



CEEPR

MIT Center for Energy and
Environmental Policy Research

Theories and Practices of Cross-Border Carbon Market Linkages

Implications for Asia

Michael A. Mehling

7 May 2024



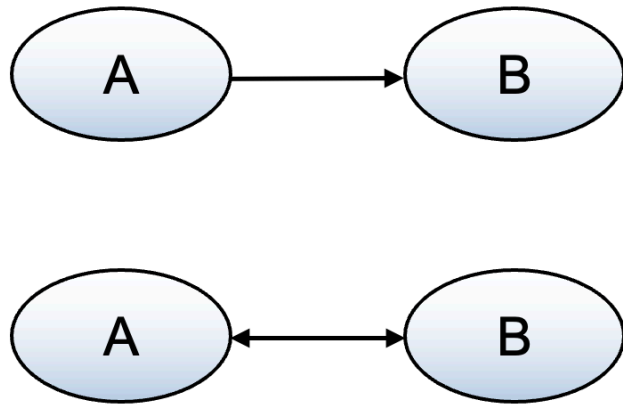
ceepr.mit.edu

Cross-border Carbon Market Linkage: Concept and Benefits

- Defining Cross-border Carbon Market Linkage
 - Carbon markets are considered linked if a participant in one market can use a carbon unit issued under another market to meet compliance obligations
 - A link can consist of a simple provision stating the equivalence of units from another carbon market, but usually entails changes to market infrastructure ✎
- Potential Benefits of Carbon Market Linkage in Asia
 - Asia already has over a dozen carbon markets, including the world's largest emissions trading system, and is set to continue expanding this trend
 - Linkage results in an enlarged market with more market participants, greater diversity of abatement costs, improved liquidity, and reduced cost
 - Recent studies underscore the potential of cross-border transfers to dramatically reduce the economic burden of achieving national and international mitigation objectives

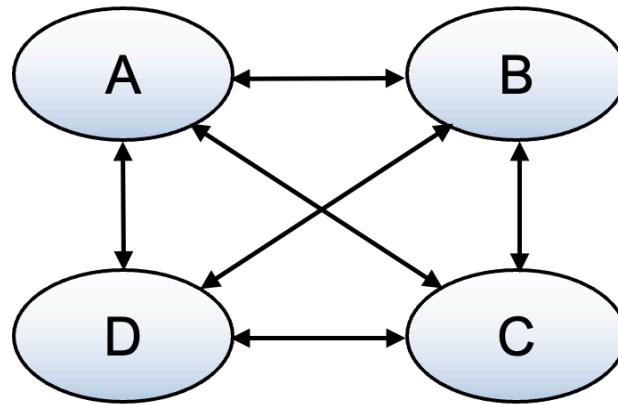
Cross-border Carbon Market Linkage: Concept and Benefits

