

The role of carbon removals in a net-zero future

Presenting the State of Carbon Dioxide Removal, a new report by



Matthew J. Gidden, Ph.D.

Senior Research Scholar

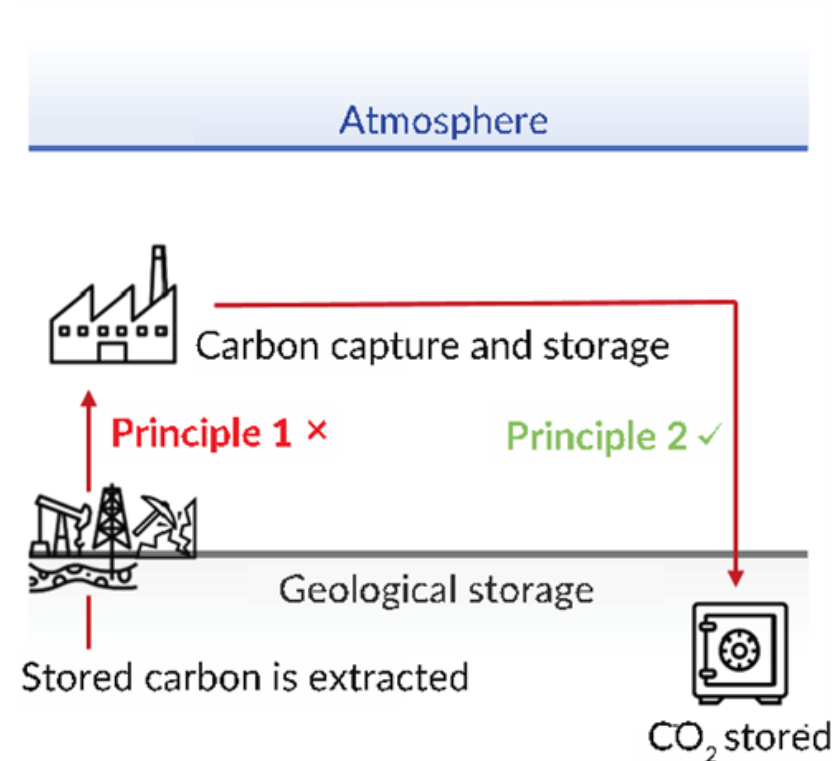
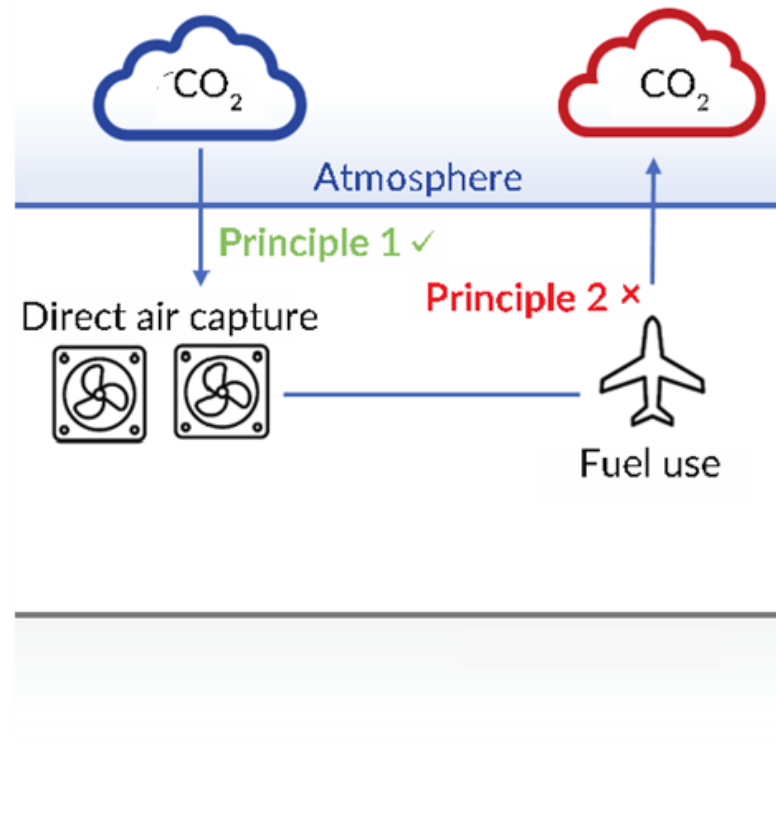
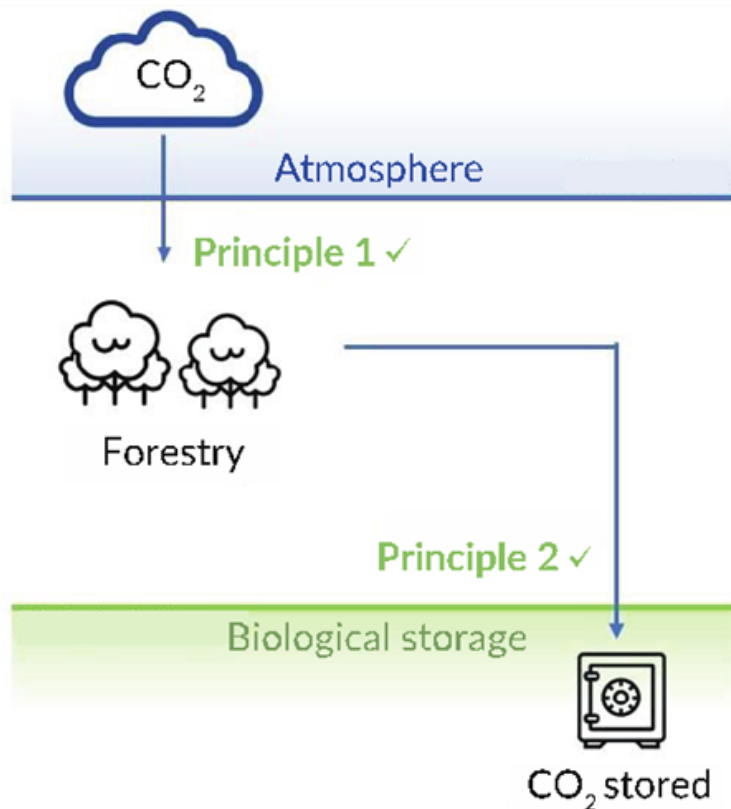
Energy, Climate, and Environment Program (ECE)
International Institute for Applied Systems Analysis (IIASA)

@mattgidden

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Carbon Dioxide Removal (CDR)

CDR methods capture CO_2 from the atmosphere (Principle 1) and durably store it (Principle 2). They must be additional to natural processes (Principle 3).



