



Carbon Budgeting Background Paper

Introduction

The Climate Action Plan 2019 proposes five-year carbon budgets and proposes that a newly constituted Climate Action Council would advise Government on the setting of these. The current Climate Change Advisory Council was given an action in the Plan to “commence the process of forming carbon budgets for 2021 to 2025, 2026 to 2030 and 2031 to 2035”. The Department recently requested the Council to “develop recommendations on [a] suitable approach for preparation of multi-annual carbon budgets to inform preparation of drafting of legislation” by Q3 and to provide regular updates on progress made on the same.

At its September meeting the Council agreed a workplan to commission some small-scale research in the topic and to hold a workshop with the aim of informing development of a background paper.

Two pieces of small-scale research were commissioned¹;

- “Report on New Zealand’s Recent Climate Policy Developments” by Prof. Dave Frame (2019).
- “Climate Justice and Carbon Budgets” by Dr. Tara Shine (2019).

On the 21st October, a workshop was held in Dublin which included Dr. Frank McGovern, EPA, Dr. Tara Shine, climate and sustainability advisory, Dr. Quentin Dupriez, DG CLIMA, Prof. Andy Reisinger, NZ by teleconference and Mike Thompson of the UK CCC secretariat. The presentations are available on the Council website. These elements have informed the paper that follows.

A paper presented by Prof. Myles Allen at the Agriculture seminar hosted by the Council in 2018 “Importance of different greenhouse gases in achieving Paris Goals” has also informed this paper.²

¹ These are part of the meeting papers pack and will also be published on the Council website.

² This has been included in the meeting papers again and will also be published on the Council website.



Background (Science)

Published in 2013-14, the fifth assessment report (AR5) of the Intergovernmental Panel on Climate Change (IPCC) established that there is a linear relationship between the total amount of CO₂ we put into the atmosphere and the amount of global warming. Therefore, if we want to limit global warming at a given level, the total amount of CO₂ we emit to the atmosphere is also limited and at some point emissions must at least reach zero. This implies a global carbon budget for different temperature goals. Following the Paris Agreement, our collective aim 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 IPCC's 2018 Special Report on 1.5°C goal increased our understanding of the global carbon budgets for that goal and 2°C. While some uncertainty remains at the margin, the implication is clear that not only do we need to cut our emissions significantly by 2050, but we need to pay attention to our cumulative emissions on the way to that goal. Any overshoot on (or exceedance of) the global budget will have to be recovered through removals of CO₂ from the atmosphere, termed 'negative emissions'.

While the global carbon budget is focussed on CO₂, the main driver of global warming, the SR1.5 also enhanced our understanding of the required emission reduction pathways for other major GHGs such as Nitrous Oxide (N₂O) and Methane (CH₄). Neither N₂O nor Methane is required to reduce to zero and in fact is deemed unlikely to be possible to reach zero. The IPCC SR1.5 presents scenarios where N₂O and Methane emissions do not go to zero but are balanced by negative emissions or ongoing removals.

In an Irish context, negative emissions include natural sinks such as wetlands, soils or forestry where early action could ensure removals in the long-term, and potential technological options such as Bio-Energy with Carbon Capture and Storage (BECCS) and Direct Air Capture (DAC).

Some efforts have been made in the literature to downscale the global carbon budget to a national level, including for Ireland (also see discussion below).³ However, there is contention over the appropriate methodology to employ in this regard and how to take account of scientific uncertainty. A working paper commissioned by the Council (Frame

³ Glynn, J., Gargiulo, M., Chiodi, A., Deane, P., Rogan F., Ó Gallachóir, B., 2019. Zero carbon energy system pathways for Ireland consistent with the Paris Agreement. *Climate Policy* 19:1, 30-42. Available at: <https://www.tandfonline.com/doi/pdf/10.1080/14693062.2018.1464893> and <https://calculator.climateequityreference.org>

(2019)) suggests that explicit alignment of national targets to a downscaled global budget may be inappropriate in a policy context. When undertaking a review of appropriateness of a national budget, actions by other countries which impact the remaining global budget would introduce an element of uncertainty to national action. The revision of the global budget could change the domestic target, even where domestic actions have been successful, and may lead to setting revised levels of ambition that are unachievable. Therefore, while consideration of the global carbon budget is important, the national target or budget should not be automatically linked.

