Beyond Fossil Fuels is a civil society network committed to ensuring a just and rapid transition to a fossil-free, renewables-based future. Building upon the Europe Beyond Coal campaign, its goal is for Europe to be coal-free by 2030 and phase out fossil gas from the power sector by 2035. A clean and flexible energy system will deliver lasting benefits for citizens, the climate and the broader economy. Beyond Fossil Fuels is a non-profit organisation with an office in Berlin, with staff spread across Europe.

If you have any questions, please get in touch with juliet.phillips@bff.earth

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?**

While the 'Green Bonus' proposal holds potential, as currently devised, it runs a risk of failing to proactively support a cleaner, fossil-free power system. In order for the Green Bonus to more effectively support the goal of decarbonisation, there would need to be a clearer focus on clean flexibility and energy storage technologies – and exclusion of 'hydrogen readiness' because the availability of renewable hydrogen is likely to be very limited.[1]

In order to meet Ireland's target of 80% renewable electricity by 2030, Ireland needs a targeted approach to phase out fossil fuels and simultaneously scale up renewables, energy storage and clean flexibility. In 2024, gas still represented 32.1% of Ireland's gross electricity supply.[2] A significant effort will be needed to reduce this by 2030, with a clear focus on scaling up the following technologies:

- **Long duration energy storage** – enabling renewable energy to be stored at times of excess generation, to be used during peaks in energy demand. This also reduces the costs associated with renewables curtailment.
- **Demand flexibility across households and industry** – reducing the need to turn on expensive gas plants when there are spikes in energy demand via shifting consumption to times where renewable energy is plentiful, for example via dynamic energy tariffs and incentives. The definition of demand flexibility needs to specifically exclude use of on-site fossil fuel generation.
- **Domestic and industrial energy efficiency** – reducing energy demand at source via fabric efficiency measures, as well as electrification and promotion of resource efficiency. Taking an 'efficiency first' principle reduced system costs and energy bills.
- **Interconnectors and energy cooperation** – boosting connectivity with European countries to benefit from renewable energy and energy storage all year around.
- **Continued build out of renewables and grid infrastructure** – continued build out of wind and solar energy, alongside grid reinforcements, can ensure that Ireland has

[1] https://www.iea.org/reports/global-hydrogen-review-2025/production-prospects-to-2030-2 ; https://gh2.org/blog/bnef-estimates-5-million-tonnes-clean-hydrogen-2030-when-iea-says-we-need-300-million-tonnes

[2] https://www.seai.ie/data-and-insights/seai-statistics/key-publications/energy-in-ireland

a secure supply of energy around the year; particularly when coupled with storage and flexible use.

A focus on these technologies will be key to meeting Ireland's legally binding climate targets; as well as supporting energy security. Ireland remains one of the most energy import dependent states in the EU, with 78.5% of the country's energy needs coming from imports in 2023.[3] This leaves the country highly exposed to global energy market shocks and external supply issues. Only fossil-free forms of energy generation and flexibility can help reduce these security and economic risks.

Ireland's capacity market currently has one of the worst shares in Europe of payments to thermal vs. renewable & flexible capacity (77% thermal vs. 18% non-thermal) – second only to Italy (84% vs. 12%).[4] We note that the 18% non-thermal contracts may not be genuinely clean forms of flexibility; and some of it may be for on-site fossil fuel generation which looks to the grid like "reducing demand" but is actually moving demand from the grid to the on-site fossil fuel generation.

This suggests that there might be more structural problems standing in the way of clean flexibility technologies accessing contracts. Analysis suggests that storage assets, such as Battery Energy Storage Systems (BESS), continue to face challenges due to the limited revenue streams currently available in Ireland.[5] At present, BESS assets cannot fully access key markets such as the wholesale and balancing markets. This limitation creates difficulties for developers in securing the investment and financing needed for storage projects. Securing planning permission for storage projects can be a lengthy and complex process. Additionally, the lack of grid capacity presents a major barrier for developers and significant investment in grid infrastructure is also required to accommodate increased levels of flexible storage assets. It is also noted that the lack of clear, long-term policy support for storage is another detriment for the industry.[6]

As the Green Bonus is currently set out, it is not clear that such an approach, which supports key clean flexibility technologies, would be the result of the policy. In particular, we are concerned that there is a risk that it results in the prolongation of fossil fuels and carbon lock-in. In order to meet climate targets and squeeze fossil gas out of the system; in favour of cleaner technologies, the 550g/kWh limit would need to be significantly reduced, to prevent gas plants from receiving the bonus.

