

# ENGAGE

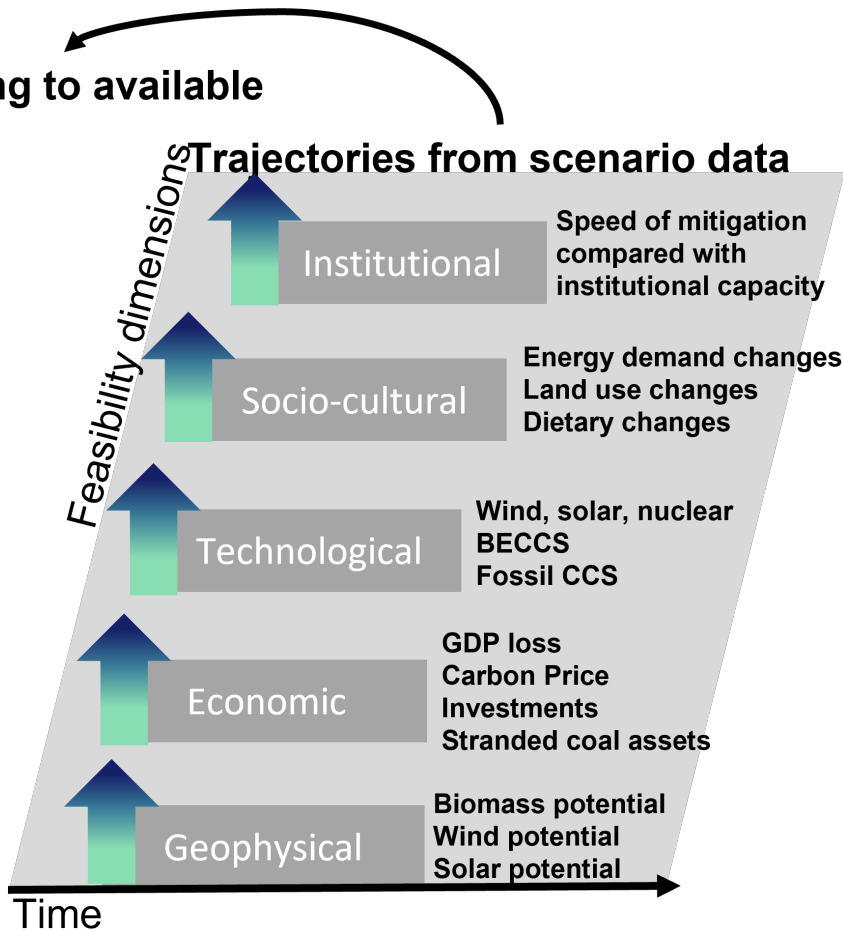
## Exploring **N**ational and **G**lobal **A**ctions to reduce **G**reenhouse gas **E**missions

*Addressing Regional Feasibility Concerns in the Race to Net Zero*

Presentation by *Elina Brutschin* based on work led by Christoph Bertram (UMD/PIK), Keywan Riahi (IIASA), Oliver Fricko (IIASA), Bas van Ruijven (IIASA), Laurent Drouet (EIEE) et al...

