Government of Japan

Submission on the contents of the dialogues to be held under the work programme for urgently scaling up mitigation ambition and implementation

May 2023.

1. Background

- As IPCC AR6 SYR states, simultaneous hazards will increase as global warming progresses. Deep, rapid, and sustained reductions of in all sectors are required in order to limit the temperature increase to 1.5℃ within reach. In this context, transition of energy is crucial in achieving net zero by 2050 and concrete actions to absolutely reduce emissions from the energy sector are needed in this critical decade, as GHG emissions from the energy sector account for more than 70% of global emissions. In fact, average annual CO2 reductions in 2046-2050 from 2020 by clean energy such as wind, solar, biofuels, hydrogen, and other renewables could be approximately 23 Gt CO2, according to Net Zero Emissions by 2050 A Roadmap for the Global Energy Sector by IEA. Moreover, according to this report, clean energy employment increases by 14 million new clean energy jobs by 2030. In sum, there is a substantial mitigation potential in transition to clean energy, in addition to enhancing energy efficiency and demand side measures.

2. The Nature of the Dialogue

- Decision 4/CMA.4 stipulates that the content of the dialogues, including key findings, and opportunities and barriers related to the topic, should be summarized in an annual report for inputting to the high-level ministerial round table on pre-2030 ambition (HRT) and consideration for a draft CMA decisions.
- The topic of this year's MWP global dialogue is accelerating just energy transition. In considering key findings, opportunities and barriers to accelerating just energy transition, Japan proposes to address sub-topics such as energy efficiency and conservation, maximum use of renewable energy, acceleration of phase-out of unabated fossil fuels in the context of a global effort, use of a wide range of technologies that contribute to decarbonization, such as hydrogen, ammonia and CCUS, and international cooperation. The global dialogue should contribute to identifying policy measures which Parties should take to realize just energy transition.
- The global dialogue will be held at least twice a year, and the content to be discussed at each meeting should be designed in sequence, bearing in mind the process of preparing the annual report which should include key findings, and opportunities and barriers of the selected topics, reporting to the HRT and considering recommendation of a CMA decision. For example, the first dialogue should focus on understanding the current situation and issues of Parties and the entire world related to just energy transition. Useful policy measures and reduction potentials should be examined in order to identify key findings, and opportunities and barriers related to the above-mentioned sub-topics. Discussion should be more detailed in the second dialogue in order to identify a direction to be taken globally and concrete measures that can

be implemented by each Party, building on the key findings, opportunities and barriers identified in the first session, for example, by discussing actual case and situations with relevant stakeholders. Finally, the messages to be put forward in the report will be discussed with a view to reporting to HRT and drafting CMA decisions.

- In order to facilitate discussions under the dialogues, Japan requests the Secretariat to prepare a technical paper prior to each dialogue to visualize global and national progress. This technical paper includes the latest findings from relevant organizations including IPCC, IEA and others, and the synthesis reports on NDC/ LT-LEDS prepared by the UNFCCC secretariat for participants in the dialogue to facilitate fact-based discussions by visualizing mitigation ambition and implementation gaps, and mitigation potential. This should include an overview of the issues (including mitigation potential) and a list of relevant policies by each Party in advance of the first dialogue. After the dialogue, a dialogue report should be prepared by extracting the description of the technical paper and adding the results of the first dialogue, leading to the second round of discussions. As per the mandate, the annual report should be prepared compiling the first and second dialogue reports, followed by a discussion at the HRT and utilized for drafting a CMA decision - this annual cycle will, as a process, increase mitigation ambition and implementation.

3. Case Studies

Experiences that Japan can share in relation to this year's topic are as follows.

(1) Policies and Initiatives related to energy transition

Basic Policy aimed at Implementing Green Transformation (GX)

- In February 2023, the Cabinet of Japan approved the "Basic Policy aimed at Implementing Green Transformation (GX)," in which it clarified policies of promoting energy saving and a drastic shift to decarbonized power sources such as renewable energy and nuclear power. By steadily implementing the initiatives outlined in the Basic Policy, such as the GX promotion Act passed at the ordinary session of the Diet in May 2023, Japan will support R&D and capital investments that contribute to decarbonizing energy and raw materials, amounting to approximately 20 trillion yen over the next 10 years. Japan will work to simultaneously realize decarbonization, stable energy supply, and economic growth.

