

What is the Future of Emissions Trading?

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The impact of increasing greenhouse gas (“GHG”) emissions resulting from human activities has driven innovation in market-based solutions, technology development and international law. Approaching the twentieth anniversary of the signing of the Kyoto Protocol to the United Nations Framework Convention on Climate Change (“UNFCCC”), there is no doubt that the economics of GHG emissions are facing a paradigm shift.

Despite its own growing pains, the Kyoto Protocol set the stage for the growth of emissions trading schemes around the world. There are now 17 emissions trading systems operating globally, covering 35 countries, 13 states and seven cities.¹ This article will examine the state of emissions trading today, its future in the context of the EU and international emissions trading schemes and the Paris Agreement, which came into effect on 4 November 2016, and has now been ratified by 110 Parties, representing more than 69 percent of global emissions.²

Emissions Trading under the Kyoto Protocol

The Kyoto Protocol is an international climate change agreement that was adopted at the third session of the Conference of the Parties (“COP 3”) on 11 December 1997, came into force on 16 February 2005 and has been signed by 192 Parties.³ Amongst the most ambitious aspects of the Kyoto Protocol was the introduction of three market-based mechanisms developed to facilitate participating country commitments made for GHG emissions reductions:⁴ (1) the Clean Development Mechanism (“CDM”) for Annex I countries,⁵ consisting of more economically developed countries, to finance projects for GHG emissions reductions in less developed countries; (2) Joint Implementation (“JI”) for implementing projects within Annex I countries, mostly for carbon sinks;⁶ and (3) emissions trading (“ET”). Under Article 17 of the Kyoto Protocol, the signatory countries were permitted to ‘participate in emissions trading for the purposes of fulfilling their commitments’.⁷ This created a new commodity of CO2 equivalent emission reductions, collectively, referred to as ‘carbon’.⁸ As a result, a

¹ International Carbon Action Partnership Status Report 2016, *Emissions Trading Worldwide*, pg. 27. China, for example, has made significant commitments to reduction of carbon intensity and its national cap-and-trade scheme is due to be operational in 2017, covering six of its largest carbon-emitting industrial sectors, starting with coal-fired power generation. <http://ets-china.org>

² http://unfccc.int/paris_agreement/items/9444.php

³ The 192 Parties consist of 191 States and the European Union. http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php

⁴ The Kyoto Protocol was initially designed to address six greenhouse gases: carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulphur hexafluoride (SF₆). Following adoption of the Doha Amendment in 2012, nitrogen trifluoride (NF₃) was added. Volumes of the covered GHGs are converted to tonnes of CO₂ equivalent amounts or ‘CO₂e.’

⁵ United Nations, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Article 12. For further information, see: <http://cdm.unfccc.int/Projects/projsearch.html>.

⁶ United Nations, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Article 6. For further information, see: http://ji.unfccc.int/JI_Projects/ProjectInfo.html.

⁷ United Nations, *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, Article 17. For further information, see: http://unfccc.int/kyoto_protocol/mechanisms/emissions_trading/items/2731.php.

novel global 'carbon market' was created for offset, trading and banking GHG emissions reduction credits in order for participating countries to meet their mandatory assigned amounts from the first commitment period (2008-2012).⁹

The Kyoto Protocol is now in its second and final period, which is scheduled to end in December 2020. Since its entry into force, approximately 8,000 projects and almost 300 large-scale programs of activities have been established in 125 countries.¹⁰ As a result of the Kyoto Protocol, momentum is increasing for refining existing climate change-related agreements and developing future ones. The potential implication of this for the global carbon market cannot be overstated.

Overview of the EU ETS

One of the most successful examples of the Kyoto Protocol's reach is the European Emissions Trading Scheme ("EU ETS"). It is the keystone of the EU decarbonisation strategy and remains the largest emissions trading scheme in the world. It became operational in 2005 in response to the developing principles of an international emissions reduction program for the Kyoto Protocol to which the EU and its Member States individually had made commitments.¹¹ Phase I (2005-2007) served as a pilot scheme, covering only CO₂ emissions from power generators and energy intensive industries.¹² During Phase II (2008-2012) the scope of the EU ETS expanded due to the inclusion of the aviation sector and the admission of three new countries (Norway, Liechtenstein and Iceland). The EU ETS is currently in Phase III (2013-2020). Phase IV, which is the final phase, will extend from 2021-2030.