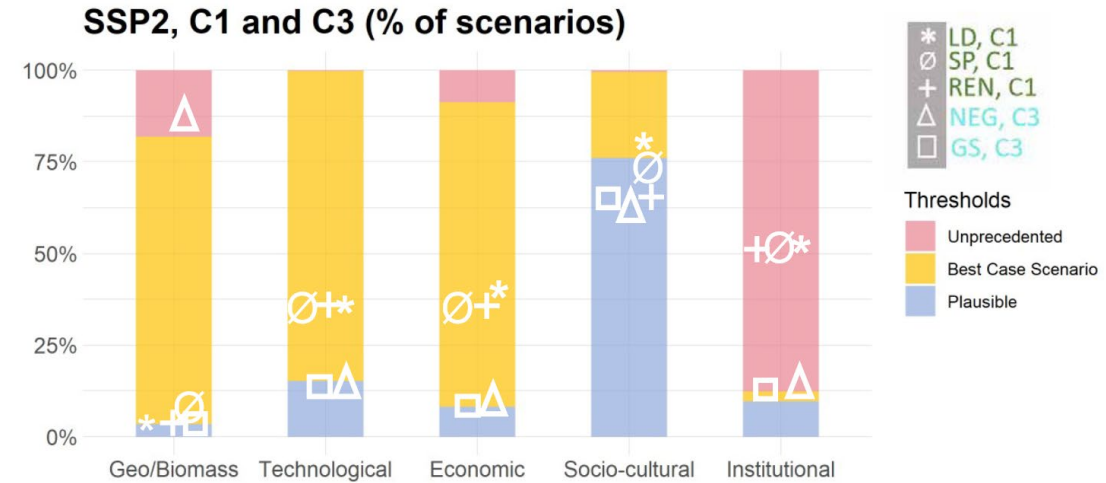
# Ex-post feasibility evaluation

Benchmarking to available evidence

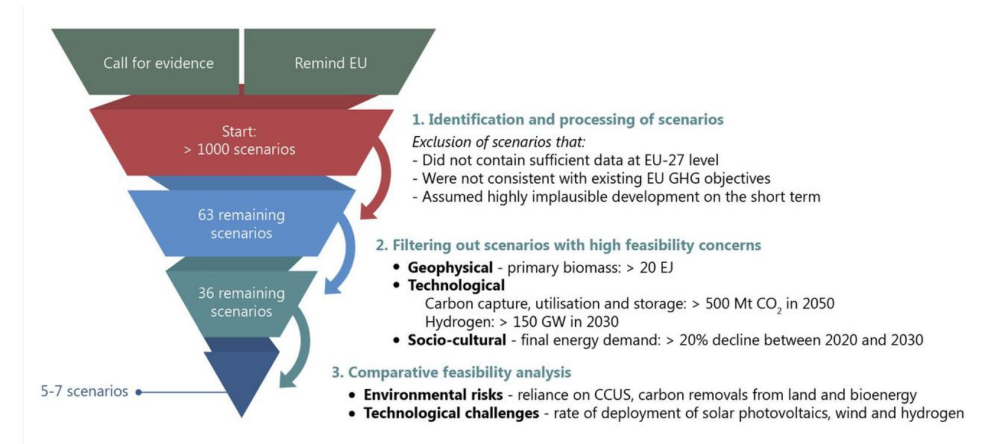


Based on Brutschin et al. (2021)

