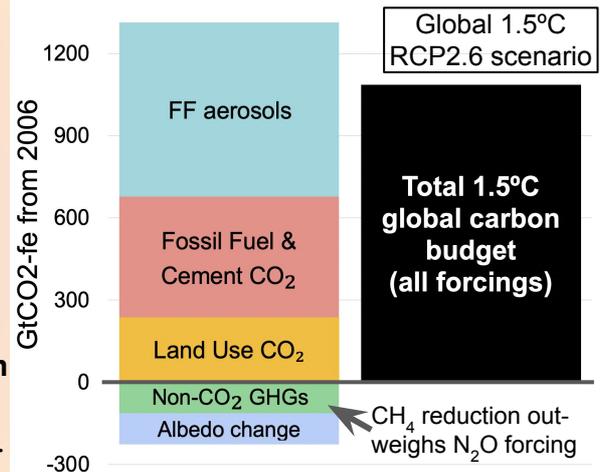


What is Ireland's "Fair Contribution" to Global Climate Action?

In **2015**, all Parties to the **Paris Agreement**, including Ireland, agreed to take action to hold the human-caused (anthropogenic) increase in global average surface temperature rise to the risk limits of **'well below 2°C'** above pre-industrial levels, while also 'pursuing efforts to limit the temperature increase to **1.5°C'**. Under the agreement, global and national **climate action** should be achieved 'in accordance with best available **science**', and 'on the basis of **equity**'.

Global heating is linearly related to cumulative emissions of carbon dioxide (CO₂).

Global heating is also linearly related to "CO₂ forcing- or warming- equivalent" emissions, summing all climate forcings including non-CO₂ greenhouse gases, methane (CH₄) and nitrous oxide (N₂O), and the cooling effect due to fossil fuel aerosol pollutants. Therefore, for a given probability of limiting to a given temperature rise from a reference year a **remaining global carbon budget (rGCB)** can be estimated in CO₂-only or multi-forcing warming equivalent (CO₂-we) terms.



Remaining global carbon budgets (rGCB) from 2015 in gigatonnes

1.5°C CO₂-only with 67%-50%-33% chance: 880-650-440 GtCO₂

1.5°C CO₂+N₂O+CH₄: 560-770 GtCO₂we; "well below 2°C" 840-1250 GtCO₂we

Downscaling from a global carbon budget to a **national emissions quota** that represents a "fair share" of global climate action requires values-based allocation among nations. This falls outside of physical science determination for which there is no existing international agreement. A common base year is important as it affects equity; choosing a later year is inherently inequitable in favour of higher emitting nations. 2015 may be latest possible equitable year.

IRELAND remaining national carbon quota (NCQ) from 2015 in megatonnes

Equal allocation among nations indexed to 2015 share of global population

CO₂-only: 1.5°C 50% chance **410 MtCO₂** (depleted by 215 MtCO₂, 2015 to end 2019)

CO₂+N₂O+CH₄: 1.5°C **560-770 MtCO₂we** (depleted by 233 MtCO₂we, 2015 to end 2019)

Overshoot of Ireland's 1.5°C and well below 2°C NCQ values is imminent, even with radical effort. For climate action consistent with the Paris Agreement, in addition to rapid reduction of all GHGs to first achieve **net zero** climate neutrality carbon budget will then require **net negative emissions** (warming reduction), achieved by carbon dioxide removal (CDR) and/or by sustained and substantial reductions in annual methane emissions.

Ireland's initial carbon budgeting programme: To show it is aligned with a fair share pathway to meeting the Paris temperature targets the proposed three consecutive 5-year carbon budgets would need to explicitly to show how the sum of cumulative GHG (CO₂we) emissions (including stating negative emissions) is consistent with the long-term goal. CO₂ and N₂O emissions need to reach net zero to stop further warming contribution. Cutting CH₄ provides a fast-acting policy lever to limit overshoot and limit need for CDR.

1.5°C Special Report Intergovernmental Panel on Climate Change (2018)

There are clear benefits to keeping warming to 1.5°C rather than 2°C or higher.

Every bit of warming matters. Limiting warming to 1.5°C can go hand in hand the Sustainable Development Agenda. **Every year matters. Every choice matters.**