21st IEA-IETA-EPRI GHG Trading Workshop

The Role of Article 6 in Achieving Net Zero Pathways

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Carbon Markets at Net Zero

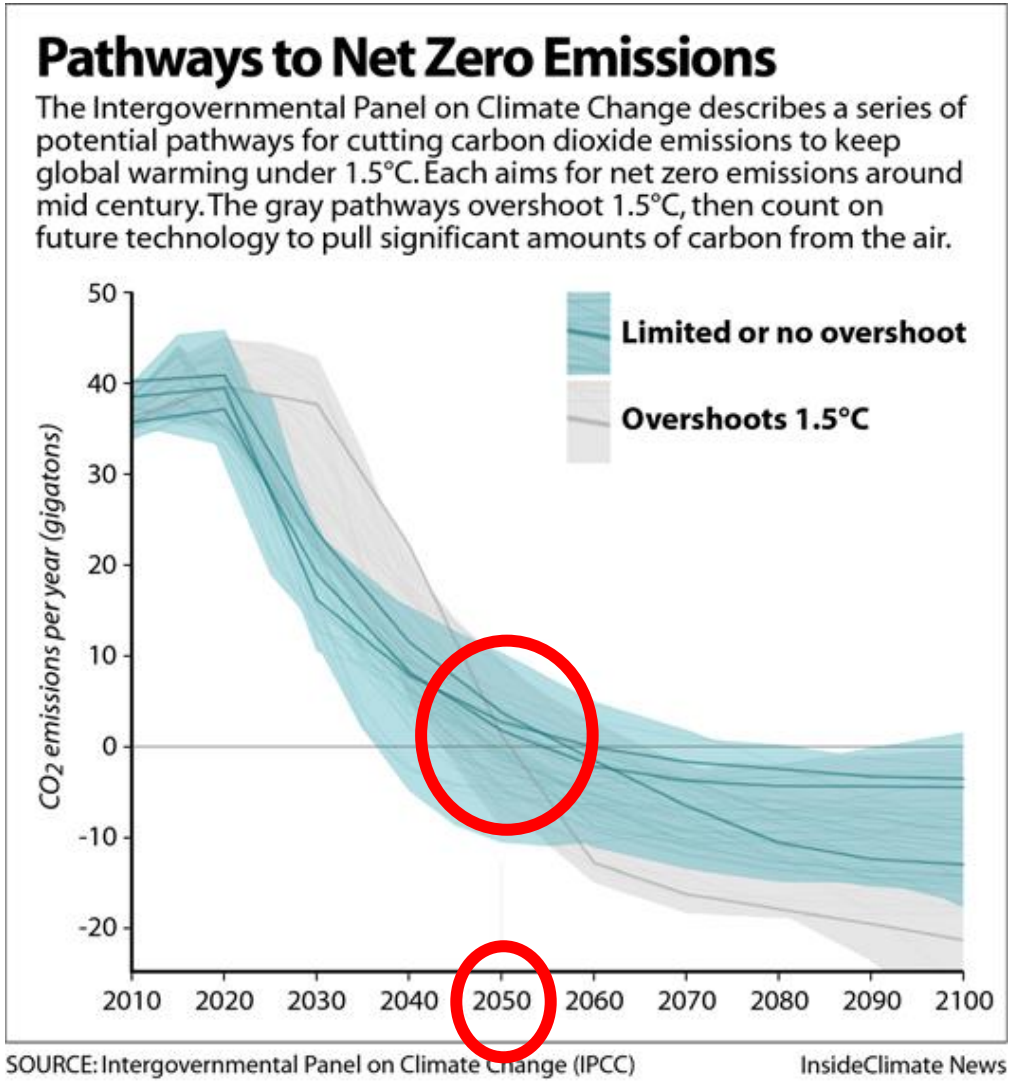
- Global emissions can only approach net zero if all parties and all sectors approach net zero emissions
- That means all parties will need to adopt comprehensive near-zero or lower NDCs
- This creates optimal conditions for effective markets to form.



