iPower Comments on

# SEM-25-070 Options for Decarbonisation of the existing CRM design

closing **27.02.2026**

iPower Flexible Energy participates actively in both the Aggregated Generator Unit (AGU) and Demand Side Unit (DSU) sectors of the electricity industry. Through these activities, iPower plays a significant role in supporting the operation of the I-SEM balancing market and facilitating the continued integration of renewable generation.

iPower currently operates approximately 100 MW of flexible capacity, providing a material contribution to system support and stability. We have experience working collaboratively with SONI and EirGrid to support secure and balanced system operations. In addition, iPower is a member of FERA, whose members collectively represent circa 200 MW of registered capacity across the island.

iPower welcomes the opportunity to provide feedback on SEM-25-070.

We support the objective of reducing carbon emissions within the CRM. However, we believe that demand-side response must play a much greater role in achieving this goal. In many cases, reducing demand at peak times is faster, cheaper, and lower-carbon than investing in new or upgraded generation. The consultation appears to mainly focus on incentives for generation. We encourage the SEM Committee to also give attention to how demand-side flexibility, that is already present, can play a part in reducing emissions.

**Questions:**

1. *Would the Green Bonus create an incentive that market participants can respond to within the timeframe of the remaining auctions under the existing CRM?*

The Green Bonus is unlikely to create a strong incentive that market participants can meaningfully respond to within the remaining lifetime of the existing CRM. With only a small number of auctions left before the current State aid approval expires in mid-2028 and much of the relevant capacity already contracted, the scope for new investment decisions is likely to be limited. A one-year contract extension may not be sufficient to justify additional capital expenditure or significant changes in plant design, particularly given the uncertainty around hydrogen infrastructure and other decarbonisation technologies. The interaction between this proposal and the recent SEM-26-003 consultation on CRM auction timings must also be considered. Both consultations reference contract extensions during the interim period, and it

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is not yet clear how the proposed Green Bonus would align with revised auction scheduling or delivery timeframes. The SEM Committee should provide worked examples illustrating how these proposals would operate together in practical scenarios. A holistic assessment of how interim contract extensions, auction timing adjustments, and decarbonisation incentives interact is essential before final decisions are made, to avoid unintended complexity or conflicting signals to the market.

Taking the proposal at face value, it is important to recognise that demand-side response aggregators are capable of delivering immediate emissions reductions within the existing CRM framework. Pure demand reduction ("turn off") has zero operational emissions, and on-site generation operating on certified carbon-neutral HVO fuel can further reduce overall system carbon intensity. If the objective is to secure measurable decarbonisation outcomes before the current CRM approval expires, enhancing and properly recognising demand-side flexibility is likely to deliver a faster and more practical impact than relying solely on additional contract duration incentives for thermal generation.

2. *Where should the CO2 emissions threshold be set to incentivise higher efficiency gas plant as well as lower carbon technologies? Please provide appropriate evidence and rationale to support.*

The framework must recognise that emissions intensity (g/kWh) does not fully reflect system-wide carbon impact. Demand-side response can reduce overall emissions by displacing less efficient generation. Therefore, while the threshold can encourage higher efficiency gas technology, it should be complemented by clear recognition of zero-emission demand reduction and certified carbon-neutral fuels.

3. *Is one year the appropriate additional contract duration?*

A one-year additional contract duration is unlikely to be a strong enough incentive on its own to materially change investment decisions. For existing gas plant, meaningful efficiency upgrades would involve capital expenditure that typically requires longer-term revenue certainty to justify. An additional single year of contracted revenue may improve bid competitiveness, but it is unlikely to unlock significant new investment within the remaining CRM timeframe. If the objective is to drive tangible decarbonisation outcomes before 2028, the additional duration must be proportionate to the scale of investment expected. Either the incentive needs to be carefully calibrated to reflect realistic upgrade costs, or the focus should shift toward measures that can deliver faster impact, such as strengthening demand-side participation and peak demand reduction, which do not rely on long-term capital recovery to deliver carbon savings.