We also heavily warn against the inclusion of 'hydrogen readiness' criteria – i.e. that gas plants can receive the bonus for incorporating equipment that is capable of burning a blend of up to 30% volume hydrogen. This is very unlikely to result in any real-world decarbonisation outcomes, since it is unlikely that sufficient green hydrogen supply would be available in the lifetime of the power plants; and thus they would run as pure-gas plants. Moreover, blending hydrogen into gas networks, which would be necessary to supply gas

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[3] https://www.seai.ie/blog/first-look-energy-supply
[4] https://beyondfossilfuels.org/wp-content/uploads/2025/01/20250123_Aurora_BFF_CRM-Report_final.pdf
[5] https://www.addleshawgoddard.com/en/insights/insights-briefings/2025/energy/energy-powering-through-2025-key-legal-challenges-opportunities-ireland/.
[6] https://www.sciencedirect.com/science/article/pii/S2352484724006425

plants, is a complex and costly venture with a 20% blended share of hydrogen understood as the limit. It is also a poor and inefficient use of a valuable and limited resource.

As ClientEarth lawyers note, "hydrogen-ready" projects often fail to guarantee any actual future use of hydrogen, especially green hydrogen. This risks long-term fossil fuel dependency and exaggerates the role hydrogen can and should play in decarbonised economies." They call for removing hydrogen readiness as a policy tool, unless infrastructure can and does truly run on 100% green hydrogen from the start.

This is backed up by the International Energy Agency's World Energy Outlook consistently shows that current low-emissions hydrogen production and planned projects fall far short of the massive scale needed for net-zero goals.[7] The Irish Hydrogen Strategy notes that hydrogen *"is likely to be a relatively expensive energy carrier and less efficient than direct use of the renewable electricity used to produce it, with energy losses occurring through the conversion process. It is important to clearly set out that for many end-use sectors there will be alternative decarbonisation solutions, such as direct electrification, that may offer a cheaper and more energy efficient option."* It also states: *"policy support and resources will not be targeting sectors where there are more viable and efficient decarbonisation options."* Given this low likelihood of dispatchable hydrogen power; and availability of cleaner and more efficient alternatives (like renewables and storage); we would encourage Ireland to consider these in the first instance; rather than subsidising 'hydrogen ready' power stations.

Other key concerns are set out below:

- **Unstrategic use of green hydrogen, and unrealistic prospects for decarbonising existing plants:** Since renewables-based, green hydrogen is likely to remain an expensive and scarce resource for many years to come, the Irish government has rightly identified that it should be used strategically for hard-to-decarbonise sectors. Thus, there are unrealistic prospects for converting existing plants to run on hydrogen in their economic lifetime. In addition,many existing plants will not have a realistic decarbonisation pathway, whether due to age, lack of proximity to carbon storage sites, or the lack of hydrogen networks coming online in time. For some plants, this would never be possible, and even for those in the right geographic area, it would rely on significant technical and infrastructure development.
- **Cost of hydrogen:** Renewable hydrogen currently remains a scarce and expensive resource, and hydrogen-to-power remains untested at scale. Given its high costs and the energy-intensity of hydrogen production; hydrogen-to-power is considered an economically uncompetitive approach to rely on for short-term power system balancing, although it can play an important role for long-term balancing.[8]
    - Hydrogen produced from fossil fuels with the promised addition of carbon capture and storage should not play a role, due to carbon leakage in the supply chain (including highly potent methane emissions). Relying on this form of hydrogen as a key means of balancing the energy system exposes

[7] https://www.iea.org/reports/world-energy-outlook-2025/executive-summary
[8] https://liebreich.com/the-clean-hydrogen-ladder-now-updated-to-v4-1/

Ireland to the same financial risks associated with fossil fuel price spikes, as prices are unavoidably linked to gas.

