

Further Exploration into Opportunities for International Cooperation – Under Article 6 and Otherwise

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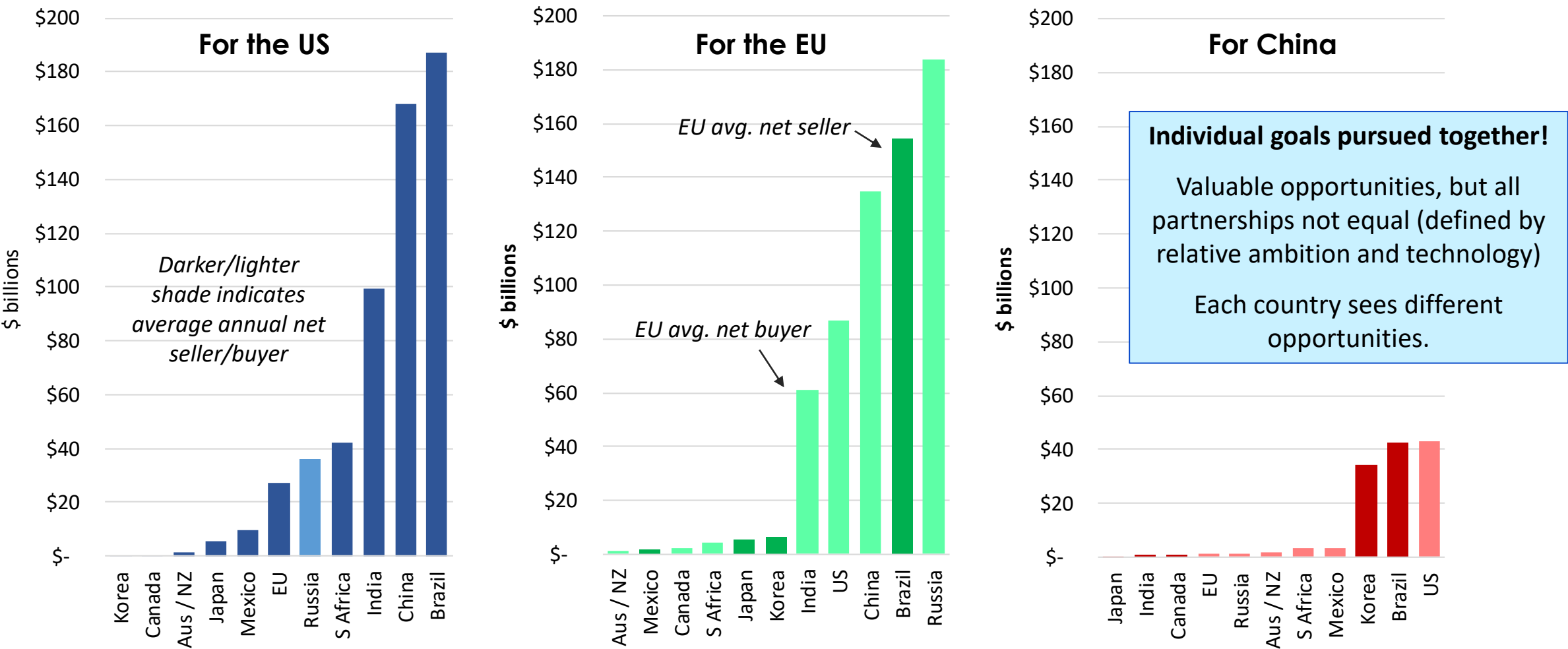
19th IEA-IETA-EPRI Annual Workshop on Greenhouse Gas
Emission Trading, Paris, France, October 3-4, 2019



Preliminary results. Please do not quote.

Emissions trading country partnership opportunities

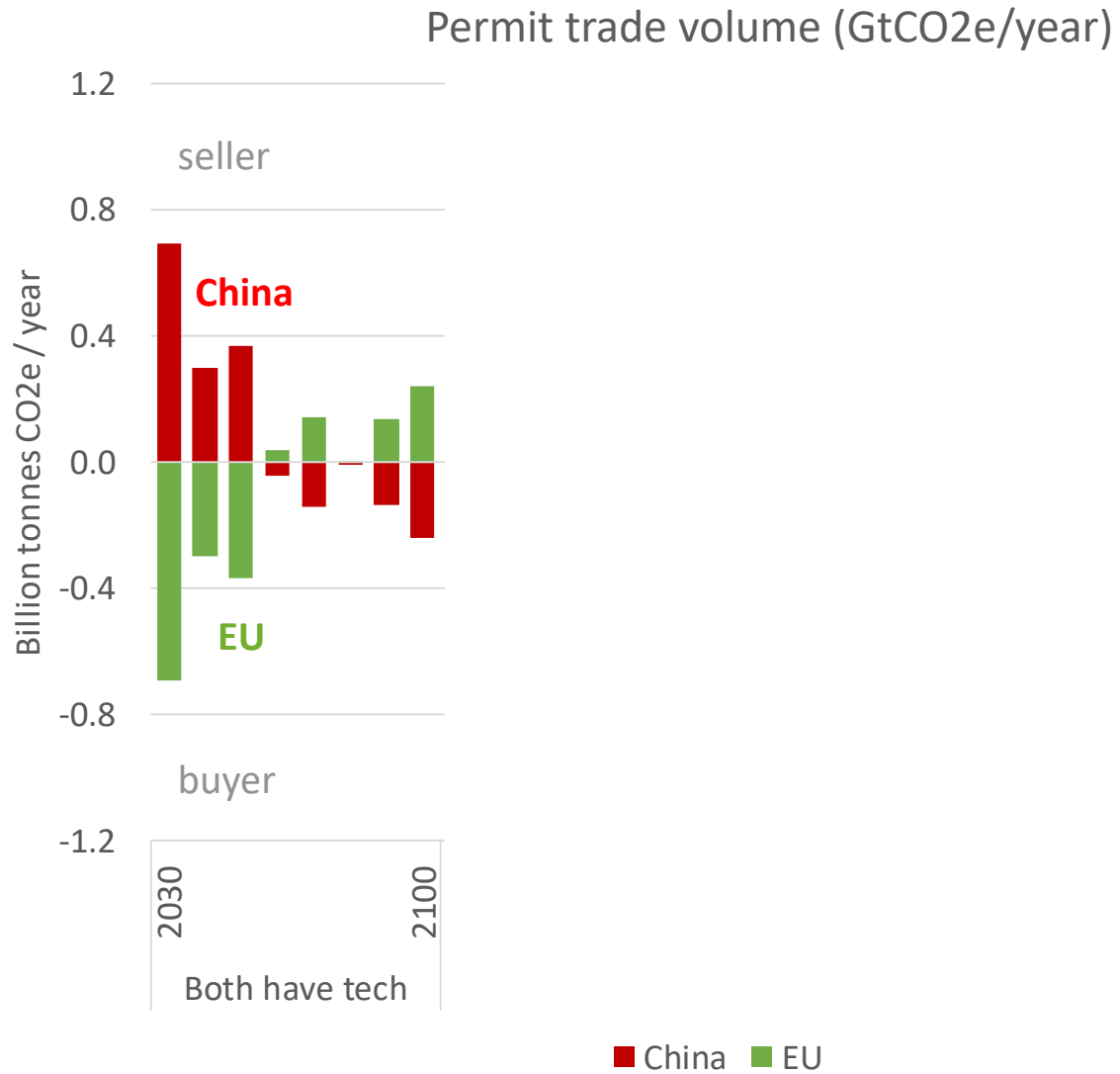
Gains in regional household consumption for each potential bilateral partnership (net present value)



