

# 7. Political Economy of Carbon Market Cooperation in Northeast Asia

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## INTRODUCTION

**SINCE THE PARIS AGREEMENT ENTERED INTO FORCE IN 2016**, expectations have been growing regarding new cooperation methods in the field of climate change, including the establishment of a regional carbon market in Northeast Asia.<sup>1</sup> Unlike the Kyoto Protocol, which assumes regional cooperation mainly in the context of implementing legally binding obligations to jointly reduce greenhouse gas (GHG) emissions, the Paris Agreement opens up new opportunities for countries to cooperate on the development and implementation of low carbon development action plans in the region. In this context, the establishment of a regional carbon market in Northeast Asia should also be actively pursued.

This chapter first seeks to analyze the conditions for establishing a carbon market in Northeast Asia by focusing on the implications of Article 6 of the Paris Agreement (which itself is described in greater detail in chapter four of this volume)<sup>2</sup> and the growing possibility of cooperation on climate change at the regional level. Second, this paper argues that it is important to develop political readiness for any Northeast Asian carbon market by demonstrating the importance of developing common interests in the renewable energy and forest sectors, and it theorizes that a carbon market could be a method of realizing such common interests. Finally, this chapter examines technical readiness for a Northeast Asian carbon market, focusing on the possibility of creating one or more Article 6.2 mechanisms at the regional level and the potential linkage of domestic emissions trading systems (ETSs) into a combined regional one.

For the purposes of this chapter, the term “carbon market” refers to various types of market mechanisms that seek to facilitate the implementation of climate change policies and achieve the objectives of the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement. It may include ETSs and other forms of market mechanisms relying on market principles. While it would be ideal for any proposed carbon market to be consistent with the scope and aim of the Paris Agreement, specifically the rules laid out in Article 6, it may be possible for a carbon market to be used for purposes other than the implementation of climate change action plans under the Paris Agreement. Theoretical linked ETSs, which serve only to facilitate the trading of credits and not to implement nationally determined contributions (NDCs), are not within the scope of this chapter.

Rather, this chapter looks for cooperative market-based approaches for Northeast Asia by considering broader political and technical contexts. Rather than becoming mired in short-term debates and policy negotiations on linking domestic cap-and-trade systems, Northeast Asian countries can collaborate on clean energy and land-based climate mitigation projects and share emissions reduction values for these efforts through Paris Agreement mechanisms. These approaches are more likely to be politically palatable in Northeast Asia in the near term and can set the foundation for further cooperation such as linking ETSs in the future.

## CONTEXT

### Article 6 of the Paris Agreement as the Guideline for a Regional Carbon Market

The regime of Article 6 of the Paris Agreement has become an important element to consider regarding carbon markets.<sup>3</sup> Under the Kyoto Protocol, the market mechanism has been used as a complementary tool to facilitate the implementation of Annex I countries' obligations to reduce GHGs while ensuring the sustainable development of non-Annex I countries. As developing countries are not under any legally binding obligation to reduce GHGs under the Kyoto Protocol, offset mechanisms that do not necessitate direct action by developing countries to reduce GHGs emissions have been a popular option between the two country groups.<sup>4</sup> ETSs, in contrast, have been used by some of the Annex I countries, mainly at the regional and domestic levels. Among the Annex I countries, ETS linkages between different jurisdictions were made on an exceptional basis, such as in the case of the EU-Norway linkage.

Under the Paris Agreement, market mechanisms are expected to be used significantly more often, as can be seen by the national plans on addressing climate change put forward by member countries of the UNFCCC. Developed and developing countries alike must now reduce GHG emissions by developing and implementing NDCs. To achieve these targets, roughly half of these countries have expressed a desire or intention to utilize international market mechanisms to assist in the implementation of their NDCs. In particular, developing countries can be expected to more actively take advantage of the international market mechanisms available to them when trying to reach voluntary emissions reduction targets relative to developed nations.

Indeed, the Paris Agreement introduces an innovative mechanism to promote the effective implementation of NDCs through its Article 6. Article 6 will play the role of an incentive mechanism for countries to effectively implement their NDCs by sharing the outcomes of GHG reduction projects among cooperating states. The Article 6 mechanisms may share some similarities to previous variants of market mechanisms under the Kyoto Protocol, but we should also expect some substantial differences. Existing market mechanisms such as the ETS and the Clean Development Mechanism (CDM) will undergo some change in terms of their functions and running modalities to best align with new rules under the Paris Agreement.

