



Department of the Environment, Climate and Communications,
29-31 Adelaide Road,
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Emailed to: carbonbudgetconsultation@decc.gov.ie

RE: Public consultation on Carbon Budgets

Wind Energy Ireland (WEI) would like to thank the Department of the Environment, Climate and Communications for the opportunity to provide a submission to the Public Consultation on the Carbon Budgets

WEI is the nation's largest renewable energy organisation with more than 160 members who have come together to plan, build, operate and support the development of Ireland's onshore and offshore wind generation. We work to promote wind energy as an essential, economical, and environmentally friendly part of the country's low-carbon energy future.

As a leader in Ireland's fight against climate change, wind energy creates jobs, invests in communities, and reduces CO₂ emissions. In 2020 alone, according to the most recent report from the Sustainable Energy Authority of Ireland, wind energy avoided 4.5 million tonnes of CO₂ more than twice as much as all other forms of renewable energy combined.

Ireland is number one in the world for the share of electricity demand met by onshore wind and in 2020, wind energy provided over 38% of the country's electricity supply. Wind energy is also a major contributor to Ireland's economy.

WEI welcomes the Technical Report of the Climate Change Advisory Council adopted the 25th of October 2021 and the evidence it provides behind the Council's carbon budget proposals.

WEI also welcomes the proposal to set carbon budgets across three 5-year periods to deliver:

- An average reduction of 4.8 per cent per annum for the period 2021-2025
- An average reduction of 8.3 per cent per annum for the period 2026-2030
- A provisional average reduction of 3.5 per cent per annum for the period 2031-2035

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Urgent action needed

We welcome the introduction of sectoral emissions ceilings, and the proposal for a 2-4 MtCO₂eq. reduction for the electricity sector by 2030, as set out in CAP2021 amounting to a 62-81 per cent reduction relative to 2018 levels. We believe that ultimately the sectoral emissions ceiling for the electricity sector should be set to 2 MtCO₂eq. by 2030 relative to 2018 levels. This level of ambition is in line with the urgent action needed to ensure that Ireland plays a leading role in the fight against Climate Change and is technically achievable¹.

The Status of Ireland's Climate report 2020² presented some important findings which highlighted the need for urgency in decarbonising our economy. The report found that greenhouse gas (GHG) levels continue to rise, and those measured in 2019 are the highest observed here since measurements began.

Background carbon dioxide concentrations are now at 413ppm, which is estimated to be 50 per cent higher than those of the pre-industrial era, while methane concentrations are at 1,940ppb, 170 per cent greater than pre-industrial levels. The report notes that the annual average surface air temperature in Ireland has increased almost 1°C over the last 120 years, with a rise in temperatures being observed in all seasons.

Additionally, the contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC)³, found that unless there are immediate, rapid and large-scale reductions in greenhouse gas emissions, limiting warming to close to 1.5°C or 2°C, as set out under the Paris Agreement, will be beyond reach.

It found that those emissions of greenhouse gases from human activities are responsible for approximately 1.1°C of warming since 1850-1900, and finds that averaged over the next 20 years, global temperatures are expected to reach or exceed 1.5°C of warming.

Noting the comparative challenges associated with reducing emissions in other sectors of Ireland's economy, we believe that with the right policy support, Ireland's electricity sector will play an essential role in ensuring we deliver on our targets of climate neutral economy no later than 2050 and a reduction in emissions of 51% by 2030 (compared to 2018 levels).

Driven by wind energy, the electricity sector can achieve the ambitious sectoral targets that have been set out for 2030 and can do so in a way that is cost-effective to the energy user. However, we must provide policy ambition, certainty and visibility to deliver the needed investment into renewables and clean supporting technologies.

¹ <https://windenergyireland.com/images/files/20210629-baringa-endgame-final-version.pdf>

² https://www.epa.ie/publications/research/climate-change/Research_Report_386.pdf

³ https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf



Therefore, Government should set out a target of 2 MtCO₂ eq. from the electricity system by 2030 and should set a further target for Ireland to achieve a zero-carbon electricity system by 2035.

Recent research has shown that this is technically and economically possible.

Achieving the carbon budgets

In 2021, Wind Energy Ireland commissioned Baringa Partners to produce the *Endgame – A zero-carbon electricity plan for Ireland*⁴ report which set out how carbon emissions from Ireland's electricity sector could be cut from almost ten million tonnes annually to under two million tonnes by 2030⁵. The report also set out a more long-term pathway to a zero-carbon electricity system where a combination of fair carbon pricing, long-duration storage and green hydrogen will eliminate the need for fossil fuels in the Irish electricity system.

The key findings of that report are that reducing power sector CO₂ emissions in Ireland from around 9 million tonnes today to a target of less than 2 million tonnes of CO₂ per year is very achievable by 2030, using the approach that at the time was underway to achieve the then 70% renewable electricity target, and implementing more of existing and proven technologies.

The report found that to achieve this 2 million tonne target, the current Programme for Government renewable capacity targets of around 8,000 MW of onshore wind and 5,000 MW of offshore wind by 2030 should be maintained, with an additional target of 5,000 MW of solar PV.

Additionally, it found that this target can be achieved at a lower cost to the consumer, compared to delivery of the less ambitious 70% RES-E target. The analysis showed that the deployment of incremental wind and solar capacity and investment in zero-carbon system services to reach a level of 2 million tonnes CO₂ by 2030 would result in a net cost saving to the consumer of over €180 million in 2030.