4. *Is the definition of blended hydrogen-readiness appropriate i.e. that the unit must incorporate combustion equipment that is capable of burning a blend of up to 30% hydrogen? Should a higher/lower percentage blend be applied for the blended hydrogen-readiness definition?*

No comment

5. *Would the Green Scalar create an incentive that market participants could respond to within the timeframe of the remaining auctions under the existing CRM?*

While a scalar could reward incremental efficiency improvements, it is unlikely to drive significant structural change in generation investment decisions before 2030–33, given the limited runway to 2028 and the extent to which much of the relevant capacity is already contracted. However, it could strengthen investment signals for demand-side units, particularly against the backdrop of declining de-rating factors, which are currently dampening incentives for demand-side participation.

6. *What are the appropriate CO2 emissions thresholds that should apply for the Green Scalar? Please provide appropriate evidence and rationale to support and*

and

7. *Should the Green Scalar be a continuous or stepwise function?*

If the Green Scalar was to be implemented it should use clearly defined bands anchored to the existing legal ceiling of 550g $CO_2$/kWh, with additional tiers that differentiate realistic, investable improvements in gas efficiency as well as genuinely lower-carbon solutions. In practical terms, 550g/kWh should act as the “no uplift” reference point (scalar = 1), with progressively higher uplifts applied to units that can credibly demonstrate lower verified emissions intensity.

We would propose that if this was to be implemented that the Green Scalar be implemented as a stepwise (banded) function rather than a continuous curve. A stepwise design is easier for market participants to understand, model, and finance against, and it reduces the risk of disputes arising from small measurement differences in emissions calculations.

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8. *Which of these two options – the Green Scalar or the Green Bonus – do respondents consider is likely to be more effective within the timeframe of the remaining auctions under the existing CRM?*

Within the timeframe of the remaining auctions under the existing CRM, the Green Bonus is likely to be more immediately effective than the Green Scalar. The Green Bonus may be simpler to design and implement, drawing on precedents in other European capacity markets. This relative simplicity could reduce regulatory and State aid risk and provide market participants with a high degree of certainty when making investment or refurbishment decisions in the limited period before 2028.

That said, the Green Scalar has clear strategic advantages. It offers a more targeted and proportionate mechanism, aligning support more closely with environmental performance and creating a stronger, longer-term signal for decarbonisation. While it is likely to be more complex and less tested in EU capacity markets, it represents a structured incentive to encourage participants to move in a greener direction. With sufficient clarity and timely regulatory alignment, it could deliver meaningful behavioural change.
However, this assessment is subject to how either option is integrated with any changes arising from the SEM-26-003 proposals, which could materially affect both design feasibility and effectiveness.

9. *What technologies could be expected to benefit from the Green Bonus or the Green Scalar in the specified timeframe? a. For each technology referred to, what is the associated scale of and timeframe for investment for an existing or a new plant?*

Within the remaining CRM timeframe (delivery years circa 2030–33), demand-side response (DSR) is one of the few technologies capable of responding quickly and at scale. Pure demand reduction (“turn down” or “turn off”) has zero operational emissions and can typically be deployed within months, with relatively low capital investment compared to generation projects. This makes DSR well suited to respond within the limited window remaining under the current CRM. In addition, some DSR portfolios include on-site generation using certified carbon-neutral HVO fuel, which offers materially lower lifecycle emissions than conventional fossil generation and should be recognised distinctly.

However, the declining Demand Reduction Factor (DRF) has reduced the effective de-rated capacity attributed to demand-side units. This weakens the revenue signal for DSR within the CRM and limits the scale at which new demand-side capacity can economically enter the market. While DSR remains capable of delivering rapid and immediate emissions reductions, its growth potential under either a Green Bonus or Green Scalar is constrained unless the impact of the DRF decline is addressed.

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10. *What is the expected commercial running pattern for each technology and are there constraints on its flexibility?*

Existing CCGTs are typically mid-merit or peaking plant in the SEM. They tend to run during higher demand periods, tighter system margins, or when renewable output is low. Their flexibility depends on design and age, modern units can ramp reasonably well, but they are still constrained by minimum stable generation levels, start-up times, maintenance schedules, and fuel costs.

OCGTs and other peaking gas units generally operate for relatively few hours per year, primarily during system stress events. They are more flexible in terms of fast start and ramping capability, but their higher fuel costs and emissions intensity mean they are rarely dispatched outside peak conditions. Their commercial viability depends heavily on capacity revenues rather than energy market income.