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Net Zero 2050

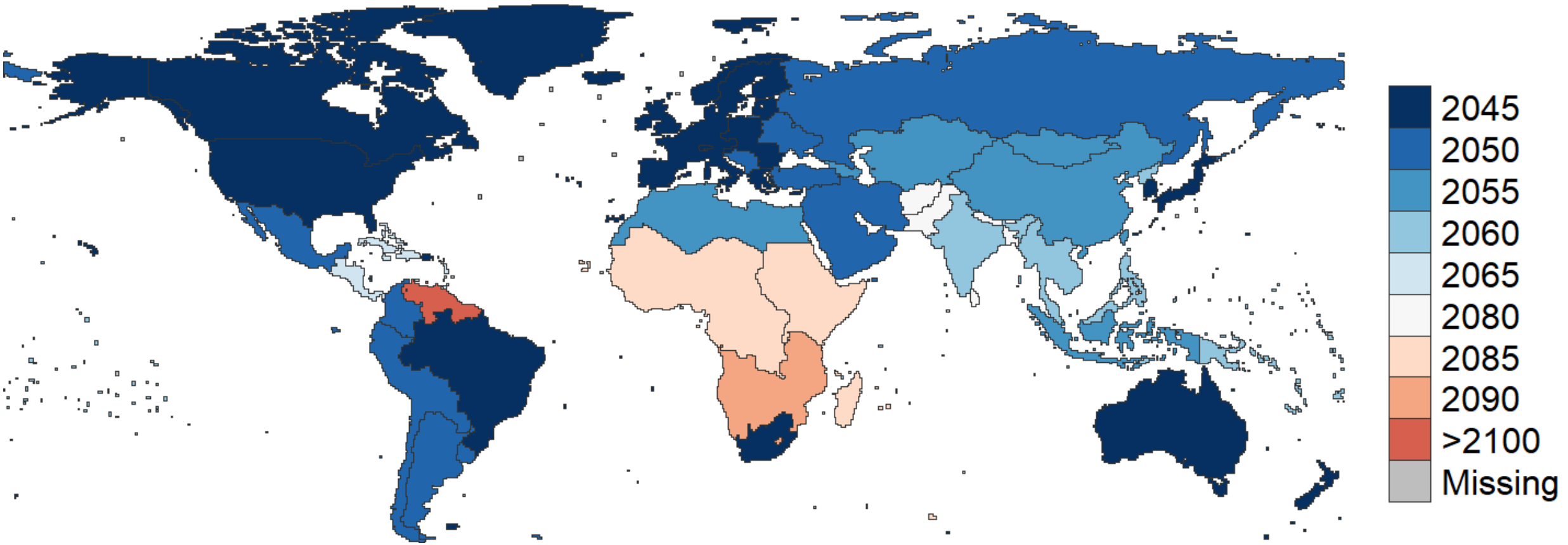
- Net Zero 2050 emerged from the IPCC SR1.5.
- Model runs that achieved net zero all used a common carbon price—i.e. perfect carbon markets.
- Implying that some countries reach net zero earlier than 2050 and some later than 2050