Unilateral and Bilateral Linkage

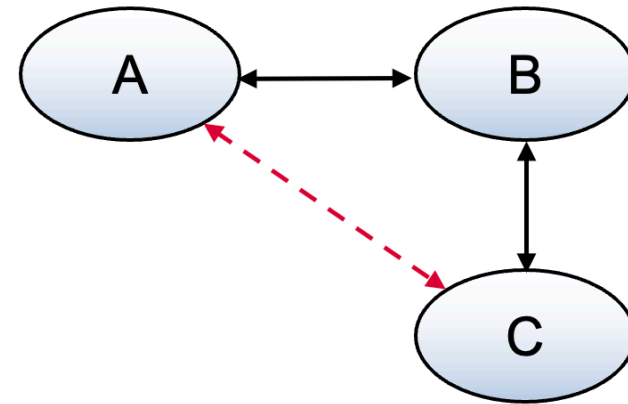


→ Unilateral Link
↔ Bilateral Link

Multilateral Linkage




Direct and Indirect Linkage



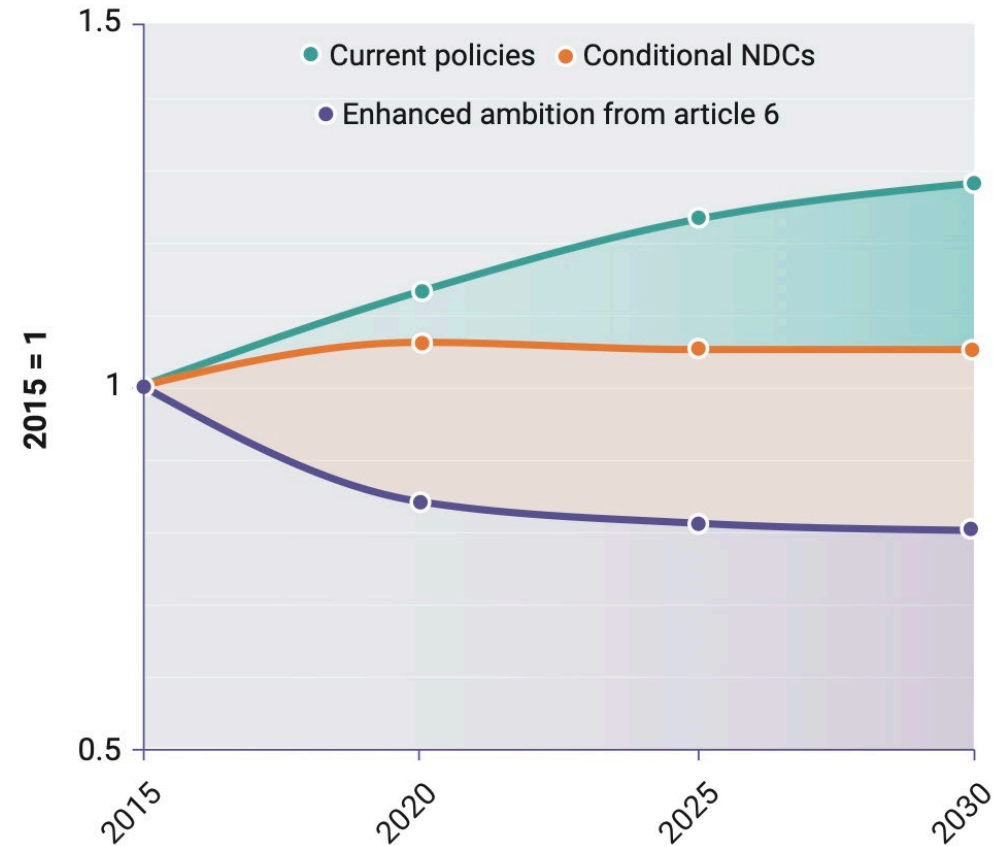
↔ Direct Link
- - - Indirect Link

Cross-border Carbon Market Linkage: Concept and Benefits

- Defining Cross-border Carbon Market Linkage
 - Carbon markets are considered linked if a participant in one market can use a carbon unit issued under another market to meet compliance obligations
 - A link can consist of a simple provision stating the equivalence of units from another carbon market, but usually entails changes to market infrastructure
- Potential Benefits of Carbon Market Linkage in Asia
 - Asia already has over a dozen carbon markets, including the world's largest emissions trading system, and is set to continue expanding this trend
 - Linkage results in an enlarged market with more market participants, greater diversity of abatement costs, improved liquidity, and reduced cost
 - Recent studies underscore the potential of cross-border transfers to dramatically reduce the economic burden of achieving national and international mitigation objectives 

Cross-border Carbon Market Linkage: Concept and Benefits

- Globally, cross-border transfers could help double climate policy ambition and close the climate finance gap:
 - [Edmonds et al. \(2021\)](#): cost reductions to meet current NDCs of ~US\$300 billion in 2030; estimates of similar magnitude (40-60% cost reductions) by [Piris-Cabezas et al. \(2023\)](#), [World Bank \(2016\)](#); could allow a doubling of climate policy ambition
 - [Yu et al. \(2021\)](#): increased financial flows of ~US\$1 trillion per year in 2050



[UNEP, Oct. 2021](#)

Researching Cross-Border Carbon Market Linkage: A Survey of the Literature

- Research on cross-border carbon market linkage has yielded hundreds of studies, and evolved across distinct phases
- Phases in the literature on cross-border carbon market linkage:
 - Pioneering phase (1990s): earliest discussion of rationale, benefits
 - Conceptual phase (early 2000s): definitions, approaches, economic potential
 - Instrumental phase (mid-2000s to early 2010s): case studies, mechanisms
 - Critical phase (mid- to late 2010s): barriers, institutions, normative implications
 - Revival phase (since 2020s): role of Article 6, lessons learned,