## Applied in the IPCC WGIII, Chapter 3

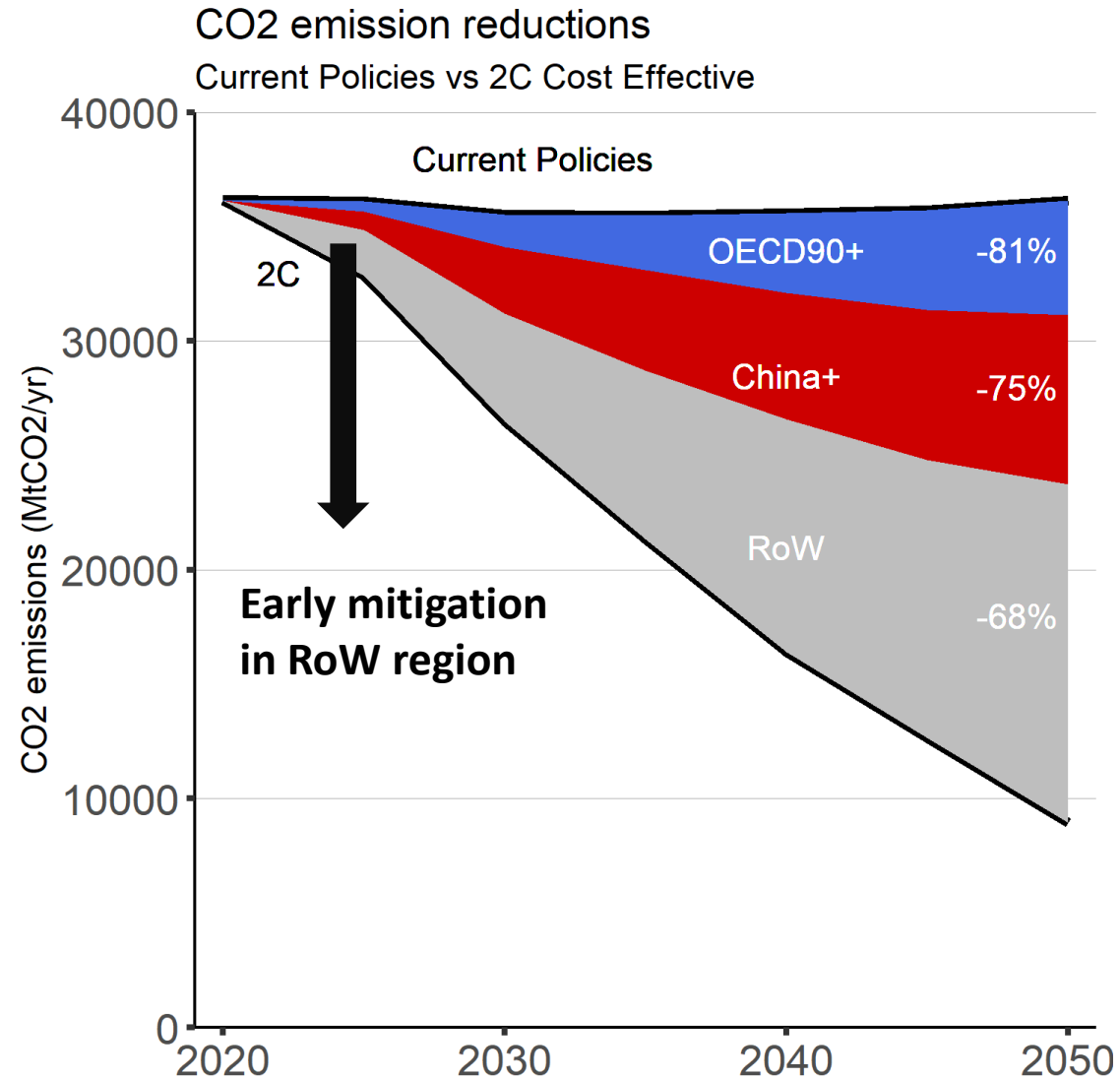


## Applied by the EUAB



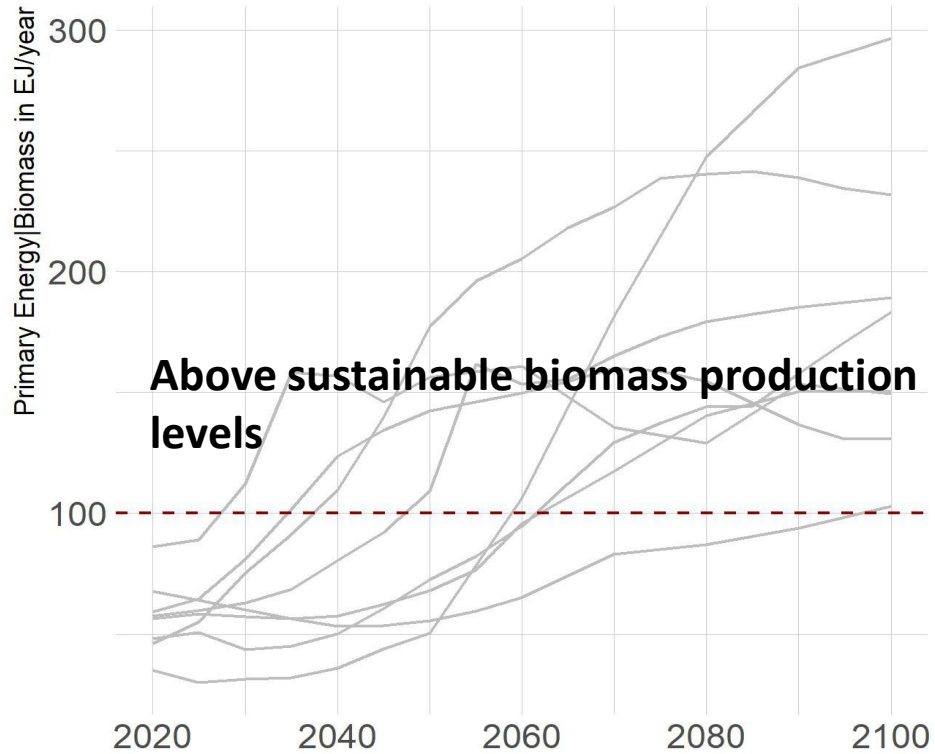
Source: Advisory Board (2023).

