Opening Statement

regarding the

Climate Change Advisory Council Carbon Budget Proposal

by Marie Donnelly, Chair of the Climate Change Advisory Council

to the

Joint Committee on Climate, Environment and Energy 25th June 2025

My name is Marie Donnelly and I am the Chairperson of the Climate Change Advisory Council. The Climate Change Advisory Council is an independent advisory body tasked with assessing and advising on how Ireland can achieve the transition to a climate-resilient, biodiversity-rich, environmentally sustainable and climate-neutral economy.

Thank you to the Joint Committee on Climate, Environment and Energy for the opportunity to attend today and speak on the Climate Change Advisory Council's proposed amendments to Carbon Budget 3 (CB3: 2031-2035) and provisional proposal for Carbon Budget 4 (CB4: 2036-2040).

1) Background

The Climate Action and Low Carbon Development Act, as amended in 2021, provides for the establishment of carbon budgets as interim milestones on this trajectory to 2050. A carbon budget represents the total amount of greenhouse gas emissions that may be released during an agreed period and are used in climate policy to act as a benchmark to help ensure sustained emissions reductions over a period of time. In 2021, the Council submitted its first programme of carbon budgets to the Minister for the Environment, Climate and Communications, which included an upper limit of 295 Mt CO_2 eq in emissions for the period 2021–2025 (Carbon Budget 1 (CB1)); 200 Mt CO_2 eq for the period 2026– 2030 (Carbon Budget 2 (CB2)); and a provisional budget of 151 Mt CO_2 eq for the period 2031–2035 (Carbon Budget 3 (CB3)). These were adopted by the Oireachtas without revision on 6 April 2022.

In accordance with the 2021 Amended Act, not less than 12 months prior to the expiry of the first carbon budget the Climate Change Advisory Council must propose a provisional Carbon Budget 4 (CB4) (2036–2040) along with any adjustment to the proposal for CB3 (2031–2035).

