



**II ELEVATE International Co-creation workshop**

# **BEYOND THE GST: ALIGNING GLOBAL AIMS AND NATIONAL COMMITMENTS**



**Thursday, 22 Feb 2024**



**11:00 AM - 15:30 PM**



**Funded by  
the European Union**

# Our principles for successful discussion

- 1 We actively listen to each other and give people time and means to articulate their views.
- 2 We do our best to be concise and clear in our discussion allowing for polite interruptions.
- 3 We build on each other's views, encouraging diverse perspectives.
- 4 We are present in meeting and actively contribute by speaking up and encouraging others to do so.
- 5 We channel kindness and inclusion in our interactions, assuming best intentions and are willing to forgive.

What else?



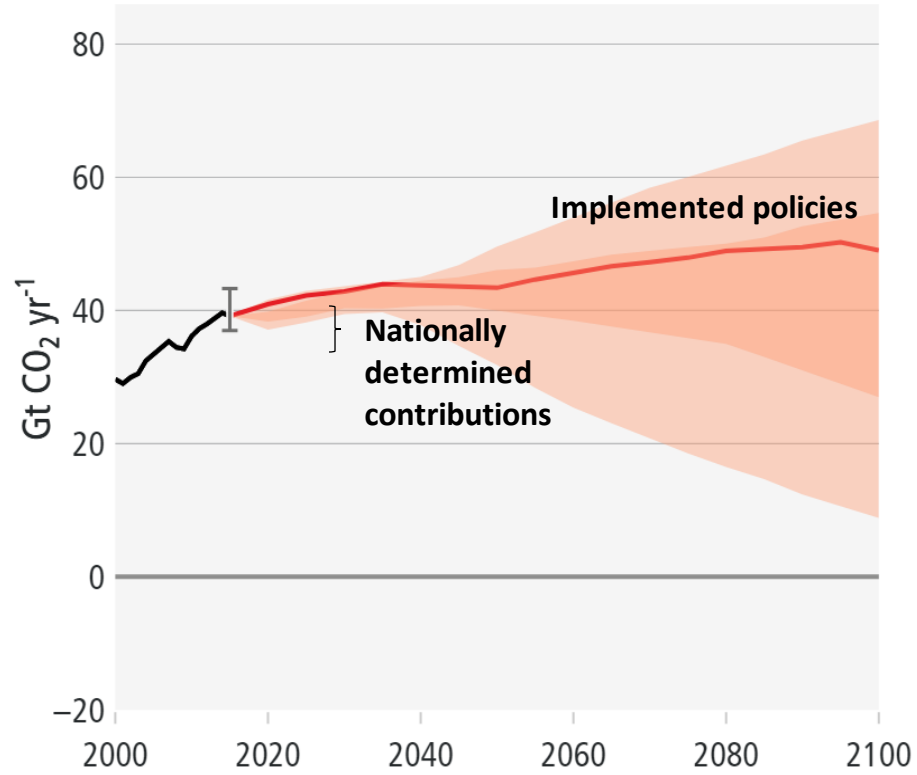
# **Beyond the GST: aligning global aims and national commitments**

*The critical decade: how can we keep 1.5 alive?*

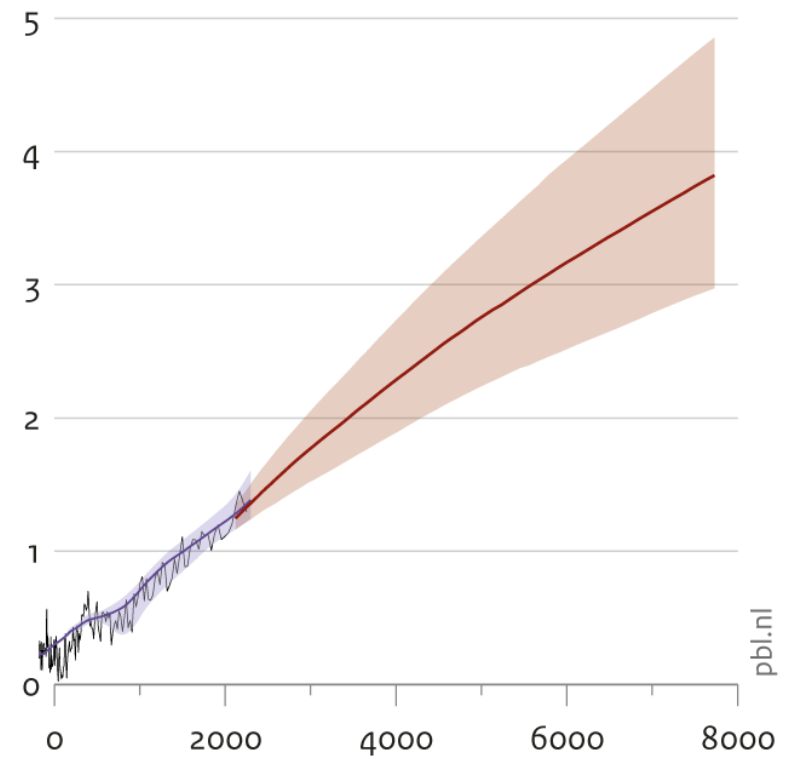
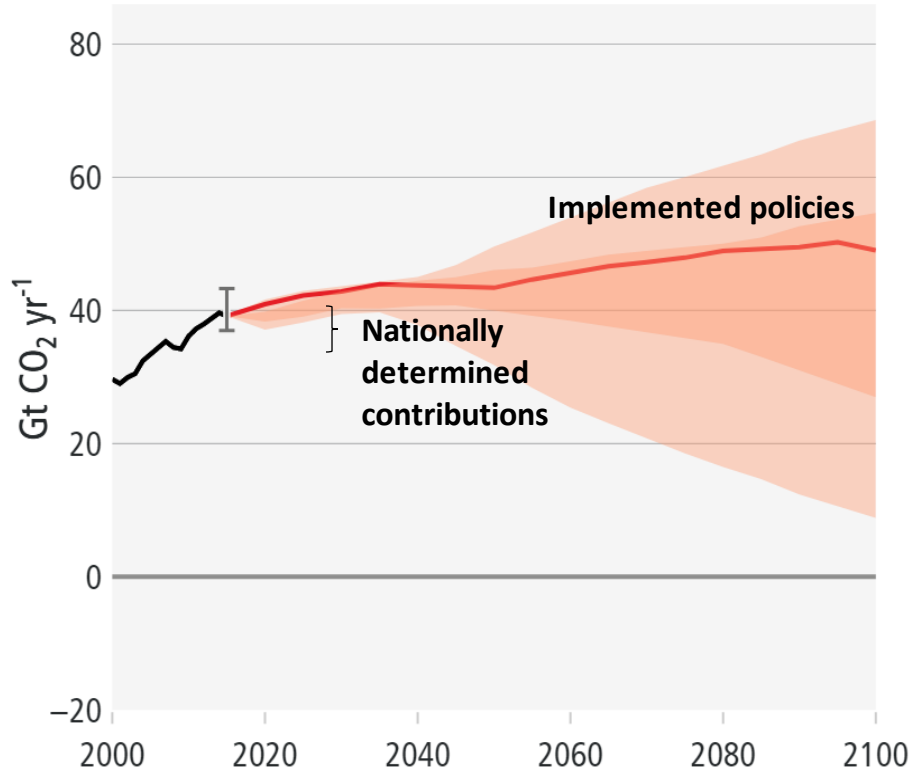
Detlef van Vuuren

**Supporting  
international  
climate policy**

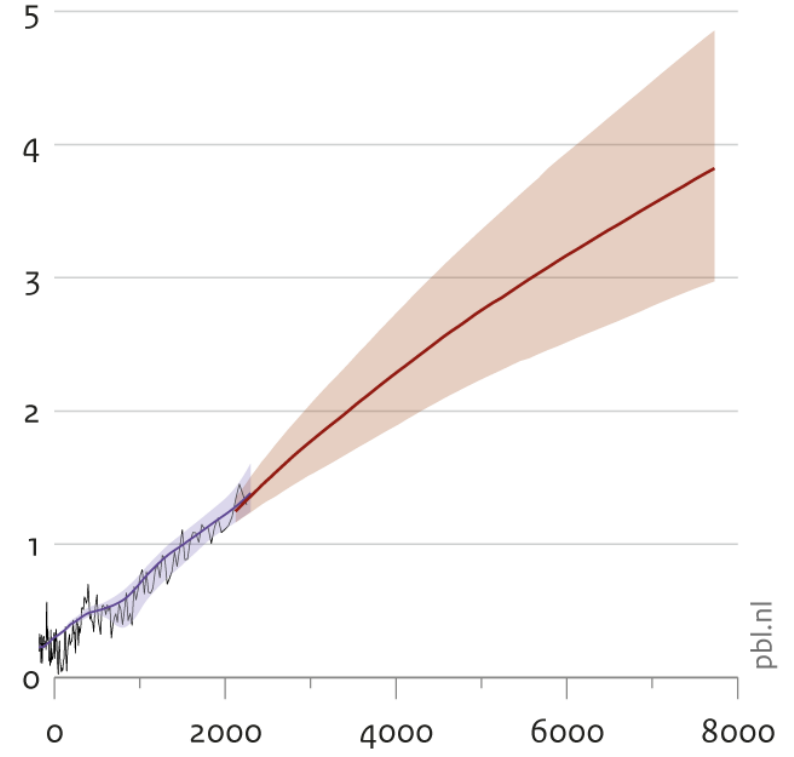
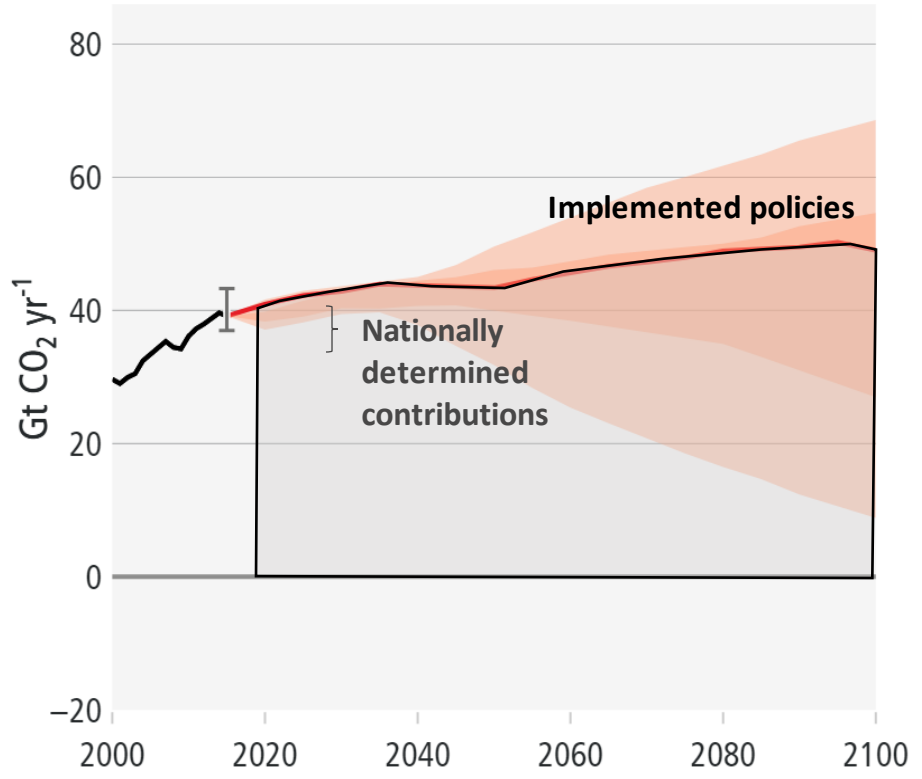
# 2023 – Global Stocktake



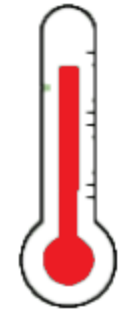
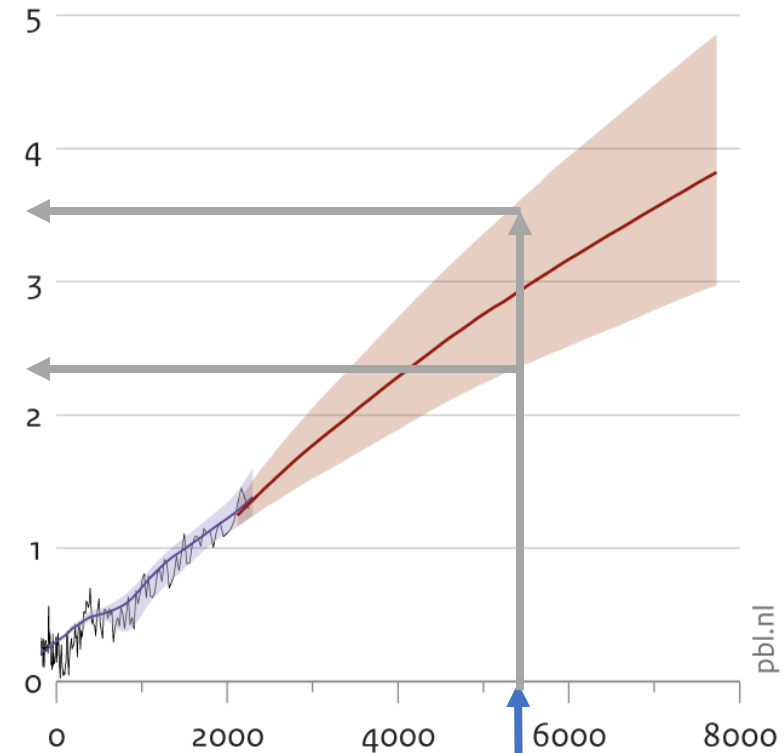
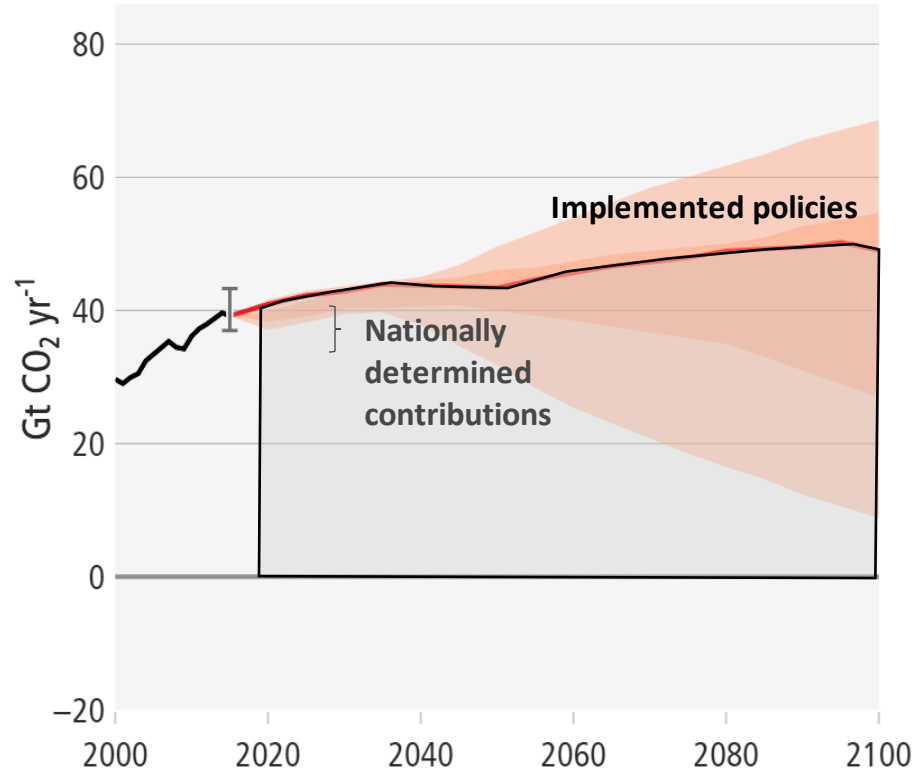
# 2023 – Global Stocktake



# 2023 – Global Stocktake



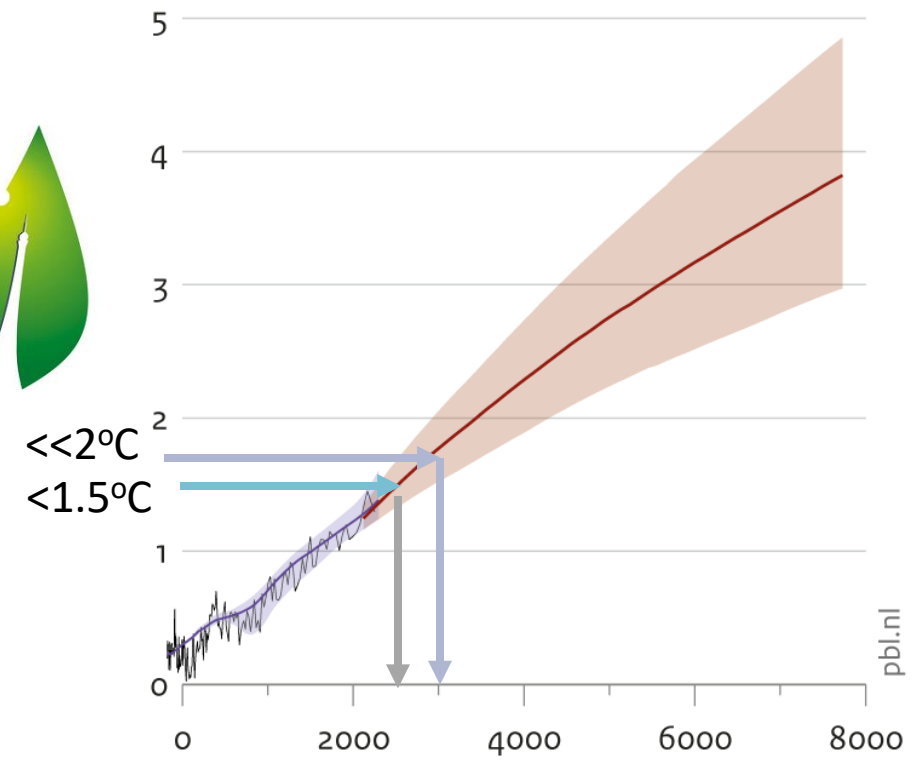
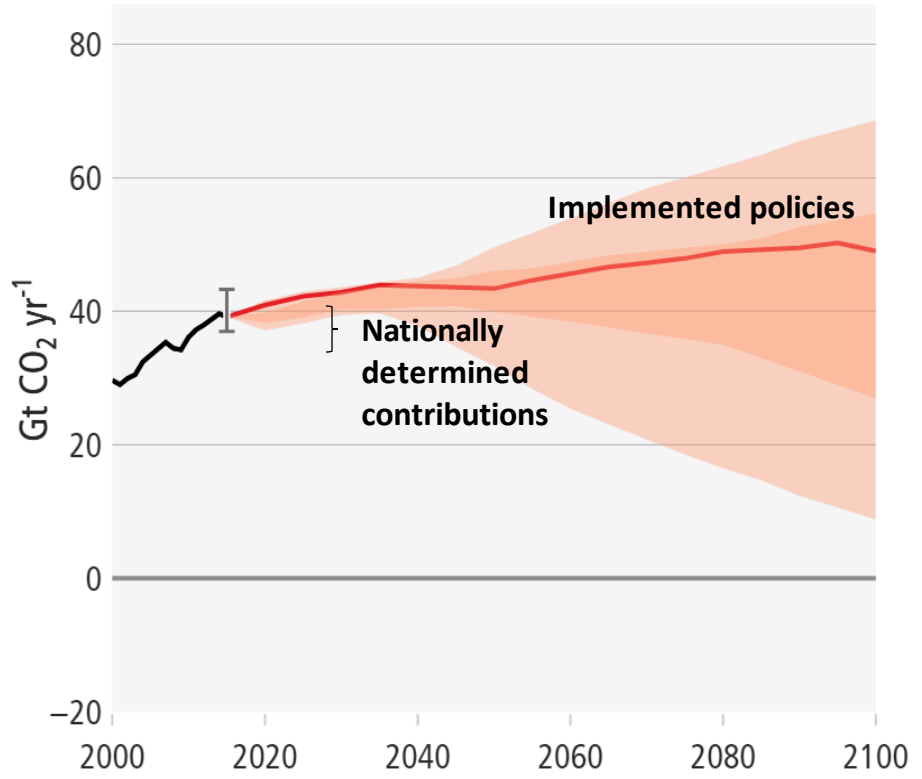
# 2023 – Global Stocktake



2.2-3.5  
degrees

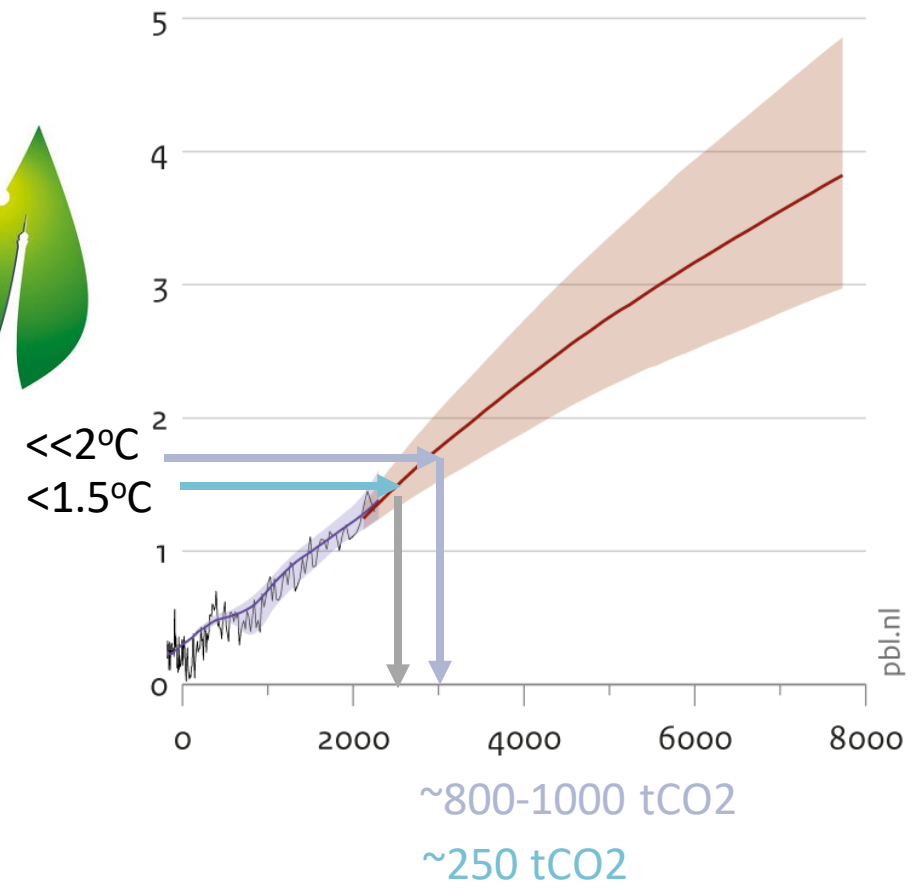
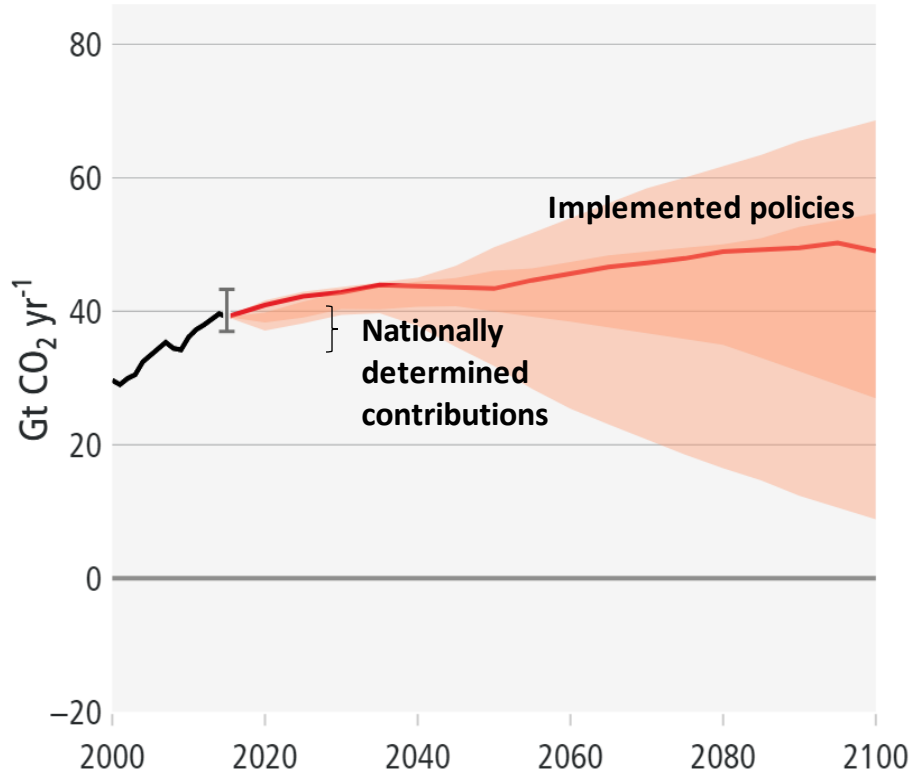


