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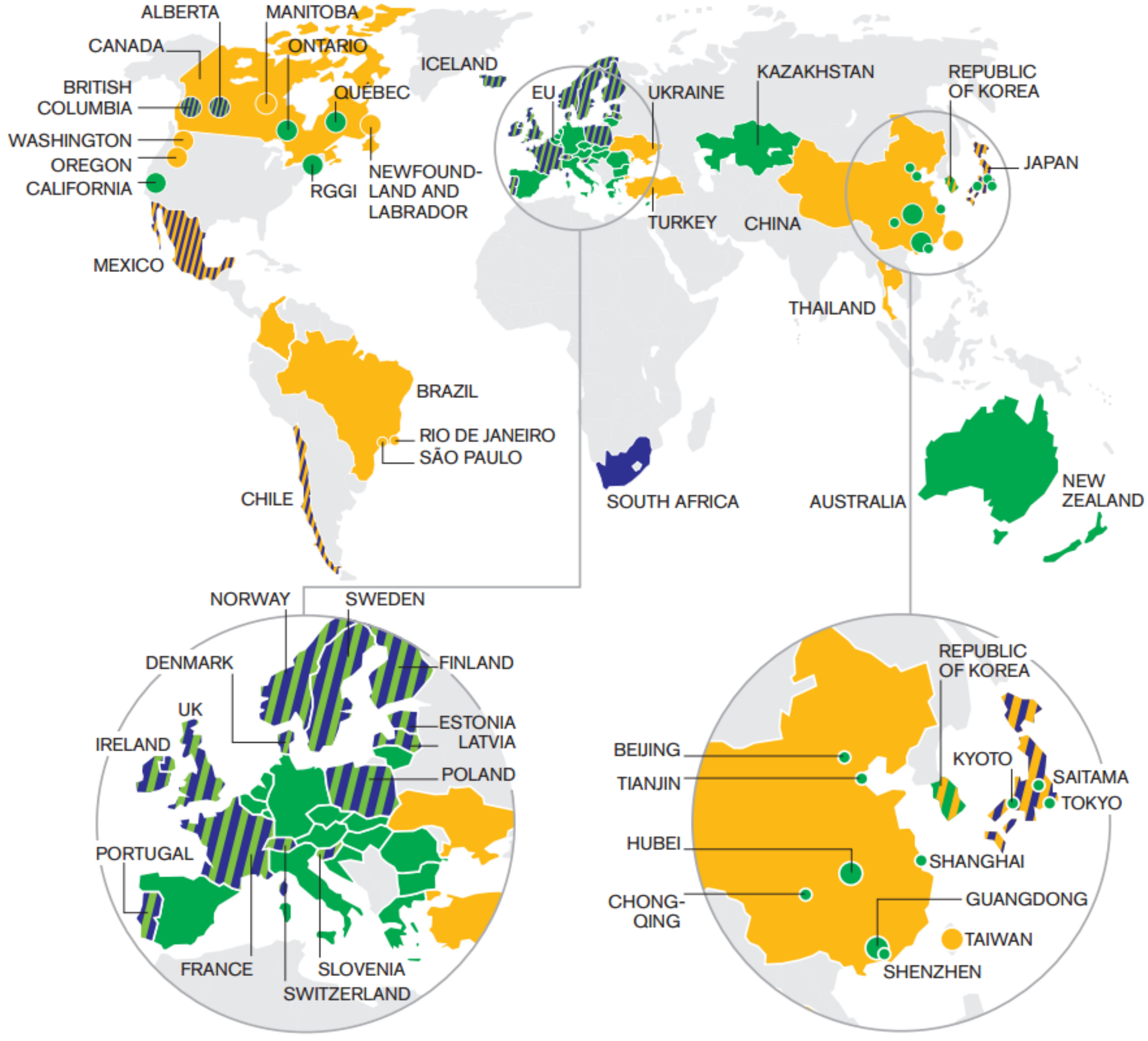
Modeling international cooperation from an NDC perspective

