

**NTCT Working Group on
“Toward Carbon Neutrality in East Asia”**

Final Report

December 2023

1. Background

Under the Paris Agreement, all the Parties agreed to a long-term temperature goal of limiting global warming to well below 2°C and pursuing efforts to limit it to 1.5°C above the pre-industrial levels. After the adoption of the Paris Agreement, the Intergovernmental Panel on Climate Change (IPCC)'s Special Report “Global Warming of 1.5 °C” (hereafter, the 1.5° C Special Report), published in 2018, highlighted robust differences in regional climate characteristics between global warming of 1.5°C and 2°C, and indicated that it is necessary to achieve global net-zero CO₂ emissions around 2050 to limit the global temperature rise to 1.5°C above pre-industrial levels.

To keep a limit of 1.5°C temperature rise within reach, there is a growing momentum for making commitments to achieve carbon neutrality or net-zero emissions by 2050. Reflecting the IPCC 1.5°C Special Report, in 2019 UN Secretary-General António Guterres called on all world leaders to make concrete and realistic plans to achieve carbon neutrality by 2050. At the Carbis Bay G7 Summit of 2021, leaders of G7 member countries made a commitment to 2050 carbon neutrality¹ and called upon all countries, in particular major emissions economies, to join their efforts in realising carbon neutrality by 2050. In 2022, G7 Leaders' Communiqué of 2022 reconfirmed their commitment to keep a limit of 1.5 °C temperature rise within reach, and at the Bali G20 Summit of 2022, the leaders of G20 also announced that they resolve to pursue further efforts to limit the temperature increase to 1.5 °C.

China, Japan and Republic of Korea (ROK) have already submitted and updated their Nationally Determined Contributions (NDCs), and announced their commitment to achieving carbon neutrality by 2050 (Japan and ROK) and by 2060 (China). However, NDCs submitted by Parties to COP27 last year for the period up to 2030 were found to be unable to limit the temperature increase to 1.5 °C. Therefore, COP27 requested Parties to revisit and strengthen their 2030 targets by the end of 2023. In addition, COP27 urged those Parties that have not yet done to submit their LTSs toward just transition to net zero emissions by or around mid-century by COP28, and also invited Parties to update their LTSs in line with the best available science.

In East Asia, the situation of each country is different in their efforts to achieve carbon neutrality, including the re-setting of NDCs, and the region should further cooperate and collaborate

¹ The G7 commitment on 2050 carbon neutrality refers to a net-zero GHG emissions target. However, in this concept paper, a carbon neutrality refers to a net-zero CO₂ emission target unless specifically mentioned.

with each other. Therefore, this WG will share the contents and efforts of each country's NDCs and LTSs, elaborate the contents of each country's strategy, and explore what kind of cooperation is possible in the region.

2. Discussions at the Working Group Meetings

The WG was established in 2021, and its members from the three countries met online three times on July 20 and August 18, 2022 and November 20, 2023.

At the first two meetings, the participants updated climate policies toward carbon neutrality in the three countries and discussed possible common grounds for the trilateral cooperation. Such common grounds include: 1) the implementation of the Paris Agreement; 2) green recovery; 3) city-to-city cooperation for sharing best experiences; 4) clean energy development (such as green hydrogen); 5) green finance initiatives; and, 6) educational cooperation including exchanging students and teachers.

Regarding technology cooperation, the participants argued that the three countries are providers of green technologies and are competing each other for developing and selling the technologies to others. It is important for the three countries to cooperate for creating markets for green technologies in Asia. To do so, a step-wise approach, beginning with mutual learning and then developing common standards, can be taken.

The participants also discussed external pressure like Carbon Border Adjustment Measure (CBAM). Though they see some values from external pressures from key global markets to promote climate action, they also pointed out challenges: 1) difficulty in calculating carbon contained in products and production process; 2) possible incomparability with World Trade Organization (WTO) agreements; and 3) negative impact on the UNFCCC and Paris Agreement process where consensus was established by multilateral negotiations over thirty years.

In 2020, China, Japan, and ROK each put forward the goal of achieving carbon neutrality around the middle of this century, and since then, has been intensively formulating various strategies and plans related to energy transition, clean energy and green industrial development. Under the goal of carbon neutrality, the participants argued that there would exist a growing consensus between China, Japan and ROK in addressing climate crisis in fields of green recovery, clean energy cooperation, green finance and low-carbon education.