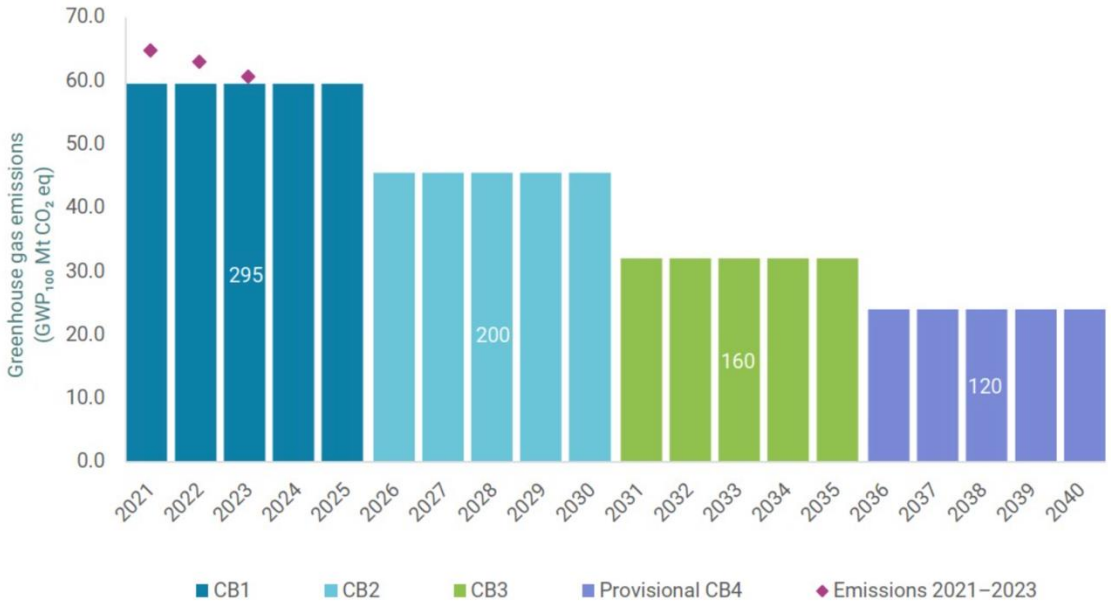
2) The proposal

The Council proposes that there should be a carbon budget of no more than 160 Mt CO_2 eq for CB3 (2031-2035), and a provisional proposal for CB4 (2036–2040) of 120 Mt CO_2 eq, with overall indicative emission reductions of 68% by 2040, relative to 2018. In its deliberations the Council has considered the most recently available national GHG inventory and projections of future GHG emissions, along with international best practice on the reporting of GHG emissions and removals. As there is no single model for Irish emissions the pathways modelled are combinations of the outputs of three different models. None of the many combined scenarios developed achieved the 51% target for 2030 emissions relative to 2018.

Nevertheless 15 emissions scenarios were identified which were consistent with the achievement of climate neutrality before 2050 (the national climate objective) in the context of a backdrop of global efforts to ensure that temperatures remain within the 1.5C goal. The Council considers climate neutrality to mean that Ireland is no longer contributing to the increase in global temperatures by 2050.

In terms of the amendments to CB3 (2031–2035), the Council has proposed that the provisional proposal of 151 Mt Co 2eq is updated to 160 Mt Co 2eq. The provisional CB3 proposed in 2021 was based on simple interpolations to meet net zero in GWP100 by 2050. Updated and improved analyses of mitigation options were used for the new proposal, in which the Council targeted temperature neutrality pathways rather than an overreliance on (as yet) unproven technologies such as carbon capture and storage.

As referenced in the Carbon Budget Proposal and the 2024 Annual Review, the Council considers that a scheduled technical reassessment of carbon budgets based on methodological changes to the national inventory should be a routine undertaking on foot of the conclusion of each carbon budget period, i.e. on a 5 yearly basis. The first such opportunity for reassessment will arise in April 2027 when the inventories for 2021-2025 are finalised and such a review should be programmed to occur every five years thereafter. Similar reviews should also be considered in the event of very significant changes in the baseline data in any given finalised set of annual inventories.



3) Carbon Budget Working Group

The Council established the Carbon Budgets Working Group (CBWG) in early 2023 and tasked the group with assisting and advising the Council in the development of the evidence basis for these carbon budget proposals. The membership of the CBWG drew together experts with a range of qualifications, expertise, and experience. The Secretariat chaired the CBWG and had responsibility for supporting the running of meetings and for liaising between the working

group and the Council. The CBWG held 18 regular meetings and one workshop between March 2023 and September 2024. Membership of the CBWG is set out on the Council's website along with all of the CBWG meeting documents, including agendas, minutes, presentations, and other technical documents. The Council would like to take this opportunity to thank the members of the CBWG and other contributors to the work of the group for their excellent scientific support in the preparation of this proposal.

The CBWG completed three iterations of modelling and analysis between September 2023 and August 2024 and developed a range of future scenarios for the energy, agriculture and land use sectors, which can be combined in 1,196 different permutations. An overview of the CBWG's pathways development and modelling is provided in the CBWG's Outputs Report. Temperature analysis of the GHG emissions for the scenarios was conducted using peer reviewed and well documented reduced complexity climate models and additional support modelling was completed to test the assumptions and results of the core scenarios. Following completion of the work of the CBWG, each member submitted final reports summarising their inputs to assist the Council in their deliberations on the carbon budget proposal and these 12 reports are also published on the Council's website.

The Council assessed the 1,196 scientifically based greenhouse gas emissions scenarios that were developed by the CBWG for consistency with the National Climate Objective. The Council identified a shortlist of 15 scenarios that achieve the emissions reductions necessary to stabilise Ireland's warming impact by 2050 (also termed temperature neutrality). The 15 scenarios considered in calculating the carbon budgets are consistent with net CO2 emissions from energy reaching zero between 2039 and 2048, along with significant reductions in other GHG emissions, including rapid and sustained reductions of between 22% and 30% in the rate of methane emissions and a 66–69% reduction in the rate of nitrous oxide emissions from agriculture by 2040, relative to 2018.