# The **default** scenario set-up and **feasibility concerns**

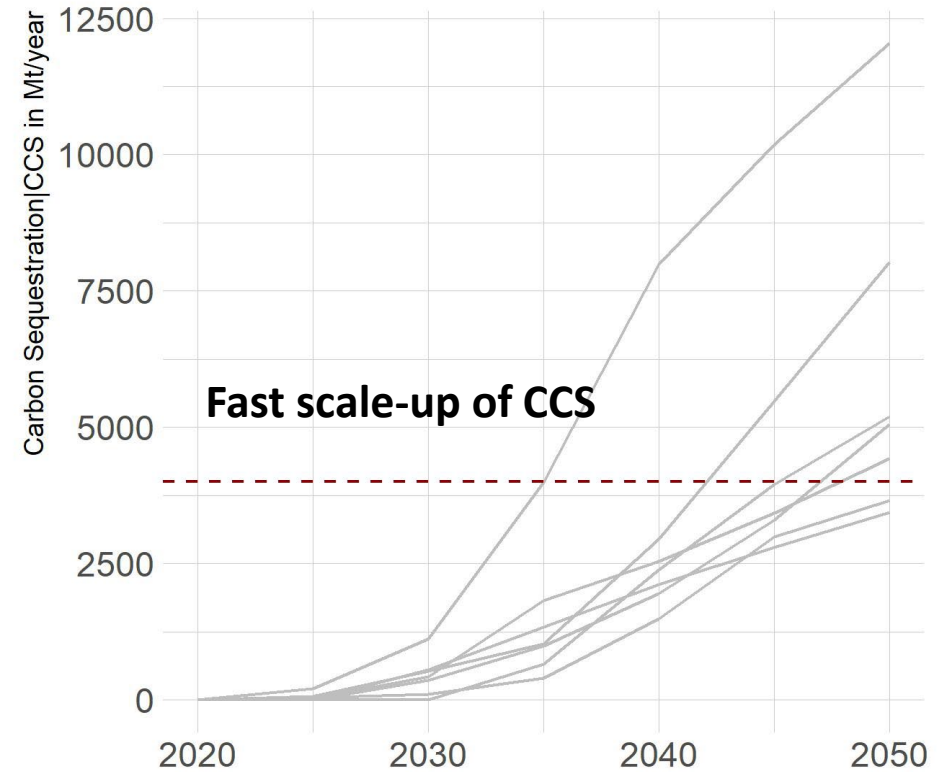


# The default scenario set-up and feasibility concerns

## ENGAGE scenarios - 1000Gt



## ENGAGE scenarios - 1000Gt



# The default scenario set-up and **feasibility concerns**

## **1. Institutional concerns**

(lots of mitigation in regions where this might be challenging)