At the meeting held in November 2023, the participants elaborated further the possibility of

collaboration in specific sectors and/or industries in which policy coordination and cooperation among the three countries would be possible. Looking at clean hydrogen, steelmaking, transport sector and renewable development in rural areas, the participants discussed the following points:

- Which sectors/industries would be most promising for the three countries' cooperation?
- Are there any specific form or mode of such cooperation?
- Are there any preconditions for such cooperation to be realised?

The participants also discussed room for cooperation in the field of carbon markets. China and Republic of Korea have already established and operationalised their domestic emissions trading schemes (ETS), and Japan recently decided to develop its ETS in a stepwise manner from 2023. In addition, the detailed rules for Article 6 of the Paris Agreement were developed, and various bilateral initiatives, such as the Joint Crediting Mechanism (JCM), have been already implemented. Considering these developments, the participants discussed the following points:

- What is the current status of the domestic ETS in each country, and are they going to be linked with Article 6 mechanisms?
- Will there be competition among China, Japan and Korea in their efforts to produce carbon credits overseas and to use them to meet their NDCs?
- Will there be any room for cooperation for the three Northeastern Asian countries in the form of joint development of carbon offsets, and setting up of a regional carbon market?

3. Policy Recommendations

Based on the discussions above, the Working Group on “Toward Carbon Neutrality in East Asia” summarized the following policy recommendations. In addition, at the third meeting, the participants elaborated two issues of cooperation on clean technologies as well as carbon market. With regard to cooperation on clean technologies, the participants discussed specific sectors and/or industries in which policy coordination and cooperation among the three countries would be possible. With regard to carbon market, they explored the possibilities of cooperation among the three countries on the joint development of carbon offsets as well as the setting up of a Northeast carbon market.

Following the Joint Action Plan for China-Japan-ROK Environmental Cooperation (2021-2025), we should fully mobilize the governments, enterprises, universities and research institutions to develop a carbon-neutral action plan in phases, jointly draw a carbon neutrality blueprint in East

Asia. We thus suggest to develop cooperation in these following areas:

- Jointly promote the Paris climate process:
 - Given the fact that now the multilateral climate process entered a new phase of implementing the Paris Agreement, China, Japan and ROK should forge further consensus in building a fair and reasonable global climate governance system with win-win cooperation. Implementation should be the key, with the focus of mitigation, adaptation and finance. China, Japan and ROK should further support developing countries to implement their climate action under the principle of Common but Differentiated Responsibilities, and translate the goals of Nationally Determined Contributions into solid actions.

- Working together for green recovery: UN Secretary-General Antonio Guterres said at the One Planet Summit that the post-pandemic economic recovery was an opportunity to achieve a green transition, and that environmental protection is not opposed to economic growth, but can create new jobs.
 - Governments of China, Japan and ROK should deliver green stimulus packages to recover from the COVID-19 pandemic and energy crisis with an aim to both facilitating transformation of economic, energy and social systems toward decarbonisation and ensuring just transition which allows such transformation to be made in a smooth and “no-one-left-behind” manner, including reskilling of workers, green job creation, and financial support for them. In the process of green recovery, the three countries could also support environmental protection industries, for example, industries related to environmental protection equipment and industries in waste recycling and disposal.

- Deepen China-Japan-ROK low-carbon multi-level cooperation:
 - It is important to promote China-Japan-ROK information exchange and cooperation in the fields of sustainable and resilient infrastructure construction, carbon market, and climate adaptation at the national, local, industrial and enterprise levels. In order to achieve sustainable economic development, concrete actions and practical efforts at the local government levels are extremely important. The promotion of low-carbon cooperation among local governments, exchanging best practices and sharing governance experiences thus will be the next priority for China, Japan and ROK.