Experience with Carbon Budgets

Implementing carbon budgets in a policy environment and legislating for carbon budgets is a relatively new phenomenon in some respects. The UK was the first government to explicitly introduce carbon budgets in legislation via the Climate Change Act 2008. The French government legislated for carbon budgets via the Energy Transition for Green Growth Act (Loi relative à la transition énergétique pour la croissance verte – LTECV) in 2015. The New Zealand government has introduced a Zero Carbon bill (an amendment to existing climate legislation) to legislate for carbon budgets among other changes.

UK Climate Change Act 2008

The Climate Change Act 2008 is the basis for the UK's approach to tackling and responding to climate change. It requires that emissions of carbon dioxide and other greenhouse gases are reduced and that climate change risks are prepared for. The Act also establishes the framework to deliver on these requirements.

The Climate Change Act commits the UK government by law to reducing greenhouse gas emissions by at least 100% of 1990 levels (net zero) by 2050. This includes reducing emissions from the devolved administrations (Scotland, Wales and Northern Ireland), which currently account for about 20% of the UK's emissions. The 100% target was based on advice from the CCC's 2019 report, 'Net Zero – The UK's contribution to stopping global warming'.

The Climate Change Act requires the government to set legally-binding 'carbon budgets' to act as stepping stones towards the 2050 target. Each carbon budget is a cap on the amount of greenhouse gases emitted in the UK over a five-year period. Budgets must be set at least



12 years in advance to allow policy-makers, businesses and individuals enough time to prepare.

The CCC advises the Minister on the appropriate level of each 5-year carbon budget. The budgets are designed to reflect a cost-effective way of achieving the UK's long-term climate change objectives. The Minister then sets the budget via secondary legislation. If the legislated budget is different from that recommended by the CCC, the Minister must also publish a statement setting out the reasons for that decision. The first five carbon budgets have been put into legislation and run up to 2032. Once a carbon budget has been set, the Climate Change Act places an obligation on the Government to prepare policies to ensure the budget is met.

The CCC was set up to ensure emissions targets are set based on expert independent assessment of the evidence and to monitor the UK's progress towards meeting the targets. The Committee must:

- Advise the government on the appropriate level for emissions targets and how these can be met.
- Report to Parliament on progress made in reducing greenhouse gas emissions and the further progress needed to meet future targets.
- Publish its advice and reasons for that advice.

French Energy Transition for Green Growth Act 2015

The French Energy Transition for Green Growth Act 2015 (Loi relative à la Transition Énergétique pour la Croissance Verte – LTECV) is a vast legal document incorporating not only matters relating to climate change mitigation, but general policy pathways towards low-carbon economic development. These provisions range from compliance and reporting mechanisms, to a carbon-pricing trajectory, to detailed methods of governance, to green innovation incentives and retro-fitting subsidies. The Act contains a variety of targets with an overarching 2050 mitigation target, updated in 2017, of carbon neutrality or net zero emissions by 2050 across all greenhouse gases (from the original target which was a 75% reduction compared to 1990 by 2050).

An important part of the Act's governance framework is a system of 5-year carbon budgets set within National Low Carbon Strategies (SNBC). The first three 5-year budgets were adopted by decree at the same time as the first National Low-Carbon Strategy (SNBC)



(Decree No. 2015-1491 of 18 November 2015). The SNBC and carbon budgets are legally binding for the public sector, mainly through a requirement to take them into account which can be subject to judicial scrutiny.

The budget levels are laid out by the Ministry in the SNBC every five years such that the budgets are always in place at least ten years in advance. This enhances certainty for medium to long term planning. The SNBC details the actions to be taken towards a low-carbon economy and covers both energy and non-energy sectors. The emission reduction trajectory consistent with achieving carbon neutrality by 2050 is broken down for all economic sectors. While the budgets cover all gases and sectors, emissions associated with forestry and landuse are excluded from their scope up to and including the 2024-2028 budget period. This may be related to EU 2030 mitigation targets which do not include forestry and landuse.⁴

The LTECV imposes a legal obligation on the government to achieve emission reductions, diversify energy and enshrines into law France's national contribution to the global fight against climate change (LTECV, 2015). A system of regular review and reporting obligations is also incorporated in the governance structure of the LTECV with carbon budgets being revised every five years, plus regular revisions of the individual implementation decrees. The government must present progress reports to the parliament on an annual basis. These reports must detail the state's public expenditure on climate policy and the overall financing of the energy transition (which also includes an evaluation of private financial resources being invested). It also assesses whether these resources are sufficient to reach the LTECV's objectives (IEA, 2017).