Policies: countries pursuing NDC and significant increase in ambition post-2030

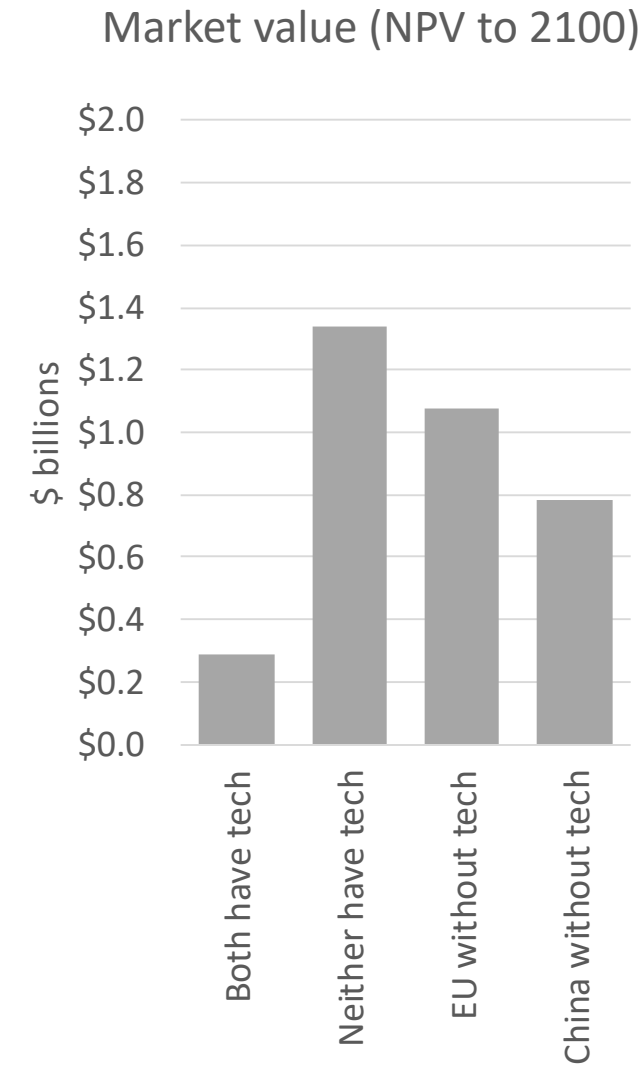
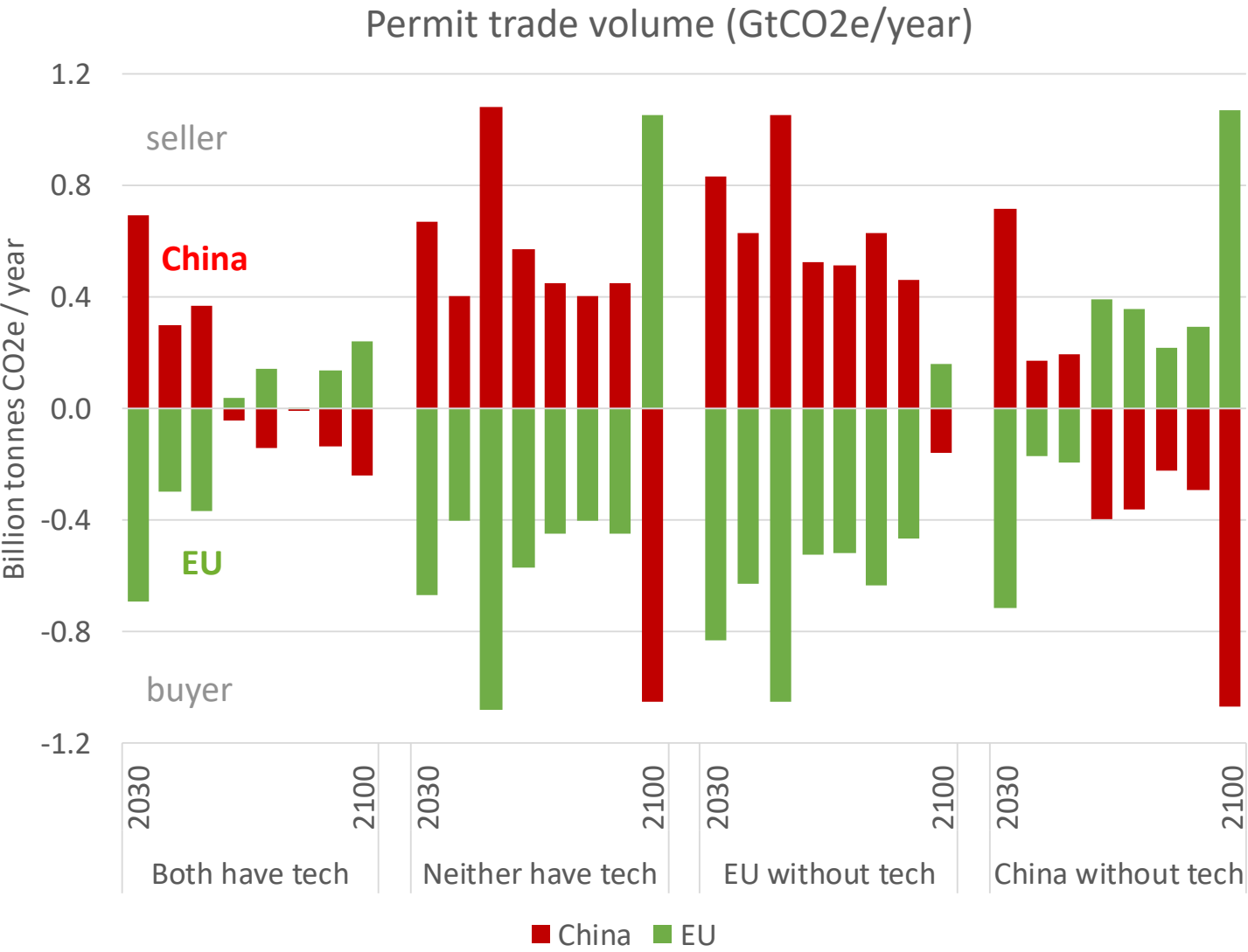
How might technology shape partnership opportunities?