- ➢ **Risk of carbon lock-in if these technologies do not mature in time:** By providing long-term contracts to gas power plants with the proviso they are "decarbonisation ready", the Irish government risks locking in carbon emissions. Since hydrogen-to-power is yet untested at scale, there is a risk that plants are never converted, should the technologies not be established in time, or if there is insufficient supply of renewable hydrogen available. This would run counter to Ireland's energy and climate targets.
- ➢ **Opportunity cost:** By locking money into otherwise uneconomic fossil fuel plants, Ireland misses out on the opportunity to invest in other solutions that can support fossil-free security of supply.

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

We encourage the CO2 threshold to be set at a level where gas plants cannot access the bonus for being 'low carbon'. Additional factors should include:

- A full lifecycle analysis of emissions from plants, including including methane considered in the threshold
- Exclusion of so-called 'hydrogen ready' and 'CSS ready' plants, given concerns raised in response to the first question
- Exclusion of biogas. HVO produced from food crops should be excluded because of its high life-cycle emissions, including from indirect land use change (ILUC).

It needs some guidance to test if a mix of non-thermal alternatives can deliver a similar service.

3. **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**

As noted in response to question 1, we strongly oppose the proposal for hydrogen-readiness to be considered in a Green Bonus. We also note that such a proposal could run counter to Ireland's Hydrogen Strategy.

As ClientEarth notes, to avoid these risks, the best approach would be to abandon the 'hydrogen readiness' concept altogether, unless and until the infrastructure or equipment in question can and will use 100% hydrogen from the outset without any need for further conversion.[9] Anything else risks confusion and an off-track energy transition. They also note

[9] https://www.clientearth.org/media/ykrhwrs5/raport-hydrogen-2025-04-_finall.pdf

that standards themselves say nothing of the likelihood of the power plants being converted to use 100% hydrogen later.

The main pieces of EU energy policy of the past legislature do not focus on 'hydrogen readiness'. However, the notion gained traction following Russia's aggression against Ukraine, with the REPowerEU initiatives. The TEN-E Regulation includes the term 'dedicated hydrogen assets', which seems to be inspired by a 'hydrogen readiness' approach. 'Dedicated hydrogen assets' are defined as "infrastructure ready to accommodate pure hydrogen without further adaptation works, including pipeline networks or storage facilities that are newly constructed, repurposed from natural gas assets, or both".[10]

ClientEarth warns that current traits of the emerging concept of 'hydrogen readiness' could be incompatible with a number of EU law principles:

- **Precautionary principle.** This principle proposes that authorities should err on the side of caution when facing an uncertain situation. In the case of hydrogen readiness, there are substantial doubts about the future availability and price of hydrogen.
- **Energy efficiency first principle.** Energy efficiency is one of the aims of EU energy policy. The processes for hydrogen production and use implies chemical reactions that lead to energy loss that are generally larger than those from electricity, and efficiency solutions must be considered when assessing whether to promote hydrogen production.
- **Principle of legal certainty.** The current lack of clarity on the concept of hydrogen readiness may delay investment decisions in alternative solutions that are already available, lead to inefficient investments, or give rise to conflicts between definitions from different domains, since it is unclear how the concept will be adapted to different contexts and if they will be compatible

4. **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 same concerns that we note for the Green Bonus might be applied to the Green Scalar. We propose that Ireland should specifically look to incentivise and support clean flexibility and energy storage solutions (listed in response to question 1); both via incentives, as well as removing and addressing current barriers.

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

As noted in response to question 2, we argue that only fossil free technologies should be able to benefit from green bonuses. HVO produced from food crops should also be excluded because of its high life-cycle emissions, including from indirect land use change (ILUC).

