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5th December 2019

Dear Minister Bruton,

RE: Advice on a suitable approach for preparation of multi-annual carbon budgets to inform preparation of drafting of legislation

The Climate Change Advisory Council welcomes the invitation from the Minister for Communication, Climate Action and Environment to provide advice on a suitable approach for preparation of multi-annual carbon budgets to inform preparation of drafting of legislation.

The Council considers that the introduction of carbon budgets is needed to frame and support the decarbonisation process in Ireland. Carbon budgets need to be directed towards a clear and quantified long-term goal. Legislated carbon budgets in other jurisdictions have each been coupled with a legislated quantified emission reduction target for 2050. The Council recognises that the existing Climate Action and Low Carbon Development Act (2015) contains a national transition objective. This objective encapsulates a long-term vision for the Irish economy and society across mitigation and adaptation and therefore should be maintained. A quantified emission reduction target should complement the national transition objective.

Ambitious mitigation action in Ireland to date has been hampered by the lack of an effectively binding long-term target and a lack of horizontal coordination across

sectors. Legislating for a quantified long-term target and the appropriate introduction of carbon budgets would increase policy stability and investor certainty and thus further enable the low carbon transformation in Ireland. It also represents a key opportunity to improve governance on climate action in Ireland. The governance measures outlined in the Climate Action Plan will be an important support for ambitious action across the sectors.

Following the Paris Agreement, our shared goal is to hold the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels. The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report demonstrated that there is an effectively linear relationship between the total amount of CO₂ in the atmosphere and the amount of global warming. Therefore, if the world wants to limit global warming, the total amount of CO₂ that can be emitted to the atmosphere is also limited and at some point, because it is a long-lived gas, CO₂ emissions must at least reach net-zero, or in other words any remaining emissions must be balanced by removals of CO₂ from the atmosphere, i.e. 'negative emissions'. This implies a global carbon budget for any temperature goal.

The IPCC's 2018 Special Report on Global Warming of 1.5°C goal increased our understanding of the global carbon budgets consistent with holding the temperature rise to 1.5°C (or 2°C). It confirms again the necessity for emissions of CO₂ to reach net zero in this century in order to limit climate change to 1.5°C or 2°C. The Special Report also considers the required long-term trajectories for global emissions of nitrous oxide and methane and finds that the emissions of these gases do not need to reach zero and indeed cannot reach zero. Most scenarios which stay within a climate change of 1.5°C require a very significant reduction in emissions of nitrous oxide by approximately 35% on 2010 levels by 2050. However, some scenarios allow for an increase in emissions of nitrous oxide where bio-energy with carbon capture and storage (BECCS) plays an important role in mitigation. Since nitrous oxide is a long-lived gas, the remaining emissions (foreseen in all the 1.5°C scenarios) must be addressed or balanced by negative emissions.

The IPCC Special Report on Global Warming of 1.5°C finds that global emissions of methane must reduce by between 24-47% on 2010 levels by 2050 in order to limit

climate change to 1.5°C. A significant portion of the reduction in methane emissions can be achieved through the elimination of fugitive emissions associated with fossil fuel extraction and distribution. Further reductions need to be achieved through improvements in food production systems and the management of waste. As methane is a short-lived gas, the remaining emissions of methane, consistent with and foreseen in the 1.5°C scenarios, do not need to be balanced by negative emissions.

While some uncertainty remains at the margin, the implication of the IPCC Special Report on Global Warming of 1.5°C is clear that not only does the world need to dramatically cut greenhouse gas emissions by 2050, but paying attention to cumulative emissions of long-lived gases over the period to 2050 is also very important. Any overshoot on, or exceedance of, the global budget will have to be recovered through negative emissions.

The Council advises that mitigation effort in the next decade to 2030 must at minimum meet Ireland's obligations under the EU Effort Sharing Regulation.

The Council further advises that mitigation effort in the long-term should be guided by the best available science and Ireland's obligations towards the international community and future generations under the Paris Agreement.

In line with the Paris Agreement, the Council has previously stated that Ireland should aim to have no further negative impacts on the climate system by mid-century. Therefore, the Council emphasises that it is crucially important that emissions of CO₂ and other long-lived greenhouse gases in Ireland reach net zero emissions by 2050.

The Council considers that while all greenhouse gases are important, a one-size fits all approach is not always appropriate. Based on analysis by the IPCC, it is not necessary that emissions of biogenic methane should reach net zero, nor would this be an attainable goal.