# 2023 – Global Stocktake

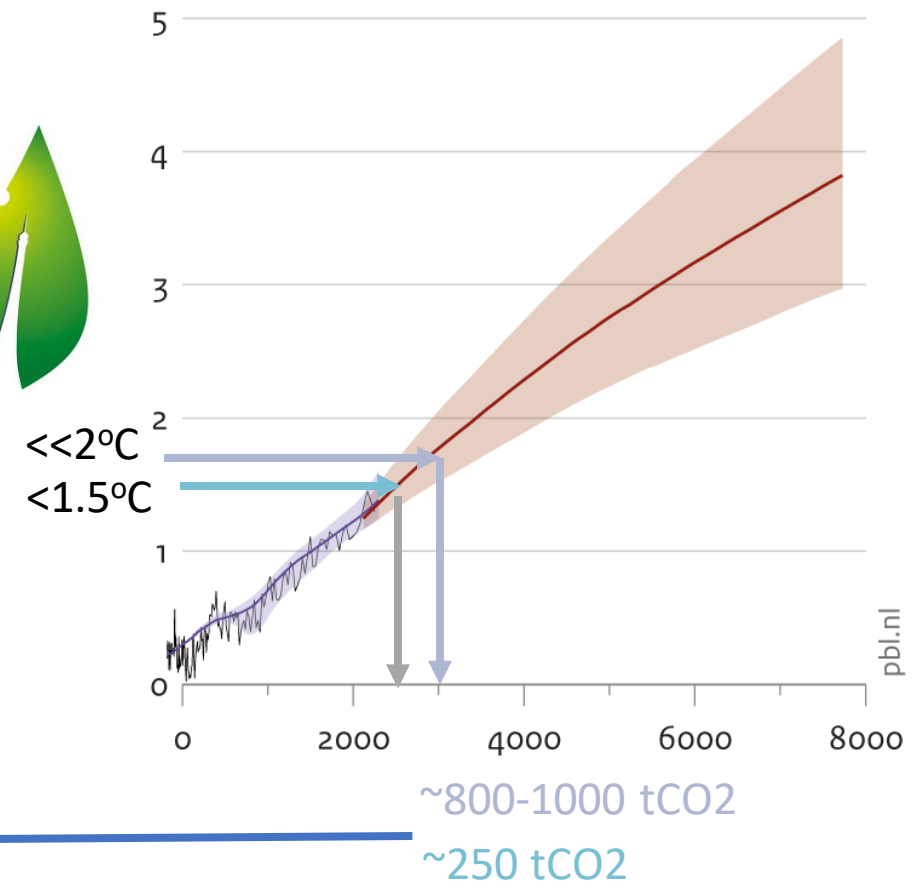
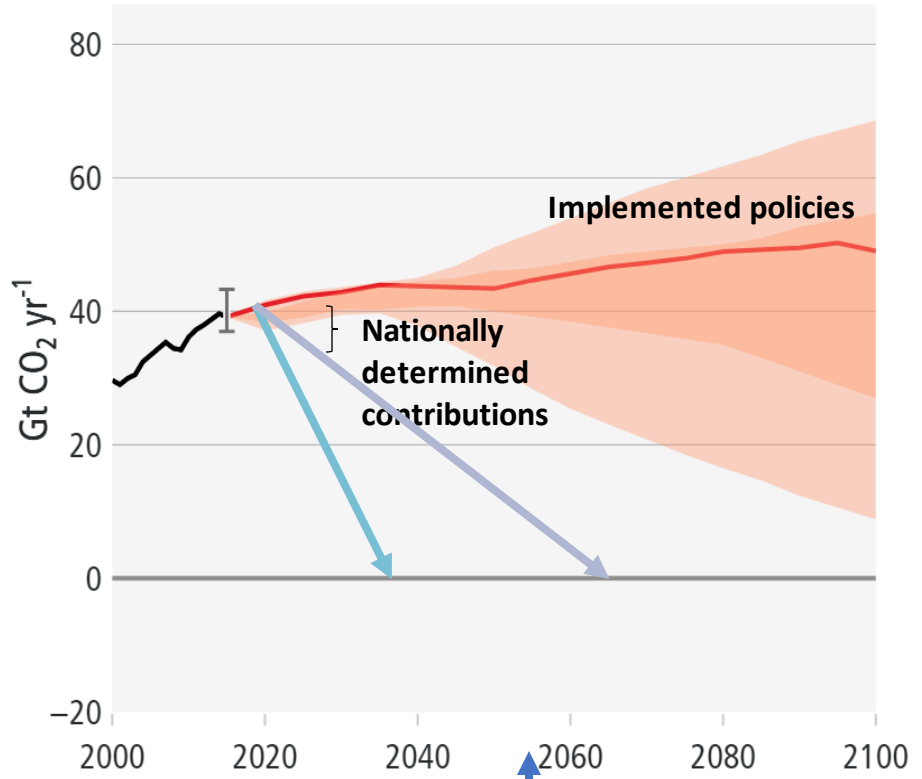




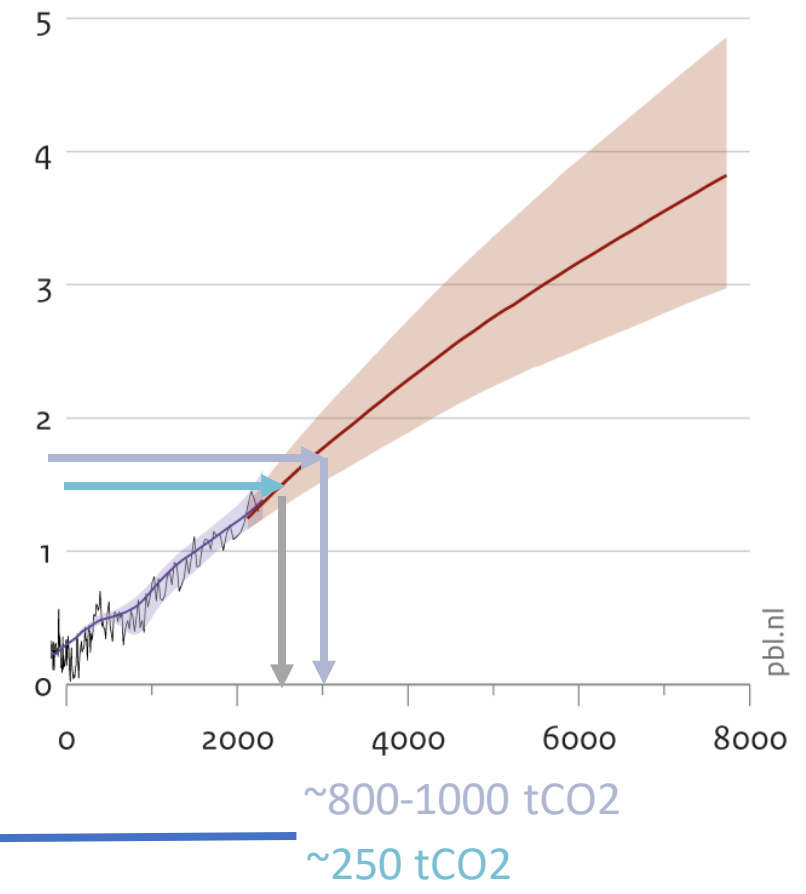
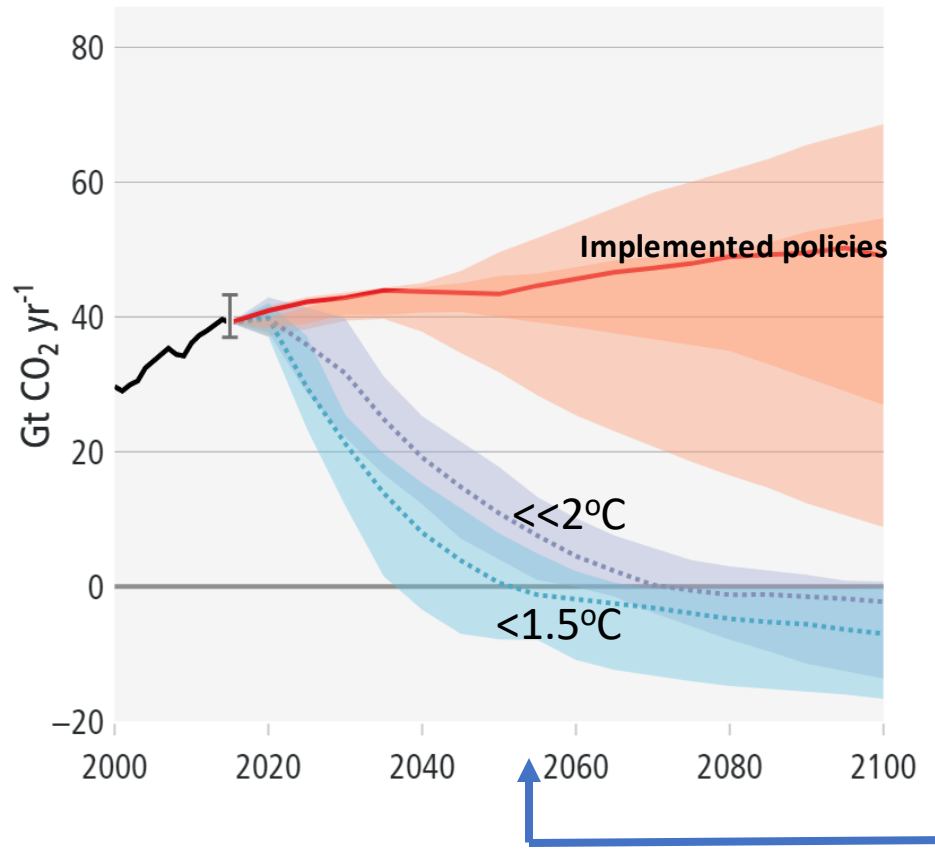
# 2023 – Global Stocktake



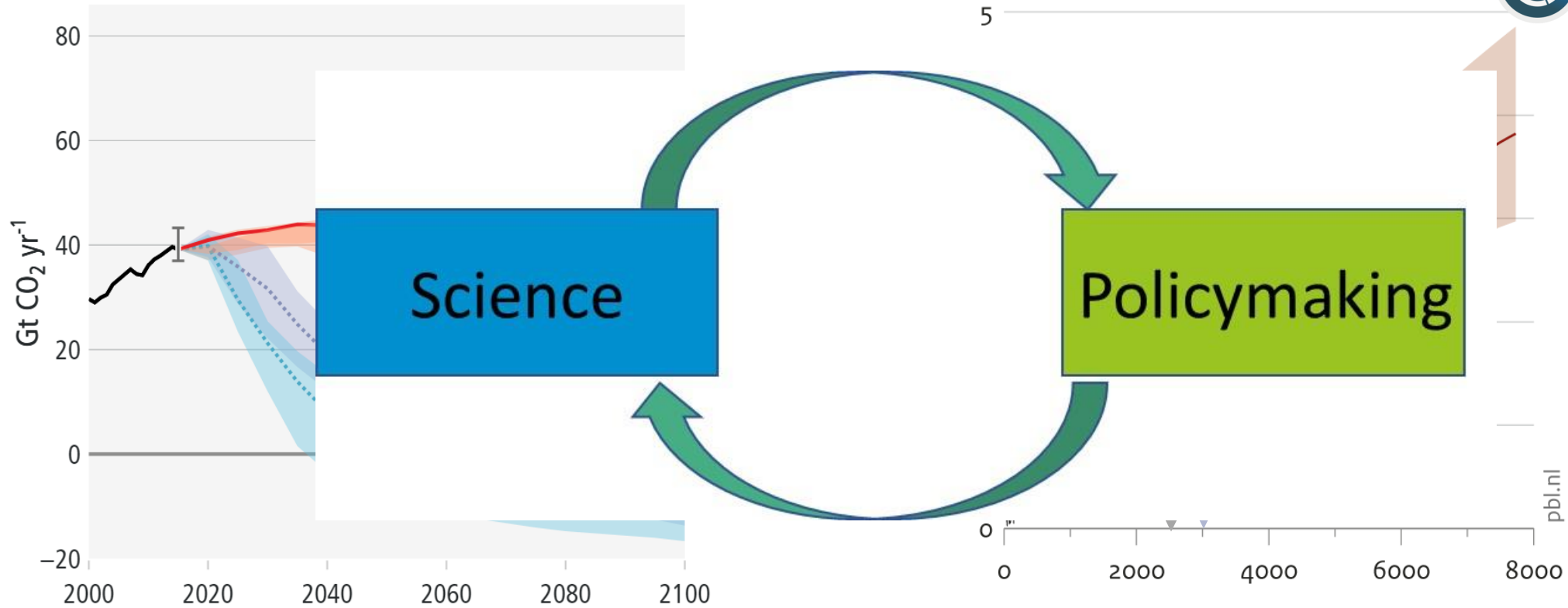
# 2023 – Global Stocktake



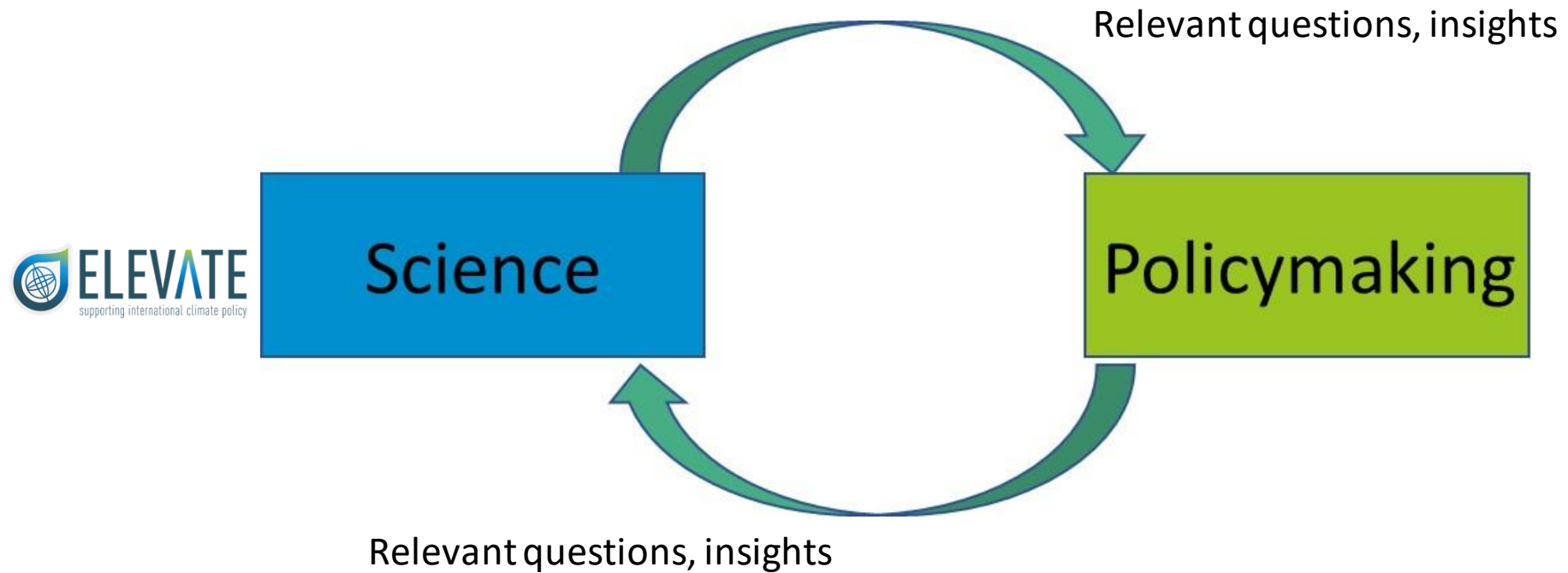
# 2023 – Global Stocktake



# 2023 – Global Stocktake



- Current policies are not enough
- We have to collectively raise ambition
- The coming decade is critical
  - Current policies = no budget for 1.5; 600 GtCO<sub>2</sub> for <<2!!
- Transition away from fossil fuels



Want to create long-term relationship between negotiators/policy-makers and scientists



 UNIVERSITY OF MARYLAND

 NEW CLIMATE INSTITUTE

 IIASA  
International Institute for Applied Systems Analysis

 CLIMATE STRATEGIES

 PBL Netherlands Environmental Assessment Agency

 CMCC  
Center for Global Model Intercomparison and Earth System Simulation

 AARHUS UNIVERSITET

 MCC

 WiseEuropa

 E3 Modelling  
Energy Economy Environment

 KAPSARC  
King Abdullah Petroleum Studies and Research Center  
using Innovative Solutions for a Sustainable Future

 AFREC ENERGY

 POTSDAM INSTITUTE FOR CLIMATE IMPACT RESEARCH

 TERI  
The Energy and Resources Institute

 IIIM AHMEDABAD

 江苏工业大学  
JIANGSU UNIVERSITY OF TECHNOLOGY



清华大学  
Tsinghua University



 KYOTO UNIVERSITY



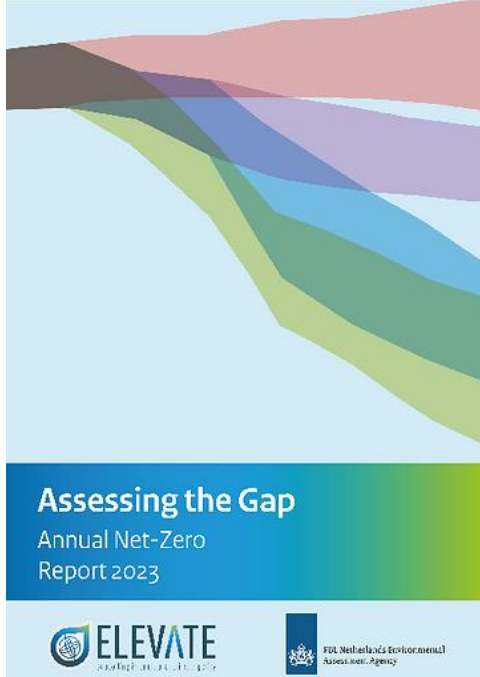
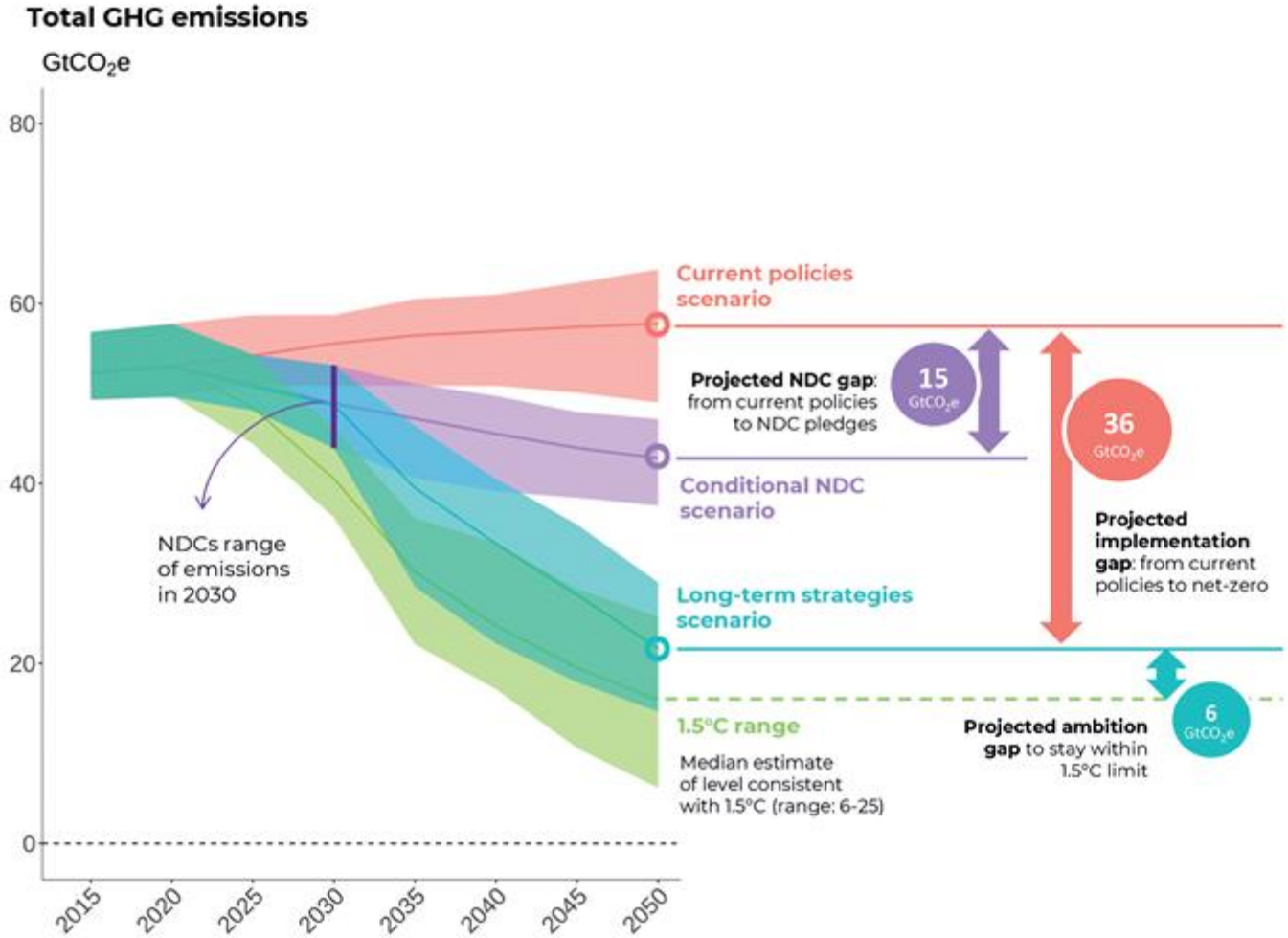
ASEAN Centre for Energy  
One Community for Sustainable Energy

