

Positive tipping points must be triggered to solve climate crisis, say researchers

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Positive tipping points must be triggered if we are to avoid the severe consequences of damaging Earth system tipping points, researchers say. With global warming on course to breach 1.5°C , at least five Earth

system tipping points are likely to be triggered—and more could follow.

Once triggered, Earth system [tipping points](#) would have profound local and global impacts, including [sea-level rise](#) from major ice sheet melting, mass species extinction from dieback of the Amazon rainforest and disruption to weather patterns from a collapse of large-scale ocean circulation currents.

The new commentary entitled "Tipping points: Both problem and solution," [published](#) in *One Earth* by researchers from the Global Systems Institute at the University of Exeter, says positive tipping points must be triggered to help reach the levels of decarbonization required.

"One reason for hope is that many of the tipping thresholds that are likely to be crossed first are so-called slow tipping systems, which can be briefly exceeded without a commitment to tipping," said lead author Dr. Paul Ritchie.

"However, rapid decarbonization that minimizes the distance of any overshoot and—even more importantly—limits the time spent beyond a threshold is critical for avoiding triggering climate tipping points."

Dr. Jesse Abrams said, "One mechanism for achieving the rapid decarbonization levels required is ironically through positive tipping points, moments when beneficial changes rapidly gain momentum."

The research team points to the sales seen in electric vehicles, particularly across Scandinavia, as evidence for the capability of human systems to exhibit positive tipping points.

Professor Tim Lenton added, "Under the correct enabling conditions, such as affordability, attractiveness and accessibility, Norway has managed to transition the market share of [electric vehicles](#) from under

10% to near 90% within a decade."

More information: Tipping Points: both problem and solution, *One Earth* (2023). DOI: [10.1016/j.oneear.2023.11.016](https://doi.org/10.1016/j.oneear.2023.11.016). [www.cell.com/one-earth/fulltext ... 2590-3322\(23\)00552-3](http://www.cell.com/one-earth/fulltext...2590-3322(23)00552-3)

Provided by University of Exeter

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