Plan for Global Warming Countermeasures

- Furthermore, Japan has "Plan for Global Warming Countermeasures", a statutory plan of GHG reduction based on the Act on Promotion of Global Warming Countermeasures. This plan sets targets/estimates and guidelines for all types of greenhouse gases, and also indicates expected GHG reductions by 2030 for measures in accordance with the sectors of the GHG Inventory, including industry, commercial and others, residential, transportation, and energy conversion The Plan is prepared with detailed concrete measures with figures, including both the emission amount of the base year and the projection of FY2030 (the target year). For example, in term of greenhouse gas emission reductions of energy sector by the introduction of renewable energy, the projection by 2030 are 201.6-211.8 million t-CO2eq and the latest amount of emission (that of FY2020) was 129 million t-CO2eq in relation to the projection. This was a result of various institutional measures, such as positive zoning (designating areas for promoting renewable energy), promotion of introduction of solar power generation in the public sector, and promotion of the introduction

of solar power generation for private companies' own consumption.

・ The implementation status is to be followed up annually with the participation of experts and stakeholders, and the overall progress is to be reviewed by the Global Warming Prevention Headquarters, of which all cabinet ministers are members. Based on these following-up mechanism, a review of the plan itself is to be conducted approximately every three years in accordance with the Act.

Ref. Japan's Estimated Emissions & Removals in FY2030

(Unit: Mt-CO_2 eq.)	FY2013[*1]	FY2020[*2]	Estimated Emissions in FY2030 (-46% of FY2013/ NDC)
GHG Emissions and Removals	1,408	1,106	760
Energy-related CO_2	1,235	967	677
Industry	463	356	289
Commercial and others	238	182	116
Residential	208	166	70
Transport	224	185	146
Energy conversion	106	82.1	56
Non-energy-related CO_2	82.3	76.8	70.0
CH_4	30.0	28.4	26.7
N_2O	21.4	20.0	17.8
Four gases incl. alternative CFC (HFCs, PFCs, SF_6, and NF_3)	39.1	57.5	21.8
Removals	-	-44.5	-47.7
Joint Crediting Mechanism (JCM)	Contributing to global emission reductions and removals with a cumulative total of approximately **100 million tCO_2** by fiscal year 2030.		

*1 Source: the Plan for Global Warming Countermeasures *2 Source: Japan's National Greenhouse Gas Emissions in FY2020 (Final Figures)

Policies to expand the introduction of offshore wind power generation

・ Japan aims to formulate offshore wind projects of 10 GW by FY2030 and 30-45 GW by FY2040. Based on the Offshore Wind Promotion Act, the Japanese government has been steadily building a project pipelines and has designated 8 areas with the total capacity of around 3.5 GW as promotion zones, 10 areas as promising zones, and 6 areas as preparation zones. Regarding offshore wind power, the floating type will be important in the future. Therefore, 120 billion yen has been invested by the Green Innovation Fund to support research and development of the floating offshore wind power. In April 2023, Prime Minister Kishida launched an action plan to expand the introduction of renewable energy. The plan stated that the public and private sectors should cooperate to develop an industrial strategy and introduction targets for "floating offshore wind power" at an early stage to attract investment domestically and internationally. Japan is also considering institutional arrangements for floating offshore wind power projects in addition to research and development, not only in the territorial waters but also in the exclusive economic zones (EEZ). In order to promote large-scale offshore wind power projects, it is also important to coordinate with local stakeholders, including fishermen, and to have a fair and efficient bidding system. Japan's knowledge as described above for the expansion of renewable energy can be shared at the dialogue.

