

Climate change policy of Japan

Nov 29, 2021

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Japanese NDCs and LTS

Policy Speech by the Prime Minister to the 203rd Session of the Diet (October 26, 2020)

- We hereby declare that by 2050 Japan will aim to reduce greenhouse gas emissions to net-zero, that is, to realize a carbon-neutral, decarbonized society.
- Addressing climate change is no longer a constraint on economic growth. We need to adjust our mindset to a paradigm shift that proactive climate change measures bring transformation of industrial structures as well as our economy and society, leading to dynamic economic growth.

Prime Minister Suga's Speech at the Leaders Summit on Climate (April 22, 2021)

- Japan will take a big step toward overcoming this global issue. Japan aims to reduce its greenhouse gas emissions by 46 percent in fiscal year 2030 from its fiscal year 2013 levels, setting an ambitious target which is aligned with the long-term goal of achieving net-zero by 2050. Furthermore, Japan will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent.

- As NDC for 2030, Japan aims to reduce its greenhouse gas emissions by 46 percent in fiscal year 2030 from its fiscal year 2013 levels, and will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent.
- In formulating the NDC, Japan reviewed its Plan for Global Warming Countermeasures, which covers the entire government's climate change policies, and the Cabinet approved a revised version that includes enhanced measures.
- In addition, in light of the fact that nearly 90% of Japan's greenhouse gases come from energy sources, the energy mix, which was studied in parallel, was also taken into consideration as a basis for the formulation of the NDC.

Table: Targets and estimates by greenhouse gases and other classifications*1

(Unit: Million t-CO₂)

	Targets and estimates in fiscal year 2030*1	Fiscal year 2013
Greenhouse gas emissions and removals	760	1,408
Energy-related CO ₂	677	1,235
Industry	289	463
Commercial and others	116	238
Residential	70	208
Transport	146	224
Energy conversion*2	56	106
Non-energy-related CO ₂	70.0	82.3
Methane (CH ₄)	26.7	30.0
Nitrous oxide (N ₂ O)	17.8	21.4
Four gases incl. alternative CFC*3	21.8	39.1
Hydrofluorocarbons (HFCs)	14.5	32.1
Perfluorocarbons (PFCs)	4.2	3.3
Sulfur hexafluoride (SF ₆)	2.7	2.1
Nitrogen trifluoride (NF ₃)	0.5	1.6
Greenhouse gas removals	-47.7	—
Joint Crediting Mechanism (JCM)	Japan aims to contribute to international emission reductions and removals at the level of a cumulative total of approximately 100 million t-CO ₂ by fiscal year 2030 through public-private collaborations. Japan will appropriately count the acquired credits to achieve its NDC.	

*1: Figures of target (or estimates in the case of energy-related CO₂).

*2: Excluding statistical discrepancy from power and heat allocation. For that reason, the total sum of the actual results by each sector is not equal to the emissions of energy-related CO₂.

*3: Figures for the four kinds of greenhouse gases of HFCs, PFCs, SF₆ and NF₃ are calendar year values.

Main policies & measures listed in the Plan for Global Warming Countermeasures



Renewable energy, Energy conservation

- Local governments **set up promotion areas** based on the revised Act.
→ Expansion of renewable energies that bring benefits to the local community (e.g. **solar power**)
- Expansion of the obligation to comply with **energy-saving standards** for **houses and buildings**

Industrial, Transport, etc.

- Support for innovation towards 2050
→ **2 trillion-yen fund** that supports R&D and implementation in society in priority fields such as **hydrogen and storage batteries**
- R&D and social demonstration support for energy saving of more than 30% in data centers

Cross-sectional Strategies

- Creation of **more than 100 "leading decarbonized subnational/qualtiers"** by 2030 (Regional Decarbonisation Roadmap)
- Emission reduction in developing countries through the use of advanced decarbonization technologies
→ Contributing to global reduction through the "Joint Crediting Mechanism: JCM"

Energy mix in FY2030



		(2019 ⇒ previous energy mix)	Energy mix in FY2030 (<u>ambitious outlook</u>)		
Energy efficiency improvement		(16.55 million kl ⇒ 50.30 million kl)	62 million kl		
Final energy consumption (without energy conservation)		(350 million kl ⇒ 377 million kl)	350 million kl		
Power generation mix Electricity generated: 1,065 TWh ⇒ Approx. 934 TWh	Renewable energy	(18% ⇒ 22-24%)	36-38%	*If progress is made in utilization and implementation of R&D of renewable energy currently underway, 38% or higher will be aimed at.	
	Hydrogen/Ammonia	(0% ⇒ 0%)	1%		
	Nuclear	(6% ⇒ 20-22%)	20-22%		(details of renewable)
	LNG	(37% ⇒ 27%)	20%		solar 14~16%
	Coal	(32% ⇒ 26%)	19%		wind 5%
	Oil, etc.	(7% ⇒ 3%)	2%		geothermal 1%
				hydropower 11%	
				biomass 5%	
(+ non-energy related gases/sinks)					
GHG reduction rate		(14% ⇒ 26%)	46%		
			Continuing strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50%		

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- Formulate in accordance with the provision of the Paris Agreement
- Shows the basic concept, visions and measures for **net zero GHG emissions by 2050**

<Basic concept>

Global warming countermeasures are **the keys to transforming the industrial structure and producing robust growth** by dramatically changing our economy and society, promoting investments, and enhancing productivity.

