International Institute for Applied Systems Analysis
IIASA

OVERSHOOT CONFERENCE
2025 | Laxenburg
30.Sep – 02.Oct

Towards a framework for aligning national mitigation scenarios with 1.5°C in an era of overshoot

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Theme 1: Highest possible mitigation ambition under overshoot

30th September 2025

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How should national models evolve to guide the “highest possible ambition” in an era of 1.5 ˚C overshoot?

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- Returning to 1.5 °C after overshoot requires radical mitigation measures that are mainly implemented **at the national level**
  - **Global IAMs** guide & provide boundary conditions
  - **National scenarios** operationalise & hold to account
  - BUT do national models really depict **“Highest Possible Ambition”?**

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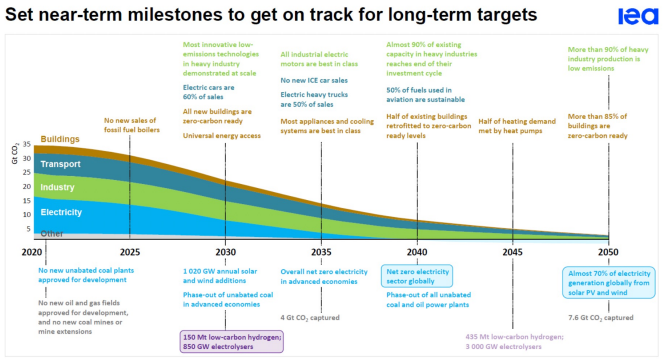
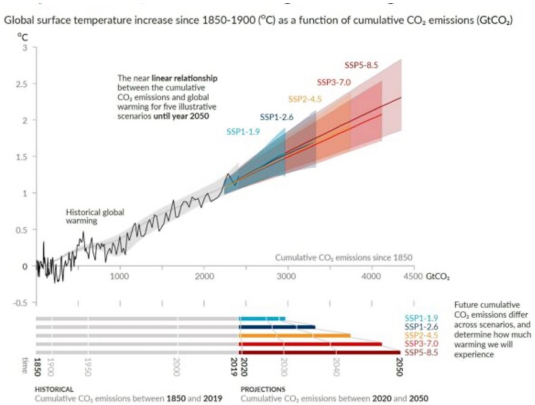
1.5°C return scenarios must be able to depict:

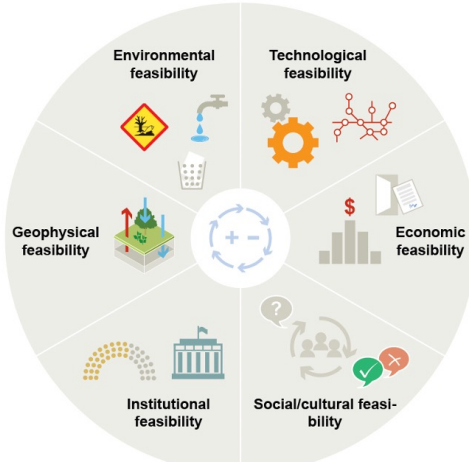
Explicit transition



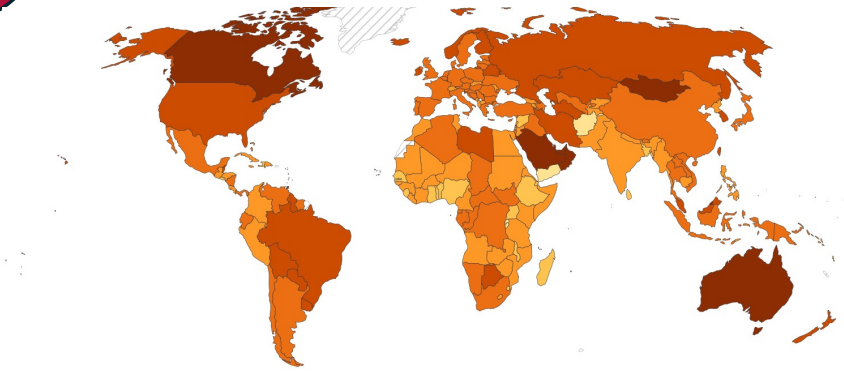
Adequacy



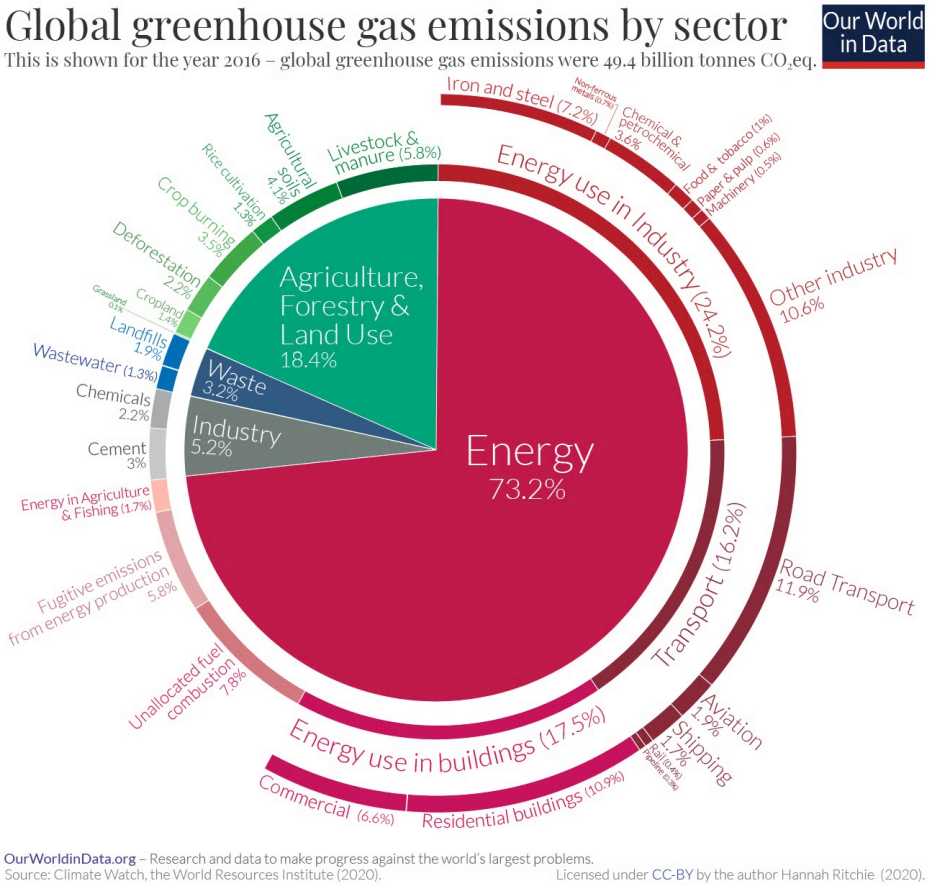
Feasibility



Fairness



Represent all GHGs, sectors & account for carbon cycle



- National models are typically limited or lacking in:
  - Non-energy GHGs
  - International aviation & shipping
  - Embodied GHGs in international (energy) trade
  - Agriculture, forestry and other land uses (AFOLU)
  - Carbon & land use accounting – for biomass