Article 6.1 stipulates general issues such as the importance of voluntary cooperation on implementation of NDCs, environmental integrity, and sustainable development. Article 6.1 emphasizes these as follows:

Parties recognize that some Parties choose to pursue voluntary cooperation in the implementation of their nationally determined contributions to allow for higher ambition in their mitigation and adaptation actions and to promote sustainable development and environmental integrity.<sup>5</sup>

Article 6.2 assumes voluntary cooperation between and among parties to share emissions reduction outcomes, that is, international transferred mitigation outcomes (ITMOs) to implement their nationally determined contributions. Article 6.2 does not, however, go into detail about how to transfer ITMOs from the host country to another country. Therefore, several possibilities may exist such as linkage between and among existing ETSs; bilateral or multilateral cooperation initiated and executed through bottom-up mechanisms such as Joint Crediting Mechanisms (JCMs), or similar mechanisms to be created under

Article 6.2; and multilateral mechanisms to be created and managed by international organizations such as the Carbon and Financing Club of the Global Green Growth Institute (GGGI), other similar mechanisms maintained by multilateral development banks, and/or heterogeneous linkages between disparate market mechanisms housed in different jurisdictions. Considering that member countries of the UNFCCC are still negotiating on detailed rules for Article 6 at the time of this writing, it is still not clear whether any dominant mechanism(s) will appear.<sup>6</sup> In any case, the focus of the mechanism laid out in Article 6.2 should not be about trading units but about sharing the outcomes of mitigation efforts.

Article 6.4 deals with the centralized mechanism utilized to generate credits/units. The market mechanisms that had been conceived under the Kyoto Protocol such as CDM and Joint Implementation (JI) may be considered model(s) for the Article 6.4 mechanism.<sup>7</sup> Similar to current mechanisms under the Kyoto Protocol, the Article 6.4 mechanism will be operated directly by the UNFCCC. Detailed rules on governance and elements of the mechanism need to be agreed to by countries while considering the lessons learned from the Kyoto mechanisms. Ultimately, the outcome of efforts to reduce GHGs by participating countries can also be shared between and among countries. In such cases, Article 6.2 will govern transferred outcomes as ITMOs.

### Climate Change Cooperation in Northeast Asia

Northeast Asia consists of relatively few countries, yet the total volume of GHG emissions from the region accounts for more than 30 percent of the global total.<sup>8</sup> Naturally, region-wide cooperation on climate change may be counted as a viable option toward the implementation of the UN climate change regime.

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Unfortunately, under the Kyoto Protocol, it was seen as almost impossible for Northeast Asian countries to consider cooperation with the goal of reducing GHG emissions at the regional level. Under the Kyoto Protocol, Japan is the only country in the region that belongs to the Annex I group. China and the Republic of Korea (South Korea) along with Mongolia and the Democratic People's Republic of Korea (North Korea) as non-Annex I countries used to remain relatively free from taking on substantial GHG emissions reduction actions. In addition, the fact that China, Japan, and

South Korea belong to different negotiation groups in G77 and China, the Umbrella Group, and the Environmental Integrity Group respectively, has posed further difficulties in achieving mutual ground for regional countries to cooperate in terms of reducing GHG emissions.

The unique geopolitical features of Northeast Asia are also a contributing factor to difficulties in working together on climate change. China's reluctance to bind itself to multilateralism, historical issues between/among the countries, and the impact of traditional security challenges such as the North Korean nuclear issue are just some of the reasons.

However, the Paris Agreement opened a new opportunity for Northeast Asia to cooperate on climate change. It encourages both developed and developing countries to create their own NDCs that prioritize the planning and implementation of a low carbon economy. Cooperation among the countries will

provide more opportunities to realize low carbon growth among them. For example, there have already been positive signs of countries actively seeking to implement low carbon economic policies at the national level. In the case of China, for example, emphasis has been placed on development utilizing low carbon technology such as renewable energy, electric-powered vehicles, and fast train networks, which should help China reduce its GHG emissions, demonstrating the nation's active role in implementing the Paris Agreement. In this changing landscape, there is more room for the carbon market to play an increasingly important role in the region if it could provide incentives for the actors to engage in region-wide climate change cooperation.<sup>9</sup>

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### Implications for a Carbon Market in Northeast Asia

A Northeast Asian carbon market has the potential to be an important policy tool not only to facilitate the implementation of domestic climate change policies but also to encourage cooperation among the regional states and other stakeholders on regional efforts to realize low carbon development and, as a result, realize their NDC commitments to reduce GHG emissions. For the role of a carbon market to be fulfilled at the regional level, existing efforts at the national and subnational levels need to be supplemented by efforts at the regional level, for example, the linkage of already existing ETS systems and/or the creation of a regional market mechanism. In any case, the rules of Article 6 will play a guiding role in developing and implementing the market mechanism(s) in the region by providing opportunities to share the outcomes of GHG emissions reductions.