## **2. Majority of scenarios above sustainable biomass levels**

## **3. A few scenarios assume a relatively high scale-up of CCS**

## **4. Demand side changes not explored systematically**

# Scenario set-up that incorporates **feasibility concerns**

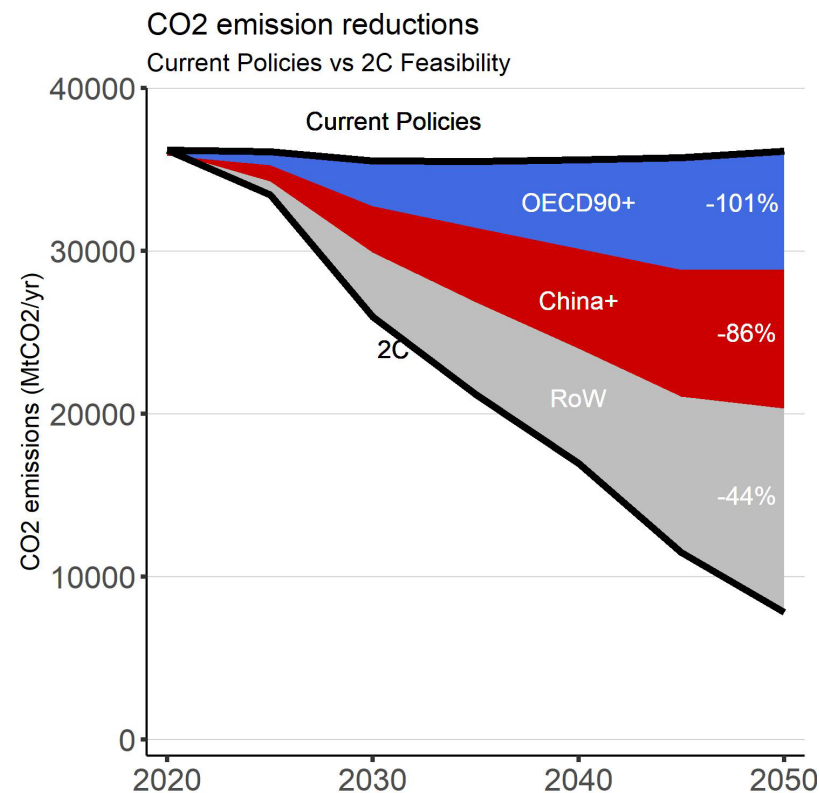
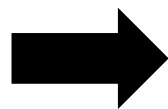
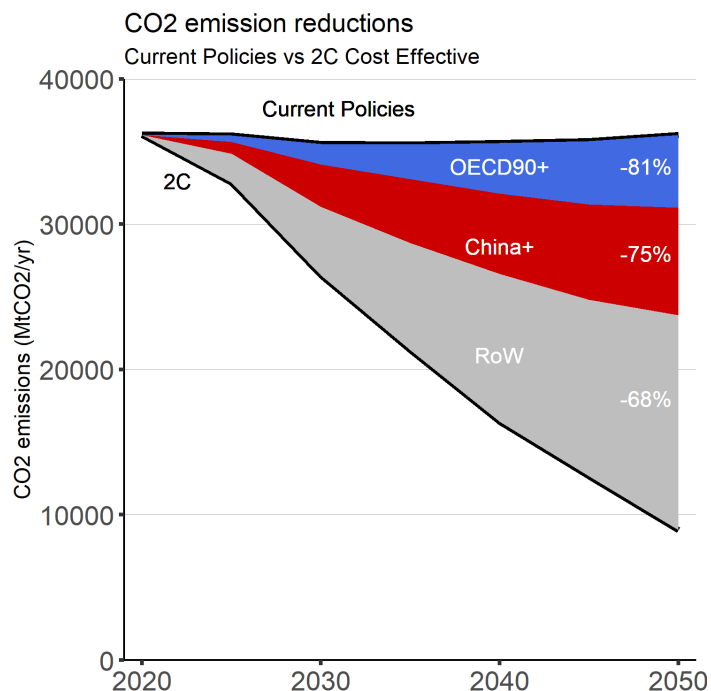
+constraints on **mitigation capacity** in regions with low government effectiveness

