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# Linked Carbon Markets: Silver Bullet, or Castle in the Air?

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## Abstract

Does the Paris Agreement provide a boost to carbon markets? Although carbon markets are spreading globally, so far relatively few links have been established between them. The history of linking indicates that successful efforts are characterized by converging ETS design, and, related to this, political will. Moreover, existing links have been facilitated by prior economic and political ties. Such linking processes face significant challenges related to distribution of power and political feasibility. The Paris Agreement does not make the more intrinsic challenges of political linking go away. Moreover, a significant amount of elaboration and clarification of the Paris Agreement remains subject to further negotiations. Nevertheless, Paris confirmed an increasing support for carbon markets: the periodic reviews of state climate policies, shared fulfilment, and common guidance for accounting, together provide a new momentum for the development of carbon markets and the process of linking them. What this boost means for the prospects of a globally interlinked carbon market remains to be seen.

## Keywords

Carbon markets – Paris Agreement – linking – emission-trading system – SDM – ITMO – political feasibility

## 1 Introduction

Carbon pricing and markets are spreading globally, but will the Paris Agreement provide a further boost? Currently, about forty national jurisdictions and over twenty cities, states, and provinces, representing approximately one quarter of global greenhouse gas emissions, have put a price on emissions, through a carbon levy or an emission-trading system.<sup>1</sup> The history of carbon markets has not been one of successful linear evolution; the United States dropped its ETS plans, and the pioneering EU ETS experienced very troubled times post-2010. However, recent developments give reason for cautious optimism. The Paris Agreement marks a step forward for the global climate regime, and a rescue effort for the EU ETS and progress towards a Chinese ETS indicate brighter prospects for carbon markets.<sup>2</sup>

After years of stagnating international climate negotiations, analysts began to see the emergence of carbon markets and links between them as a feasible bottom-up route to a well-functioning global climate regime.<sup>3</sup> While international climate negotiations and carbon markets have largely evolved as separate tracks, the two might well reinforce one another. Prior to COP 21, carbon-market supporters expressed hope that Paris would provide a boost for the worldwide development of carbon markets and links between them. In order to assess the impact of the COP 21 outcome on carbon-market linking, we will consider what progress has been made in linking carbon markets so far. Based on an analytical framework presented in the next section, we provide a brief overview and analysis of linking processes, and then discuss whether the Paris Agreement will stimulate and facilitate linking. We conclude by reflecting on whether the vision of linked carbon markets and a regime ‘from below’ is a silver bullet, or a castle in the air?

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1 World Bank, *State and Trends of Carbon Pricing 2015* (Washington, DC: World Bank/Ecofys, September 2015).

2 J. Wettestad and T. Jevnaker, *Rescuing EU Emissions Trading—The Climate Policy Flagship* (Basingstoke: Palgrave Pivot, forthcoming 2016).

3 See D. G. Victor, ‘Fragmented Carbon Markets and Reluctant Nations: Implications for the Design of Effective Architectures’, in *Architectures for Agreement: Addressing Global Climate Change in the Post-Kyoto World*, edited by J. Aldy and R. Stavins (Cambridge, UK: Cambridge University Press, 2007), at 133–60; J. Jaffe and R. N. Stavins, ‘Linkage of Tradable Permit Systems in International Climate Policy Architecture’, *Faculty Research Working Papers Series*, John F. Kennedy School of Government, Harvard University (2008); and David A. Weisbach and Gilbert E. Metcalf, ‘Linking Policies When Tastes Differ: Global Climate Policy in a Heterogeneous World’, *6 Review of Environmental Economics and Policy* (2012), at 110.

## 2 What is Linking and When Does it Occur?

Carbon-trading markets may be linked in various ways. With a direct link, companies within system A may use allowances from system B to meet obligations within system A. An indirect link between systems A and C exists if both are linked to system B but not to each other: given their respective linkages to system B, developments within system A will probably affect system C via system B, and vice versa.<sup>4</sup> In this article we are mainly concerned with the *direct* linking of systems.

