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**14th April 2021**

To: **An Taoiseach  
Micheál Martin TD**

Government Buildings  
Merrion Street Upper  
Dublin 2

**An Tánaiste  
Leo Varadkar TD**

Department of  
Enterprise, Trade  
and Employment  
Kildare Street  
Dublin 2

**Minister  
Eamon Ryan TD**

Department of the  
Environment, Climate and  
Communications  
29-31 Adelaide Road  
Dublin 2

**Re: Climate Action and Low Carbon Development (Amendment) Bill 2021**

A Taoiseach, a Thánaiste agus a Aire,

We are active researchers in the domains of climate science, environmental law, and energy system decarbonisation, with substantial records of academic publication in these fields. We write to you now in relation to the draft Climate Action and Low Carbon Development (Amendment) Bill 2021 as agreed and published by the Government on the 23rd March 2021.

First, we would like to acknowledge that the Bill has benefited greatly from the pre-legislative scrutiny process of the Joint Oireachtas Committee on Climate Action. As now published, the Bill is a very considerable improvement over the preliminary draft released in October 2020. We want to congratulate you for your personal commitment and leadership in advancing the legislation to this key stage. The Bill represents a step change in recognition by the Irish state of the global climate and biodiversity emergency. It proposes fundamental improvements in the governance of Irish climate action. Central to this is the architecture of a rolling 15-year greenhouse gas *cumulative emissions budget programme*, informed by independent expert

advice, and transcending the terms of individual governments. This will provide the essential strategic framework for sustained long term climate action.

But it is against this background of strong support for the positive changes proposed in the Bill that we must write to express our serious concern about a central provision: namely the transposing into the Bill of the *near term* (2021-2030) emissions reduction commitment entered into by your three parties in the Programme for Government 2020. The decision to put this commitment on a statutory basis in the revised Bill, as recommended by the Joint Oireachtas Committee (recommendation 33), is a very important advance over the original draft. We welcome this *intention*, which has the potential to significantly strengthen near term policy effectiveness. However, having scrutinised the language in the Bill, proposing the insertion of a new subsection 6A(5) into the 2015 Climate Act, and having discussed this with many peers across scientific and legal disciplines, we have concluded that the current provision is fundamentally flawed, being at once uncertain in law and mistaken in science. While there are a number of other important issues arising from the Bill as drafted, we emphasise that in this letter we are focussing on this narrow question of **the failure of the proposed s.6A(5) to legally or scientifically place the commitment of the Programme for Government for the period 2021-2030 onto a secure statutory basis.**

The relevant Programme for Government commitment was expressed as follows:

*We are committed to an average 7% per annum reduction in overall greenhouse gas emissions from 2021 to 2030 (a 51% reduction over the decade) ...*

It is important to note that neither of the linked formulations in the Programme for Government (“average 7% per annum reduction” compounding to a “51% reduction over the decade” in annual emissions) is *directly* expressed in cumulative (multi-annual) emissions *budget* terms. Thus the transposition into a multi-annual budgeting framework was always going to require *some* translation into an equivalent cumulative emissions budget constraint. In the current Bill text, this is attempted by way of section 9, inserting a new s. 6A(5) into the 2015 Climate Act. This would impose an explicit obligation on the Climate Change Advisory Council, in bringing forward its proposals for the first emissions budget programme (covering 2021-2035 in three 5-year periods), as follows:

*The first 2 carbon budgets proposed by the Advisory Council shall provide for a reduction of 51% in the total amount of greenhouse gas emissions over the course of the first 2 budget periods ending on 31 December 2030, from the annual greenhouse gas emissions reported for the year ending on 31 December 2018, as set out in the national greenhouse gas emissions inventory prepared by the Agency.*

In our view, this provision is entirely lacking in legal certainty. Whilst its meaning is in our view unclear full stop, the provision is ambiguous between *at least* two entirely contradictory interpretations:

- A. That the cumulative emissions over the 10 year period (2021-2030) (“*the total amount...over the course*”) — i.e., the sum of the first two 5-year emissions budgets — must be at least 51% less than would have resulted from 10 years of continuing emissions at the 2018 level; or
- B. That the first two 5-year emissions budgets must be *somehow* premised on (“provide for”) a specific outcome for the *annual* emissions in the year 2030, namely that annual emissions in that year should be 51% of the annual emissions in 2018.