E.g., EU-China partnership varying availability of negative emissions technology



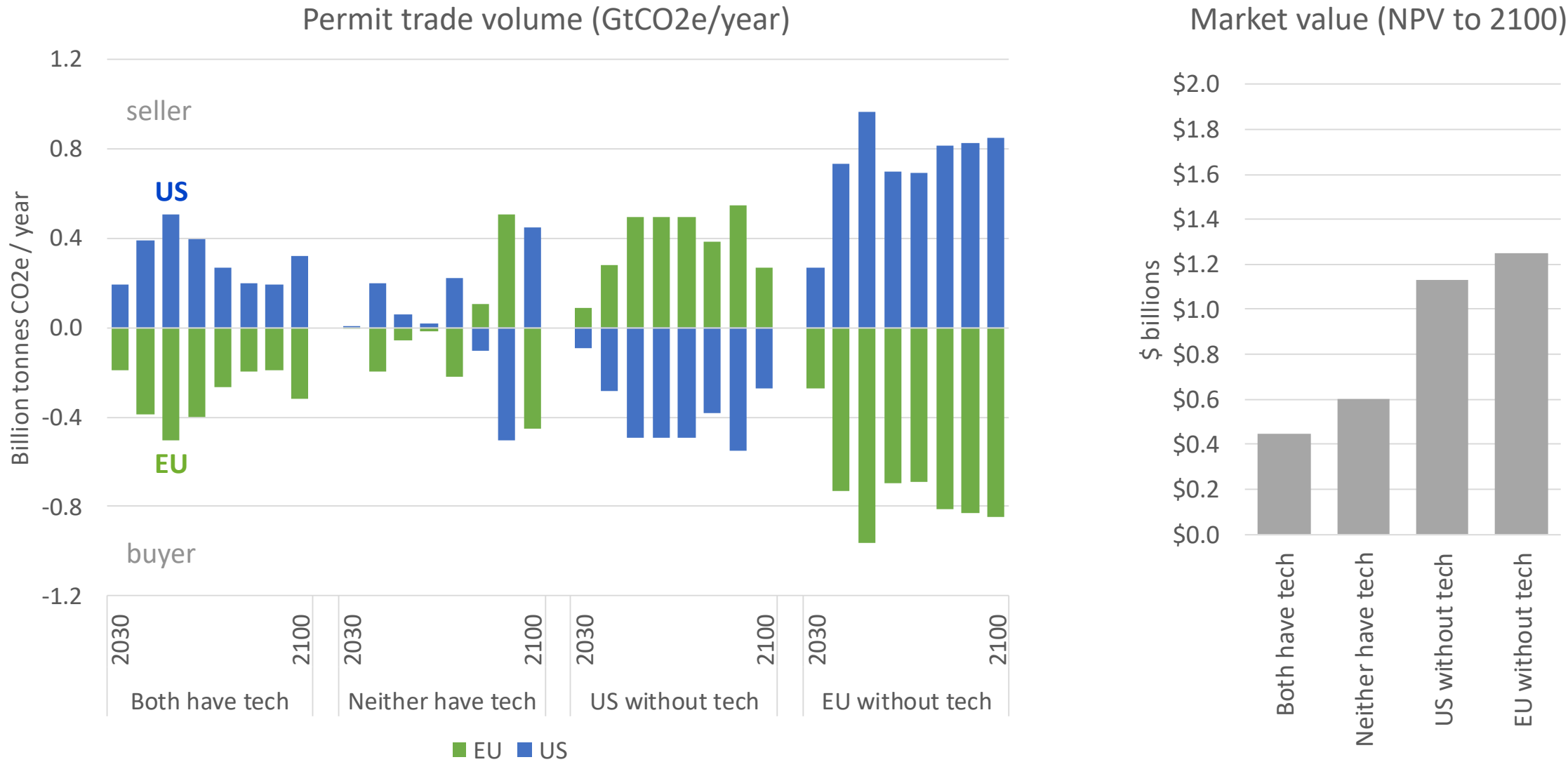
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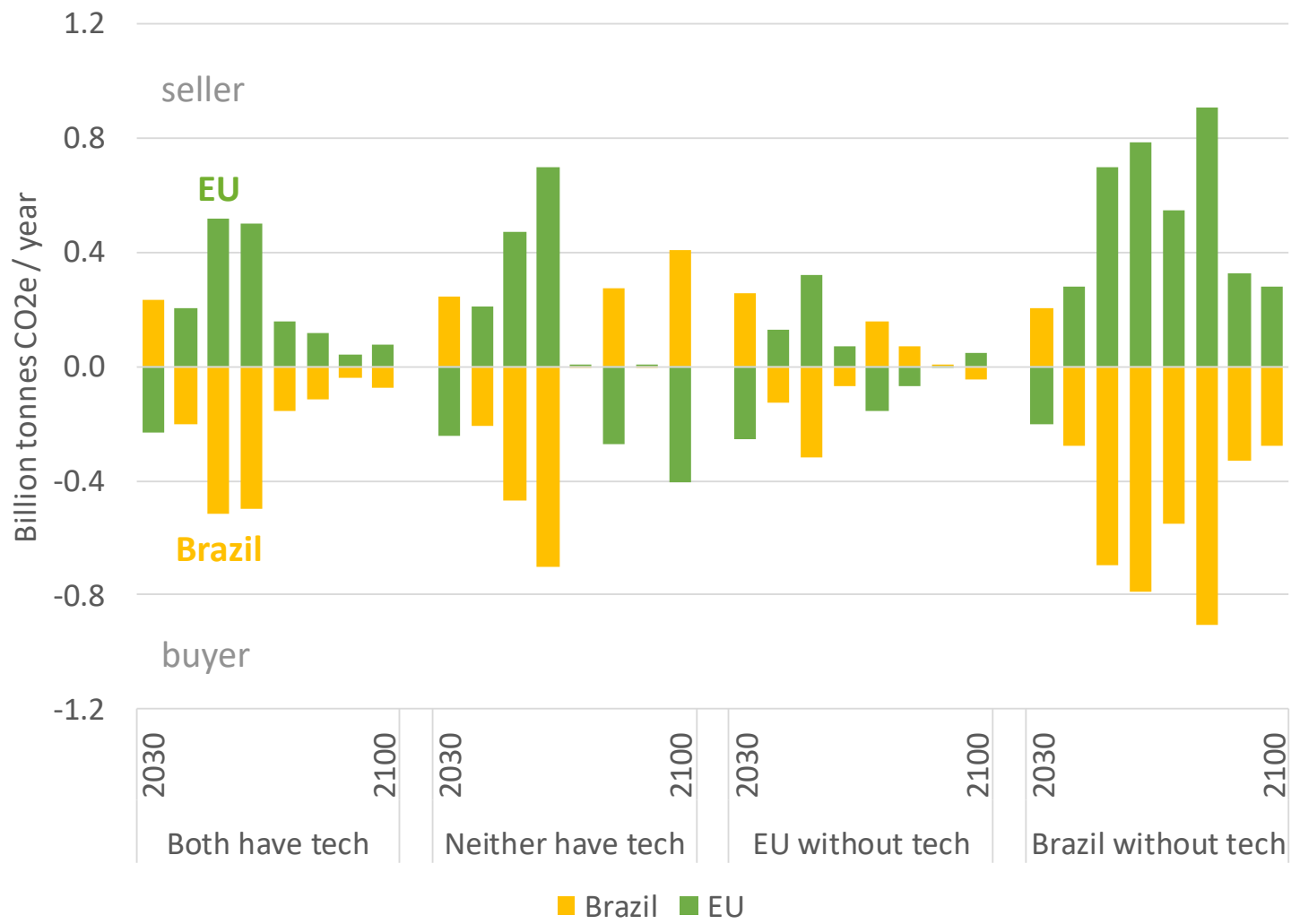
E.g., EU-US partnership varying availability of negative emissions technology



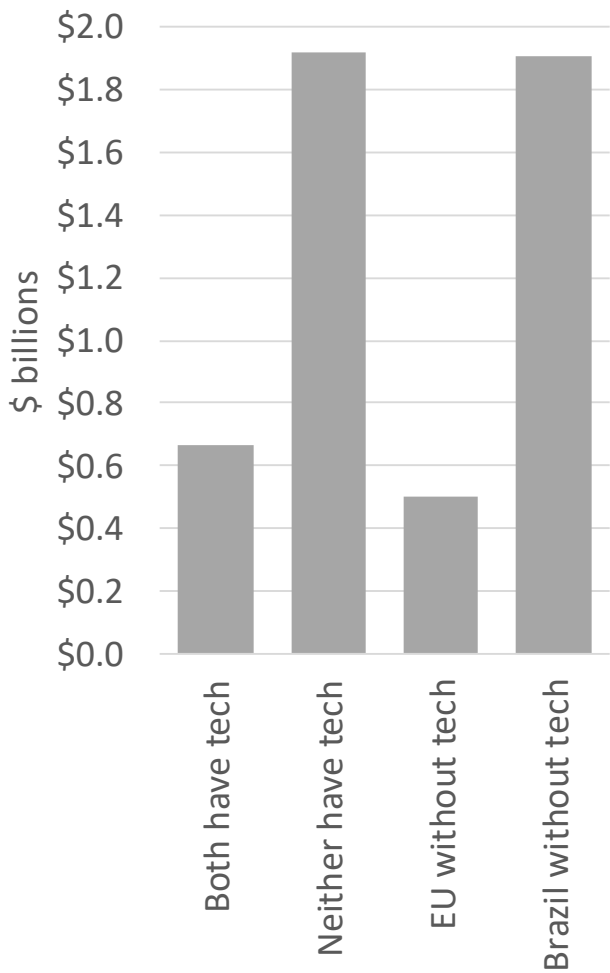
How might technology shape partnership opportunities?