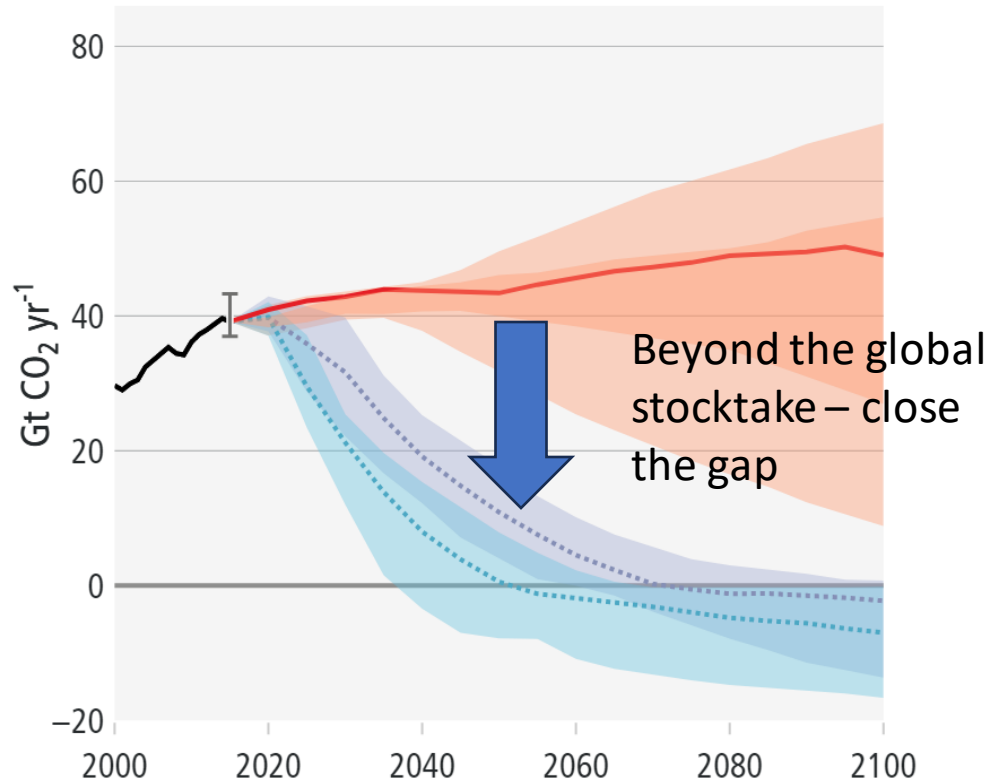
 COPPE UFRJ



**Horizon Europe  
2021-2027**

# Assessing the Gap: Annual Net-Zero Report 2023





Effective policies  
(sectoral and  
economy wide)

WP2 on policies

Raising ambition  
in a just way

WP5 on justice and sustainability

International  
cooperation

WP4 on international cooperation

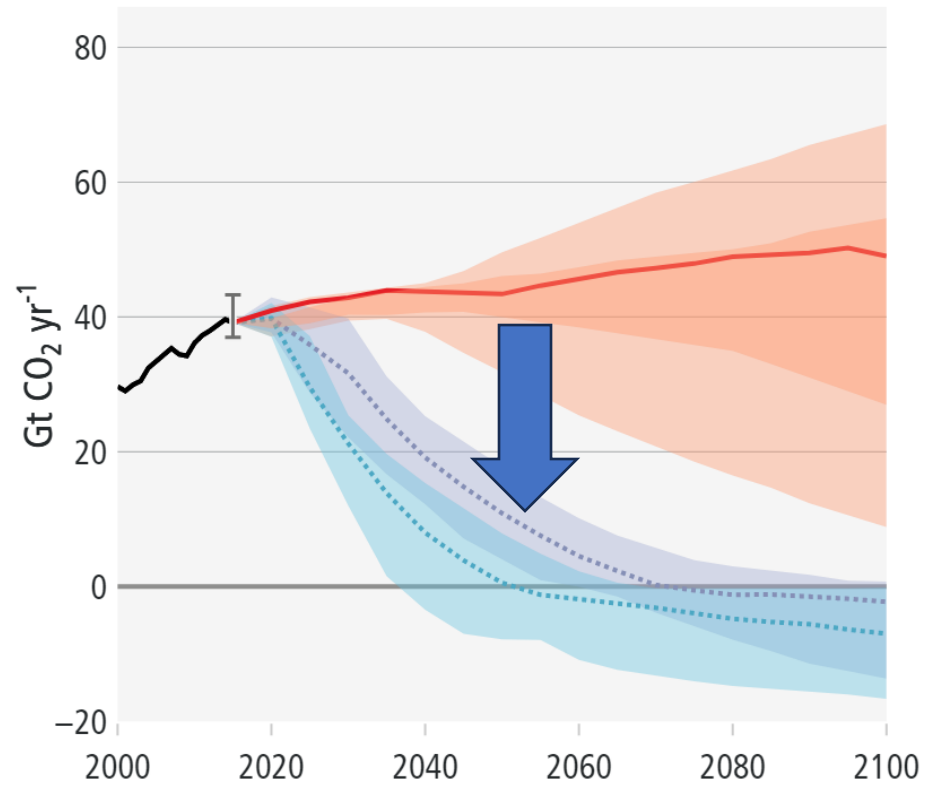
Involve actors /  
remove barriers

WP3 on sectoral potential

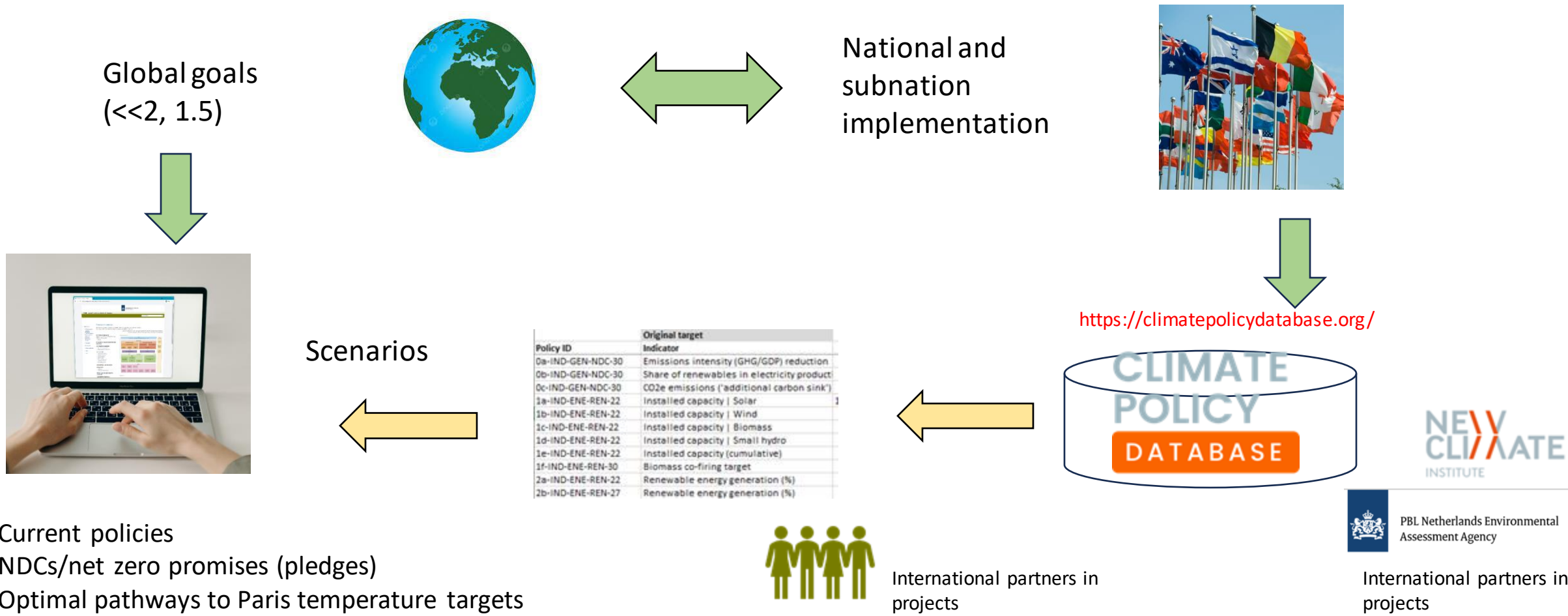


# Effective policies (sectoral and economy wide)

Raising ambition  
in a just way

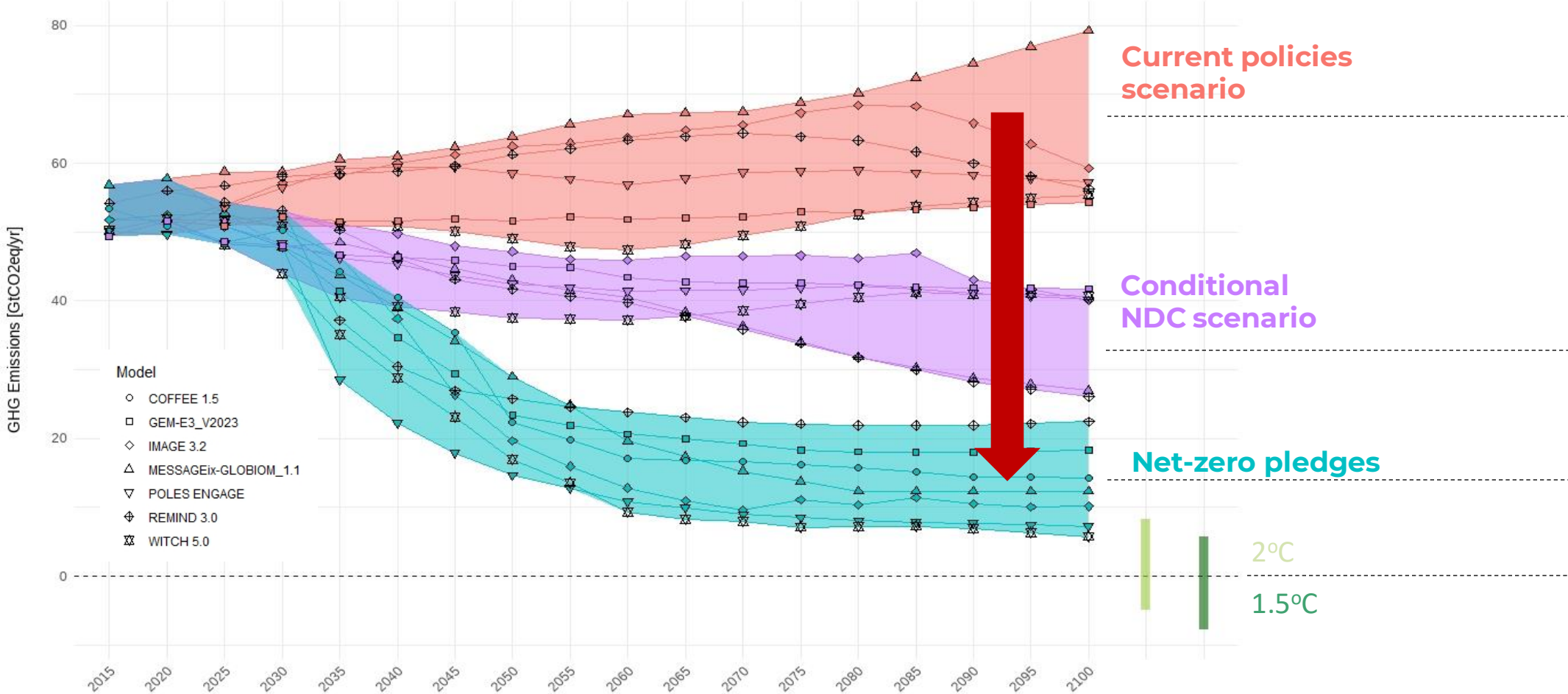


# Policies

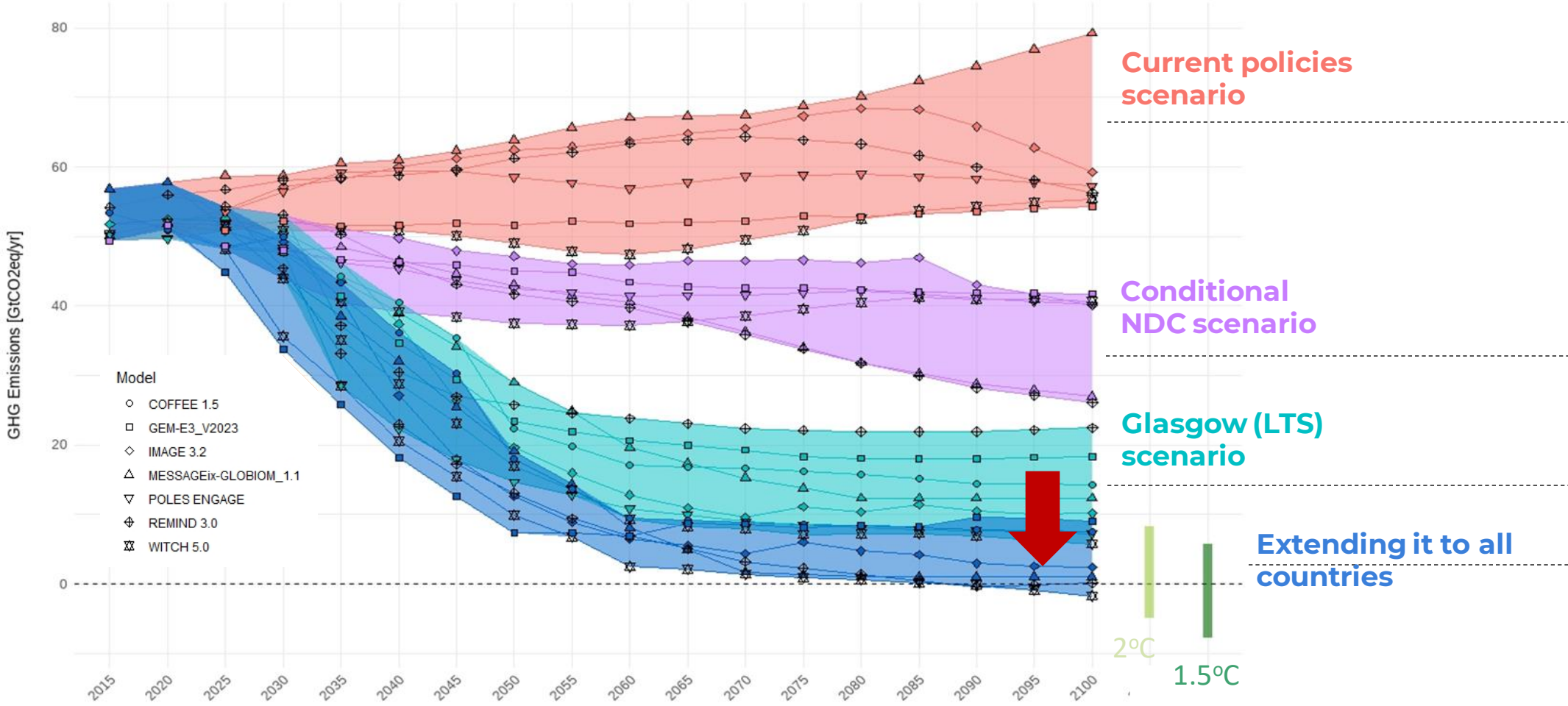


- Current policies
- NDCs/net zero promises (pledges)
- Optimal pathways to Paris temperature targets

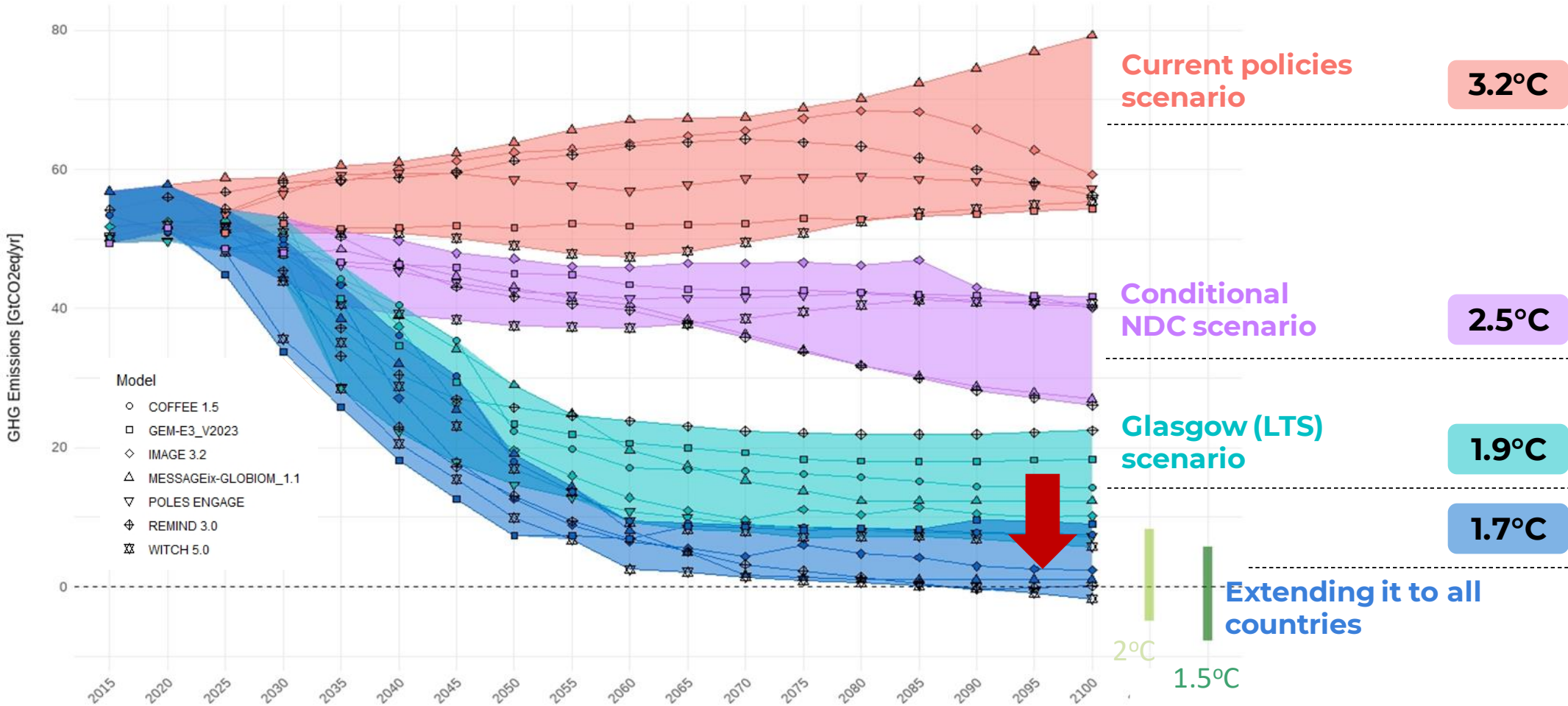
# Net-zero pledges



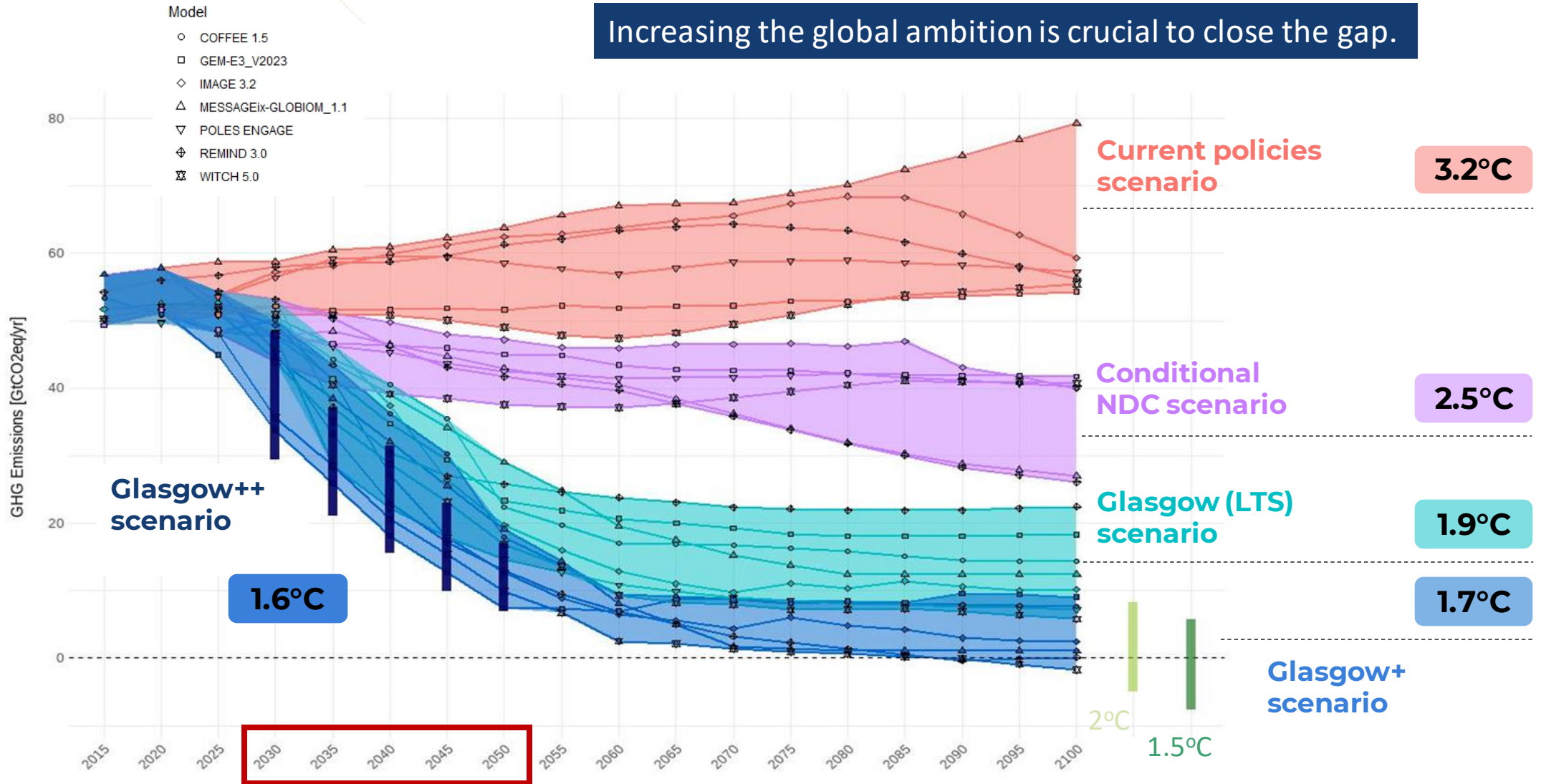
# Net-zero pledges



# Net-zero pledges

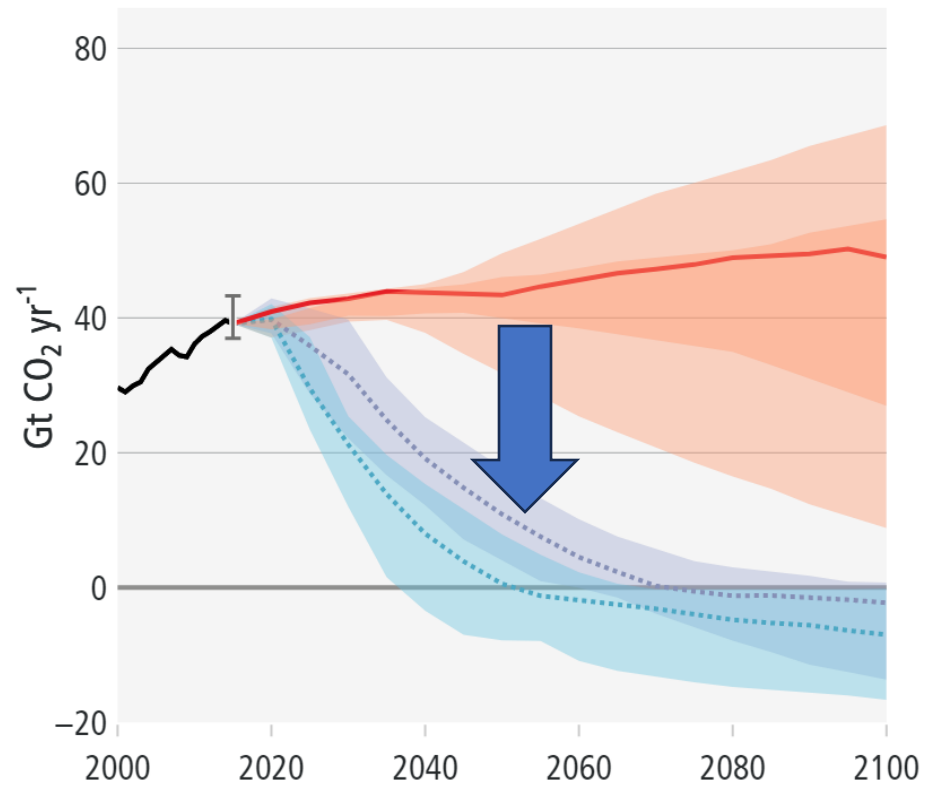


Increasing the global ambition is crucial to close the gap.



