



ELECTRIC POWER
RESEARCH INSTITUTE

International Offsets: The potential role of the energy sector

Geoffrey J. Blanford, Ph.D.

Global Climate Change Program, EPRI

Global Technology Strategy Project Technical
Workshop

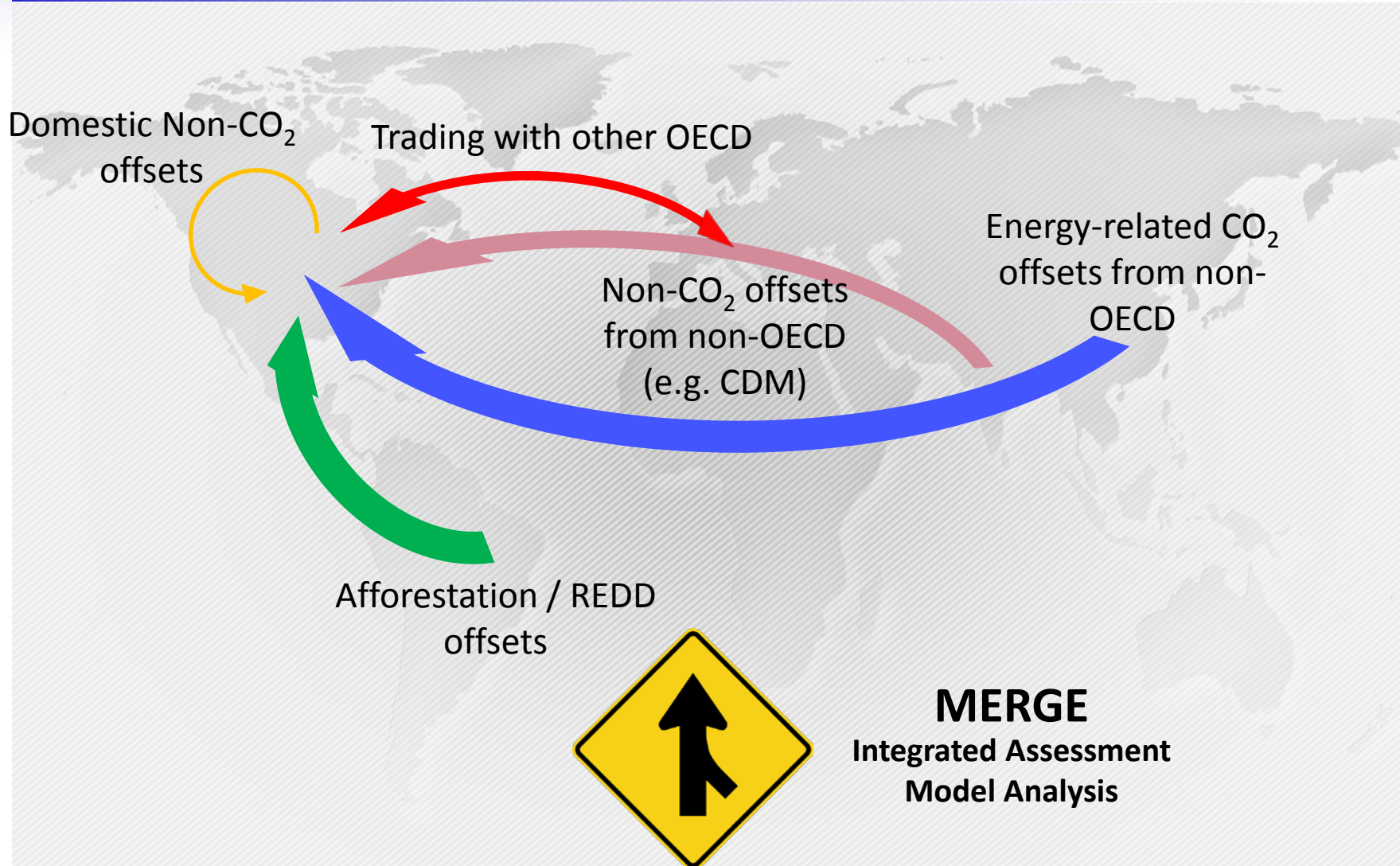
College Park, MD

May 26, 2010

The Offset Dilemma

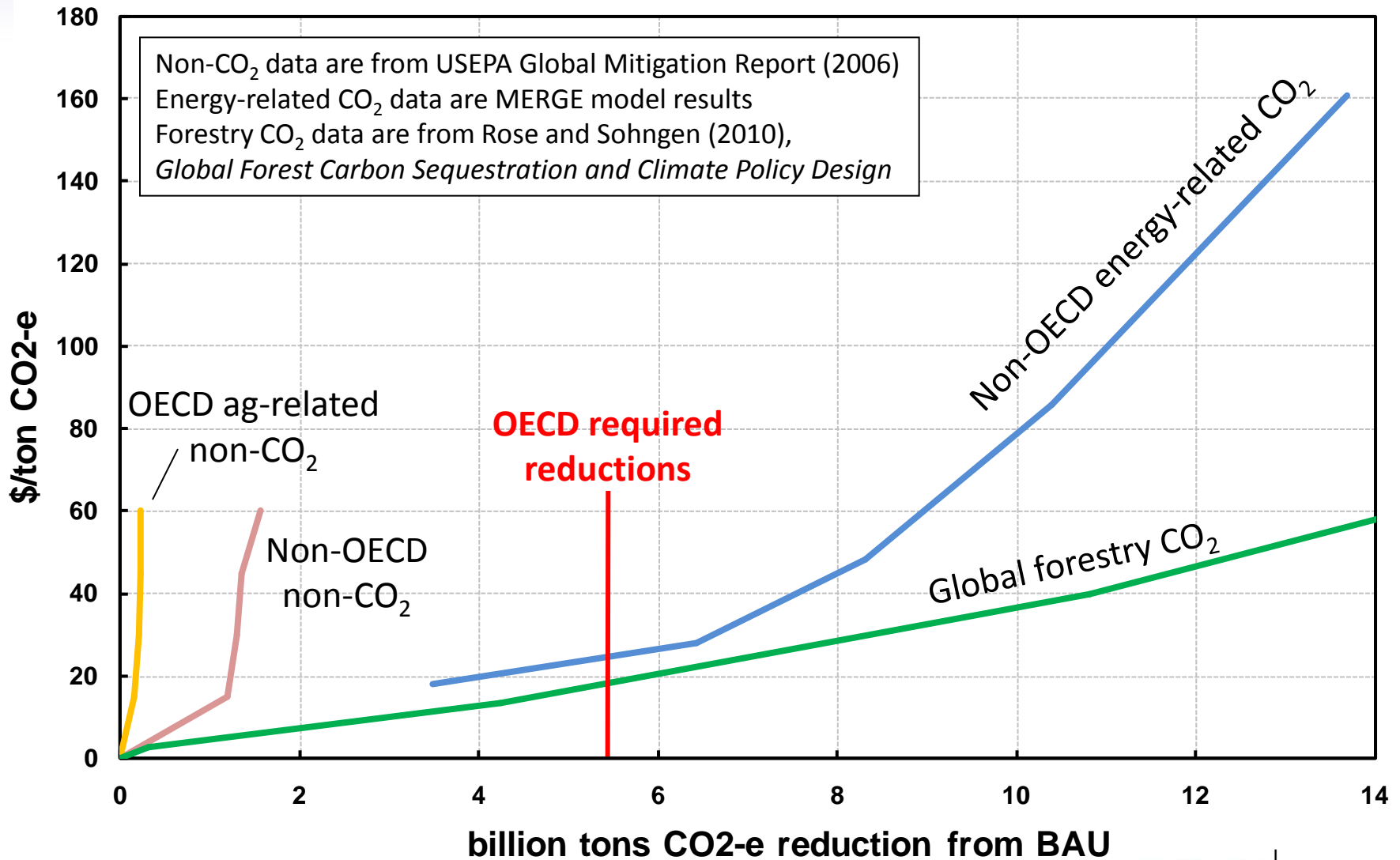
- Under Waxman-Markey bill, offsets of several stripes are admissible with a **high limit** on international crediting
- Abatement opportunities internationally are **abundant** and **cheap**, but many **institutional barriers** exist near-term
- In long-term, as support for **global stabilization** efforts broadens, non-OECD countries will become less willing to export cheap abatement options
- Is there a **window of opportunity** for offsets?