① Sectoral visions and direction of measures to achieve the visions



Energy:

- Principle to put renewable energy first
- Rigorous energy efficiency measures
- Decarbonize power sources and foster electrification
- Search for all options such as hydrogen, ammonia, nuclear power



Industry:

- Rigorous energy efficiency measures
- Decarbonize heating as well as manufacturing processes



Transport:

- Achieve 100% of new vehicles sold to be electric by 2035
 - Make a combined use of Electrified Vehicles* and social systems
- * Electrified Vehicles : Electric Vehicles, Fuel Cell Vehicles, Plug-in Hybrid Vehicles and Hybrid Vehicles



Community and Living:

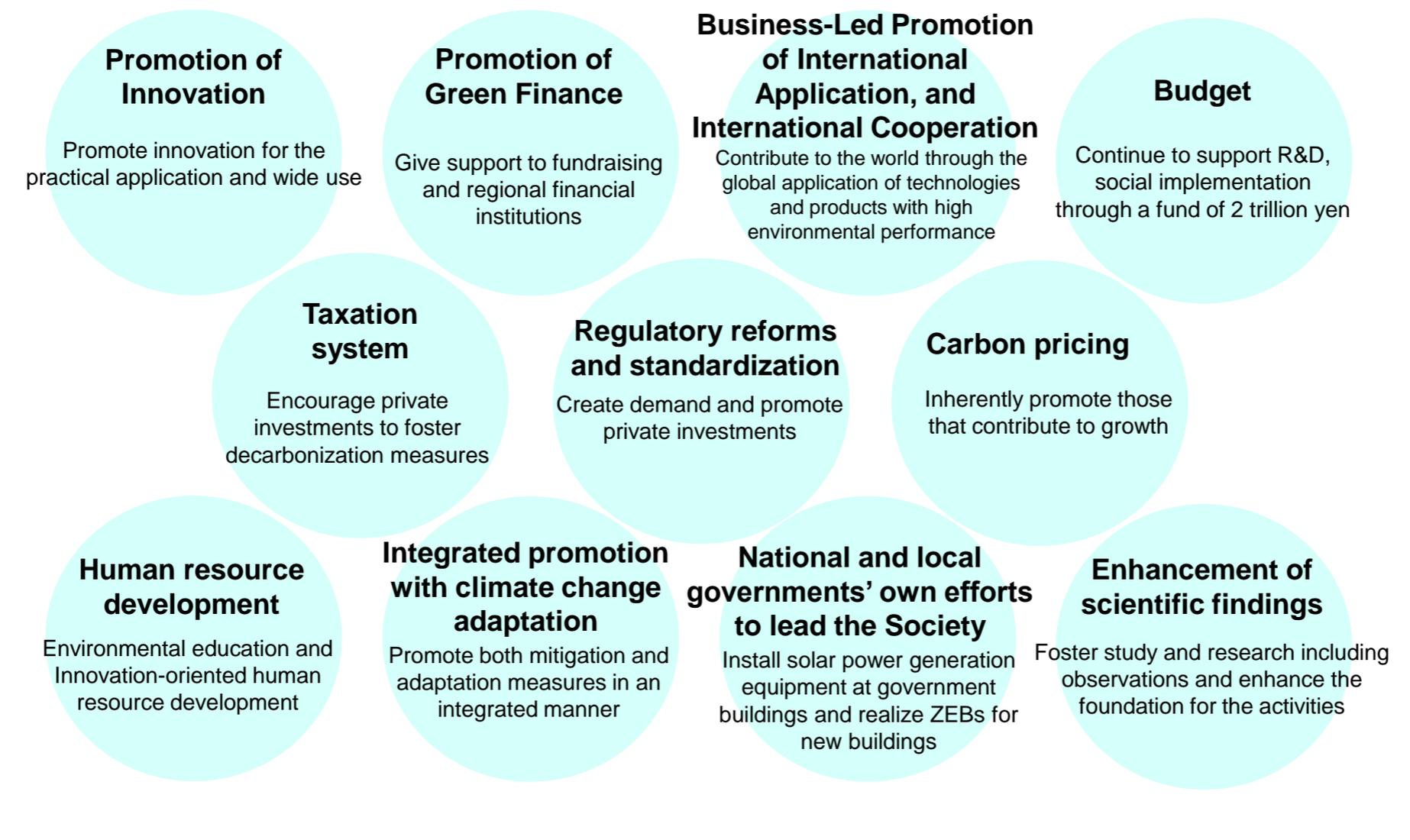
- Solve regional problems and create a resilient and vibrant society
- Turn general households into prosumers of decarbonized energy



Measures for Carbon Sink:

- Implement carbon sink measures and foster DACCS (Direct Air Capture and Carbon Storage)

② Cross-Sectoral Measures to be Focused



Japanese Policy and Measures

- **Mitigation**

- The amendment to the Act on Promotion of Global Warming Countermeasures
- Decarbonization in Local governments
- Decarbonization in Corporate Management

- **Adaptation**

- Revised National Adaptation Plan

- Stipulated net zero by 2050 as the basic principle to clarify its legal ground and ensure its policy continuity.



Legislate a long-term direction and promote efforts and investments towards decarbonization



Promote the introduction of renewable energy that will lead to regional development

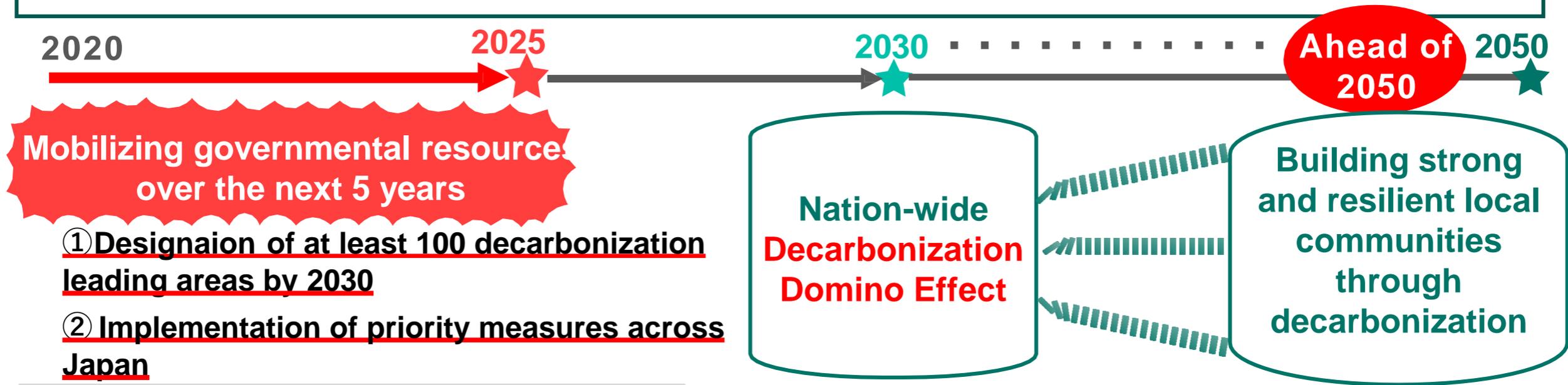


Open data on corporate emissions, leading to EGS investments

The Council for National and Local Decarbonization (Regional Decarbonization Roadmap formulated on June 9, 2021)



