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Modelling just transition pathways to climate neutrality

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Abstract: A notable inclusion in the most recent mitigation assessment from the IPCC was the need for a broader societal transformation to achieve the Paris Agreement temperature goals in a fair and equitable manner. Energy system models are becoming increasingly important in politics when it comes to informing the energy transition towards climate neutrality. Even though these tools have become very powerful, their ability to map real-world behavioural, social and political developments is limited. This can lead to neglecting important aspects of fairness and inclusion as well as behavioural change measures in politics and policies, making it (almost) impossible to keep up with the goal of leaving no one and no region behind in the transition. In this talk, we argue that it is time to rethink energy system models through the lenses of a just transition. An integrated and complementary energy modelling and social science and humanities research approach is crucial to enable fair and equitable climate neutrality pathways. Political decisions would benefit from insights not only based on modelled techno-economic pathways and scenarios of the energy transition, but also on the findings of discussions and debates with the many stakeholders involved or impacted. This is particularly important as cost optimisation ignores existing injustices, there will be geographically dispersed winners and losers in the energy transition, and the transition process can offer different socio-economic benefits for broader regional transitions. In this talk, we will discuss limitation of current modelling approaches and provide policy recommendations to broaden the evidence base to include inter- and transdisciplinary research as well as the learnings from implementation projects. The policy recommendations are based on findings and experiences from stakeholder engagement in modelling from different European research projects, including SENTINEL, SONNET, SEEDS and JustWind4All.

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