Sources of “Off-System” Compliance

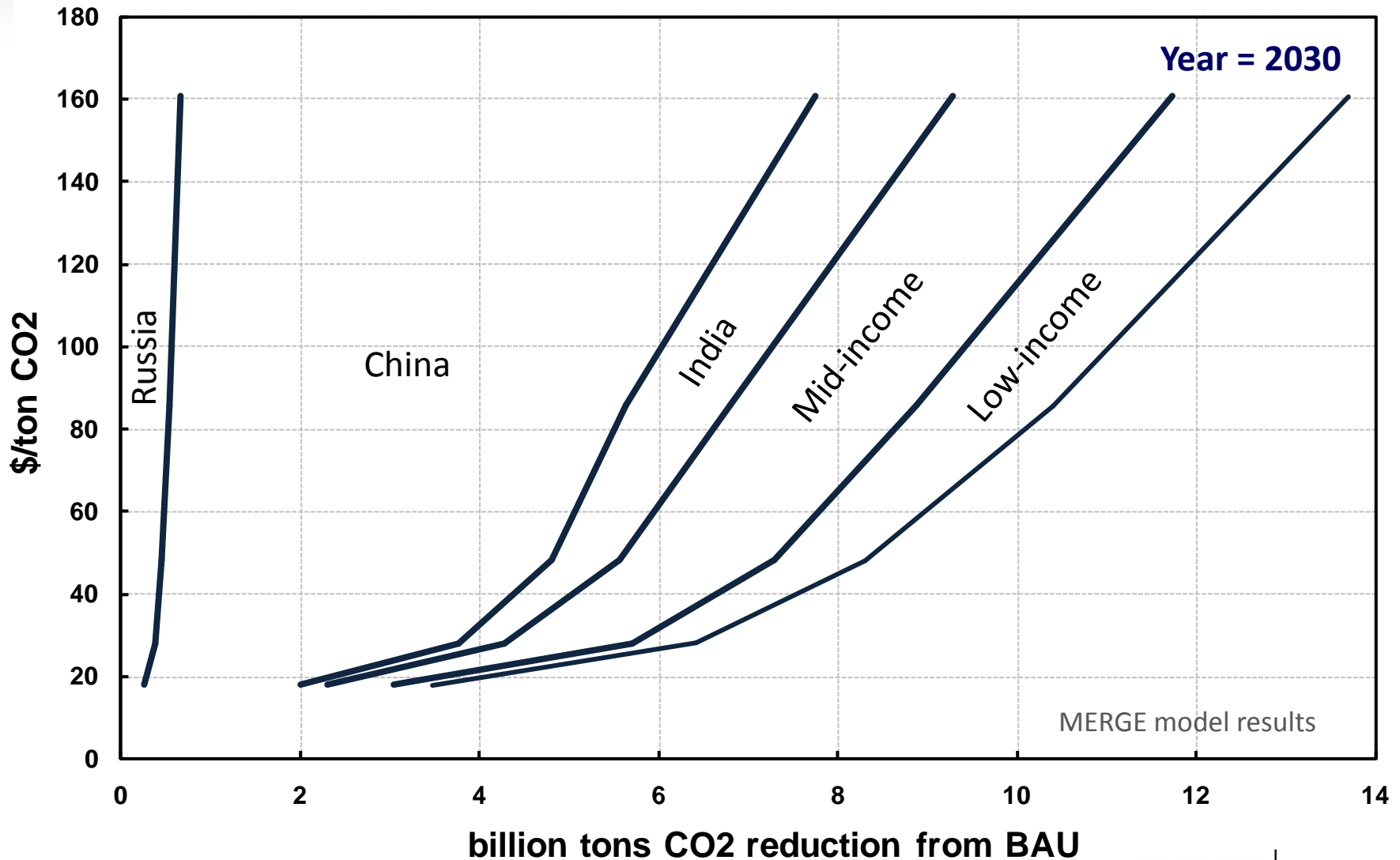


MERGE
Integrated Assessment
Model Analysis

OECD Potential Supply Curves for 2030

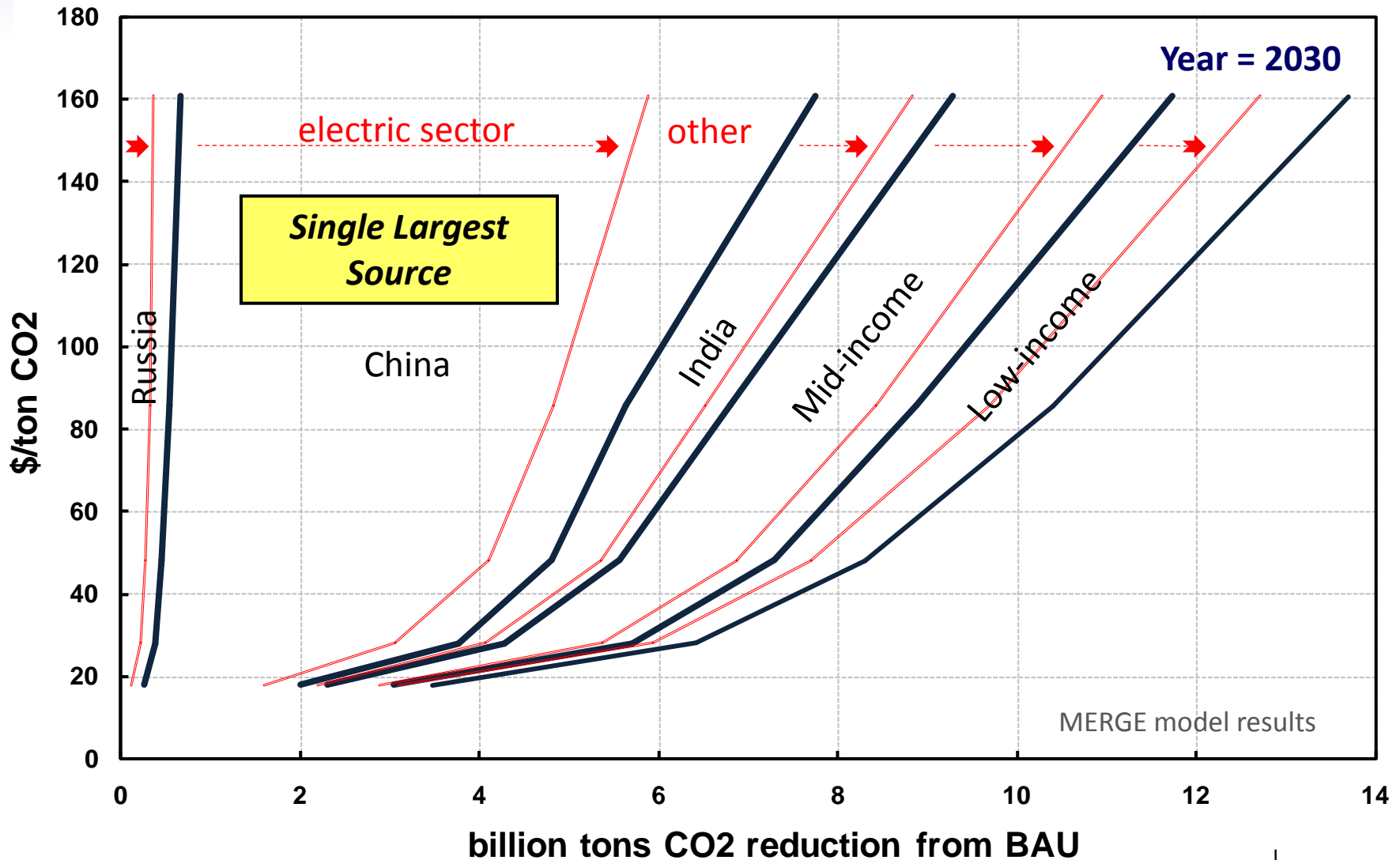


Non-OECD energy-related CO₂ abatement



MERGE model results

70% of abatement occurs in electric sector



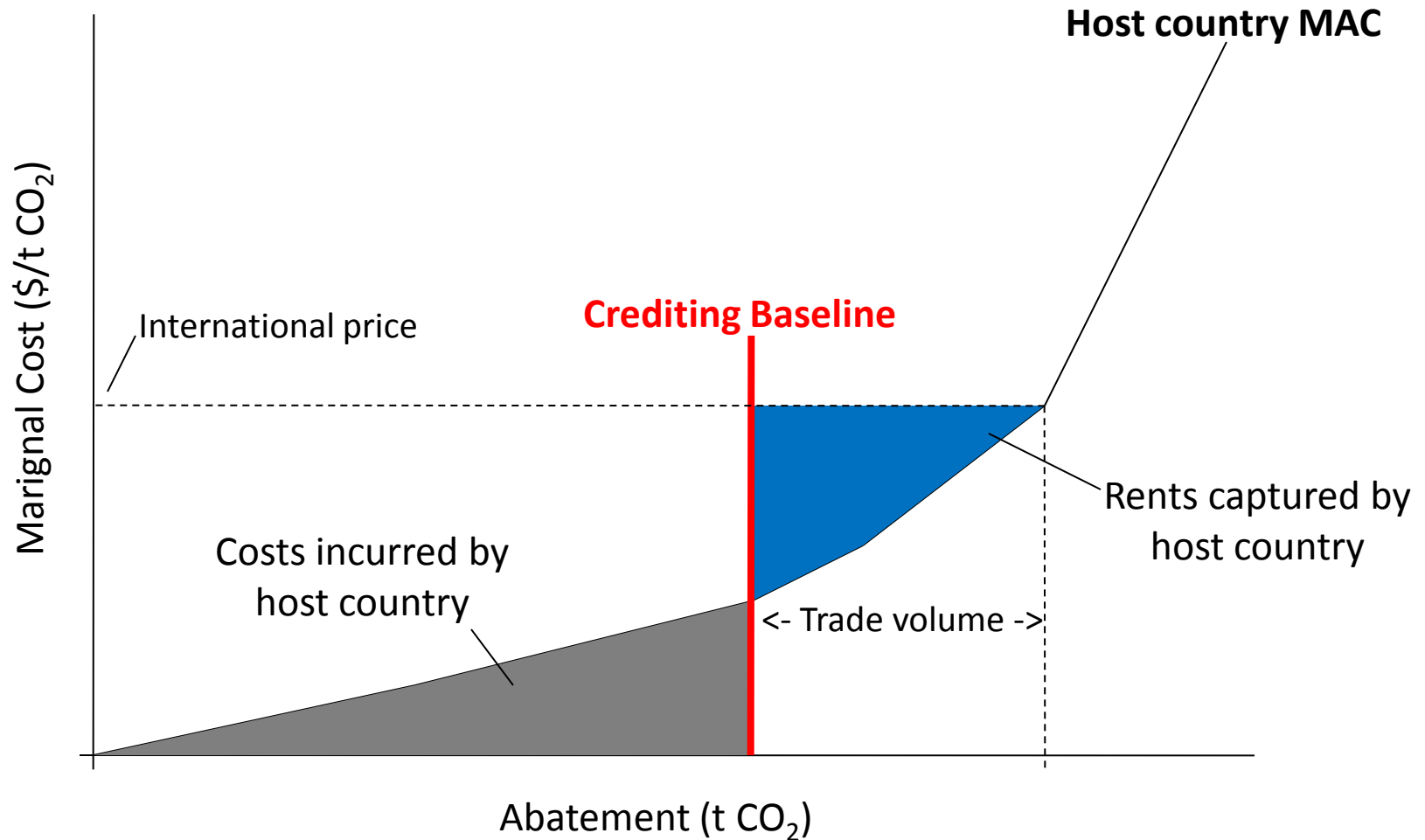
Details of the Sectoral Mechanism

