Current arrangements in the SEM CRM

Under the existing arrangements, Existing Capacity can only bid for a 1-year contract. New Capacity which satisfies the RAs that it will invest more than the NCIRT of €300,000/MW_{d³} via the Exception Application process can bid for a contract of up to 10 years⁴. An existing Capacity Market Unit (CMU) can have incremental capacity designated as New Capacity, and bid for a 10-year contract on the incremental capacity, provided that the investment cost per incremental MW_d exceeds the NCIRT⁵.

Existing Capacity which is planning significant investment, but is not increasing its capacity, cannot obtain a multi-year contract. Where the Unavoidable Future Investment (UFI) costs will result in the unit's Net Going Forward Costs (NGFC) exceeding the Existing Capacity Price Cap (ECPC set at €54,586/MW_d/year for the 2027/28 T-4 auction⁶) the market participant can apply to the RAs for a Unit Specific Price Cap (USPC). In setting the USPC, the RAs will allow recovery of the investment (including an appropriate cost of capital) over an appropriate period, which might normally be five years for a unit which has a minimum of five years of economic life remaining⁷, but could be less than five years where the applicant can demonstrate that the economic life of the investment is less than five years.

In the auctions to date, the RAs have approved USPCs which have included an element to cover UFI.

³ Or the sterling equivalent

⁴ The new capacity can bid for a contract duration of any integer number of years between 1 and 10

⁵ For instance, if a CMU with 100MWd of existing capacity demonstrates to the RAs that it is going to invest €5,000,000 to increase the capacity to 110MWd, i.e., €5,000,000 for 10 incremental MWd = €500,000/incremental MWd, it can bid for a 10-year contract on the incremental 10 MWd, but can only obtain a 1-year contract on the existing 100MWd.

⁶ Or £50,482/MW_d/year for units in Northern Ireland

⁷ Assuming the investment is made

3. Key issues with the existing SEM arrangements

Under the existing SEM arrangements, Existing Capacity making an investment may be required to put a proportion of that investment "at-risk". Where, for instance, Existing Capacity has a USPC approved, with its UFI recovered over five years, if it wins a one-year contract in the auction, it is required to make the investment, but it is only guaranteed⁸ to recover one-fifth of its investment⁹ via the initial auction. The Existing Capacity will also be allowed to reflect the agreed investment in its auction offers in the four subsequent years, but the remaining investment is at-risk of being stranded if the Existing Capacity loses in the subsequent auctions. Even if it was allowed to reflect the total cost of the investment in a one-year offer, the investor may be constrained in what it can recover in one auction by either the APC, or by competition from New Capacity which is able to spread the cost over a 10-year contract.

4. Arrangements in other European CRMs

The RAs have undertaken a high-level review of the multi-year contracts available in four other key European capacity markets, namely in GB, Belgium, Italy and Poland. All of these markets allow contracts of up to 15-year duration for capacity market units that invest more than a threshold value. GB, Belgium and Poland also have intermediate length contracts for investors that make lower levels of investment.

4.1 Great Britain

In the GB 2027/28 T-4 auction which takes place in February 2024, investors can apply for a:

- 3-year contract: where the investor invests more £165/kW_d; or
- 15-year contract: where the investor invests more than £325/kW_d.

Other capacity market units are only eligible for 1-year contracts.

⁸ subject to satisfactory asset performance

⁹ including return on investment

Whilst the 3-year contract is ostensibly for refurbishing existing capacity, any new capacity which meets the £165/kW_d threshold but does not meet the £325/kW_d threshold could apply for a 3-year contract, but not a 15-year contract.

The GB CRM has had provision for intermediate length contracts since its inception in 2014, when the investment thresholds were £125/kW_d for a 3-year contract and £250/kW_d for a 15-year contract.

There has been limited use of the 3-year contract in the auctions held to date¹⁰, with less than 50MW_d of 3-year contracts awarded in aggregate across those auctions to either refurbishing capacity or new capacity.

