## 4. The Paris Agreement's Article 6 and Cooperation in Northeast Asia to Address Climate Change

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CHINA, JAPAN, AND KOREA TOGETHER ACCOUNTED FOR APPROXIMATELY 28 PERCENT of global greenhouse gas (GHG) in 2014.2 In addition, GHG emissions have been increasing significantly in the region, especially in China (which is the world's largest emitter). Therefore, in order to address global climate change effectively, it is essential that the countries of Northeast Asia implement effective climate change policies—and take full advantage of opportunities for international cooperation in reducing emissions.

National and subnational governments in Northeast Asia are indeed deploying a range of policies intended to address climate change. Policies that yield a price on carbon are important in this mix, to somewhat varying degrees across the region. China has undertaken a rolling launch of a nationwide pricing system—a set of sectoral (and perhaps sub-sectoral) tradable performance standards (Ewing 2016, 2017; Ewing and Shin 2017; Goulder 2017; Goulder and Morgenstern 2018; ICAP 2018; Karplus 2017). The Republic of Korea (hereafter Korea) launched a national emissions trading system (ETS) covering larger emitters in six sectors in January 2015. Japan has subnational ETSs in two neighboring districts, Tokyo and Saitama, and has been considering a national ETS since 2010. Japan is collaborating with countries across East Asia on its Joint Crediting Mechanism, which has the potential to support pricing systems in the region.

At the same time, negotiators representing Parties<sup>3</sup> to the Paris Agreement<sup>4</sup> are developing the modalities, procedures, and guidelines (MPGs)—or "rules and regulations"—needed to effectively implement the Paris Agreement's Article 6, which provides options for Parties to cooperate in addressing climate change (IETA 2017b, 4–6; SBSTA 2017a, 2017b). Article 6.2 is particularly important, because it provides opportunities for participating Parties to apply emissions reductions from other jurisdictions to the attainment of their nationally determined contribution (NDC).6 These extraterritorial emissions reductions may be less costly to achieve than domestic mitigation opportunities; therefore, Article 6.2 transfers have the potential to lower mitigation costs in participating countries and, in aggregate, the world. Lower costs may prompt governments to pursue more ambitious policies in subsequent rounds of NDCs, which all participants in and observers of the Paris process agree is essential, if the world is to adequately address climate change.

Cost effectiveness is also a principal benefit of well-designed pricing policies (ETSs or carbon-tax systems) at the regional, national, and subnational levels. Article 6.2 makes no reference to carbon pricing and Parties may utilize so-called internationally transferred mitigation outcomes (ITMOs) regardless of the type of domestic climate change policies they employ. However, Article 6.2 will provide an accounting framework for collaboration across multiple national systems—and will guide and encourage further development of these systems—including in Northeast Asia. This is true, in part, because of the example that Article 6.2 sets; "trading" mitigation outcomes internationally may encourage market mechanisms

domestically. It is also true because the accounting interface between domestic pricing systems (especially ETSs) and ITMOs is more transparent and user-friendly, as this paper will explain.

Article 6.2 requires that Parties transferring ITMOs carefully account for the transfer to avoid double counting of emissions reductions. This is essential if Article 6 and the Paris Agreement as a whole are to be effective in achieving their environmental goals. There are a number of challenges, however, to realizing an Article 6.2 accounting mechanism.<sup>7</sup> Perhaps the most important is the use of relative emissions reduction targets in many NDCs.

An *absolute* emissions reduction target is characterized as the number of tons of GHG emissions reduction—economy wide—compared to *measured* emissions in a reference year.<sup>8</sup> Mitigation outcomes for NDCs with absolute, economy-wide targets are already unitized—as mass-based quantities of emissions reduction. It is relatively easy, therefore, for an Article 6.2 accounting system to verify that transfers between Parties with absolute targets have avoided double counting, provided the measurement, reporting, and verification (MRV) processes for the respective Parties are sound.