The French High Council on Climate; le Haut Conseil pour le Climat (HCC) is an independent body created by decree in May 2019 and charged with issuing advice and recommendations on the implementation of public policies and measures to reduce France's greenhouse gas emissions. It is intended to provide independent insight into government climate policy. Each year the HCC provides a consultative report on the greenhouse gas emissions reduction trajectory and the performance of policies and measures. Every five years it provides advice on the government's draft SNBC and proposed carbon budgets and their consistency with international, EU and domestic targets and obligations.

⁴ However France does have access to 58.2Mt of AFOLU flexibility mechanism in the EU Effort Sharing Regulation.



New Zealand Zero Carbon Amendment Bill (2019)

The New Zealand Government this month (November 2019) passed a Zero Carbon Amendment Act. The purpose of the amendment bill is to provide a framework by which New Zealand can develop and implement clear and stable climate change policies that contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels.

The Act has four main operative elements;

1. A new greenhouse gas emissions reduction target to:
 - reduce all greenhouse gases (except biogenic methane) to net zero by 2050
 - reduce emissions of biogenic methane within the range of 24–47 per cent below 2017 levels by 2050 including to 10 per cent below 2017 levels by 2030.
2. A system of emissions budgets to act as stepping stones towards the long-term target
3. It requires the Government to develop and implement policies for climate change adaptation and mitigation.
4. A new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals.

The New Zealand Climate Change Commission (NZCCC) will recommend/advise quantified 5-year carbon budgets to the Minister which may then be accepted or rejected by the Minister. The Commission will specify in its advice, the expected role of different sectors and different gases in meeting the budget and also the role of sinks and international offsets. At the time when the Minister sets and officially notifies the budget, the Minister must prepare a written response to the Commission that is presented to the House of Representatives. If the Minister has not accepted the advice of the Commission the response must outline the reasons why.

Commonalities and Differences

The UK, France and New Zealand each have provisions specifying 5-year budgets that are set at least 10 years in advance. In each of the three countries, the setting of budgets every five years does not require primary legislation but it does involve some form of secondary



legislation. In the initial year of enactment, the first three 5-year budgets are set, and then every five years thereafter, a subsequent 5-year budget is set. This enables more detailed medium term planning. Each of the countries has also legislated for a quantified 2050 target that guides the setting of interim carbon budgets and also allows long-term policy and infrastructure planning.

Each of the three countries has an independent advisory body that reviews greenhouse gas emissions trajectories and performance against targets, goals and budgets. In the UK and New Zealand these bodies have a role in proposing the budget to the Minister or Government. Thus the legislation has something to say about what needs to be taken into account by those bodies in identifying and proposing budgets. In France, the HCC does not have a role in proposing budgets which are set internally by the Ministry for Ecology and Inclusive Transition but rather comments or provides advice on the draft budgets proposed by the Ministry. The French law does not specify what needs to inform the setting of budgets.

Each of the three countries allows sinks to be counted towards meeting budgets. Each of the three countries includes all GHGs in the carbon budgets (even New Zealand which has separate 2050 targets). Each of the three countries makes provision for banking and borrowing between budget periods. Banking is allowed without restriction while borrowing is subject to limitation (e.g. less than 1% of emissions of that later budgetary period). Each of the three countries makes provision for the use of international mitigation (offsetting or traded units) to count towards meeting carbon budgets but with limitations. In the UK legislation, it is up to the Secretary of State to specify the limits on their use. In New Zealand, budgets must be met in so far as possible through domestic emissions reduction and domestic sinks but the NZCCC can also advise if they anticipate that an amount of international units are required to meet budgets.

In regards to the role of an advisory body in proposing carbon budgets; the New Zealand Commission on Climate Change has been tasked with more detailed requirements than the UK Committee on Climate Change.

Performance and Budgets

In the UK, since the Climate Change Act came into force, greenhouse gas emissions have been falling and the first two carbon budgets legislated by the government were met comfortably. The first and second carbon budgets were overachieved by 36 MtCO₂e (1%)

and 384 MtCO₂e (14%), respectively⁵. Analysis for the CCC found that the financial crisis and a change in the EU ETS emissions accounting for the UK share of the cap drove compliance with the budget rather than successful transformatory policies⁶.