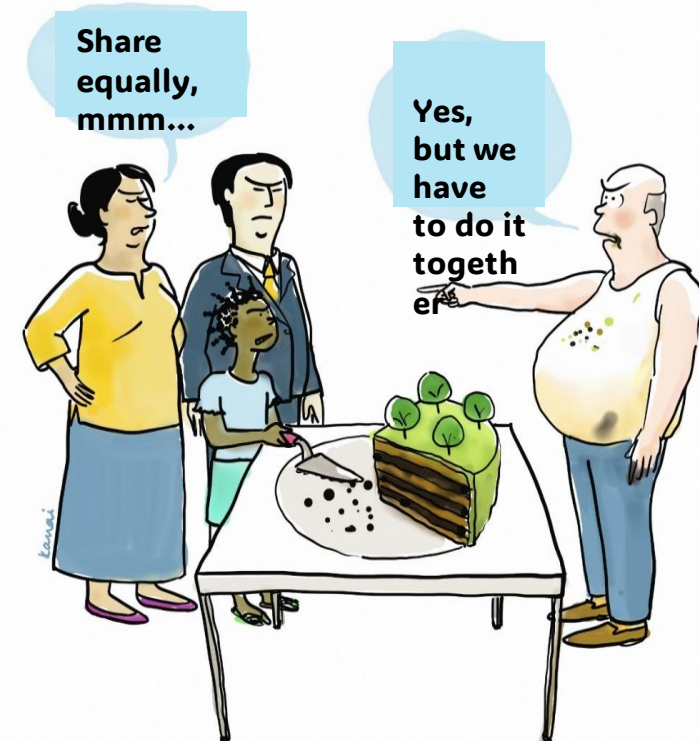
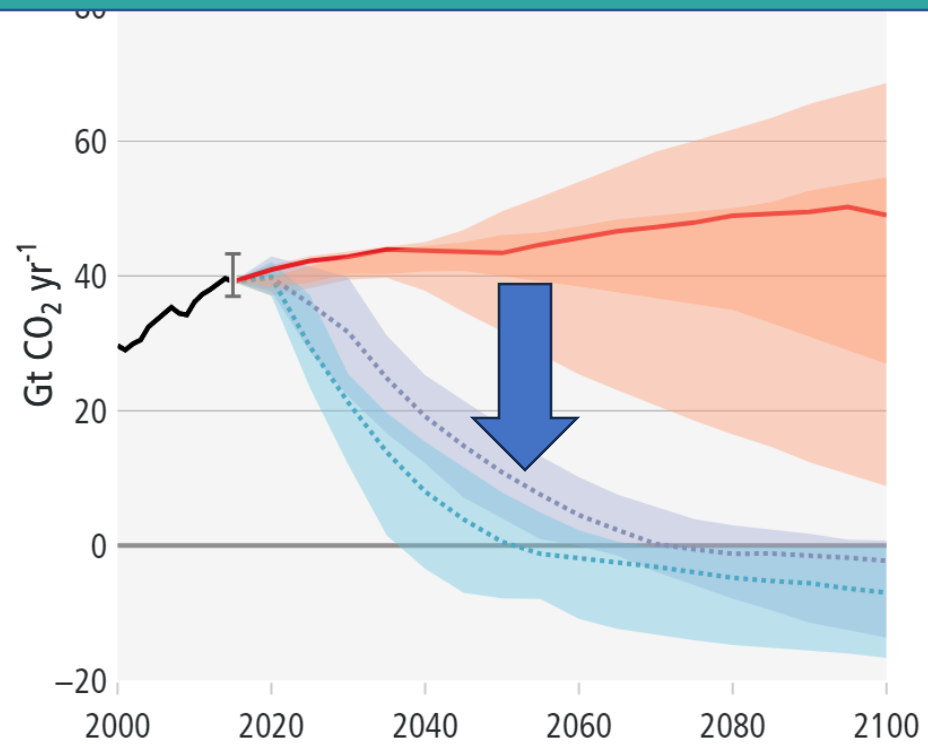
# Effective policies (sectoral and economy wide)

Raising ambition  
in a just way



## Raising ambition in a just way

Effective policies  
(sectoral and  
economy wide)

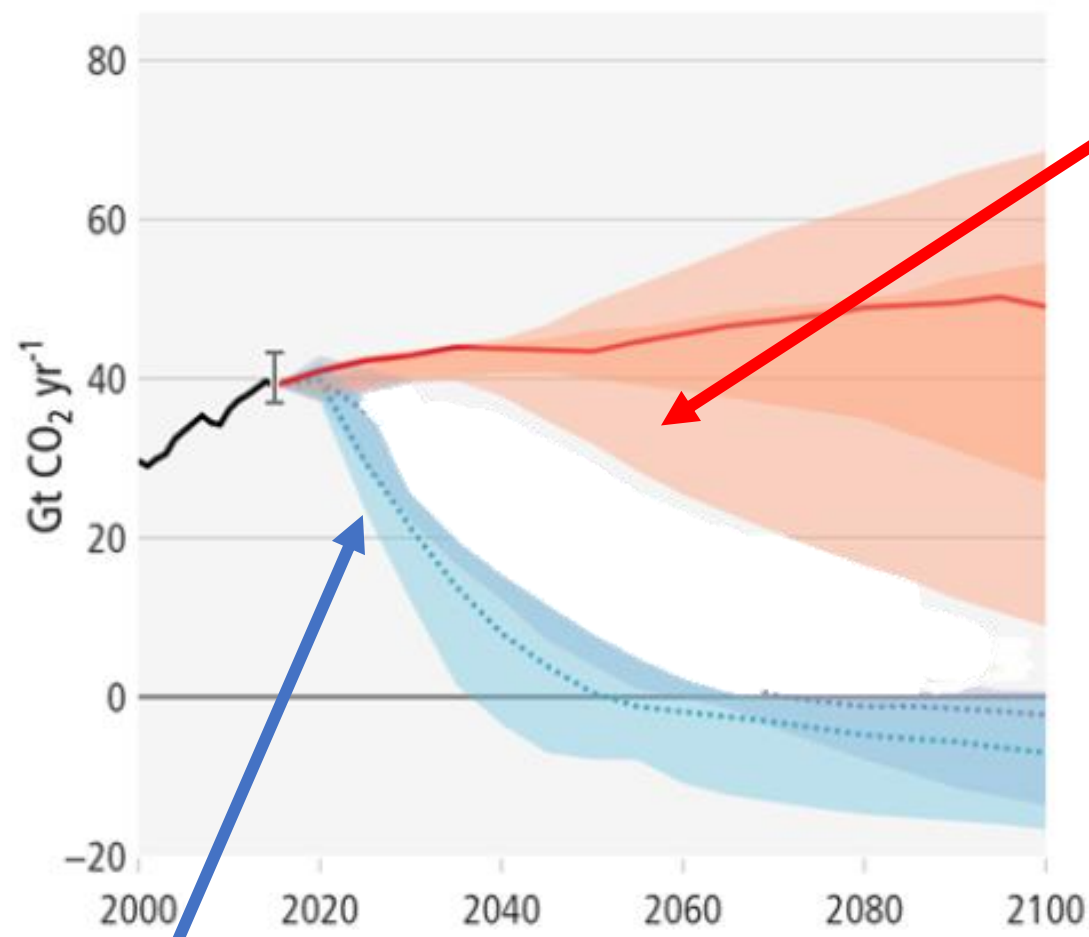




# Justice

- Emphasized in UNFCCC (equity): recognizing special circumstances, sustainable development rights, and differentiated responsibilities
- Plays a role in many ways in climate policy (mitigation, adaptation, relationship with SDGs)
- Sufficient level of justice condition for support – also in strengthening ambition
- Different methods and principles can be used

Focus on possible debt generated over time



Distribution of remaining emissions

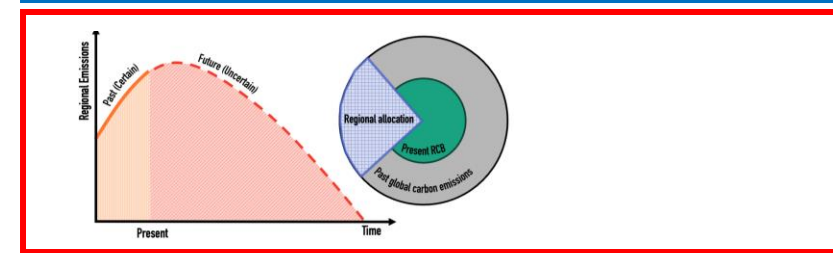
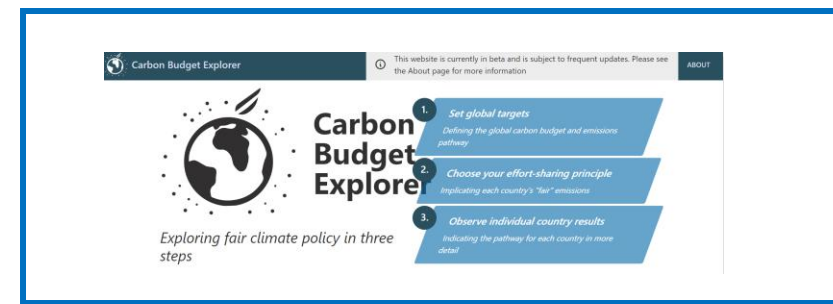


### Normative choices

- Climate target
- Fairness/allocation concepts
  - Equity
  - Responsibility
  - Capability
  - Decent living conditions
  - Continuity

[Some concepts are controversial and contested]

- Translation of these concepts



| Start Time (CET) | End time (CET) | Agenda Item  |
|------------------|----------------|--|
| 11:00            | 11:25          | Introduction to Event: The critical decade: how can we keep 1.5 alive?   |
| 11:25            | 11:45          | Introduction to Research Topics in breakout room sessions  |
| 11:45            | 12:20          | Aligning global goals and national commitments: Reflections from partner countries   |
| 12:20            | 14:20          | Interactive sessions <ul style="list-style-type: none"> <li>- Raising ambition through sectoral action</li> <li>- Navigating Just Transitions in the next round of NDCs</li> </ul> |
| 14:20            | 14:30          | Report back from the interactive sessions  |
| 14:30            | 14:25          | Panel discussion with stakeholders: <i>What does “transition away from fossil fuels” mean for this critical decade?</i>  |
| 15:25            | 15:30          | Wrap up and next steps   |

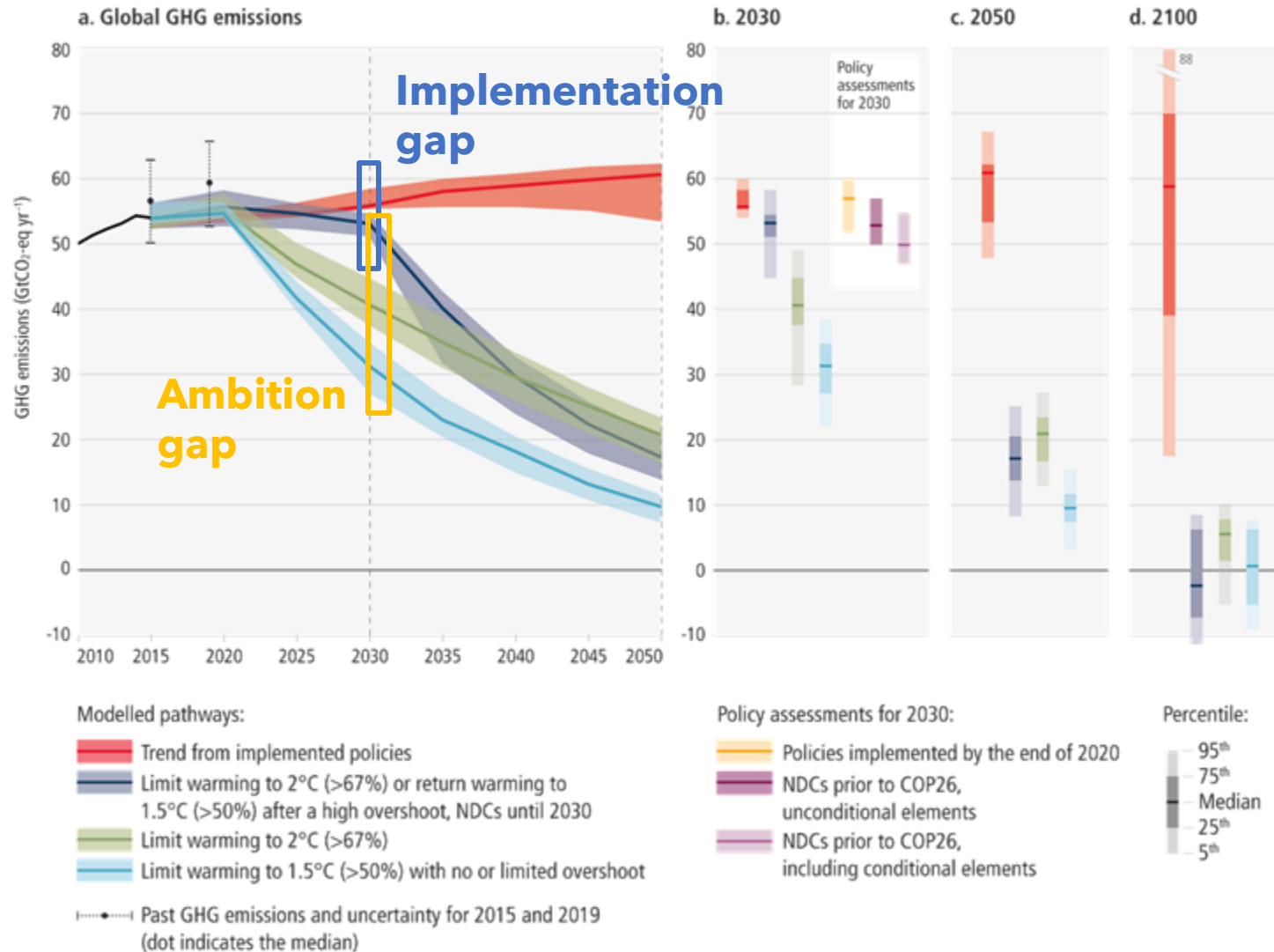
# **ELEVATE - ENABLING AND LEVERAGING CLIMATE ACTION TOWARDS NET ZERO EMISSIONS**

## **RAISING AMBITION THROUGH SECTORAL ACTION**

Leonardo Nascimento

ELEVATE – Stakeholder Workshop February 22nd

# GLOBAL IMPLEMENTATION AND AMBITION GAPS

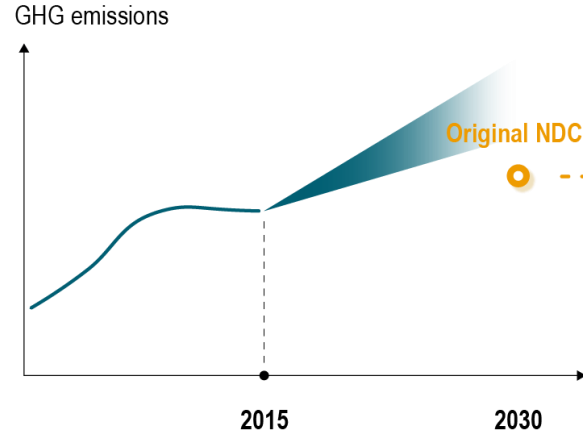


→ **Closing emissions gaps** remain fundamental to meet the goals of the Paris Agreement

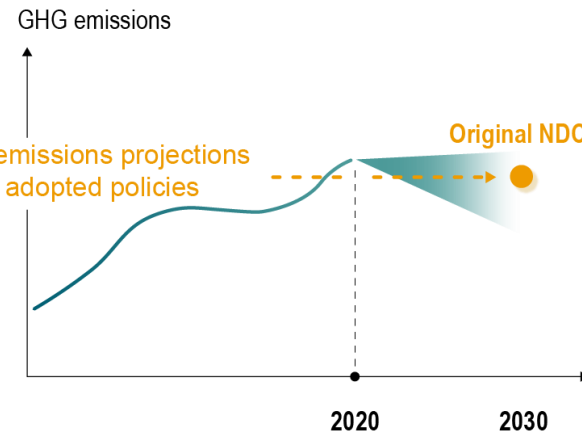
→ Delaying action **increases the effort** to reduce emissions in the future.

# AMBITION RAISING MECHANISM

## Stage I

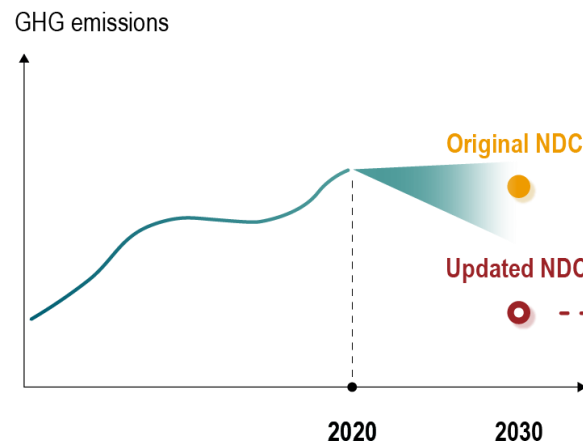


## Stage II

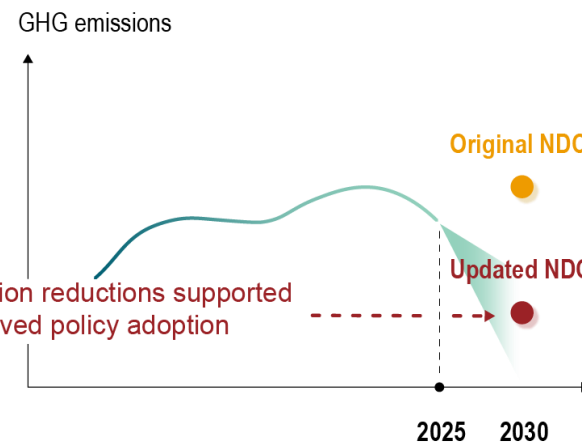


Source

## Stage III



## Stage VI



The ambition raising mechanism is not just about updating NDCs

Projected to miss target ? adopt additional policies

Projected to meet target ? adopt more ambitions target

# SECTORAL ACTION TO CLOSE THE GAP BEFORE 2030



**3x**

**Renewables**

**2x**

**Efficiency**

**-75%**

**Methane**

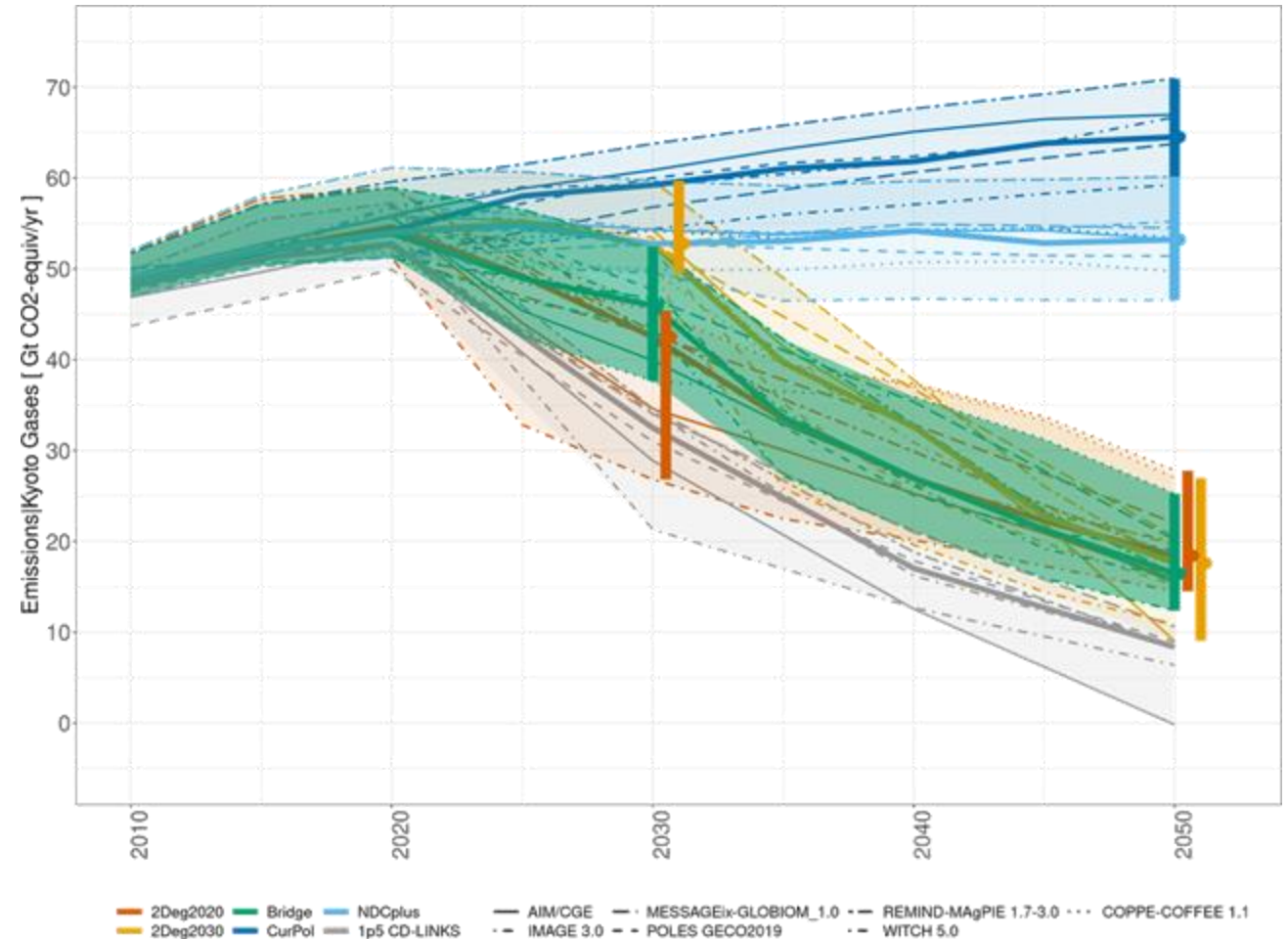


**Electrification**

**Global Stocktake** calls Parties to contribute to several **sectoral global efforts**.

# BRIDGING THE GAP ANALYSES

1. Identify **good practice sectoral measures** that have been successful in some contexts.
2. Map the **effect** of these measures on sectoral indicators.
3. Quantify the impact of **replicating good practice** sectoral measures in other parts of the world.



van Soest, H.L., Aleluia Reis, L., Baptista, L.B. *et al.* Global roll-out of comprehensive policy measures may aid in bridging emissions gap. *Nat Commun* **12**, 6419 (2021).  
<https://doi.org/10.1038/s41467-021-26595-z>



# BREAKOUT DISCUSSION

We are working on **updating the list** of sectoral measures and their effect.