- Energy-related offsets must come from a capped **sector** in a **participating country** under a **qualifying agreement**
- Cap must be **below BAU**; only reductions beyond the cap can be sold as offsets, market mechanisms are unclear
- Originally conceived for internationally competitive industries (e.g. steel), but **electric sector** is by far the most important for generating offset trade volume

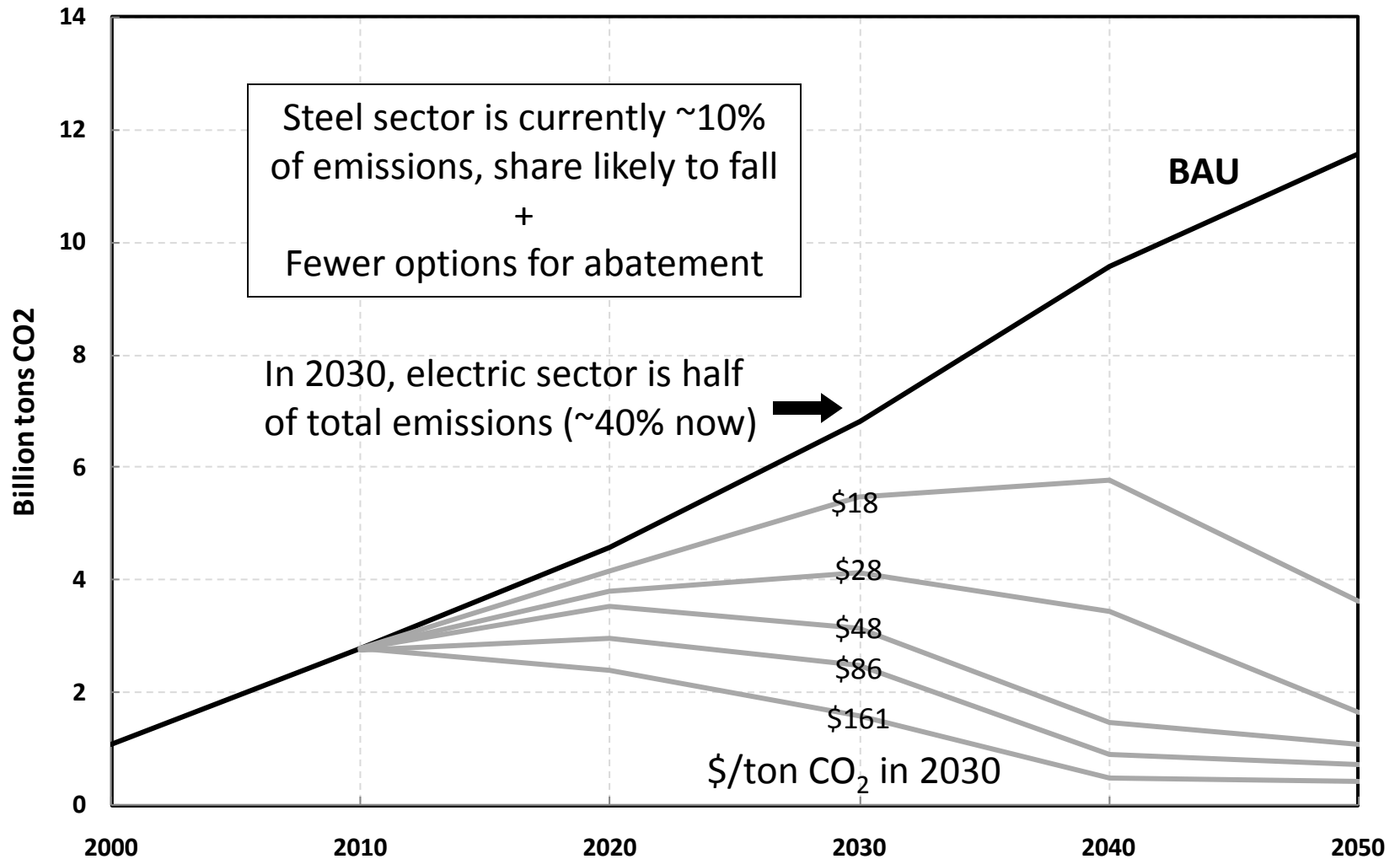
Can a deal be negotiated?