- Strengthen cooperation in the field of clean energy development and promotion.
 - Under the goal of carbon neutrality, clean energy cooperation is a comprehensive solution to address the climate crisis. China's 14th Five-Year Plan and Japan's Green Transformation (GX) Basic Policy have common priorities on a clean, safe and efficient energy system, and multi-energy complementary clean energy bases such as wind power, hydropower, photovoltaic and nuclear power, laying the foundation for clean energy cooperation between China, Japan and ROK. Relying on regional multilateral mechanisms and platforms, the three countries could strengthen clean energy cooperation in clean energy technologies such as solar PV, batteries and energy storage, onshore and offshore wind, hydrogen and renewable gas.
 - The three countries should initiate joint research on the possibility of mutual recognition of certification. Cross-country inconsistencies in standards for evaluating emissions from hydrogen production and transport and certificate programmes for, for example, receiving government subsidies could become a barrier for international investment in hydrogen projects, international hydrogen trade and the establishment of international supply chains. Currently, the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) in which China, Japan and ROK participate as member countries together with other 21 members is taking the lead, in partnership with the International Organisation for Standardisation (ISO), in developing methodologies for evaluating emissions from different hydrogen production methods and carriers. Full standardisation of such methodologies and certification systems across countries is ideal for effectively promoting international trade of hydrogen and minimising the administrative burden for companies, but takes time for coordination. Therefore, mutual recognition of certification schemes across countries can be the initial step towards the full standardisation. The three countries should initiate research on barriers and challenges for mutual recognition of low carbon hydrogen certificates, and possible way forward to overcoming such barriers and challenges.
 - The three countries should promote joint R&D in green steelmaking. Three countries can find common grounds for cooperation in this area because of at least of two reasons: One is the low level of technology maturity. A hydrogen-based reduction ironmaking process is still at the early stage of technology development. No country/steelmaker has established itself as the leader of this technology yet. This provides room for cooperation. The other reason is the impact of CBAM. Steel is one sector within the scope of application. China,

Japan and ROK have major global steelmakers and have an incentive for cooperation for developing the green steel production process. Between Japan and ROK, the 1st Green Steel Joint Seminar was held on 21st September 2023 to discuss trade issues and green steel standards. China can be invited to this Joint Seminar. This Joint Seminar can be developed as a platform for further collaboration among the three countries.

- The three countries should promote collaboration for learning from new business models for new, domestic market-oriented technologies, such as a vehicle-to-grid (V2G) system—a system in which electric vehicle (EV) can sell demand response services to the grid. Reflecting different domestic regulatory frameworks and market conditions among the three countries, different business models for V2G are expected to be developed. The governments (or regulators) and V2G service providers can learn from various business models and explore new ideas of business model. A better understanding about domestic market conditions and regulatory frameworks is a starting point.
 - The three countries should collaborate for sharing lessons for promoting renewable energy in the nexus of mitigation and adaptation/resilience in rural areas. The promotion of decentralised, renewable energy-based electricity systems can provide multiple benefits: Mitigation effects, improvement in resilience of local communities against various external shocks including extreme weather events, and improvement in energy access. There are several programmes and projects for decentralised, renewable energy systems in the three countries, which provide opportunities for mutual learning about project design and implementation as well as business models for such system, including financing.
- Promote information exchange and cooperation in the fields of carbon markets:
 - In order to effectively implement domestic Emissions Trading Schemes (ETSs) in each country, it is important to learn from each other regarding the regulatory frameworks, market designs, allocation of allowances and the role of offset credits. It is also important to conduct joint research on key topics which have impacts on the implementation of each country's ETS. They include demand and supply relations in each market, lessons from EU ETS regarding their benchmark approach to limit free allocation and automatic reduction of initial allowances, as well as the operation and implications of CBAM.
 - Actively promote green finance cooperation:
 - The three countries can and should more aggressively provide finance to support just

transition from coal to renewable energy in developing countries in Asia. There are notable examples. Following such examples as Just Energy Transition Partnership (JETP) and Asian Development Bank's Energy Transition Mechanism (ETM), the three countries should mobilise the finance through public-private partnership to help decommissioning coal-fired power plants, providing alternative energy as well as jobs in Asian developing countries. The three countries have government-led financial arms and contributions to multilateral/regional development banks. Together with private sectors, such resources should be mobilised for rolling out renewables and also facilitate just transition.

- China, Japan and ROK are also the pioneers of green finance in Asia, and have issued national-level guidelines on green finance policies to promote the development of domestic green financial markets and carbon markets through fiscal policy guidance and pilot project construction. In the next stage, China, Japan and ROK can jointly develop mutual standards to promote the development of international green finance.

- Widely extend low-carbon education cooperation:

- China's Ministry of Education has issued the Working Plan for Strengthening Carbon Neutrality Higher Education Talent Cultivation System, which focuses on incorporating green low-carbon education into teaching and researching. Given the importance of carbon neutrality in education and research, we could further promote exchange programs between universities and research institutions among our three countries under the support of Trilateral Cooperation Secretariat (TCS) and other organizations in the future.

5. Annexes

“Report for the NTCT Working Group on “Toward Carbon Neutrality in East Asia”

“NTCT “Toward Carbon Neutrality in East Asia” WG Program : China’s Section”

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In Alphabetical Order of Country Name