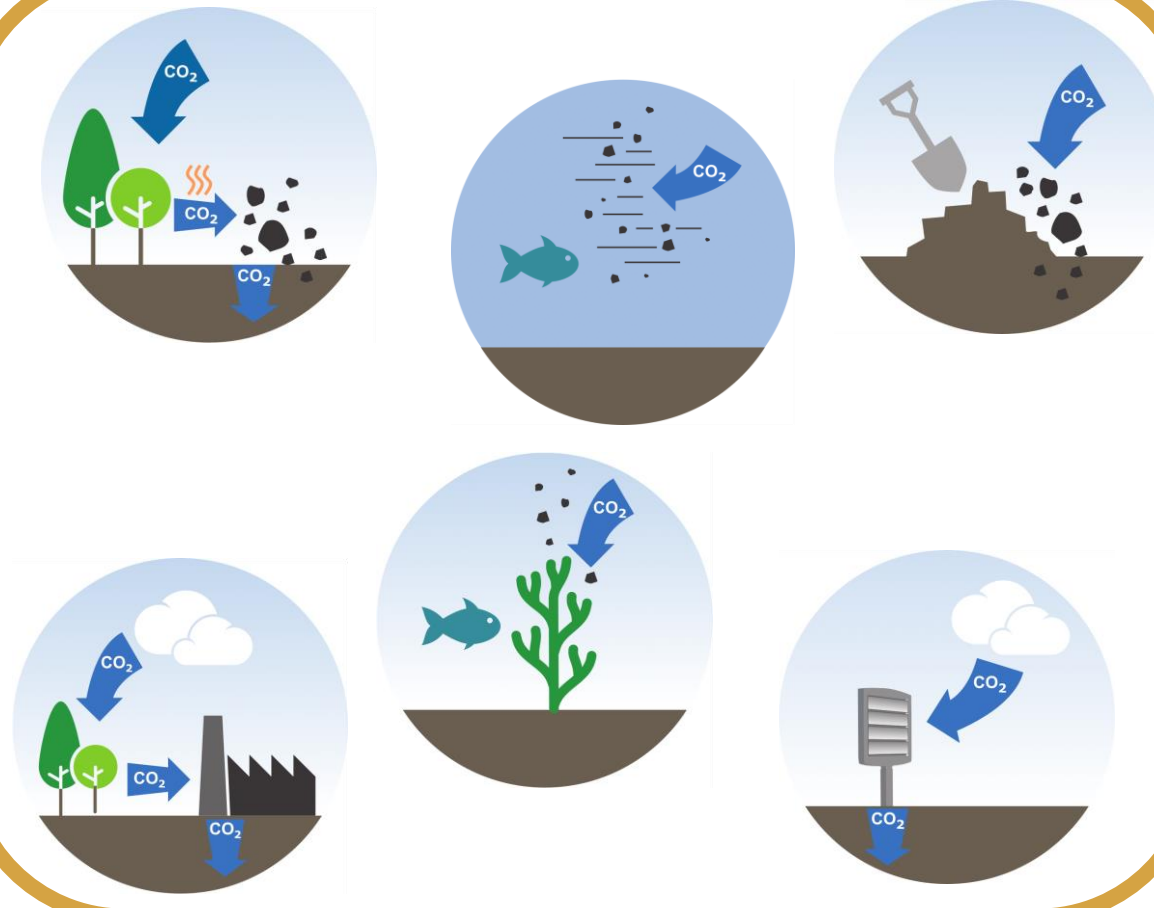
Source: Zero Emissions Platform (2020)