[10] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32022R0869

6. **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?**

As currently proposed, we are concerned that there is a risk that either of these models would fall short of supporting a real-world decarbonisation; unless the incentives are specifically focused on scaling up clean flexibility technologies. Whichever is adapted, we propose that hydrogen-readiness should not be used as a criteria.

In parallel, further policy work is needed to address market barriers that might prevent these technologies from taking off.

We note that there is no mention of the impact that data centres might have on Ireland's ability to decarbonise the capacity market. Energy demand in Ireland is projected to spiral as more and more data centres seek to come online. Ireland currently hosts 82 operational data centres, with 14 more under construction and planning approval granted for an additional 40, predicting a 65% growth in the sector in the coming years. Data centres are already using up more than 20% of Ireland's electricity.[11] This is forecast to grow to 30% by 2030.

There is evidence that data centres are adding substantial costs to energy bills in the US, due to spikes in electricity demand associated with data centres. An independent watchdog that monitors one of the largest grid operators – PJM – auctions, Monitoring Analytics LLC, found that data center demand – actual and forecast – made up $9.3 billion, or 63% of the total power capacity bill for 2025 to 2026.[12] In other words, ratepayers across PJM are paying $9.3 billion more in just one year than they would have without data centers' electricity demand.

In the context of plans to 'decarbonise' the capacity market; the government should consider how a potential increase in gas plants – driven by data centre demand for electricity – might run up against EU state aid guidelines, which require Member States to explain how investments in new gasfired generation will contribute to achieving the EU's climate targets, and how lock-in of these new plants will be avoided.[13]

Furthermore, as part of the EU State Acid regulations setting out the proportionality of the state aid measures and Article 22 of Electricity Regulation, electricity consumers creating the need for the measure should contribute to its costs.[14] The recent update to the State Aid framework sets out a model for capacity markets which proposes: *At least 90% of the capacity mechanism costs must be allocated to consumers based on their consumption during at least 1% and at most 5% of the highest price hours (or market time units) each*

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[11] https://www.friendsoftheearth.ie/assets/files/pdf/foe_data_centre_resource_updated_august_2024.pdf
[12] https://ieefa.org/resources/projected-data-center-growth-spurs-pjm-capacity-prices-factor-10
[13] Guidelines on State aid for climate, environmental protection and energy 2022 https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52022XC0218%2803%29
[14] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52016PC0861

year (or each delivery window). Charges may be levied on balance responsible parties (such as suppliers).[15]

Thus, there is a strong case that it would be illegitimate for the Irish capacity market – which is paid for via the energy bills of everyone – to essentially subsidise the business model of data centres, which are disproportionately contributing to the capacity problem.

7. **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?**

A range of clean technologies can replace the role that gas currently plays in the electricity system, as mapped out below in new analysis from The Brattle Group. A more detailed analysis of each is in the full report (attached to our response).

8. **Do you consider that any of the other measures discussed in the accompanying AFRY Assessment Report, or any measures to achieve decarbonisation that are 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**

[15] https://eur-lex.europa.eu/eli/C/2025/3602/oj/eng

To meet the national 80% renewables target and show leadership, we encourage the Irish government to consider the following steps:

- **Commit to phase out fossil gas plant payments via the capacity mechanism and re-direct funding into clean, fossil-free options** – including long-duration energy storage, energy efficiency, renewables, batteries, flexibility (excluding flexibility delivered via on-site fossil fuel generators) and interconnectors. This should include an explicit statement that gas plants can no longer be funded through the capacity mechanism, and will be moved to a strategic reserve or non-market based mechanism. This also means delivering the actions related to accelerating flexibility and managing demand in the 2025 Climate Action Plan and ensuring new actions are committed to in the 2026 Climate Action Plan
- **Set out a "gas exit" plan,** with consideration of whether a capacity mechanism or strategic reserve is better suited to limit the market power of gas. This should include economic analysis of the cost saving for consumers associated with removing the market power of gas plants to name their price.
- **Give consideration to the risks associated with over-reliance on hydrogen-to-power,** recognising the risk of fossil fuel lock-in, additional costs/ delays, and factor these into decisions made associated with funding different technologies.