Carbon Markets at Net Zero

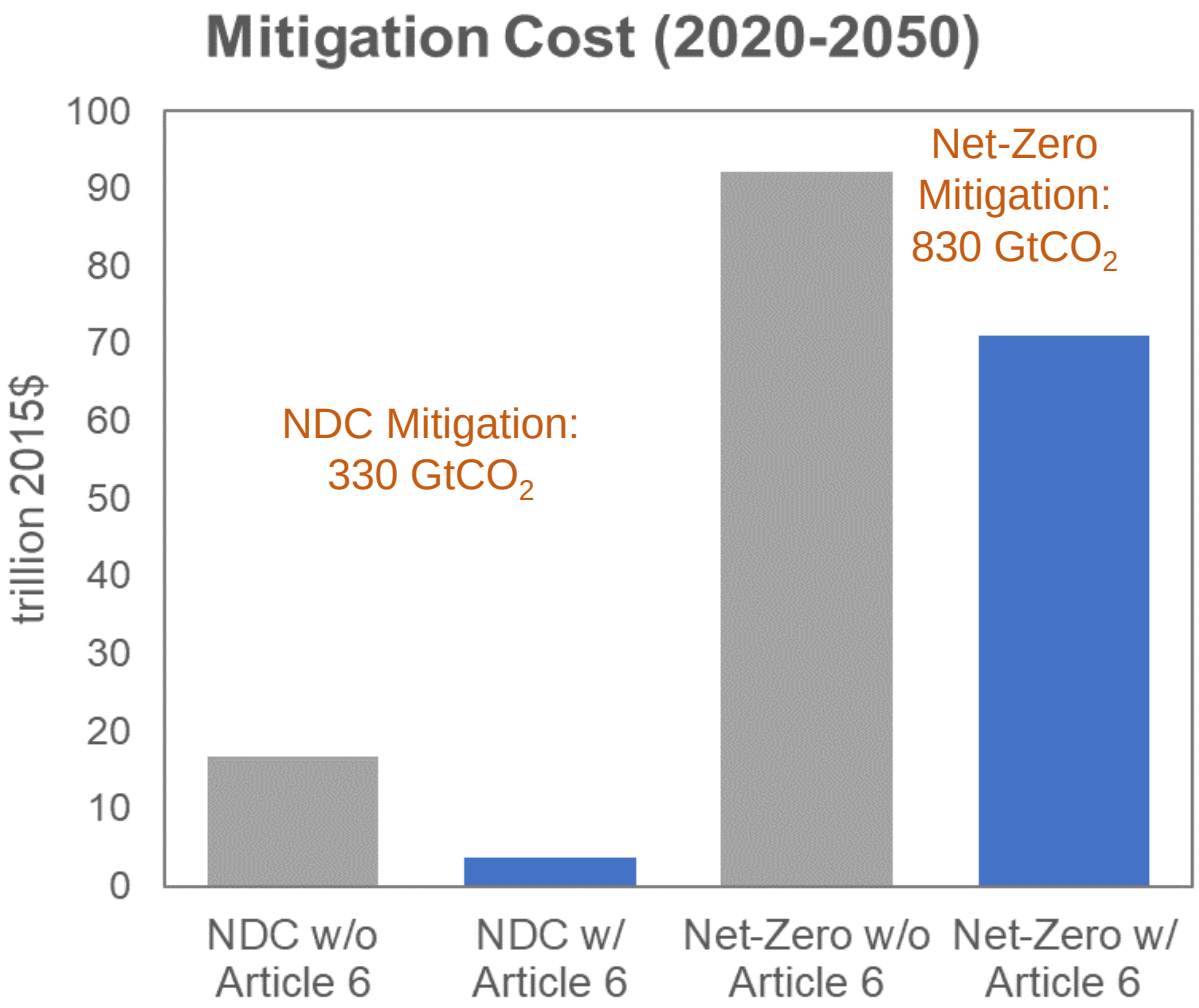
- We are now exploring scenarios in which developing countries have net zero dates that are later than 2050, based on per capita GDP and net zero pledges.
- Peak temperature change is slightly higher than ~1.6 degrees.
- Preliminary results show that
  - Carbon markets have relatively small transfers of absolute emissions, but each transaction is very valuable.
  - Land use plays a major role in earlier periods and carbon removals become increasingly important in later periods.
  - Capital investment shifts from developed to developing regions.