## POLITICAL READINESS FOR A CARBON MARKET IN NORTHEAST ASIA

In the context of the importance of article 6 of the Paris Agreement and the ever increasing possibility of regional cooperation on climate change, efforts to establish a Northeast Asian carbon market should be aligned with building political momentum to achieve regional low carbon development, as can be seen in the cooperation on renewable energy and forestry areas. In other words, a regional carbon market should be considered not only as the final objective to be achieved but also as a means of realizing the regional common interests of all countries involved.

### The Regional Carbon Market as a Means of Promoting Shared Interests

Considerations of a regional carbon market can be politically sensitive.<sup>10</sup> In the case of linking ETSs, for example, it can raise some concerns such as setting supranational mandatory emissions caps and disclosing national information of a sensitive nature. To create a carbon market in Northeast Asia, emphasis should be given to designing it as a means of promoting common interests among the countries. As mentioned earlier, a regional carbon market under the Paris Agreement can be a tool for facilitating cooperation on a regional low carbon economy. Such a planned carbon market can facilitate the transition to large-scale, low carbon development projects, such as the mega scale of investments in renewable facilities, the building of regional infrastructure such as the proposed integrated electricity “super grid” regional transportation networks, and region-wide forest management. The carbon market functionally achieves these goals by allowing countries to share the mitigation outcomes of low carbon development projects thanks to the use

of ITMOs. This will, in turn, also help regional countries meet their national targets regarding the reduction of GHG emissions. In the case of South Korea, the nation may participate in building mega renewable facilities in the desert areas of Mongolia, taking advantage of the use of ITMOs for implementing its NDC targets. Here, cooperation on renewable energy and forestry is essential.

### The Carbon Market as a Means of Promoting Renewable Energy Cooperation

Massive energy consumption, especially of coal and oil, in the region has led to the situation where emissions of CO<sub>2</sub> and other GHGs in the region may not be able to be reduced in time to achieve the two-degree target under the Paris Agreement.<sup>11</sup> According to the NDCs put forward by China, Japan, and South Korea, they need to make further efforts through increasing cooperation with other countries. In this context, renewable energy cooperation through the construction of wind and solar power plants and the sharing of generated electricity through the regional super grid are solutions that must be actively pursued.

In fact, renewable energy cooperation in the region has often been considered in the recent context of the necessity of securing a sustainable energy supply. In 2017, President Moon Jae-in of South Korea agreed with President Vladimir Putin of Russia that the two countries would cooperate to build the Northeast Asian super grid. In addition, the leaders of China and South Korea discussed possible cooperation on connecting electricity grids in Northeast Asia during the occasion of President Moon's visit to Beijing. In Japan, SoftBank, which first proposed this regional idea in 2011 after the Fukushima accident, has played a leading role in these regional efforts by launching its new 50-megawatt wind farm in Mongolia's Gobi Desert. Considering that the potential electricity generation capacity in the desert area in Mongolia is more than the combined electricity generation capacity of China, Japan, and South Korea,<sup>12</sup> renewable energy cooperation seemingly becomes critical for securing sustainable energy.

Renewable energy cooperation through the construction of a super grid has been promoted not only in terms of sustainable energy but also in terms of overall reduction in GHG emissions.<sup>13</sup> In the case of South Korea, renewable cooperation in Northeast Asia can be better understood in the context of the energy transition 2030 policy, a policy that aims to increase domestic renewable energy usage to 20 percent of the national energy mix by 2030. This can also be understood as South Korea's effort to actively implement its national target to reduce GHG emissions. In other words, in a situation where it would conceivably be very difficult for Korea to achieve its goal of reducing GHG emissions by up to 37 percent relative to business-as-usual (BAU) levels by 2030 only through domestic implementation policies, securing a high-level renewable energy source from outside the peninsula will drastically increase the possibility of Korea meeting its emissions reduction goals.