Many CDR methods

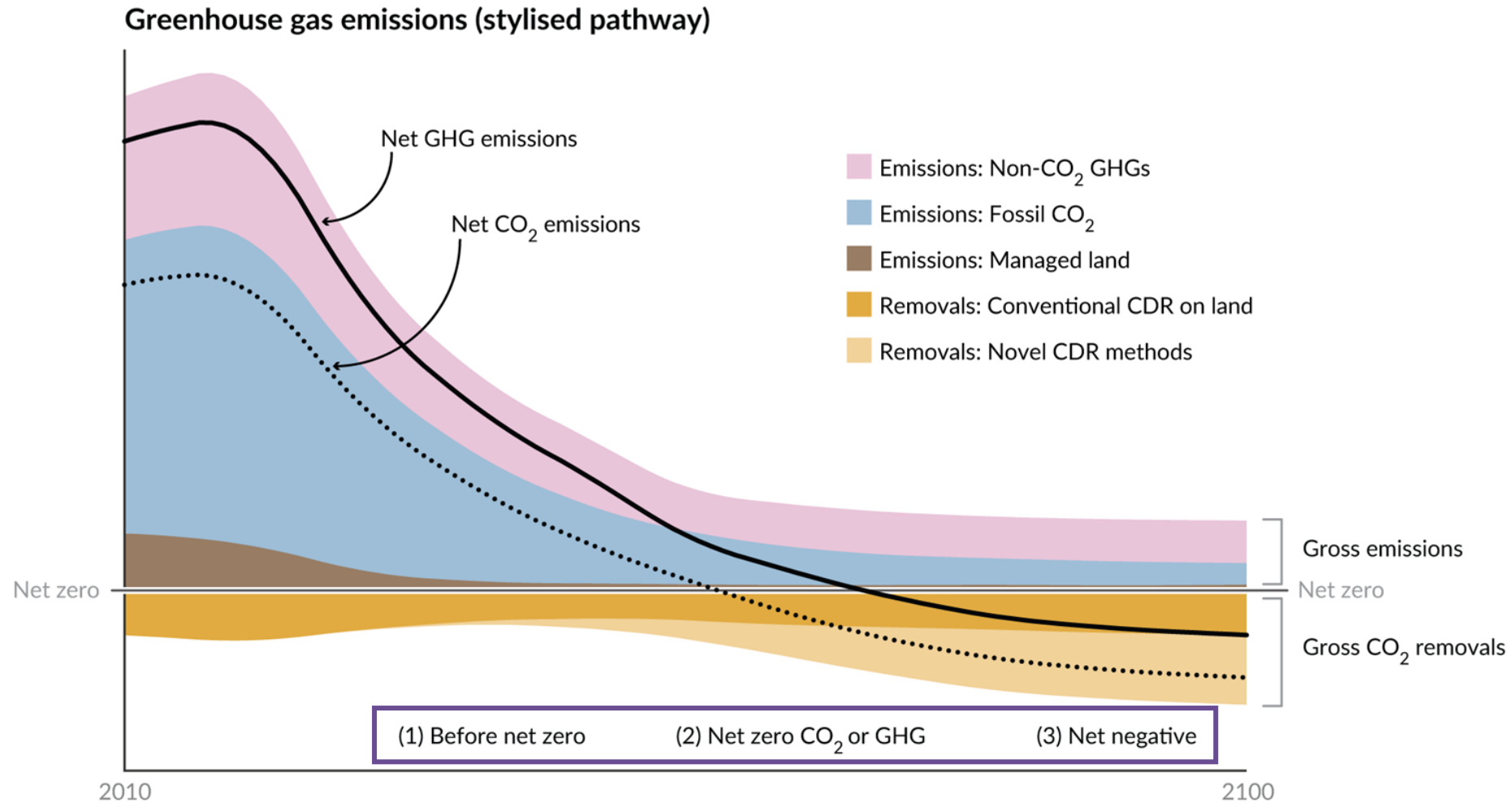
Conventional CDR on land



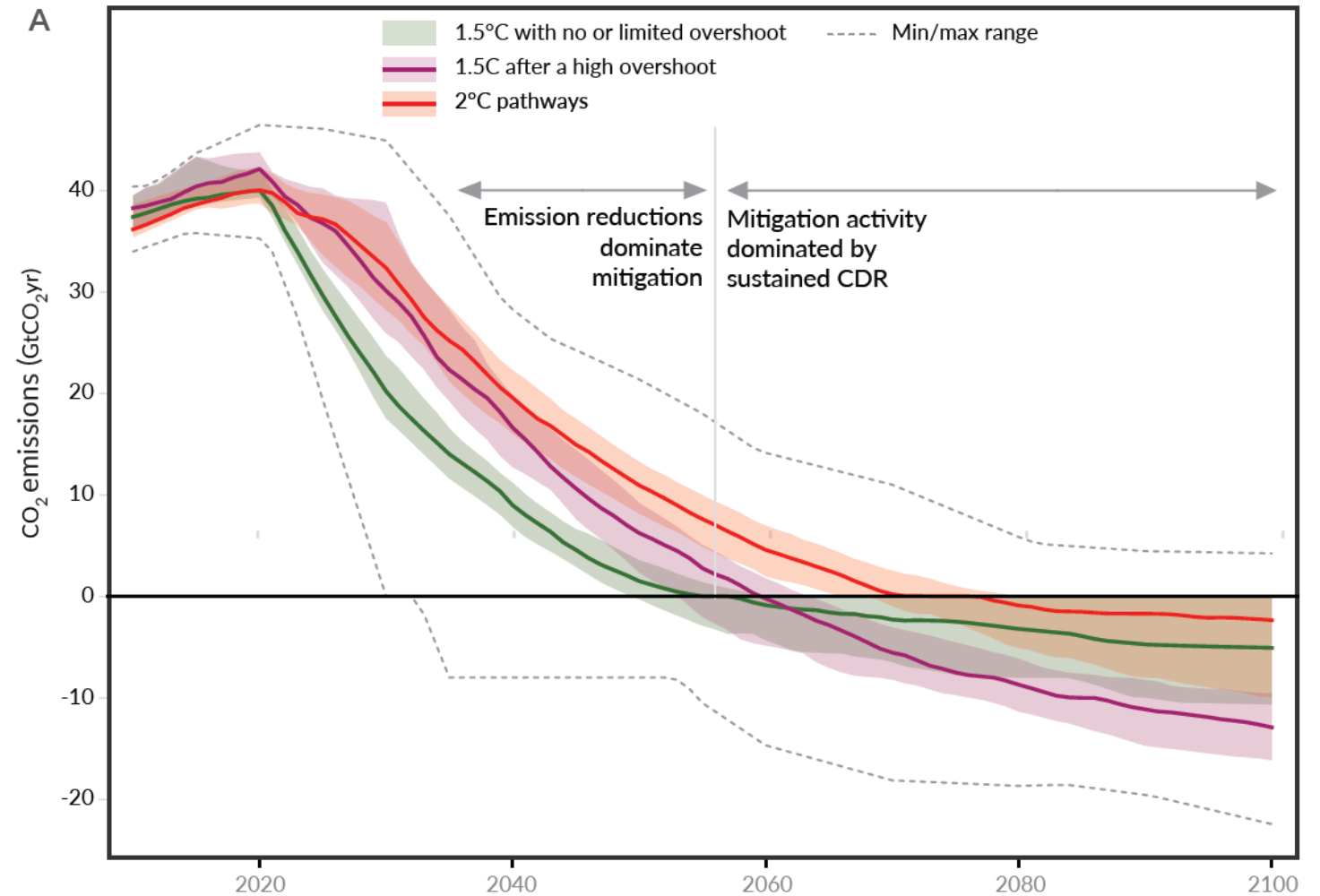
Novel CDR