The 'cap and trade' principle of the EU ETS designates a maximum allowance (cap) of aggregate GHG emissions allocated to each subject 'installation' in Member States. It currently covers more than 11,000 large installations in the energy, manufacturing and aviation sectors. Emission allowances ("EUAs") can be auctioned, or allocated for free, and subsequently traded. If an installation exceeds its maximum GHG allowance, it must purchase EUAs from other installations. Each installation must report its emissions annually and surrender the corresponding number of EUAs or equivalent international emissions credits. The allocation and price of EUAs is sector dependent.¹³

Auctioning was introduced during Phase III and is now the default method of allocating EUAs.¹⁴ The European Energy Exchange ("EEX") in Leipzig provides an auction platform for the majority of the countries participating in the EU ETS, whilst the ICE Futures Europe ("ICE") in London acts as the United Kingdom's platform.

In October 2004, the EU 'Linking Directive' was adopted to allow operators in Phase II to use Kyoto Protocol credits from the JI and CDM in order to meet their regulatory commitments.¹⁵ Compatibility between certain

⁸ Countries with emission reduction commitments (being the more developed Annex 1 countries) receive Assigned Amount Units ("AAU") representing their 'national cap', and may acquire emission units from other member countries through carbon reductions, CDM projects, JI or ET to meet these mandatory assigned amounts. Certified Emission Reductions ("CER") are generated from CDM project activities by Annex 1 countries in developing countries. Emission Reduction Units ("ERU") are awarded to countries that invest in JI projects. Removal Units ("RMU") are the carbon currency from certain land use, land change and forestry activities, including reforestation.

⁹ The Kyoto Protocol was amended by the Doha Agreement, adopted on 8 December 2012. The amendments included, amongst other things, the establishment of a second commitment period for the Kyoto Protocol (2013-2020), new commitments for the Annex I countries and an expanded list of GHGs. The Doha Amendment will enter into force on the ninetieth day after three-fourths of the Parties to the Kyoto Protocol accepted it (see Article 20, paragraph 4 and Article 21, paragraph 7, of the Kyoto Protocol). In order for this to occur, the Depositary must receive 144 instruments of acceptance. As of 9 November 2016, 73 countries have ratified the Doha Amendment. United Nations, Doha Amendment to the Kyoto Protocol.

http://unfccc.int/files/kyoto_protocol/application/pdf/kp_doha_amendment_english.pdf

¹⁰ <http://newsroom.unfccc.int/paris-agreement/governments-see-cdm-as-crucial-for-paris-goals/>

¹¹ 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, as amended.*

¹² https://ec.europa.eu/clima/policies/ets/pre2013/index_en.htm

¹³ The manufacturing sector, for example, receives free EUAs dependent upon benchmarks as set out in Commission Decision 2011/278/EU of 27 April 2011, *determining transitional Union-wide rules for harmonised free allocation of emission allowances pursuant to Article 10a of Directive 2003/87/EC of the European Parliament and of the Council.*

¹⁴ <https://www.gov.uk/guidance/eu-ets-carbon-markets>

Kyoto Protocol emissions reduction units and the EUAs remains. In particular, certain CERs and ERUs are exchangeable with EUAs, subject to limits imposed under the ETS Directive and Registry Regulation.¹⁶

Reform of the EU ETS

In recent years, the EU ETS has suffered from a surplus of EUAs.¹⁷ The main reasons for this structural imbalance were a reduction in industrial output and emissions due to the economic crisis and an inflexible supply of EUAs. The surplus led to a drop in the traded price of EUAs, which in turn discouraged installations from reducing GHG emissions through low-carbon investments or switching from coal to gas for electricity generation.¹⁸

In response to significant demand fluctuations and the resulting excess supply of EUAs, the Market Stability Reserve (“MSR”) was adopted by the European Council on 18 September 2016. The MSR will be operational from 2019 and will place ‘back-loaded’ market allowances into a reserve.¹⁹ If the total number of EUAs exceeds a certain threshold, the MSR will automatically withdraw from the EU ETS a percentage of the EUAs in order to achieve price stabilisation by reducing supply.²⁰ Despite concerted efforts to remedy the situation, a recent EEA report notes that a large surplus of EUAs remains.²¹

Certain Member States have adopted additional measures to encourage GHG emissions reductions. The United Kingdom, for example, has established a ‘Carbon Price Floor’. The Carbon Price Floor requires businesses using fossil fuels to generate electricity to pay additional rates on those fuels, effectively functioning as additional top-up taxation on the price of EUAs. Similar unilateral measures have not been applied uniformly across Member States, and, as such, the levy is unpopular amongst certain domestic industry participants as it is believed to create a competitive disadvantage within the single market.

