



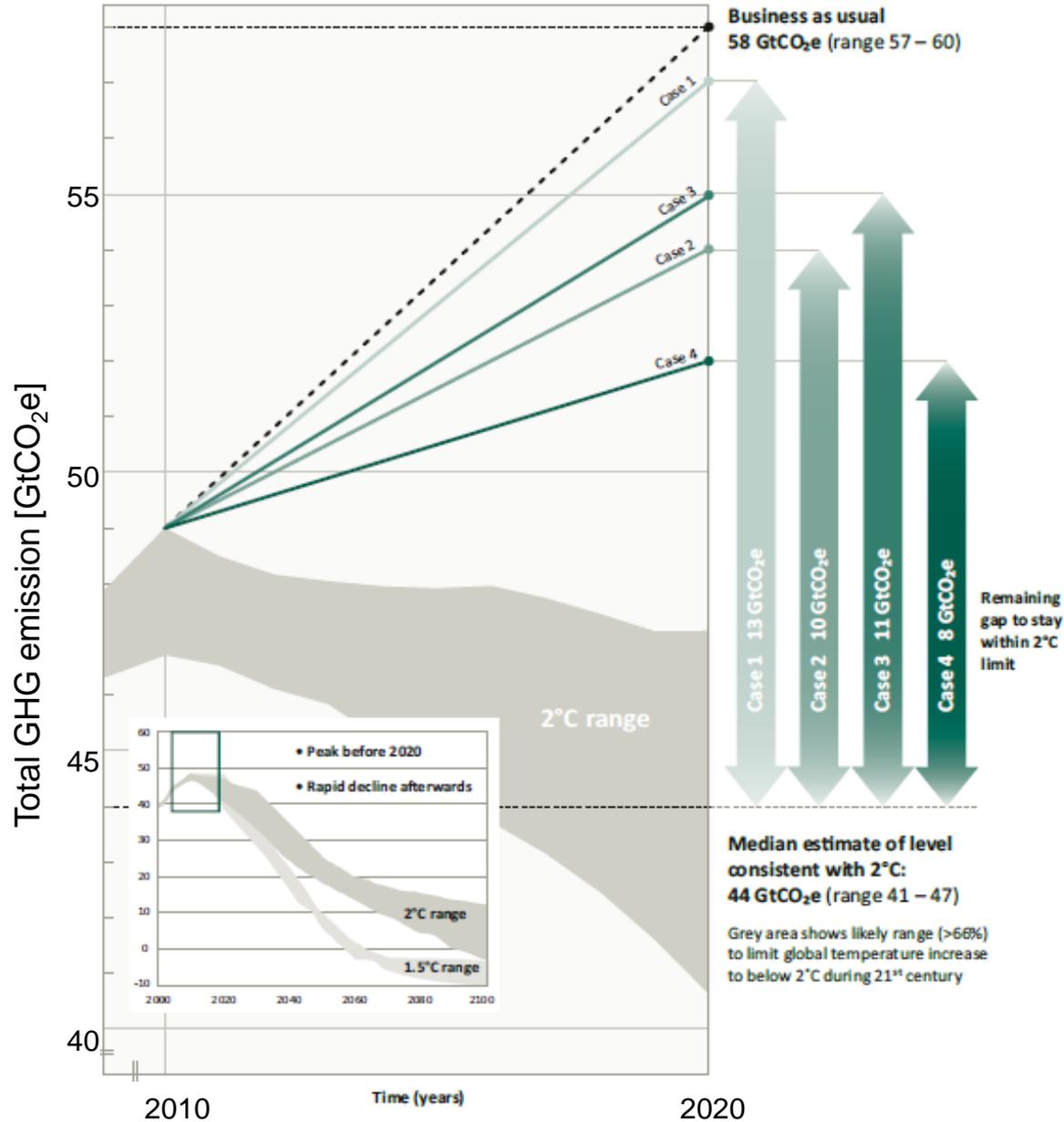
POTSDAM INSTITUTE FOR
CLIMATE IMPACT RESEARCH