Linking carbon markets may entail costs as well as benefits. As to the benefits, linking emission-trading systems means that allowances in one system may be used to meet obligations for reducing emissions in another, which could 'narrow or eliminate differences in the marginal cost of abatement between different regions or countries'.<sup>5</sup> This is expected to level the playing field for industry as well as direct investments in emission reductions to areas where these can be achieved at the lowest cost. This may assuage industry's fears about an uneven global regulatory playing field and related 'carbon leakage'.<sup>6</sup> Linking could also bring extra demand for allowances and help to counteract the problems of oversupply and low carbon price (as experienced by the EU ETS). Thus, linking can lower the overall costs of emission reduction, reduce price volatility, and improve market liquidity.

However, linking may also entail economic and political costs. Given the sharp differences in purchasing power around the globe, linking may have strong distributional effects. It can also lead to the export or import of problems experienced by one of the systems; thus difficulties within system A, e.g. over-allocation, might cause market imbalance in system B. It should also be kept in mind that numerous other climate- and non-climate-related taxes, subsidies, and regulations exist, so linking in itself is not sufficient to ensure a level playing field.

Linking can give rise to complex issues of distribution of transnational power and competence. Design choices in system A can influence the operation of system B. If system A is about to undertake changes, should it consult system B and should the latter have co-decision-making power? Such consultations might complicate reform processes. Linking will in any case entail some loss of

4 J. Jaffe, M. Ranson, and R. N. Stavins. 'Linking Tradable Permit Systems: A Key Element of Emerging International Climate Policy Architecture', 36(4) *Ecology Law Quarterly* (2009), at 789–808.

5 Weisbach and Metcalf, *supra* note 3, at 113.

6 C. Flachsland, R. Marschinski, and O. Edenhofer, 'To Link or Not To Link: Benefits and Disadvantages of Linking Cap-and-Trade Systems', 9(4) *Climate Policy* (2009), 358–72, at 363.

political control in system A—whether due to the political influence granted to system B or to system B’s inevitable impact on system A. In general, linking can raise a considerable challenge of political feasibility: despite the obvious and likely economic benefits, the resistance of central political actors due to uncertainty about distributional effects can render linking efforts complicated or futile.<sup>7</sup>

The establishment of a successful link between two emission-trading schemes is facilitated by a basic compatibility of designs, prior close political and economic ties, and a certain geographical proximity between the parties. While a functioning and institutionalized cooperative relationship is advantageous for linking, compatibility in the level of ambition, the rules determining the use of offsets, and the design of price/supply management mechanisms, have been identified as essential.<sup>8</sup>

### 3 Empirical Overview: Main Linking Processes to Date

Apart from the EU ETS, currently operating emission-trading systems are found in Switzerland (in operation since 2008), New Zealand (2008), two regional systems in Japan (Tokyo 2010, Saitama 2011), two regional systems in the United States (the Regional Greenhouse Gas Initiative (RGGI) 2009, California 2013), the Canadian province of Quebec (2013), Kazakhstan (2014), and South Korea (2015). In addition, seven pilots were started in cities and provinces in China (2013–2014), with a Chinese national ETS scheduled to be launched in 2017. Lastly, two Canadian provinces, Manitoba and Ontario, have announced that they will set up emission-trading systems that can be linked, respectively, to other North American schemes, and to California and Quebec.<sup>9</sup> To date, actual links between emission-trading systems are limited. In Europe, the Norwegian

7 J. F. Green, T. Sterner, and G. Wagner, ‘A Balance of Bottom-Up and Top-Down in Linking Climate Policies’, 4 *Nature Climate Change* (2014), at 1064–67.