We are analysing the **sectoral indicators**, such as renewable electricity, within country groups to **differentiate the impact** of these measures.

→ Discuss the list of sectoral measures used in the bridging scenario analyses

→ Discuss potential ways to group these countries to add nuance to the assumption of rolling out these measures to other places in the world.

# Thank you for your attention!

➤ Leonardo Nascimento

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[www.elevate-climate.org](http://www.elevate-climate.org)

[@ElevateClimate](https://twitter.com/ElevateClimate)

# Navigating Just Transitions in the next round of NDCs – unravel the different dimensions, forms and metrics of justice

ELEVATE Online Workshop February 22, 2024  
Elina Brutschin

## Key messages

- ❑ What is justice?
- ❑ How can a broader understanding of justice be incorporated into the work of climate mitigation scenarios?

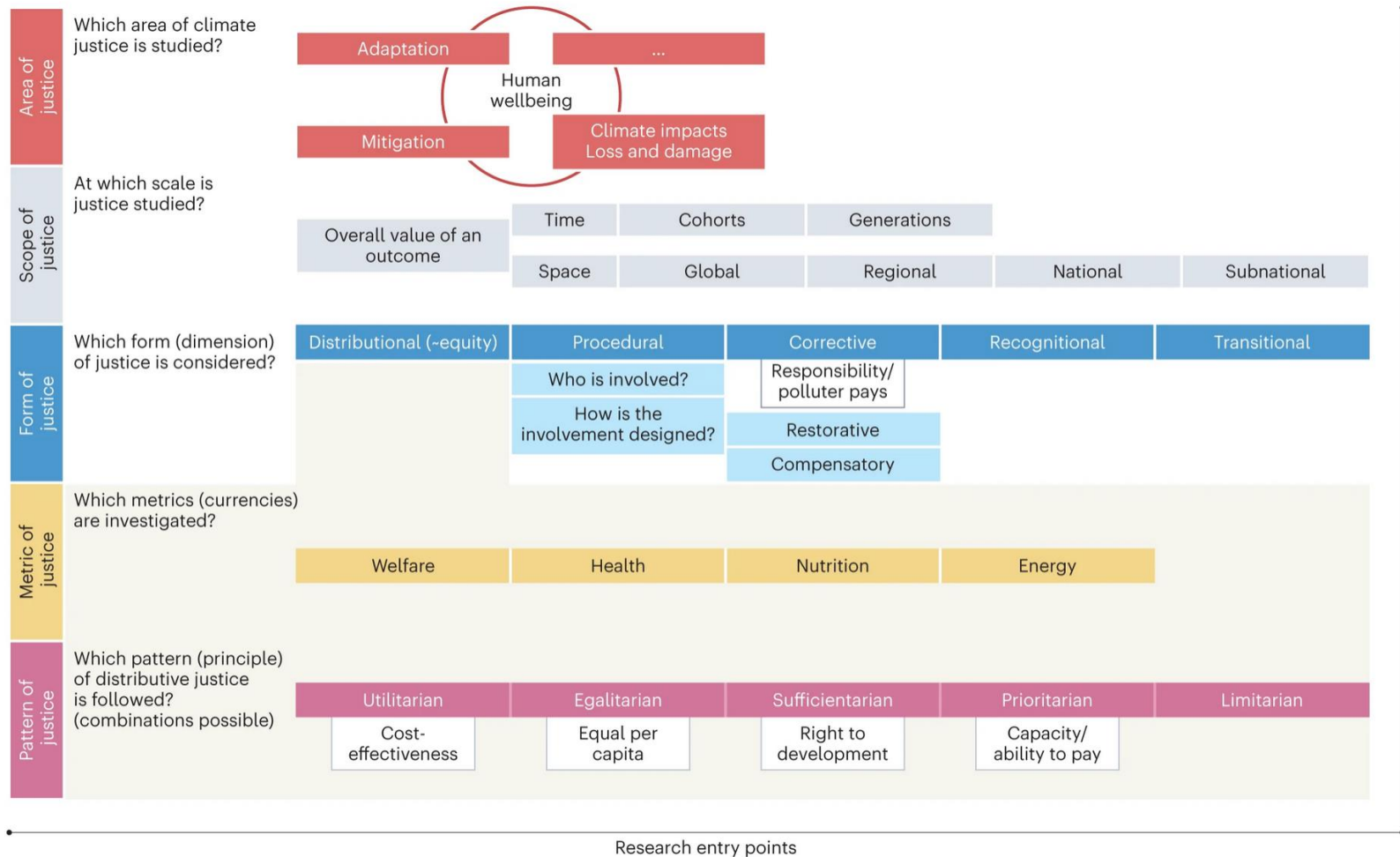
## Justice broader discussions

- ❑ "Just transitions" originated from US trade unions to address environmental regulation's **job impacts**.
- ❑ Climate, energy, social, and **environmental** justice have merged over time.
- ❑ SDGs prioritize justice through **equal access** to opportunities and services, while protecting the environment.
- ❑ UNFCCC emphasizes **equity**: recognizing special circumstances, sustainable development rights, and differentiated responsibilities.

# Getting a systematic overview

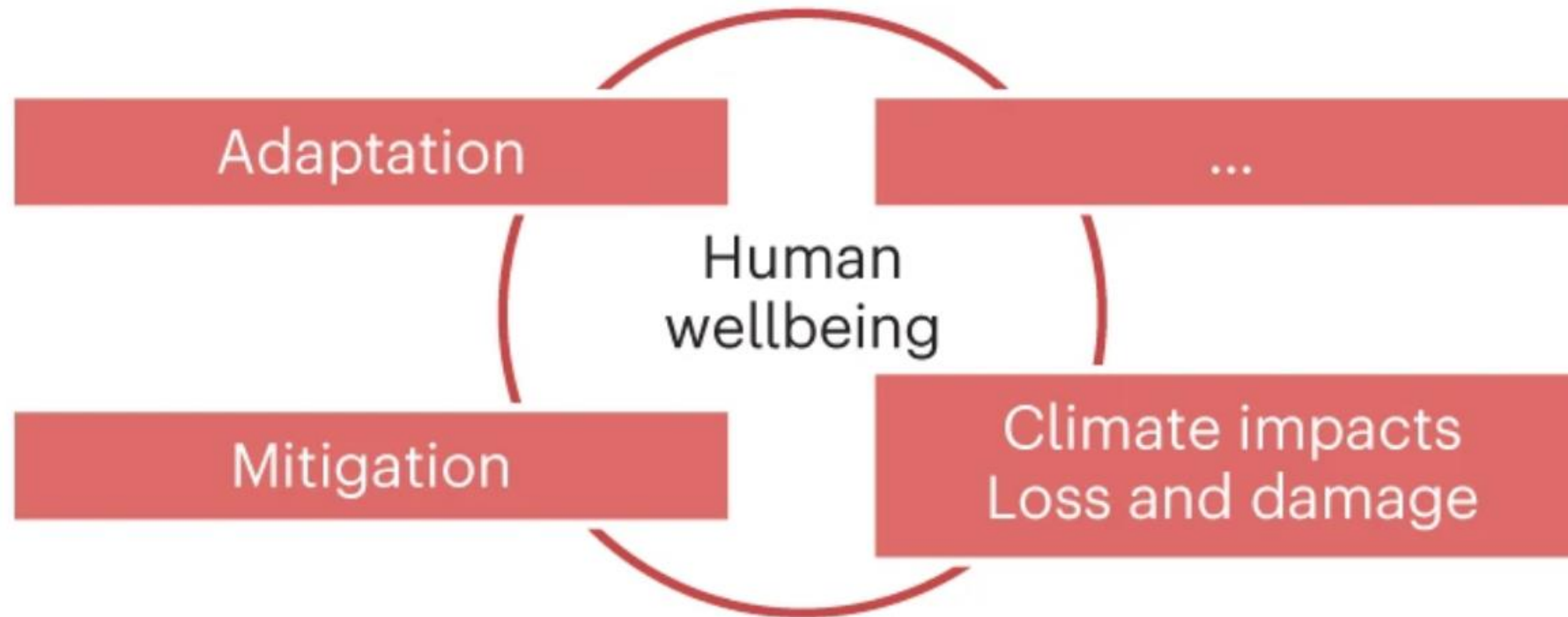
**Fig. 1: A justice framework to guide climate research and policy discussions.**

From: [Justice considerations in climate research](#)

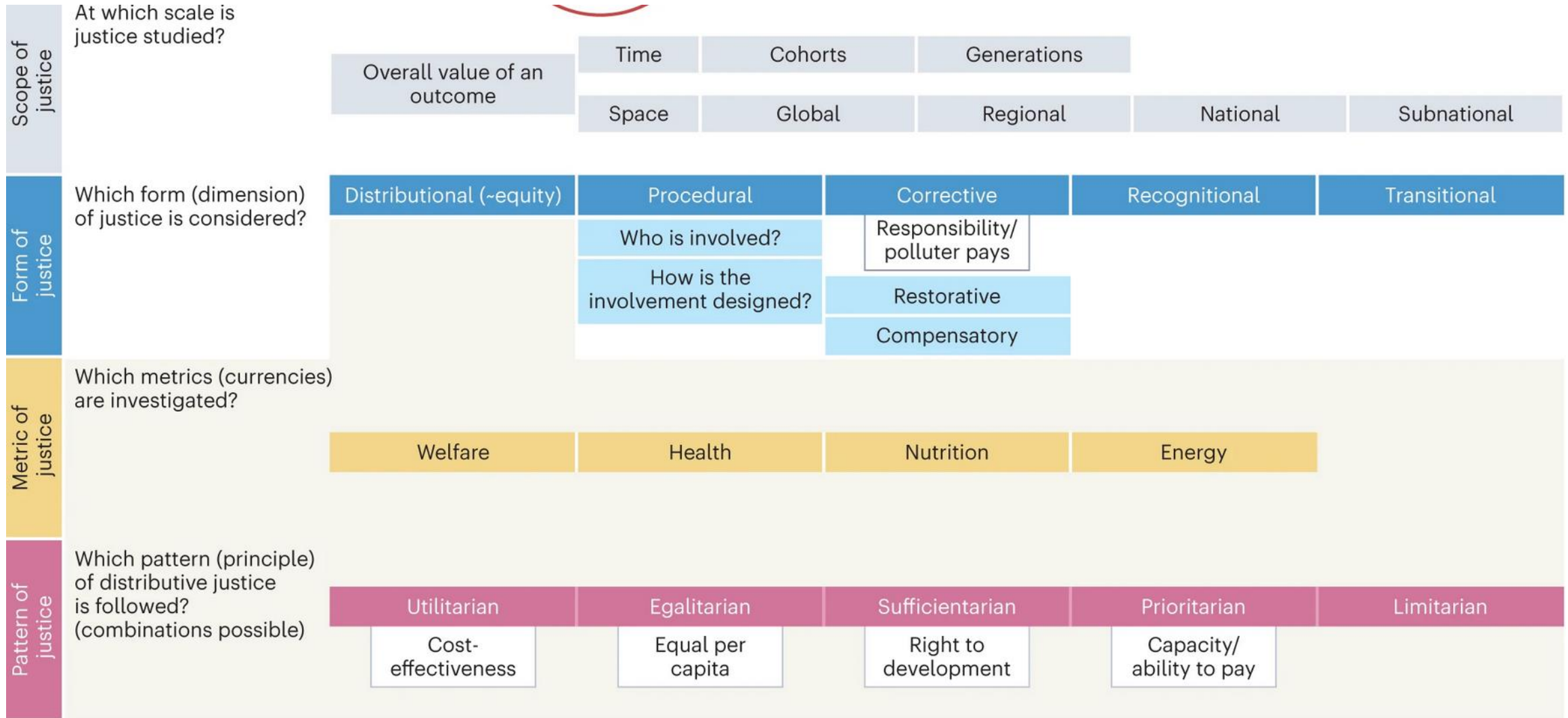


Zimm, C., Mintz-Woo, K., Brutschin, E., Hanger-Kopp, S., Hoffmann, R., Kikstra, J. S., Kuhn, M., Min, J., Muttarak, R., Pachauri, S., Patange, O., Riahi, K., & Schinko, T. (2024). Justice considerations in climate research. *Nature Climate Change*, 14(1), 22–30. <https://doi.org/10.1038/s41558-023-01869-0>

# Which areas are studied from justice perspective?



# Scope, form, metrics and patterns...

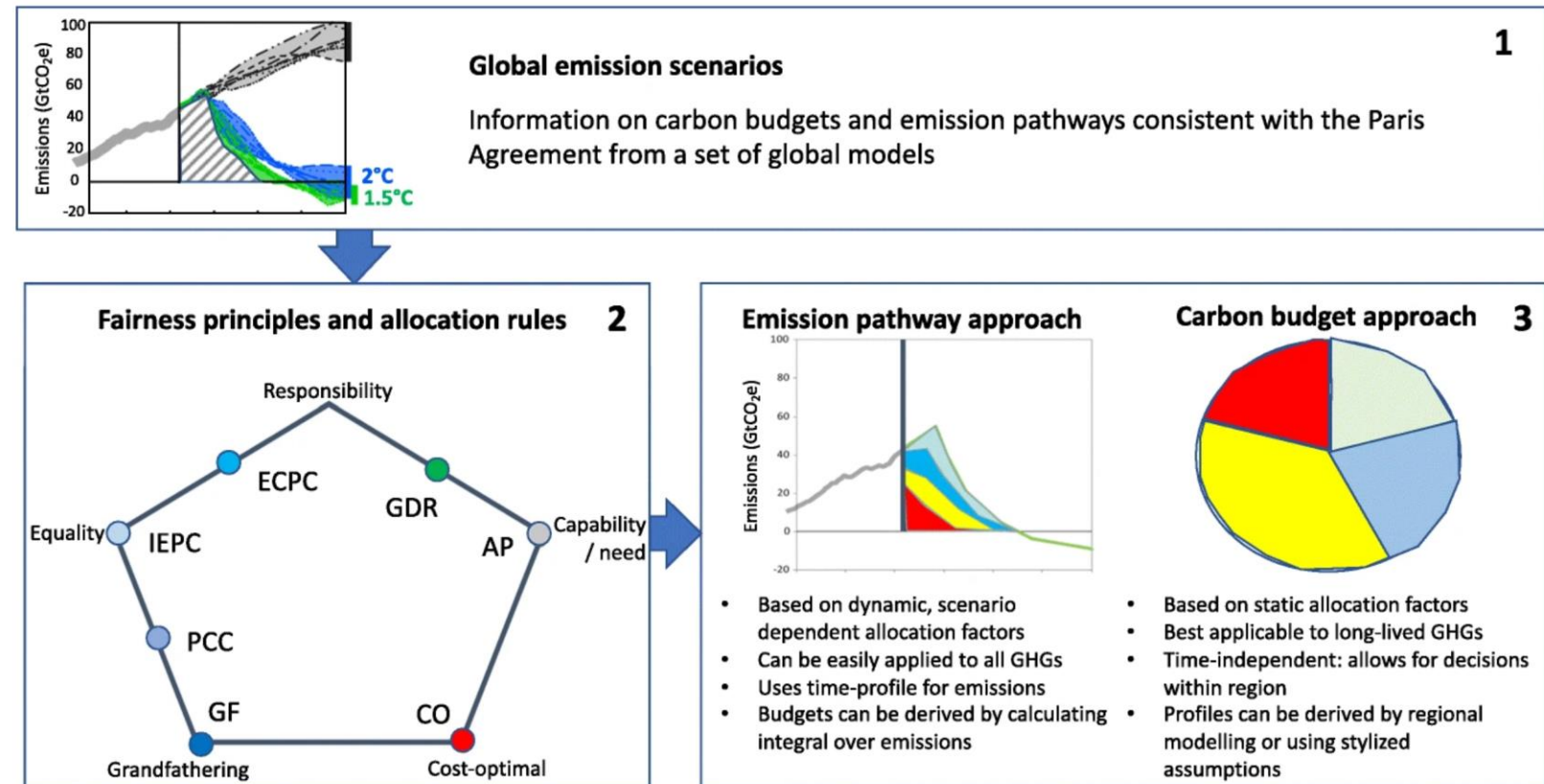




# Justice in global IAMs (so far)

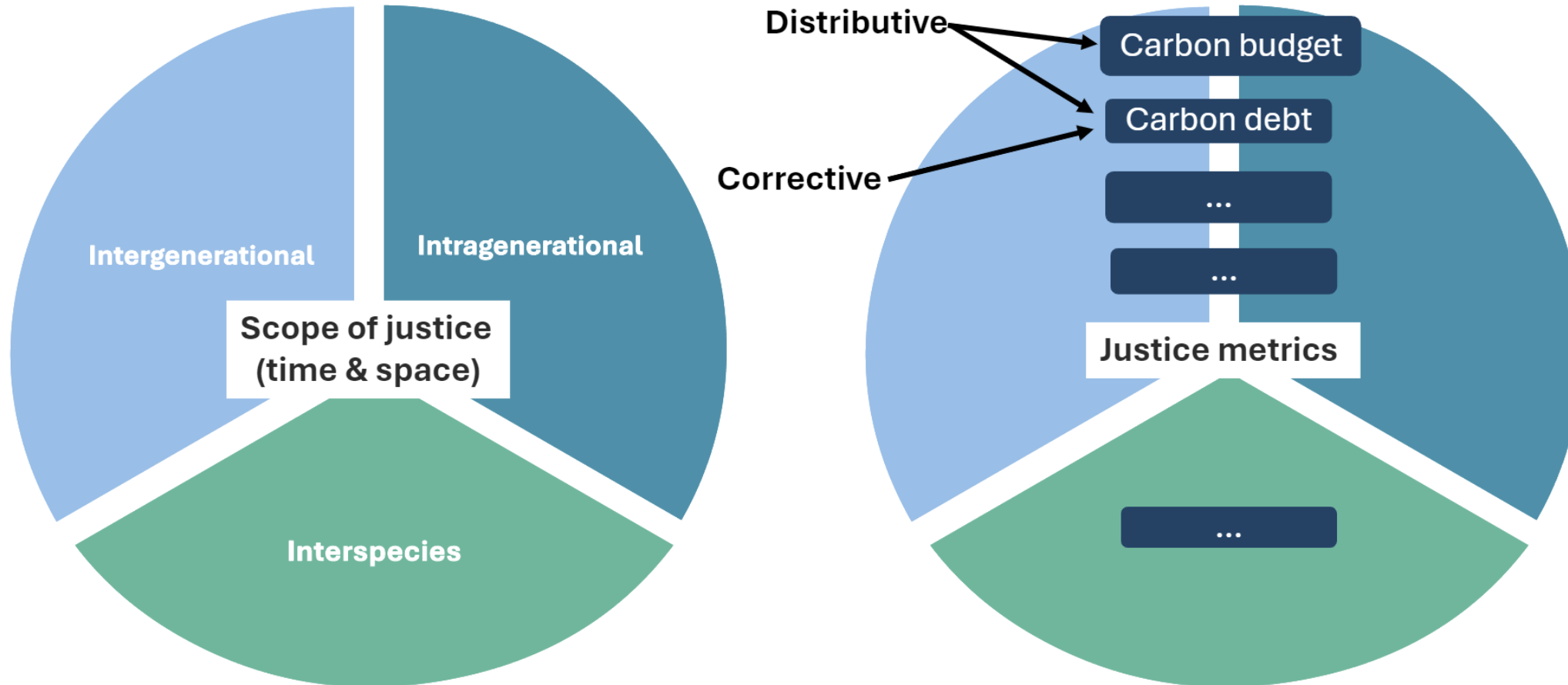
Ex-post using outputs/data from scenarios

Regional distribution of global carbon budget/ investments following different fairness principles



van den Berg, N. J., van Soest, H. L., Hof, A. F., den Elzen, M. G. J., van Vuuren, D. P., Chen, W., Drouet, L., Emmerling, J., Fujimori, S., Höhne, N., Köberle, A. C., McCollum, D., Schaeffer, R., Shekhar, S., Vishwanathan, S. S., Vrontisi, Z., & Blok, K. (2020). Implications of various effort-sharing approaches for national carbon budgets and emission pathways. *Climatic Change*, 162(4), 1805–1822. <https://doi.org/10.1007/s10584-019-02368-y>

# Justice concepts in ELEVATE



Gupta, J., Liverman, D., Prodani, K., Aldunce, P., Bai, X., Broadgate, W., Ciobanu, D., Gifford, L., Gordon, C., Hurlbert, M., Inoue, C. Y. A., Jacobson, L., Kanie, N., Lade, S. J., Lenton, T. M., Obura, D., Okereke, C., Otto, I. M., Pereira, L., ... Verburg, P. H. (2023). Earth system justice needed to identify and live within Earth system boundaries. *Nature Sustainability*, 6(6), Article 6. <https://doi.org/10.1038/s41893-023-01064-1>



# Carbon Budget Explorer

*Exploring fair climate policy in three steps*

ELEVATE workshop 22 February 2024  
Mark Dekker



# Carbon Budget Explorer

*Exploring fair climate policy in three steps*

1.