Relative targets are of two major subtypes: intensity targets, denominated in tons of GHG emissions reduction per unit of GDP, and mass-based emissions reduction relative to a business-as-usual (BAU) emissions baseline. (See also Mehling et al. 2017, 20–21.) If the NDC quantitatively specifies the modeled BAU or GDP baseline—as some NDCs indeed do for BAU-type targets—along with the percentage reduction from the baseline in a target year, then the relative emissions reduction target is effectively equivalent to a quantitative (mass-based) target. (The Party must be committed to not changing this baseline over the period covered by the NDC, for this equivalency to hold.)

In practice, however, for NDCs with relative targets—including those BAU-based targets that can be quantified—economy-wide emissions actually increase for some time. Moreover, while the emissions target can be quantified in some cases, the emissions reduction is always relative to a modeled baseline, not compared to a measured amount of emissions in a previous year, as with NDCs having absolute targets.

In these respects, an emissions reduction in a BAU-based NDC that specifies the baseline is quite similar to an emissions reduction in an emissions reduction credit (ERC, or "offset") system. Historically, the largest such ERC system has been the Kyoto Protocol's Clean Development Mechanism. Existing ERC systems are all project based—or at most programmatic (including multiple projects of a similar type), though sectoral systems have been envisioned. In a clean development mechanism (CDM) project, for example, actual emissions are compared with a modeled, quantitative, BAU baseline with the difference being converted to offset credits denominated in tons of GHGs.

Negotiators working on Article 6.2 MPGs will need to decide whether such unitized emissions reductions can be transferrable, as CDM (and other offset) credits have been in the past. The outcome depends on whether such transfers can satisfy the conditions of Article 6.2, namely, that transfers "promote sustainable development and ensure environmental integrity and transparency, including in governance" and avoid double counting, under a "robust" accounting regime.

Other NDCs with relative targets do *not* provide the quantitative value of the modeled BAU or GDP. It is probably impossible then to define the emissions reduction unit in the country with the relative target—

or to demonstrate that double counting has been avoided. Parties with such NDCs will probably not be able to participate in Article 6.2 transfers.<sup>11</sup> China, Japan, and Korea's NDCs<sup>12</sup> are, respectively, examples of each of these cases:

- China's NDC includes a set of targets, including the following:<sup>13</sup>
  - o A 60-65 percent reduction—of carbon dioxide emissions only—per unit of GDP by 2030, from the 2005 level. The NDC does not provide modeled GDP projections, so quantitative emissions reduction targets cannot be determined from the NDC.
  - o A peaking of carbon dioxide emissions by "around 2030." The NDC does not provide an absolute target for peak emissions, which, again, makes it difficult to characterize quantitative units of emissions reduction.
- Korea's NDC target: 14 37 percent reduction of GHG emissions from BAU by 2030, economy wide. The NDC provides the projected BAU emissions at 2020, 2025, 2030, so a quantitative, economywide target for these years can be readily determined from the NDC.
- Japan's NDC has an absolute target for all GHGs of a 26 percent emissions reduction by 2030, relative to 2013 levels.15

A possibly simplistic conclusion would be that Japan could participate in Article 6.2 transfers; Korea might, depending on the outcome of negotiations on Article 6 MPGs; and China probably could not. Let us add some nuance to this conclusion, though:

- Accounting for ITMOs is for the purpose of compliance with the Paris Agreement—including measuring progress toward achieving one's NDC target(s) and demonstrating avoidance of double counting. Accounting for ITMOs is effectively independent of national policy—or linkage between national policies. 16 Presumably, most Parties (national governments) would indeed like to convert transfers of mitigation units between national policy systems to obtain Paris Agreement credit for related emissions reduction. However, some may not care, in the near term. China, for example, could conceivably engage in transfers of some kind with other East Asian countries, at some point in the future, without regard—in the near term—to how this might affect progress toward its NDC.<sup>17</sup> China or other Parties with non-quantifiable relative targets might choose to do so to learn about linkage and other types of transfers, in preparation for utilizing Article 6.2 with subsequent versions of their NDCs or to render their emissions reduction cost effective (which might be important to them regardless of whether or not such transfers were credited to their current NDCs).
- The challenges associated with Parties having NDC targets such as China's—or even Korea's participating in Article 6.2 transfers might be addressed in the context of larger, one-time transfers (as contrasted, for example, with linkage between policy systems). Parties to a large, one-time transfer might have the incentive to devote considerable analytical resources to the transaction, sufficient to demonstrate that the parties to the transaction had avoided double counting and satisfied other Article 6.2 obligations, even if their NDCs utilized relative targets that could not be quantified. Kerr et al. (2018) provide an example of how such a one-time transfer might work.
- It remains unclear how Article 6.4 and Article 6.2 will interact. The 6.4 mechanism will have more centralized oversight—from a Convention or Paris Agreement body—than more "bottom-up" 6.2 transfers. It is also assumed that the 6.4 mechanism will incorporate an ERC-type system with some

characteristics of the CDM. It is possible—and perhaps likely—that offset credits or other types of mitigation units generated by a Party's 6.4 activities may be converted in some manner to ITMOs for use in 6.2. Possibly, then, a Party such as China, with a non-quantifiable relative target, might still engage in 6.2 transfers, using ITMOs converted from the 6.4 mechanism. Parties with targets such as Korea's might find it desirable to obtain ITMOs in this manner, as well. (On the relationship between 6.2 and 6.4, see Michaelowa [2017]; Michaelowa and Hoch [2016].)

 Aldy and colleagues (2016a, 2016b) offer possible approaches to comparing effort across NDCs with heterogeneous target types. Their primary purpose is to enhance the Paris Agreement's transparency mechanism—the reporting and review procedures in Article 13—and global stocktake (Article 14). However, such techniques for comparing disparate systems might contribute over time to the ability to ensure proper accounting for Article 6.2 transfers between Parties with relative targets.

Any international carbon market in Northeast Asia (with "market" construed broadly to include various types of transfers and exchanges of mitigation units) is likely to be heavily dominated by China. Given the type of target China employs in its NDC, however, it will be difficult for China to satisfy Article 6.2 requirements for ITMOs (if and when the Chinese government decides it wishes to use 6.2). China and its potential trading partners may take a number of paths to alleviate these difficulties—though the surest path would be for China to adopt a quantifiable—if not absolute—target for emissions reductions in future NDCs. 18

In the meantime, it is likely that Japan and Korea will find it feasible during the first NDC period to engage in 6.2 transfers. This will depend, however, on how the 6.2 (and broader Paris Agreement) accounting regime deals with Korean ERC-like mitigation units.

The Paris Agreement is designed to accommodate—indeed encourage—learning and iteration. Parties must submit new NDCs every five years, and the Agreement encourages Parties to be more ambitious with each submission. Article 13 reporting and review mechanisms facilitate cross-national learning about climate change policy, and Article 11 (among other provisions) aims to build capacity for implementing the Agreement—including measurement of progress toward achieving NDCs. Learning and iteration in turn, it is hoped, will encourage increased ambition.

International cooperation on mitigation, including transfers of mitigation units, also can encourage increased ambition—by rendering mitigation less costly. Difficulties with quantifying emissions reductions under some NDCs will be an obstacle to utilizing Article 6. This paper has considered how such difficulties might be ameliorated. More important, however, will be for governments to move in the direction of absolute, economy-wide targets in subsequent NDCs. <sup>19</sup> As they do, the current challenges to fully utilizing Article 6.2 in Northeast Asia—and elsewhere—will become less daunting.