In light of the analysis of the IPCC, the government should enshrine in legislation the requirement that emissions of all greenhouse gases (except biogenic methane) reach net zero by 2050.

Also, as a result of the findings of the IPCC report, the government needs to obtain scientific advice on the appropriate target for emissions of biogenic methane in Ireland in 2050. The identified target should then be enshrined in legislation. Any target for biogenic methane must be fully consistent with the findings of the IPCC report and therefore must demonstrate ambition and aim for significant reductions to 2050. Also, any such target will need to be consistent (or made consistent) with the eventual decision on the appropriate target for the EU in 2050.

Public understanding and acceptance as well as civic engagement are key to success in climate policy. Clearly, further work, including consultation, is required to determine an appropriate treatment of biogenic methane in an Irish and an EU context.

To support policy certainty and confidence in setting the low carbon trajectory for decision makers and investors, a carbon budget should be set at least twelve years in advance and remain fixed, excepting circumstances described below. The Minister's recommendation to Government should not normally review or otherwise open up budgets that have already been set through legislation, but rather recommend a new consecutive budget.

Carbon budgets should include all gases from all sectors, cognisant of any different net reduction targets applying to greenhouse gases. There should be provision for review and revision of carbon budgets in the case of changes in the science of measurement and reporting etc. These can be routinely adopted. Substantive revision to carbon budgets should be limited to only happen before the budget has come in to force and in the case of significant change in scientific understanding or circumstances. The reasons for such a revision should be presented in the statement to the Oireachtas.

In advising on carbon budgets, the Council should be required to take into account factors such as EU and international commitments, cost-effectiveness, feasibility, cumulative emissions, and the best available science. To support transparency, the Council should be required to provide the reasons underpinning its carbon budget advice and make this publicly available.

Banking of excess emissions savings, from one budget period to the next, should be allowed to further incentivise early and ambitious action. This is a standard approach across EU legislated targets and across the examples of legislated carbon budgets. In circumstances where a deep low carbon transformation is required across the economy and society, the wisdom of provisions for borrowing is less clear. The Council therefore advises that the provisions for borrowing should be limited and subject to the same level of public scrutiny as the setting of budgets.

Where deep decarbonisation and a net zero outcome is required globally, the ability to use traded units towards domestic emissions reduction targets is not sustainable in the long-term. However, where there is confidence that traded units represent real global emissions reductions, they can be a lower cost means to achieve a climate outcome. The Council should not propose carbon budgets that they believe would require the purchase of traded units for compliance. However, provision should be made in the legislation for the Minister to determine the appropriate use of units.

To achieve the Paris Agreement objectives globally will require negative emissions. Ireland is anticipated to need to implement significant negative emissions in order to meet obligations under the Paris Agreement and/or ambitious domestic mitigation targets. Therefore, the role of natural sinks and technologies in this regard should be explored and developed.

The Act should make provision for reviewing performance against the budget with an official statement on compliance to the Oireachtas soon after the official inventory figures for the final year of a budget period are published. The Council should review performance against the 5-year budget once the statement on compliance has been made and also review progress in budgetary compliance on an annual basis.

The Climate Action Plan suggests that the present Council will assist the department in administratively setting budgets in advance of the passing of legislation by Q2 2020. This is a new task, not provided for in the current legislation establishing the Climate Change Advisory Council, nor in the existing resources available to the Council.

Having consulted with the agencies/authorities in other countries with responsibility for developing carbon budgets, it is clear that the development of carbon budgets is

a serious undertaking, requiring intensive research and analysis, using a range of analytical tools. It should be informed by robust cross-sectoral analysis of mitigation potentials, costs and barriers. This is crucial to ensure that carbon budgets are ambitious and achievable.

Socioeconomic modelling of greenhouse gas emission scenarios to 2050 is an essential tool to support the development of carbon budgets but can be a resource intensive process. The Council advises that it will not be able to develop carbon budgets unless sufficient resources are made available, including access to all relevant government data, modelling and analysis, and dedicated resources for the Council including staffing and budget. To avoid ambiguity, access to the necessary data, analyses, and models should be covered by a memorandum of understanding covering all relevant Departments and outside agencies. This memorandum will need to be in place before the Council can begin work on carbon budgets.

If the resources are made available immediately, the Council will aim to provide advice on the appropriate levels for the first three budget periods by 30th November 2020.

Should you wish to clarify any of the points above, please contact myself directly or the Climate Change Advisory Council Secretariat info@climatecouncil.ie or phone 01 2680180.

Yours sincerely,

Prof. John FitzGerald

Chair

Climate Change Advisory Council