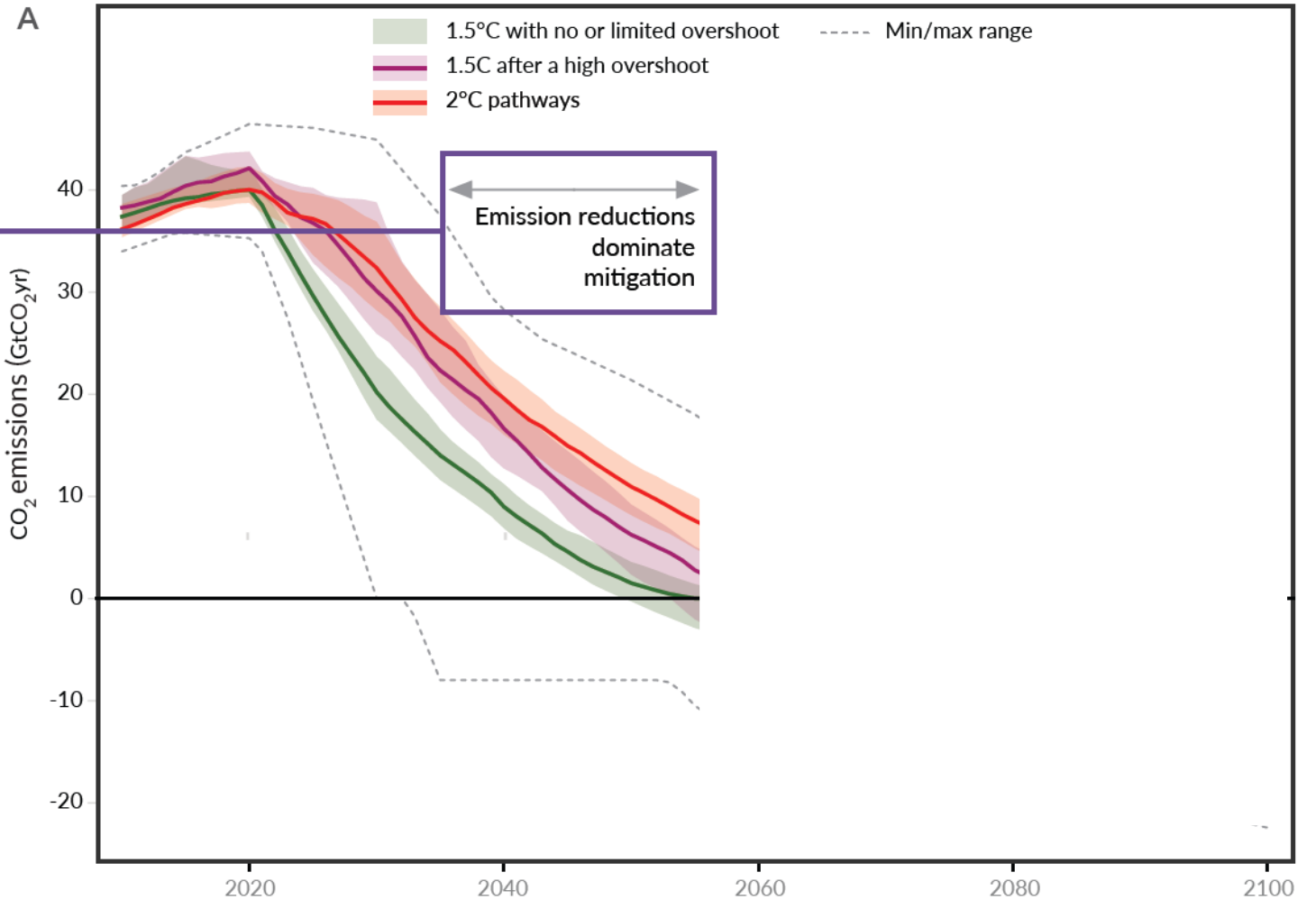
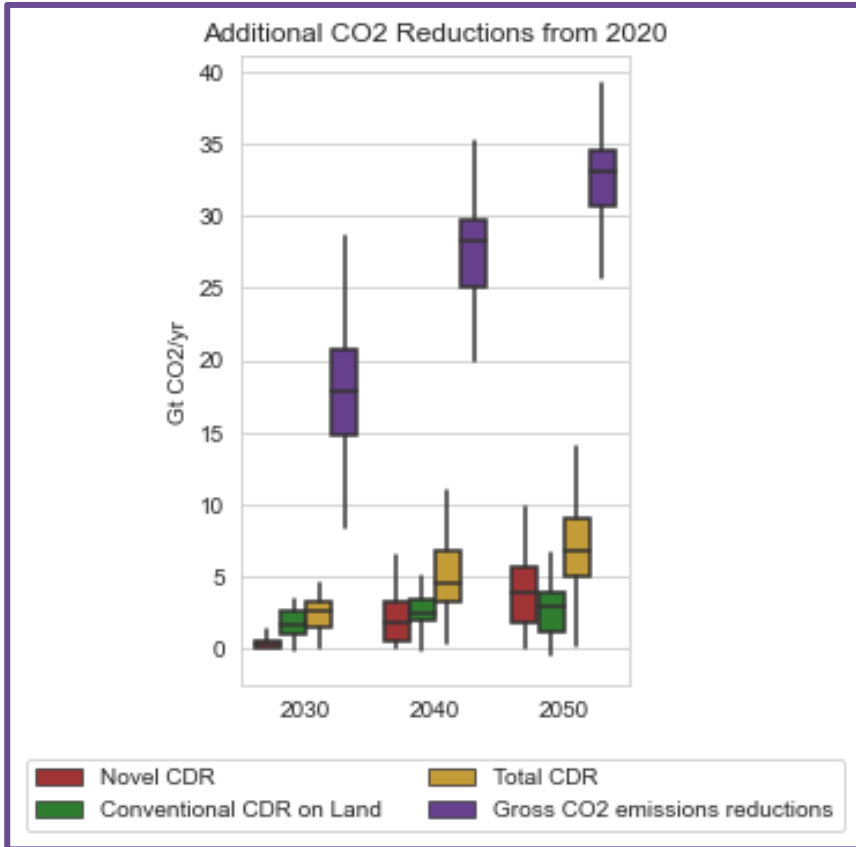
CDR plays three roles in mitigation pathways