In 2015, the European Commission proposed wider structural reforms to the EU ETS.²² These reforms were, in part, necessary to ensure that the overall ‘cap’ under the EU ETS decreases at a faster rate than had previously been envisaged in order to achieve a 43 percent reduction in GHG emissions in the ETS sector by 2030 and to address the structural imbalances in EUA supply and demand mentioned previously. The proposed reforms fall into four main categories: (i) an increase in the linear reduction factor of the EU ETS cap from 1.74% per year to 2.2% per year from 2021, (ii) new rules and benchmarks for free allocation of EUAs as well as the transferral of 250 million unallocated EUAs from the MSR and closed installations to a ‘new entrants’ reserve’ aimed at providing free allocation for new market entrants and growing companies, (iii) new rules to protect against the risk of carbon leakage and (iv) the creation of an Innovation Fund to finance renewable energy sources and a Modernisation Fund to support investments, including small-scale investment projects, that modernise energy systems and improve energy efficiency so as to contribute to emissions reductions in lower-income Member States such as Poland, Czech Republic, Romania, Hungary, Slovakia, Bulgaria, Croatia, Estonia, Lithuania and Latvia.²³

¹⁵ Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 amending Directive 2003/87/EC establishing a scheme for greenhouse gas emission allowance trading within the Community, in respect of the Kyoto Protocol's project mechanisms.

¹⁶ Commission Regulation (EU) No 389/2013 of 2 May 2013, establishing a Union Registry pursuant to Directive 2003/87/EC of the European Parliament and of the Council, Decisions No 280/2004/EC and No 406/2009/EC of the European Parliament and of the Council and repealing Commission Regulations (EU) No 920/2010 and No 1193/2011.

¹⁷ By the end of Phase II, a surplus of more than 2 billion EUAs had accumulated.

¹⁸ Policy makers initially expected price per EUA to be approximately €25-€30 and in 2012 the EUA price was as low as €3. As at 17:42 p.m. on 14 November 2016, the EUA secondary market price listed on EEX was €5.39. <https://www.eex.com/en/market-data/environmental-markets/spot-market/european-emission-allowances#!/2016/11/14>

¹⁹ The ‘back-loaded’ allowances consist of 900 million EUAs whose auctioning was postponed from the years 2014-2016 until 2019-2020.

²⁰ <http://www.consilium.europa.eu/en/press/press-releases/2015/05/13-market-stability-reserve/>

²¹ European Environment Agency, *Trends and projections in the EU ETS in 2016, The EU Emissions Trading System in numbers*, pg. 12.

²² European Commission, *Proposal for a Directive of the European Parliament and of the Council, amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments*, 15 July 2015.

²³ The investment board of the Modernisation Fund will develop guidelines and investment selection criteria specific to such projects (see European Commission, *Proposal for a Directive of the European Parliament and of the Council*

Emissions Trading under the Paris Agreement

As emissions reduction is accepted as a mechanism for abating global warming to internationally accepted levels, the UNFCCC Conference of the Parties held in December 2015 (“**COP 21**”) heralded the shift in focus, scope and solutions to address the ultimate impact of increasing GHG emissions to respond to the potentially physically, economically and socially catastrophic consequences of climate change. What started out as an intention to find a global force for reducing GHG emissions from developed countries has morphed into a mechanism for impact mitigation and adaptation globally. The framework for the world’s ‘new plan’ for climate change was agreed to commence from 2020, with an amended target of limiting global warming to 2°C and pursuing efforts to limit the temperature increase to 1.5°C (“**Paris Agreement**”). Significantly, the Paris Agreement is further reaching than the Kyoto Protocol, aiming to strengthen the ability of countries to deal with the impacts of climate change through ‘appropriate financial flows, a new technology framework and an enhanced capacity building framework’ to support action by developing countries and the most vulnerable countries ‘in line with their own national objectives’.²⁴ Under the Paris Agreement, each participating country is required to establish a nationally determined contribution (“**NDCs**”), which outlines its objectives to combat climate change.²⁵ Importantly, and in contrast to the Kyoto Protocol, NDCs are a ‘best efforts’ commitment and not legally-binding.²⁶

The Paris Agreement outlines the parameters for international market mechanisms to be used by the Parties in order to help meet their NDCs, including emissions trading.²⁷ Article 6 of the Paris Agreement recognises that Parties can choose to pursue ‘voluntary cooperation in the implementation of their nationally determined contributions’, which may include ‘internationally transferred mitigation outcomes’, through emissions trading. Such an emissions trading mechanism should aim to: (i) promote the mitigation of GHG emissions, (ii) incentivise and facilitate participation in the mitigation of GHG emissions by public and private entities authorised by a Party, (iii) contribute to the reduction of emissions levels in host countries for the purpose of emissions mitigation by another Party and (iv) deliver an overall mitigation in global emissions.²⁸ In essence, this opens up emissions trading for developed and developing countries using a mechanism that incorporates elements of the Kyoto Protocol mechanism to ‘deliver an overall mitigation in global emissions’, using ‘policies and measures’ and going beyond CDM projects for offsetting. Post-2020, it is expected to replace both CDM and JI.