The impact of near-term policy choices on the achievability of the 2°C target

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The “emissions gap”



Pledged emission reductions for 2020 are not in line with least-cost 2°C pathways

UNEP Gap Report (2013)

Outline and guiding research questions

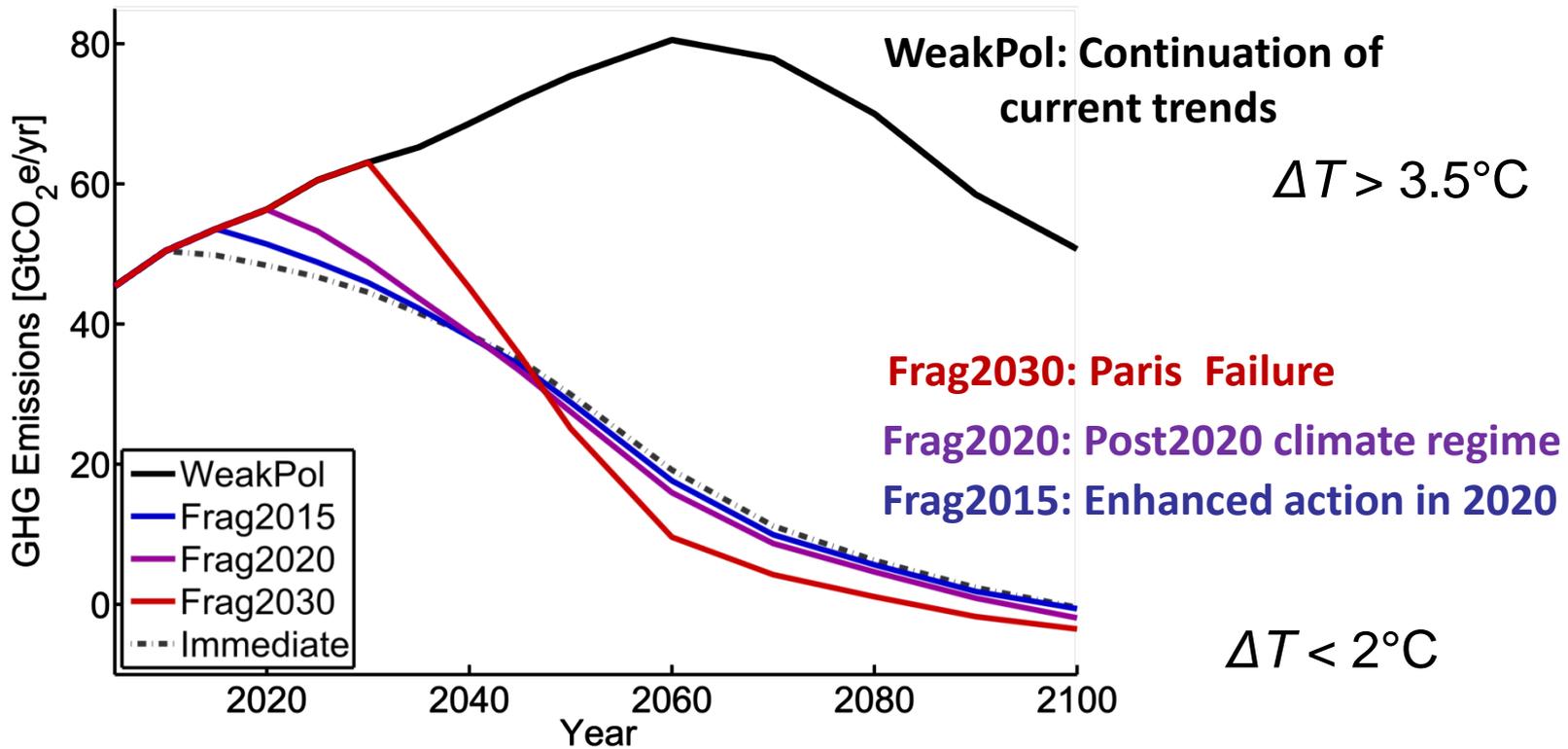
Given the discrepancy between the long-term climate target and mitigation action in the near term