- In order to achieve carbon neutrality by 2050 through cooperation and collaboration between the national and local governments, the Council for National and Local Decarbonization was established to discuss measures leading to decarbonization, especially for local initiatives and citizens' lifestyles.
- The Council was held three times since its first meeting on December 25, 2020 and formulated the "Regional Decarbonization Roadmap" in its third meeting on June 9, 2021.



★ Policy Frameworks

- Policies above to be implemented in collaboration with policy programs such as the Green Food System Strategy, the Green Challenge for National Land Transport, and the Green Strategy for 2050 Carbon Neutrality.
- Executives from the Ministry of the Environment such as Vice-Minister for Global Environmental Affairs have visited local governments to explain the concept of the decarbonization leading areas and policies to support them.

Countermeasure in Regional Decarbonization Roadmap



Major Targets

1) Designate Decarbonization Leading Areas

- Develop Roadmap for 100 Leading Decarbonized Areas by 2025
- Realize Decarbonization by 2030 in those areas (Decarbonized Domino Effect)

2) Develop regional implementation system and national support mechanism

- Human Resource (Dispatch Experts, capacity development of local stakeholders)
- Technical knowledge sharing (RE potential, local economic analysis)
- Funds

3) Lifestyle innovation e.g lead by carbon foot print

- Visualize CO₂ emission
- CO₂ reduction Points
- Decarbonization Ambassadors

Funds

1. The subsidy for promoting renewable energy and local decarbonization

- subsidy to local governments which are keen to implement local decarbonization measures

2022JFY:20 billion-yen(about 173 million \$)
(MOEJ requested)

2. The Institution for realizing the carbon-free society

- Financial support for corporations which implement decarbonization projects

2022JFY:20 billion-yen(about 173 million \$)
(MOEJ requested)

Spread of Decarbonization in Corporate Management

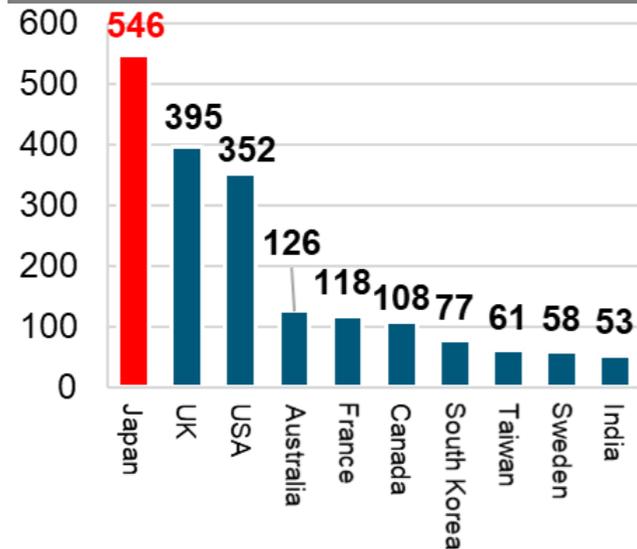
As of October 31, 2021



TCFD

- 2,634 financial institutions, companies and governments around the world (546 are in Japan.) expressed their support.
- **The largest number in the world**

Number of companies that support TCFD (Top10 countries & regions)

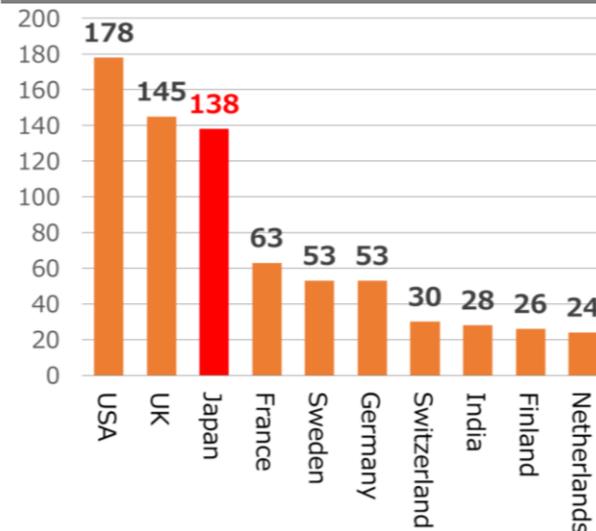


[source] TCFD website TCFD Supporters (<https://www.fsb-tcfid.org/tcfid-supporters/>)

SBT

- Number of approved companies: 997 (138 are Japanese companies.)
- **The 3rd largest in the world**

Number of approved companies with SBT by country (Top 10 countries)

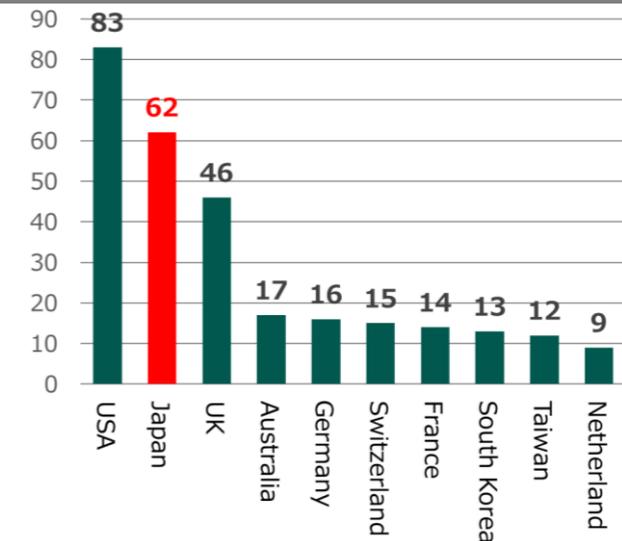


[source] Science Based Targets homepage Compiled from Companies Take Action (<http://sciencebasedtargets.org/companies-taking-action/>). Industry classification is prepared by the secretariat by applying the Japan Standard Industrial Classification, etc.

