

Title **Reframing Climate Change: from long-term targets to emission pathways**

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Abstract

The 2007 UN Bali and 2009 Copenhagen Climate Change conferences heard repeated calls for reductions in global greenhouse gas emissions of 50% by 2050 to avoid exceeding the 2°C threshold between *acceptable* and *dangerous* climate change. Whilst such end-point targets dominate the policy agenda, they do not, in isolation, have a scientific basis and are likely to lead to seriously misguided policies with regards to both reducing emissions and adapting to rising temperatures. To be scientifically credible, climate change policies must be informed by an understanding of cumulative emissions and associated emission pathways.

This presentation based on a recent paper (<http://journals.royalsociety.org/content/a7877169j7163rh2/>) builds on the carbon budget and pathway approach to demonstrate the urgency and scale of the reversal in emission trends necessary for stabilisation at 450ppmv CO₂e (i.e. a 50% chance of not exceeding 2°C). It goes on to suggest that such dramatic changes are unlikely to be forthcoming from the framing of current climate negotiations. Moreover, it argues that the mainstream climate change agenda is far removed from the rates of mitigation necessary to stabilise at 550ppmv CO₂e (3°C) and even an optimistic interpretation suggests stabilisation much below 650ppmv CO₂e (4°) is improbable. These findings have stark repercussions for mitigation and adaptation policies and raise serious questions as to whether the current global economic orthodoxy is sufficiently resilient to absorb the scale of challenge faced. The presentation concludes that unless economic growth can be reconciled with unprecedented rates of decarbonisation (in excess of 6% per year), it is difficult to envisage anything other than an interim contraction of the economy, for OECD nations in particular, being compatible with stabilisation at or below 650ppmv CO₂e.

Ultimately, the presentation makes clear that the latest scientific understanding of climate change allied with current emission trends and a commitment to 'limiting average global temperature increases to even 4°C above pre-industrial levels', demands a radical reframing of the climate change agenda with potential repercussions for the viability of contemporary society.