8 Ibid.; see also A. Tuerk, M. Mehling, S. Klinsky, and X. Wang, ‘Emerging Carbon Markets: Experiences, Trends, and Challenges’ (London: Climate Strategies Working Paper, January 2013); and S. Hawkins and I. Jegou, ‘Linking Emissions Trading Schemes—Considerations and Recommendations for a Joint EU-Korean Carbon Market’, *ICTSD Issue Paper No. 3, 2014*, <[www.ictsd.org/downloads/2014/03/linking-emissions-trading-schemes-considerations-and-recommendations-for-a-joint-eu-korean-carbon-market.pdf](http://www.ictsd.org/downloads/2014/03/linking-emissions-trading-schemes-considerations-and-recommendations-for-a-joint-eu-korean-carbon-market.pdf)>; and M. Ranson and R. Stavins, ‘Linkage of greenhouse gas emissions trading systems: learning from experience’, *Climate Policy* (2015), at 1–15.

9 World Bank, *supra* note 1; see also J. Wettestad and L. H. Gulbrandsen, ‘The Evolution of Carbon Trading Systems: Waves, Design and Diffusion’, *ENI Report 9/2015* (Lysaker, Norway: Fridtjof Nansen Institute).

ETS became part of the EU ETS, and attempts are being made to connect the EU ETS to the Swiss system (further on both these points, see below). In North America, subnational systems in the United States and Canada have been linked. No intercontinental links have yet been successfully established.

### 3.1 *Linking With the European Union as Hub*

From the start, the European Union displayed openness towards connecting its ETS to other systems. The first emission-trading Directive included the goal of entering into agreements with countries that had ratified the Kyoto Protocol for ‘mutual recognition’ of allowances.<sup>10</sup> Later, the European Commission noted that the EU ETS could be linked to ‘compatible mandatory schemes,’ citing California and Australia as examples.<sup>11</sup> In 2009, the European Union expressed the hope that emission-trading schemes within the OECD could be linked by 2015, with broader linkages by 2020.<sup>12</sup>

The first formal ETS links between the EU ETS and other countries happened in Europe, but this occurred through third-country implementation of the ETS Directive and not through bilateral agreements. Iceland, Lichtenstein, and Norway cooperate closely with the European Union through the European Economic Area (EEA) Agreement, which grants access to the European Union’s internal market in exchange for implementation of relevant EU legislation. Norway had wanted to connect to the EU ETS already in 2005, but there was disagreement about whether the link should be effected through a bilateral agreement (preferred by Norway) or by implementation of the EU ETS Directive (preferred by the European Commission).<sup>13</sup> In 2005, Norway

10 European Union, *Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 Establishing a Scheme for Greenhouse Gas Emission Allowance Trading Within the Community and Amending Council Directive 96/61/EC*.

11 European Commission, ‘Limiting Global Climate Change to 2 Degrees Celsius: The Way Ahead for 2020 and Beyond’, COM(2007) 2 final, Brussels, at 6.

12 European Commission, ‘Towards a Comprehensive Climate Change Agreement in Copenhagen’, COM(2009) 39 final, Brussels; and European Council, ‘Climate Change—Contribution to the Spring European Council (19 and 20 March 2009): Further Development of the EU Position on a Comprehensive Post-2012 Climate Agreement – Council Conclusions (7128/09) (2009), Brussels.

13 Y. G. Kim and E. F. Haites, ‘Greenhouse Gas Emissions Trading Schemes: Recent Development and Policy Recommendations for Korea’, *KEI Report RE-02* (2005), Seoul: Korea Environment Institute, at 53; and W. Sterk, M. Braun, C. Haug, K. Korytarova, and A. Scholten, ‘Ready to Link Up? Implications of Design Differences for Linking Domestic Emissions Trading Schemes’ (JET-SET Working Paper I/06, Wuppertal, July 2006), at 38, <[http://wupperinst.org/uploads/tx\\_wupperinst/JETSET\\_WP\\_1-06.pdf](http://wupperinst.org/uploads/tx_wupperinst/JETSET_WP_1-06.pdf)>.

set up a domestic ETS designed to be similar to the EU ETS, in order to be able to link with it. Norway joined the EU ETS in 2009 by implementing the Directive.