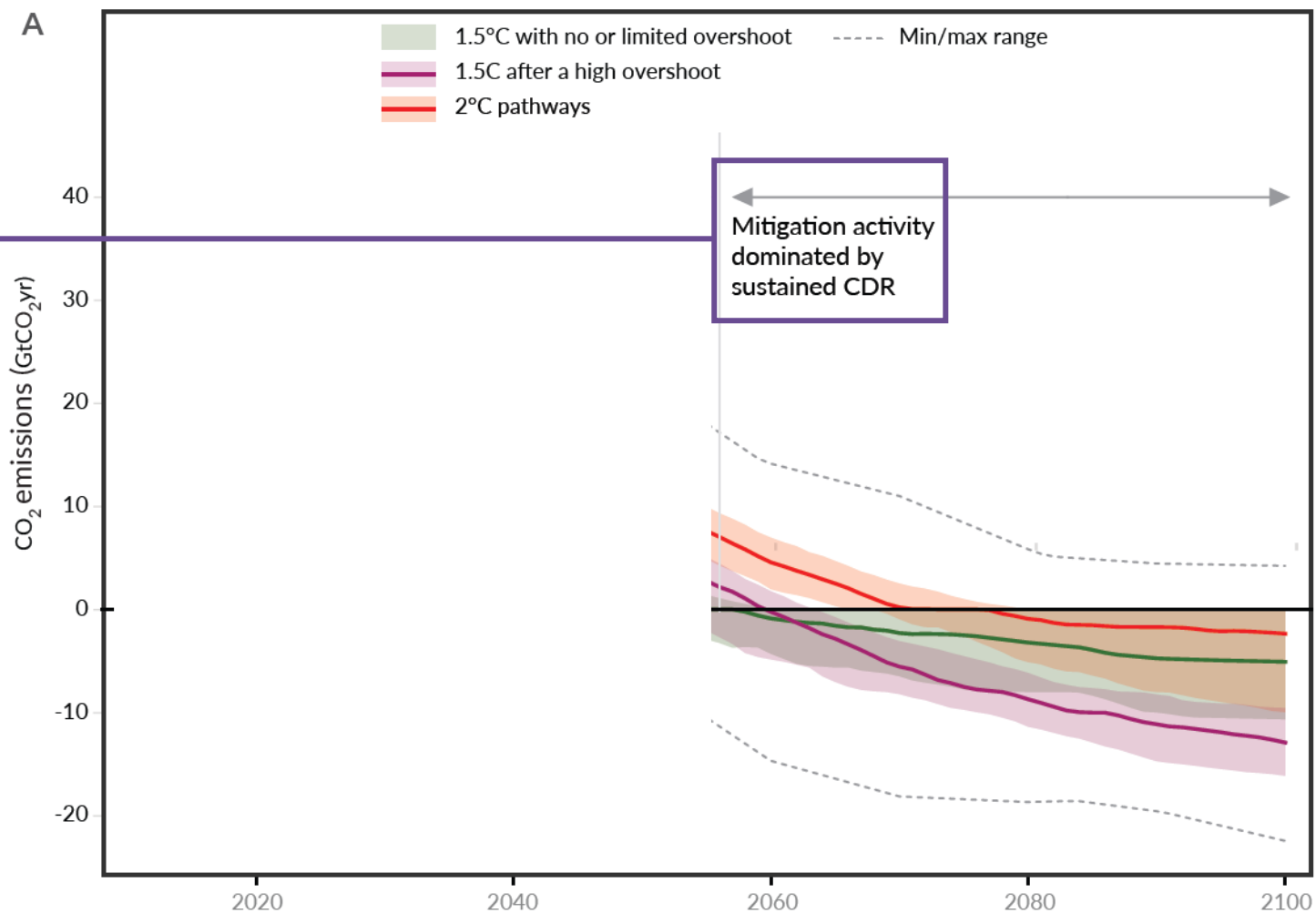
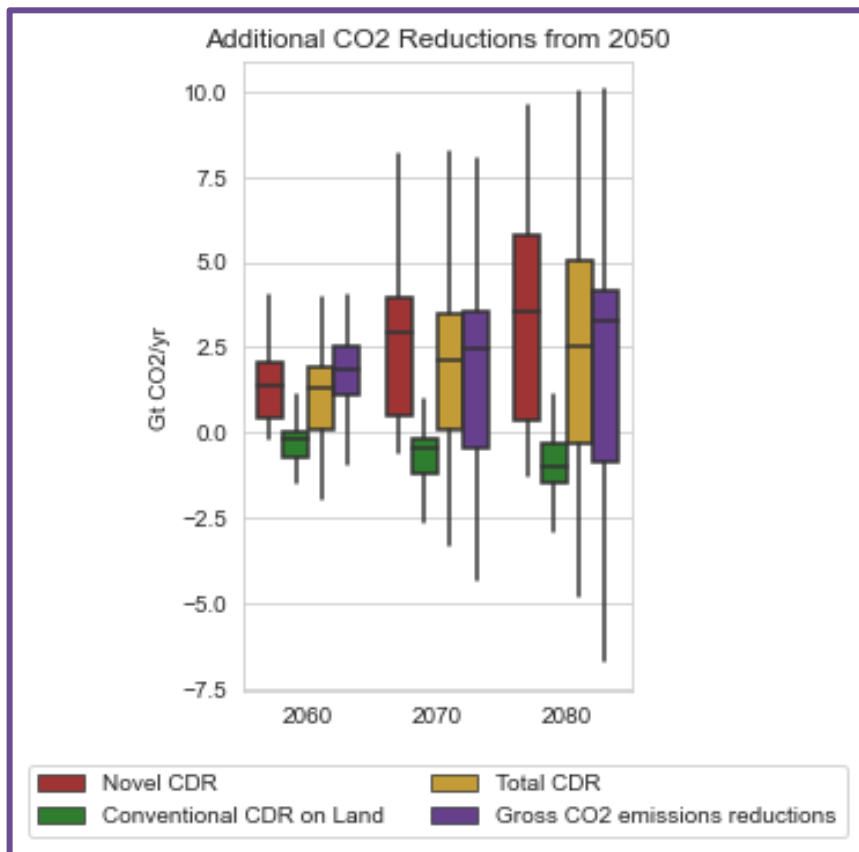
We need fast and deep GHG emissions reductions AND CDR



