Justice and convergence in IAMs

AR6 and new ongoing work

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Sciences Po, 23 November, 2023

Notes on the AR6 database (state of scenarios in ~2021)

GDP per capita (PPP)
Kanitkar et al. = coloured triangles.
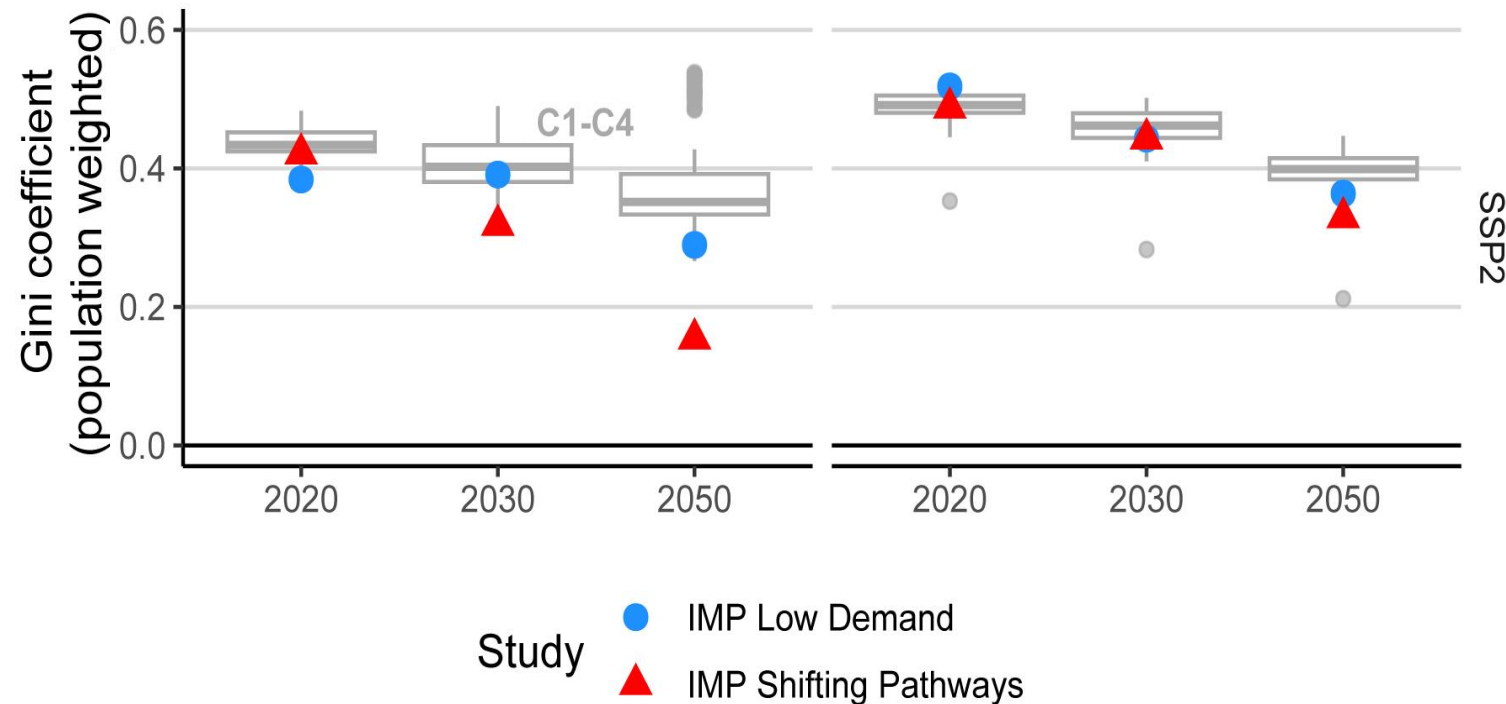IPCC ranges across C1, C2, C3, C4.
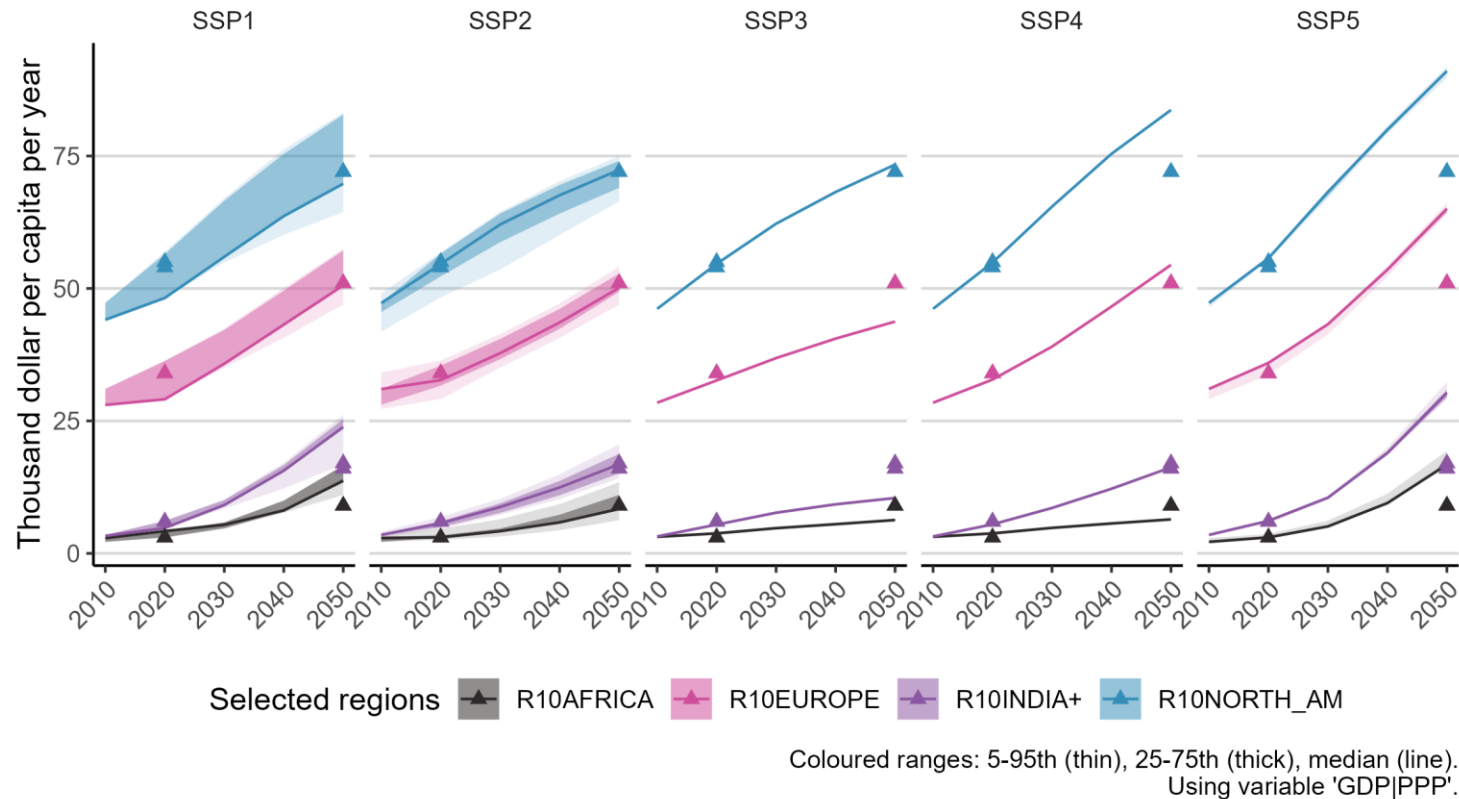
SSP1 · SSP2 · SSP3 · SSP4 · SSP5

