Federation of Energy Response Aggregators

FERA Response on SEMC consultation SEM-25-070 on Options for Decarbonisation of the existing CRM design

26/02/2026

FERA's members operate in the Demand Side Response sector of the electricity industry and perform a significant role in supporting the operation of the I-SEM balancing market and facilitating the continuous introduction of renewables. The FERA members have together a registered capacity above 160MW, which carries a significant contribution to system support and stability.

Our members have been operational since 2014 and have client sites right across the island of Ireland and thus operate in both jurisdictions.

Their portfolios include Demand Response through turning equipment off, as well as behind the meter generation. They utilise diesel and HVO, along with gas cleanup capabilities. Some members operate AGUs and others have actual Generation stations.

FERA supports efforts to reduce the emissions from electricity industry participants and many of our members' sites have encompassed new fuels and emission cleanup equipment. Overall we have witnessed an improvement in the awareness of emission legislation and performance.

Introduction

Whilst it is widely understood that action is required to achieve Climate Change targets, the question has to be asked as to who is responsible for monitoring and incentivising such performance. Monitoring and ensuring compliance within environmental legislation should be within the remit of the governmental departments for the Environment. It is questionable if the governance of the electricity market should be required to fulfil that role.

Some have suggested that there is a repetition of actions by more than one department and that is seen as duplication of work and an overall inefficiency of consumer/taxpayer resources.

The consultation paper and the AFRY report both identify that the timeframe being discussed is short and there are a lot of contracted capacity that shall not be open to the outcome of this consultation. There is a feeling that the effort to do something may not have a significant effect on emissions. It is however understood that this is more likely to be viewed as an identifiable action to enhance discussions for the delivery of CRM reform and achieve further State Aid approval.

Comments

Green Bonus - Whilst that could facilitate investment it still requires the facility to operate alongside other technologies that have not become cleaner. There is no financial advantage to being cleaner. It also relies on an attractive clearing price for the initial auction and the extension of an additional year.

Green Scalar - This provides support to more expensive technologies, competing against other technologies that have not become cleaner. It returns more revenue at a time it is required in order to recover investment within a limited time. It would need to be clarified if such a scalar was available in subsequent auctions, as it can not be assumed that each unit would bid for a 10 year contract.

Emissions Data Publication - This would require routine testing of each piece of specific equipment, along with less accurate running data. Testing is expensive and therefore such annual data must be paid for. It is unclear how that additional cost is being addressed within this consultation paper. The question again arises as to the tests required under the CRM and those required by another government department. This again raises the concern of work repetition and efficient use of resources.

Decarbonisation Declaration – provision of a plan could be achievable but is it expected to improve over a certain period of time and what is the change in revenue in relation to what is delivered? Other 'incentives' such as ARHL already set a target, so the question is "What now can be delivered?"

Question responses

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?

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. The remaining T-4 auctions could facilitate 'green' investment and return a 10 year contract, but the addition of one more year may not add much 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. It is not yet clear how the proposed Green Bonus would align with revised auction scheduling or delivery timeframes and the addition of one more year would impact the required volume in the subsequent year.

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.

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. 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?

The timeframe to 2028 is short, and much of the relevant capacity is already contracted. While a scalar could reward marginal efficiency improvements, it is unlikely to drive significant structural change in generation investment decisions before 2030-33. In addition, the Green Scalar introduces greater design and State aid complexity compared to a contract-length incentive. If parameters are adjusted auction by auction, this may increase revenue uncertainty rather than provide the long-term signal needed to justify investment.

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.

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?

The Green Bonus could be simpler to design and implement, as it has precedent in other European capacity markets. This greater simplicity reduces regulatory and State aid risk and gives market participants more certainty when making investment or refurbishment decisions in a relatively short window before 2028.

By contrast, while the Green Scalar offers a more nuanced mechanism, it is more complex, untested in EU capacity markets, and may introduce additional design and approval risks. It may not result in participants bidding lower or more competitively as they need to recover higher costs and obtain the "bonus".

Given the limited number of auctions remaining and the relatively small pool of capacity able to respond meaningfully within this period, a straightforward and low-risk incentive such as the Green Bonus is more likely to deliver practical and timely impact, however this is caveated by how this would be integrated with any changes that come out of the SEM-26-003 proposals.

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 around 2030-33), the technologies most likely to benefit from either the Green Bonus or the Green Scalar are existing gas plants that can undertake efficiency upgrades or fuel adjustments. These projects typically involve moderate refurbishment works that improve heat rates and reduce emissions intensity. They can usually be delivered within one to three years, making them realistically responsive within the current window.

New high-efficiency gas plants could also benefit, particularly if designed to meet tighter emissions thresholds from the outset. However, new build projects typically require three to five years (or more) to develop and construct. This means only projects already well advanced are likely to respond meaningfully before 2030-33.

Demand-side response can respond quickly with Pure demand reduction ("turn off") has zero operational emissions and can be scaled across multiple sites within months. In addition, some on-site generation uses certified carbon-neutral HVO fuel, which should be recognised distinctly from fossil generation. Demand-side portfolios can therefore provide immediate emissions impact without major infrastructure build.

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

Existing CCGTs are typically base load, even for system security reasons, and mid-merit in the SEM. 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. 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?

The requirement to identify if participants are complying with all their site permits can arise from various pieces of legislation. If a government department responsible for environmental legislation monitors and ensures compliance, then there should be no duplication of that work by another

governance body. It may be that verification of environmental legislation should reside with the departments of the environment and not within the CRM.

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 the participant, of fuel consumption and generation output to confirm actual emissions intensity against declared values.

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?

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.

Several of the additional measures identified in AFRY's longlist may merit further consideration.