- **What are implications of delay on the political feasibility of the 2°C target?**

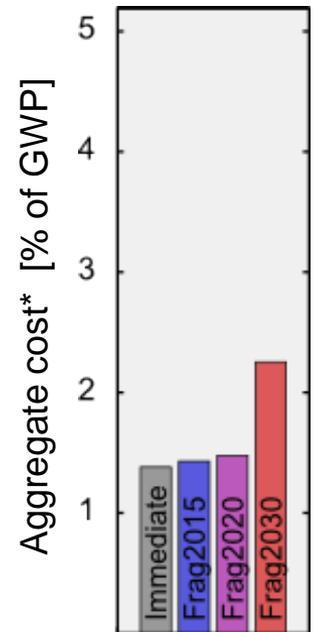
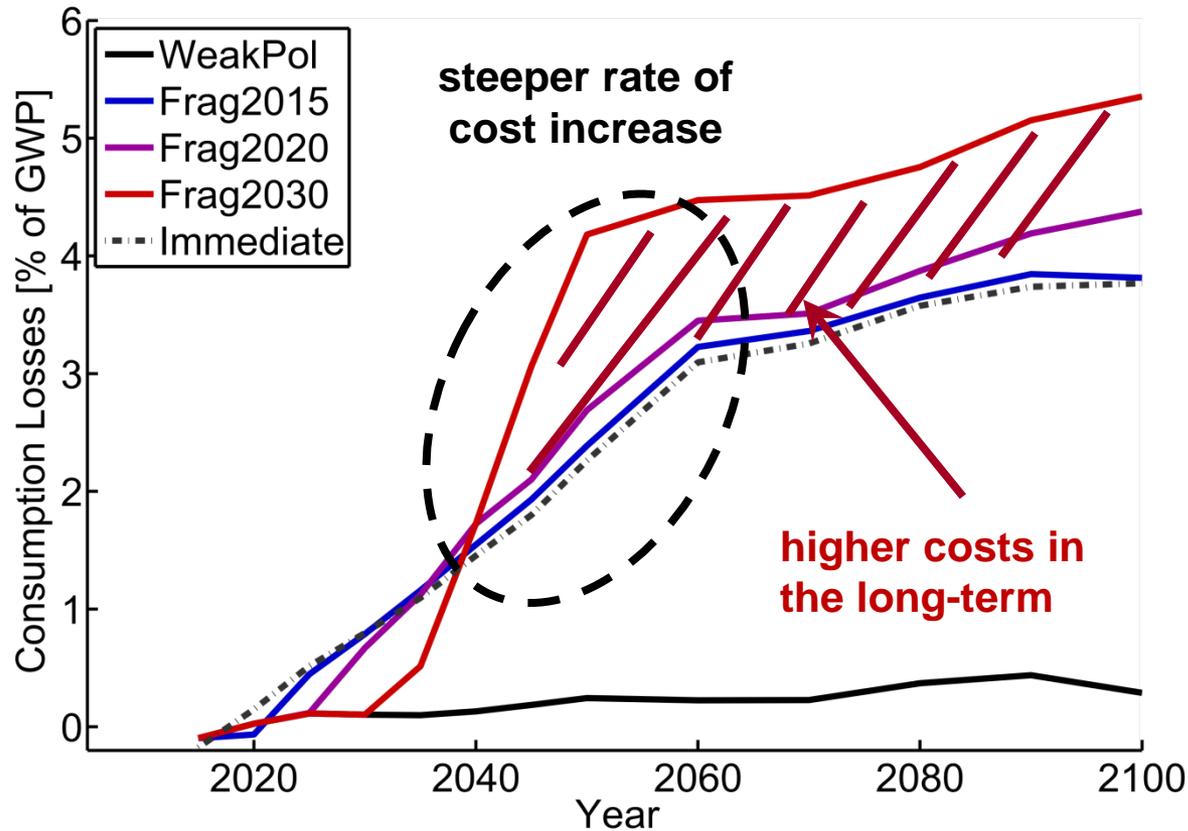
*Based on Luderer G, Pietzcker R, Bertram C, Kriegler E, Meinshausen M, Edenhofer O, 2013.
Economic mitigation challenges: how further delay closes the door for achieving climate targets.
Environmental Research Letters.*