Thousand dollar per capita per year

Selected regions — R10AFRICA · R10EUROPE · R10INDIA+ · R10NORTH_AM

Coloured ranges: 5-95th (thin), 25-75th (thick), median (line).
Using variable 'GDP|PPP'.

AR6 database is an "**ensemble of opportunity**": scenarios in the literature made available to the IPCC.

Most scenarios are SSP2, but there are **numerous other scenarios highlighted** in the IPCC report and thus part of the assessment, including the high-level **Illustrative Mitigation Pathways (IMPs)**. Plotting the **Kanitkar et al.** numbers, they **mostly align with SSP2**.

Future socioeconomic changes (here, GDP) **differ by model, and by storyline** (here, SSP).

In the AR6 scenario database, two of the highlighted IMPs show clearly more egalitarian patterns across regions than most scenarios.

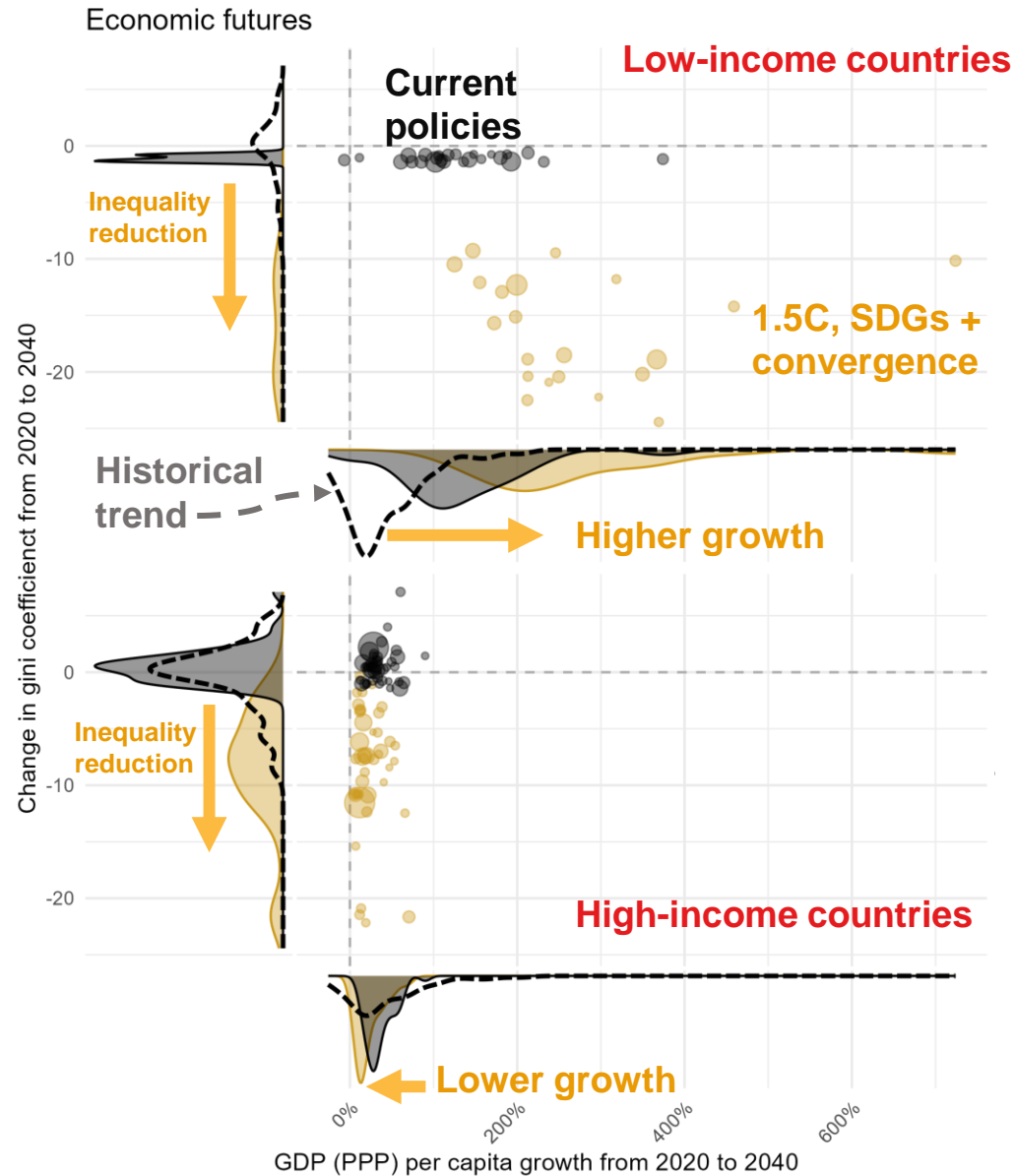# Notes on the AR6 database
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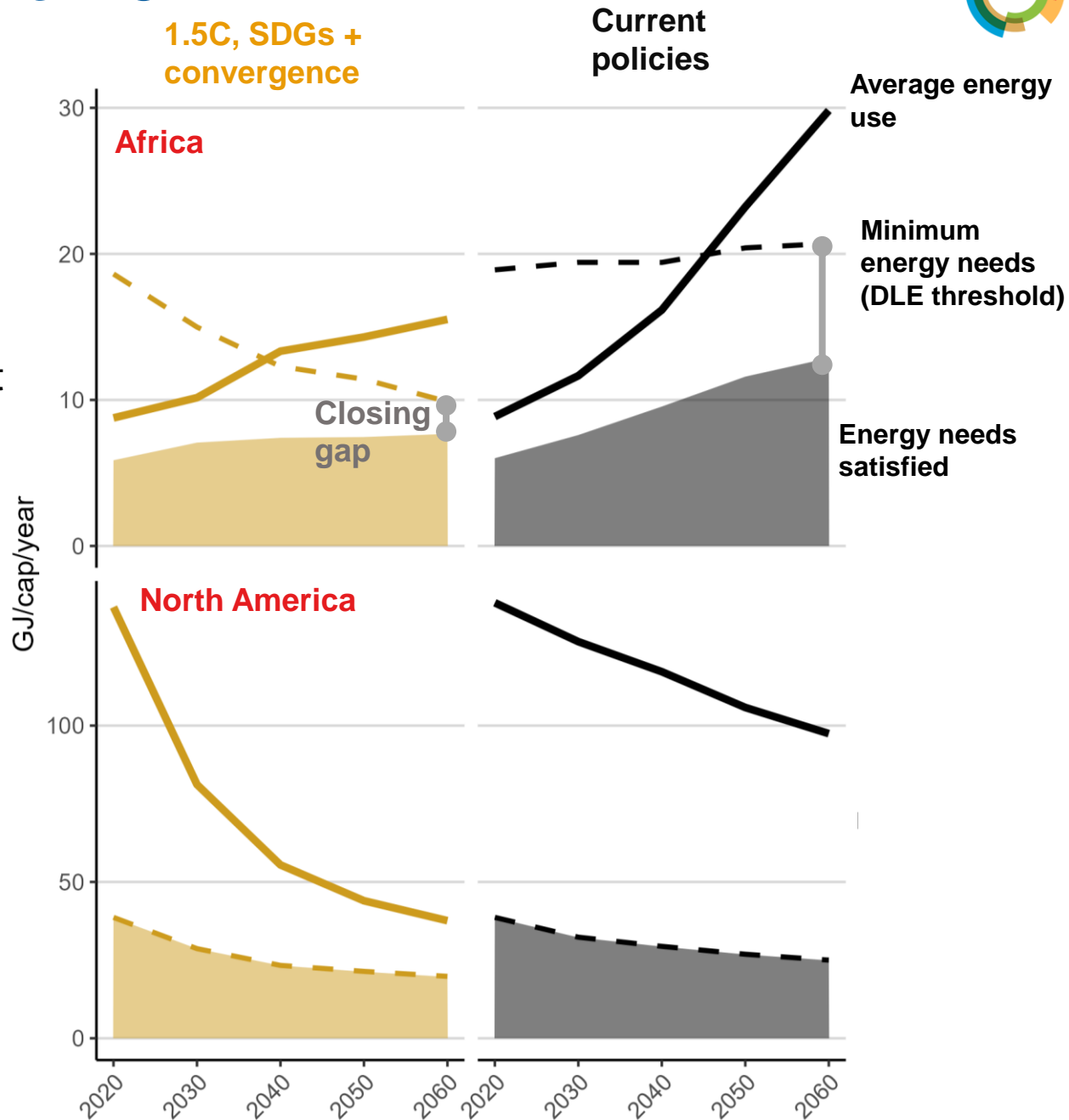
Current work

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Scenarios are exploring radical degrowth and mitigation capacity constraints with faster emissions reductions in rich countries.