Battery storage typically operates in short-duration cycles, charging during lower-price periods and discharging during peak or high-price periods. It is highly flexible, with rapid response capability and no minimum generation constraints. However, its operation can be constrained by energy duration (e.g. 1–4 hours), state-of-charge limits, and degradation.

Demand-side response is typically activated during periods of peak demand or system stress. Pure demand reduction ("turn off") is inherently highly flexible, as it can be deployed quickly and without operational emissions. In addition, on-site generation within demand-side portfolios can provide reliable, dispatchable support with minimal technical constraints, and where certified carbon-neutral HVO fuel is used, it represents a practical and low-carbon flexibility solution.

Each technology contributes differently to adequacy and flexibility, and these differences should be considered wholly when designing decarbonisation incentives.

11. *What verification process should apply to ensure compliance with the emissions thresholds for either measure?*

For delivery years, an ex-post verification process should apply, particularly for units receiving a Green Bonus or Green Scalar uplift. This could include annual reporting by participants of fuel consumption and generation output to confirm actual emissions intensity against declared values. iPower has already developed a market-based calculation tool aligned with the legislative methodology, which is submitted as part of capacity auction qualification to demonstrate compliance with emissions requirements.

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For mixed or carbon-neutral fuels, such as certified HVO, robust sustainability certification and clear fossil-origin accounting should be required to ensure integrity. However, verification should remain proportionate and avoid duplication. Where compliance with environmental permits and legislation is already monitored and enforced by the relevant government departments, that responsibility should remain with those authorities rather than being replicated within the CRM. The overall framework should be transparent, aligned with existing reporting obligations, and minimise administrative burden.

12. *Do you agree with the proposal to publish the carbon emissions data submitted at qualification by successful units, and where relevant, ex-post data provided by successful units?*

Greater transparency will support informed policy development, enable proper assessment of the effectiveness of any decarbonisation measures, and increase confidence that incentives such as the Green Bonus or Green Scalar are delivering measurable outcomes. Commercially sensitive information should be protected where appropriate.

13. *How effective do respondents consider the proposed "Decarbonisation Declaration" would be?*

A similar declaration requirement already applies to capacity awarded Intermediate Length Contracts (ILCs), with the additional element here being the submission of a formal decarbonisation plan. While this added planning requirement may improve transparency and strategic thinking, its effectiveness will depend on how rigorously plans are reviewed and whether there are any meaningful follow-up expectations.

14. *Is the proposed content of the "Decarbonisation Declaration" sufficient? Could other elements be included e.g. feasibility study, interim targets?*

A similar declaration requirement already applies to capacity awarded Intermediate Length Contracts (ILCs), with the additional element here being the submission of a formal decarbonisation plan. This added planning requirement may improve transparency and encourage more structured thinking around long-term transition pathways.

However, the effectiveness of the Declaration will depend less on adding further documentation and more on how rigorously plans are reviewed and whether there are meaningful follow-up expectations. While elements such as a high-level feasibility assessment or indicative interim milestones could be included, these should remain proportionate and realistic given current infrastructure and policy uncertainties.

15. *Do you consider that any of the other measures discussed in the accompanying AFRY Assessment Report, or any measures to achieve decarbonisation that not identified by AFRY, should be considered further by the SEM Committee? If so, please state clearly if your view relates to the timeframe of the present workstream (lifetime of the existing CRM) or longer-term CRM development. If so, please provide supporting evidence.*

iPower consider that several of the additional measures identified in AFRY's longlist merit further consideration, and that some complementary measures not explicitly developed in the report could also be examined. We distinguish below between (A) measures relevant within the lifetime of the existing CRM (to 2028) and (B) measures more appropriate for longer-term CRM reform (post-2028).

**A. Measures Relevant Within the Lifetime of the Existing CRM**

1. Targeted Recovery of CRM Costs (AFRY Longlist Option 16)

AFRY identifies targeted cost recovery as a supporting measure that could promote implicit demand response by aligning cost recovery with peak demand periods. This approach is consistent with the CEEAG guidance (Climate, Energy and Environmental Aid State Aide Guidelines), which encourages allocating security of supply costs to consumers who contribute to system stress. It is also reflected in the EU Clean Industrial Deal State Aid Framework (2025), which requires a significant share of capacity mechanism costs to be allocated during peak price periods.