The proposals for CB3 and the provisional CB4 are based on the average annual emissions of the 15 shortlisted scenarios rounded to the nearest 10 Mt CO2eq. An annual reduction of at least 6.3% on average year on year to 2040 is required to remain within the carbon budgets. This represents an unprecedented, sustained level of emissions reductions, which demonstrates the challenging ambition of these carbon budget proposals consistent with the national climate objective.

4) Achieving climate neutrality

The Council assessed the implications of the different pathways in terms of feasibility and the challenges associated with the transformations implied. As an absolute imperative, fossil fuels must be phased out as early as 2039 within the Electricity, Industry, Buildings and Transport sectors, with limited to no opportunity for new investments in fossil fuel systems. All energy sector scenarios underlying the proposal require unprecedented rates of low carbon technology adoption, but mainly rely on technologies that are mature, cost-effective and well-tested.

a) Electricity demand is projected to grow out to 2050 due to the electrification of transport, buildings and industry, with strong growth in wind and solar photovoltaic (PV) power across all scenarios. The transport scenarios involve full electrification of all vehicles by 2040, with an end to sales of new internal combustion engine vehicles by 2025 for private vehicles and by 2027 for freight vehicles. However, Low Energy

Demand scenarios, which lower the dependence on private cars and reduce freight movements, allow a later phasing out of new fossil fuel vehicles.

b) Scenarios for the Built Environment sector involve rapid deployment of heat pumps with targeting of the most carbon-intensive buildings for retrofitting first, deployment of district heating, ending the use of coal and peat and mostly phasing out kerosene for heating by 2030. Industry relies on direct electrification for the majority of its processes, apart from high-temperature processes that rely on biomass and wastes.
c) A very ambitious adoption of mitigation measures in Agriculture is necessary combined with relatively stable or reduced livestock agricultural activity. Key mitigation measures include using methane reducing additives in slurry and feed, protected urea fertilisers, improved breeding practices and reducing the age of cattle finishing. Farmers must be financially supported to implement these measures.
d) All forestry scenarios include a reduced rate of harvest, closer to the economic optimum, compared with the current trend towards shorter harvest intervals, which would apply to both existing and new forests. Rates of afforestation range from the current policy target of 8,000 ha per year to more ambitious 17,500 ha per year being achieved.
e) All selected scenarios require the deployment of carbon dioxide removal (CDR), including nature-based and technological solutions, as well as mitigation within the LULUCF sector in the period to 2050 and beyond.

There are implicit implications for trade-offs between the Energy sectors and Agriculture, Forestry and Other Land Use (AFOLU) sectors inherent in the range of emissions reductions for CH4 and N2O, and the time frame for achieving net zero CO2 emissions. Targeting the lower end of ambitions in each case would not be sufficient to realise the ambition of these carbon budget proposals. Instead, these ranges illustrate the need for a government-wide cross-sectoral approach to assigning levels of effort sharing between the Energy and AFOLU sectors via sectoral emissions ceilings within the limits of the proposed carbon budget.

Macroeconomic analysis found that, overall, the long-term costs of reaching the National Climate Objective are expected to be relatively limited, as future savings in imports of fossil fuels will largely offset the long-term costs of making the change. While achieving carbon budgets will involve significant upfront investment costs, delayed action will impose a greater financial burden on society in the longer term from continued fossil fuel dependence, with greater and more costly impacts expected with additional warming. In relation to energy, investment is front loaded, rising by 9.5–11% above the baseline level in the period to 2030. The analysis found that the biggest burden of adjustment, which will have a medium-term negative impact on living standards, will be between 2025 and 2035. However, even at its peak, the reduction in living standards will be limited, probably amounting to between 0.5% and 1% of national income.