Kikstra et al. (in prep), do not cite

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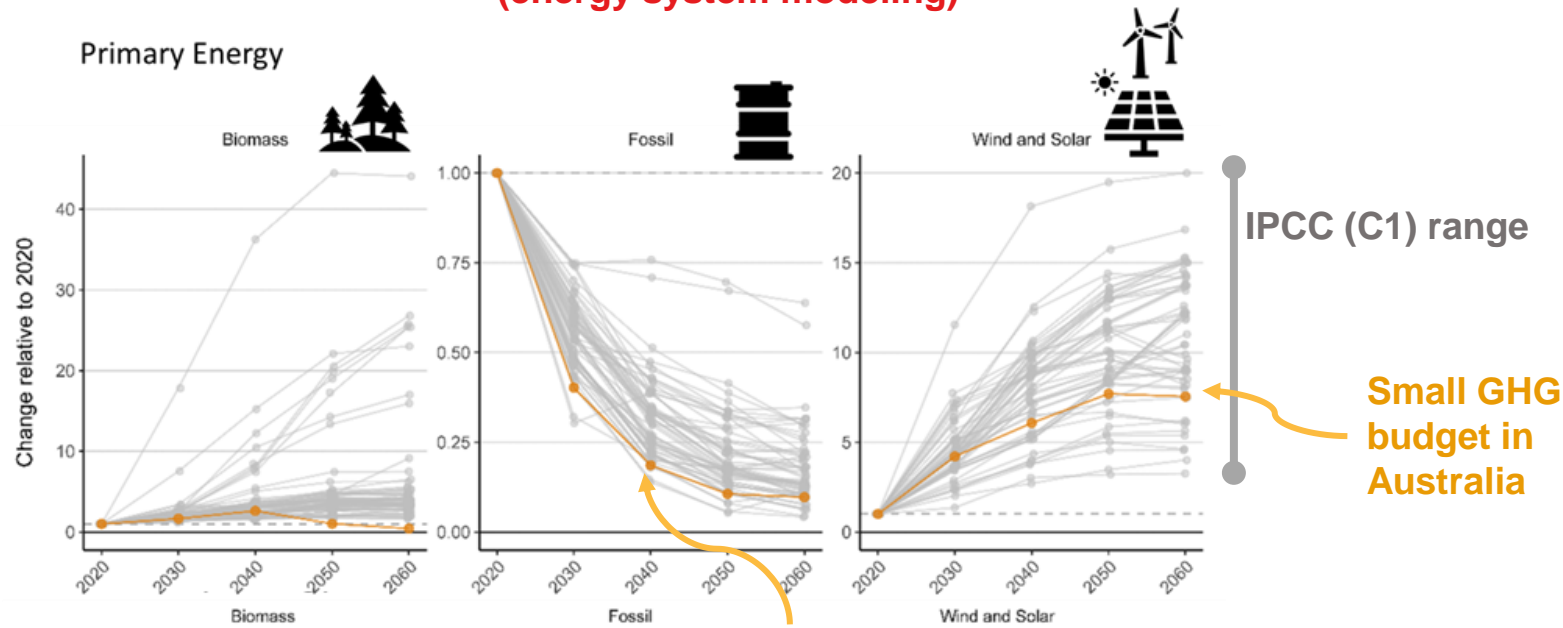
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Current work

Australia (energy system modeling)