The emissions units under the Paris Agreement, labelled as ‘internationally transferred mitigation outcomes’ (“**ITMOs**”), do not as yet have a defined metric. As well as meeting NDC targets, the use of ITMOs are also expected to promote sustainable development; however, the Paris Agreement does not provide detail on how sustainability assessments and monitoring should be conducted and many countries have argued that these should be the prerogative of participant countries.²⁹ The question also remains as to how ITMOs will be reconcilable with other metrics if they are not expressed in tonnes of CO₂e.³⁰

The Paris Agreement falls short of regulating the precise nature of the ‘new carbon market’. It opens the door to markets developing on a bilateral basis, through linked clusters of carbon market ‘clubs’ or potentially via a centralised UNFCCC-governed approach. The Subsidiary Body for Scientific and Technological Advice is negotiating and preparing international guidance for implementation of the co-operative approaches

amending Directive 2003/87/EC to enhance cost-effective emission reductions and low-carbon investments, 15 July 2015, pg. 22).

²⁴ <http://bigpicture.unfccc.int/#content-the-paris-agreement>

²⁵ UNFCCC, Conference of the Parties, *Adoption of the Paris Agreement*, Articles 3 and 4.

²⁶ NDCs must be transparent and each successive NDC must build on the ambitions of the previous one in order to ensure a progressive response. Developed countries are expected to take the lead through economy-wide reduction targets, and developing countries must enhance their mitigation efforts in order to move toward economy-wide targets (in accordance with their national circumstances).

²⁷ UNFCCC, Conference of the Parties, *Adoption of the Paris Agreement*, Article 6(1) and (2).

²⁸ UNFCCC, Conference of the Parties, *Adoption of the Paris Agreement*, Article 6(4).

²⁹ UNFCCC, Conference of the Parties, *Adoption of the Paris Agreement*, Article 6(2) and the German Emissions Trading Authority (DEHSt) *Market Mechanisms in the Paris Agreement- Differences and Commonalities with Kyoto Mechanisms*, Discussion Paper, October 2016, pg. 12.

³⁰ German Emissions Trading Authority (DEHSt) *Market Mechanisms in the Paris Agreement- Differences and Commonalities with Kyoto Mechanisms*, Discussion Paper, October 2016, pg. 24.

mentioned in the Paris Agreement. Discussions have started this month at the Conference of the Parties in Marrakesh (“COP 22”).³¹

Conclusion

The concept of ‘international emissions trading’ is slowly taking root. Emissions trading schemes are growing both geographically and in terms of the scope of their sectoral coverage, although at present, there is a collection of disparate programs that do not have the critical mass (or uniformity) to easily transport into an international regime. The history of the Kyoto Protocol has shown that in order for an international emissions trading regime to be successful, it would need to be based firmly in UN goals, applying principles such as ‘common but differentiated responsibility’ but also reflecting the realities of globalisation and the need for stable carbon markets. The challenges facing the EU ETS demonstrate that emissions trading schemes need to be adaptive to shifting decarbonisation goals, reform to demand-side market fluctuations and be responsive to changing patterns of energy consumption. The Paris Agreement has reconfirmed the role of emissions trading schemes as an instrument for meeting global climate change goals; although it has not developed the architecture for a new system of international emissions trading—this remains to be deliberated and negotiated.³² The track for those charged with developing an inclusive international emissions trading program faces numerous hurdles from years of lessons learned under the Kyoto Protocol. This includes the negative realities of carbon pricing, decreased demand for carbon credits, controversies surrounding the integrity of credits generated under the Kyoto Protocol mechanisms and criticism of the program infrastructure. Arguably, whilst there have been many growing pains for market-based mechanisms, there remains a confidence in the ability of emissions trading programs to be an indispensable instrument by which governments can achieve their contribution to climate change targets and adaptation to its consequences.

Ultimately, creating a truly international emissions trading scheme may be part of the basket of innovative solutions for reaching the agreed climate change targets, but with no unified structure, a comparison of emissions trading versus other mechanisms being considered for climate finance may mean that an even more concerted effort and commitment by the UNFCCC parties is essential.³³

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³¹ https://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/agenda_sbsta45.pdf

³² The adopted agenda for COP 22 recognises and designates time for discussions on long-term climate finance priorities (http://unfccc.int/files/meetings/marrakech_nov_2016/application/pdf/cop22_20160711.pdf). This could be the impetus for negotiating the policies and procedures for a future market-based mechanism such as emissions trading.

³³ Future COPs will need to determine how a potential transfer from the Kyoto Protocol market mechanisms will occur.