RE100

- Number of participating companies: 340 companies worldwide (62 are Japanese companies.)
- **The 2nd largest in the world**

Number of companies participating in RE100 by country (Top 10 countries & regions)



Compiled from the [source] RE 100 home page (<http://there100.org/>). Industry classification is prepared by the secretariat by applying the Japan Standard Industrial Classification, etc.

List of companies working on TCFD, SBT and RE100

Construction : HAZAMA ANDO CORPORATION /Sekisui House, Ltd. /
Daito Trust Construction Co., Ltd. /
Daiwa House Industry Company, Limited /TODA CORPORATION /
TOKYU CONSTRUCTION CO., / LTD.LIXIL Group Corporation /
Sumitomo Forestry

Grocery : Asahi Group Holdings, Ltd. / Ajinomoto Co., Inc. /
Kirin Holdings Company, Limited /
NISSIN FOODS HOLDINGS CO., LTD.

Electric Appliances : KONICA MINOLTA, INC. / SEIKO EPSON CORPORATION
Sony Corporation / NEC Corporation / Panasonic
Corporation Fujitsu Limited / FUJIFILM Holdings Corporation /
RICOH Company, Ltd.

Chemical: SEKISUI CHEMICAL CO., LTD.

Pharmacy : Eisai Co., Ltd. / ONO PHARMACEUTICAL CO., LTD.
DAIICHI SANKYO COMPANY, LIMITED

Precision equipments :Shimazu Corporation / NIKON CORPORATION

Other products : ASICS Corporation / Kao Corporation /
Meiji Holdings Co., Ltd.

Information & Communication : Nomura Research Institute, Ltd.

Retail Trade : ASKUL Corporation / AEON CO., LTD. /
J. FRONT RETAILING Co., Ltd. / MARUI GROUP CO., LTD.

Real estate : Tokyu Fudosan Holdings Corporation /
Tokyo Tatemono Co.,Ltd. / Mitsui Fudosan Co., Ltd. /
MITSUBISHI ESTATE CO., LTD.

Service : SECOM CO., LTD.

Promoting Decarbonization in Corporate Management

- MOE dispatches information on decarbonization in corporate management and promotes decarbonization practices by supporting the implementation of scenario analysis in line with TCFD recommendations, and the formulation of action plans to achieve SBT, etc.

Dispatch of information on decarbonization in corporate management

- Operate a website **“Green Value Chain Platform”** and offer information on how to calculate overall emissions throughout the supply chain, etc.

https://www.env.go.jp/earth/ondanka/supply_chain/gvc/

- Operate a network called **“Promotion of Decarbonization in Corporate Management Network”**, a place to exchange information

Support for conducting scenario analysis in line with TCFD

- **Individually support companies to conduct scenario analysis**, which is considered to be the most difficult out of the disclosure items recommended in the TCFD.
- **Provide a guidebook that outlines the procedures for conducting scenario analysis** and examples of implementation, based on the past experiences.

http://www.env.go.jp/policy/policy/tcfid/TCFDguide_3rd_EN.pdf

Support for the formulation of action plans to achieve SBT, etc.

- **Individually support companies to formulate of actions plans to achieve SBT, etc. for both large companies and SMEs.**
- Provide a **guidebook** summarizing the procedures for the formulation of action plans based on the past experiences.
- Guidebook for SMEs also include **benefits of taking action** towards decarbonization

Adaptation Policy in Japan

- Facing serious impacts of climate change, Japanese government works on adaptation to climate change in a wide range of sectors in collaboration with various stakeholders.

Background

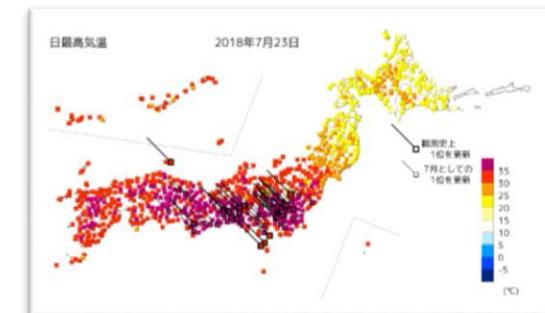
- Extreme weather events affect industries, ecosystem, and human health.
- Embedding "Adaptation" in all related policies is the key (e.g. agriculture, fisheries, disaster risk reduction, health)

Noteworthy output in recent years

- 1. Enactment of the Climate Change Adaptation Act (2018-)**
A law focusing on adaptation was rare in the world
- 2. Climate Change Impact assessment (published in 2020)**
Scientific assessment of the significance, urgency and confidence of 71 categories in 7 sectors.
- 3. Climate Change Adaptation Plan (revised in Oct 2021)**
KPIs were set for major items which were assessed at the highest significance and urgency.
- 4. Climate Change Adaptation Promotion Council (2018-)**
The Cabinet Secretariat and 12 ministries and agencies will periodically review the progress of adaptation policies.
- 5. Efforts in the local communities**
Local governments promote adaptation measures suitable for local situations. Local Adaptation Centers to disseminate adaptation info were established in 34 out of 47 prefectures
- 6. international cooperation**
 - ① Knowledge and technical supports utilizing Asia-Pacific Climate Change Adaptation Information Platform (AP-PLAT).
 - ② Japan will provide climate finance, both public and private, totaling about USD 60 billion from 2021 to 2025, and it will further enhance its assistance for adaptation.