In France, the 1st carbon budget set in 2015 and covering the period 2015-2018 was exceeded, by 62MtCO₂e. The HCC found that at the national level, the SNBC is isolated and is marginally operational. The first SNBC failed to meet the first carbon budget that France set itself. In legal terms, the SNBC is only binding for multi-year energy planning (PPE), which limits its structural effects for the development of other laws and programmes, thereby limiting its impact. The current framework is legally and politically too weak to move France towards carbon neutrality by 2050.⁷

There is limited research to indicate whether the implementation of carbon budgets in a legislative framework actually delivers improved mitigation performance. However, it has been demonstrated to increase the confidence of decision makers and policy makers in developing long-term plans and investments. It demonstrably has added to public scrutiny and transparency of mitigation policy implementation.

EU Targets and Trajectories

While not framed in these terms, the Effort Sharing Regulation (and similarly previously the Effort Sharing Decision) has the same effect as a carbon budget because, not only is an end point target defined for 2030 but emissions limits (annual emission allocations) for each year up to 2030 have been set with provision made for banking and borrowing between years. The annual emission allocations for the period to 2030 essentially define a GHG budget for the period.

The European Council has previously agreed a goal of an 80-95% cut in emissions by 2050. The EU Commission recently adopted a vision of 'A Clean Planet for all; A European strategic long-term vision for a prosperous, modern, competitive and climate neutral economy' with net zero GHG emissions by 2050. This is part of an effort to bring EU climate ambition in line with the goals of the Paris Agreement and efforts to limit the temperature increase to 1.5°C. This vision has yet to be adopted by the Member States but was supported by many. The Commission has developed an emissions pathway for Europe to

⁵ <https://www.theccc.org.uk/wp-content/uploads/2019/07/CCC-2019-Progress-in-reducing-UK-emissions.pdf>

⁶ <https://www.theccc.org.uk/wp-content/uploads/2019/07/How-the-UK-met-its-carbon-budgets.pdf>

⁷ https://www.hautconseilclimat.fr/wp-content/uploads/2019/09/hcc_rapport_annuel_2019-english.pdf



net zero emissions that demonstrates its feasibility. The analysis of how this would be shared across Member States and the paths appropriate for the respective Member States has not been developed.

Long-lived and Short-lived Greenhouse Gases

In order to meet the Paris Goals, the global mean surface temperature (GMST) will have to stabilise at a level well below 2C. To achieve stabilisation, two things must happen. First, the amount of, and therefore the warming from, CO₂ in the atmosphere will have to stabilise. For this to happen, CO₂ emissions will have to be net-zero, because CO₂ emissions are cumulative. If we overshoot the temperature target, we would have to take action to remove CO₂ from the atmosphere (or equivalent) to then bring temperature back below 2°C.

Second, non-CO₂ pollutants will also have to stabilise in the atmosphere. For long-lived pollutants such as N₂O, this will mean reducing emissions to net-zero as well. At present, we do not have the technological solutions to eliminate all N₂O emissions. Therefore, this is likely to mean offsetting of any residual N₂O emissions that cannot be eliminated by removal of CO₂ from the atmosphere. Given the lifetime of N₂O is more than a century, the exchange of an emission of N₂O for a removal of CO₂ is straightforward when considering the relative impact on climate over the next 100 years. The amount of “equivalent” carbon dioxide that would need to be captured to offset the release of a tonne of nitrous oxide is relatively unambiguous, at about 265 tonnes, where 265 is the “100-year Global Warming Potential” (GWP₁₀₀) of nitrous oxide⁸ (note that there are significant co-benefits to deployment of measures to reduce nitrous oxide as this can reduce harmful emissions of reactive nitrogen to air and water).

Due to its 12-year lifetime, in order to stabilise methane concentrations in the atmosphere, net-zero emissions are not required. This is because methane is destroyed in the atmosphere on relatively short timescales. Reducing the rate of methane emissions would cause the concentration of methane in the atmosphere to decline over the following decades.

⁸ Myhre, G., et al., 2013: Anthropogenic and Natural Radiative Forcing. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the IPCC, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.



In New Zealand, initial discussion of the Zero Carbon Act revolved around treating the Kyoto basket of “all gases” in CO₂-equivalent form. Early discussions of how biogenic methane should be treated tended to be binary: either (Option 1) it should be left out entirely, or (Option 3) it must decline to net zero. As the distinction between long-lived greenhouse gases and short-lived greenhouse gases became more widely understood in the public discourse, the idea that there might be a scientifically-defensible perspective in the middle gained traction among policymakers, and the Ministry for Environment consultation document on the Zero Carbon Act presented an intermediate possibility: Option 2: to achieve net zero for long-lived greenhouse gases and to stabilise emissions of short-lived greenhouse gases. The decision to proceed with option 2 brought all important stakeholders on board with a net zero target for long-lived greenhouse gases and opened a conversation for how best to treat short lived greenhouse gases. This was considered a key element that enabled bipartisan support for the final Zero Carbon Act including a net zero target for all greenhouse gases and a 24-47% reduction target for biogenic methane.