E.g., EU-Brazil partnership varying availability of negative emissions technology

Permit trade volume (GtCO2e/year)

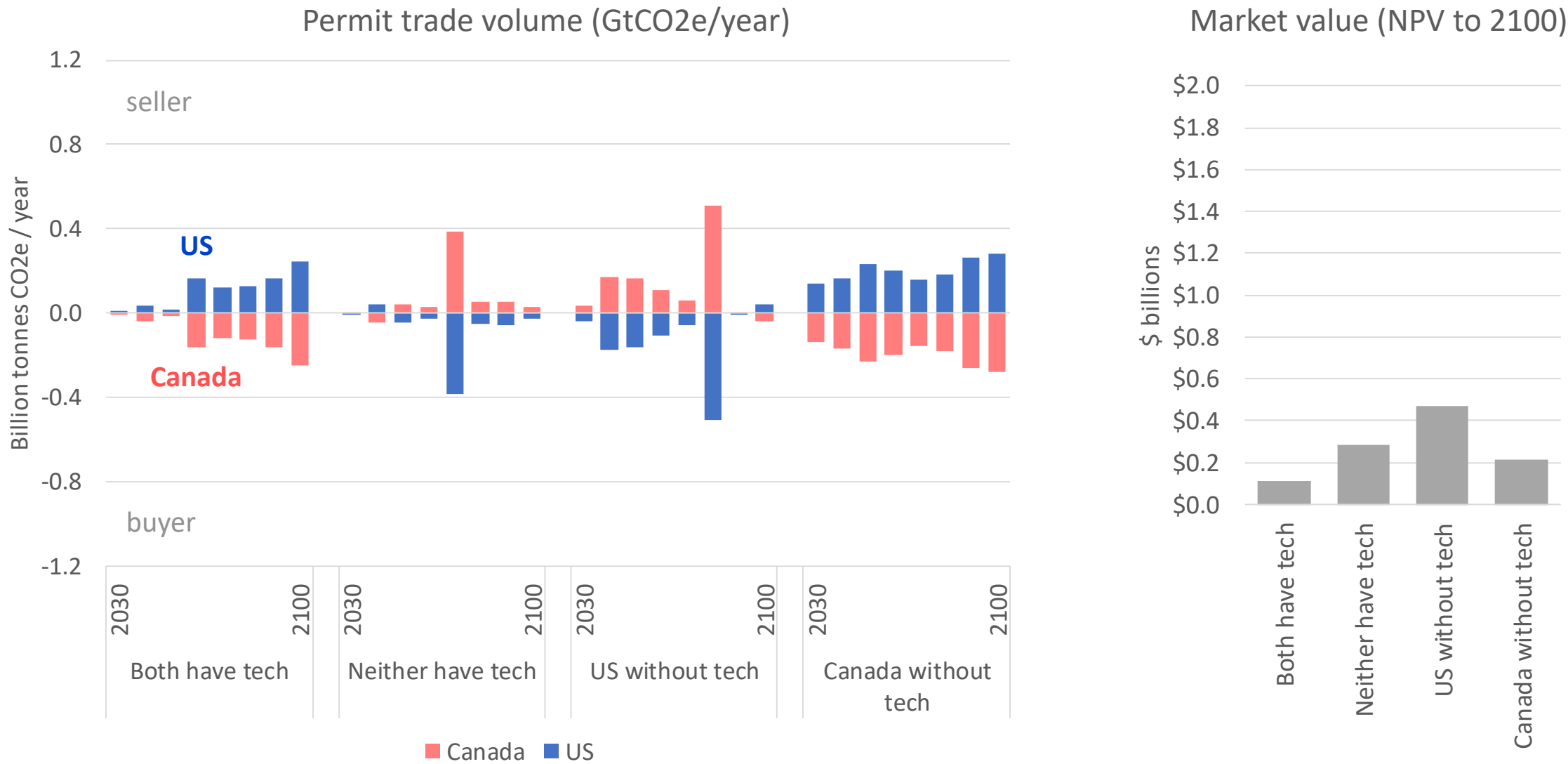


Market value (NPV to 2100)



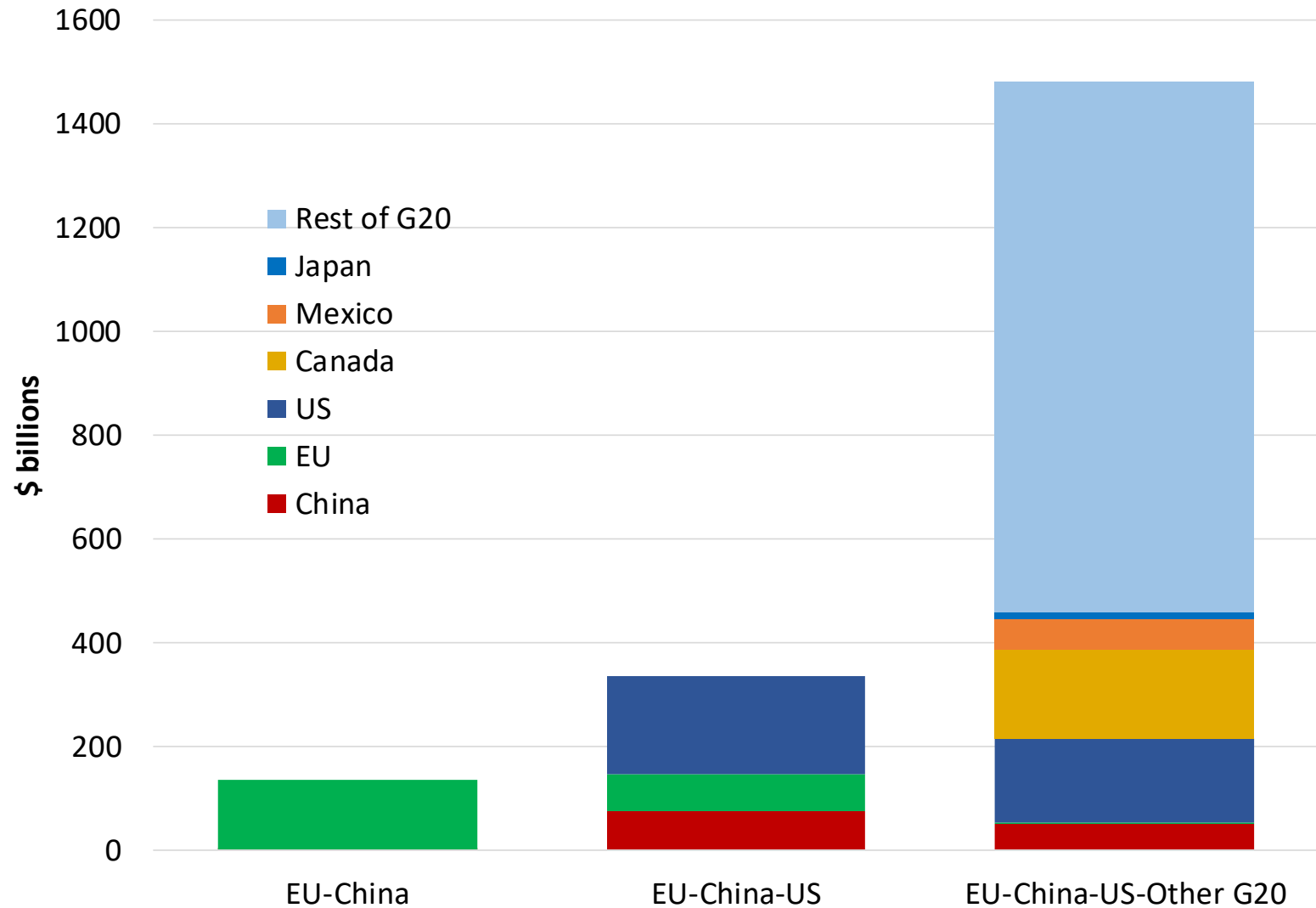
How might technology shape partnership opportunities?

E.g., US-Canada partnership varying availability of negative emissions technology



How might technology shape partnership opportunities?