Primary Energy

IPCC (C1) range

Small GHG budget in Australia

Faster emissions reduction may be possible

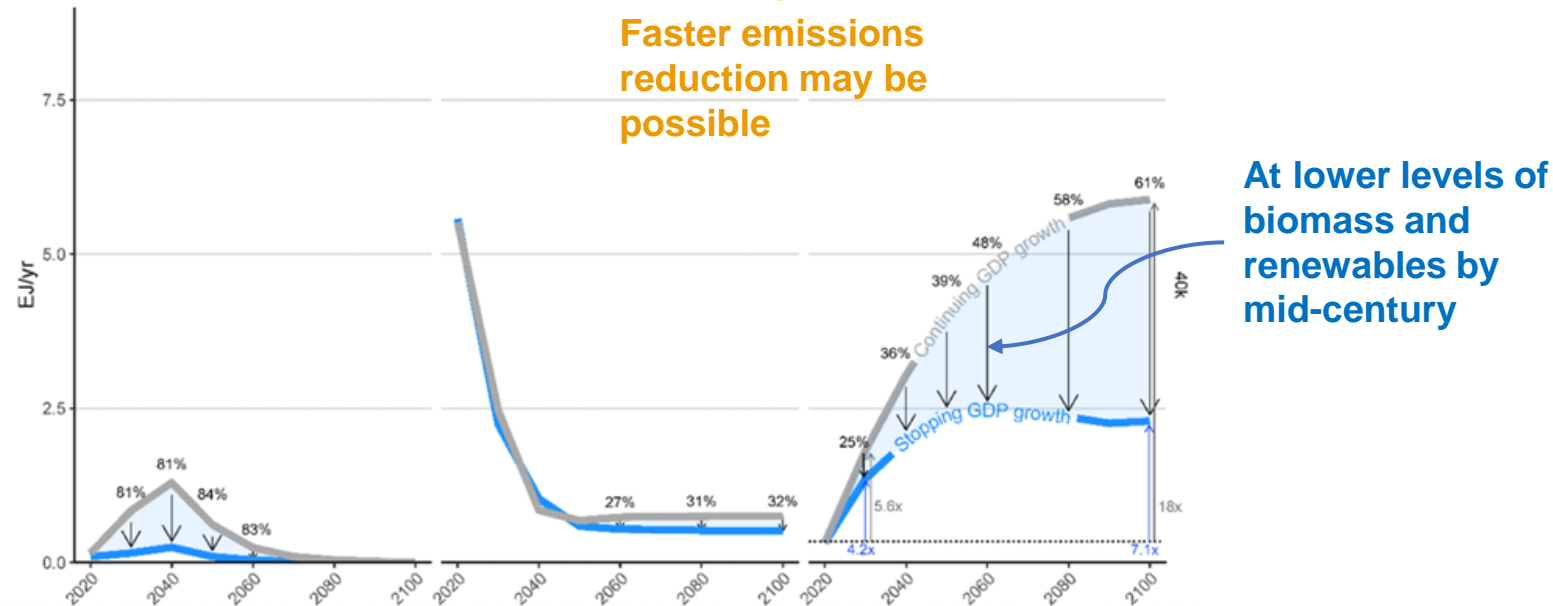**At lower levels of biomass and renewables by mid-century**

