

# Exploring the Potential for International Mitigation 'Clubs' for the Road from Paris - An initial exploration -

Preliminary results



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# Motivation

## ■ The Challenge

- Shifting global emissions trends to stabilize/reverse temperature growth (e.g., to avoid 2°C or ? of warming)
- Aggressive climate targets likely expensive. Policy design important!

## ■ INDC country pledges are just the beginning

- How will/can INDCs be implemented?
- INDCs take us to 2030 – where do we go from there, and how?

## ■ Important issues

- The opportunities for international cooperation?
- The implications of long-term policy for near-term decisions and opportunities?
- Building blocks to a more comprehensive international system?

Aggressive action requires looking beyond sectors, borders, and 2030.

## Sample of INDC statements regarding international market mechanisms

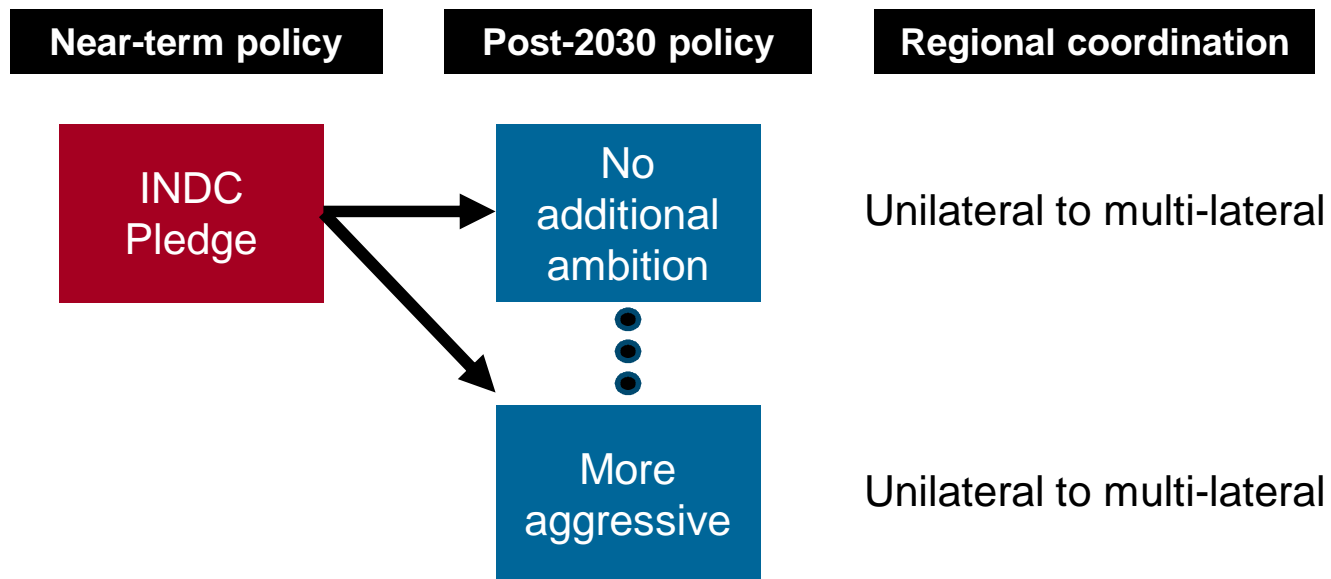
- USA: “At this time, the United States does **not** intend to utilize international market mechanisms to implement its 2025 target.”
- EU: “**No** contribution from international credits.”
- Russia: “The INDC indicator is to be achieved with **no** use of international market mechanisms.”
- Switzerland: “Carbon credits from international mechanisms **will** partly be used.”
- Mexico: “In order to achieve rapid and cost efficient mitigation, robust global market based mechanism will be essential. Mexico’s unconditional INDC commitment will be met regardless of such mechanisms, although these would assist cost-effective implementation. **Achieving our conditional goal will require fully functional bilateral, regional and international market mechanisms.**”
- Norway: “[Supports] inclusion of market based mechanisms in the 2015 agreement, and the opportunity to **continue** using units accruing from the CDM and JI.”