(gains in discounted household consumption)



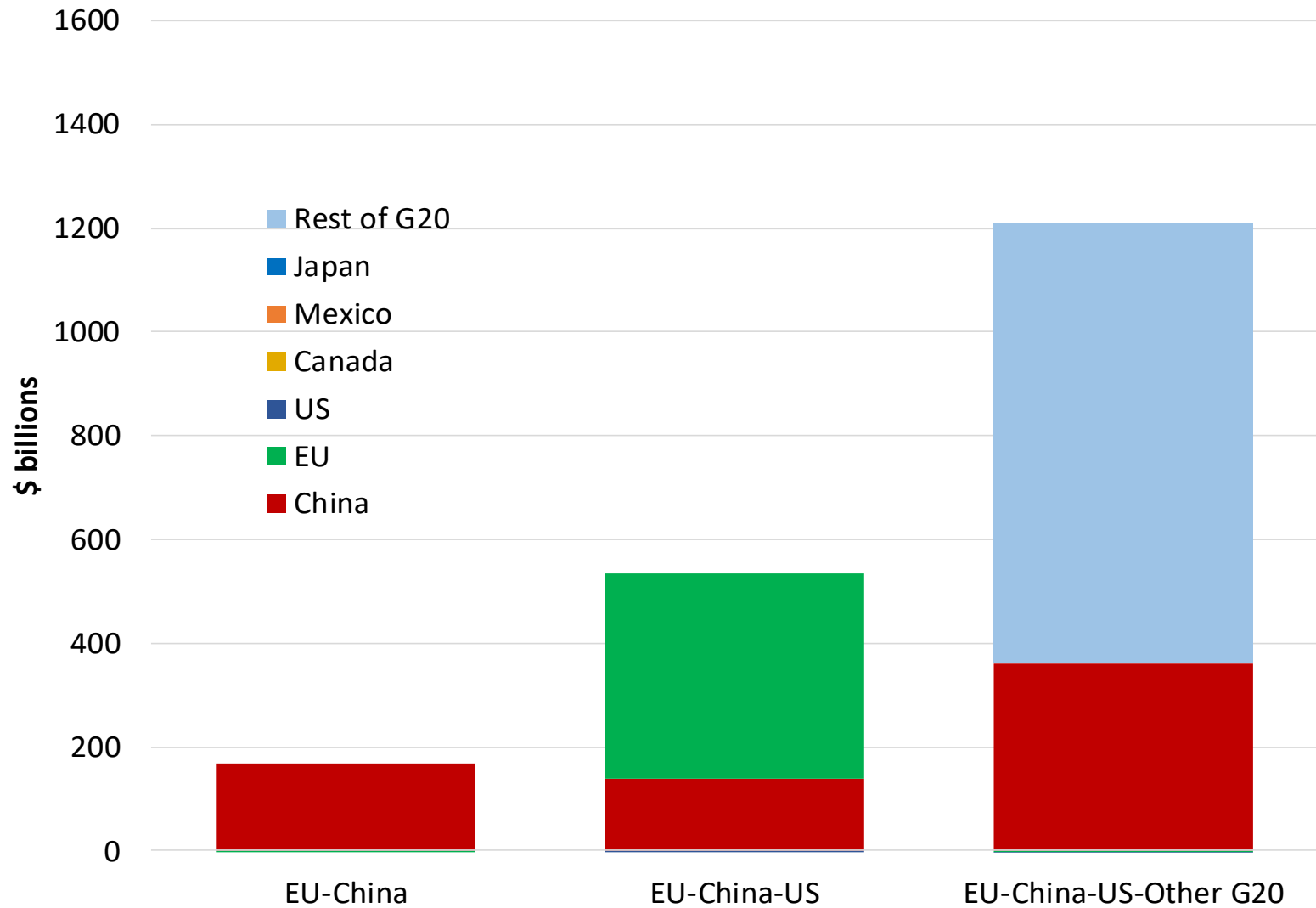
Growing trading partnerships increases total benefits – but not for every partner.

Changes in regional value depend on whether net buyers or sellers added to the partnership.

Policies: NDCs to 2030 with significant increase in ambition post-2030 (result is slight chance < 2°C)

How might technology shape partnership opportunities?

(gains in discounted household consumption without negative emission technology)



Without negative emissions technology...very different total benefits and distribution of benefits

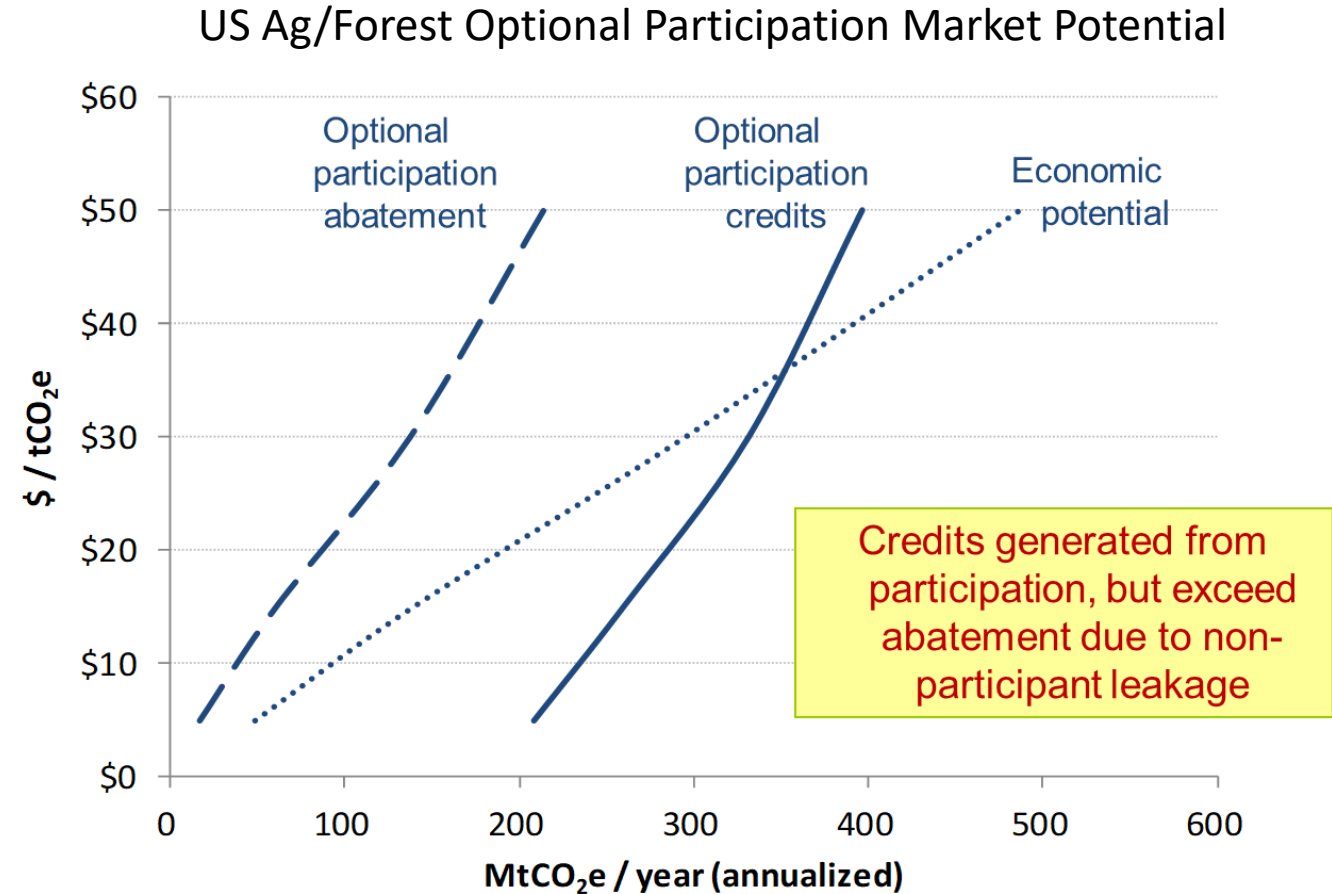
Policies: NDCs to 2030 with significant increase in ambition post-2030 (result is slight chance < 2°C)

Overall, strategic issues to keep in mind

- Choice of trading partner
 - Relative ambition of partner
 - Expanding partnerships
 - Availability and crediting of low-carbon technologies
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- In addition to competitiveness, leakage, and trade balance