+ all models **below 100 EJ/year** in Primary Energy/Biomass

+ all models have **constraints on CCS**, nuclear and renewables

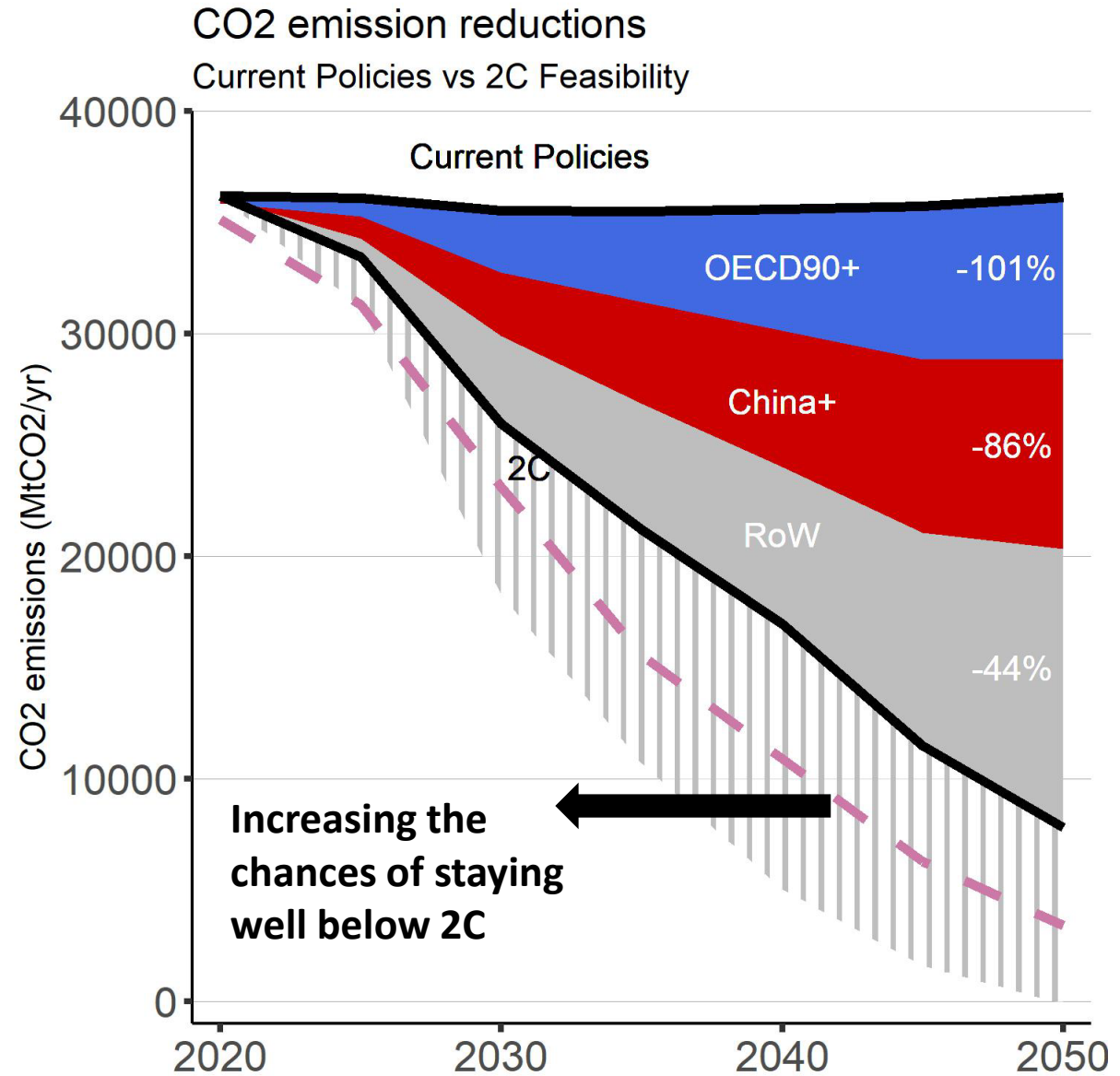


With these constraints there is a regional shift in efforts but reaching more ambitious climate targets becomes more challenging