- **China** by itself comprises half of non-OECD
- Would China accept an electric-sector cap linked to the US trading system? Or will it continue to pursue its **own policy**?
- Negotiation (with China or others) must **balance** host country's political position on **burden-sharing** with potential financial **benefits** of offset trade

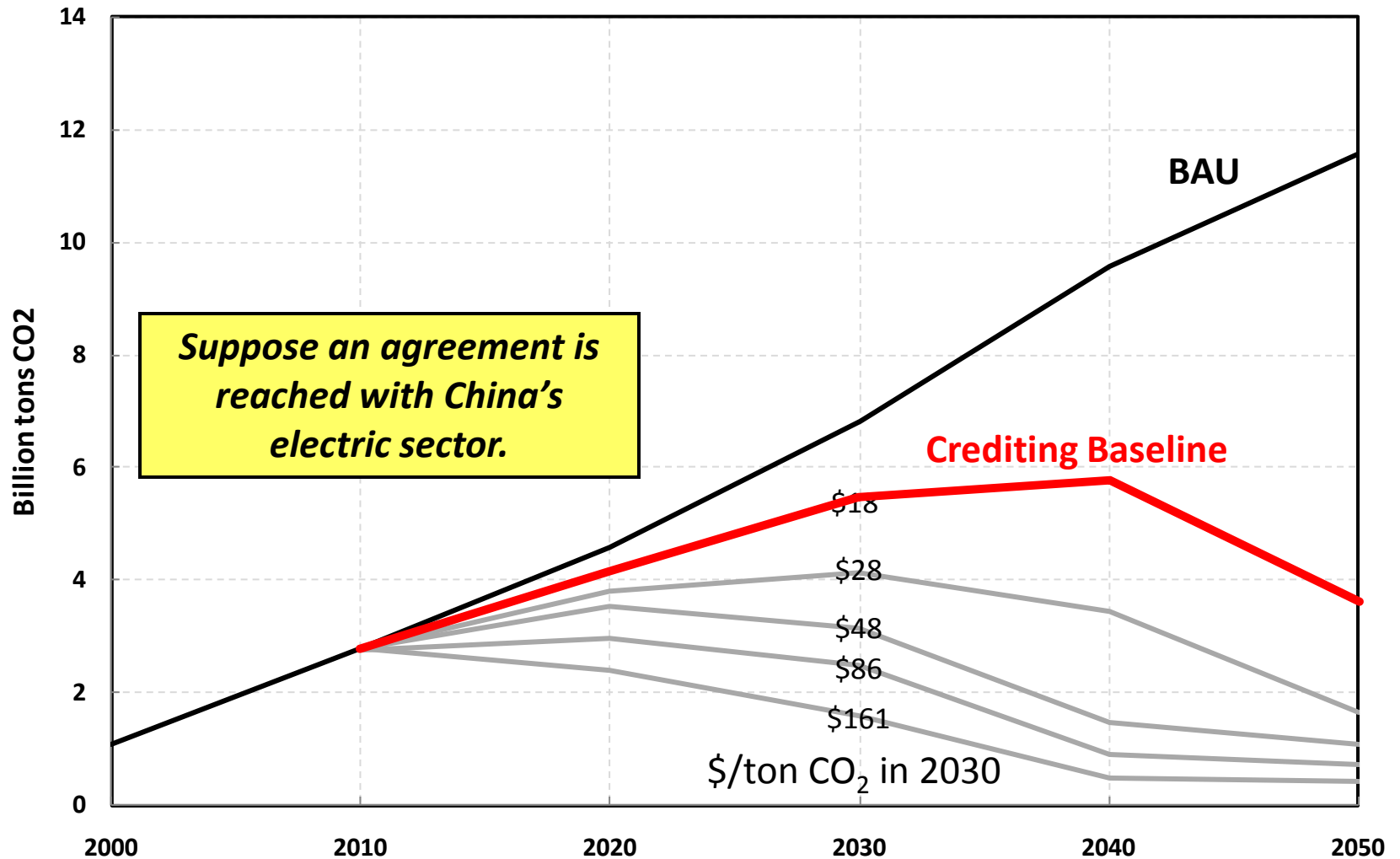
Host Country Economics of Crediting Baseline



China's Electric Sector Emissions



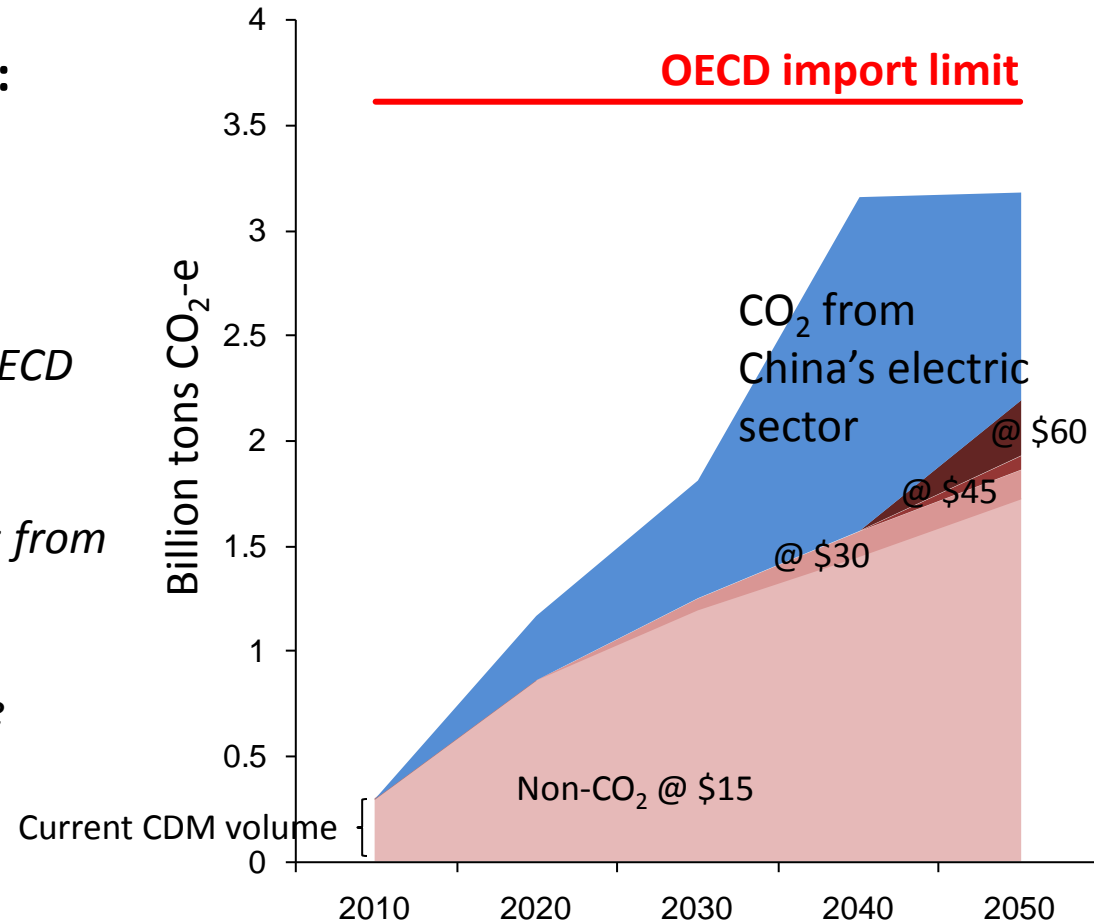
China's Electric Sector Emissions



Offset Transfers from Non-OECD to OECD

International policy environment:

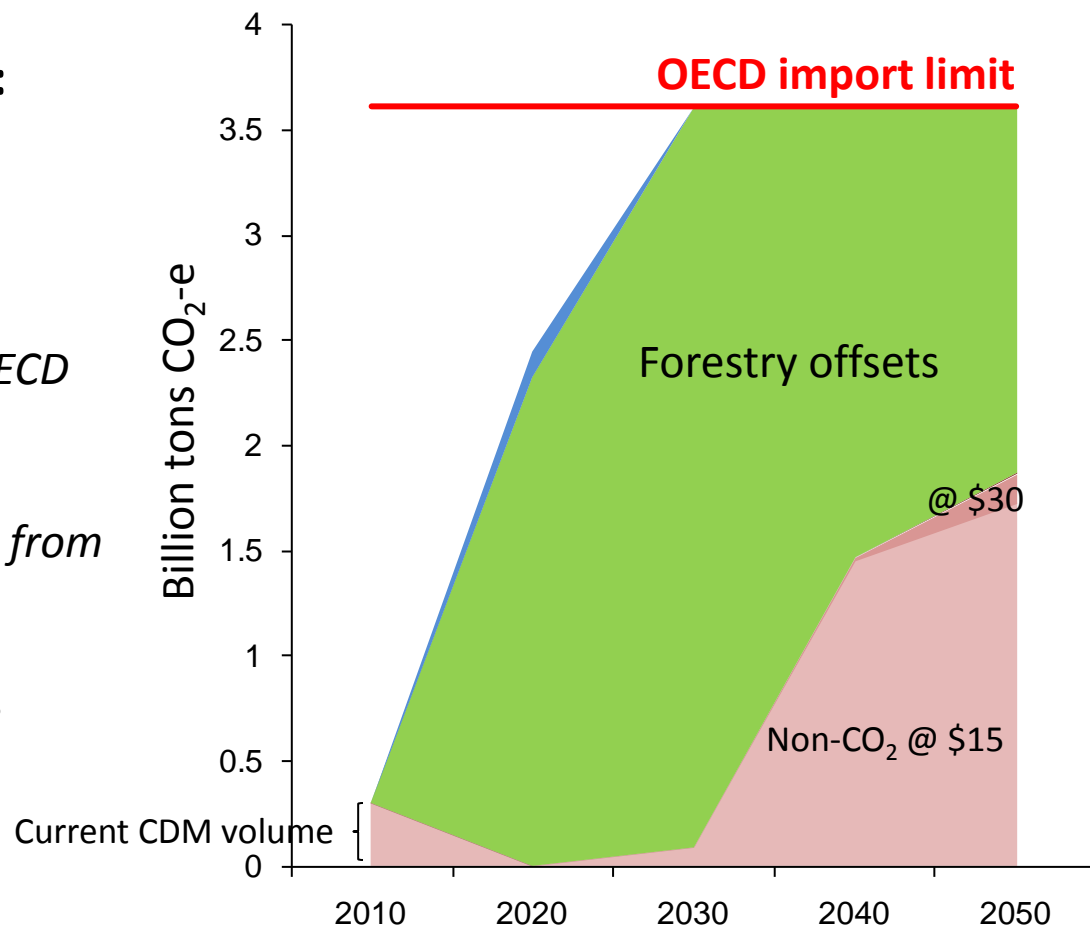
- 80% below 1990 by 2050 in OECD (USA + EU + Japan + CANZ)
- W-M scale offset provisions in all OECD countries
- Expanding CDM for non-CO₂ offsets from non-OECD
- Energy offsets from capped Chinese electric sector only