The European Union also wanted to link up to Switzerland's ETS. Unlike the EEA countries, Swiss relations to the EU are regulated by a large number of bilateral agreements. Negotiations between the European Union and Switzerland began in 2010, aimed at having the link in place by 2013.<sup>14</sup> The Swiss ETS was initially rather different from the EU ETS, being a voluntary scheme and including a price floor. In 2013 it was redesigned and made much more like the EU ETS to facilitate linking. Thus the Swiss scheme became mandatory, and rules for allocation and penalty were aligned with those of the European Union.<sup>15</sup> But, after a Swiss referendum vote in favour of restricting immigration from the European Union, the latter responded by ceasing negotiations on various agreements, including that on ETS linking.<sup>16</sup> Nevertheless, contacts on the issue continued, and a new linking agreement was announced in January 2016, with the commencement date pending a resolution of the immigration issue.<sup>17</sup>

### 3.2 *Linking in North America*

Of the two subnational emission-trading schemes in the United States (California and RGGI), only California has been linked to another ETS, namely Quebec's ETS on 1 January 2014. Prior to linkage, the two systems had been members of the Western Climate Initiative (WCI) (California since 2007 and Quebec since 2008). The WCI consists of US states and Canadian provinces (other members are British Columbia, Manitoba, and Ontario). Because of the large size of the Californian system, it was expected to have a much greater influence on Quebec's ETS market than the latter would have on the former. Media reports noted that access to cheaper Californian allowances would be advantageous for Quebec's industries.<sup>18</sup>

14 FOEN, *Commission Proposes Opening Negotiations with Switzerland on Linking Emission Trading Systems* (2010), <[www.bafu.admin.ch/emissionshandel/10923/10926/10927/index.html?lang=en](http://www.bafu.admin.ch/emissionshandel/10923/10926/10927/index.html?lang=en)>.

15 S. Hawkins and I. Jegou, *supra* note 7, at 33–4.

16 ENDS Europe, 'Talks on Swiss–EU ETS Link Postponed Indefinitely' (26 March 2014).

17 Carbon Pulse, 'EU and Switzerland to link carbon markets after talks conclude' (25 January 2016), <<http://carbon-pulse.com/14646/>>.

18 *Globe and Mail*, 'Quebec-California Partnership Blazes Trail for Carbon Trading', 2 January 2014, <[www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/quebec-and-california-press-ahead-with-carbon-trading-plan/article16176708/](http://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/quebec-and-california-press-ahead-with-carbon-trading-plan/article16176708/)>.

### 3.3 *Attempted Intercontinental Links*

The European Commission stated that the EU ETS could be linked to 'compatible mandatory schemes', citing California and Australia as examples.<sup>19</sup> A central element of the Waxman-Markey bill, proposed in 2009, was a US national ETS. So the initial main linking vision of the Commission was clearly of a linked EU-US carbon market. The key to building a broad carbon market by 2015 was 'a transatlantic carbon market between the EU and US,' according to a Commission representative.<sup>20</sup> But this suffered a serious blow in mid-2010, when the US ETS bill failed to pass the Senate.<sup>21</sup>

The climate-policy dynamics continued at a lower level. A California delegation visiting Brussels in 2007 to learn about the EU ETS had expressed hopes that California would be the first non-European ETS to link to the EU ETS from 2013 onward.<sup>22</sup> In April 2011, following a meeting with California representatives, EU Climate Commissioner Hedegaard signalled an interest in establishing a link to the California ETS.<sup>23</sup> However, the California authorities this time discussed linking their ETS to *other* schemes (WCI, Quebec), without mentioning the EU ETS as a possibility.