5) Other Factors considered

The 2021 Amended Act requires that the Council carries out its functions in respect of the preparation of carbon budgets in a manner that is consistent with the objectives of the UNFCCC and the Paris Agreement. In preparing this carbon budget proposal, the Council has reflected Ireland's National Climate Objective and been guided by the long-term temperature goal of the UNFCCC Paris Agreement to limit global warming to well below 2°C and pursue efforts to limit warming to 1.5°C. The shortlist of 15 scenarios were identified by the Council as being consistent with setting Ireland on an emissions trajectory that is compatible with

Ireland's emissions contributing to no further global warming by 2050, against a backdrop of global efforts to limit global warming to 1.5°C in line with the Paris Agreement. As can be seen in our report this reduces the number of scenarios that are used in the final analysis relative to the analysis which considered efforts to limit global warming to 2°C, the upper end of the range of the temperature target.

These carbon budget proposals exclude emissions from international aviation and shipping (as mandated under S.I. 531 of 2021) and are calculated based on global warming potential values evaluated over 100 years (GWP100) published in the Intergovernmental Panel on Climate Change Fifth Assessment Report in line with UNFCCC and EU reporting requirements.

Furthermore, the Council's carbon budget proposal does not address the potential of carbon budget debt rollover between carbon budget periods. The 2021 Amended Act mandates that exceedance of carbon budgets is carried over at the point of concluding the finalisation of emissions inventories for each carbon budget period. The Government will need to seriously consider the implications of exceedances, how they are dealt with in the context of a system of sectoral emissions ceilings and implement the corrective action necessary to ensure compliance with our national targets.

6) Compliance with EU targets

In 2024 the European Commission recommended a 2040 climate target of a 90% reduction in net GHG emissions by 2040 relative to 1990 levels. Whilst a more fully formed proposal from the European Commission is expected shortly, the EU has not formally adopted this target, nor has it indicated how Member States will be allocated different targets, or whether sectors will be treated differently. Ireland's GHG emissions profile is distinctive, with a higher share of gases such as methane and nitrous oxide from agriculture than other EU member states. To be consistent with anticipated EU policy, only scenarios for the energy system that meet a 90% reduction target by 2040 or earlier were considered for the Council's carbon budget proposal. The EU 2040 scenarios within the European Commission proposal achieve Agriculture sector methane emissions reductions of 15–40% between 2019 and 2040. Analysis of the scenarios directly informing the Council's carbon budget proposal are within this range, achieving Agriculture sector methane emissions reductions of 22– 30% between 2018 and 2040.

7) Conclusions

Climate change is now contributing to increasingly damaging storms and more frequent flooding, droughts, and coastal damage with significant and costly consequences for people, communities and nature across Ireland and globally. Ireland's urgent response to the global crisis must be ambitious in order to fulfil our obligations to the global community and our own future generations. This will require the most significant change since the foundation of the State. We know that, if we do nothing, there will be profound costs to the Irish economy and to the people of Ireland. What the Council has proposed is feasible with today's technologies, but it represents a significant political and social challenge for the country. This will necessitate difficult policy choices and substantial investment. This will require strong political leadership to ensure that Ireland can collectively achieve a climate-neutral and biodiversity-rich society and that no one is left behind.

Government must urgently commit to making the necessary investment, taxation and policy decisions. It needs to prioritise investment and resources now to save people and businesses money by phasing out fossil fuels to avoid future fines and compliance costs, maintain

competitiveness in a low carbon world and enhance resilience to climate change. Sufficient financial supports must be put in place by Government to enable people, households, urban and rural communities, and impacted economic sectors to take action at the speed and scale required. Government needs to accelerate the implementation of strategies to upskill people and businesses for new technologies and practices, while reskilling those sectors impacted by the transition. It is critical that lead Government departments, State agencies and Local Authorities must be aligned to achieve the national climate objective.

There is no doubt that this transition will be disruptive and initially expensive. It will be necessary to manage this transition carefully and in an inclusive manner which ensures that potential impacts on people, communities, business and nature are properly addressed. However, it presents Ireland with an opportunity to achieve a more sustainable society and cleaner environment and to improve people's health and well-being. The transition also provides an opportunity to deliver energy independence and price stability, to maintain Ireland's competitive economy in a low-carbon world, and to build greater resilience to the impacts of climate change.

The Council looks forward to the interaction today with the Joint Oireachtas Committee and providing any further assistance or advice for Government in furthering the achievement of the national climate objective.