# Scope of Present Analysis

- Exploring opportunities for and implications of international cooperation between US, EU, and China in the form of tri-lateral trade in emission permits
  - Emissions pathways – under unilateral & tri-lateral action
  - Emissions permit market – volumes, prices, financial flows
  - Regional power sector, energy system & economic implications

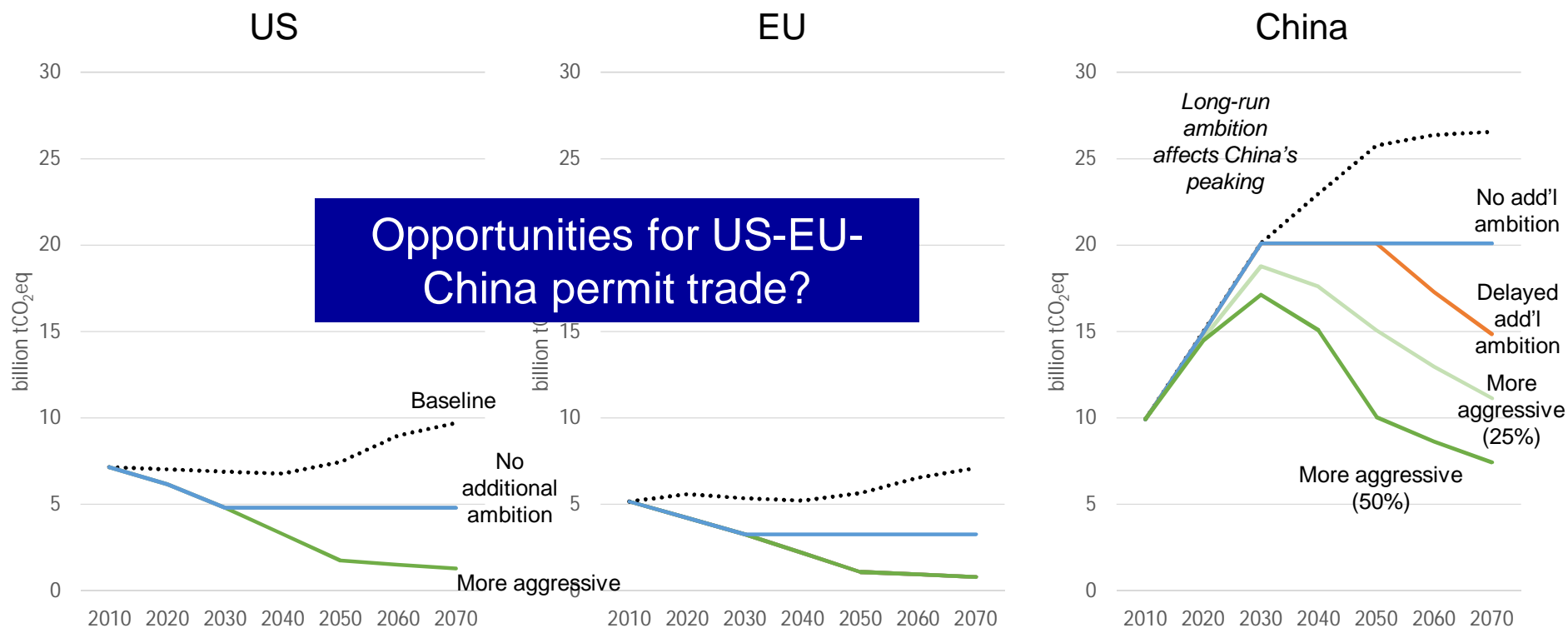
# Scenario Design

- Exploring two key dimensions:
  - Regional mitigation action: unilateral, bilateral or multi-lateral
  - Post-2030 additional policy ambition: none to more



- Using MERGE – a global intertemporal optimization integrated assessment model (economy, energy, & climate systems)