Evidence suggests that targeted capacity charges can influence demand behaviour. For example: France's "Tempo" tariff applies higher charges during system stress days, Italy applies peak-based capacity charges linked to the tightest system hours.

ACER's 2024 Security of Supply Monitoring Report highlights the importance of demand participation in adequacy frameworks. Within the current CRM timeframe, this measure could reduce peak demand and therefore reduce dispatch of higher-emitting plant. It addresses the root cause of capacity procurement rather than only incentivising lower-carbon supply.

2. Emissions Validation, Monitoring and Transparency (AFRY Option 15)

AFRY highlights the strengthening of emissions validation and reporting. While publication of emissions data is proposed, we consider that extending ex-post verification requirements to any unit benefiting from green incentives would strengthen integrity. This aligns with ACER Opinion 22/2019 on $CO_2$ calculation methodologies under Regulation (EU) 2019/943. This measure is likely implementable within the current timeframe and would support evidence-

based evaluation of decarbonisation performance before 2028.

3. Longer Long-Stop Period for Low-Carbon Capacity (AFRY Option 9)

AFRY screened this cautiously due to security of supply risk. However, a tightly controlled and limited extension for clearly defined low-carbon technologies (e.g. storage) could be reconsidered if coupled with safeguards. The GB Capacity Market introduced such flexibility on an interim basis for a period of 24-months construction time, however the capacity contract duration would be eroded by the time availed of. This would require careful risk management but could likely be implemented easily as extended long-stop dates (12-18 months) are already managed for exception applications within the I-SEM.

**B. Measures More Appropriate for Longer-Term CRM Reform (Post-2028)**

4. Minimum Volume Targets for Non-Fossil Flexibility (AFRY Option 12 – screened out for Phase 1)

AFRY screened this out for Phase 1 but noted it is relevant to future CRM design. The 2024 EU Electricity Market Design Directive requires Member States to facilitate participation of non-fossil flexibility, including storage and demand response. A minimum volume or dedicated procurement for non-fossil flexibility may therefore be appropriate for Phase 2.

5. Derating Factor Reform (AFRY Options 13 & 14 – screened out)

AFRY concluded that DRFs should not be used to reflect carbon intensity in Phase 1. In practice, a Green Scalar would operate in a similar technical manner to a DRF, in that it adjusts remuneration based on a defined characteristic of the unit.

6. Stronger Integration of Demand-Side Response (Not Fully Developed in AFRY Longlist)

While AFRY screened out a full review of DSU arrangements for Phase 1, demand-side response remains one of the fastest and lowest-carbon adequacy tools available. ACER's 2024 Security of Supply Report and the EU Electricity Market Design reforms both emphasise demand participation as a core adequacy solution. For Phase 2, structural measures could include: Reduced administrative barriers for DSUs, Improved settlement granularity, and Enhanced visibility of demand response contribution to adequacy metrics.

For the remaining lifetime of the existing CRM, the most practical additional measures are targeted cost recovery reform and strengthened emissions monitoring, as these can deliver measurable impact before 2028. For longer-term CRM development, structural reforms such as minimum non-fossil flexibility volumes, deeper demand-side integration, and improved alignment with EU market design reforms should be prioritised. These measures are supported

by CEEAG, ACER monitoring reports, and recent EU Electricity Market Design legislation, and are likely to deliver more durable decarbonisation outcomes beyond the current State aid approval period.

The sharing of MEC is another practical way in which demand-side resources can support decarbonisation using existing infrastructure. By enabling more flexible use of available connection capacity, MEC sharing can increase system flexibility without requiring significant grid reinforcement or major upgrades.

If the SEM Committee's objective is to maximise decarbonisation within the remaining lifetime of the CRM, demand-side units must be fully and appropriately recognised within any carbon-based incentive framework. Any existing barriers to DSU participation should be identified and removed, and care should be taken to avoid measures that unintentionally favour thermal generation over demand reduction solutions.

iPower appreciate the opportunity to contribute to this consultation and would welcome engagement on how the CRM can better unlock demand-side decarbonisation potential.

Yours sincerely,

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