(2) Roles of Subnationals

Decarbonization Leading Areas

- In 2021, the Council for National and Local Decarbonization, together with relevant organizations and stakeholders, formulated Regional Decarbonization Roadmap to address decarbonization throughout the country by encouraging to local communities' actions. The objective of the Roadmap is to make decarbonization domino effects throughout Japan, by fully mobilizing policies during the 5-year intensive period to 2025, including measures such as creating at least 100 "Decarbonization Leading Areas" and implementing priority measures (self-consumption solar power generation, zero-carbon drive, energy saving in households and private sectors etc.).
- The requirements for selection include: (i) net zero CO2 emissions from electricity consumption in the consumer sector (the residential and commercial sector) by FY2030, (ii) measures to combat global warming in accordance with regional characteristics (reduction of CO2 from energy consumption other than electricity in the consumer sector and other greenhouse gas emissions, etc. and (iii) maximum introduction of renewable energy facilities based on renewable energy potential. At least 100 Decarbonization Leading Areas will be selected and supported by Ministry of the Environment by FY 2025 and 62 areas have been designated.
- The feature of this policy measure is that it allows tailored approach reflecting the characteristics of each region. For example, Kamishihoro Town, a dairy town in Hokkaido, is committed to decarbonization through biogas power generation, using methane gas generated from livestock manure. Also, City of Yokohama, Kanagawa, which has about 3.8 million population but has low renewable energy potential is working to decarbonize through a partnership with Tohoku areas which have high renewable energy potential.
- In sum, Decarbonization Leading Areas will aim to achieve regional revitalization as well as carbon neutrality by 2030 and will replicate these leading models to other areas for making "decarbonization domino effect" across the country.

City-to-city collaboration

- Japan is promoting City-to-City Collaboration to make net-zero commitments and to introduce decarbonized infrastructures in partner cities. It has linked 45 subnational governments abroad with 20 Japanese subnational governments and has formulated 24 JCM model projects including introduction of renewable energy in various sectors. Building upon such experience, Japan launched the "Clean Cities Partnership Program (C2P2)" in February 2023 to provide a comprehensive and synergetic support to urban agenda including climate change, environmental pollution, and circular economy.

(3) Cross-cutting Issues

Use of Article 6 of the Paris Agreement

- It is estimated that the implementation of Article 6 of the Paris Agreement could reduce up to 9 billion tons of additional CO2 emissions annually by 2030 (J. Edmonds et al., 2021). This corresponds to approximately 30% of the global CO2 emissions in 2018. IPCC AR6 WGIII addresses the potential of international coordination in promoting more ambitious NDCs while saving a cost (IPCC AR6 WGIII report Figure 14.2). In this respect, as discussed in the Cooperative Approaches section of IPCC AR6 WGIII 14.3.2.7, the market mechanisms being consistent with Article 6 of the Paris Agreement are effective means

not only to promote further emission reductions through the introduction of advanced decarbonization technologies, including renewable energy, that are difficult for some Parties to introduce on their own due to initial costs and/or technical barriers, but also to stimulate private investment and the global carbon market, which is expected to reach US$300-400 billion annually by 2030 (UNEP and UNEP DTU, 2021).

- At COP27, there was a growing interest in the use of carbon markets and Article 6 to achieve targets set in the NDCs and further increase ambition, as seen at the launch of the Paris Agreement Article 6 Implementation Partnership, involving more than 90 countries and institutions as of May 2023 and organizations in the aim of designing high-integrity carbon markets. In order to promptly establish international high-integrity carbon markets and realize emission reductions, the dialogues under the MWP could serve to promote knowledge sharing in line with its topic of accelerating just energy transition.
- In particular, regarding capacity-building support, it would be useful to obtain inputs from Parties, the secretariat and other relevant bodies and promote information sharing on the institutional arrangements including authorization process by Parties, reporting and review on implementing Article 6, the registry and other tracking systems and promote information sharing among them.
- Japan initiated the above-mentioned 'Paris Agreement Article 6 Implementation Partnership' and can share its experience in building capacity for the implementation of Article 6 during the dialogues.

