Can we limit global warming to 1.5 degrees C?

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Efforts to combat climate change tend to focus on supply-side changes, such as shifting to renewable or cleaner energy. In a Special Issue in the Energy Efficiency Journal that follows the IPCC Special Report on

Global Warming of 1.5 ˚C, researchers argue that demand-side approaches can play a crucial role given the aspirational target outlined in the Paris Agreement.

"We need to aggressively reduce carbon emissions as soon as possible, which is not impossible, but challenging. Therefore researchers must provide clear guidance to policy makers and practitioners about available options," says Professor Luis Mundaca at Lund University in Sweden, who was a lead author on the IPCC Special Report on 1.5 ˚C degrees.

"Downsizing the energy system by tackling ever-rising demand, makes it more feasible to decarbonize the energy resource mix via renewables," says Luis Mundaca.

To this end, the researchers outline how carbon emissions can be reduced by using demand-side approaches within specific sectors.

Demand-side approaches often involve multiple mitigation strategies across end-use energy sectors. For transport sector, some examples of this could be:

- "Avoid" measures aim to decrease the need for transport (e.g. telecommuting).
- "Shift" measures that aim improve transport efficiency (e.g. public transport)
- "Improve" measures that aim to increase the fuel efficiency of vehicles (e.g. minimum standards, vehicle electrification).

In contrast to prevailing thinking, the special issue argues that sector-specific deep decarbonization pathways are available.

"We found an abundance of policies and measures that are possible. Some approaches are specific to sectors, such as building codes—or to

products, for example with minimum performance standards—while others are generic, such as technical efficiency improvements," says Luis Mundaca.

"Ambitious demand-side approaches reduce mitigation costs and the need for carbon dioxide removal options, which are anthropogenic activities removing CO_2 from the atmosphere" says Luis Mundaca, who sees the need for a more integrated behavioural and technological approach in policymaking to foster this transformation.

"Compared with technology change, behavioural aspects remain heavily overlooked. Whereas there is growing consensus that the removal of barriers to behavioural change is a critical and essential element for keeping the 1.5 °C target within reach, assessments and policy discussions continue to be heavily focused on technology," he continues.

He also emphasizes that it is not only up to politicians. As a society we also need to critically analyse our consumption patterns and habits. Whether this means less air travel, the appliances we buy or what food we eat, there are plenty of choices available to individuals. The special issue also aims to empower us, consumers.

More information: Luis Mundaca et al. Demand-side approaches for limiting global warming to 1.5 °C, *Energy Efficiency* (2018). DOI: 10.1007/s12053-018-9722-9

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