If the Northeast Asian carbon market can provide additional opportunities for regional countries by allowing them to share mitigation outcomes through ITMOs, countries will surely support the development and implementation of a regional carbon market. Put simply, a regional carbon market based on Article 6 of the Paris Agreement could play a critical role in boosting region-wide low carbon projects, such as Northeast Asian renewable energy projects, as it will allow regional countries not only to realize low carbon development but also help them meet their targets of reducing GHG emissions according to their proposed NDCs.

## Carbon Market and Forest Cooperation

Cooperation on forestry and land use is also extremely important in Northeast Asia. Until recently, “yellow dust” has been one of the most significant regional environmental problems.<sup>14</sup> Strong west winds in Northeast Asia carry yellow micro dust particles from the desert areas of northern China to other countries in the region.<sup>15</sup> Desertification as well as unsustainable agricultural policies have been identified as the main reasons for such Yellow Dust problems. To address this issue, active cooperation on planting vegetation in the desert areas, along with providing sustainable agriculture policies, has been practiced. Second, in North Korea, the forest sector was identified as a primary area for the country to address its own climate change problems. In its NDC proposal, North Korea assumes a combination of sustainable agriculture and low carbon energy policies to address problems stemming from the forestry sector. Third, the Siberian region has been recently suffering from region-wide forest fires. These fires have been attributed to increased temperatures resulting from climate change, and they release a massive amount of CO<sub>2</sub>, which destroys local industry. Unless the issue of forest fires in Siberia is addressed, we should expect this issue to become a significant contributor to global warming as well as regional air pollution.

All three forestry and land-use cases in Northeast Asia demonstrate a strong need for effective cooperation in the context of addressing climate change in the region. As cooperation on these issues also requires a level of cooperation at the national level to achieve any tangible outcomes, there is a rapidly increasing need for efficient resource mobilization, including huge investments and the development of common climate change policies. As in the case of renewable energy cooperation, a regional carbon market could surely play an important role in ensuring the region has the necessary resources demanded for cooperation on climate change mitigation by being developed according to rules of the Paris Agreement.

In other words, further considerations on how to integrate relevant issues on reducing emissions from deforestation and forest degradation (as part of the UN REDD+ programme) under Article 5 of the Paris Agreement into discussions on Article 6 must be made quickly. In fact, the UNFCCC negotiations have been considering several options on how to link these two relevant and important issues in the context of Article 6. Furthermore, reforestation and other land-use issues also must be addressed in the UNFCCC regime.

## TECHNICAL READINESS FOR A CARBON MARKET IN NORTHEAST ASIA

Once political readiness for the creation of a carbon market at the regional level is addressed, the establishment of a carbon market in the region can ultimately be achieved by meeting technical readiness requirements. Technical readiness should also be dealt with in accordance to the rules of the Paris Agreement.

### Status of Carbon Markets in Northeast Asian Countries

Among the countries in Northeast Asia, China, Japan, and South Korea have introduced their own domestic carbon markets. While South Korea has developed a nationwide ETS covering most emission sectors, China introduced its nationwide ETS in 2017 based on its experiences in implementation of seven pilot programs as well as active participation in international offset markets through participating in CDM projects. Japan has not, as of yet, implemented its own nationwide ETS but rather two municipal-level ETSs. It does have extensive experience in developing international and domestic offset rules, however.<sup>16</sup> Other countries in the region including North Korea, Mongolia, and Russia have not shown any significant sign of interest in a regional carbon market to date.

## China

In 2017, China introduced its nationwide ETS by focusing on the power sector after implementing pilot programs in five cities and two provinces based on its rich experiences in implementation of CDM projects. These seven pilot ETSs have made progress in the measurement, reporting, and verification (MRV) process largely due to the influence of National Development and Reform Commission (NDRC) and external organizations such as the World Bank's Partnership for Market Readiness (PMR). As China introduces its nationwide ETS, its carbon market has become the largest in the world. China will work on operationalizing the new national market until 2020 to ensure compliance, advancing its domestic MRV policies, ensuring appropriate ETS coverage, and aligning with other national climate policies.