While a cost is incurred to the end consumer to support additional renewable capacity through the PSO levy, as well as additional costs to reinforce the network and secure DS3 services, there would be €288 million savings associated with lower wholesale power prices, and the elimination of over €250 million of dispatch balancing costs (DBC) – much of which are paid today to turn on gas-fired power stations to enable them to provide system services. This results in a large overall net saving to end consumers.

The report concluded that a target of less than 2 million tonnes of CO₂ emissions per year from the Irish power sector is very achievable using proven technologies that exist today.

Moving to a zero-carbon electricity system in Ireland by 2035

⁴ <https://windenergyireland.com/images/files/20210629-baringa-endgame-final-version.pdf>

The *Endgame* report also looked at a more ambitious reduction of power sector emissions and found that it is technically feasible for Ireland to move to a zero-carbon electricity system in the lifetime of the proposed carbon budgets (2021-2035).

The study found that remaining emissions in the electricity system could be eliminated with a combination of a 100 €/tCO₂ ETS carbon price, long-duration electricity storage assets, green hydrogen electrolyser capacity and a comprehensive retrofit of fossil gas fired capacity to utilise green hydrogen to provide enough system flexibility to enable the build-out of the full Programme for Government renewable targets for offshore, onshore and solar.

This would reduce Irish power sector emissions to zero.

The *Endgame* study therefore demonstrates that a zero-carbon power sector in Ireland is possible, and can be achieved with concurrent investment in a series of technologies new to Ireland such as long-duration storage and green hydrogen and a carbon price floor of 100 €/tCO₂ in I-SEM.

The timeframe depends on the delivery of investment into technologies such as long-duration storage and green hydrogen, and the associated Government policy ambition towards the achievement of a zero-carbon electricity system as early as possible.

Regular and consistent renewable deployment

However, WEI is particularly concerned about the need to ensure the right frameworks are in place to empower the electricity sector to deliver on its emissions reduction targets, in line with the carbon budget proposals and Climate Action Plan 2021.

Ireland has enormous offshore wind potential, and if key policies are delivered in the coming 6-9 months, we still have a chance to deliver on the 5 GW offshore target. However, it will be later in the decade when most of this offshore renewable energy comes onto the system.

EirGrid's recently published *Shaping our Electricity Future* assumes that only 1,300 MW of onshore wind energy will be delivered by the end of 2030 and proposes grid reinforcements accordingly. This raises serious concerns around the impact of the strategy on the electricity sector's cumulative emissions over the course of the decade.

The cornerstone of EirGrid's 2030 renewable energy scenario is the delivery of 5,000 MW of offshore wind energy by the end of that year. We would like to be clear so there is no risk of misunderstanding – Government policy is not on track to enable our industry to achieve this target.



As we pointed out in our September 2021 report, *Twelve months to deliver offshore wind energy*⁶, the policy framework that would enable our members to connect 5,000 MW of offshore wind energy by 2030 is simply not in place.

We would like to further highlight that even if every single policy recommendation in *Twelve months to deliver offshore wind energy* is delivered, and delivered on time, it does no more than give our industry a fighting chance of hitting the 2030 target. It does not guarantee success.

In order to achieve the emissions reduction targets set out in the 2021 Climate Action Plan, onshore wind, in line with Government capacity targets, must be deployed regularly and consistently throughout the decade.

The pipeline is in place to deliver on the Government's onshore targets. However, EirGrid's strategy is out of step with this reality, and must be urgently aligned with Government capacity targets, and the revised RES-E target of 80%, to provide the needed grid reinforcements to accommodate this level of onshore renewable electricity.

In a scenario as envisaged by *Shaping Our Electricity Future*, where no additional onshore renewables are connected beyond what is stated, and when offshore wind is not expected to begin connecting to the grid until 2028, this means there would be no significant reduction in our electricity emissions for a substantial part of the decade.

We are concerned at the implications of the strategy for our legally binding carbon budgets in terms of cumulative CO₂ emissions over the decade.

Each year in which we fail to deliver new renewable energy capacity is another year of avoidable CO₂ emissions at a time when we need to urgently align our electricity system with a 1.5°C trajectory.

It is hard to see how *Shaping our Electricity Future* has considered the impact of cumulative carbon emissions reductions as required by the first and second carbon budget programmes set by the Climate Change Advisory Council. We would urge this to be a core consideration for the next iteration of the plan, and we would encourage the Government to ensure that carbon budgets are central to future plans for our electricity grid.

Conclusion

In conclusion, we reiterate our support for the CCAC's proposal for a programme for carbon budgets that will set Ireland on the pathway to achieving the 51% emissions reduction target by 2030.

⁶ <https://windenergyireland.com/images/files/final-twelve-months-to-deliver-offshore-wind-energy.pdf>



However, in order to ensure the electricity sector can deliver emissions reductions at this scale, it is important that the needed policy frameworks are in place.

This means:

- Accelerating the drive towards the Government renewable electricity capacity targets, including 8,000 MW onshore wind and 5,000 MW offshore wind;
- Supporting zero-carbon technologies such as long duration storage, green hydrogen and demand response to replace our current fossil-fuel based, back-up system;
- Ensuring the electricity grid is sufficiently strengthened over the next ten years with the needed grid infrastructure to accommodate these levels of renewables.

WEI would again like to thank the Department for the opportunity to provide a submission on the Carbon Budgets. We hope you consider the comments and recommendations made within our submission and we would be happy to meet with you at any point to discuss this feedback.

Best Regards,

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[Redacted name]

Wind Energy Ireland