*Set global targets*

*Defining the global carbon budget and emissions pathway*

2.

*Choose your effort-sharing principle*

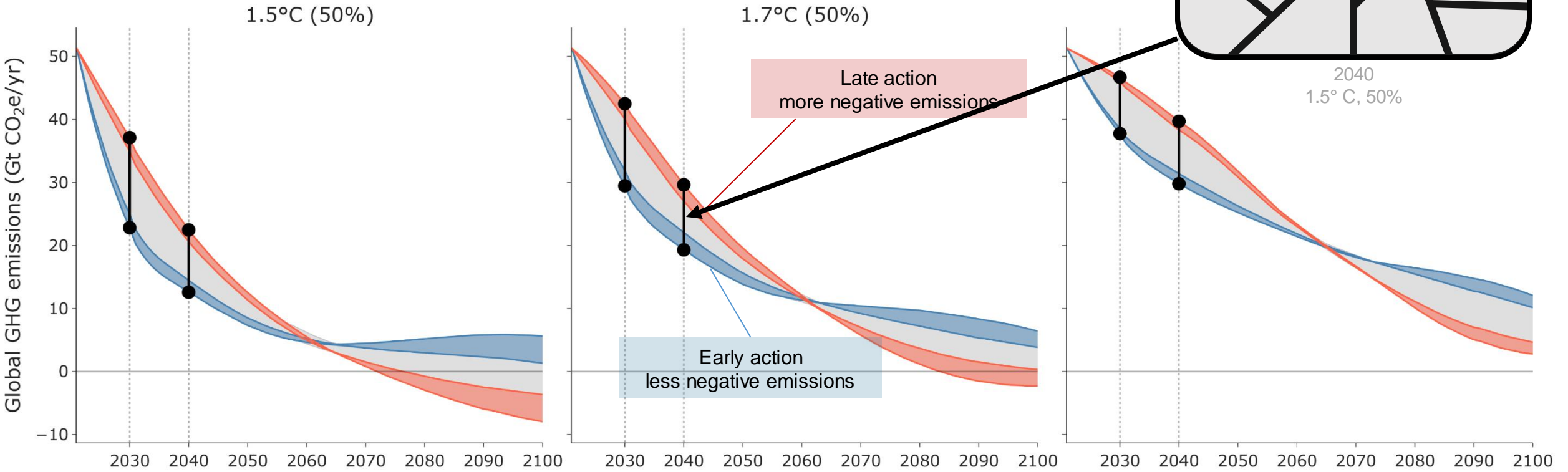
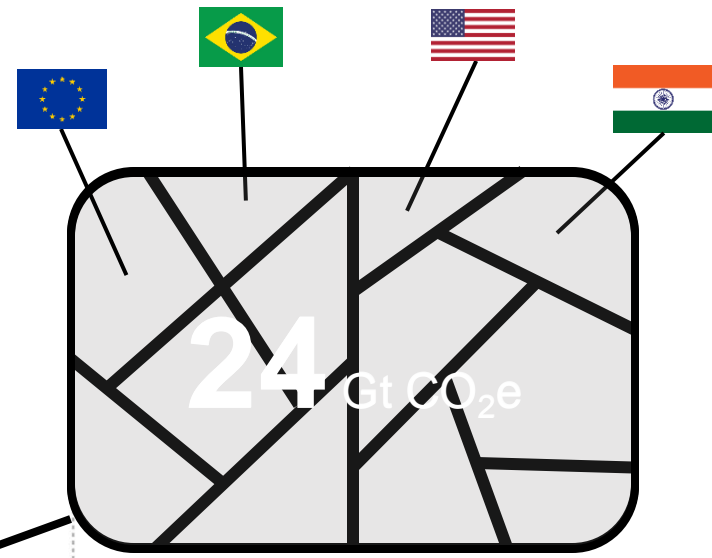
*Implicating each country's "fair" emissions*

3.

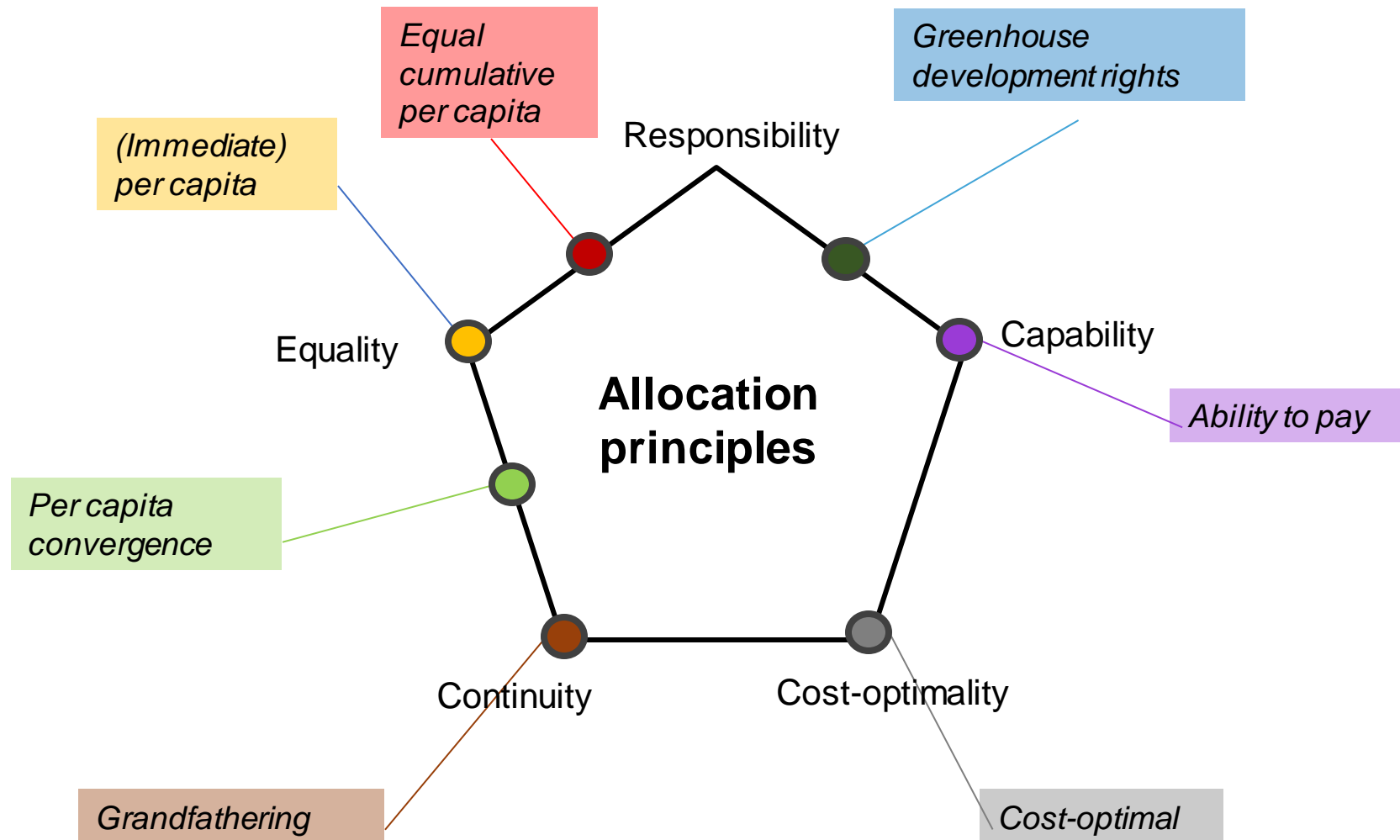
*Observe individual country results*

*Indicating the pathway for each country in more detail*

# Step 1: Set global targets



## Step 2: Choose view on fairness



## Step 3: Observe consequences

[www.carbonbudgetexplorer.eu](http://www.carbonbudgetexplorer.eu)

# Aligning global goals and national commitments- Reflections from national stakeholders



**Moderator:**  
**Detlef van Vuuren**

Senior researcher at the  
Netherlands Environmental  
Assessment Agency



**Ritu Mathur**

Senior Energy Economist at  
NITI Aayog



**Jiang Kejun**

Senior Researcher at Energy  
Research Institute in China



**Maciej Bukowski**

Senior International Analysis  
Expert at BGK –Polish  
Development Bank.



**Maria Aljishi**

International Policy Advisor,  
Climate Change &  
Sustainability, Carbon Markets  
at Ministry of Energy in Saudi  
Arabia



# Choose your topic:

## Raising ambition through sectoral action

Please **stay** in this meeting link

## Navigating Just Transitions in the next round of NDCs – unravel the different dimensions, forms and metrics of justice

Please connect to the **other link** posted in the chat

# ELEVATE - ENABLING AND LEVERAGING CLIMATE ACTION TOWARDS NET ZERO EMISSIONS

## BREAKOUT SESSION

Leonardo Nascimento & Elena Hooijschuur

ELEVATE - Stakeholder Workshop February 22nd

# MORNING SESSION

## Warm up

Get to know each other a little bit better

## Pairs

Discuss your answers with your partner and reflect on differences



**Lunch  
break**

## Introduction

A little more information about the session and the measures considered.

## Individual

Think about sectoral measures and their constraints.

How much political attention do measures receive in your country? Do you miss any measures? Which constraints are important?

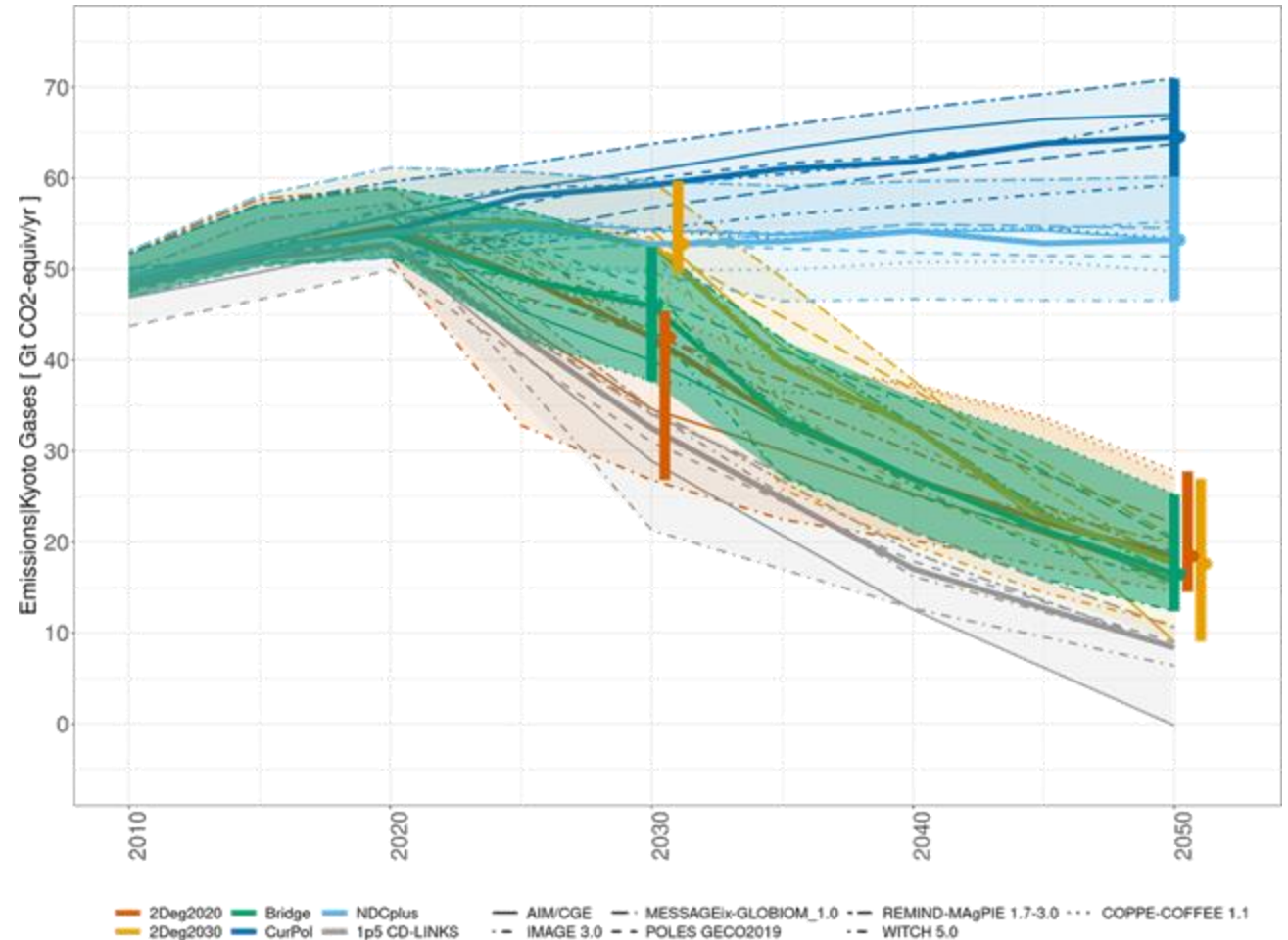
## Groups

Think about interesting lessons from resulting scenario

Discuss and share your thoughts. Think of some key takeaways to share with the group.

# BRIDGING THE GAP ANALYSES

1. Identify **good practice sectoral measures** that have been successful in some contexts.
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<https://doi.org/10.1038/s41467-021-26595-z>

# ANALYSES LIMITATIONS



Indicators were defined based on the **best performer** across major emitters.

For example, annual renewable growth of 1.4 p.p. (EU 2007-2017)

Countries have different contexts and **good practice may vary** across them.



Measures are replicated globally at similar levels or only distinguished into high-income and other countries.

Assumption that measures can be replicated elsewhere do not account for **implementation constraints**.

# SECTORAL MEASURES

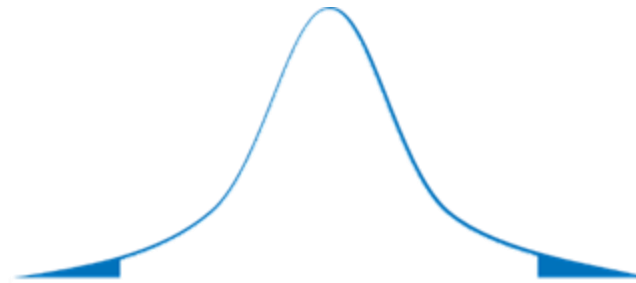


# MAP THE EFFECT



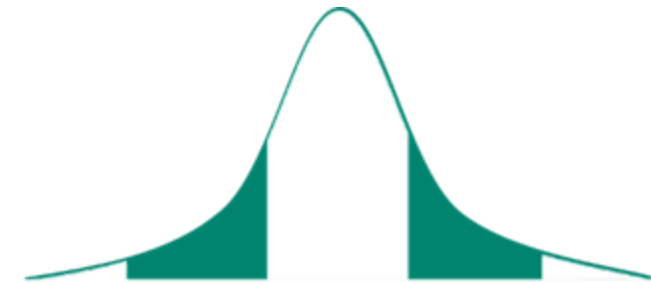
## Common performance

- Most countries have performance within this range
- Estimate is usually robust to extreme values
- Interquartile range (25<sup>th</sup> – 75<sup>th</sup> percentiles) offers a good estimate



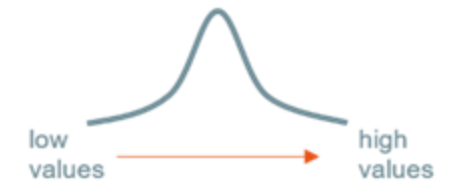
## Outliers

- Unusual values that are often not representative
- Likely driven by variations in small countries or extreme events
- Definition varies but often rely on identifying the tails of the distribution



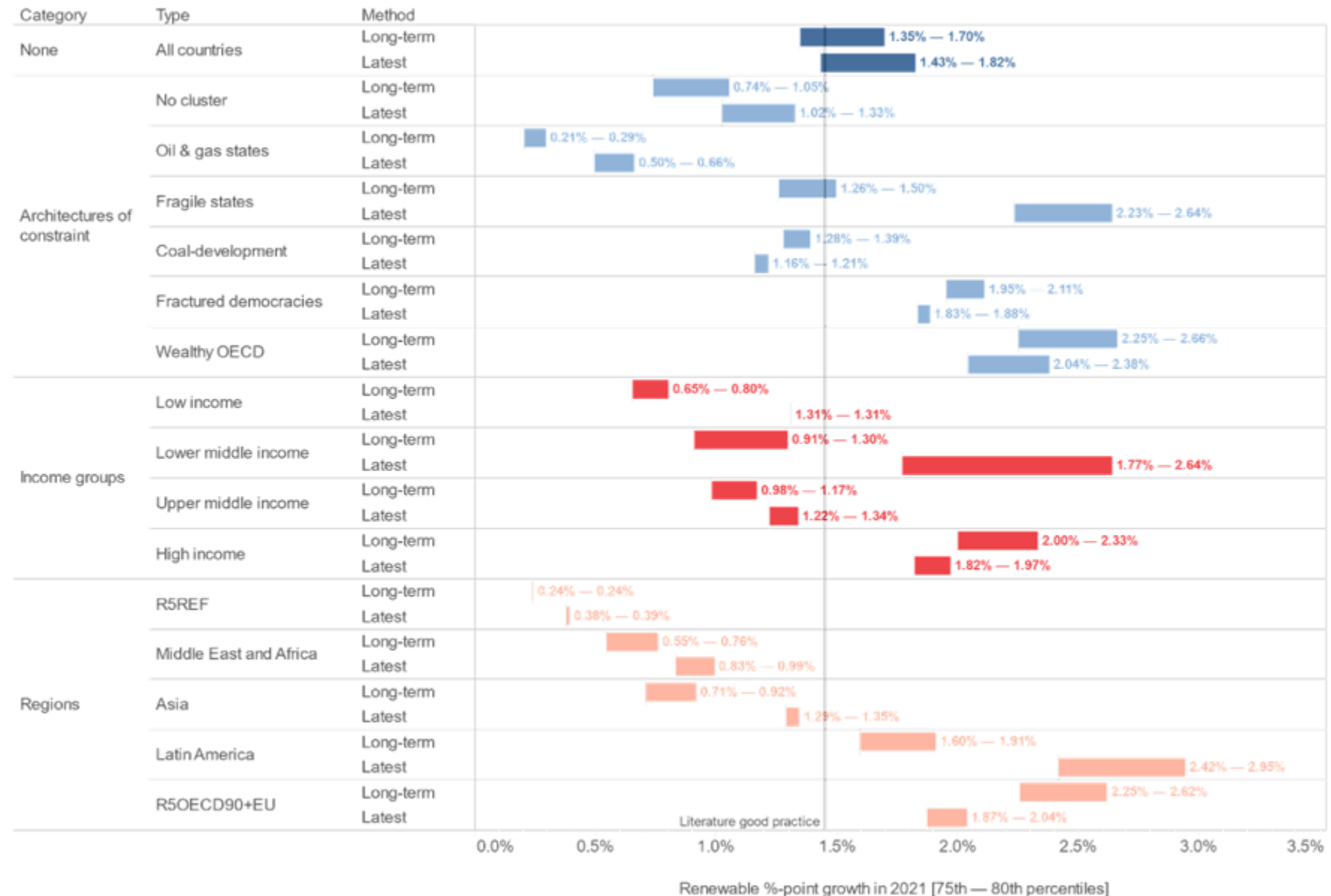
## High and low performance

- The range between common and outliers
- Useful to identify above or below average performers



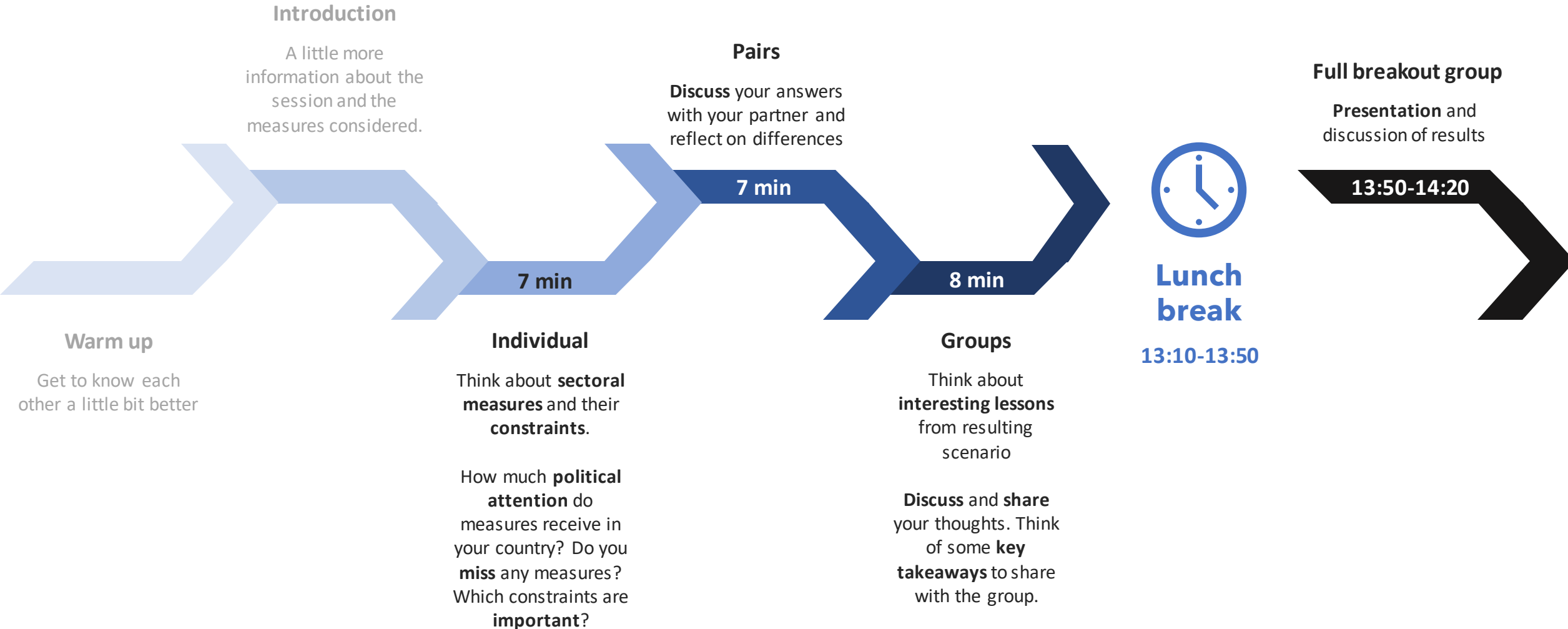
# DIFFERENTIATE THE EFFECT

Statistical approach enables differentiation of good performers across country groups





# BREAKOUT SESSION



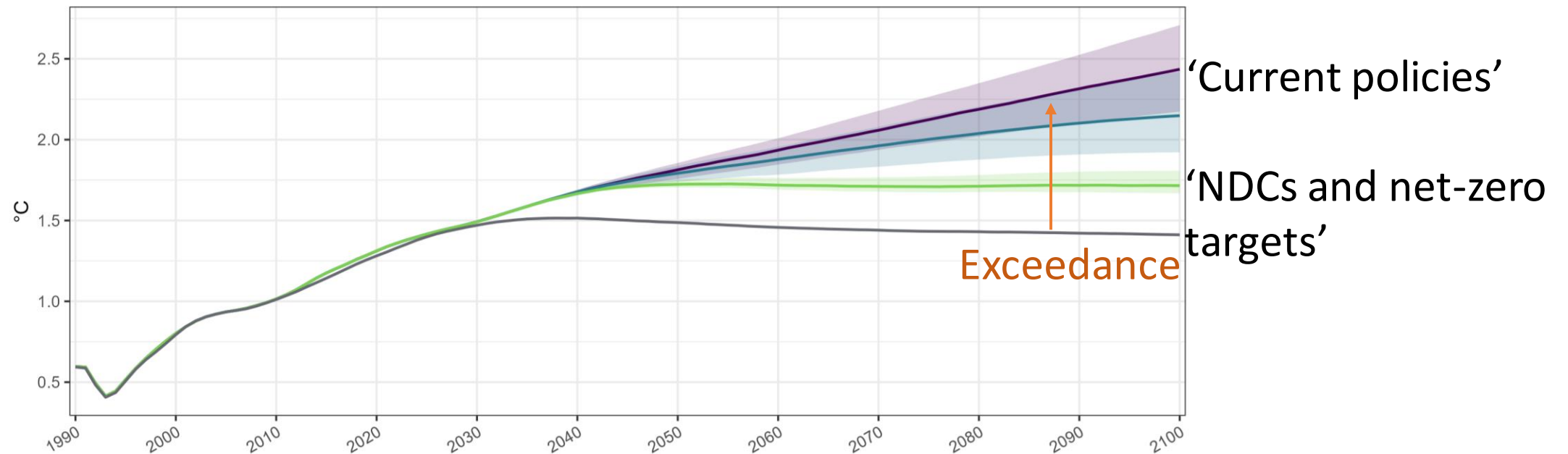
# Interaction session II – Application of carbon debt to inform the next round of NDCs

ELEVATE Online Workshop February 22, 2024  
Setu Pelz

# Emissions trends and temperature targets

Current trends may deplete the 1.5°C (50%) carbon budget this decade.