December 2016

Carbon pricing is gaining momentum

several of the largest economies price carbon

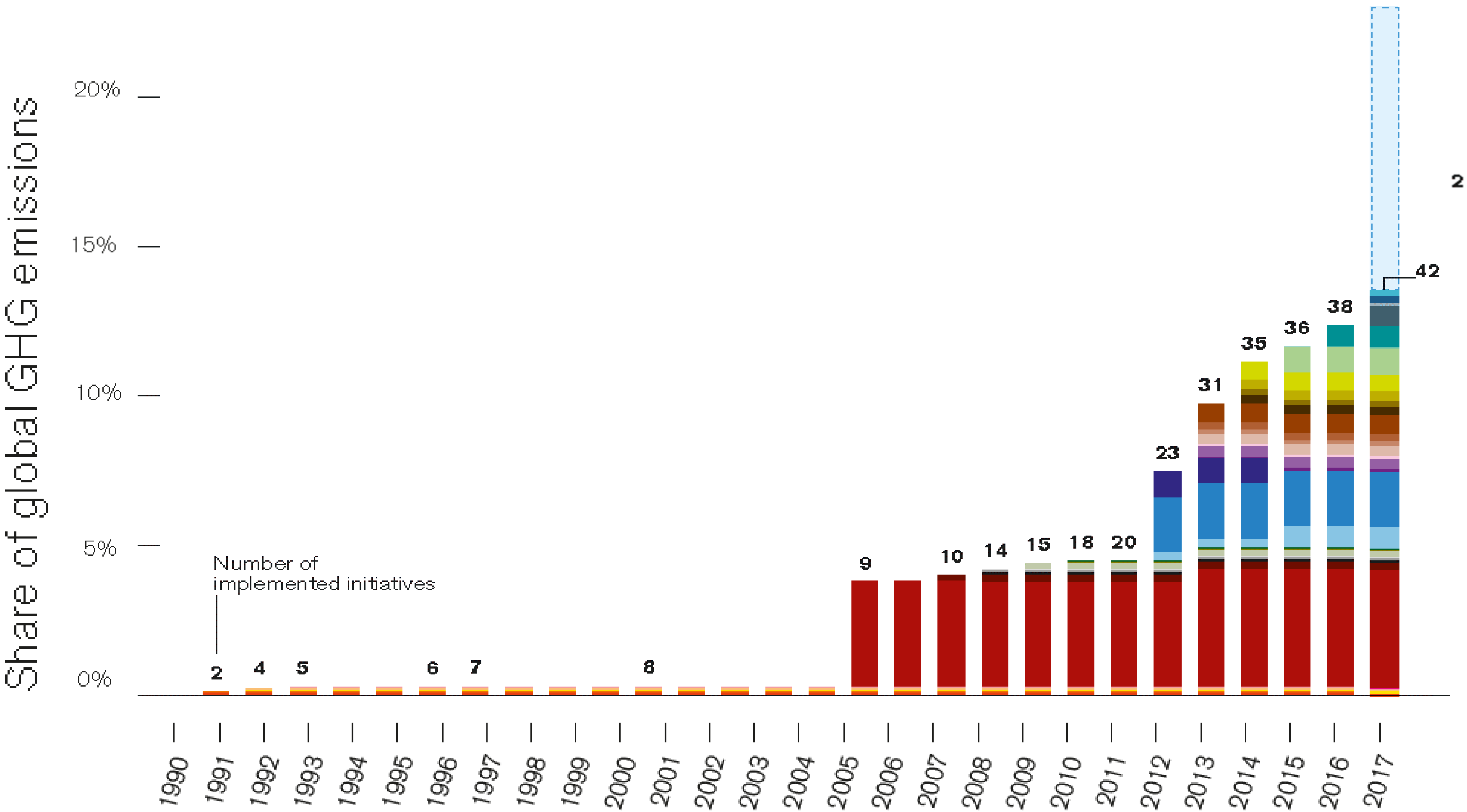
globally carbon markets reach US$ 50 billion



- ETS implemented or scheduled for implementation
- Carbon tax implemented or scheduled for implementation

- ETS and carbon tax implemented or scheduled
- ETS implemented or scheduled, tax under consideration
- Carbon tax implemented or scheduled, ETS under consideration

Threefold increase of carbon pricing initiatives in the past decade



The growth in carbon pricing increases the potential for an international carbon market

Article 6 of the Paris Agreement opens up this possibility and facilitates the transition

95 parties intend to use international carbon pricing instruments to meet their (I)NDCs

— 8 INDCs mention both domestic and international carbon pricing (5 per cent of emissions)

— 87 INDCs intend to use international carbon pricing (29 per cent)

