



## Climate Change Advisory Council Meeting –Carbon Budgets Working Group

### Meeting 14

#### APPROVED MINUTES

**Date:** 23<sup>rd</sup> May 2024

**Start time:** 13:30

**Venue:** EPA offices, Clonskeagh and Video Conference Meeting

**Present:** In person: Kevin Hanrahan, Trevor Donnellan, John Fitzgerald, Emma Lynch, Brian Ó Gallachóir. On MS Teams: Hannah Daly, Stephen Treacy, Kian Mintz-Woo, Jeanne Moore, Mert Yakut, Niall McInerney, David Styles, James Moran, Oliver Geden, Colm Duffy

**Apologies:** Jim Scheer, Kelly de Bruin

**Observers:** Online: Jillian Mahon, Vahid Aryanpur (UCC), Bakytzhan Suleimenov (UCC), Sanchez Serratos (UG), Mayra Alejandra (UG), Andres Marinez Arce (UG)

**Secretariat:** In person: George Hussey, Meabh Gallagher, Kieran Craven; Phillip O'Brien, Claire Camilleri, Jodie Colgan. Online: Ciara Hilliard

**External presenters:** None

### 1. Opening of meeting

All were welcomed to the meeting.

#### 1.1. Adoption of Agenda

The agenda was adopted by the CBWG.

#### 1.2. Minutes for the Carbon Budgets Working Group Meeting

The minutes from the previous meeting were accepted by the CBWG.

### **1.3 Actions**

Five actions were discussed:

Action 15 on the clarification of role of the CBWG – the CBWG ToR and the role of the CBWG in terms of presenting a range of scenarios for Council to consider was reiterated to Council at their meeting on the 25<sup>th</sup> April. This action was proposed to close.

Action 16 relating to the discussion of feasibility of scenarios – (1) an accompanying descriptive narrative of the scenarios has been requested from the core modellers to inform (2) the scenario dialogue tool which will be developed to facilitate a collective narrative on impacts of modelled scenarios has been shared with the CBWG members. This action was proposed to close

Action 17 relating to delivery timelines for additional modellers – additional modelling teams have confirmed delivery of results on 28<sup>th</sup> June (Central Bank) and 25<sup>th</sup> July (SEAI and NTA). The Secretariat met CBWG economists (JF, ESRI, Central Bank) on the 14<sup>th</sup> May to discuss macroeconomic analysis. This action was proposed to close

Action 19 with regard to NTA modelling – a trilateral discussion with NTA, TIM and SEAI CBWG members has been scheduled for 27<sup>th</sup> May. This action will remain open.

Action 21 in relation to in-person meetings – a poll was issued to CBWG members on 23 April gathering responses in relation to the July and August CBWG meeting. Preference indicated for in person attendance at a central Dublin location. This action was proposed to close.

There were no objections to actions being closed.

## **2. Presentation of the 2<sup>nd</sup> iteration of Core Modelling Results**

Presentations were made from the three institutions that conducted the second iteration of modelling for the Carbon Budget Programme using the three core models.

KH from Teagasc presented on FAPRI modelled results. For the 2<sup>nd</sup> iteration, results were modelled out to a 2050 horizon (beyond the 10 year horizon that has normally been modelled by FAPRI). The modelling team acknowledged the request from the CCAC to incorporate a range of MACC measure uptake rates for this iteration. However, progress on this range of mitigation measure uptake rates has not been possible due to unforeseen resource limitations. Three scenarios out to 2050 have been completed, with six additional scenarios currently incomplete due to these resource limitations. During the presentation the modelling assumptions and inputs were outlined, including the limitations of extending modelling to 2050. It was highlighted that model results should be considered possible future scenarios and not forecasts, with high levels of uncertainty associated with mitigation measures, increasing with time horizon. The importance of the spatial distribution of agricultural type was noted along with impacts of mitigation measures to cattle numbers and fertiliser use, together with implications for land-use change. The uncertainties of the modelling with regard to MACC measure adoption rates were stressed, with the need for policy action, advisory supports and industry-consumer support to increase adoption rates.

Following the presentations discussions included model assumptions, the efficacy of technical measures, adherence of modelled emissions to sectoral emission ceilings, the costs of carbon abatement, drivers of fertiliser demand, sheep numbers, and impacts to agricultural activity levels.

HD from UCC presented on TIM modelled results. Following the 1<sup>st</sup> iteration of modelling, requests from the CCAC were included in the updated model results, with an increased number of carbon budget scenarios modelled. The modelling team has also engaged with SEAI, NTA and the All Island Climate & Biodiversity Research Network to refine model assumptions and inputs. In addition to the 315Mt and 400Mt carbon budgets modelled for the first iteration, new scenarios have been modelled for 250Mt, 350Mt and 450Mt. During the presentation model assumptions and inputs were outlined. Limitations to the model outputs were highlighted. Implications to the electricity grid for transmission and distribution were noted. The need for all modelled pathways to rely on carbon dioxide removal (CDR) technologies to remain within existing carbon budgets was highlighted. A preliminary comparison of modelled results with indicative 2040 EU proposed targets was made. The main conclusions were outlined including implications for the timing of fossil fuel phaseout, BECCS deployment, bioenergy applications, and requirement of CDR to address early carbon budget overshoots, and land use implications. Ongoing and future modelling work was outlined.