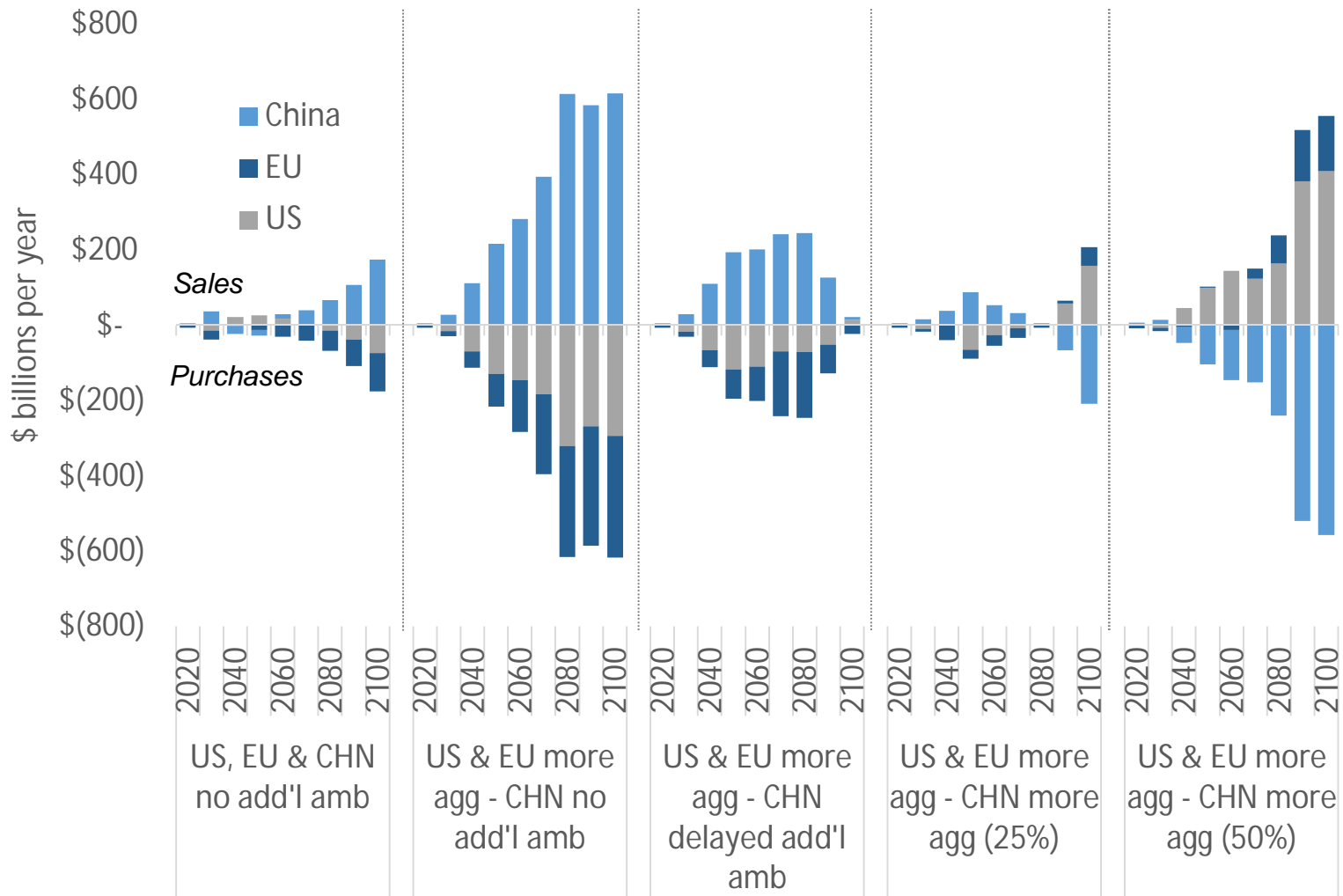
# US, EU, & China Unilateral Action GHG Emissions