If enacted as it stands, s.6A(5) would place the Council in the most invidious position of being forced to settle on its own interpretation of this unclear legal provision, knowing that regardless of which choice it makes, its proposed budget programme would potentially be open to immediate legal challenge on the basis of this evident lack of clarity. This, in itself, represents a compelling reason to revise this drafting.

But the second, more fundamental, difficulty is that *neither* interpretation is *scientifically* well grounded; in the sense that *neither interpretation can be shown to be scientifically equivalent to the commitment expressed in the Programme for Government*. The central scientific concept here is that it is the cumulative amount of emissions over a period of time (a cumulative emissions budget) that, to a first approximation, determines the national contribution to further planetary warming. Thus, to test scientific equivalence we *have* to focus on the cumulative emissions budgets that would be associated with the (competing) interpretations of s.6A(5) and compare these with the budget that would be properly associated with the Programme for Government commitment. It is *only* in the case that they match that the Bill would have successfully transposed the Programme for Government intent: but unfortunately this test currently fails for *both* candidate interpretations.

To explain this briefly, we note that, of the two linked formulations included in the Programme for Government, it is the representative annual emissions *pathway* stipulation (“average 7% per annum reduction”) that directly yields an equivalent cumulative budget for the 10-year period. A detailed calculation of this is shown in the annex at the end of this letter. The calculation is carried out relative to a baseline of annual emissions for a given reference year, defining the annual emissions level before the first 7% reduction is applied. The representative pathway then shows annual emissions reducing by a year-on-year factor of 7% each year from 2021-2030, resulting in a compound reduction of 51% (strictly 51.6%) in *annual* emissions in 2030 relative to the baseline year. This shows that the (maximum) *cumulative* emissions over the 10 year period (2021-2030) that would still be consistent with the Programme for Government commitment, would be at least 31% (strictly 31.4%) less than would have resulted from 10 years of continuing emissions at the baseline annual level. Whereas, **interpretation A** stipulates, on its face, an entirely different reduction in this “total amount” of emissions over the 10 years, of 51%. It appears that (on this attempted interpretation) the Bill text has mistakenly conflated the (compound) reduction in *annual* emissions arising only in the final year of the period under consideration (c. 51%), with the reduction in *cumulative* emissions that would accrue over the full 10 year period (c. 31%).

Alternatively, we can consider **interpretation B** of the Bill. This may initially appear more plausible, in that the numeric 51% here *appears* to correctly echo the use of 51% in the Programme for Government. But this then presents an immediate problem in that the proposed s.6A(5) contains no wording linking the *annual* emissions level in 2018 to the *annual* emissions level in 2030. On the contrary, s.6A(5) instead speaks only in terms of “the total amount” of emissions over the first two 5-year budget periods. Thus, if interpretation B is indeed the Government’s intent, we cannot see how it could seriously be argued that the current drafting achieves the intended outcome. This problem arises directly from the attempt to detach the *end point* (compound 51% reduction in annual emissions) from the corresponding annualised emissions *pathway* (“average 7% per annum reduction”) that gives rise to that end point in the Programme for Government. Absent such a linked annualised pathway specification, the end-point annual emissions level (i.e., in 2030) *in itself* does not actually yield *any* formal constraint on the *cumulative* emissions over the 10-year period.

It is critical to note here that while the Council may itself *consider* alternative detailed annual emissions pathways in the course of arriving at its cumulative budget recommendations (the “budget programme”), such example annual pathways will not, in themselves, form any part of the Council’s *statutory carbon budget proposals*. Indeed, it is of the essence of the multi-year governance framework that the Council’s role in developing carbon budgets is *not* to propose what the emissions level should be in *any* single year, but only the cumulative emissions over successive 5-year periods. This allows for Government flexibility in *itself* selecting a desired pathway of annual emissions and in subsequently adjusting such an annual pathway on a dynamic basis (within the legislated terms of the overall carbon budget framework). Thus, it would be entirely incoherent to require the *Council*, in discharging the particular function addressed under s.6A(5), to “provide for” a particular emissions level in any particular year, as interpretation B would purport to do. In other words, under interpretation B, no matter what cumulative emissions budget programme the Council chose to propose, this would still be mathematically consistent with the supposed obligation in s.6A(5), which therefore would have no formal, demonstrable, effect. Whereas the whole point of s.6A(5) is, surely, to translate the Programme for Government commitment into a *secure, statutory, constraint* on the Council’s (first) budget programme proposals. Thus, again, s.6A(5) entirely fails to deliver the Programme for Government commitment.