## Japan

Japan has developed various market-based mechanisms including its own Voluntary Emission Trading Scheme (JVETS), Advanced technologies promotion Subsidy Scheme with Emission Reduction Targets (ASSET), and the J-Credit System. In the case of ETSs, the Tokyo Metropolitan Government (TMG) launched its own ETS by covering 1,400 large-scale facilities and factories in the industrial and commercial sectors. By implementing various domestic market mechanisms, Japan has developed a strong domestic capacity in MRV and registry for trading. At the international level, Japan introduced the JCM with its partner countries. Through the JCM, not only the programs of Japanese and foreign firms but also government programs have been implemented through the JCM. Outcomes of JCM implementation projects will be shared by both relevant countries through the development of registries and may be used for the implementation of NDCs of each country. Once detailed rules for Article 6 of the Paris Agreement are finalized, the JCM may need to be revised according to the new global rules.<sup>17</sup>

## Korea

When looking at the Northeast Asian region, we can say that South Korea has developed the most complete form of carbon market at the national level by launching its national ETS program in 2015. During the first phase of its ETS implementation, the scheme covers 525 large emitters; 68 percent of total emissions; and 23 sectors including steel, cement, petrochemicals, refineries, power, buildings, waste, and aviation. Further improvements planned for in the second phase of implementation include active participation in global carbon markets. In addition, if we consider its plan to use international market mechanisms to assist in the implementation of its NDC, we can assume that South Korea would show strong interest in making use of the mechanism to be governed and developed by Article 6 of the Paris Agreement.

## Developing Regional Article 6 Mechanisms

One of the immediate options for Northeast Asia to consider is to create one or more viable mechanism(s) under Article 6.2 of the Paris Agreement, the text of the article assuming various types of voluntary mechanisms. The JCM is one such example, but as of yet there are no other mechanisms available under Article 6.2.

In Northeast Asia, countries may consider using JCM as a way of creating and sharing credits resulting from the implementation of low carbon projects in the region. If this is to be the case, countries must carefully consider how to participate in JCM projects. Countries can cooperate bilaterally or multilaterally depending on their own preferences, although a single multilateral JCM project may provide a more efficient means of cooperation. Regardless of structure, however, countries need to agree on how to share

mitigation outcomes for the purposes of the implementations of individual NDCs. There is also a pressing need to carefully monitor against the risks of double counting, an issue that reared its head under the Kyoto Protocol, so that cooperating states can comply with environmental integrity standards according to the detailed rules of Article 6.<sup>18</sup>

Another option is to create a completely new regional mechanism under Article 6.2. Such an approach would, of course, also need to comply with rules on environmental integrity and double counting, while having the capacity to be used for the implementation of NDCs according to the Paris Agreement.<sup>19</sup> The establishment of strong governance among participating countries, clear guidelines on sharing mitigation outcomes, elimination of double-counting practices, and standardization in reporting and verification rules are technical elements that must all be prioritized in the development and introduction of any new regional mechanism under Article 6.2 of the Paris Agreement.

### Linking ETSs

The regional linkage of domestic emissions trading schemes is a popular option in the context of creating a carbon market at the international level. The fact that China, Japan, and South Korea maintain their own schemes, albeit to different levels of completion, is an encouraging sign when considering ETS linkage as a possible option. On the other hand, considering the scale of the differences in the structure and scope of these systems, it could create complications regarding a regional ETS. Further potential linkages to the regional ETS, such as would be the case if Mongolia and North Korea were to link up as well, would further compound this issue. In any case, regional rules need to be agreed to by the countries involved on how to use linked ETSs for the purpose of implementing NDCs under Article 6 of the Paris Agreement. Otherwise, attempts to link ETSs will face serious challenges from those same countries. However, if ETS linkage is to be considered as a way of generating, sharing, and transferring mitigation units as ITMOs, then a range of technical elements on the type of linkage pursued, cap stringency, allocation rules, stability mechanisms, and monitoring and compliance approaches (among other issues) would need to be addressed.

## CONCLUDING THOUGHTS

Considering the different situations among the countries in Northeast Asia in terms of types, scope, and role of carbon markets at the domestic level, it may not be immediately possible to have directly linked ETSs at the regional level. It may also be true that the existing mechanism developed by Japan, that is, the JCM, may not be used among the regional countries to build a regional carbon market. Therefore, Northeast Asia's own mechanism under Article 6.2 is the more viable option to develop a regional carbon market that will include linked ETSs at the later stage.



## ENDNOTES

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<sup>19</sup> See Chung, “Status and Prospects for Article 6,” 69–70.