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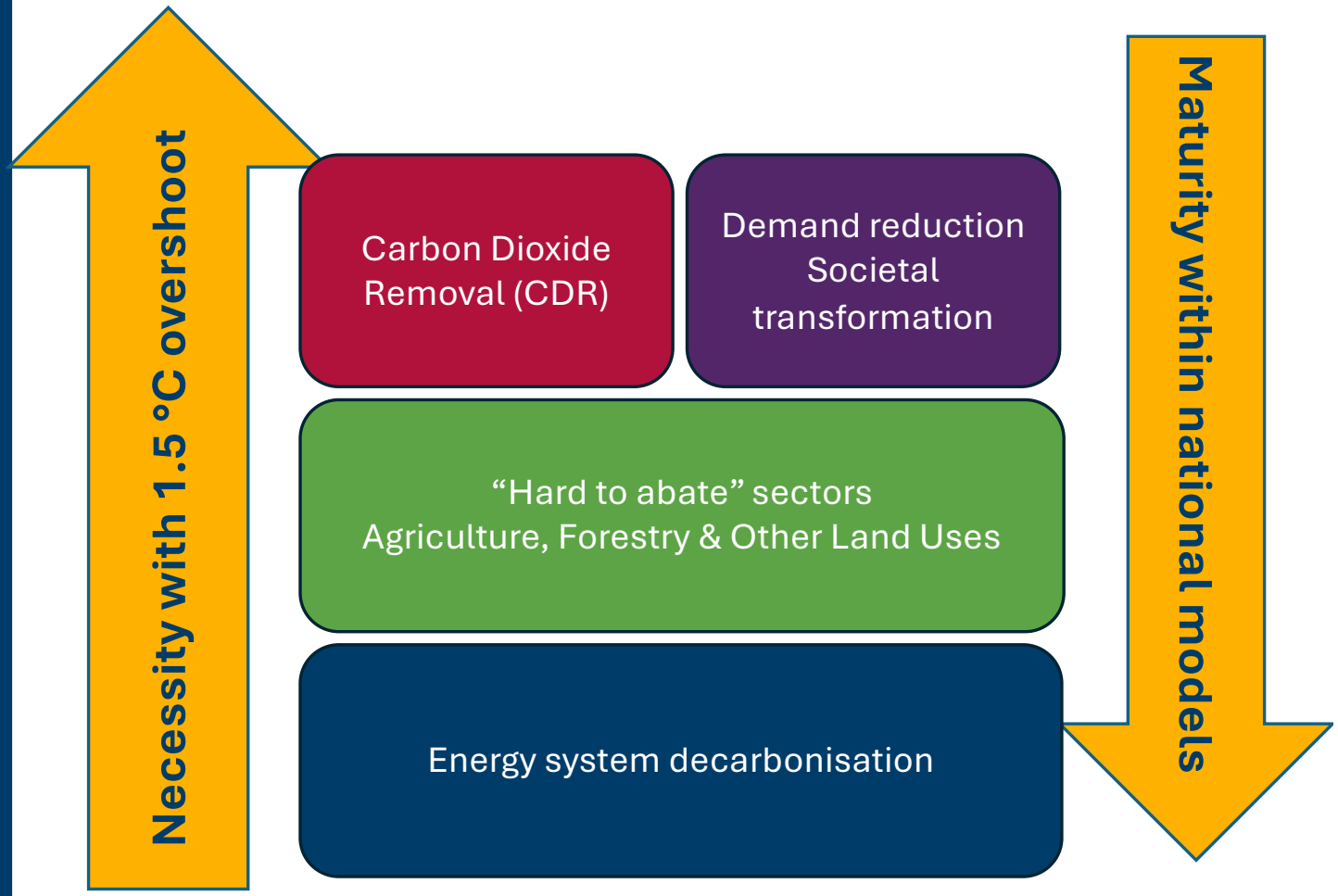
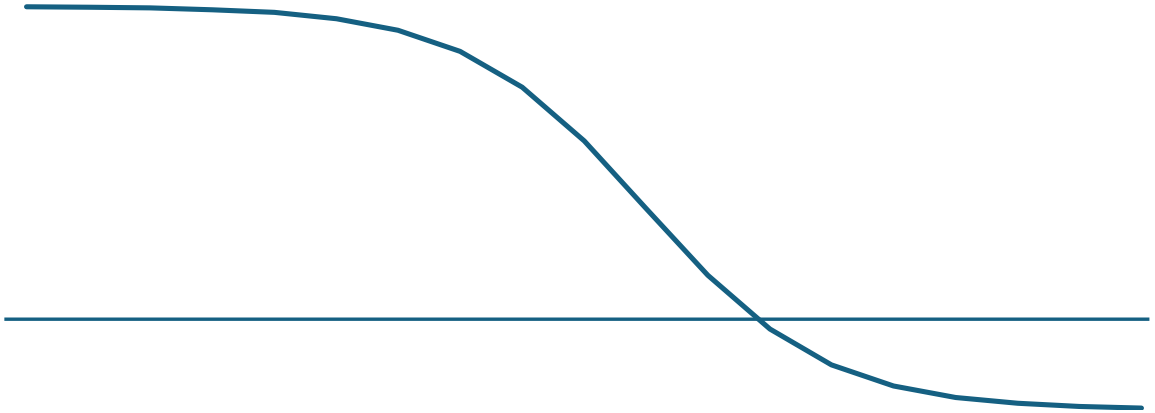
Returning to 1.5 ˚C after overshoot requires going beyond the energy transition to a **fundamentally broader mitigation agenda**