Linkage talks between the European Union and Australia marked greater progress. A meeting between EU Commission President Barroso and Australian Prime Minister Gillard in 2011 resulted in an announcement of the intention to step up the discussion about linking the trading systems in the European Union and Australia.<sup>24</sup> The next year, Australia and the Commission announced that a full link would be in place by 2018, with a partial link (enabling Australian firms to use EU allowances for compliance) from 2015 onward. They also agreed on a 'pathway' towards full linkage, which included two adjustments to be made to the Australian system.<sup>25</sup> The initiative came mainly from the Australian side, with the EU ETS link heralded as a factor in

19 European Commission, 'Limiting Global Climate Change to 2 Degrees Celsius' (2007, at 6).

20 Quoted in Point Carbon, 'EU Hopeful of Building Joint Carbon Market with US', 4 February 2009.

21 ENDS Report, 'Stillborn Cap-and-Trade Bill Forces Policy Rethink', no. 427 (August 2010), at 57.

22 Reuters Planetark, 'California Eyes Joining EU Emissions Trading Scheme', 30 March 2007.

23 'EU Plans to Link Emissions Trading Scheme with California', *The Guardian*, 7 April 2011; and L. Zetterberg, 'Linking the Emissions Trading Systems in EU and California', 6 *FOREST STUDY IVL* (Gothenburg: Swedish Environmental Research Institute, 2012), at 41.

24 Reuters Planetark, 'EU, Australia to Discuss Linking Carbon Trading Schemes', 6 September 2011.

25 ENDS Europe, 'EU and Australia Agree Emissions Trading Link' (28 August 2012).

facilitating the country's troubled road towards an effective carbon-pricing policy.<sup>26</sup>

In January 2013, the European Commission put forward a recommendation to the European Council on opening formal negotiations on the link to Australia.<sup>27</sup> In July 2013, key EU energy-intensive industries condemned the linkage plan with Australia, arguing that the move was poorly thought-out, premature, and would benefit only Australia.<sup>28</sup> The Australian federal election in September 2013 installed Tony Abbott as prime minister. He had campaigned on a promise to scrap the plans for an Australian ETS. In October of that year, he brought the EU-Australia linking process to a halt.<sup>29</sup> Also halted was a linking process with the New Zealand ETS.<sup>30</sup>

#### 4 The Paris Agreement and its Implications for Linking

First, at a general level, the periodical reviews of national climate policies (Nationally Determined Contributions) that were outlined in the Paris Agreement could make emission trading and the linking of carbon markets more attractive. Updated national policies should become more ambitious as a result, and this could increase the demand for flexibility.

Second, the Paris Agreement acknowledges that countries may cooperate voluntarily to implement their NDCs. Countries may transfer emission reductions amongst themselves (called 'internationally transferred mitigation outcomes', or ITMOs, in article 6.2). It has been pointed out that an ITMO is not an allowance unit.<sup>31</sup> An ITMO is defined bottom-up: it can be produced from any type of scheme, and is not structured by the COP. No system of top-down screening or approval is required. However, these transfers should 'support sustainable development', and be consistent with UNFCCC guidance. Such guidance is not provided in the Paris Agreement but is to be established at

26 I. Bailey, I. MacGill, R. Passey, and H. Compston, 'The Fall (and Rise) of Carbon Pricing in Australia: A Political Strategy Analysis of the Carbon Pollution Reduction Scheme', 21(5) *Environmental Politics* (2012), at 691–711.

27 Commission, 'Linking EU ETS with Australia: Commission Recommends Opening Formal Negotiations', Press release, Brussels, 24 January 2013.