The UK Department of Energy Security and Net Zero also recently consulted on a range of changes to the GB capacity mechanism to improve security of supply and better align the GB capacity mechanism with the UK's net zero targets. Following an initial consultation¹¹ which resulted in a number of detailed changes to improve security of supply (Phase 1), the UK Government published a new consultation which proposes a number of measures associated with accelerating investment in low-carbon technologies and aligning the GB capacity mechanism with the net zero goal (in Phase 2). The key proposals consulted on in the October 2023 consultation¹² include:

- Introducing new 3-year agreements for low carbon, low capex technologies.
 Capacity with an emissions intensity of 100gCO₂/kWh or less, could obtain a 3-year contract without having to meet a capex threshold.
- Introducing a new 9-year threshold as a mid-point between the existing 3-and 15-year contracts. The 9-year contract would only be available to new-build and refurbishing capacity which meets the 100gCO₂/kWh limit, and which is investing more than a capex threshold set mid-way between the threshold for a

¹⁰ As of October 2023, there have been five T-4 auction, one T-3 auction and five T-1 auctions.

¹¹ Consultation published in January 2023 at https://www.gov.uk/government/consultations/capacity-market-consultation-strengthening-security-of-supply-and-alignment-with-net-zero; Government response published in June 2023 at

https://assets.publishing.service.gov.uk/media/648837ec5f7bb700127fa8e4/capacity-market-2023-consultation-government-response.pdf

¹² https://assets.publishing.service.gov.uk/media/65296ec4697260000dccf811/capacity-market-phase-2-10-year-review-consultation.pdf

3-year contract and a 15-year contract. The consultation states that the new 9-year contract will "support a wide range of low carbon projects for whom existing CM arrangements may not be sufficiently versatile, such as low carbon refurbishing assets".

4.2 Belgium

The Belgian CRM was recently put in place by the Government of Belgium with the primary purpose of attracting sufficient investment in New Capacity to facilitate the phase out of a number of large nuclear units.

The Belgian legal framework establishes the following contract durations:

- 3-year contracts: for investors investing a minimum of €177/kW_d;
- 8-year contracts: for investors investing a minimum of €400/kWd; and
- 15-year contract: for investors investing a minimum of €600/kW_d;

Other capacity market units are only eligible for 1-year contracts.

There have been two Y-4 auctions held to date, and only 1-year and 15-year contracts have been awarded. No intermediate 3-year or 8-year contracts have been awarded.

4.3 Poland

The Polish capacity market allows for:

- Up to 5 years for new or "modernised" capacity, where the net investment expenditure related to the net achievable capacity is equal approximately €90/kW (400 zł/kW); and
- Up to 15 years for new units where the level of net investment expenditure related to the net achievable capacity is equal to approximately €541/kW (2400 zł/kW).

Existing units and other new or "modernised" units which do not meet the €90/kW (400 zł/kW) threshold can bid for 1-year contracts. The duration of the contracts for new and "modernised" units with multi-year contracts can be extended for 2 years if the unit rate of CO₂ emission is lower than or equal to 450kg/MWh, or in the case of a

cogeneration unit, where at least half of heat produced is supplied to the heating system where the medium is hot water.

4.4 Italy

In the Italian CRM, CMUs investing more €214/kW in auctions held in 2022 could bid for contracts of up to 15 years. Other capacity providers can only bid for contracts of 1 year duration.

5. Proposed changes

5.1 Design overview

The SEM Committee is considering whether to introduce an intermediate length contract for Existing Capacity or New Capacity investing more than the Intermediate Contract Investment Rate Threshold (ICIRT) and less than the current NCIRT. Whilst this change may primarily benefit Existing Capacity, intermediate length contracts could also be available to New Capacity looking to invest more than the ICIRT, but less than the NCIRT. Permitting New Capacity to also bid for intermediate length contracts, where investing more than the ICIRT would facilitate more equal competition between Existing Capacity and New Capacity

The SEM Committee is consulting in this document on:

- Whether to introduce an intermediate length contract, of 3 years or 5 years or some other length; and
- What rate of investment Existing Capacity and New Capacity should have to invest per MW_d to obtain an intermediate length contract. In this document we refer to this threshold as the Intermediate Contract Investment Rate Threshold (ICIRT). It is envisaged that this new parameter would be consulted on for each auction, like the NCIRT, but this consultation would establish the initial value of this parameter.