- **To what extent can additional technology policies augment sub-optimal carbon pricing, and help to keep the 2°C target within reach?**

Mitigation scenarios with delayed action

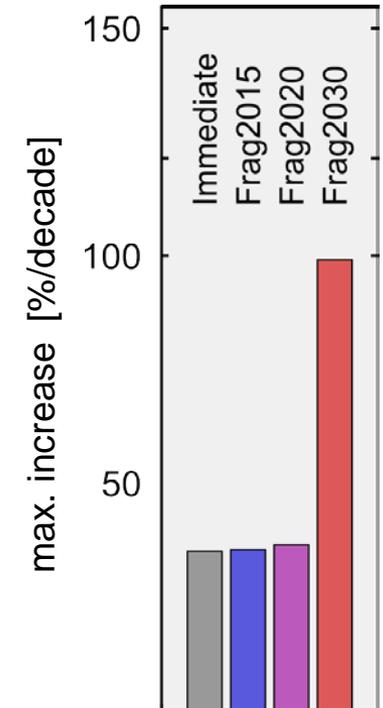
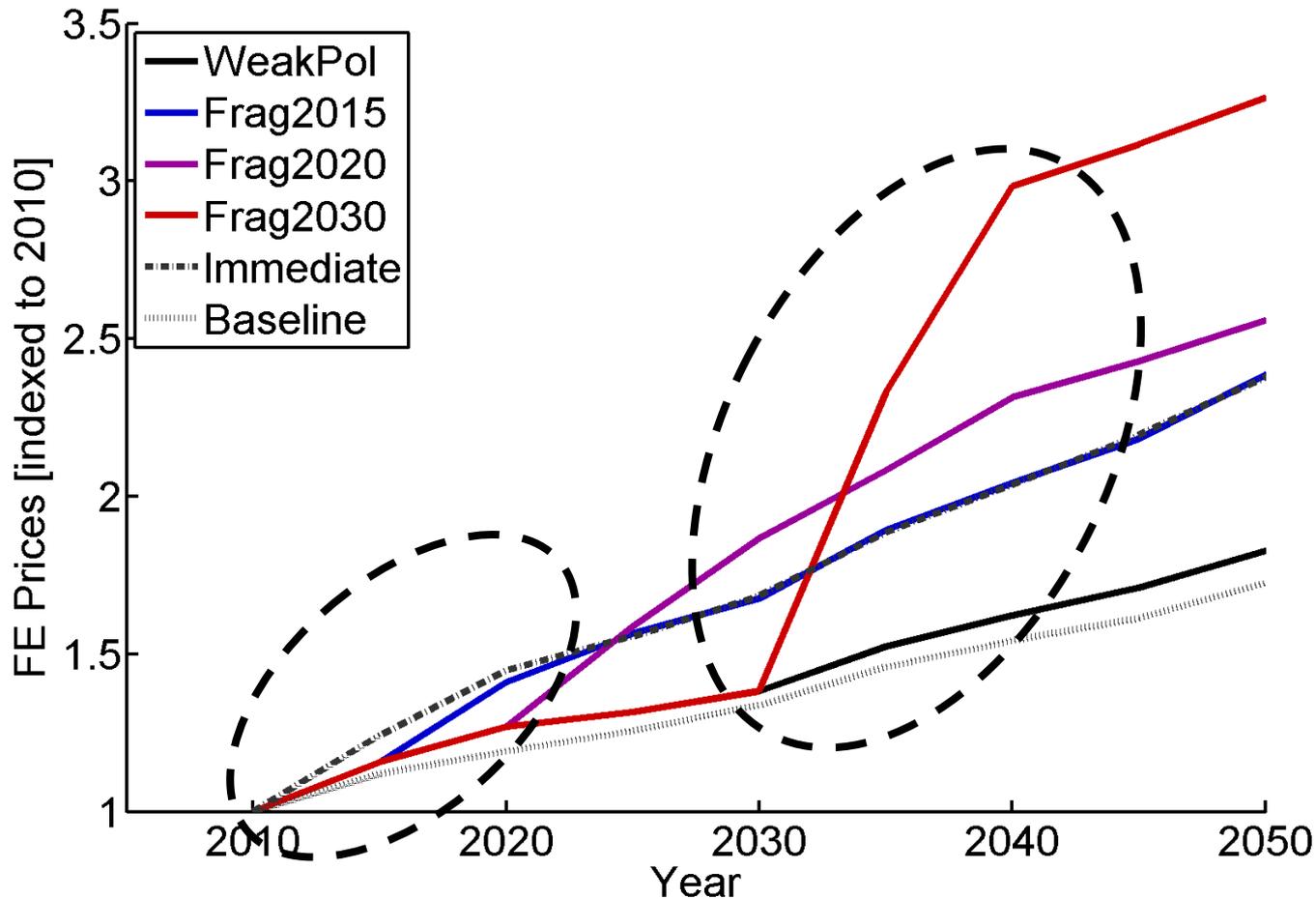