We believe that these difficulties are fundamental, and run entirely contrary to your expressed intentions for the Bill. We strongly urge that they be addressed during passage of the Bill through the Oireachtas. Fortunately, this is comparatively straightforward. For example, the following redrafting of s.6A(5) is a possible formulation that is derived as directly as possible from the text in the Programme for Government:

**Option 1:** *The first 2 carbon budgets proposed by the Advisory Council shall provide for a total amount of greenhouse gas emissions over the course of the first 2 budget periods ending on 31 December 2030 that is no greater than the total amount of greenhouse emissions that would result from annual greenhouse emissions in 2021 being 7% below the baseline level, and annual*

*greenhouse gas emissions then reducing by a further 7% in each successive year of the period 2022-2030, such that annual emissions in 2030 would correspond to 51.6% of the baseline level. For the purpose of this subsection, “the baseline level” means the level of greenhouse gas emissions reported for the year ending on 31 December 2018, as set out in the national greenhouse gas emissions inventory prepared by the Agency.*

Alternatively, the following formulation would be scientifically exactly equivalent, but is derived as directly as possible from the existing Bill text:

**Option 2:** *The first 2 carbon budgets proposed by the Advisory Council shall provide for a total amount of greenhouse gas emissions over the course of the first 2 budget periods ending on 31 December 2030 that is at least 31.4% below the total amount that would result from constant annual greenhouse emissions over the same period at the level reported for the year ending on 31 December 2018, as set out in the national greenhouse gas emissions inventory prepared by the Agency.*

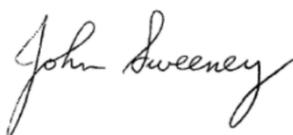
Either of these formulations would in our view be at once *legally certain* and *scientifically consistent* with the commitment in the Programme for Government. While other satisfactory formulations would also be possible, we believe that the above two options represent the most direct and legally secure approaches. Note that neither formulation purports to require the Council, in proposing the relevant carbon budgets, to propose (“provide for”) what the emissions level should be in any *single* year (2030 or otherwise). Further, both of the formulations above have the effect of setting only a *maximum* permissible budget for the first ten years, leaving the Advisory Council free to propose a smaller budget if it deems appropriate. This would give correct scientific force to deliver on the Joint Oireachtas Committee’s recommendation that the Bill should set a “minimum” interim target (recommendation 33).

Of course, we would be happy to provide more detailed analysis on request or address any further issues arising from this correspondence.

Le gach dea-ghuí,



**Barry McMullin**  
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Dublin City University



**John Sweeney**  
Maynooth University  
(emeritus)



**Andrew Jackson**  
Sutherland School of Law  
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# ANNEX

The table below shows a detailed calculation of the percentage reductions in emissions associated with the Programme for Government commitment, expressed in both annual and cumulative terms, for the period 2021-2030. For the purposes of calculation, overall greenhouse gas emissions in the baseline year (specified as 2018 in the draft Bill) are here assigned an index value of 100. The word “average” in the expression “average 7% per annum reduction” in the Programme for Government is here interpreted in the sense of “annualised percentage rate” (APR) which is the standard definition in compounding rate calculations: i.e., 7% per annum is the equivalent “average” (APR) rate corresponding to a “51% reduction over the decade” (in annual emissions). It is seen that the annual emissions rate in 2030 would in fact represent a reduction of **51.6%** compared to the baseline annual emissions; and the cumulative emissions over the period 2021-2030 would represent a reduction of **31.4%** compared to constant emissions at the baseline level over the full 10-year period.

	Annual		Cumulative	
	Amount	Reduction	Amount	Reduction
<b>Baseline</b>	100.0	0.0%		
<b>2021</b>	93.0	7.0%	93.0	7.0%
<b>2022</b>	86.5	13.5%	179.5	10.3%
<b>2023</b>	80.4	19.6%	259.9	13.4%
<b>2024</b>	74.8	25.2%	334.7	16.3%
<b>2025</b>	69.6	30.4%	404.3	19.1%
<b>2026</b>	64.7	35.3%	469.0	21.8%
<b>2027</b>	60.2	39.8%	529.2	24.4%
<b>2028</b>	56.0	44.0%	585.1	26.9%
<b>2029</b>	52.0	48.0%	637.2	29.2%
<b>2030</b>	48.4	51.6%	685.6	31.4%