JCM

- Japan has been reducing emissions in partner countries by promoting the introduction of decarbonization technologies in partner countries through the Joint Crediting Mechanism (JCM). So far, Japan has signed the Memorandum of Cooperations (MOCs) with 26 countries and implemented more than 240 projects as of May 2023. The JCM contributes to the creation of local employment through the implementation of emission reduction projects in partner countries such as energy efficiency, renewable energy, and waste-to-energy generation.

(4) International Collaboration

- In the international context, Japan promotes various international cooperation activities in a comprehensive manner to support global transition to the net-zero including policy dialogue, supporting from making strategy, plan and introduction of infrastructure, and financing. In relation with ASEAN, Japan is implementing various climate actions with ASEAN and its member states based on ASEAN-Japan Climate Change Action Agenda 2.0.

Just Energy Transition Partnership（JETP）

- The Just Energy Transition Partnership (JETP) is a partnership in which donor countries work together to accelerate the early retirement of high-emission infrastructure in partner countries and provide supports for investment in renewable energy and related infrastructure.
- Following South Africa, JETPs with Indonesia and Vietnam were launched last year. Under Japan’s G7 Presidency, in partnership with partner countries, Japan is working with International Partners Group (IPG) to support partner countries' efforts to accelerate a just energy transition towards net zero through JETPs.

AETI／AZEC

- Each country has various pathways according to the actual situation, and it is necessary to pursue diverse and practical approaches that utilize a wide range of energy sources and technologies. Therefore, Japan is making the most of Japan's knowledge and experience to implement energy transitions in emerging countries in Asia through the Asia Energy Transition Initiative (AETI). Specifically, with Indonesia, Thailand, and Vietnam, Japan is supporting the formulation of roadmaps for energy transitions and long-term strategies for carbon neutrality that meet the needs of each country.
- In addition, as support for the introduction of specific decarbonization technologies, such as (i) a demonstration project of an optimal thermal operation system for green hydrogen production in India was introduced. Moreover, (ii) support for the Net Zero Energy Building (ZEB) project in Malaysia was introduced. Through utilizing these advanced decarbonizing technologies, Japan has been contributing to emission reduction and sustainable development in Asia.
- Through these efforts, Japan will work with like-minded countries in Asia to realize the "Asia Zero Emission Community" concept. In March 2023, Japan held the Asia Zero Emission Community (AZEC) Ministerial Meeting and the AZEC Public-Private Investment Forum to create and accelerate concrete cooperation as part of the AZEC concept.

Transition Finance

- Transition finance is indispensable for simultaneously achieving environmental measures, economic growth, and stable energy supply, and to financially support steady energy transition initiatives. In September 2022, Japan succeeded in setting guidelines for the results of discussions at the Asia Transition Finance Study Group (19 financial institutions, including those in Asia as well as Europe and the United States, discussing the financing concepts necessary for a steady energy transition in Asia). At the same time, the Economic Research Institute for ASEAN and East Asia (ERIA) compiled and published a list of transition technologies that are considered useful for energy transitions in Asia. In the future, through the renewal and expansion of guidelines and technology lists, and dissemination and awareness-raising, Japan will realize a steady energy transition in Asia.

Cleaner Energy Future Initiative for ASEAN（CEFIA）

- In order to promote global emission reductions, it is important to make efforts to transfer technology at the regional level. For example, in the ASEAN region, Japan is promoting CEFIA (Cleaner Energy Future Initiative for ASEAN), which facilitates the collaboration between the public and private sectors in Japan and ASEAN countries. CEFIA contributes to the diffusion of clean energy and decarbonizing technologies, the improvement of the environment for energy-related businesses in the region and the job creation in the ASEAN region, through the implementation of decarbonizing projects called Flagship Projects, such as ZEB, RENKEI (Energy efficiency of plants and facilities through IoT) and SteelEcosol (Energy efficiency of steel industries). Through these international technical cooperations with a focus on local realities, CEFIA contributes to the energy transition and decarbonization in ASEAN region. The 4th CEFIA Government-Private Forum was held in Philippines in February 2023 with over 100 participants including governments and companies from Japan and ASEAN countries, as well as those from financial institutions including the Asian Development Bank.

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