Political feasibility: Mitigation costs



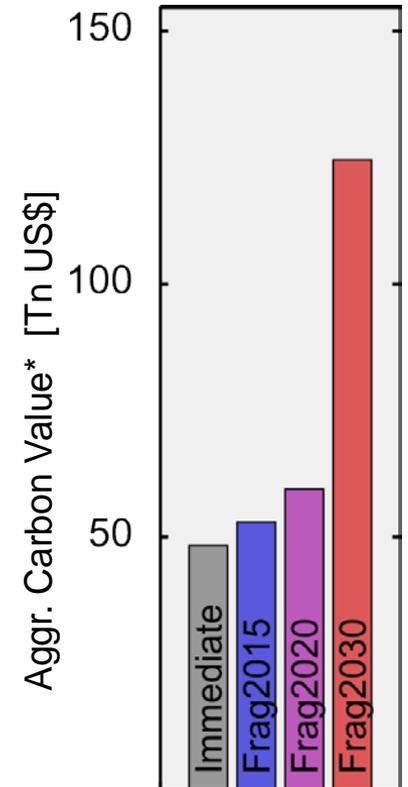
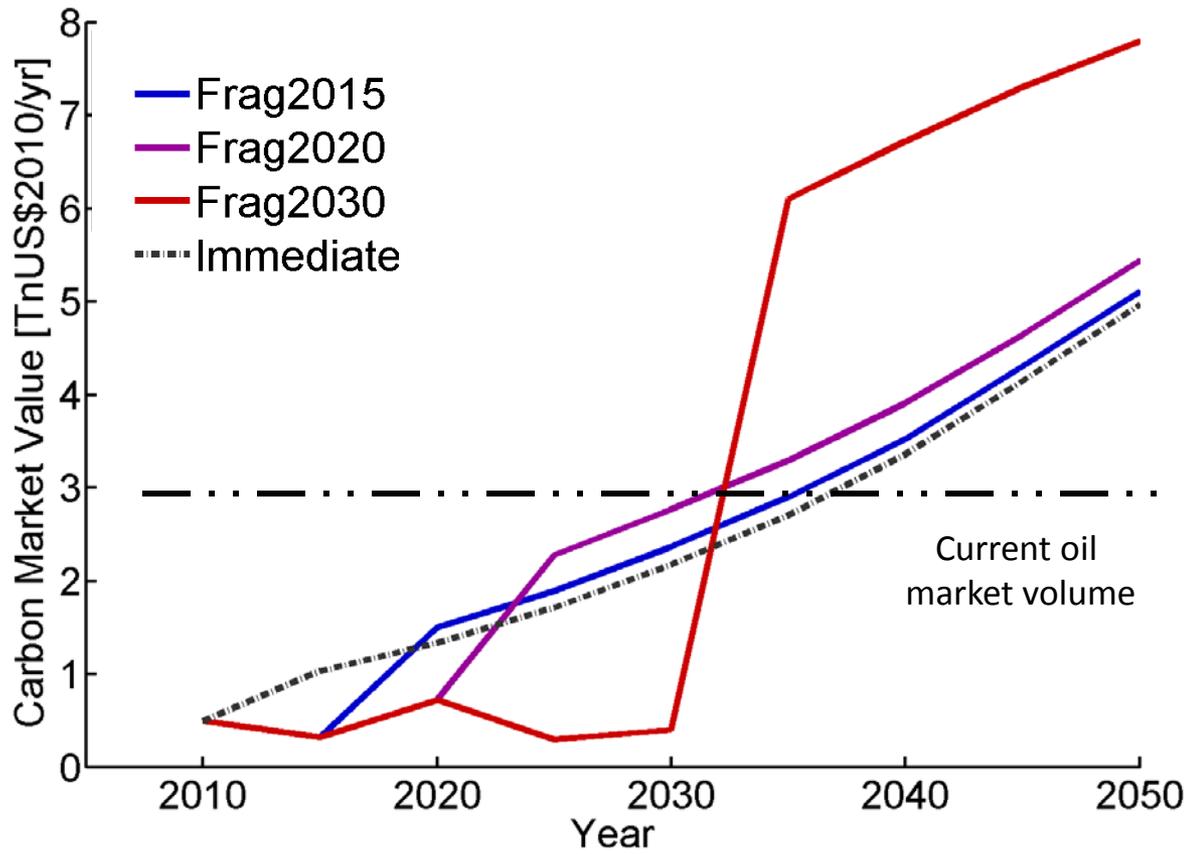
*discounted at 5%p.a.