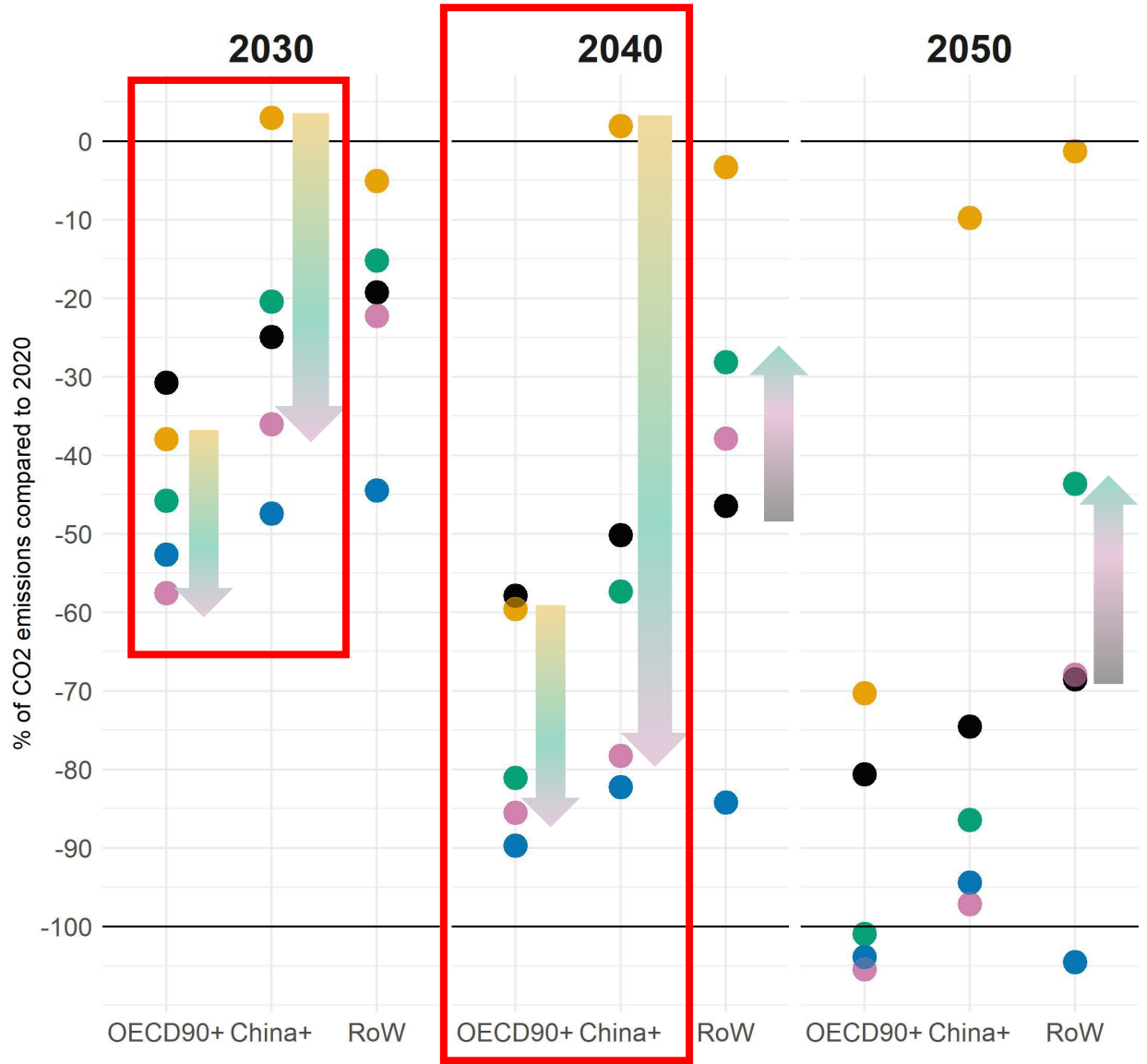


# Additional Enablers

Given that many scenarios do not systematically explore demand side reductions, we assume major demand reductions in the developed regions and additional technological enablers (no constraints on solar and wind)