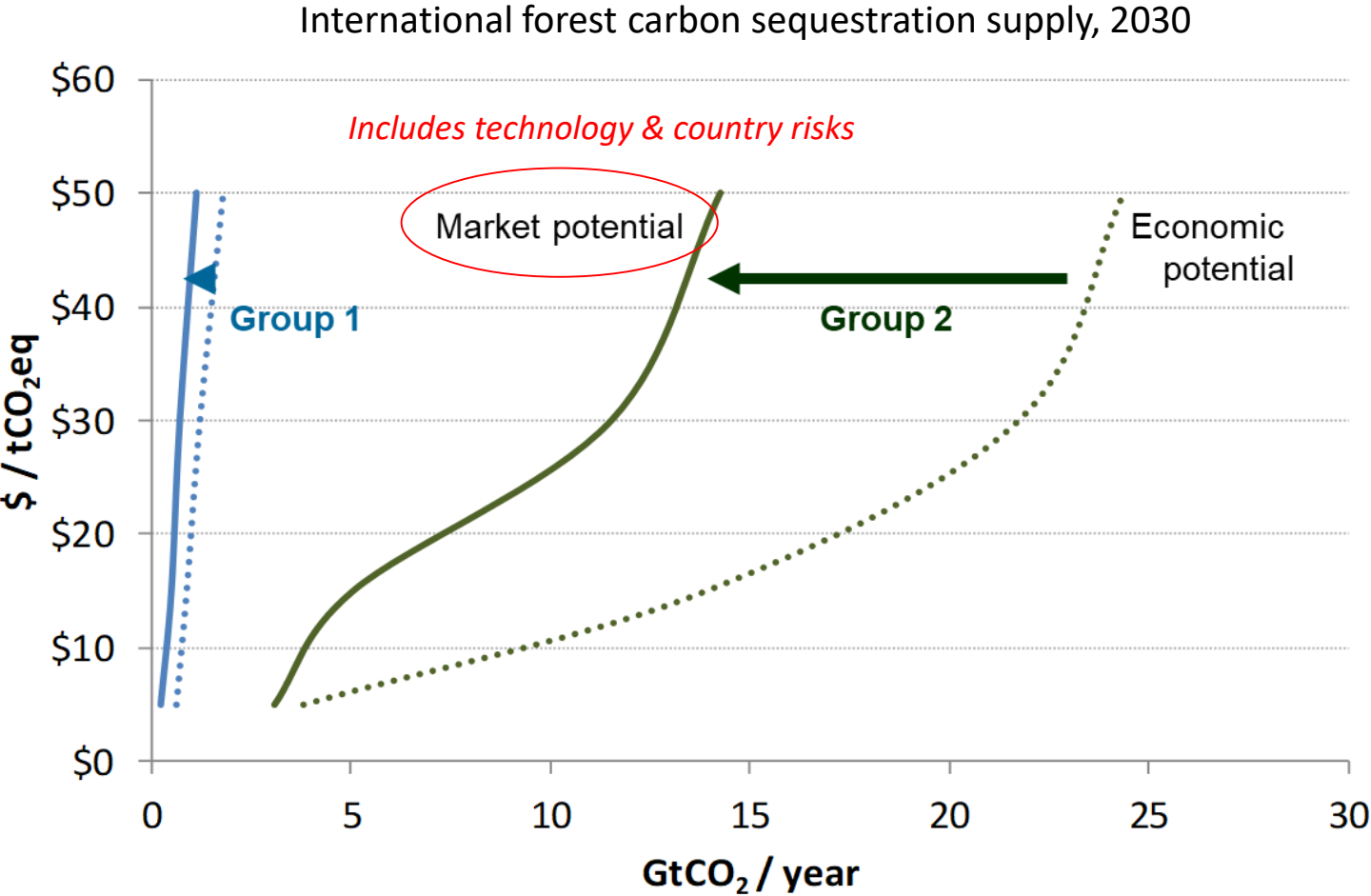
Natural systems offer large potential, but challenges to consider

- Large global forest abatement opportunity but likely transition carbon losses (e.g., Rose and Sohngen, 2011)
- With voluntary incentives, potential non-participant leakage, but net abatement (figure)
- Staggered regional incentives have leakage and cost implications (Rose et al., in prep)
- Significant project and country investment risks (next slide)



Rose et al (in prep)

Forest carbon mitigation investment risks



Significant abatement potential, but investment risks, as well as policy instrument type, affect market potential.

Rose et al (in prep)

Group 1 = developed countries; Group 2 = developing countries

Closing remarks

- **International bi-lateral (and larger) trading partnerships can be valuable**
 - Reducing societal costs and offering savings to citizens
 - As an incentive to increase global participation and ambition
 - Reducing the cost of delayed action
 - Increasing the likelihood of being able to limit warming to below 2°C
- **Technology availability will likely impact partnership opportunities**
- **There are strategic issues to keep in mind**
- **Natural systems offer large potential, but challenges to consider**
- **Technical issues numerous and important to evaluate**



Thank you!

[Comments, questions, interest](#)

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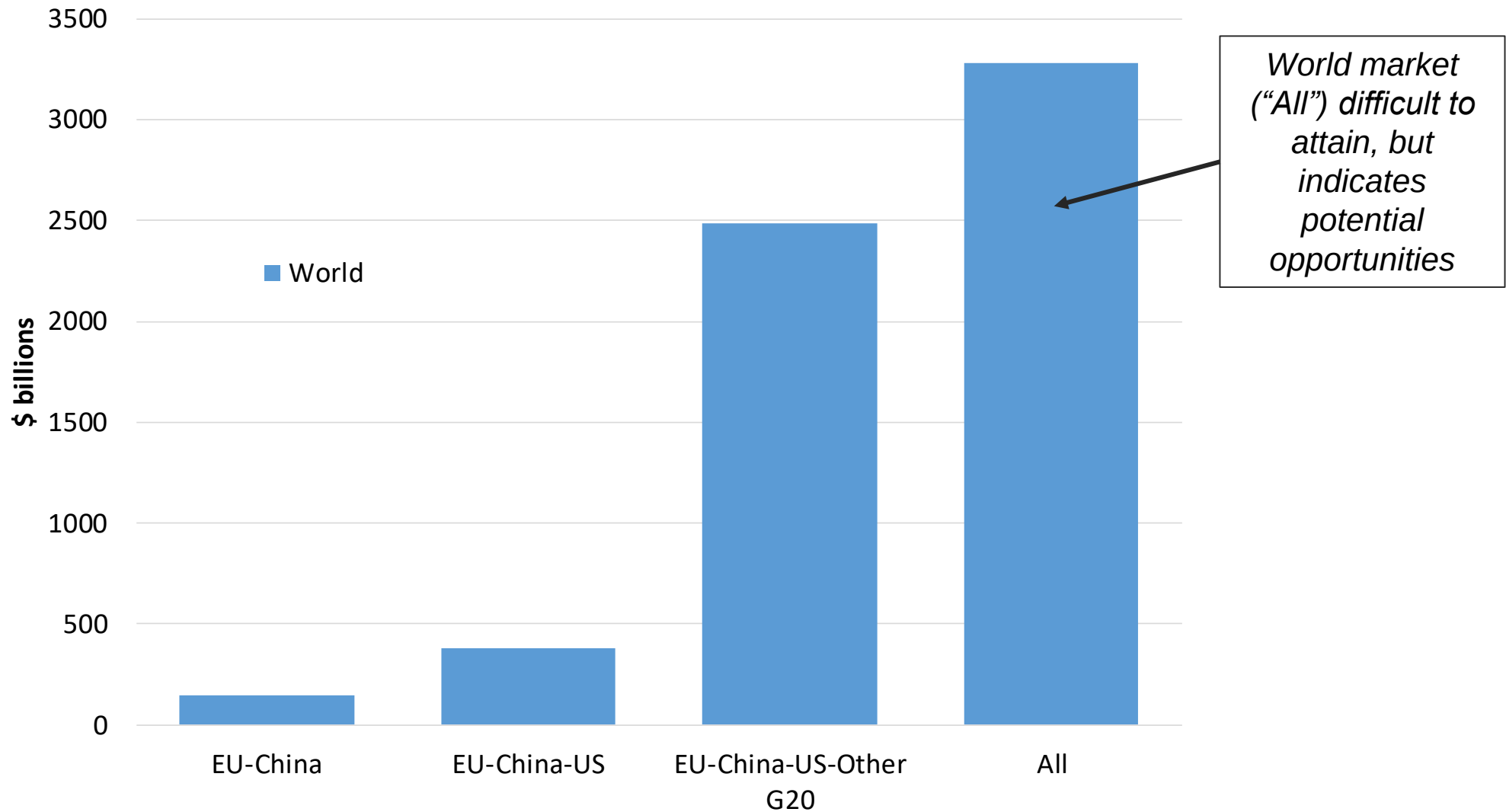
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Growing the Trading Partnership Increases Total Global Benefits

(gains in discounted household consumption)



Assuming India and developing country emissions peak in 2040/2050 respectively and decline rapidly

Emissions Trading a Means for Increasing Ambition?