Following the presentations discussions included the assumptions for transport activity levels in modelling, energy consumption levels, the application of EU proposed targets, and CDR methodologies. The land and sea area requirements for energy production and transmission were raised along with conversion pathways of wood to biogas. The timelines for transition to a net-zero power system were highlighted along with implications of behavioural change and supply chain constraints. The cost of carbon abatement was raised, along with mitigation of emissions from cement production.

DS from University of Galway presented on GOBLIN modelled results. The modelling approach, assumptions and inputs were outlined with the rationale for modelled scenarios. Scenarios for varying agriculture emission reductions (30-60%) for agriculture were modelled, along with varying activity levels for agricultural practices and CDR and Carbon Capture and Storage (CCS). Emissions of modelled scenarios were presented, with no modelled scenario reaching net zero by 2050, even with the inclusion of CCS. The importance of long term policy thinking in the agricultural sector was highlighted with the difficulty for AFOLU of reaching net zero based on GWP100 was stressed.

Following the presentations discussions included land use inputs and assumptions, dairy cost assumptions and age of slaughter of livestock. The importance of the communication of biodiversity impacts of land use change was raised along with forestry targets and diseases, fertiliser application, and carbon savings from BECCS.

Following the discussion VA, BS, SS, MA and AMA left the meeting.

### **3. Carbon Budgets Work Plan**

The work plan was shared with the working group focussing on the temperature analysis of scenarios from the 2<sup>nd</sup> iteration of modelling due in June. The analysis of warming impacts of these by Joe Wheatley, and COSMO macroeconomic modelling results are due 28<sup>th</sup> June, with additional testing of scenario results (SEAI and NTA) due 25<sup>th</sup> July.

In July, SEAI and NTA are due to present their additional analysis results on both the 1<sup>st</sup> and 2<sup>nd</sup> iterations of modelling. There will be a follow-on discussion on biodiversity considerations by JM, and a follow-on discussion on CDR and Carbon Budgets by OG.

The meeting schedule was presented with the short number of remaining meetings highlighted. Prioritisation of in-person attendance at the July and August meeting was proposed by the Secretariat, with locations suggested in Dublin, Cork and Galway, and the potential for existing times of meetings possible to change. The results from the poll indicate a preference for a Dublin city centre location for those able to attend in-person.

#### **4. Next Steps and Agenda for next meeting**

The Core modelling teams should submit their results in line with Joe Wheatley's template by Friday 24<sup>th</sup> May. The June meeting will include a presentation of the temperature analysis by Joe Wheatley for this 2<sup>nd</sup> iteration of modelling, the COSMO macroeconomic modelling results by NMI, and a briefing paper on aviation and maritime emissions by the Secretariat. In an extended agenda, SEAI will return to present their final results from DESS.

#### **5. AOB**

JM's membership of the CBWG was approved by Council on Thursday 25<sup>th</sup> April and he was welcomed to the group as a full member.

It was noted that the agreement of inputs for the 3<sup>rd</sup> iteration of modelling is currently scheduled for the July meeting. It was raised by CBWG members that depending on the level of requests from the CCAC for inclusion in this round of modelling, this could be a challenging timeline to achieve.

All contributors were thanked for continuing positive engagement.

## 6. CB WG Actions Log

Action Number	Date Raised	Description	Owner	Due	Status
15	29/02/24	Request for clarification on the role of the CBWG in terms of presenting a range of scenarios for Council consideration as opposed to proposing a particular feasible pathway.	CCAC Secretariat	April 2024	Closed  CBWG referred to ToR of the group. ToR of the CBWG was raised with CCAC at their April meeting.
16	29/02/24	Request for a more detailed discussion within the CBWG on the practical technical feasibility of various scenarios	CBWG Members	April 2024	Closed  Accompanying descriptive narrative requested from core modelling teams. Scenario dialogue developed to facilitate collective narrative on impacts of scenarios based on feedback from all CBWG members
17	29/02/24	Core and additional modelling teams to confirm delivery timelines for the 2 <sup>nd</sup> iteration of modelling and analysis in line with Carbon Budgets Workplan	CBWG Members	Mar 2024	Closed  Email correspondence with modelling groups. Bilateral meetings to held with additional modelling teams.  The Secretariat and CBWG economists (JF, ESRI, Central Bank) met on 14 May.
19	22/03/24	Secretariat to schedule trilateral discussion with	Secretariat	Apr 2024	Open

		NTA, TIM and SEAI CBWG members.			Trilateral discussion scheduled for 27 <sup>th</sup> May
21	22/03/24	Secretariat to issue a poll to hold an in-person meeting in an alternative location	Secretariat	May 2024	Closed  Poll in relation to July and August meetings issued on 23 April