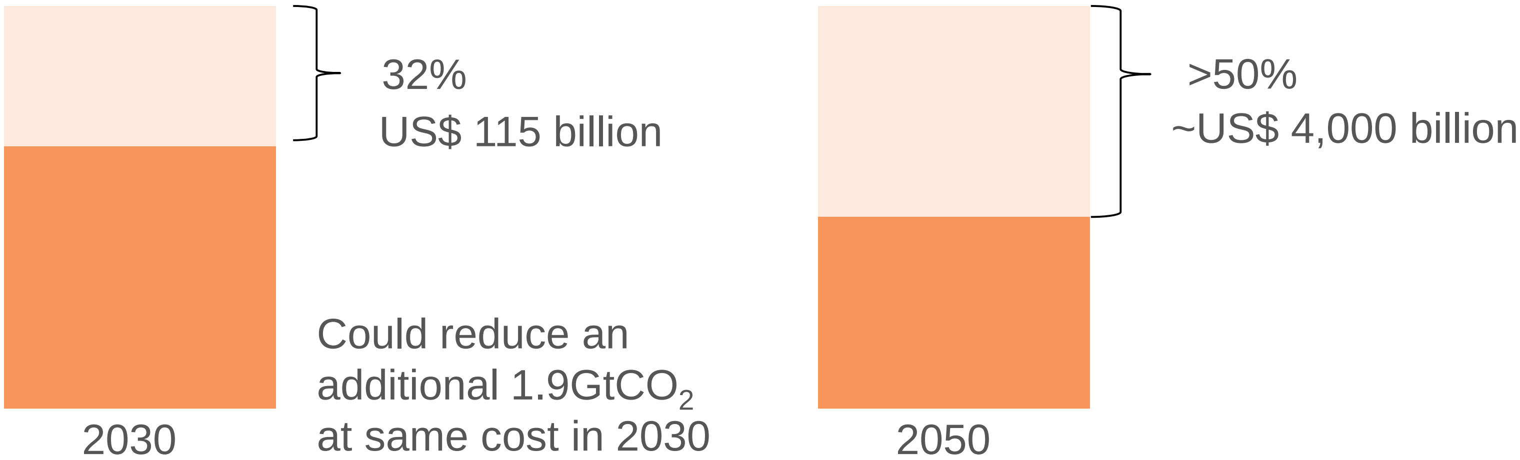
Paris Agreement identifies range of international carbon pricing mechanisms

— Internationally Transferred Mitigation Outcomes (ITMOs) under Article 6.2 and 6.3

— mechanisms to contribute to mitigation and sustainable development (Article 6.4) to go beyond offsetting

The development of an international carbon market could deliver significant cost savings