Land Slides
(Photo 2020, Kumamoto pref.,
From MLIT Japan website)



- Record of the highest temperature; 41.1 degree C in Kumagaya, Saitama.
- More than one thousand people a year died due to heat illness in Japan.

International Cooperation for Decarbonized Society

COP26: Entities of action expanded and actions emphasized

- Main actors of actions expanded: **Kyoto Protocol**: Developed countries --> **Paris Agreement**: All the countries
- COP26 set daily topics such as finance, energy, which encouraged countries to make pledges.
- Its implied concept is to urge/request actions of every sectors and stakeholders.
- Focus of COP has expanded on negotiation inside of Paris Agreement, but wider implementation action.

COP Decisions : Embedded system for strengthening mitigation and adaptation

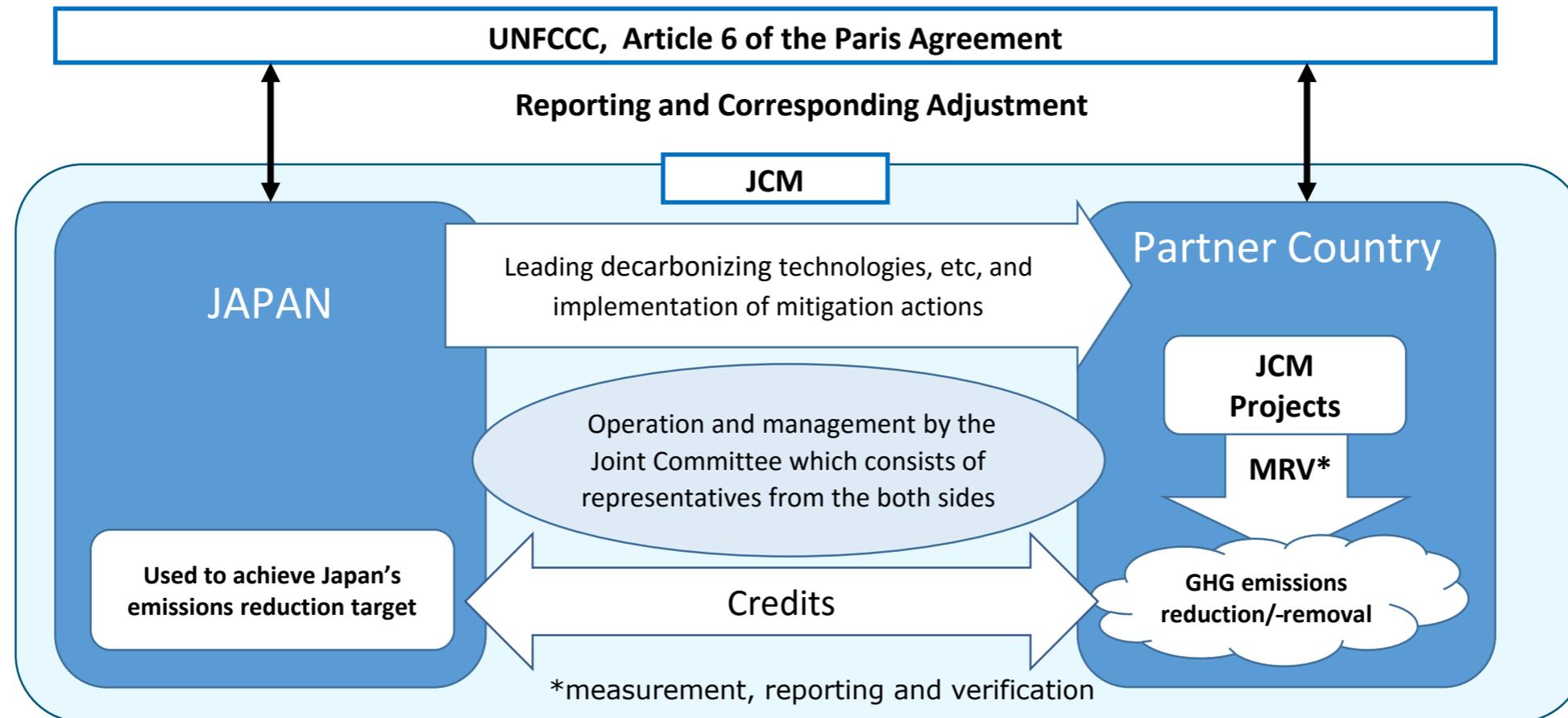
- COP decisions embody fundamental perspective of mitigation, adaptation and finance, requesting parties to raise ambition toward net-zero around mid-century to achieve 1.5 °C goal.
- Particularly cover decisions compile significant progresses as follows;
 - 1) Establish a work program to urgently scale up mitigation ambition and implementation in this decade at COP27
 - 2) Urge parties that have not yet done so to submit new or updated NDCs in advance of COP27
 - 3) Accelerate efforts towards the phasedown of unabated coal power and phase-out of inefficient fossil fuel subsidies
 - 4) Urge developed country Parties to at least double their collective provision of climate finance for adaptation to developing country Parties from 2019 levels by 2025
 - 5) Recognize important role of non-Party stakeholders, including civil society, indigenous peoples, local communities, youth, children, local and regional governments and other stakeholders

Negotiation : Article 6 Market mechanism

- Market mechanism attracts private finance to facilitate emission reductions and to promote private-sector voluntary market.
- Completion of Paris Rulebook including Article 6 is highly valuable.
- Japan contributed to the finalization of the Article 6 rule while providing quantitative analysis and bridging proposal for addressing unresolved issues, which are reflected in the agreed rule.

Joint Crediting Mechanism (JCM)

- Facilitating diffusion of leading decarbonizing technologies, etc. and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of partner countries.
- Appropriately evaluating contributions from Japan to GHG emissions reduction or removal in a quantitative manner and use them to achieve Japan's emissions reduction target.
- Contributing to the ultimate objective of the UNFCCC and use of market mechanisms, including the JCM, is articulated under Article 6.



