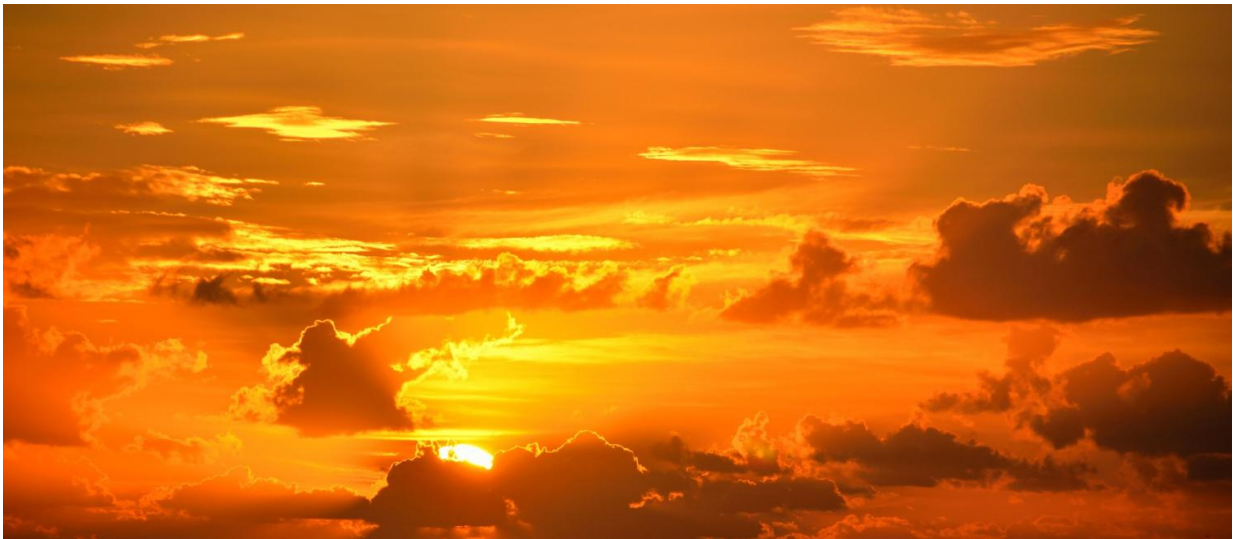


Climate change reassessment prompts call for a 'more sober' discourse

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An international research team has called for a more sober discourse around climate change prospects, following an extensive reassessment of climate change's progress and its mitigation.

They argue that [climate](#) change models have understated potential warming's speed and runaway potential, while the models that relate [climate science](#) to consequences, choices and policies have understated the scope for practical mitigation against it. Policymakers are becoming aware of the former bias but seldom perceive the latter.

Their study is published today in *Environmental Research Letters*. Lead and corresponding author Dr. Amory Lovins, from Rocky Mountain Institute, Colorado, said: "The IPCC's 2018 Special Report is a stark and bracing reminder of climate threats. We know focussed and [urgent action](#) to combat climate change is still essential. But our findings show that both despair and complacency are equally unwarranted.

"We found that, while climate change models have understated potential warming, the models used to guide policy makers have understated the scope for practical, let alone profitable, mitigation against it.

"Indeed, since 2010, and despite the past three years' disappointing slowdown in [energy savings](#), global decarbonisation has accelerated to trend on course (averaged over the past three years) to achieve the Paris 2 C target. Large gains from [energy](#) efficiency have been underemphasized and modern renewable heat—decarbonising about as much as solar power plus windpower—has generally been overlooked altogether."

Co-author Professor Daniel Kammen, from the University of California, Berkeley, USA, said: "We find that the actual rate of decarbonisation in the [global economy](#) is significantly higher than is used in many baseline assessments of technological change. No single climate action can be sufficient to meet national climate goals, but rapid gains in energy efficiency uniquely enable economy-wide transitions to a low-carbon system that make achieving the Paris Climate Goals possible, if we take aggressive actions across all sectors of the economy."

The researchers found that recent developments in energy markets and analyses could open new prospects for the achievability, social/economic acceptability, and economic attractiveness of the climate targets in the Paris Agreement, including its aspirational 1.5 C target. Professor Kammen said: "These developments include the recent uptake of

renewable energy, which has been dynamic but also unexpected.

"What we need now is a renewed and coordinated effort to represent these developments in influential global climate and energy systems models. Doing so is critical to saving trillions of dollars, while achieving stringent climate mitigation outcomes."

The study notes that recent progress in and future potential for advanced end-use energy efficiency has also been overlooked.

Professor Diana Ürge-Vorsatz, from Central European University, Hungary, is Vice Chair of IPCC Working Group III and a co-author of the study. She said: "These two classes of resources have already shrunk the gap between pre-2010 implementation rates and those needed to achieve targets indicated by the climate modeling literature. Many models, using 'historic' trends, consider 1.5-2.0 per cent per year drops in primary energy intensity to be ambitious. However, the 2010-18 rate averaged 2.03 per cent per year, even reaching 2.7 per cent per year in 2015, and could rise further.

"Reduced primary energy intensity, plus an increased share of decarbonized final supply, have lately matched the sustained 3.4 per cent per year that IPCC AR5 found necessary for a 2 C trajectory.

Together they are only half of, but trending toward, the sustained 6.7 per cent per year needed for 1.5 C."The study recommends some new approaches for future modelling. It argues the need to reconsider reliance on pre-2011 energy data, and to better understand and apply modern energy efficiency options from advanced practitioners and their engineering-based literature.

It notes there is also an opportunity to acknowledge, study, test, and if warranted apply high-quality work from other disciplines.

Lead author Dr. Lovins underlined: "Cross-fertilization with different perspectives and schools of thought beyond technocracy can often provide step-changes in enriching analytical insights. Models confirm the scope for ambitious mitigation pathways, and provide an important way to inform emitting industries, policymakers, and the public about rapidly exploiting both modern [energy efficiency](#) and the short atmospheric lifetimes of CH₄ and other super-emitters.

"Enhanced, more complementary ways of reducing these concentrated emissions and exploiting nonlinear benefits can capture new business and socio-political opportunities by applying basic first-aid principles to our planet's ailing climate."

Professor Kammen added: "When the mainstream climate models integrate these methodological advances and new evidence, they are likely to recalibrate the prospects for achieving ambitious climate targets, including 1.5 C.

"Furthermore, the rich menu of climate-change mitigations—whether driven by business, public policy, or civil society and individual choice—need not wait for these modelling improvements, but all would benefit from them."

Co-author Professor Luis Mundaca, from Lund University, Sweden, concluded: "The evidence is now clear that climate mitigations, particularly on the demand side, well in excess of those traditionally modelled will make sense, make money, and create large co-benefits, chiefly for development, equity, health, and security. Refined modelling therefore need not precede but should evolve in parallel with ambitious policy interventions and aggressive adoption."

More information: 'Recalibrating Climate Prospects' by Lovins et al *Environmental Research Letters* (2019).

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