These costs savings could be used to scale up ambition

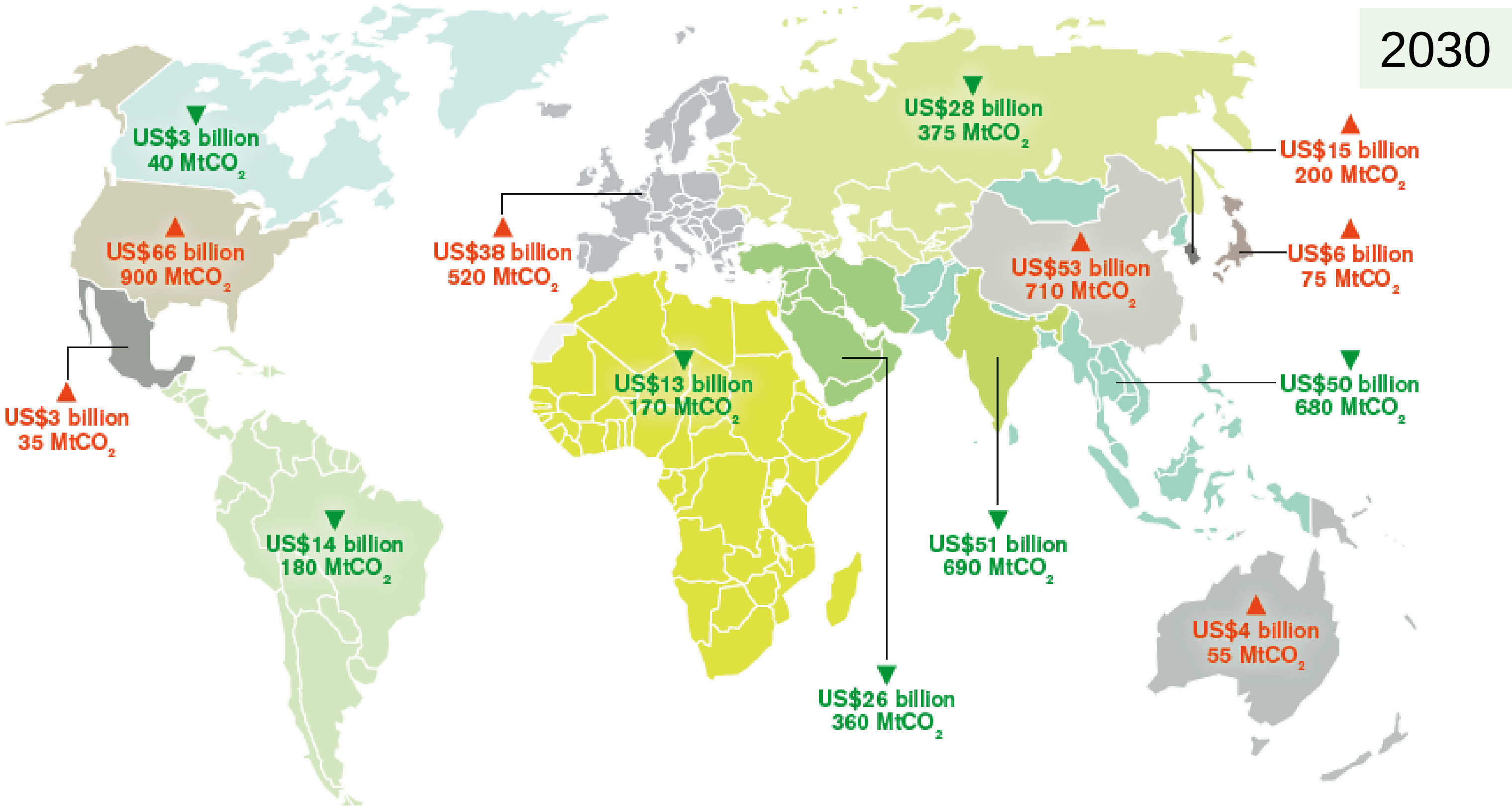


beyond 2050, an international carbon market may be a necessity

— countries are highly unlikely to become carbon neutral individually beyond 2050, but may be able to achieve it jointly

Note: 2030 abatement costs based on INDCs. 2050 abatement costs assume transition to rights to equal per capita energy CO_2 emissions consistent with staying below 2°C by 2100

This would imply significant trading in carbon assets



Note: All results are rounded. All results assume full international trading of emissions. Resource flows assume a single global price for emissions.

Resource inflows, emission sales	Resource outflows, emission purchases
GLOBAL TOTAL	GLOBAL TOTAL
US$185 billion	US$185 billion
2,495 $MtCO_2$	2,495 $MtCO_2$

Competing objectives and complex link designs have been barriers to an international carbon market

Choosing a partner
- maximising cost benefits vs political implications of resource flows

Link design
- regulatory harmonisation
- negotiations

Link operational
- shocks, policy shifts and their transmission
- regulatory changes

- **can countries afford to sell mitigation outcomes** if they also have NDC targets to reach and if they have complex packages of domestic mitigation policies in place?
- **can others countries afford to buy such mitigation outcomes** if facing risks on environmental integrity, comparability off efforts, and international recognition?

There are a range of barriers to an international carbon market… but also potential solutions

Potential barriers	Possible solutions
Market uncertainty	Finance (including results based climate finance)
Concerns over environmental integrity	Collaboration over market design; finance (including results based climate finance); development of international standards
Loss of control	Collaboration over market design; finance (including results based climate finance); sectoral agreements
Loss of co-benefits	Collaboration over market design; sectoral agreements; domestic instruments
Comparability of ambition and prices	Analytical tools to compare ambition; international guidelines
Undesirable distributional consequences	Collaboration over market design; sectoral agreements

The METRIC guidelines are intended to guide policymakers and private sector to link in the ways that make most sense for them

Market integrity	Links should ensure the integrity of carbon markets and related markets (such as financial and energy markets)
Environmental integrity	Links should ensure environmental integrity and ultimately improve environmental outcomes
Transparency	Link design should be transparent and should provide all stakeholders with a clear understanding of its rationale in order to generate support, and to allow the free exchange of information between linked schemes
Recognise ambition	Link design should recognise early action and avoid incentives to reduce effort
Inclusiveness	Links should be designed to facilitate and encourage more jurisdictions to join the scheme and promote greater international co-operation
Cost-effectiveness	Links should reduce the overall cost of mitigation, including administrative and transaction costs, and improve economic efficiency

Early actors may establish norms for global carbon markets

regional proximity and/or close economic ties may provide fertile ground for first links

- cooperation is more likely between jurisdictions with similar objectives
  - reducing compliance cost in one and raising funds in the other
  - political benefits of closer cooperation and legitimacy of carbon markets
  - creating a level playing field for companies active in linked jurisdictions

the METRIC guidelines are intended to provide guidance for jurisdictions to achieve both their shared and competing objectives

- facilitating cooperation while acknowledging differences
- norms established through early linking are consistent with growth in global cooperation in the long run

Further details on the benefits of linking and challenges of linking can be found in the State and Trends of Carbon Pricing

Chapter 4 of the World Bank's State and Trends of Carbon Pricing 2016 (link)

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