The appropriate length of contract may need to be considered in the context of the level of investment /MW_d likely to be required, the competitive environment and the APC. Consider for example, an Existing Capacity unit in Northern Ireland which needs to invest €250,000/MW_d, to continue operating economically. If it bids all the

investment cost into a one-year contract, its total Net Going Forward Costs (NGFC) is €250,000/MW_d/year, plus whatever its other NGFC are. A market participant would not be able to reflect a total NGFC of €250,000/MW_d in an auction offer, given the €163,000/MW_d/year current APC level. Even if it bids up to APC, it would be reliant on winning in a later auction to recover its total investment, including an appropriate return on capital. If, however, the ICIRT was, for example, €150,000/MW_d, and the intermediate contract was 3 years, it could spread the €250,000/MW_d over three contract years, which would allow it to bid at €95,690/MW_d/year. By bidding for a 3-year contract at €95,690/MW_d/year it would earn its Weighed Average Cost of Capital (WACC)¹³, subject to appropriate asset performance. However, if it also had significant other Net Going Forward Costs, it may also need to incorporate those in its auction offer, and it may not be so competitive against other Existing Capacity or New Capacity which was able to spread its investment cost recovery over a longer guaranteed contract.

If the intermediate contract was 5-years, it would only need to reflect an investment cost of €61,370/MW_d/year in a 5-year bid, which would mean that it could bid at a more competitive price.

An example of the relationship between investment cost p.a. and the total amount invested is shown below for 3-year and 5-year contracts. The values are shown for investment of between €50,000 and €299,000/MW_d, with investments of €300,000/MW_d being eligible for a 10-year contract under the current arrangements. The values below do not include any other Net Going Forward Costs that an existing CMU may need to recover.

Table 1: Relationship between investment cost and amount reflected in 3-year and 5-year contract bids

Contract	Investment, €/MWd, spread over contract length					
length	50,000	100,000	150,000	200,000	250,000	299,000
3-year	19,138	38,276	57,414	76,552	95,690	114,445
5-year	12,275	24,549	36,824	49,099	61,373	73,403

¹³ We have assumed the NI pre-tax nominal WACC of 9.27% from the 2023 CEPA BNE study (SEM-23-016)

5.2 Measures to promote emissions objectives

The SEM Committee notes the changes being consulted on in GB, and may also consider further measures within the CRM to promote investment in low carbon technologies on the island of Ireland. The SEM Committee welcomes further feedback from stakeholders on the potential design of such measures. Where such measures may feasibly be implemented in time for the 2028/29 T-4 auction, the SEM Committee will give due consideration to implementing them on this tight timeline, but the SEM Committee also recognises that it may be necessary to implement the reforms in stages.

5.3 Gaming issues and mitigation

The SEM Committee is also considering whether additional scrutiny / monitoring measures that may be appropriate for refurbishing plants to prevent gaming of any new arrangements. In the case of New Capacity, it is more difficult to build New Capacity without investing at least €300,000/MWd, and there appears to be limited opportunities for investors to claim they are investing €300,000/MWd, obtain a 10-year contract and then invest less than €300,000/MW_d whilst still delivering the capacity. However, in the case of refurbishing plant, it may be difficult for the RAs to ascertain whether a unit really needs to invest a certain amount per MWd to continue to be economically viable. Suppose that the ICIRT is set at, for instance, €150,000/MWd and an Existing Capacity unit claims it will spend just over €150,000/MWd to deliver capacity in the capacity year 2028/29. Existing CMUs may have to provide evidence that it actually spent at least €150,000/MWd to be paid under the multi-year contract. The RAs recognise that there is likely to be more opportunity to game intermediate length contracts for refurbishment than there is for 10-year contracts for New Capacity, and that there may be a case for more stringent monitoring of actual spend versus ex ante estimates than for New Capacity.