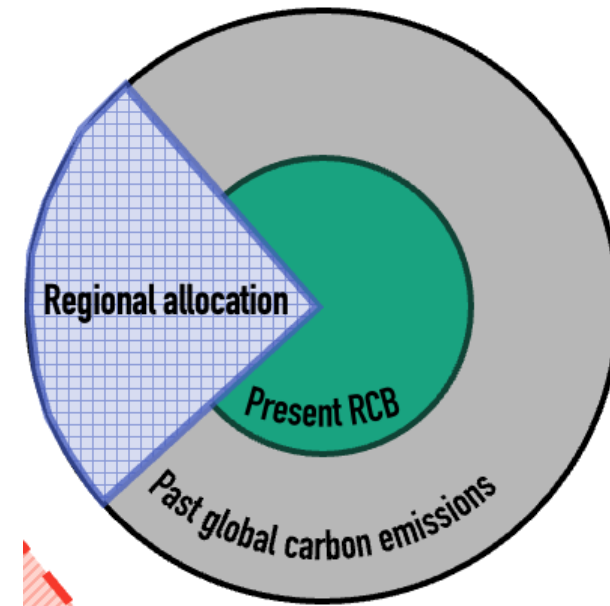
Effort must focus on minimizing the magnitude and duration of exceedance.



# Determinants of 'fair' regional allocations

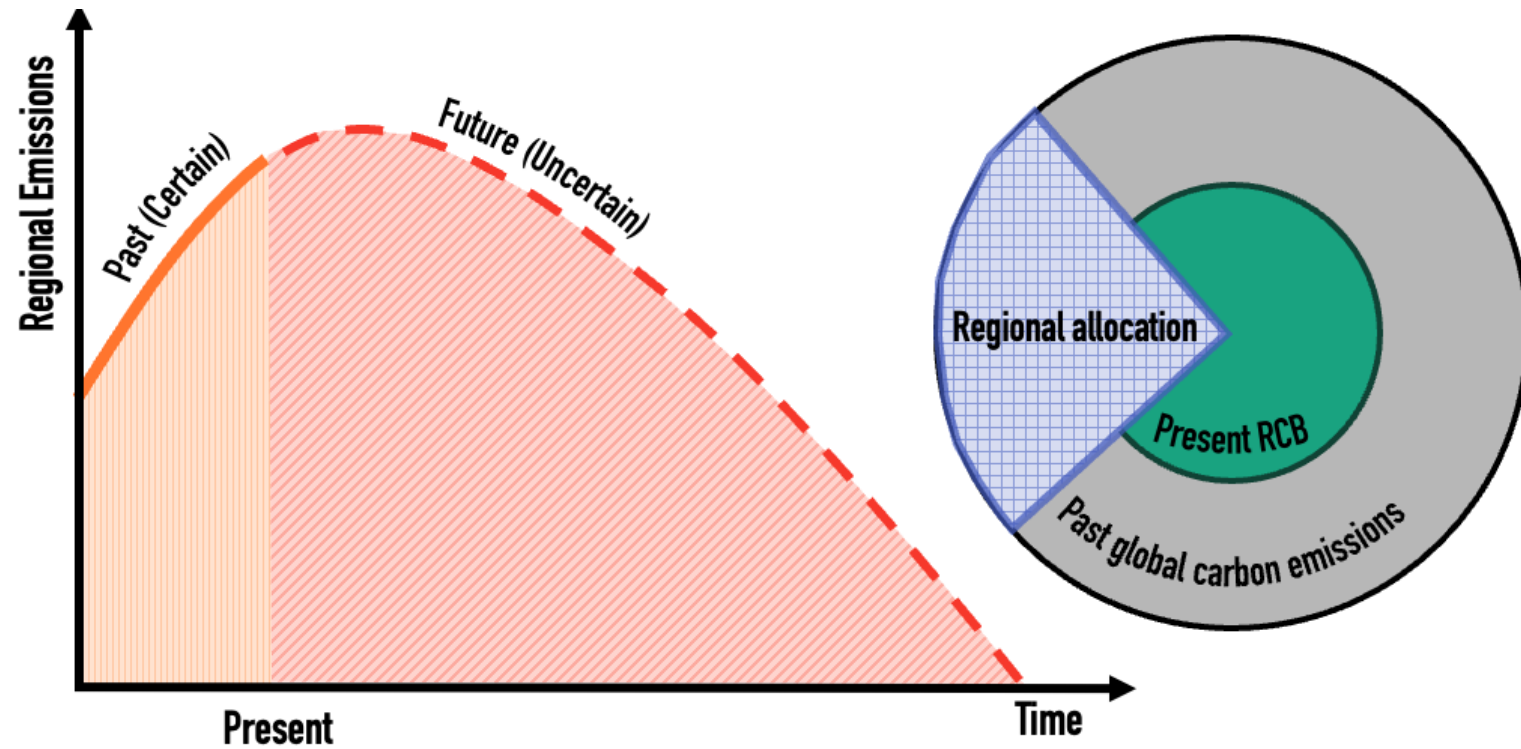
We begin with 'fair' shares of a carbon budget ...

- What RCB?
- What historical period?
- What allocation approach?



# Considering future regional emissions

We then consider expected emissions trends to regional net-zero CO<sub>2</sub>

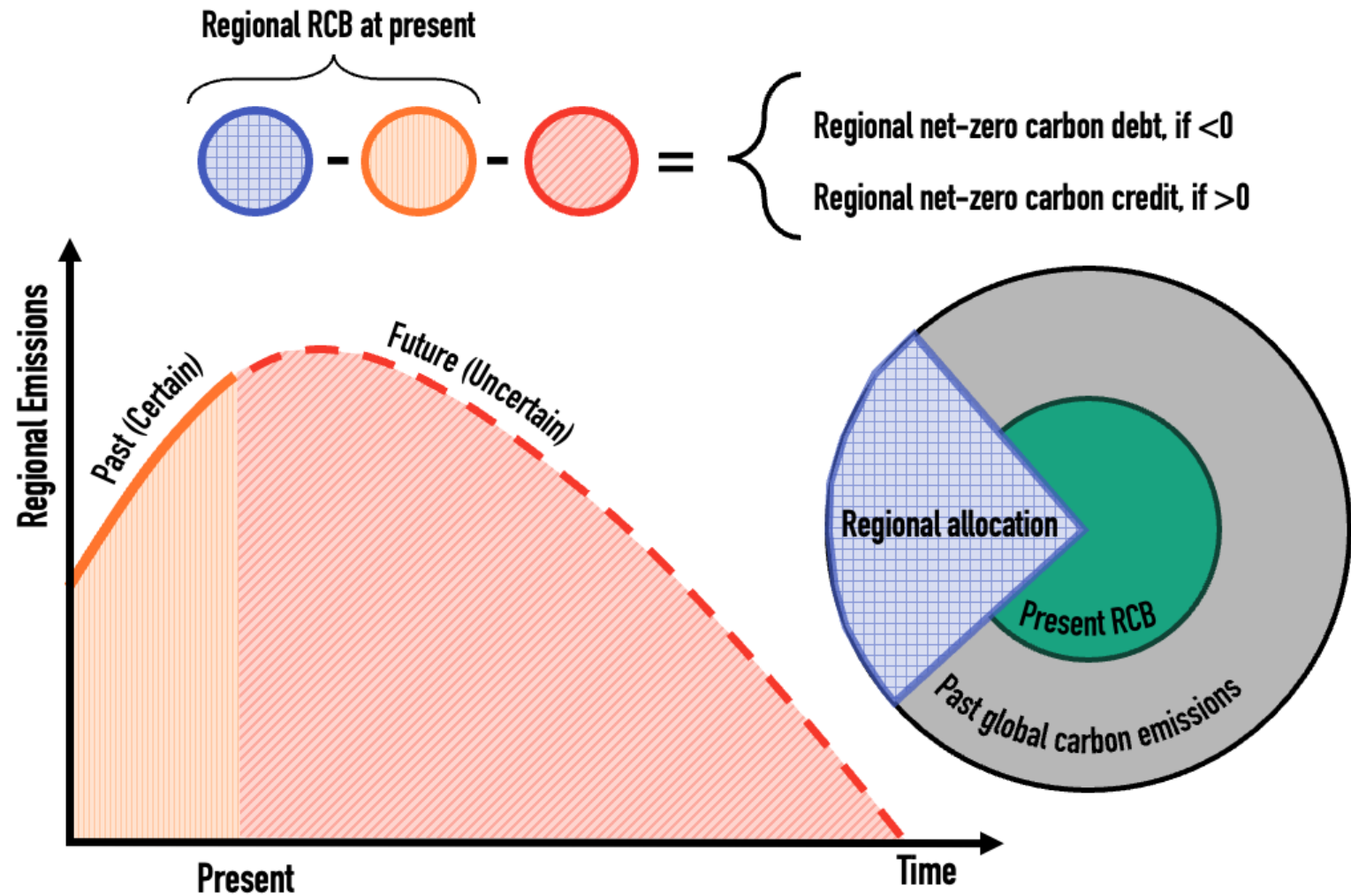


# Net-zero carbon debt

Net-zero carbon debt is a measure that contrasts 'fair' allocations ...

... with expected emissions trends

... to define exceedance and drawdown responsibilities.



## The possible implications of carbon debt for informing the next round of NDCs

- Carbon debt is being generated in an unequal manner, and will continue to accrue, worsening the likelihood and magnitude of 1.5°C RCB exceedance.
- Every GtCO<sub>2</sub> above the RCB will cause unequal tangible climate impacts over time, irrespective of ‘fair’ claims
- Later net-zero and peak emissions paths shift drawdown and impact burdens to future generations *in all regions*
- Responsibility for this exceedance and associated additional burden and damage may be argued proportional to carbon debt

# Please move to the breakout rooms

- One person in each group should open the tool and share their screen.
- Within groups, please discuss and arrive at a possible middle ground for how one may quantify carbon debt.
- How much of a role do you think equity and fairness will play in informing ambition during the next round of NDCs?
- How can evidence generated by the modelling community best inform considerations of fairness during the next round of NDCs?



# What does “transition away from fossil fuels” mean for this critical decade?



**Lara Aleluia  
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Environment



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Kitous**

Deputy head of Unit A2  
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CLIMA)

# ELEVATE - ENABLING AND LEVERAGING CLIMATE ACTION TOWARDS NET ZERO EMISSIONS

## Transitioning towards climate science: The critical role of COP28's fossil fuel statement

Lara Aleluia Reis, Massimo Tavoni and Laurent Drouet \*RFF-CMCC EIEE

# Context

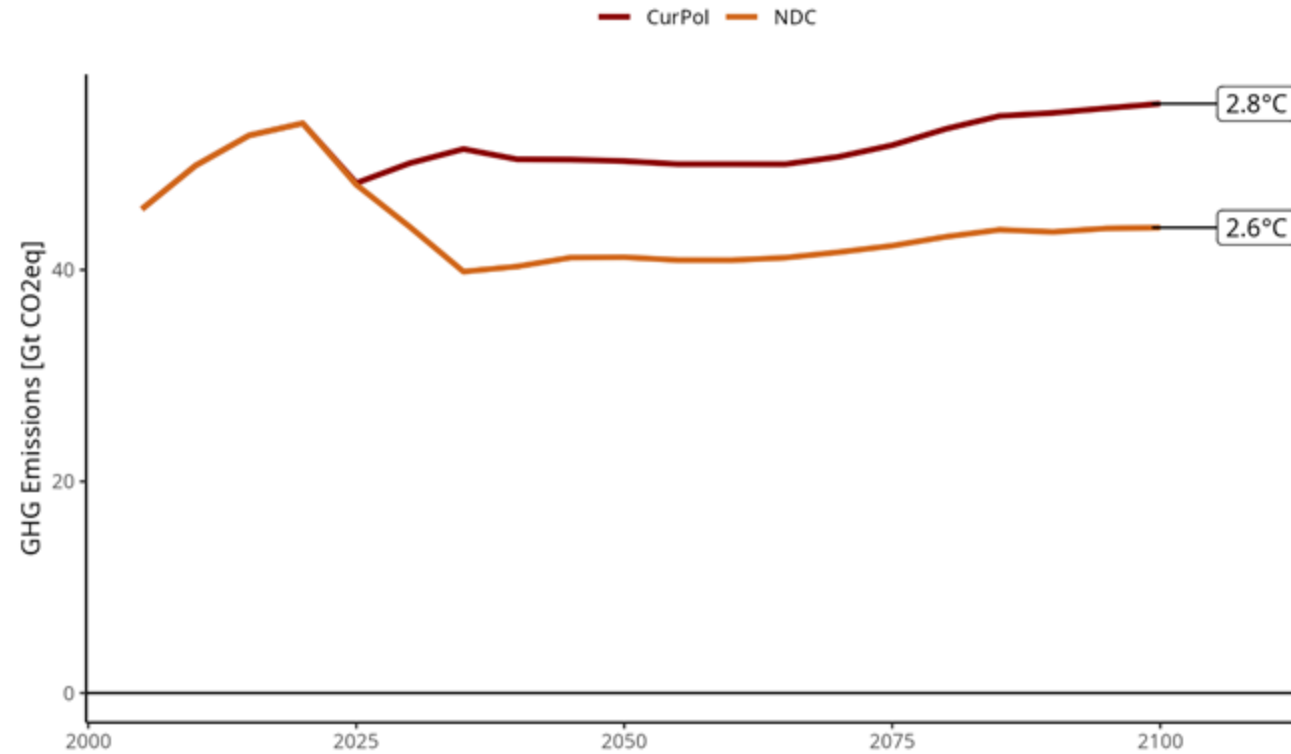
- The **COP28** conference, held in Dubai in December 2023, represented a significant milestone in the evolution of climate agreements.
- This event was notable for **two** main reasons:
- It hosted the inaugural **Global Stocktake (GST)**
- Culminated in several pivotal **agreements**



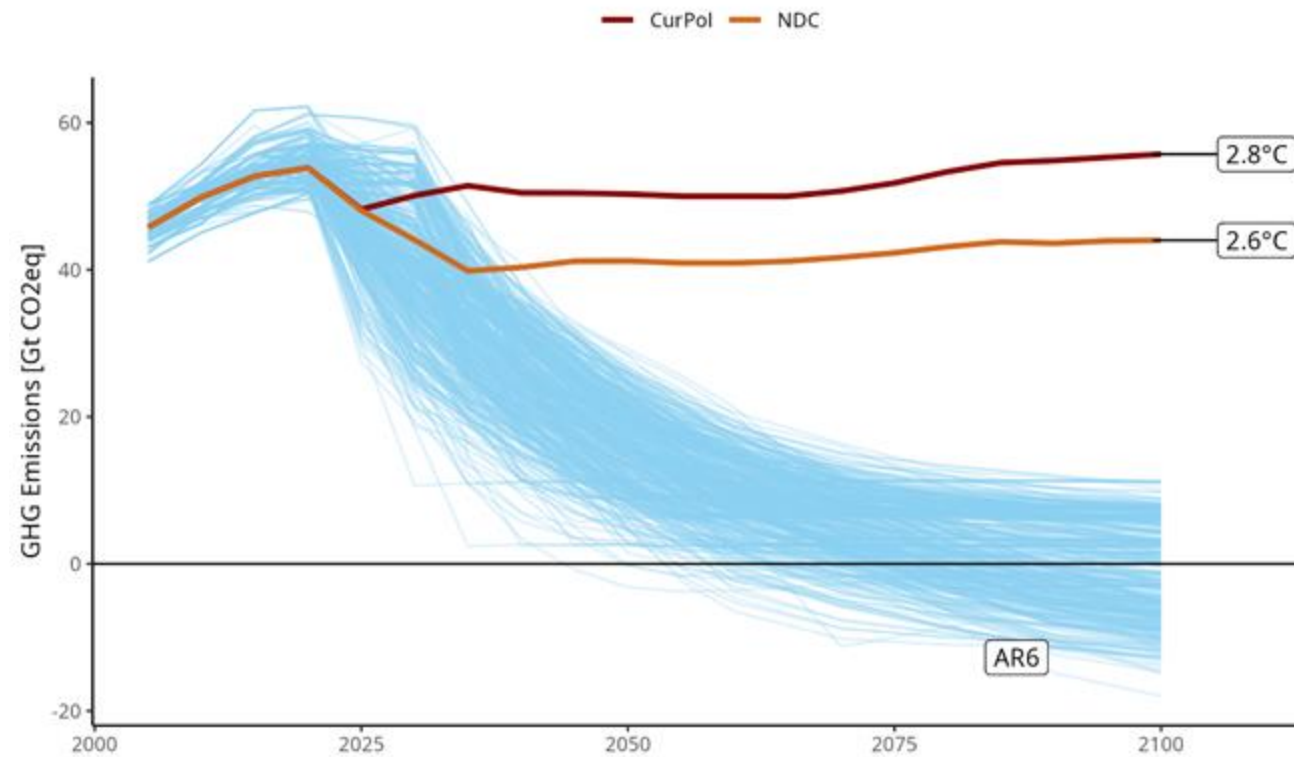
# The Agreements

- Triple the world's renewable energy capacity to 11 TW by 2030,
- Enhance energy efficiency annually at a rate of 2–4%, by 2030,
- Triple nuclear capacity by 2050,
- **“Transitioning away” from fossil fuels**