Offset Transfers from Non-OECD to OECD

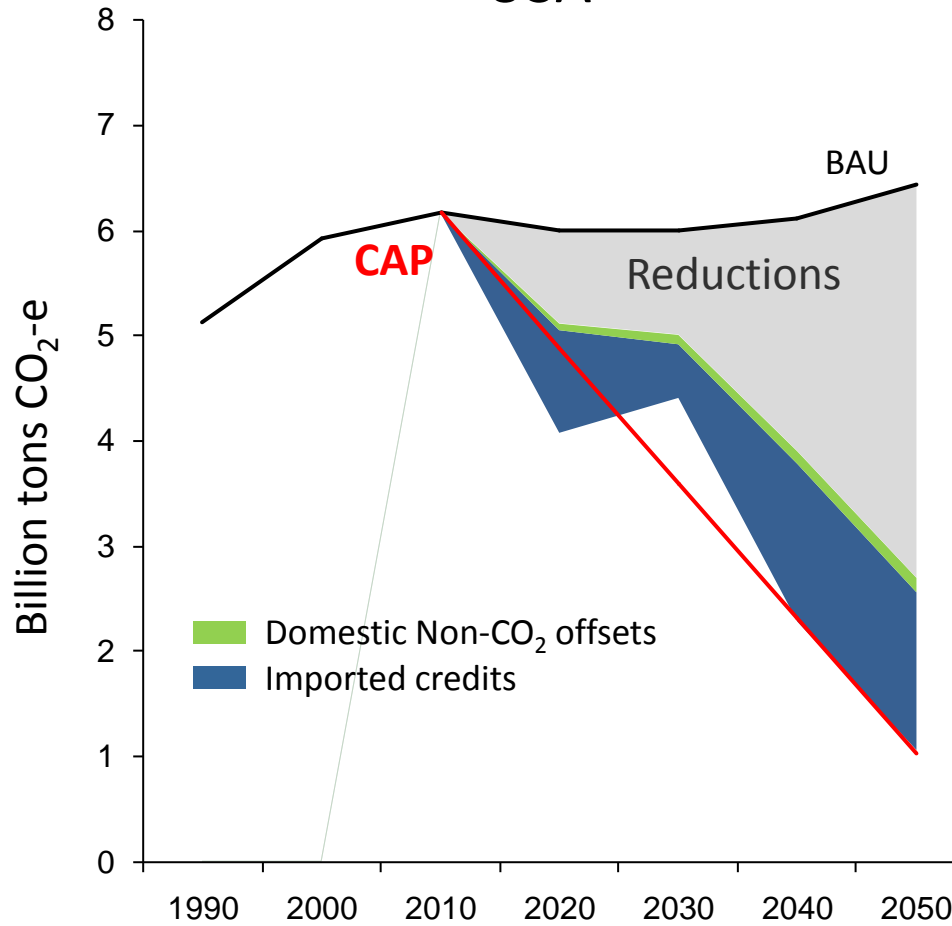
International policy environment:

- 80% below 1990 by 2050 in OECD (USA + EU + Japan + CANZ)
- W-M scale offset provisions in all OECD countries
- Expanding CDM for non-CO₂ offsets from non-OECD
- Energy offsets from capped Chinese electric sector only
- **Full potential for global forestry**

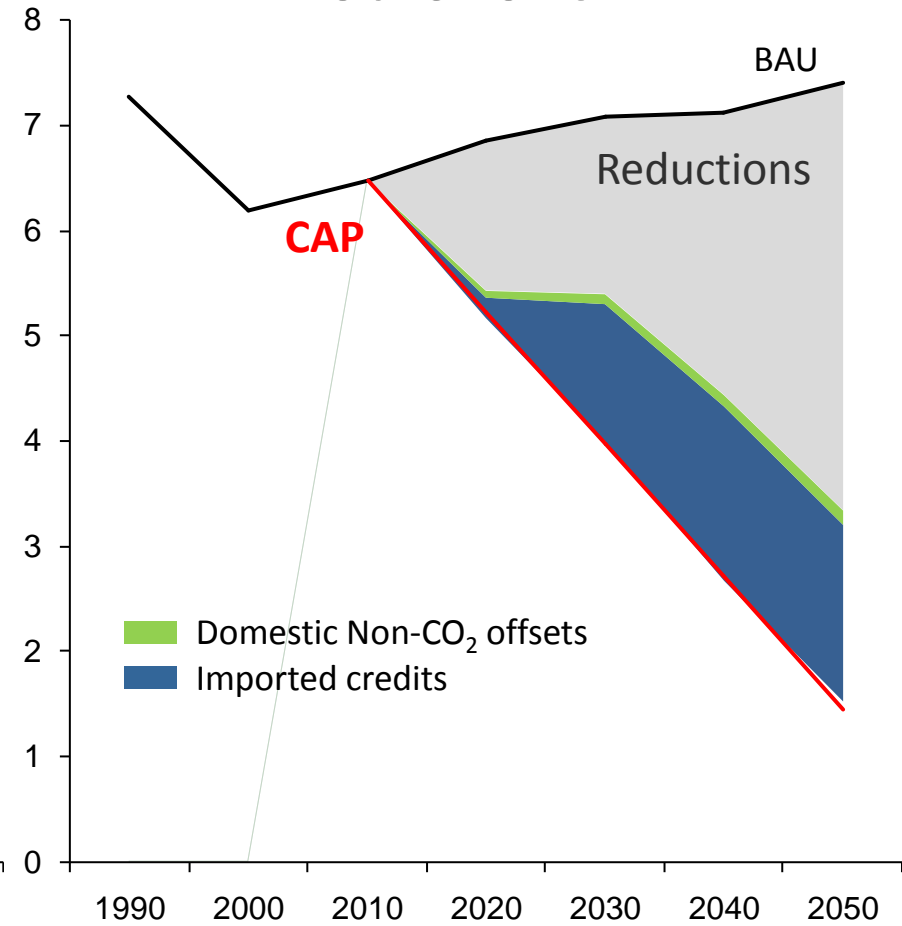


Compliance in OECD with Cap on China Elec.