5.4 Changes to Exception Application processes

If the SEM Committee proceeds to implement a new intermediate length contract, changes will be required to Exception Application processes. Existing Capacity will be eligible to apply to the RAs to obtain an intermediate length contract and will be required to demonstrate that its investment exceeds the ICIRT, and obtain a form of

USPC for a multi-year contract. For instance, suppose that the intermediate contract length is 5 years, and the ICIRT is €150,000/MW_d/year.

Suppose that an Existing CMU demonstrates that it:

- Has Net Going Forward Costs of €50,000/MW_d/year, excluding refurbishment investment; and
- Demonstrates to the satisfaction of the RAs that the Existing CMU needs to make €200,000/MW_d of refurbishment investment.

As per Table 1, the €200,000/MW_d equates to an annualised cost of €49,099/MW_d over 5 years. In this example, the Existing CMU has total NGFC of €99,099/MW_d/year. With the existing 10% tolerance built into the USPC process, it may be given a USPC of €/MW_d/year, and be able to bid for a 5-year contract at €109,009/MW_d.

New Capacity seeking to invest more than the ICIRT, but less than the NCIRT, would be able to apply to the RAs via an extended New Capacity Exception Application process to have the right to bid for a 5-year contract. If approved by the RAs, the New Capacity would be able to bid for a 5-year contract at any price up to APC, like any other New Capacity unit¹⁴. Where any New Capacity unit applies to the RAs for the right to bid for a 10-year contract, but the SEM Committee judges it will spend more than the ICIRT but less than the NCIRT, that capacity will also be allowed to bid for an intermediate length contract.

When making an application for a multi-year contract, the applicant may need to demonstrate an intent to decarbonise aligning with energy strategies in Ireland and Northern Ireland.

5.5. Implementation Plan, Long-Stop Date, Termination Payments and Security Cover

The SEM Committee is considering whether Existing Capacity seeking a multi-year contract should be required to submit an implementation plan as part of the

¹⁴ including New Capacity which is only eligible to bid for a 1-year contract. Under existing arrangements all New Capacity can bid at any price up to APC.

Qualification process, in the same way as New Capacity is currently required to submit an Implementation Plan to the TSOs during the Qualification process.

The SEM Committee is seeking feedback on whether this is appropriate, and whether it is appropriate to require the same milestones to be included in an implementation plan for capacity seeking an intermediate length contract. The SEM Committee notes that the GB Capacity Market Rules require refurbishing capacity to submit a construction plan, similar to New Capacity.

If the SEM Committee decides to implement an intermediate length contract, the SEM Committee will also need to decide whether the Long-Stop date for the intermediate length contract will be the same as for a multi-year New Capacity contract, the same as for single year Existing Capacity, or an intermediate length. Currently, all capacity contracts with a duration of greater than one year have a Long Stop Date of 18-months after the start of the relevant capacity year, and all capacity contracts with a duration of one-year have a Long Stop Date of one month after the start of the relevant capacity year. However, if a new contract of, for example, three-year duration was implemented, primarily to support refurbishing generation, the SEM Committee may consider whether it would be appropriate to introduce a Long Stop Date of less than 18 months.

Currently, Existing Capacity is not required to pay termination payments or lodge performance security. We envisage that this would continue to be the case, including for Existing Capacity seeking a multi-year contract, but we may keep the issue under review, particularly if there is a failure by market participants to deliver the investment as envisaged.

6. Advantages and disadvantages of proposed changes

The key benefit of the proposed change is that it could better promote an efficient form of investment in capacity by extending the economic life of existing capacity. Whilst the existing arrangements facilitate investment by Existing Capacity, the revised arrangements could do more to de-risk such investment.

The key concern is that locking in greater volumes of capacity under longer term contract could inhibit competition and increase the risk of stranded assets. There are

also concerns that there is the opportunity for Existing Capacity to game the arrangements by claiming the need for investment, which is not necessary. These concerns apply particularly to portfolio generators which stand to benefit from a higher clearing price.