Cross-Border Carbon Market Linkage in Practice: Case Studies

- Early experiences with unilateral and bilateral linkage
 - Unilateral: Chicago Climate Exchange, New Zealand, South Korea, Switzerland
 - Bilateral: Norway and European Union; Tokyo and Saitama
- California and Québec (2014)
 - Temporarily also linked with Ontario (2017-2018)
 - Implemented through an agreement between subnational jurisdictions
 - Joint institutions & processes: Consultation Committee, registry, auctions (WCI)
 - Process for withdrawal; monitoring of net trading flows
- European Union and Switzerland (2020)
 - Implemented through a binding international treaty
 - Connects EU Transaction Log and Swiss Supplementary Transaction Log
 - Joint institutions & processes: Joint committee, consultation and notification
 - Process for suspension, termination and expansion

Mechanisms for Cross-Border Carbon Market Linkage

- Adoption of Legal Mandate and Authority for Carbon Market Linkage
- Form and Process of Carbon Market Linkage
 - Decision on unilateral vs. bi-/multilateral carbon market linkage
 - If bi-/multilateral linkage: coordination through formally binding international treaty or through an informal political understanding (MoU) with reciprocity
 - Routine governance of the carbon market linkage through institutions and processes, e.g. notification and consultation duties, formal secretariat
- Substantive Considerations
 - Alignment with existing legislative and regulatory frameworks
 - Accounting for and reporting emission transfers under international rules (notably Article 6 of the Paris Agreement: single-year/multi-year targets, share of proceeds)

Recommendations for Cross-Border Carbon Market Linkage in

Asia

- Relative youth and diversity of carbon markets in Asia is an opportunity
 - Leverage the heterogeneity of abatement cost and levels of development
 - Future cross-border linkage can be included in emerging carbon market design
- Engage in international processes to align carbon market approaches
 - Pursue active engagement in fora such as PMI, ICAP, IFCMA, UNFCCC
- Include mandate for carbon market linkage in carbon market rules
- Build trust and cooperation with prospective future linkage partners
 - Study the potential effects (e.g. economic benefits) of carbon market linkage
 - Practice transparency and commit to engagement in good faith
 - Consider appropriate linkage processes and mechanisms



CEEPR

MIT Center for Energy and
Environmental Policy Research

Thank You


Please come visit us!

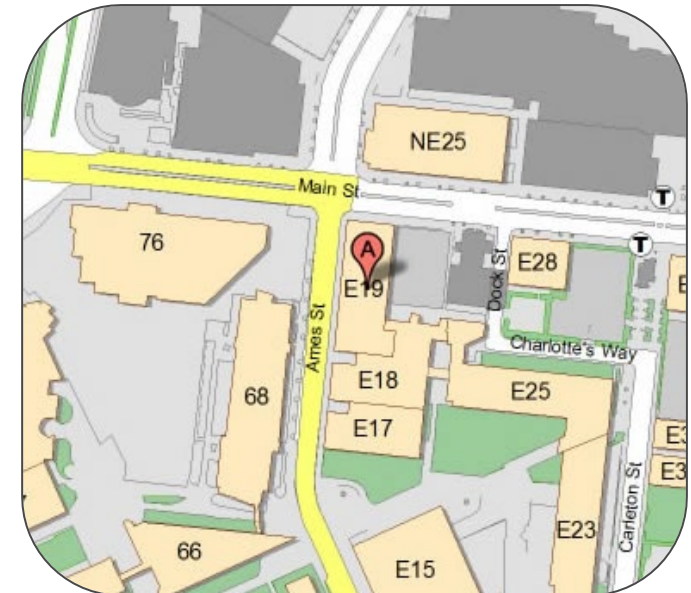
Center for Energy and Environmental Policy Research

Massachusetts Institute of Technology (MIT)
MIT Building E19-411
400 Main Street, 4th Floor
Cambridge, MA 02142-1017

 <http://ceepr.mit.edu>

 ceepr@mit.edu

 617-253-3551



CEEPR

MIT Center for Energy and
Environmental Policy Research