Broaden the mitigation & scenario space

Alternative (low) demand & transformative pathways

Maximum plausible uptake of mitigation measures



Diverse CDR options

Explicit mitigation of residual emissions

Broaden scenario narratives

>2100 horizon

National scenarios confront decisionmakers with choices & trade-offs

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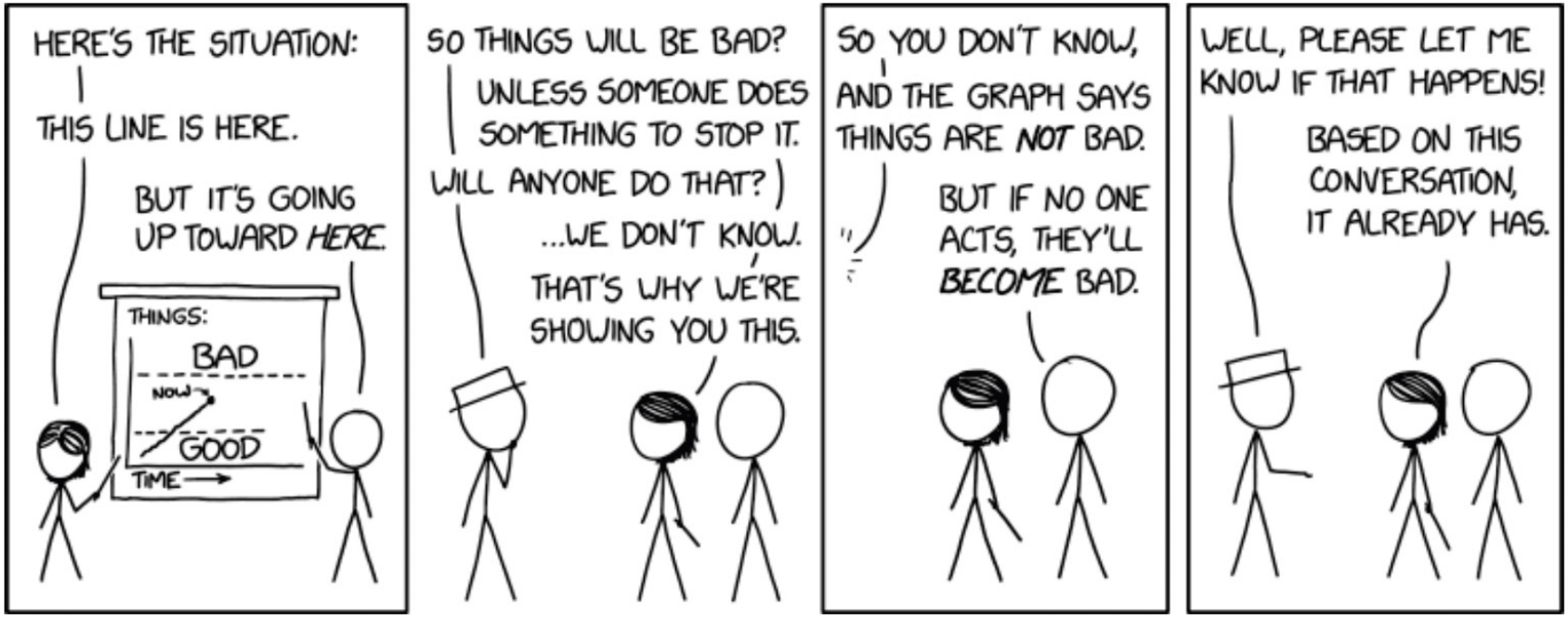

xkcd.com

Thank you

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