Net-Zero Years by Region



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Mitigation Cost



Without Article 6

With Article 6

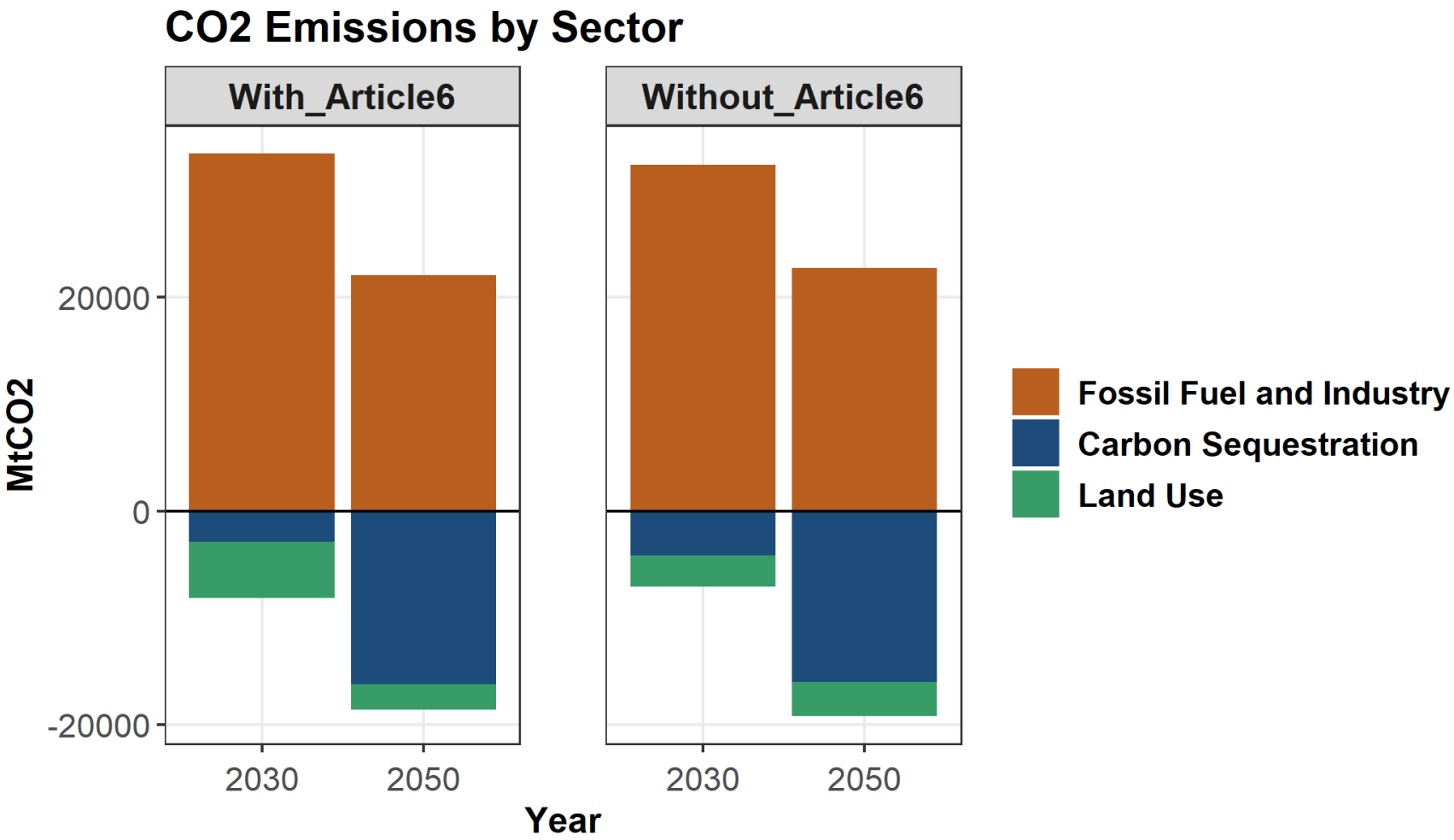
In net-zero scenarios, Article 6 could reduce mitigation cost by $21 trillion between 2020 and 2050, compared to $13 trillion in NDC scenarios.

Trading Volume and Market Value

- Physical transactions are not growing, but financial values are growing.

	Physical Trade (MtCO2)	Financial Flows (Billion 2015$)
2025	2900	160
2030	3500	300
2035	3750	500
2040	3850	700
2045	3650	1100
2050	2450	1050