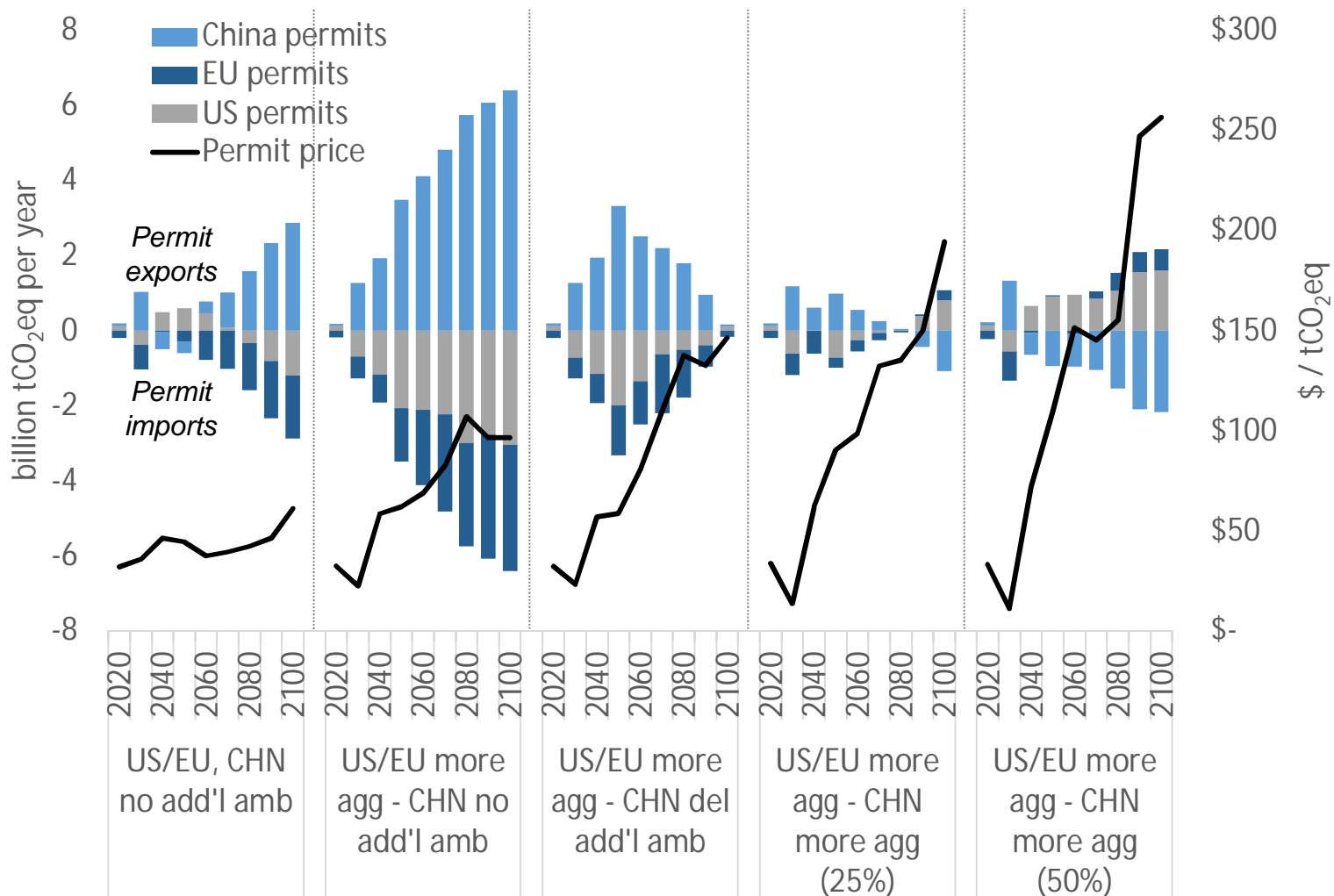
## Scenarios

Scenario	Near-term Policy	Long-run Policy (2030-2100)	
		US and EU	China
I	Pledges to 2025/2030	No additional ambition	No additional ambition
II	Pledges to 2025/2030	More aggressive	No additional ambition
III	Pledges to 2025/2030	More aggressive	Delayed additional ambition
IV	Pledges to 2025/2030	More aggressive	More aggressive - 2050 25% below 2030 cap
V	Pledges to 2025/2030	More aggressive	More aggressive - 2050 50% below 2030 cap