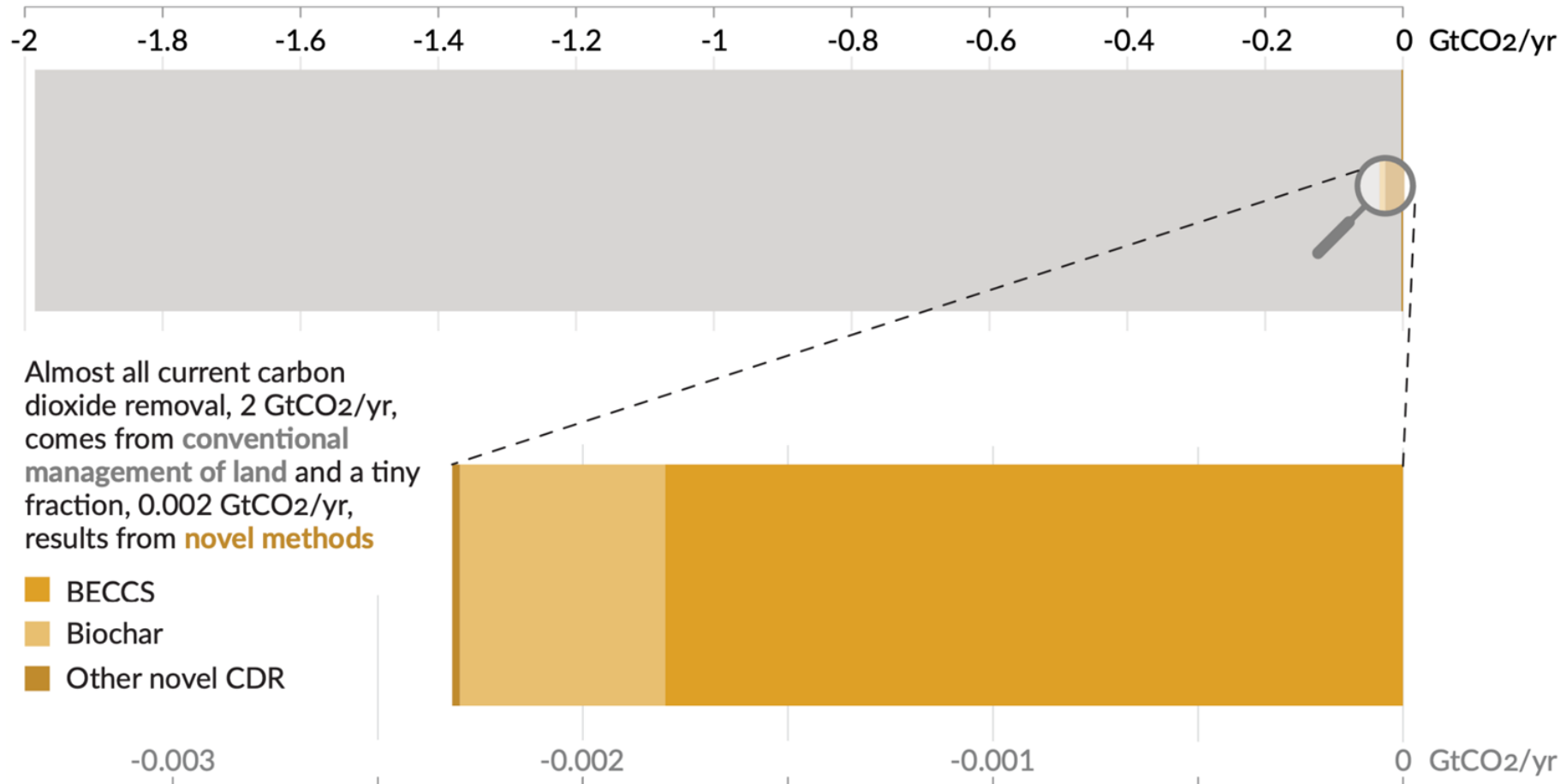
We need fast and deep GHG emissions reductions AND CDR



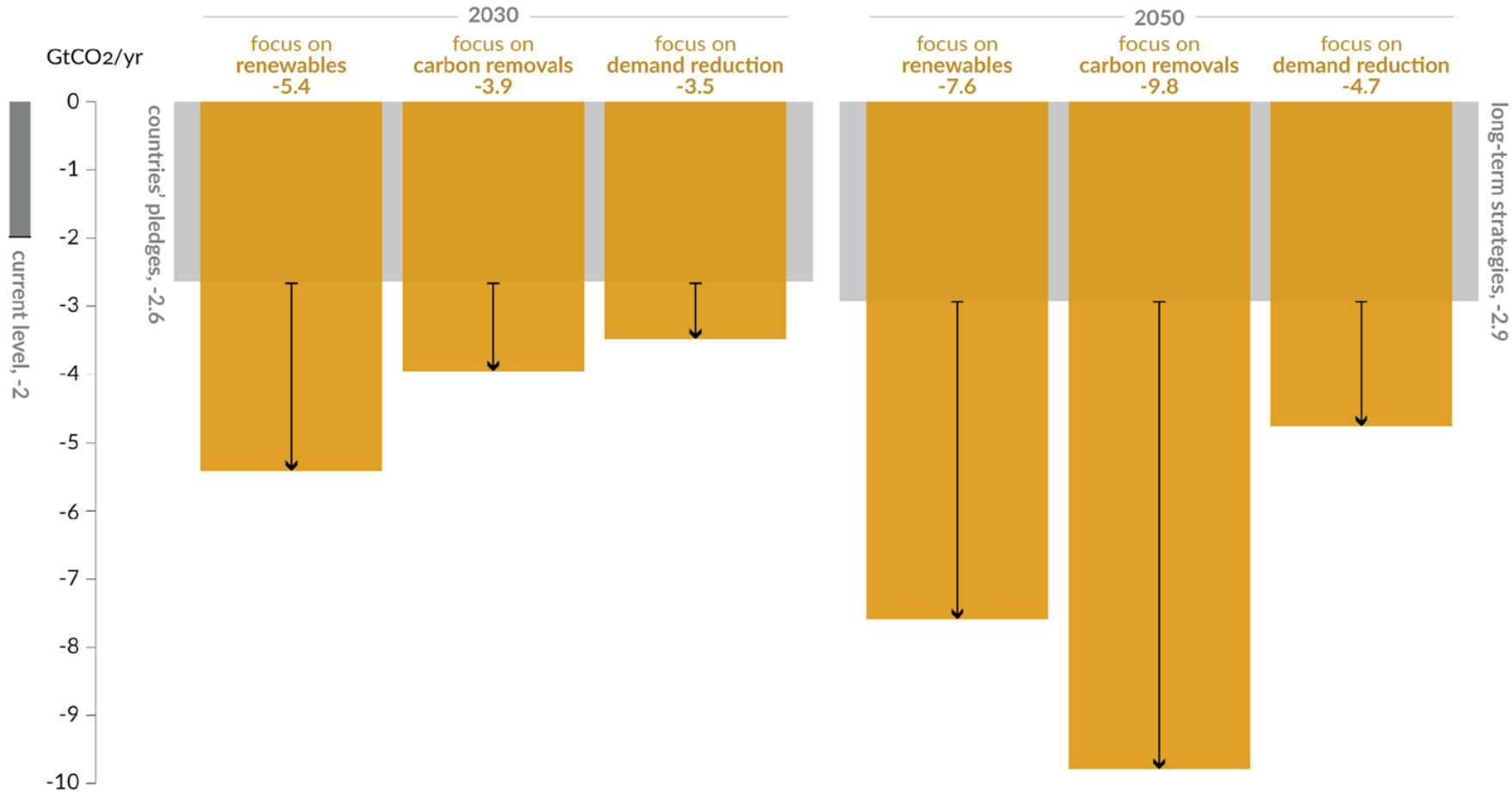
We need fast and deep GHG emissions reductions AND CDR