USA

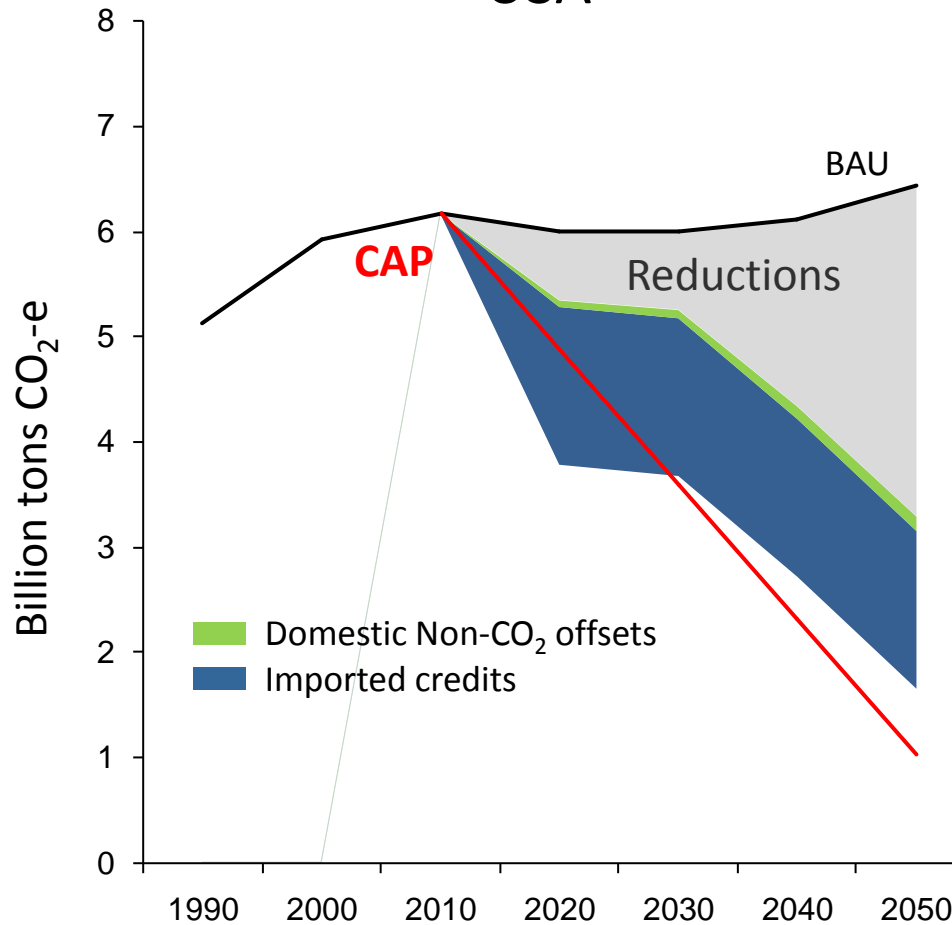


Other OECD

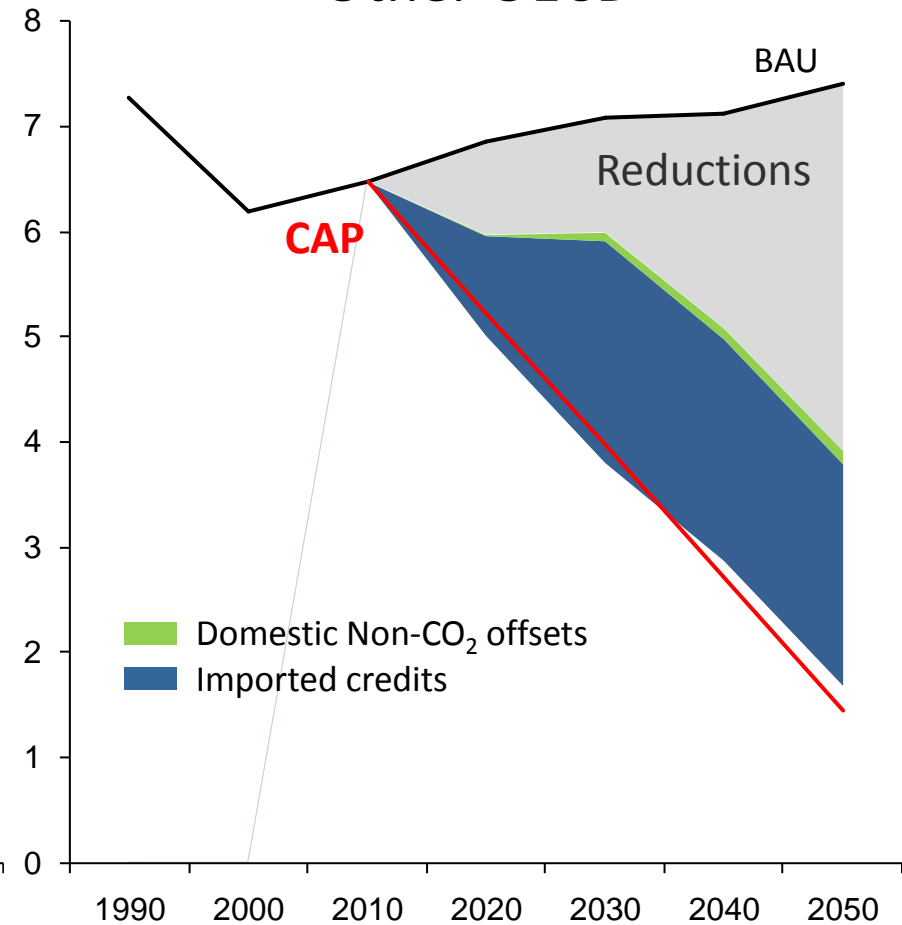


Compliance in OECD with Full Forestry

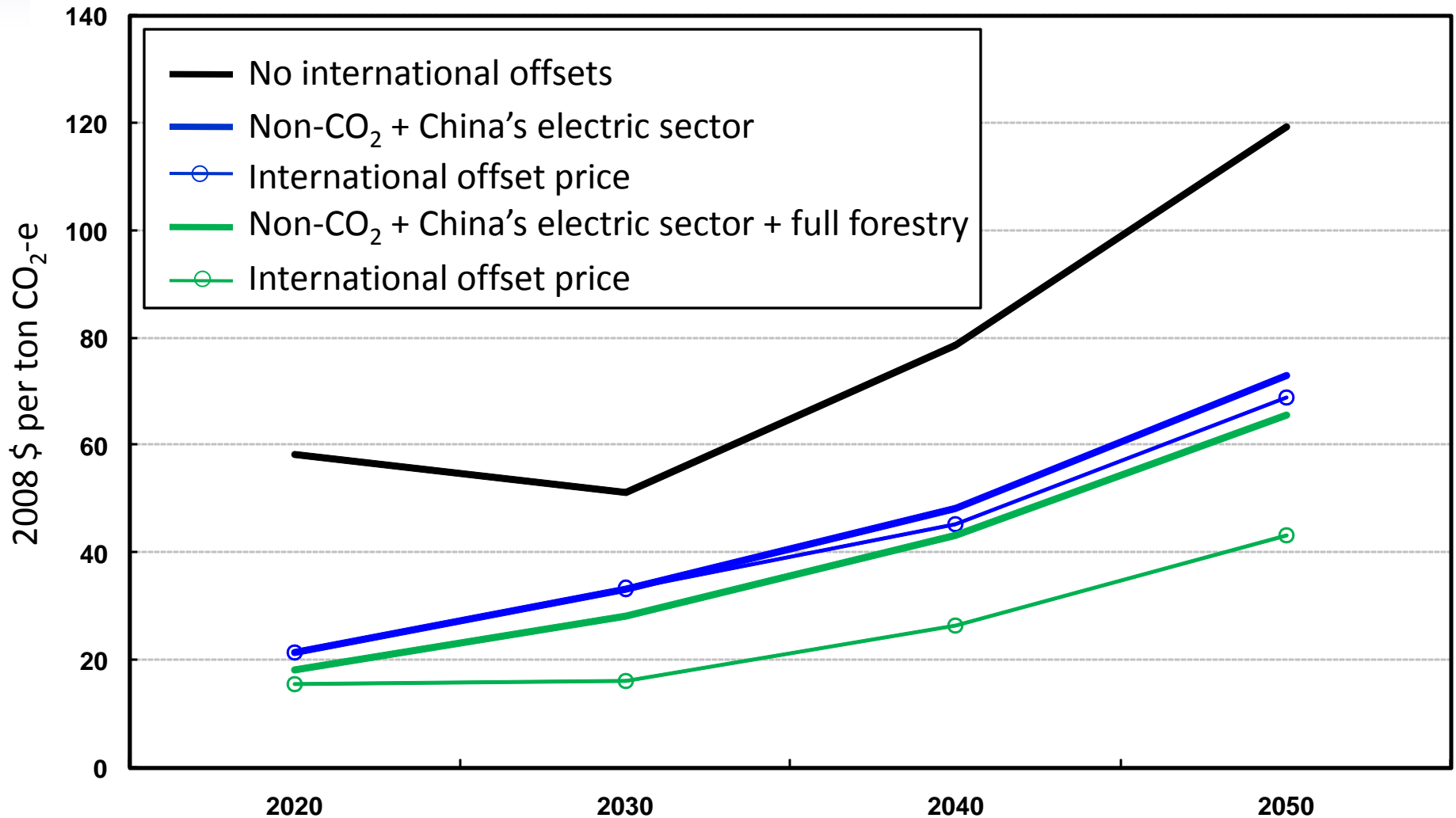
USA



Other OECD



US Permit Prices with OECD-only Targets

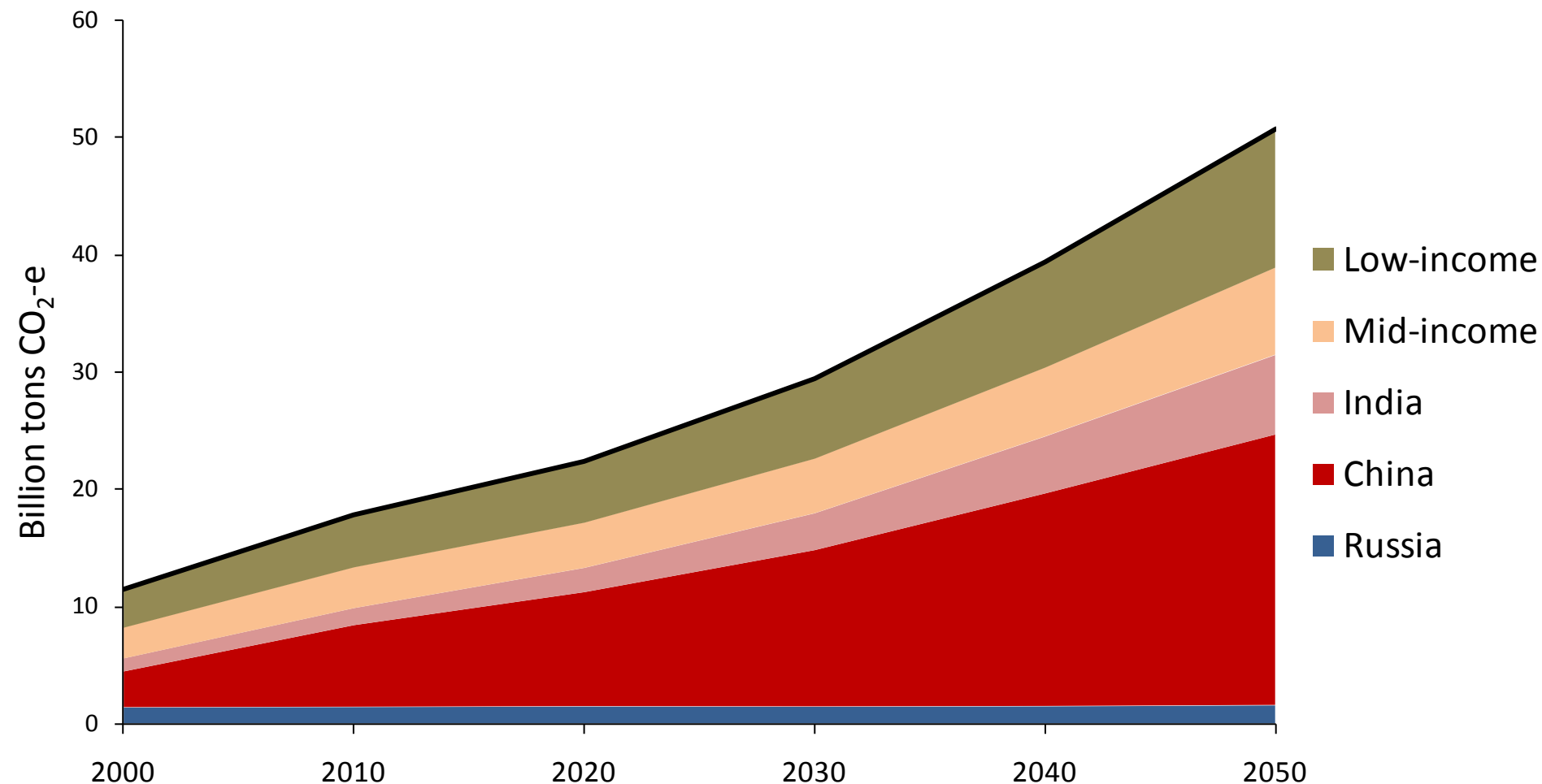


Impact of Longer Term Global Targets

