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## SCALING UP CARBON MARKETS POST-PARIS

Even veterans of carbon markets seldom speak any more of the time when the price of carbon in the EU ETS was steadily above €20 per ton and Carbon Expo was filled with entrepreneurs and bankers from around the world striking deals in what many hoped would become the largest commodity market in history.

While that is not how it worked out, is it possible that the heyday of carbon markets is yet to come?

As we look to the future and the imperative for countries to deliver on promises made in Paris, it's time to focus on the opportunities. Investment needs to amount to more than \$1 trillion per year over the next 15 years -- a multi-trillion dollar financing opportunity for the private sector and governments to help turn climate mitigation commitments into climate-smart investments that create jobs and improve lives.

A long-term, predictable price on carbon is widely recognized as critical to this effort. Our analysis in the State and Trends of Carbon Market 2015 report indicated that the use of market-based mechanisms is often the most cost-efficient way to achieve GHG reductions when aligned with other climate mitigation policies, regulations, taxes, removal of subsidies and energy efficiency incentives. Carbon pricing initiatives give the private sector the

certainty it needs to make long-term decisions and drive investment in low-carbon technologies, in turn reducing emissions.

Already 40 countries and more than 20 cities, states and provinces are putting a price on the pollutants that cause warming, covering some 13 percent of all greenhouse gas emissions, according to the World Bank's most recent Carbon Pricing Watch<sup>1</sup>. This includes 7 out of 10 of the world's largest economies and 3 out of 5 of the world's largest emitters<sup>2</sup>, which are planning or considering the use of market mechanisms including ETSs, offset mechanisms and results-based climate finance.

This year saw the launch of two new carbon pricing initiatives: British Columbia established an ETS for the liquefied natural gas industry alongside its carbon tax, followed by Australia's implementation of a safeguard mechanism to the Emissions Reduction Fund, pricing emissions of large emitters that exceed their set limit.

Moreover, France announced its intention to introduce a carbon floor price for the coal-fired power sector from 2017 and Canada is exploring options for carbon pricing on a national level. Mexico announced it is testing a cap-and-trade system to enable a national carbon market starting in 2018 and strong interest in linking to a North American carbon market. Panama also said it is preparing a carbon market, with the aim of becoming a regional hub for sustainable forest management and trade in international emissions.

Looking forward, China's move to set up a national emissions trading system in 2017 will potentially alter the landscape. If the initial phase goes as planned, China will immediately pass the EU ETS in having the largest carbon market in the world. We predict the global value of carbon pricing initiatives could double to \$100 billion.<sup>3</sup>

About 100 countries – accounting for roughly 58% of global emissions – included references to carbon pricing initiatives and use of market-based mechanisms in their Intended Nationally Determined Contributions. The Paris Agreement gave an additional boost to expectations for renewed carbon markets with a separate Article 6. We at the World Bank Group were happily surprised to see the extent to which this language enables the establishment of a new carbon market, validating our decades of work in supporting governments and mobilizing the private sector to finance climate mitigation, beginning with the first ever carbon fund in 2000.

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What will it take to further scale up market-based carbon pricing instruments to help meet the demand for climate-smart investment?

The 1997 Kyoto Protocol envisioned a global trade architecture for greenhouse gas emissions that allowed developed countries to offset their emissions by financing low-carbon projects in developing countries through the Clean Development and Joint Implementation Mechanisms. The Paris Agreement, through Article 6, will rely on different, and more complex, rules of the game with all countries and jurisdictions having the ability to design and implement carbon pricing initiatives that fit their domestic circumstance, while voluntarily participating in cooperative arrangements to allow for carbon trading across borders.

Establishing an international carbon market would go a long way toward spurring climate mitigation efforts by giving carbon emitters the possibility of acquiring greenhouse gas emission reductions where it is most cost effective for them to do so. This requires linking of carbon reduction actions, and the World Bank's Networked Carbon Markets initiative is focused on facilitating such cross-border trade based on a shared understanding of the relative value of these different approaches, ultimately allowing for a fungible international carbon market.

The State and Trends<sup>4</sup> analysis shows the earlier that such a market is developed, the larger the savings and hence the greater the potential to scale up ambition in the short term. In fact, we believe that while not a panacea, without an international market for carbon, it will be not be possible to cost-effectively stay below the 2 degree Celsius target set by the Paris Agreement. That is why the World Bank has established the first global fund to pilot the development and transfer of carbon

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assets under the Paris Agreement. The Transformative Carbon Asset Facility (TCAF) will assist countries to leverage public finance to create favourable conditions for private sector investment in low-carbon technologies, providing blueprints to scale up efficient and low-cost mitigation on a global level. Specifically, the \$500 million facility will develop innovative carbon accounting methodologies to attribute emission reductions to the implementations of policies and economy or sector-wide programs, going beyond project-by-project mitigation while ensuring the environmental integrity of the assets. And it will test approaches to transparently transfer these mitigation outcomes, or "ITMOs", as they are referred to in Article 6.

The experience of the more than 35 participants in the Partnership for Market Readiness<sup>5</sup> (PMR) further demonstrates the necessity of establishing robust emissions monitoring, reporting and verification (MRV) systems as for countries to identify opportunities to reduce GHG emissions, and an important prerequisite to launching carbon pricing initiatives at least-cost. For example, countries like Turkey and Ukraine are currently designing and implementing national programs to monitor, report and verify greenhouse gas emissions from emitters in the energy and industrial sectors.

Regulation of emissions is also spreading also into new areas. With aviation representing about 2% of global emissions, equivalent to the world's 7th largest emitter, 191 countries signed an historic agreement

in October 2016 to keep greenhouse gas emissions from international aviation to 2020 levels, despite the sector's anticipated continuing growth, using carbon offsets. The World Bank is offering assistance going forward to establish new registries and MRV systems needed for this.

The importance of supporting the 'readiness' of the private sector to engage actively in the carbon market is also the premise of the International Finance Corporation's (IFC) advisory engagement in China, particularly focused on the role of the financial sector and industry in carbon trading. Together with the Shenzhen emissions exchange, IFC, the arm of the World Bank Group that works with the private sector, helped develop a specialized non-spot emissions trading product to help advance this carbon market pilot. IFC is also exploring interest from Chinese financial institutions and their clients in carbon advisory, brokerage and risk management products for use once liquidity improves as the pilots transition to a national market.

Ultimately, an international carbon market will grow out of the patchwork of mitigation actions taken by countries, states, cities and industries. New services and institutions that enable environmental integrity, transparency, comparability and, ultimately, linkage will be the cornerstones of this new and improved carbon market of the future.

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(1) <https://openknowledge.worldbank.org/handle/10986/24288> (2) China, India and Brazil. The US and EU did not state the use of carbon pricing in their INDCs, despite initiatives already being in place at a regional, national and/or subnational level. (3) Value of approximate emissions covered under the Chinese ETS multiplied by the weighted average carbon price over all initiatives globally in 2016. (4) State and Trends of Carbon Pricing, 2016 (5) [www.thepmr.org](http://www.thepmr.org)