# US-EU-China Permit Trade Financial Flows

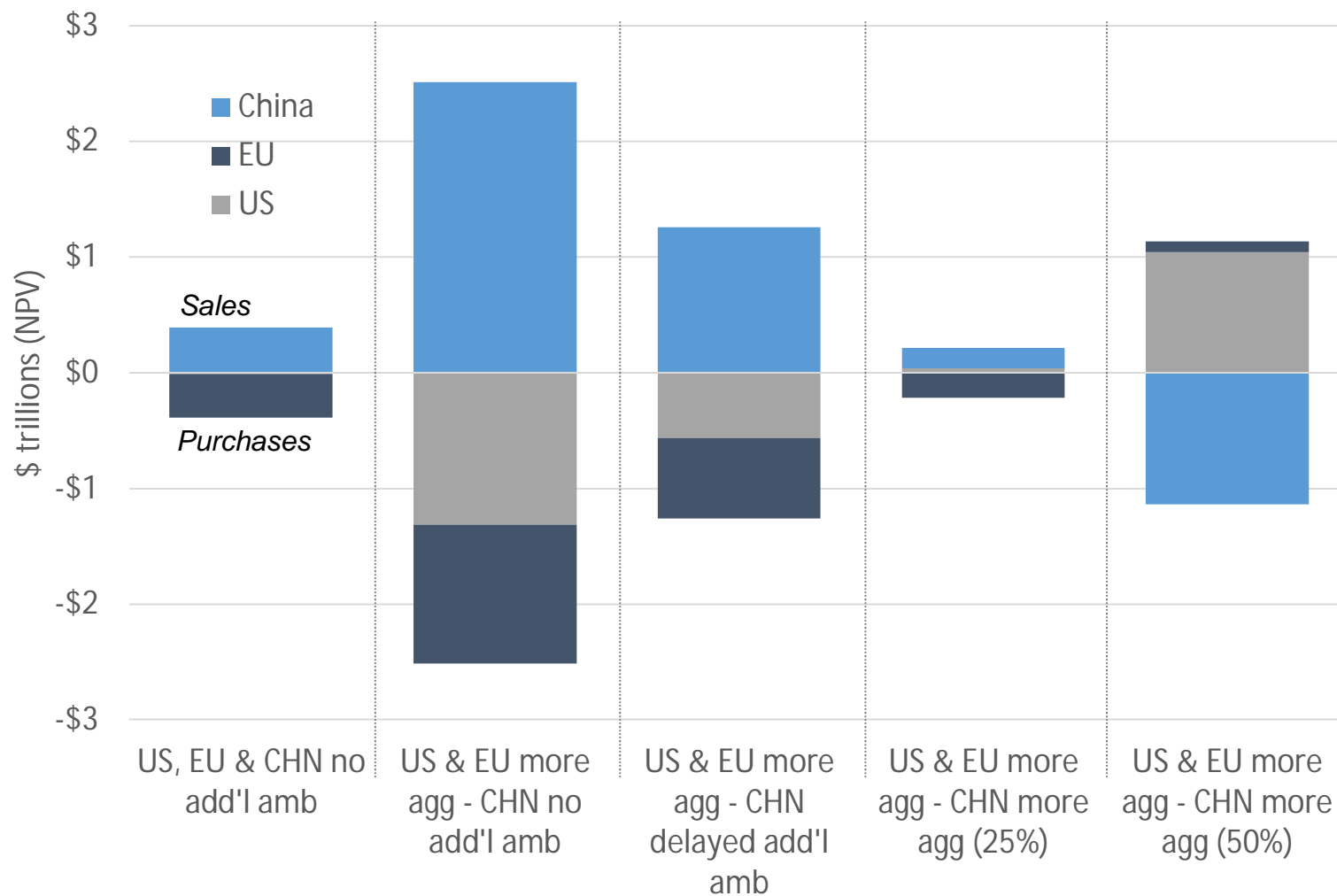


# US-EU-China Permit Trade Prices

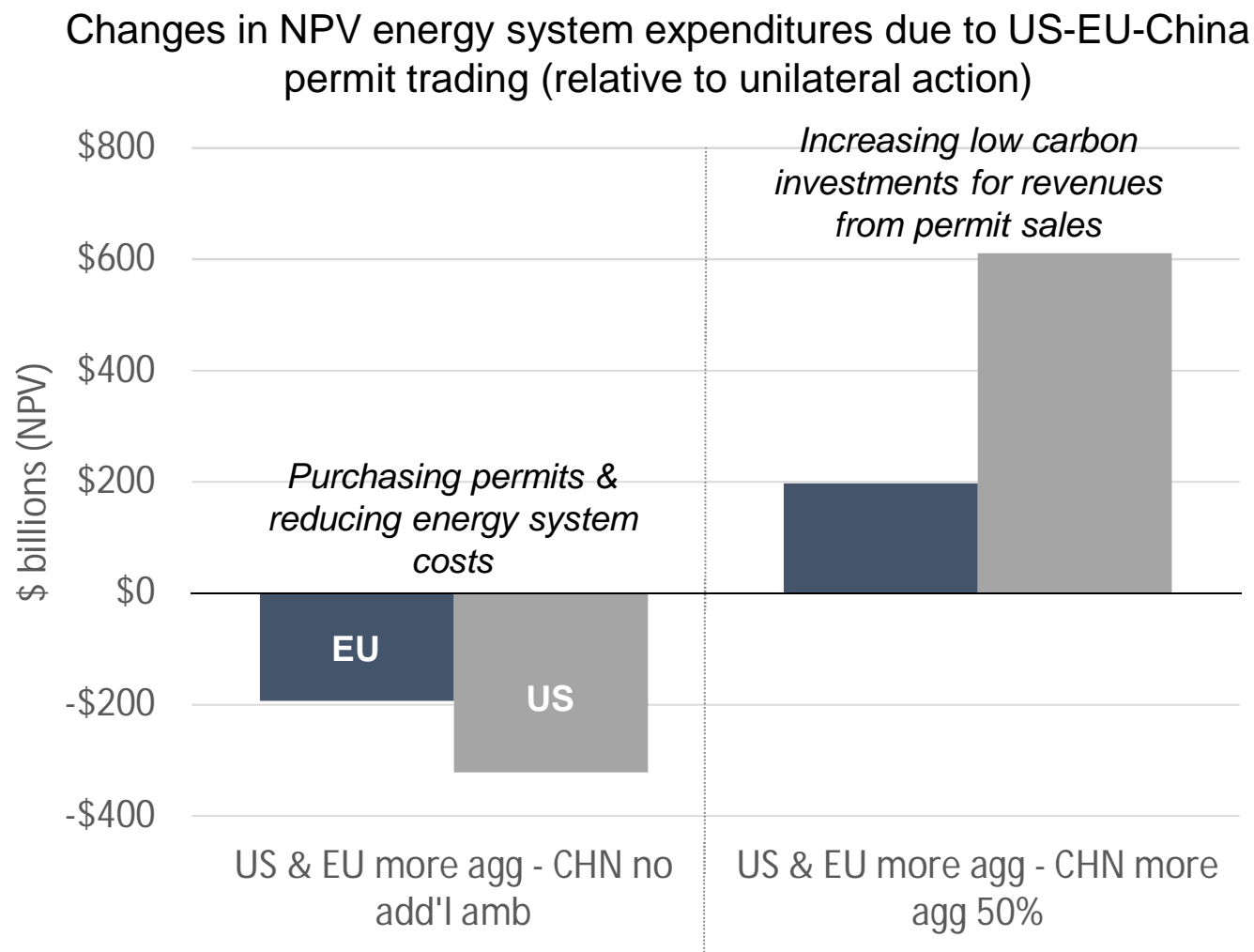




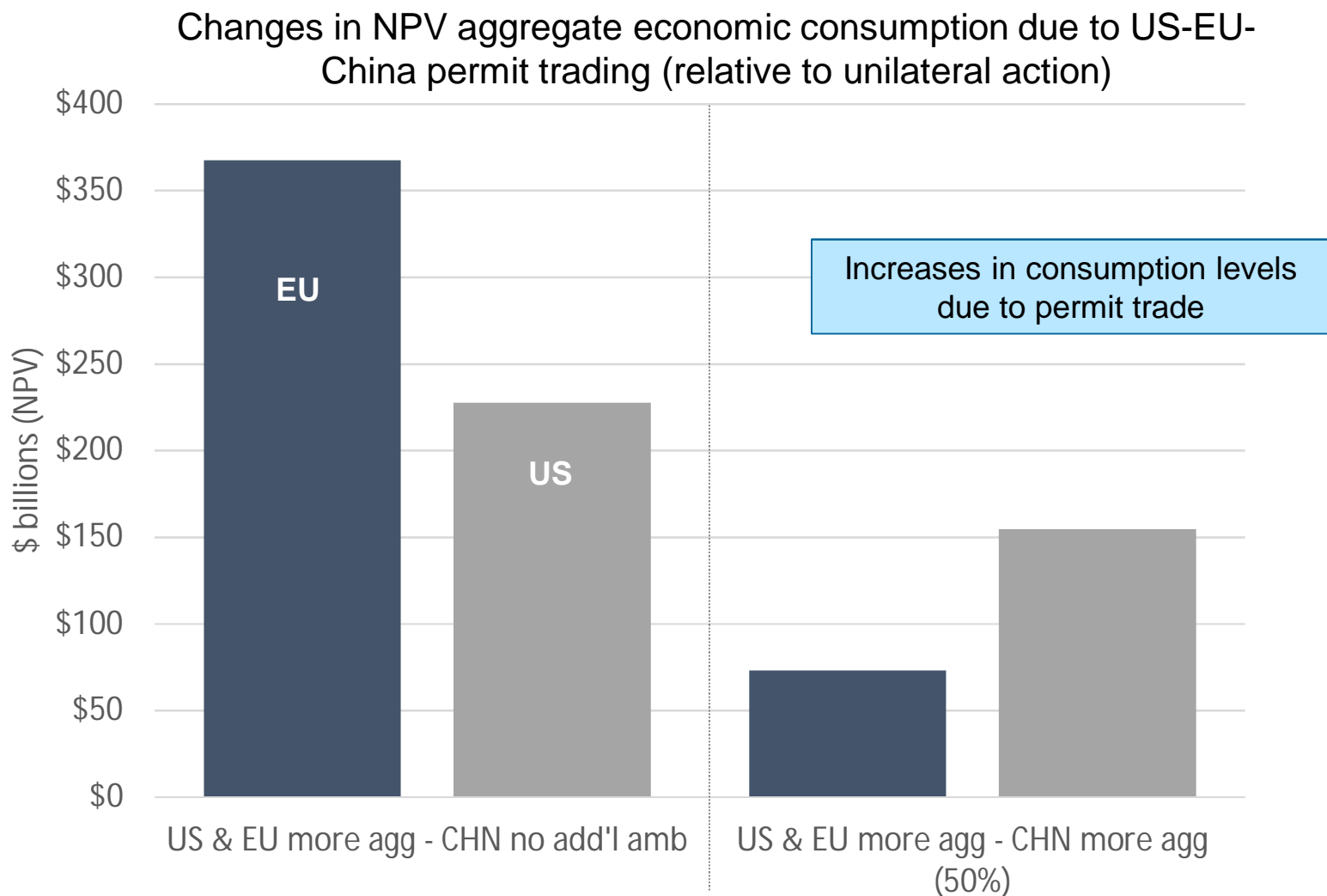
# US-EU-China Discounted Value Of Permit Trade



# US-EU-China Permit Trade Energy System Costs



# US-EU-China Permit Trade “Value” (Consumption Gains)



# Initial Observations & Insights

- **There is the potential for mutually beneficial small clubs**
- **The size of the permit market and whether a country is a seller or buyer will depend upon a variety of factors**
  - Coalition composition, individual emission reduction goals, relative marginal costs
- **Permit trade could lead to substantial financial transfers & have trade balance implications**
- **Expanding the number of trading partners will likely increase the trade benefits for the whole coalition, but may change the distribution**
- **Long-term policies shape near-term actions, especially peaking & permit trade**
  - However, peaking emissions pathways create a challenge for emissions trading
- **Interesting additional lines of inquiry**
  - International “club” composition, permit trade & technology, permit banking
- **Could international emissions trading be a means of engaging countries, increasing global effort, increasing receptiveness to pledge verification?**



# Thank You!



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