At the time of the CRM detailed design, the SEM Committee considered whether to introduce an intermediate length contract for refurbishing capacity, like in GB, but:

- Had a desire to create a competitive CRM and was keen to ensure that a
 significant proportion of capacity was "in-the-market" in each auction, rather
 than locked in under longer-term contracts. The SEM Committee was
 particularly concerned that the introduction of more multi-year contracts could
 exacerbate market power concerns; and
- Considered that the risk to investors was proportionate, and that it would not
 unduly deter investors from investing. The evidence from auctions to date is
 that some market participants have been prepared to invest on that basis, and
 the RAs have approved a number of USPCs which have included an element to
 cover UFI, apportioned over a number of years.

However, the SEM Committee recognises the security of supply situation and that the balance of risks to investors has shifted somewhat in the last 5-6 years since the original CRM design decisions were taken.

During the initial phase of the CRM, there was surplus capacity. Following the introduction of the EC's Clean Energy Package (CEP)¹⁵, the primary focus shifted to the need for investment in major new units to replace the old coal, peat and oil-fired units which do not meet emissions limits. The CRM has been successful in procuring around 3,600MW_d of new, predominantly gas-fired capacity on an all-island basis to replace retiring high-emissions plant and meet growing demand. However, not all contracted New Capacity has delivered on its contractual obligations, and the delivery risk associated with the extension of Existing Capacity may be lower than with New Capacity.

¹⁵ EC 2019/943 and supporting documents

¹⁶ Net of terminations (if correct)

In the late 2020s and 2030s, the SEM, like other European electricity markets will face a range of new challenges, as it seeks to move further towards total decarbonisation of the electricity sector:

- The majority of the New Capacity that is on track to deliver is open cycle gas turbine capacity, rather than combined cycle. Units committing to the 2028/29 T-4 auction might expect to have an operating life which extends to nearly 2050, but it is unlikely that unabated natural gas-burning capacity will be able to operate in the 2040s, which creates the risk of stranded assets. An alternative to new build gas-fired plant may be to facilitate the life extension of existing plant, including CCGTs, and this may be a lower carbon alternative than new OCGTs, and an appropriate solution for an interim period whilst the SEM transitions to zero-carbon;
- Hydrogen conversion may be a key factor in meeting decarbonisation targets.
 Existing Capacity may wish to convert to hydrogen. Investors in New Capacity may want to know that if they invest in capacity which is not currently capable of burning 100% hydrogen, there will be a framework to allow them to convert, once commercially viable sources of hydrogen become available on the island of Ireland.

In the short term, the potential for greater investment in existing plants may also help address issues with plant reliability/ unavailability which is contributing to short term capacity issues.

7. Consultation Questions

The RAs are seeking feedback on whether to implement the new intermediate length contract, and if so:

- What is the appropriate maximum duration for the intermediate length contract?
- What is the appropriate Intermediate contract Investment Rate Threshold
 (ICIRT) in €/MW_d for units to be eligible for the intermediate length contract;
- Is gaming a material concern? What approaches should be taken to prevent gaming of the new arrangements?

- What is your view on the proposed changes to the Existing Capacity
 Exception Application process and New Capacity Exception Application process?
- Should Existing Capacity seeking a multi-year contract be required to submit implementation plans for consideration by the TSOs as part of the Qualification process, and are the same milestones employed for New Capacity appropriate?
- What is the appropriate length of the Long Stop Date for Existing Capacity seeking an intermediate length contract?
- Should Existing Capacity with an intermediate length contract be subject to termination payments and performance security requirements?
- How could the design of intermediate length contracts promote investment in low carbon technologies?

8. Next Steps

The SEM Committee is seeking views from industry on the questions set out above. The RAs propose to issue a decision on this consultation in early 2024. If, following consultation, the RAs decide to proceed with the intermediate length contracts, the RAs will consult on CMC drafting changes necessary to implement any policy changes, with a view to implementing any necessary CMC modification(s) prior to the issue of relevant operational process documents for the 2028/29 T-4 auction.

Responses to the consultation paper must be sent to both the CRU and UR CRM Submissions inboxes by no later than 17:00 on 21 December 2023.

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Please note that late submissions will not be accepted.

Please note that we intend to publish all responses unless marked confidential. While respondents may wish to identify some aspects of their responses as confidential, we request that non-confidential versions are also provided, or that the confidential

information is provided in a separate annex. Please note that both Regulatory Authorities are subject to Freedom of Information legislation.