Role of Land Use and CDR

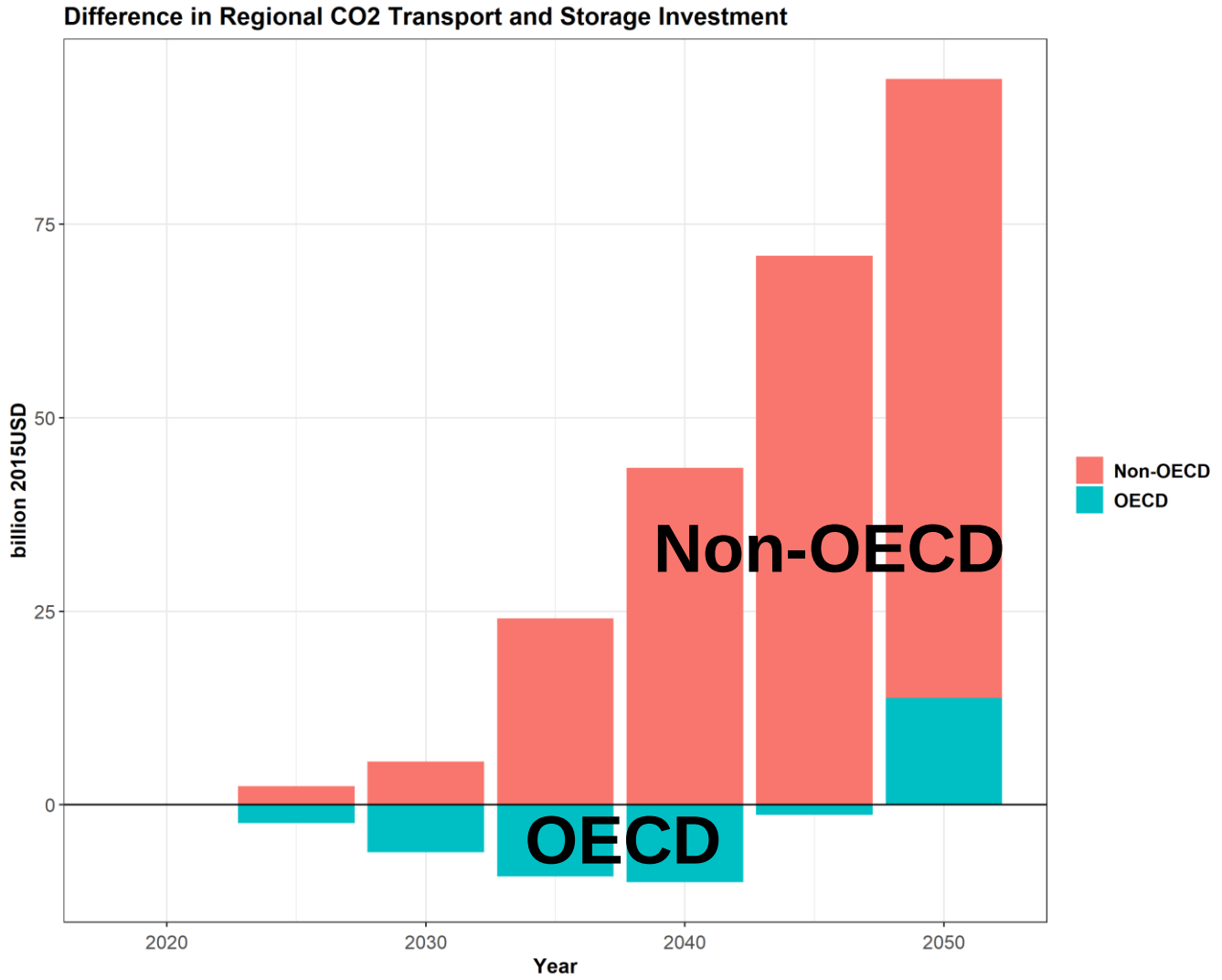


- With Article 6, there is decreasing forestation and increasing afforestation and reforestation.
- Land sinks play a key role in earlier periods and carbon removals become increasingly important in later periods.

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Capital Investment

- Capital investment shifts from developed regions to developing regions.
- >0 Increase in capital investment with Article 6
- <0 decrease in capital investment with Article 6



Takeaways

- Article 6 holds the potential to allow countries to achieve net-zero targets with greater economic efficiency.
- Carbon markets have relatively small transfers of absolute emissions, but each transaction is very valuable.
- Land sinks play an important role in emissions trading and achieving net-zero targets, especially in the near term, whereas carbon removal technologies become increasingly important in the long run.
- Article 6 has important implications for both mitigation and sustainable development. In addition to lowering mitigation costs, Article 6 could shift capital investment toward selling regions, affect local air quality and other sustainability metrics for both buyers and sellers, and shift costs and potentially incentives for technological innovation.

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Thank you!