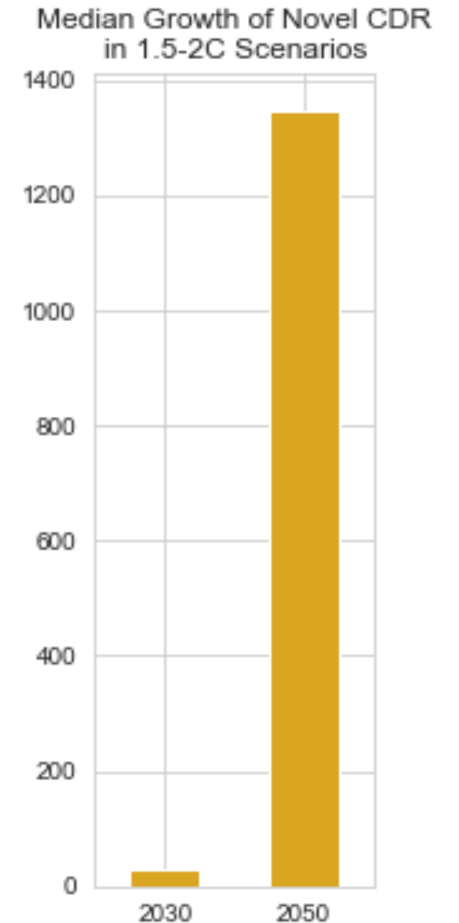
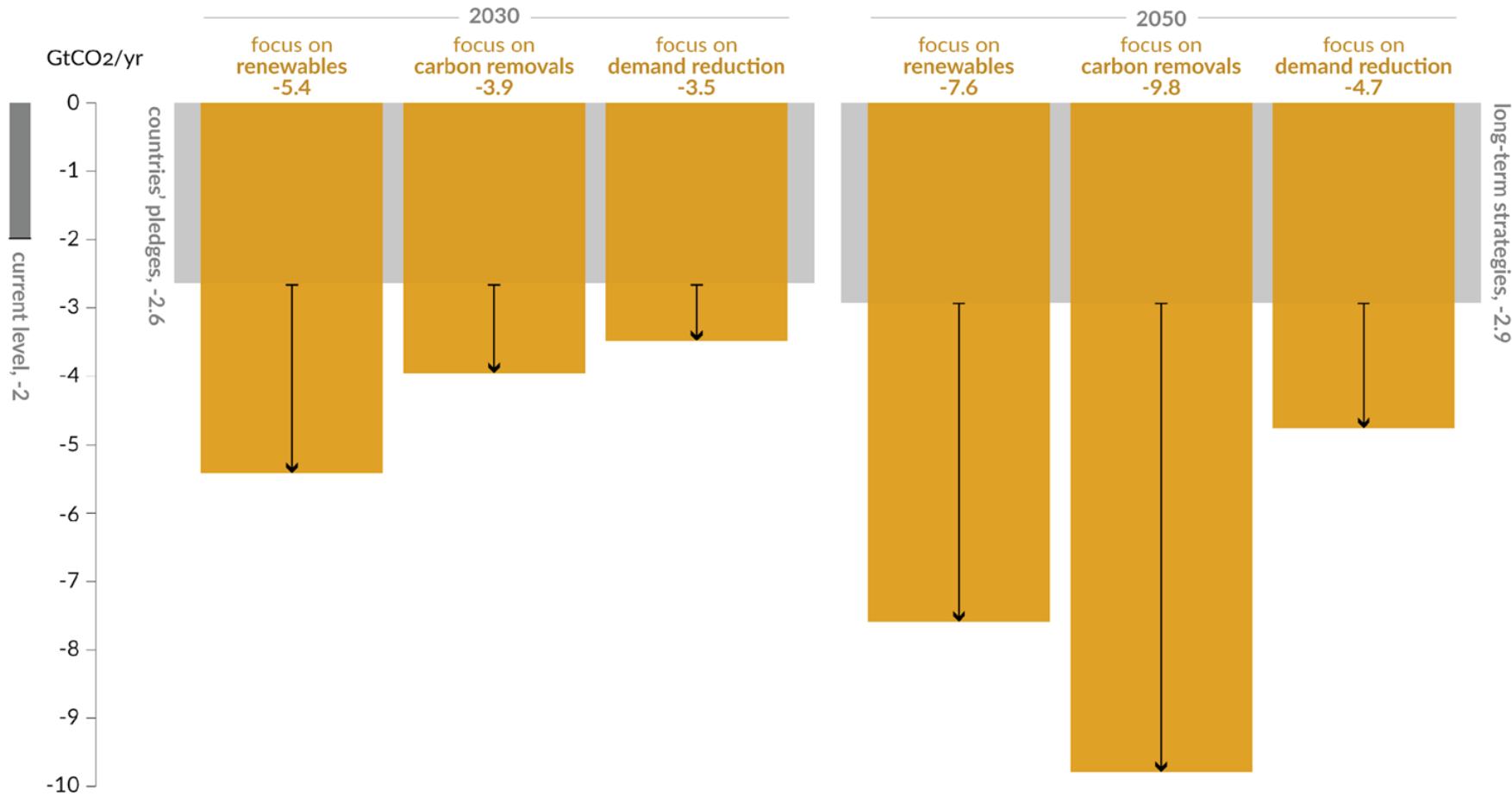
Current CDR is around 2 GtCO₂/yr – only 0.1% (2 MtCO₂/yr) is from novel methods