JCM Partner Countries

- Japan has held consultations for the JCM with developing countries since 2011 and has established the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR, Indonesia, Costa Rica, Palau, Cambodia, Mexico, Saudi Arabia, Chile, Myanmar, Thailand and the Philippines.



Mongolia
Jan. 8, 2013



Bangladesh
Mar. 19, 2013
(Dhaka)



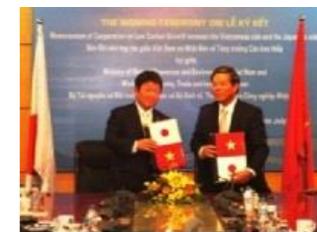
Ethiopia
May 27, 2013
(Addis Ababa)



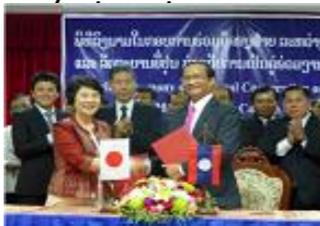
Kenya
Jun. 12, 2013
(Nairobi)



Maldives
Jun. 29, 2013
(Okinawa)



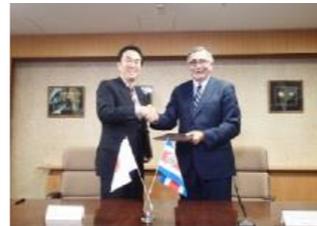
Viet Nam
Jul. 2, 2013
(Hanoi)



Lao PDR
Aug. 7, 2013
(Vientiane)



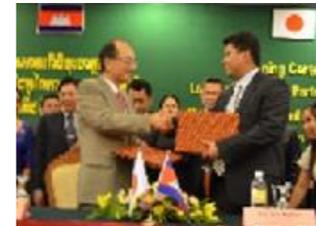
Indonesia
Aug. 26, 2013
(Jakarta)



Costa Rica
Dec. 9, 2013
(Tokyo)



Palau
Jan. 13, 2014
(Ngerulmud)



Cambodia
Apr. 11, 2014
(Phnom Penh)



Mexico
Jul. 25, 2014
(Mexico City)



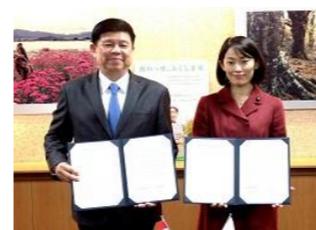
Saudi Arabia
May 13, 2015



Chile
May 26, 2015
(Santiago)



Myanmar
Sep. 16, 2015
(Nay Pyi Taw)



Thailand
Nov. 19, 2015
(Tokyo)



Philippines
Jan. 12, 2017
(Manila)

The Joint Crediting Mechanism (JCM)

- Facilitating diffusion of leading decarbonizing technologies etc. through contributions from Japan and evaluating realized GHG emissions reduction or removal in a quantitative manner to use them for achieving Japan's emissions reduction target.
- Japan will address the high initial cost barrier of introducing advanced low-carbon technologies in the Partner countries (17 countries) through the JCM.

Renewable Energy



Energy efficiency [Industrial sector]



Energy efficiency [Consumer sector]



Energy efficiency [Urban sector]



Waste



Transport



JCM Financing Programme by MOEJ (FY2013~2021) (November, 2021)