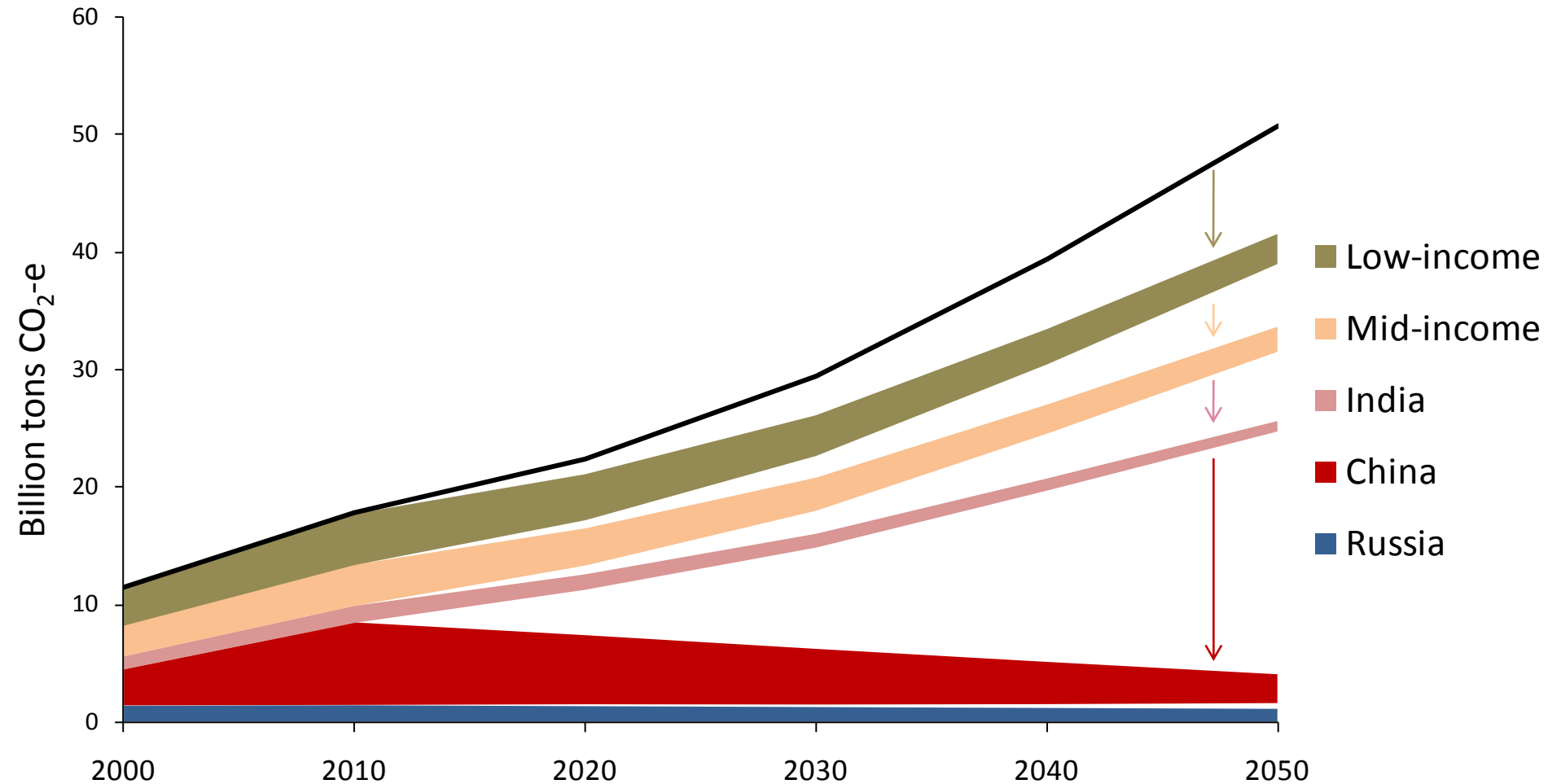
- To achieve commonly discussed stabilization targets, **all** major developing countries **must participate**
- Currently, targets are “**aspirational**” only, but they could become a reality in the future
- Consider G8 leaders’ goal for an emissions path to 2050 consistent with a **2°C temperature target**