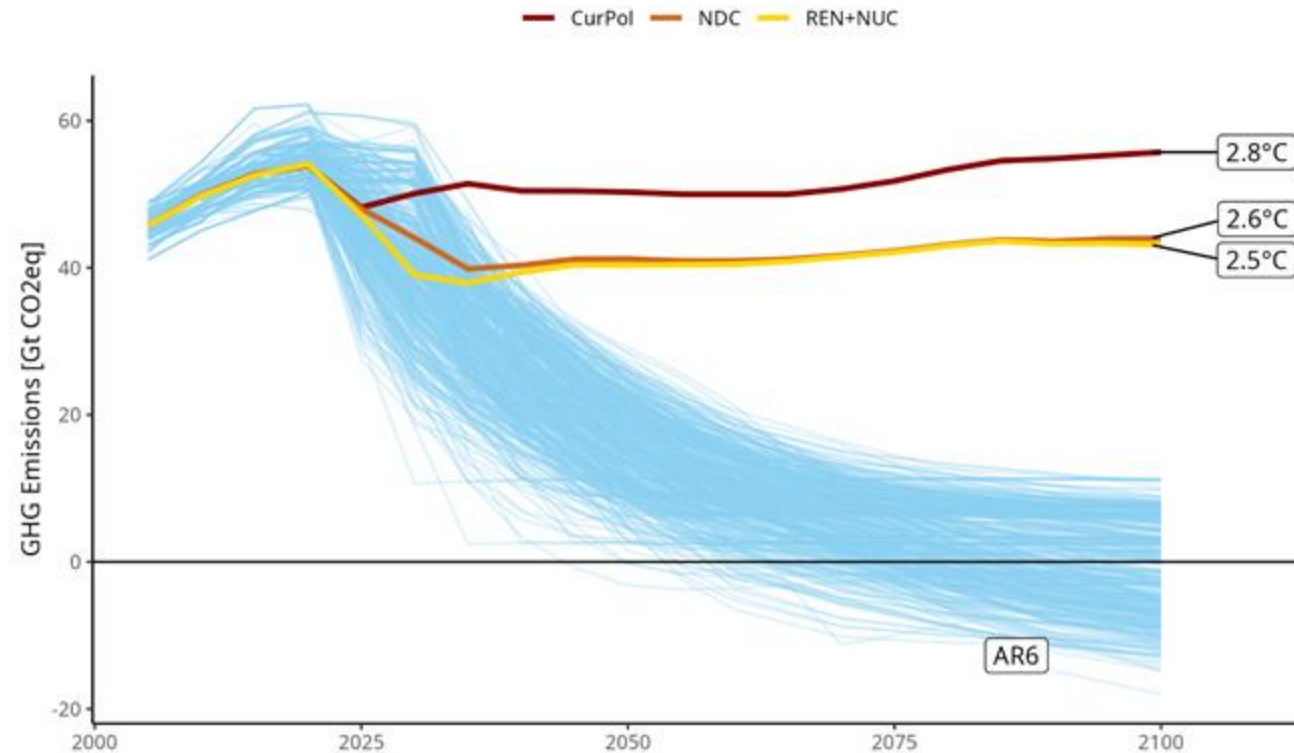
# Global GHG Emissions



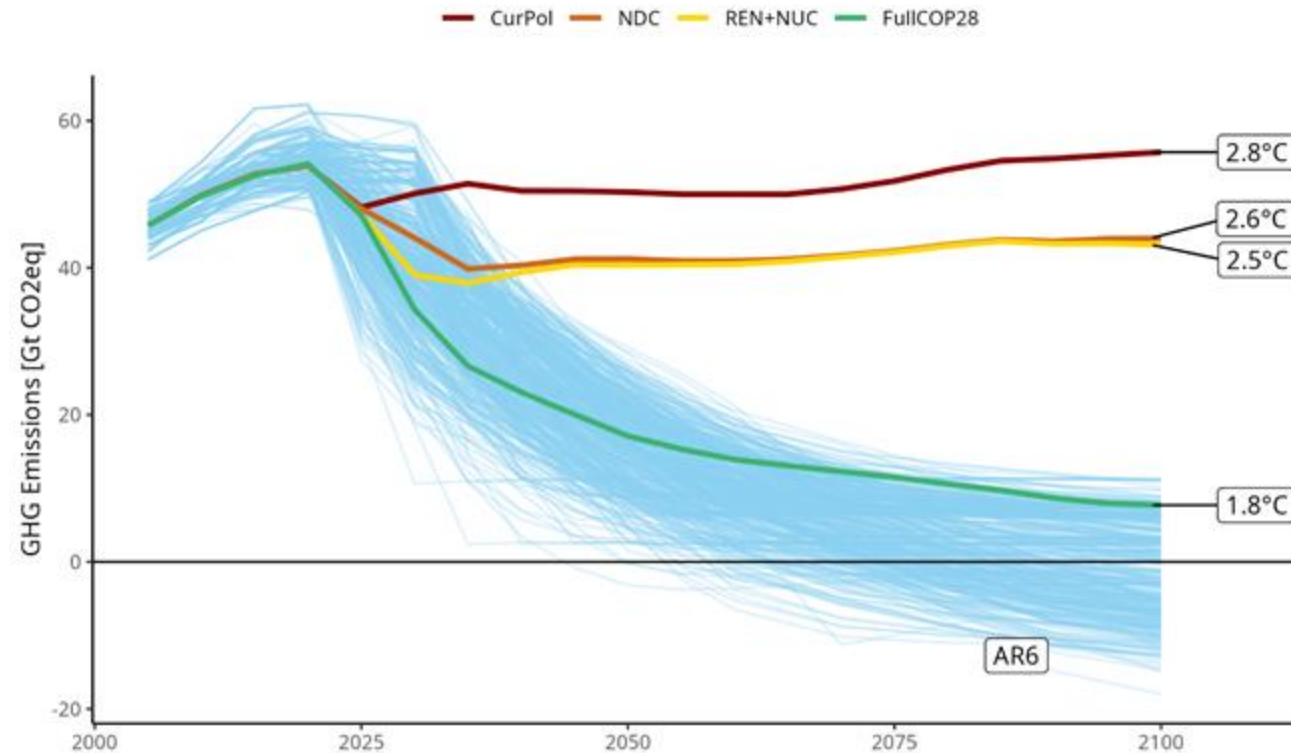
# Global GHG Emissions – alignment with science



# Global GHG Emissions – low-carbon energy and energy efficiency

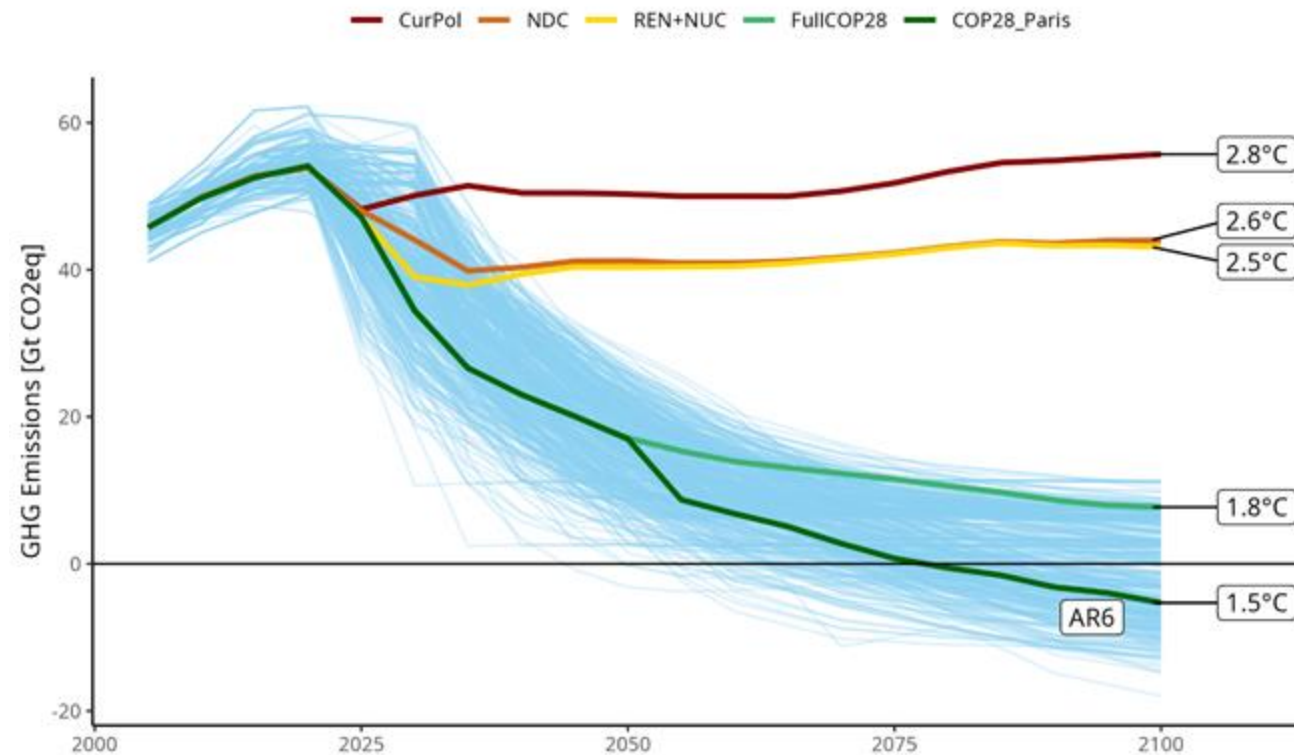


# Global GHG Emissions - “Transitioning away” from fossil fuels

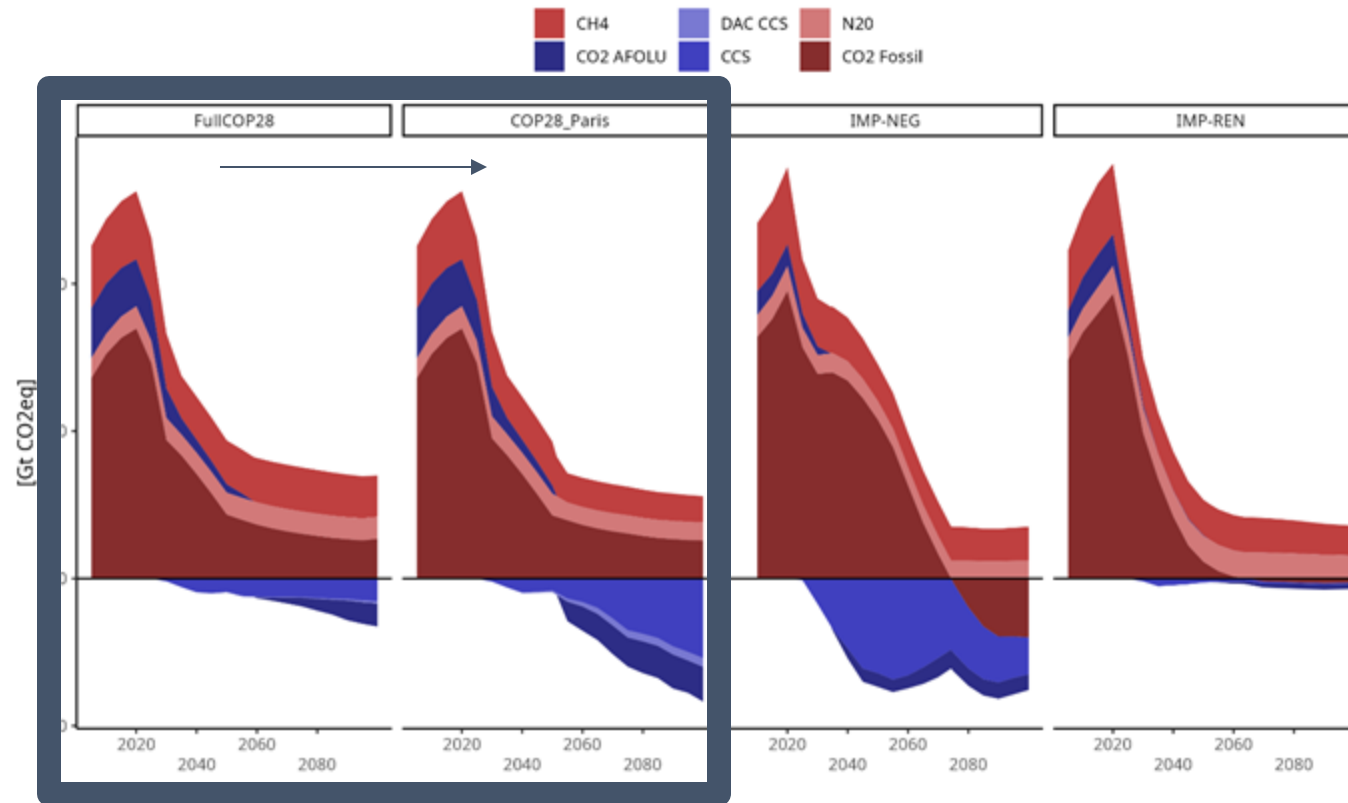




# Global GHG Emissions – Full alignment with climate science



# What more do need for the next negotiations?



# Thank you for your attention!

≡ Presenter

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# II ELEVATE International Co-creation Workshop

## Beyond the GST: aligning global aims and national commitments

Ryna Cui

Research Director, Center for Global Sustainability  
Associate Research Professor, School of Public Policy  
University of Maryland

February 22, 2024



# New policies would need to be rolled out at a high and sustained pace to achieve U.S. climate targets

- The new Inflation Reduction Act (IRA) and Infrastructure Investment and Jobs Act (IIJA) mark the largest federal investments in climate provisions in history.
- Recent policy actions are estimated to deliver reductions of 40% or more by 2030.
- The observed pace and scale of action is consistent with expectations for what could be done in the early years, with continued new actions to deliver the overall targets.

### New U.S. Policy Highlights 2021-2023

**Congress**

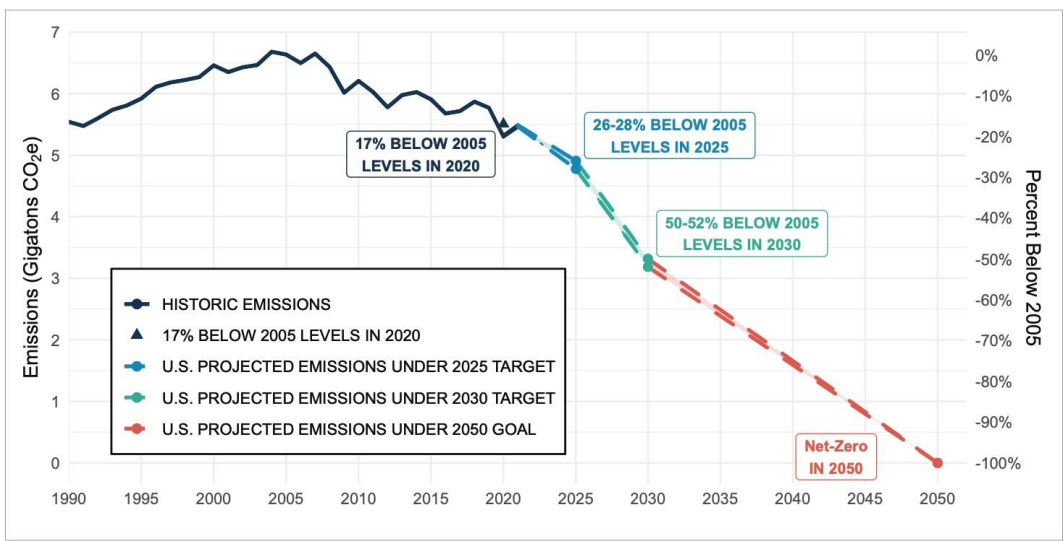
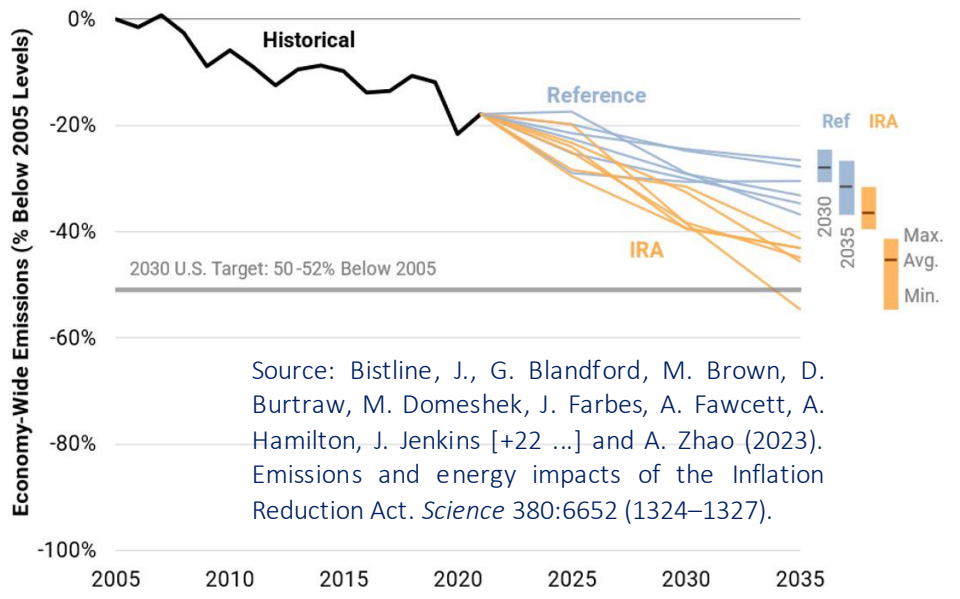
- Bipartisan Infrastructure Law
- Inflation Reduction Act

**Federal Regulatory Actions**

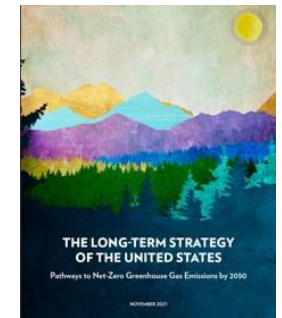
- Power, Efficiency, Transportation, Methane, and others

**Subnational Actions**

- Power, Transportation, Economy-wide targets

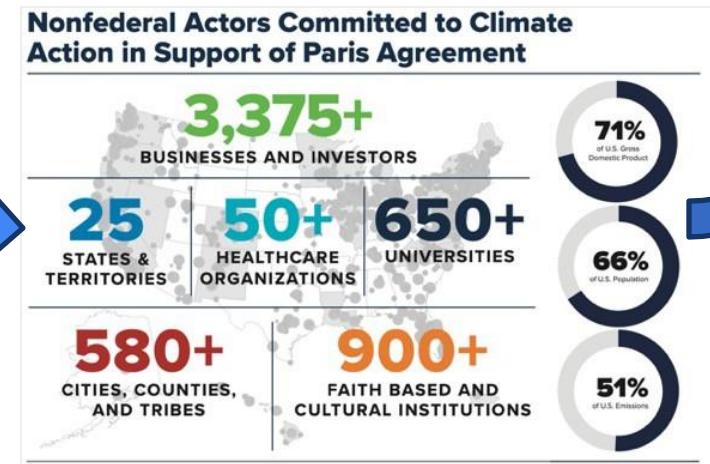


U.S. Long-Term Strategy (2021)

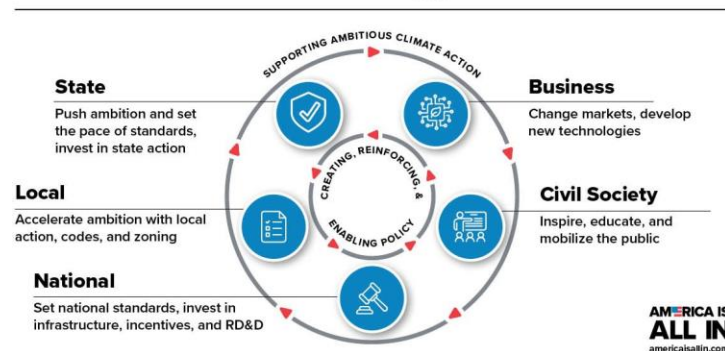


# Assessing how the U.S. climate targets can be achieved and further enhanced requires insight into its multi-tiered governance structure and an all-of-society approach

- Key features of U.S. policymaking process
- U.S. is federalized / multi-level electoral political system
  - Transformational change in the United States: policy innovation from the bottom up
  - “All politics is local” – federal funding is persuasive and durable



## The All-In Climate Strategy

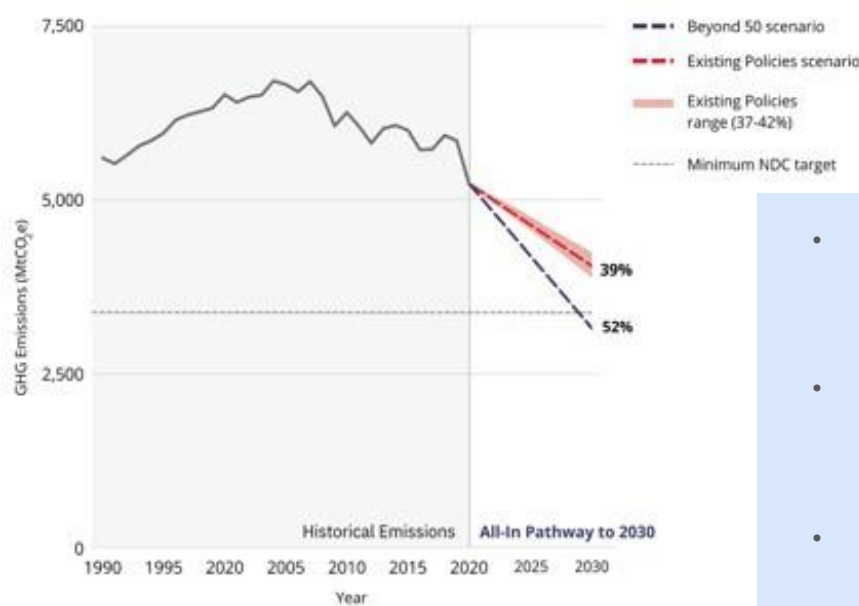
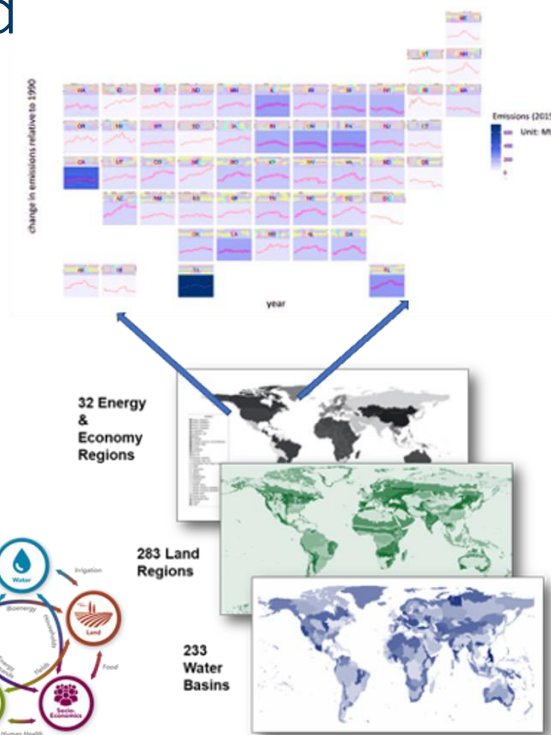
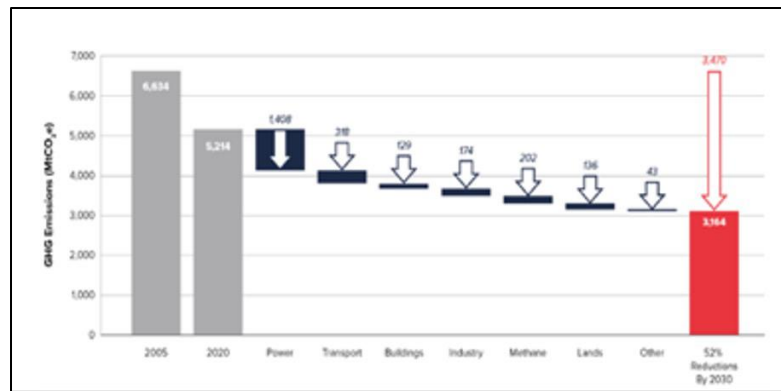


## The all-of-society approach

- Combines policies at national and subnational levels, as well as actions from business sector and civil society
- Links robust, long-term economic stimulus from federal level with implementation through federal and subnational actions
- Builds stronger and more robust long-term political supports by integrating local societal interests (equity, benefits, economic & development goals)

# Current and expected policies at federal and subnational levels can meet or exceed U.S. 2030 NDC target of 50-52% reductions in all GHG and support enhanced ambition for 2035 target and 2050 net zero

- An all-of-society approach has been and will be critical to achieve climate goals in the U.S. and other countries
- Recent laws are politically durable and economically transformational
- Expansion of subnational policies, these substantially increase the pace of clean economic transformation
- Create conditions for new action
- Combined effects of current and expected new policies can successfully achieve the U.S. 2030 target.
- Pathway for reaching a high ambition 2035 target and 2050 net zero



- GCAM-USA is a version of GCAM with 50 state level resolution in the U.S. (open-source); embedded with in global GCAM
- We assess how combined actions from federal government, states, cities, and businesses can more effectively reduce emissions and enhance ambition.
- We work with diverse governments and organizations through America is All In; Also leading for Maryland and other states.

Source: Zhao, A., S. Kennedy, K. O’Keefe, M. Borrero, K. Clark-Sutton, R. Cui, C. Dahl, G. Deye, J. Feldmann, K. Kennedy, H. McJeon, M. Moravec, D. Nilov, S. Rajpurohit, J. Rosas, C. Squire, and N. Hultman (2022). “An All-In Pathway To 2030: The Beyond 50 Scenario.” Center for Global Sustainability, University of Maryland.



II ELEVATE International Co-creation workshop

# BEYOND THE GST: ALIGNING GLOBAL AIMS AND NATIONAL COMMITMENTS



Thursday, 22 Feb 2024



11:00 AM - 15:30 PM

*Thank you for participating!*



Funded by  
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