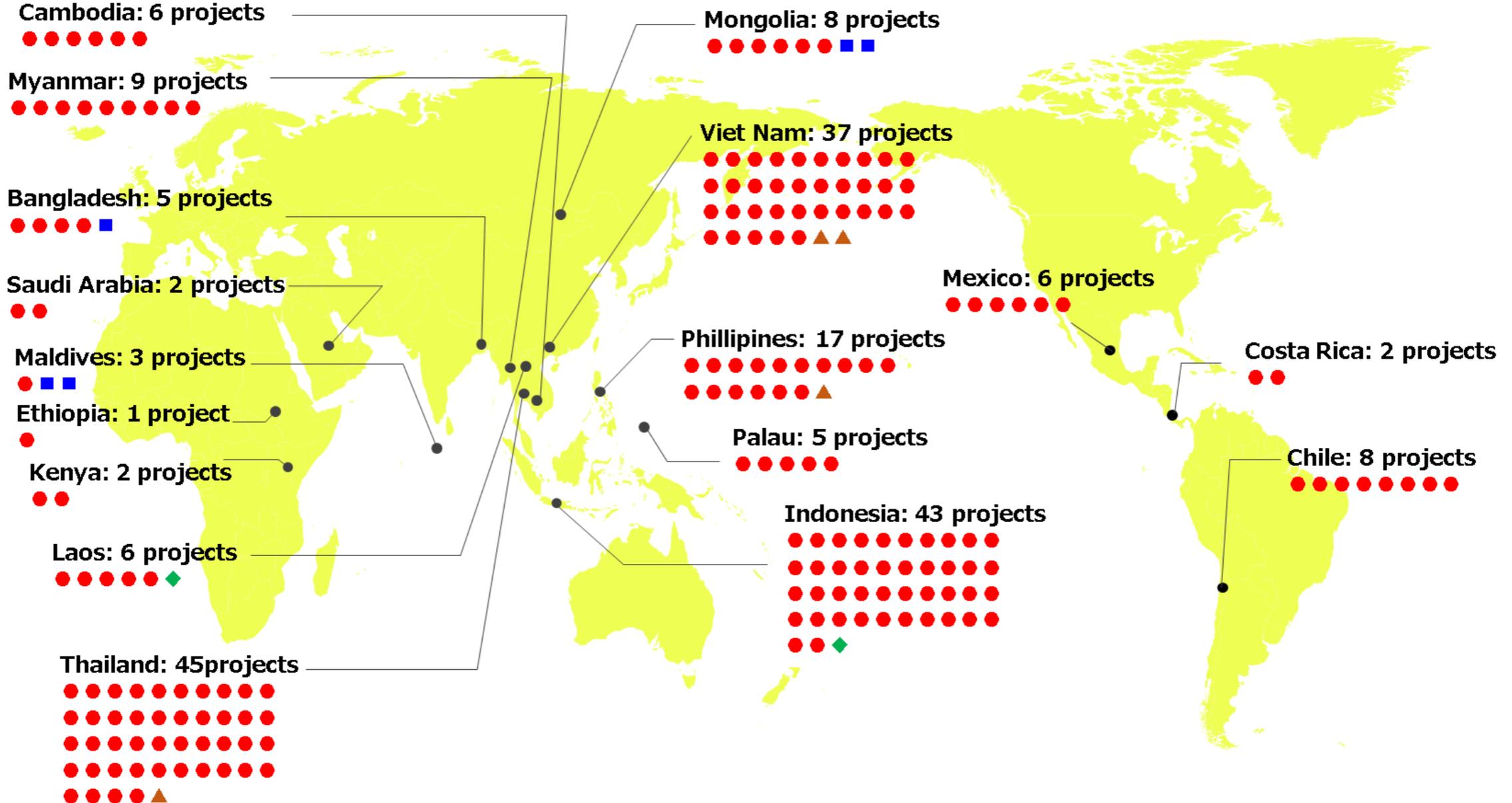


Total 205 projects (17 partner countries)

(● Model Project: 194 projects (including Eco Lease: 3 project), ■ ADB: 5 projects, ◆ REDD+: 2 projects, ▲ F-gas: 4 projects) Other 1 project in Malaysia

118 projects have been started operation.

58 projects with have been registered as JCM projects.



City-to-City Collaboration Program

Basic concept: Japanese local government: Transferring the **knowledge and experience of Japanese cities for creating decarbonized and low carbon society** to foreign cities with private sectors.



- **Creating low carbon project** efficiently and effectively
- Designing **the local systems** to promote low carbon society
Ex) low carbon action plan and technology evaluation criteria etc.
- **Capacity building** for local staffs

Promotion of private investment

Self-sustained development of foreign city

Transferring low-carbon technology to other fields

Initiative on Fluorocarbons Life Cycle Management



14 State/Int'l Organization Partners

Chile, France, Japan, Maldives, Mongolia, New Zealand, The Philippines, Singapore, The United Kingdom, Vietnam, The World Bank, CCAC, ADB, and UNIDO (as of Nov '21)

- Fluorocarbons control is important for both **ozone layer protection** and **climate change mitigation**.
- **Life cycle management** of fluorocarbons means to **reduce consumption, block leakage in use, recover, destroy, and recycle of fluorocarbons instead of discharging into the air at disposal**.
- Japan-led **initiative on Fluorocarbons Life Cycle Management (IFL)** is actively working on to **promote awareness on the importance on the refrigerant life cycle management globally**. The IFL also aims to facilitate **innovation and mutual collaborations** among its partners.
- The IFL promotes **introducing Low-GWP and Natural Refrigerants**.

Asia-Pacific Adaptation Information Platform (AP-PLAT)

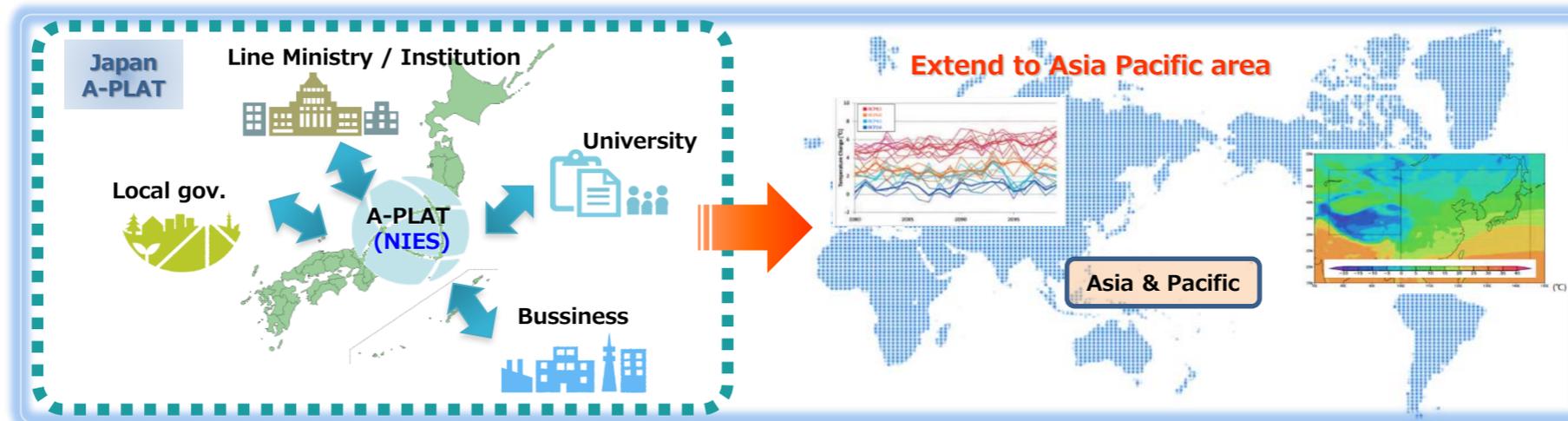
- AP-PLAT was **established on 16th June, 2019** during G20 Ministerial Meeting .
- A **web-site opened** to share the scientific knowledge including climate change impact assessment (Based on the Japan's Information Platform "A-PLAT" established in Aug. 2016)
- AP-PLAT also **explores practical partnership** aiming to enable environment for climate change risk informed decision making and practical adaptation action.
- Providing **the latest scientific climate risk information and supporting adaptation planning and project formulation** in collaboration with the partner countries and organizations



Launching Ceremony in Karuizawa, Nagano, Japan

Three Core Pillars of actions in cooperation with the Partners

1. **Develop scientific knowledge/information**
2. **Showcase supportive tools for adaptation**
3. **Capacity Building on adaptation planning and project formulation**



ASEAN-Japan Climate Change Action Agenda2.0

- Climate Change Action Agenda 2.0 was proposed by Japan at ASEAN-Japan Summit Meeting, and was welcomed by ASEAN countries.
- We keep the three pillars from agenda1.0: Transparency, Mitigation, and Adaptations.
- Expand the menu of climate change countermeasures, especially transition to decarbonization, and strengthen existing efforts.