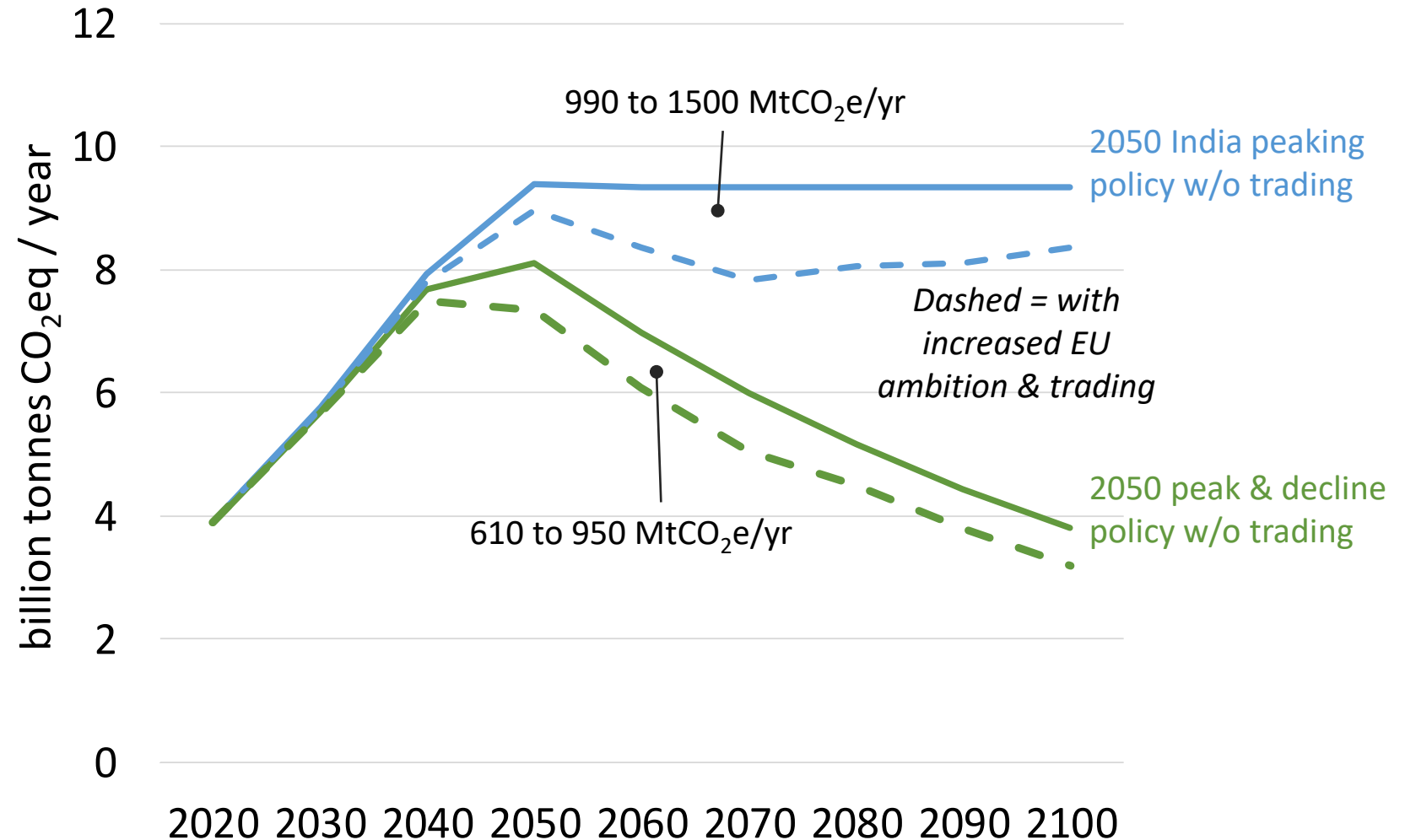
May be possible in particular circumstances

e.g., EU increases ambition with trading partnership with India

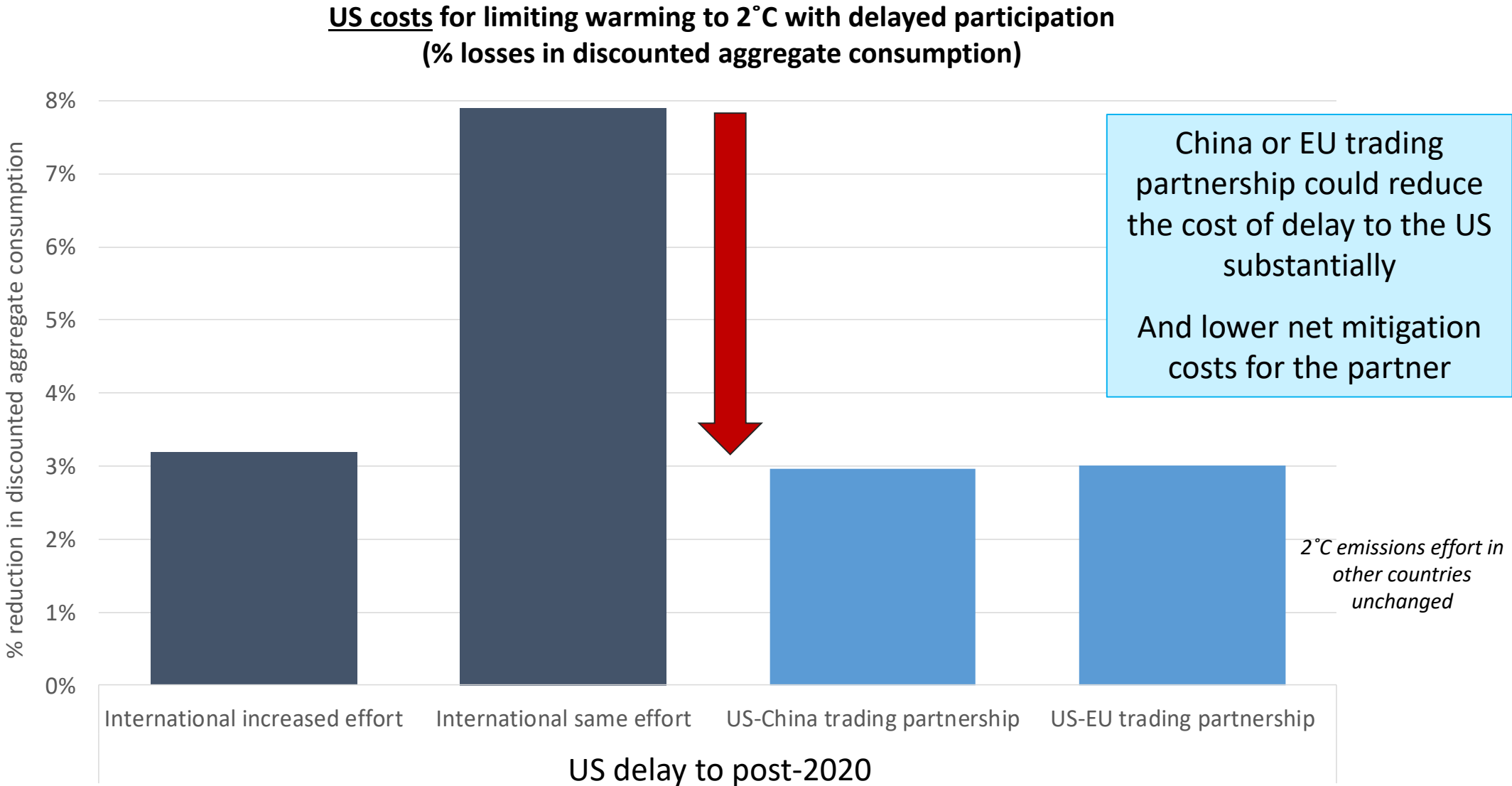
→ India reduces more to sell credits, global emissions decline, lower EU costs, India revenues

→ Repeatable with EU-India? Yes, but likely diminishing.