Climate Justice and Carbon Budgets

The Climate Action and Low Carbon Development Act 2015⁹ states that national mitigation plan and the national adaptation framework should have regard to climate justice (Article 3(2)). In the context of carbon budgeting, the climate justice challenge is to:

- a) set a carbon budget that protects the climate system and humanity;
- b) to share this budget fairly between people, countries and generations and
- c) to do so in a way that does not exacerbate poverty or undermine human rights.

Climate justice is captured in the Paris Agreement through direct references to climate justice as well as an emphasis on equity, human rights, gender equality and intergenerational justice. The long-term goals and objectives of the Paris Agreement, with reference to mitigation (the temperature goals and peaking of emissions as soon as possible with rapid reductions thereafter), adaptation and climate finance are considered to represent a climate-just approach on the international stage. Therefore, a national carbon budget that is aimed towards achieving a 2050 mitigation goal that is consistent with the Paris

⁹ <http://www.irishstatutebook.ie/eli/2015/act/46/enacted/en/pdf>



Agreement and requires immediate and rapid reductions could be considered to meet the criteria (a) and (b) of a climate just approach.

Participation contributes to the flow of information, to understanding and to climate justice and ultimately could make carbon budgets more tangible, acceptable and engaging to members of the public. While setting a carbon budget is often seen as a top down exercise at global or national level, it can also have a bottom up, local and participative dimension which can improve citizens support for climate action. In Ireland, the Citizens Assembly and the National Dialogue for Climate Action, provide potential platforms for public engagement on carbon budgets, informing decision making on their ambition, revision or implementation, enabling ownership, fairness and public acceptability.

In addition, awareness raising about what climate budgets are, why they are needed and how they drive climate policy can help to increase public support for climate action. This is another area where the National Dialogue on Climate Action could play a valuable role.

Other democratic processes such as the Joint Oireachtas Committee on Climate Action can also play a role in providing oversight of the carbon budget process and progress made, informed by reports from DCCAE, the EPA and the Climate Change Advisory Council. Cross party assessment of carbon budgets provides useful analysis for the public and decision makers alike. The UK experience has shown that independent oversight of carbon budgets is important to maintaining progress and meeting deadlines¹⁰.

The concept of just transition when applied to a carbon budget should consider sectors, regions, households, different income groups, genders, age profiles etc. to determine who may be negatively affected by restrictions on carbon and will therefore require measures to shield them from these impacts. A national assessment of vulnerability to both climate change and climate action (including a carbon budget) could inform climate just decision making by government.

Conclusions

¹⁰ Priestly, S. (2019) UK Carbon Budgets. Briefing paper. Number CBP7555, 9 July 2019. House of Commons Library. <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7555>



Long-term Target

Carbon budgets need to be directed towards a clear and quantified long-term goal. The legislated carbon budgets considered in this paper have each been coupled with a quantified emission reduction target for 2050. 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. The options for a legislated long-term goal would be as follows;

1. Legislate the existing national policy position, i.e.;
 - an aggregate reduction in carbon dioxide (CO₂) emissions of at least 80% (compared to 1990 levels) by 2050 across the electricity generation, built environment and transport sectors; and
 - in parallel, an approach to carbon neutrality in the agriculture and land-use sector, including forestry, which does not compromise capacity for sustainable food production.
2. Legislate for Net Zero GHG emissions by 2050
 - Reduce net GHG emissions by 100% on 1990 levels by 2050
3. Legislate for Net Zero GHG emissions excepting biogenic methane
 - reduce all greenhouse gases (except biogenic methane) to net zero by 2050
 - reduce emissions of biogenic methane by a quantified amount

The first option has the disadvantage that an approach to carbon neutrality in the agriculture and land-use sector has not yet been defined, thus reducing its value as a long-term goal and as a benchmark for performance, while the ambition is potentially not consistent with the Paris Agreement and efforts to limit climate change to 1.5 degrees. The second option has an increased level of ambition but the disadvantage of not recognising the consensus of the IPCC that the required pathway for biogenic methane to 2050 is different to that for the fossil fuel and industrial long-lived greenhouse gases. The third option has an increased level of ambition, and a different approach to biogenic methane that may be deemed scientifically robust – however some further work would be required to determine an appropriate target in an Irish context (the New Zealand target for biogenic methane is to reduce biogenic methane by 24-47% below 2017 levels by 2050, with a milestone 10% reduction by 2030).