There is a gap in proposed levels of CDR and what is needed to meet the Paris temperature goal



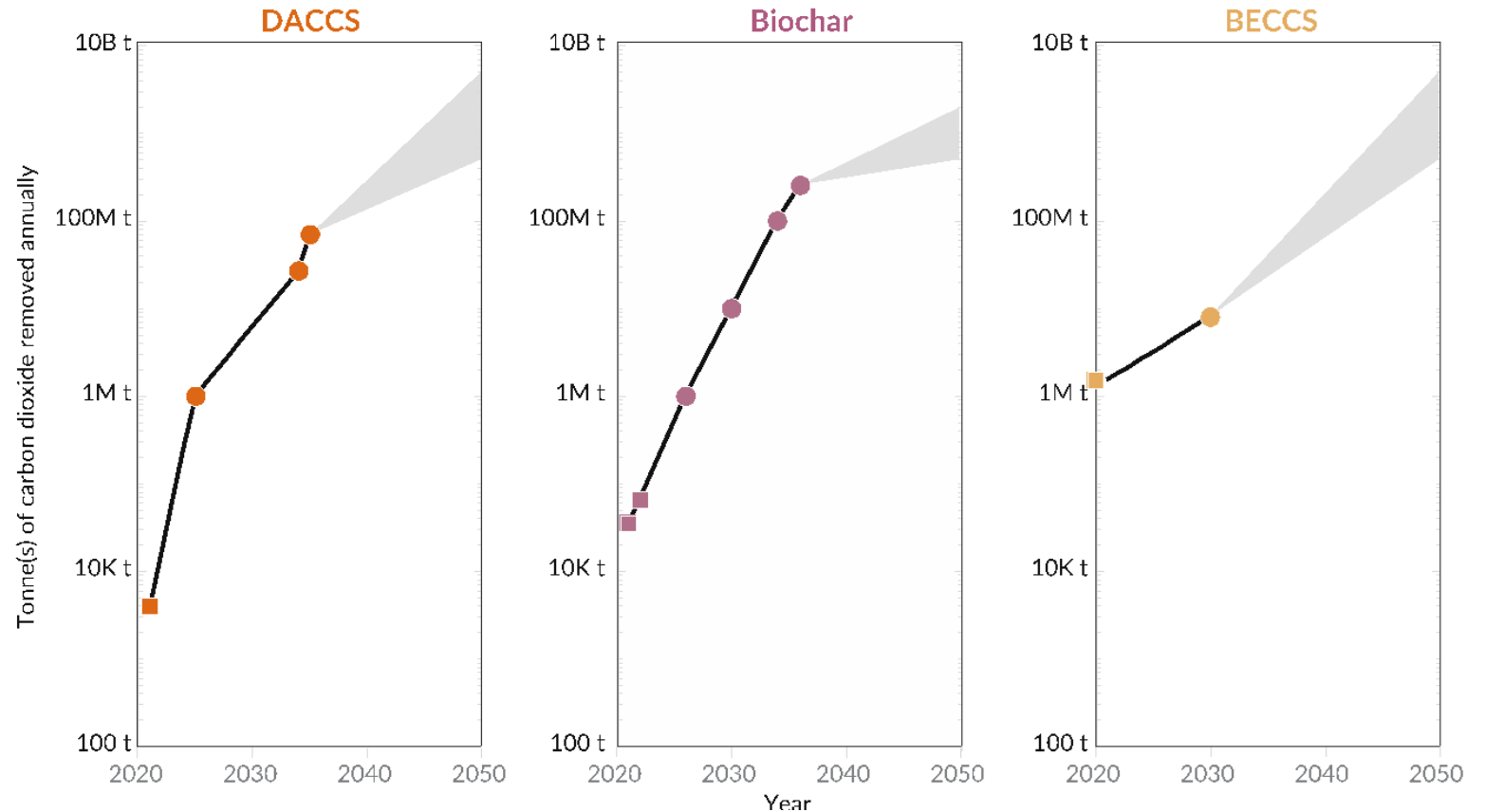
There is a gap in proposed levels of CDR and what is needed to meet the Paris temperature goal



Future growth

Announced CDR targets from industry groups and companies imply faster growth than has been seen for most historical technologies.

Segments of the industry (such as DACCS and BECCS) are still five orders of magnitude smaller than their mid-century potential.

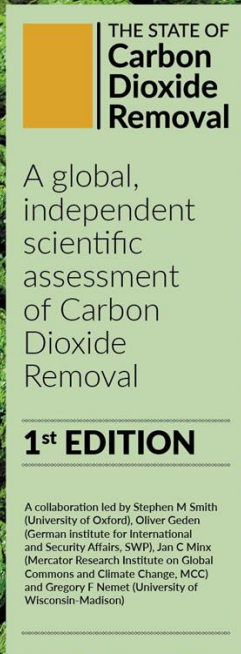


Formative phase

“The next decade is crucial for novel CDR, in particular, since the amount of CDR deployment required in the second half of the century will only be feasible if we see substantial new deployment in the next ten years, novel CDR’s formative phase.”

Key messages

- **Current CDR is 2 GtCO₂/yr**
 - almost all from conventional CDR on land
 - 0.002 GtCO₂/yr from novel CDR
- **Reducing emissions this decade is critical to limit warming to 1.5C**
- **CDR must start scaling this decade to achieve gigaton levels by 2050**
- **Gap between CDR proposed by countries and pathways to meet Paris goal**
- **CDR research, innovation and public awareness all growing rapidly**
 - Over 28,000 studies, few in social science
 - \$4bn public R&D; increasing patents, mainly in China
 - Social sentiment trends positive, except BECCS



Thank you very much for your attention!



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Matthew J. Gidden, Ph.D.

Senior Research Scholar

Energy, Climate, and Environment Program (ECE)
International Institute for Applied Systems Analysis (IIASA)

Laxenburg, Austria

gidden@iiasa.ac.at

@mattgidden

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