Political feasibility: Energy price increase



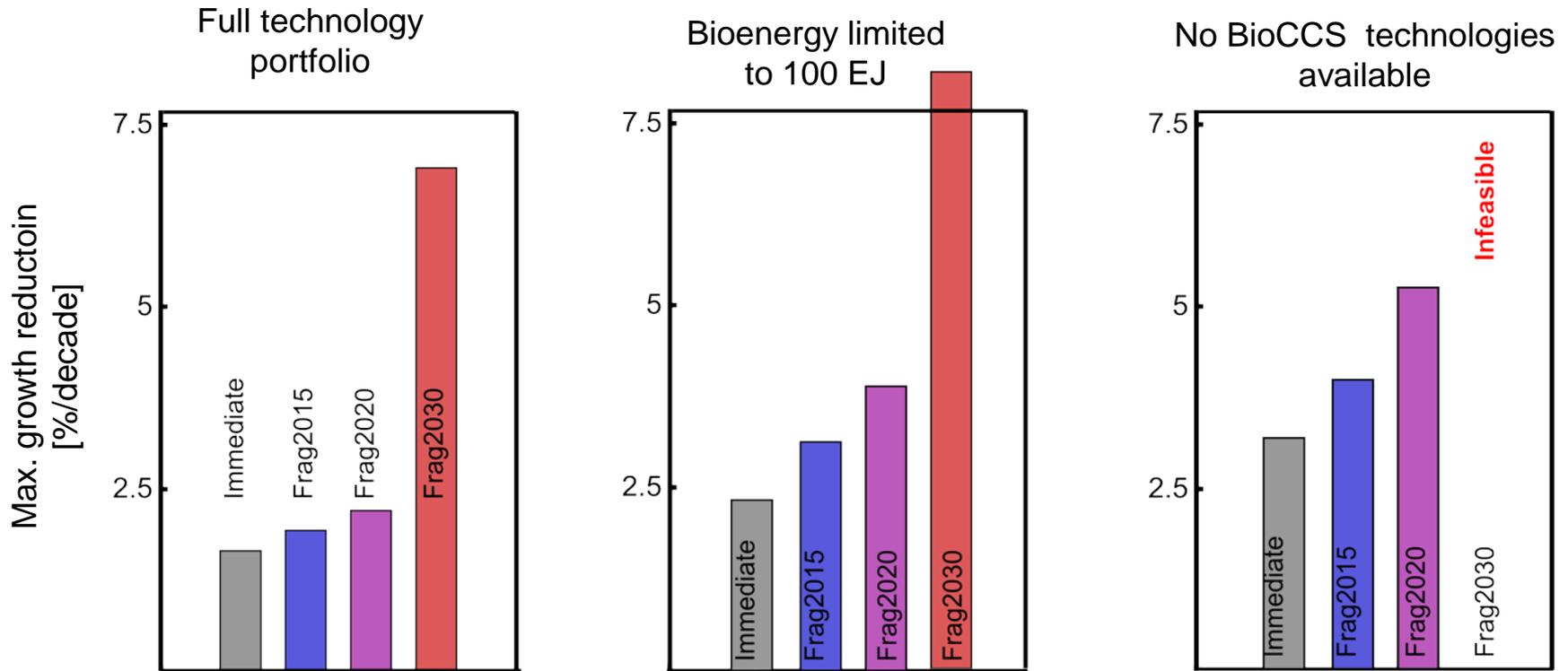
Political feasibility: Carbon market value

Total value of emissions covered under carbon pricing scheme



*discounted at 5%p.a.

Increased reliance on biomass and CCS



Alternative policy mixes for an imperfect world?

Introduction of a carbon price at a level that would ensure 2°C stabilization at least cost is unlikely to materialize in the near future

- **Can technology policies help to close the climate action gap?**
- **Which policy mix is most effective in reducing the adverse effects of sub-optimal carbon pricing in the near-term?**

Based on **Bertram C, Luderer G, Pietzcker R, Schmid E, Kriegler E, Edenhofer O (in revision).**
Adding technology policies to sub-optimal carbon pricing keeps mitigation targets within reach.

Combining technology policies with carbon pricing

		<u>Auxiliary technology policies</u>			
2015 - 2030 policies (without foresight)		No aux. Policies	Coal M oratorium	Low- C arbon S upport	Comb. C & L + tax/subsidy reform
Carbon Pricing	Moderate Carbon Tax	Tax-noT	Tax- CM	Tax- LCS	Tax- C&L
	Moderate Cap & Trade	Cap-noT	Cap- CM	Cap- LCS	Cap- C&L
	Optimal immediate first best	Opt-noT	-	-	-

After 2030: Comprehensive, cost-efficient mitigation policies

Conclusions

- 2°C target gets out of reach with if current climate policy trends continue
- Distributional consequences of climate policies might be a more critical barrier than aggregate costs
- Delay decreases option space in terms of technology choice for 2°C stabilization
- In the context of sub-optimal pricing of carbon, targeted technology policies can play a crucial role to avoid further fossil lock-in and to pave the way for a low-carbon future
- A moderate carbon tax or price floor with dedicated technology policies appears to be a pragmatic and feasible entry point to 2°C compatible decarbonization
- Scaling-up carbon pricing remains most effective lever in the near-term, and a key requirement in the long-term