Setting an appropriately ambitious quantified emissions reduction target to 2050 in Ireland consistent with the goals of the Paris Agreement, and also supporting EU ambition in the same regard would contribute significantly to addressing international and intergenerational aspects of climate justice.

Negative Emissions

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.

Greenhouse Gases and Changing Science

Carbon budgets should include all gases from all sectors, cognisant of any different net reduction targets applying to GHGs. 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 *ex ante* and in the case of significant change in understanding or circumstances. The reasons for this must be presented to the Oireachtas before they can take effect.

International Units/Credits or Offsetting

Existing EU and UN commitments for greenhouse gas emissions reductions allow to varying degrees, the use of flexible mechanisms, international traded units representing greenhouse gas emissions reductions abroad, towards compliance. 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. There are some options available;

- Allow use of traded units towards budget compliance and the 2050 target
- Allow limited use of traded units towards budget compliance and the 2050 target, with transparency regarding the same, possibly *ex ante* clarification
- Don't allow use of traded units



An overarching principle for the Council should be that the carbon budget for any given period should not *ex ante* be understood to require the use of traded units for compliance.

Banking and Borrowing

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. Approaches to borrowing differ.

1. Borrowing should only be allowed in a budget period to the extent that measures are undertaken in that period that bring about emissions removals in future periods (e.g. you can borrow emissions removals of forests planted today, or other carbon removal technologies).
2. Allow a maximum of 1% of a future budget period to be borrowed (you can only borrow from a 5-year period whose budget has already been fixed by the Minister).
3. Don't allow borrowing. Any significant change in circumstances can be addressed through a parliamentary process of budget level revision.

In circumstances where a great low carbon transformation is required across the economy and society, the wisdom of provisions for borrowing is less clear. The setting of budgets might be expected to already reflect discontinuous (or 'lumpy') reductions in emissions across time and across different sectors due to different rates of technology deployment. Therefore borrowing should not be routinely required and may require more scrutiny.

For Consideration in Developing Budgets

Both the UK and New Zealand legislate what the committee or commission should take in to account in advising on carbon budget levels. France does not specify what needs to inform the setting of carbon budgets. These are the two broad options. In advising on carbon budgets, the council could be required to take into account factors such as cost-effectiveness, feasibility, cumulative emissions, and the best available science. Or it is possible that the act should avoid being overly prescriptive as these may develop in time and in response to emerging issues.

Supporting Reasons

The New Zealand legislation is very prescriptive regarding the level of detail underlying the carbon budgets that the NZCCC should provide, whereas the UK legislation is quite high



level in this regard. In providing advice on carbon budgets, the Council should provide the reasons for the advice given and make this publicly available.

Review and Communications

The Act should make provision for reviewing performance against the budget with an official statement 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 official results are known and also on an annual basis. Currently the Council has to review performance against the long-term transition objective and against EU emissions targets. This would be a third category of performance that the Council would have to review. Therefore, it would be appropriate if the Council's communication requirements were streamlined to allow Council resources to focus on providing additional value.

Consultation

Public understanding and acceptance as well as civic engagement are key to success in climate policy. It is not the role of the Council to engage directly with the public but rather to advise Government in an expert capacity. But advice provided by the Council should be transparent and published online when it is made available to the Government. As above, in providing advice on carbon budgets, the Council should provide the reasons for the advice given and make this publicly available. It is the role of Government to engage with the public. The Council recommends serious thought be given to engaging with the Public.

There are different options for this;

- Public consultation by the Dept before the Minister sets the carbon budgets
- A requirement for the Minister to explain why if he does not accept Council advice
- More resources for public engagement through the National Dialogue or through further citizen assemblies etc.
- Consultation with Joint Oireachtas Committee on Climate Action

The increased opportunity for parliamentary scrutiny has been seen as an important feature of legislating for carbon budgets in other jurisdictions. Therefore thought should be given in an Irish context to opportunities for public or parliamentary scrutiny before secondary legislation to set a carbon budget is enacted. For example, the Minister could be required to



make a statement to the Oireachtas, if she/he has not or will not accept the advice of the Council in setting the budget.



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