## **ENDNOTES**

- <sup>1</sup> The author is grateful to Jackson Ewing and Michael Mehling for comments on earlier drafts. See also these authors' contributions to this volume.
- <sup>2</sup> World Resources Institute's data on greenhouse gas emissions is available at https://www.climatewatchdata.org/ countries/compare?locations=JPN percent2CCHN percent2CKOR#ghg-emissions. World: 48,892 MtCO<sub>2</sub>e; China: 11,601 MtCO<sub>2</sub>e; Japan: 1,322 MtCO<sub>2</sub>e; Korea: 632 MtCO<sub>2</sub>e. Figures include land-use change and forestry.
- <sup>3</sup> National governments that have adopted and ratified the Paris Agreement.
- <sup>4</sup> The final version of the Paris Agreement, together with Decision 1/CP.21, which elaborates and supplements the Agreement, is at http://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf.
- <sup>5</sup> The following provide insight into Article 6 and its elaboration: Howard et al. (2017), IETA (2017a, 2017b, 4–6), Marcu (2016, 2017a, 2017b), Stua (2017).
- <sup>6</sup> NDCs are the mitigation pledges that Parties to the Paris Agreement have submitted, adjunct to the Agreement. The UNFCCC's interim NDC Registry, required by the Agreement's Article 6.12, is at www4.unfccc.int/ndcregistry. As of April 24, 2018, 169 of the UNFCCC's 197 Parties had submitted NDCs. See http://unfccc.int/focus/ndc\_registry/items/9433. php. A total of 175 UNFCCC Parties have ratified the Paris Agreement.
- <sup>7</sup> On Paris Agreement accounting, see Bodansky (2017), Hood and Soo (2017), Mehling et al. (2017, 31–33), OECD (2017), Schneider et al. (2017).
- 8 All Parties to the Kyoto Protocol with mitigation obligations are assigned absolute, economy-wide targets of this type.
- <sup>9</sup> See, for example, Dransfeld et al. (2014).
- 10 A more cynical observer might say "hypothetical" baseline. The validity of the emissions reduction—whether in an ERC project or an NDC with relative targets—depends on the validity of the method(s) used and the transparency of the process.
- <sup>11</sup> See also Vaidyula and Hood (2018, 29—30) for a cogent discussion of this set of issues. A Party could simply use measured quantities of emissions from year to year, if emissions were declining, to characterize mitigation outcomes; presumably, however, if the Party were able to do so-and emissions were indeed declining-it would have adopted an absolute target in its most recent NDC.
- <sup>12</sup> The NDCs referenced later are identified in the respective documents as "intended" NDCs, which refers to their status prior to the Paris Agreement coming into force.
- 13 China's NDC is at www4.unfccc.int/ndcregistry/PublishedDocuments/China percent20First/China's percent20First percent20NDC percent20Submission.pdf (see p. 5 of the English version for a summary of the NDC targets).
- <sup>14</sup> Korea's NDC is at www4.unfccc.int/ndcregistry/PublishedDocuments/Republic percent20of percent20Korea percent20First/INDC percent20Submission percent20by percent20the percent20Republic percent20of percent20Korea percent20on percent20June percent2030.pdf.
- <sup>15</sup> Japan's NDC does not explicitly state that this target is economy wide, but that is assumed to be the case. Japan's NDC is at www4.unfccc.int/ndcregistry/PublishedDocuments/Japan percent20First/20150717 Japan's percent20INDC.pdf.

- <sup>16</sup> At present, linkage is only between ETSs—the best current example being at the subnational level among California, Québec, and Ontario. In the future, governments might link heterogeneous policy systems—for example, an ETS and a carbon-tax system (Mehling et al. 2017). The accounting within the linked system would be more complex than that in a system of linked ETSs, but the distinction illustrated here would remain valid.
- <sup>17</sup> Of course, counterparties to the transaction would have to be similarly indifferent to use of the transfers in Paris Agreement accounting.
- <sup>18</sup> Chinese policy makers have indeed indicated an intention to move, over time, toward using a hard cap on emissions. In addition, China is gathering some experience through several subnational ETS pilot programs (Zhang et al. 2017) and through a program of absolute caps on energy consumption (coal equivalent), as specified in the 13th and 14th five-year plans (Chen and Stanway 2016).
- <sup>19</sup> Article 4.4 provides a certain amount of guidance in this regard.

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