# Key Policy Implications



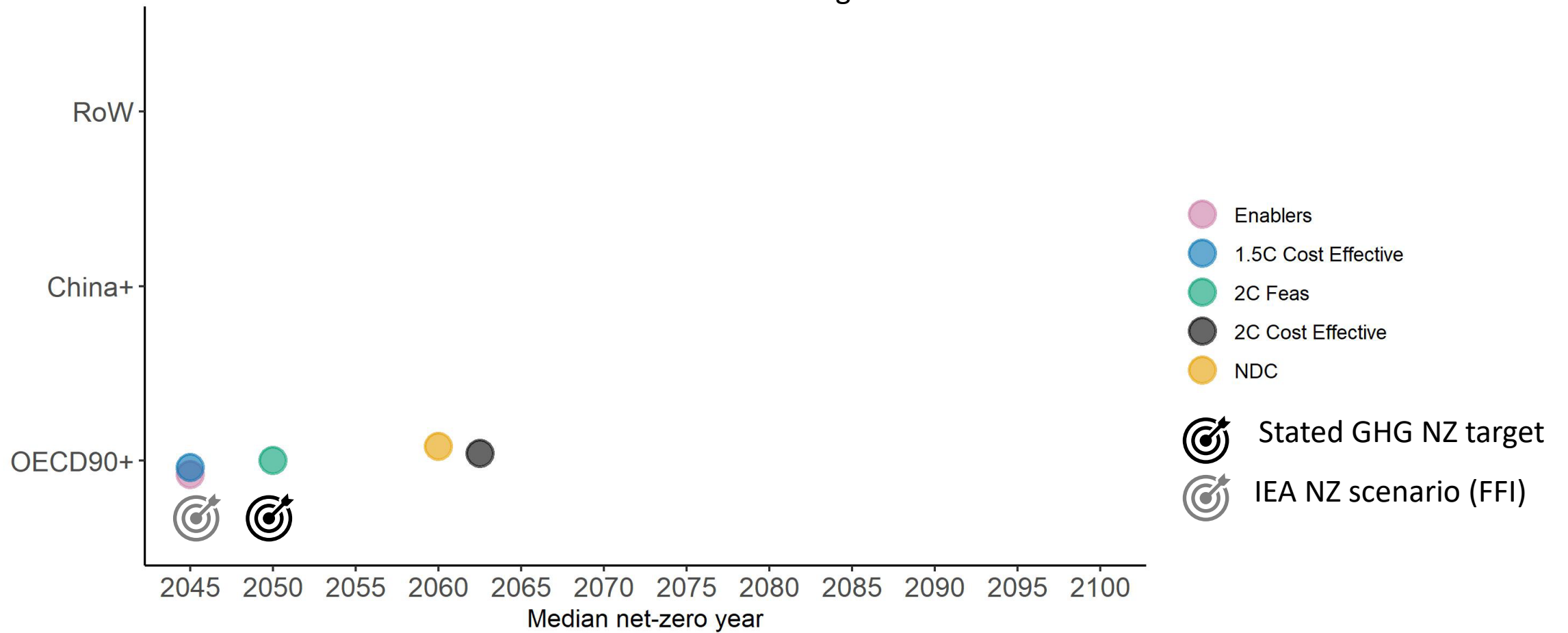
Increasing the chances of **staying well below 2C** will critically depend on whether it is possible to **substantially increase ambition in 2030 and 2040**

- Enablers
- 1.5C Cost Effective
- 2C Feas
- 2C Cost Effective
- NDC



# Key Policy Implications

Increasing the chances of **staying well below 2C** will require reaching CO2 net zero year in 2045 for OECD90+ region and in 2050 China+



*Thank you very much for your attention!*



**Link to the interactive tool and feedback**

<https://feasibility.streamlit.app/>

**[www.engage\\_climate.org](http://www.engage_climate.org)**



**@ENGAGE\_Climate**

For more information, you call also contact: [engage.secretariat@iiasa.ac.at](mailto:engage.secretariat@iiasa.ac.at)



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 821471 (ENGAGE).

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