Potential India emissions

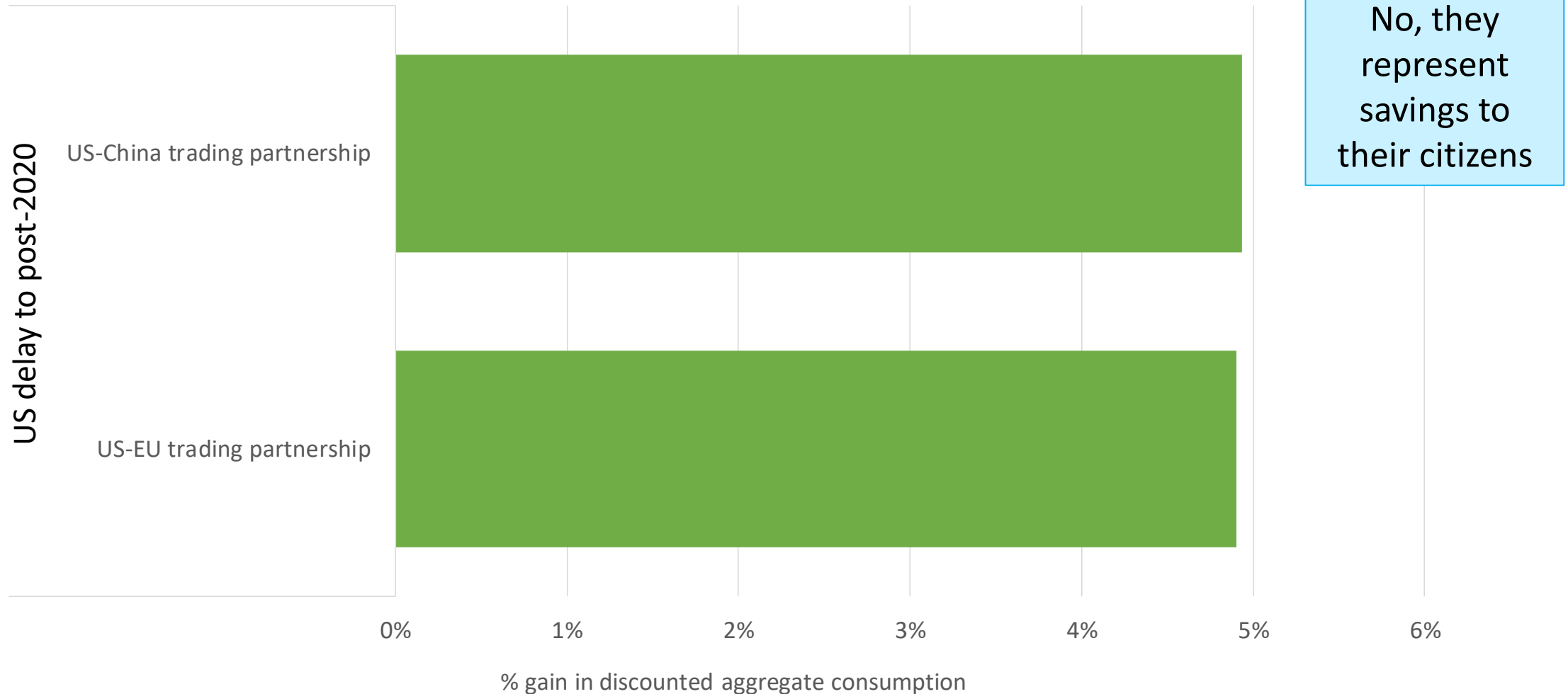


Emissions Trading Partnerships Could Reduce Cost of Delay



Should Policy-Makers be Concerned about Buying Permits?

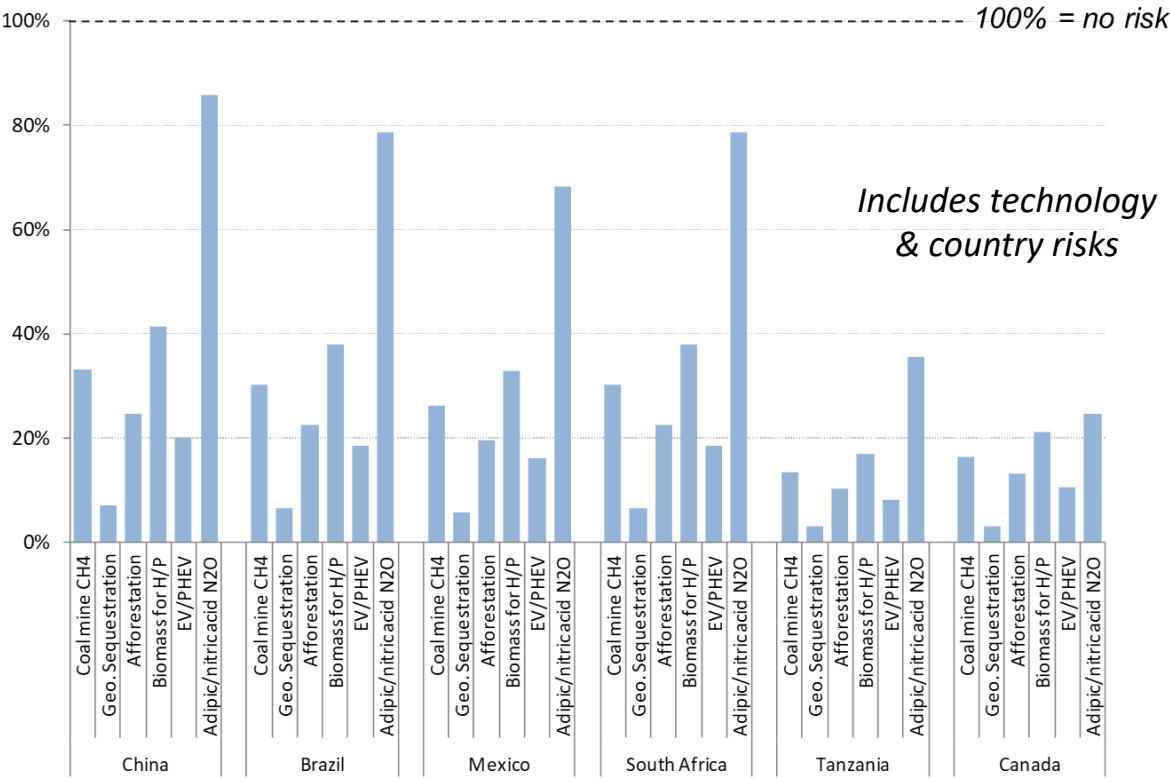
Savings to US households from US delay emissions trading partnerships (% gains in discounted aggregate consumption relative to without trading)



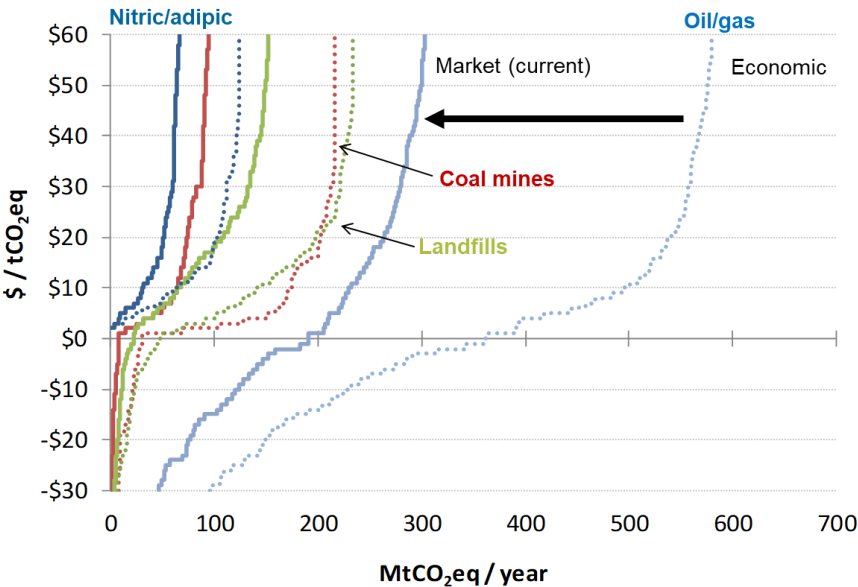
Other international cooperation mechanism opportunities (e.g., offsets)

Significant offset potential, but investment risks, as well as policy instrument type, affect market potential

Sample of offset credit risk for different locations & project types



International energy, industry, waste non-CO₂ mitigation supply, 2020



International forest carbon sequestration supply, 2030

