



2023-IP09

IEA Report

## Credible Pathways to 1.5°C Four Pillars for Action in the 2020s

In April, the IEA published its report entitled '[Credible Pathways to 1.5°C: Four Pillars for Action in the 2020s](#)'.

With global energy-related CO<sub>2</sub> emissions still rising, reaching an all-time high in 2022 of 36.8 Gt, 1.5°C was becoming an increasingly challenging target. Current policy settings were projecting a trajectory that would see warming of about 2.5°C in 2100. Even if countries were to implement in full and on time their nationally determined contributions (NDCs) and net zero pledges, as well as sectoral pledges such as the Global Methane Pledge and the Glasgow Leaders' Declaration on Forests and Land Use, the world would still see warming of around 1.7°C by 2100 – so still adrift of the 1.5°C target, above which, in its AR6 [Summary for Policymakers](#), the IPCC highlighted significant risks to ecosystems and humans.

Urgent action was therefore required if a rise to 1.5°C by 2100 were to remain on the table. In response to this challenge, the IEA has highlighted critical areas where **accelerated action in the current decade** can preserve a credible chance of achieving this. Actions are structured around four key pillars:

- **Net zero CO<sub>2</sub> emissions from energy by 2050.** Without steep and immediate reductions in energy-related CO<sub>2</sub> emissions, limiting warming to 1.5°C is just not plausible. Decarbonising electricity, accelerating energy efficiency and electrification are fundamental to this goal. Scaling up the deployment of clean electricity is critical, which includes renewables, nuclear power, **fossil fuel power plants with CCUS** and plants firing hydrogen and ammonia. In fact, **CCUS** is described as **critical for the energy sector to reach net zero**.
- **Reducing deforestation.** In addition to reducing deforestation to net zero by 2030, most of the additional abatement must come from improved management of existing forests, reduction of agricultural non-CO<sub>2</sub> emissions, and measures related to other land use changes, such as the establishment of forest plantations.
- **Mitigation of non-CO<sub>2</sub> emissions.** The rapid reduction in emissions of GHGs other than CO<sub>2</sub> are required if warming is to be limited to 1.5°C. These reductions, particularly of methane, have a huge impact on global temperatures in the short term. Cutting them quickly can limit the duration and magnitude of the temperature overshoot above 1.5°C.
- **Carbon management.** Carbon management refers to technologies and processes enabling the capture, use and storage of carbon, both from point sources and from the atmosphere. **CCS, CCU and CDR technologies are fundamental to this pillar.** Even in a low overshoot in temperature, CCS and CDR technologies will be required to mitigate and compensate the hard-to-abate residual emissions.

In summary, a credible pathway to achieving the 1.5°C goal needs strong, immediate action on each of these four pillars. To deliver immediate and rapid emissions reductions, strong contributions from all countries will be required, especially advanced and major economies.

The Major Economies Forum on Energy and Climate Change (MEF), a major international event addressing energy and climate, was convened by President Biden on 20 April to galvanise efforts



needed during the current decade to stem the climate crisis by keeping a 1.5°C limit on warming within reach. At the MEF, President Biden invited all leaders to join the United States in a new **Carbon Management Challenge**, with the goal of developing strong pipelines and critical projects **by 2030**. He also made several important [policy announcements](#) to global leaders in support of the IEA's four pillars, which have been widely applauded in the wider press and the energy community.

A [blog](#) entitled 'Biden announces new Carbon Management Challenge on CCUS and CDR for COP28' has been published by IEAGHG.

Keith Burnard

May 2023