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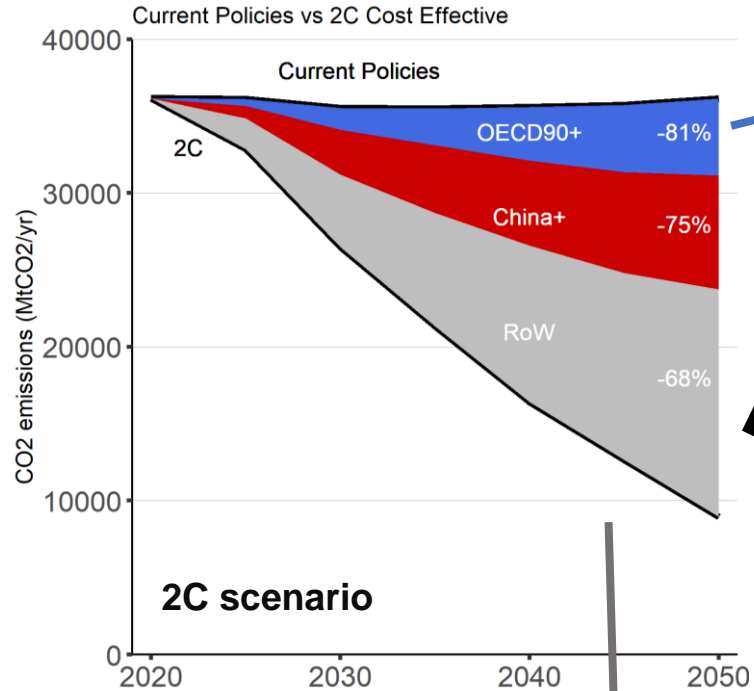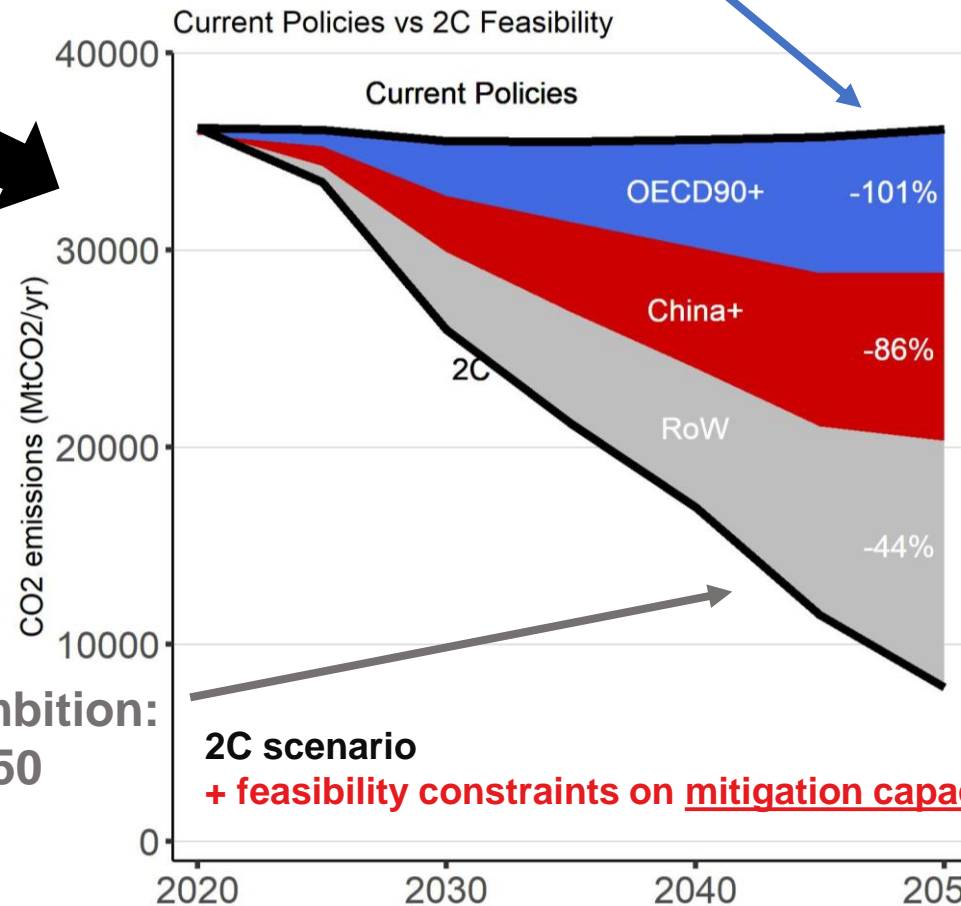
Kikstra et al. (in review)

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Current work

OECD increased ambition: from -81 to -101% in 2050

New sustainable development scenarios show the closing of decent living standards (DLS) gaps around the world.

Global South lower ambition: from -68 to -44% in 2050

Scenarios are exploring radical <u>degrowth and mitigation capacity constraints</u> with **faster emissions reductions** in rich countries.

Brutschin et al. (in prep), do not cite

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Terminology for justice

Justice framework element		Research setup (Research question + scenario design)	Research methods (Modelling toolbox)	Results (storyline, model variables, post-processing)
Area of justice				
Scope of justice				
Form of justice	Distributional Procedural Corrective Recognitional Transitional			
Metric				
Pattern of justice (part of distributional)	Utilitarian Egalitarian Sufficientarian Prioritarian Limitarian			

+ _explore_ justice systematically and link different disciplines and more systematically stakeholders

+ _rethink_ the structure of narratives and scenarios (governance, wellbeing, degrowth, etc.)

+ Procedural justice
(of research process itself)