*50% global reduction below 2000 levels +
80% below for OECD →
20% below for non-OECD*

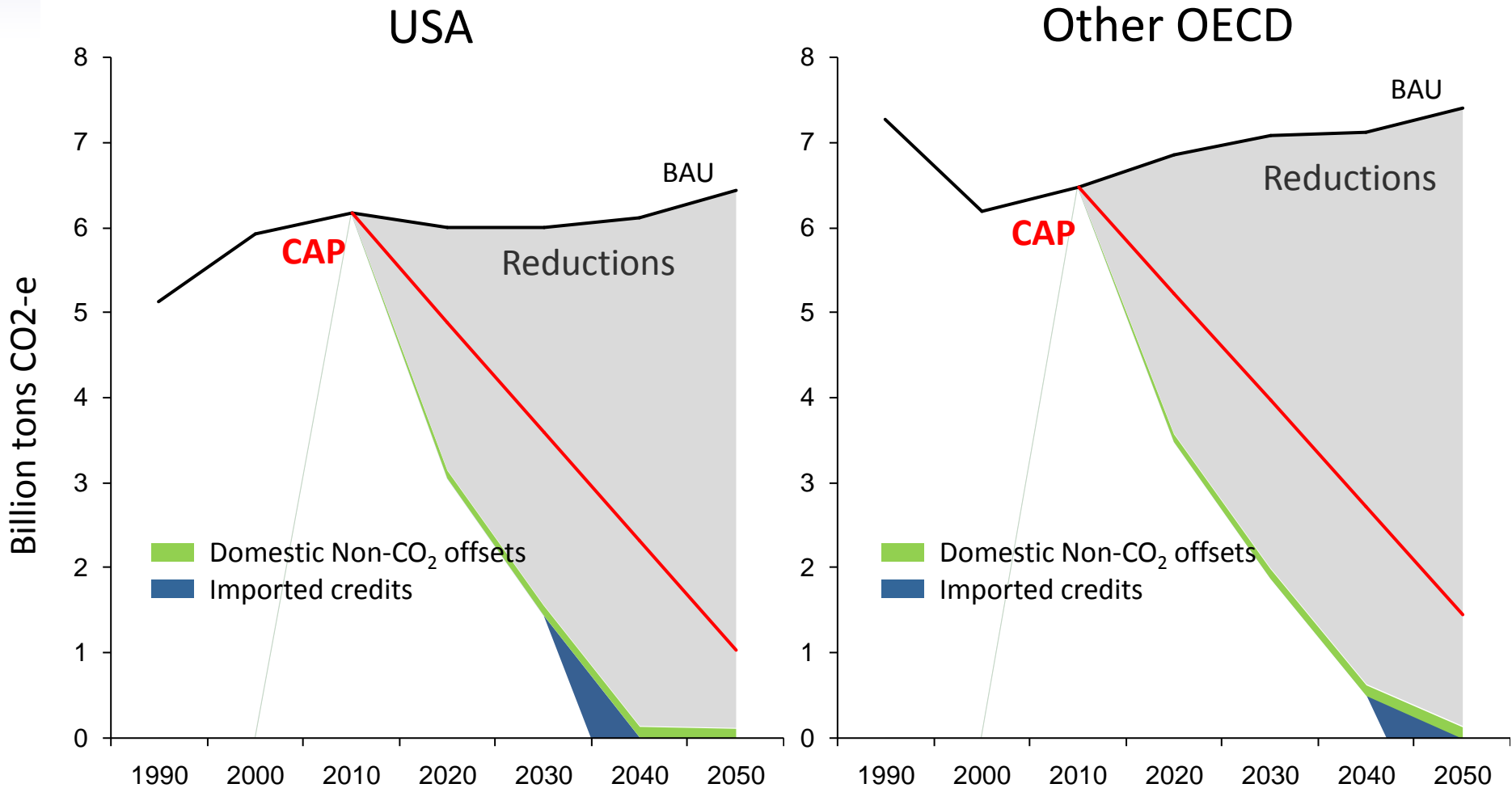
Baseline Emissions for Non-OECD



20% below 2000 = 80% below BAU in 2050

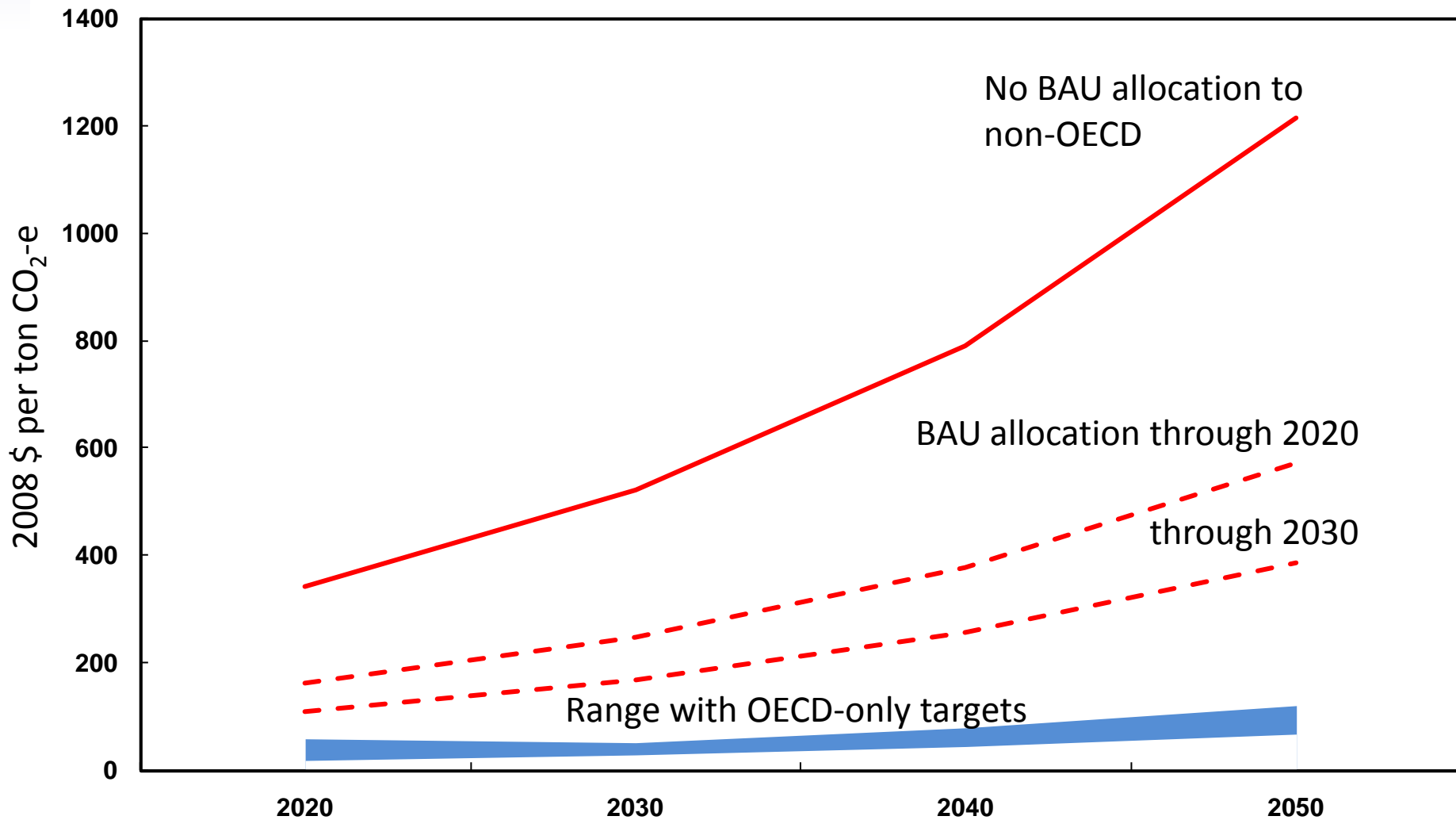


In G8 scenario, trade flows the other direction



Result holds even with a BAU allocation to non-OECD through 2030

US Permit Price in G8 Scenario



Conclusions

- Energy-related offsets depend on sectoral deals; supply is maximized by **loose caps** on **electric sectors** in **large countries**
- Political economy behind such agreements is complex, could take **several years** to negotiate
- Even with a successful negotiation, mechanism for selling excess reductions to US compliance parties is not clear
- Ultimately, sectoral caps may be abandoned in favor of **national targets** as countries join stabilization effort