28 ENDS Europe, 'EU Industry Slams Australia ETS Link' (26 July 2013).

29 Point Carbon, 'Australia Publishes Bill to Scrap CO<sub>2</sub> Trading Scheme', 15 October 2013.

30 Reuters, 'Australia, New Zealand could link carbon trade schemes in 2015', 5 December 2011.

31 A. Marcu, 'Carbon Market Provisions in the Paris Agreement (Article 6)', *CEPS Special Report*, Centre for European Policy Studies (2016).

future meetings. In practice, transfers might be regulated through separate agreements among the countries involved. The UNFCCC guidance will probably be non-binding, general 'soft' law. Nevertheless, it could bring about some convergence on the design of accounting rules within the various carbon markets. By setting a common baseline, as well as through naming and shaming, common guidance could facilitate such convergence. As noted earlier, similarity in carbon-market design will likely make linking carbon markets easier.

Lastly, the Paris Agreement established a new mechanism for sustainable development intended to build upon the experience with the Clean Development Mechanism and Joint Implementation. The design of the new mechanism is to be further developed at subsequent meetings (article 6.4). Already dubbed the 'Sustainable Development Mechanism' (SDM), this revamped CDM differs from the previous system in two ways: the division into developed and developing countries is gone, and the mechanism should lead to an overall reduction of global emissions (avoided emissions growth will not suffice). However, the Agreement does not say how this will happen. Thus, the SDM could play the part that the CDM played in the past, of creating an indirect link between carbon markets through offsetting. Access to offsetting is a design element that parties probably will want to harmonize prior to direct linking.

Thus, although the Paris Agreement did not set up any carbon markets, it created brighter prospects for developing and linking such markets. The reference to carbon markets in the agreement was seen as giving new momentum to existing initiatives.<sup>32</sup> The tightening of NDCs over time could make carbon markets and linking more attractive, with explicit reference to collaboration in the agreement providing some momentum. Third, should global soft law on accounting be established, this could boost the integrity of systems (as accounting and robust data are crucial to the trustworthiness of ITMOS and carbon markets), and thus make negotiations on linking easier.

## 5 Conclusion

With the Paris Agreement, the scene appears set for top-down and bottom-up processes that can better complement one another. The periodic review and reinforcement of NDCs, as foreseen in the agreement, could spur further cooperation on climate-policy instruments, with emission trading as an attractive option.

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32 Ecosystem Marketplace, 'Building On Paris, Countries Assemble The Carbon Markets of Tomorrow' (29 January 2016), <[www.ecosystemmarketplace.com/articles/building-on-paris-countries-assemble-the-carbon-markets-of-tomorrow](http://www.ecosystemmarketplace.com/articles/building-on-paris-countries-assemble-the-carbon-markets-of-tomorrow)>.

Although the new agreement could increase the attractiveness of linking carbon markets, this in itself is probably not enough to bring about a globally interlinked market. The history of linking has shown that successful linking efforts tend to be characterized by similarity in design and by prior economic and political ties. The EU-EEA link was achieved in a context of generally close economic and political integration, and the design of the different systems had been very similar prior to linking. With the California-Quebec link, the level of economic and political integration is lower compared with the EU/EEA case, but both parties have committed to coordinating climate policy within the WCI. In other words, there were significant pre-existing contacts between the two systems.

As for linking efforts that have not (yet) succeeded, the EU-Australian process offers a glimpse into the political-feasibility challenges involved, with sceptical interest groups on both sides, before politics in Australia brought the process to a complete halt. Nevertheless, until that point, the parties had agreed on making adjustments to the Australian system. This indicates the importance of design compatibility for linkage efforts, but also that political will to make design changes is essential. The willingness of the Swiss to adjust their system to increase its compatibility with that of the EU further supports this observation.

We must conclude that a linked regime of carbon-markets is still very much a castle in the air. The Paris summit did not provide a silver bullet for the short term. Nevertheless, Paris confirmed an increasing support for carbon markets: the periodic NDC reviews, access to shared fulfilment, and establishment of common guidance for accounting together provide a new momentum to the development of carbon markets and the process of linking them. What this boost means for the prospects of a globally interlinked carbon market remains to be seen.