Agenda1.0

1. Transparency

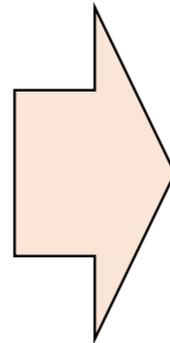
MRV

2. Mitigation

JCM, Co-Innovation
(demonstration) ,
Fluorocarbons

3. Adaptation

AP-PLAT, Disaster
prevention



Agenda2.0(2021)

1. Transparency

2. Mitigation

(1) Long term Strategy and Policy Making

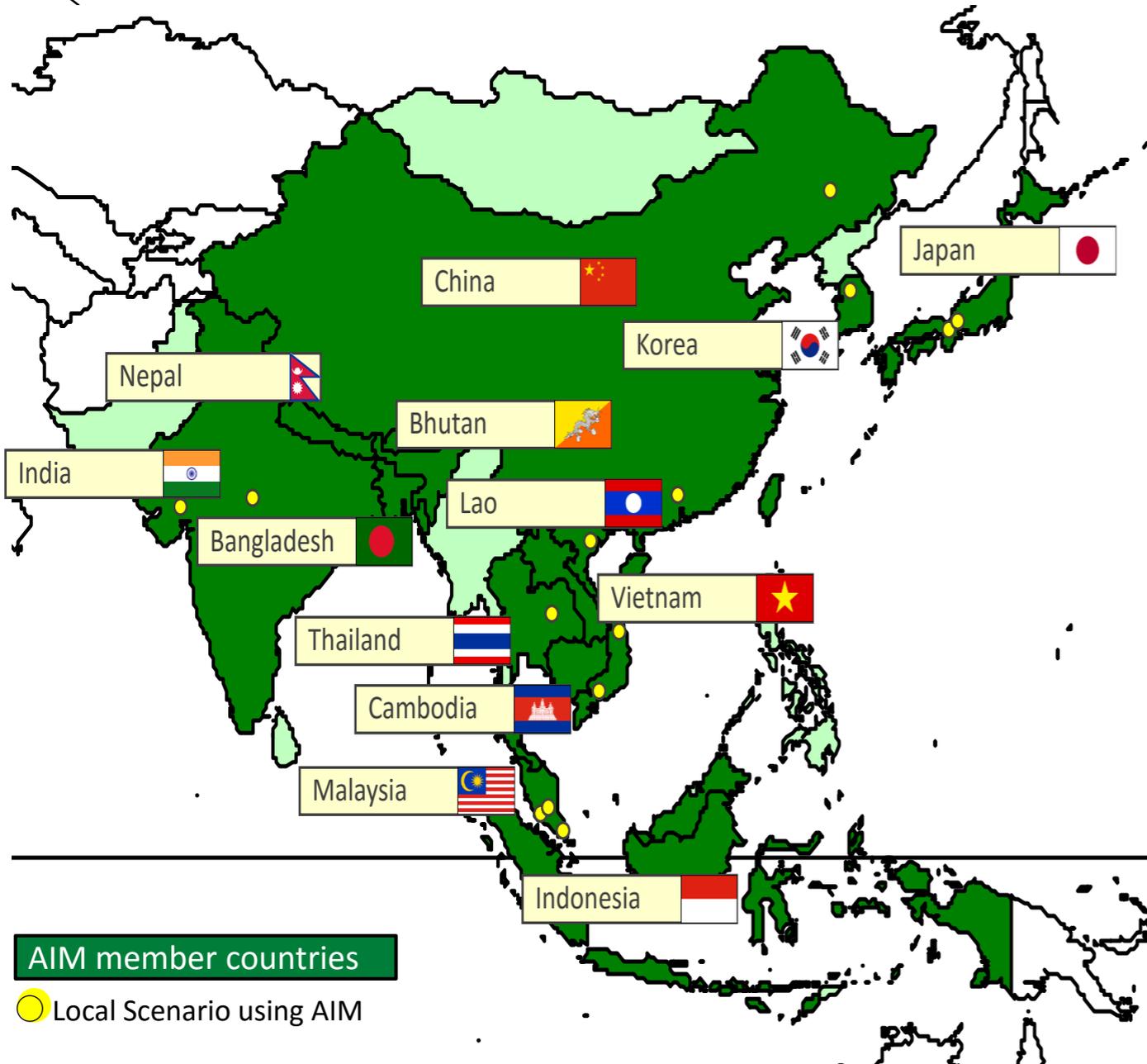
(2) Decarbonization of Each Sector

(3) Dissemination of Decarbonization Technologies
through the JCM and related schemes

(4) Expansion of Zero Carbon Cities

3. Adaptation

Scenario development in Asia using Japan's AIM (Asia-Pacific Integrated Model)



- The **AIM** – namely a large-scale computer simulation – comprises the following three models;
 - i) Extended SnapShot Tool (ExSS)**: an integrating tool of future economic, industrial, social and energy visions with mitigating options,
 - ii) AIM/Enduse**: a tool for people and industry's demand generation processes, technology deployment, and their impacts on GHG emission,
 - iii) AIM/CGE**: a tool for keeping macroeconomic consistency among supply, demand and resource constraints, and for estimating macroeconomic impacts.
- In order to assess policy options to stabilize climate change, Japan continues providing Asian countries technological support for formulation of their long-term strategy (LTS) towards carbon neutrality by FY2050 or the latter half of this century.

PaSTI: "Partnership to Strengthen Transparency for Co-Innovation"

- MOEJ has established a project focusing on promoting decarbonization efforts, especially through improving GHG emission transparency in private companies in ASEAN.
- Its objective is to contribute to accelerating competitiveness in the supply chain, and accessing ESG investment in the region.
- To this end, we are making a guideline for the region to help them enhance transparency at facility levels and made its outline open at a side event of Japan Pavilion at COP26.



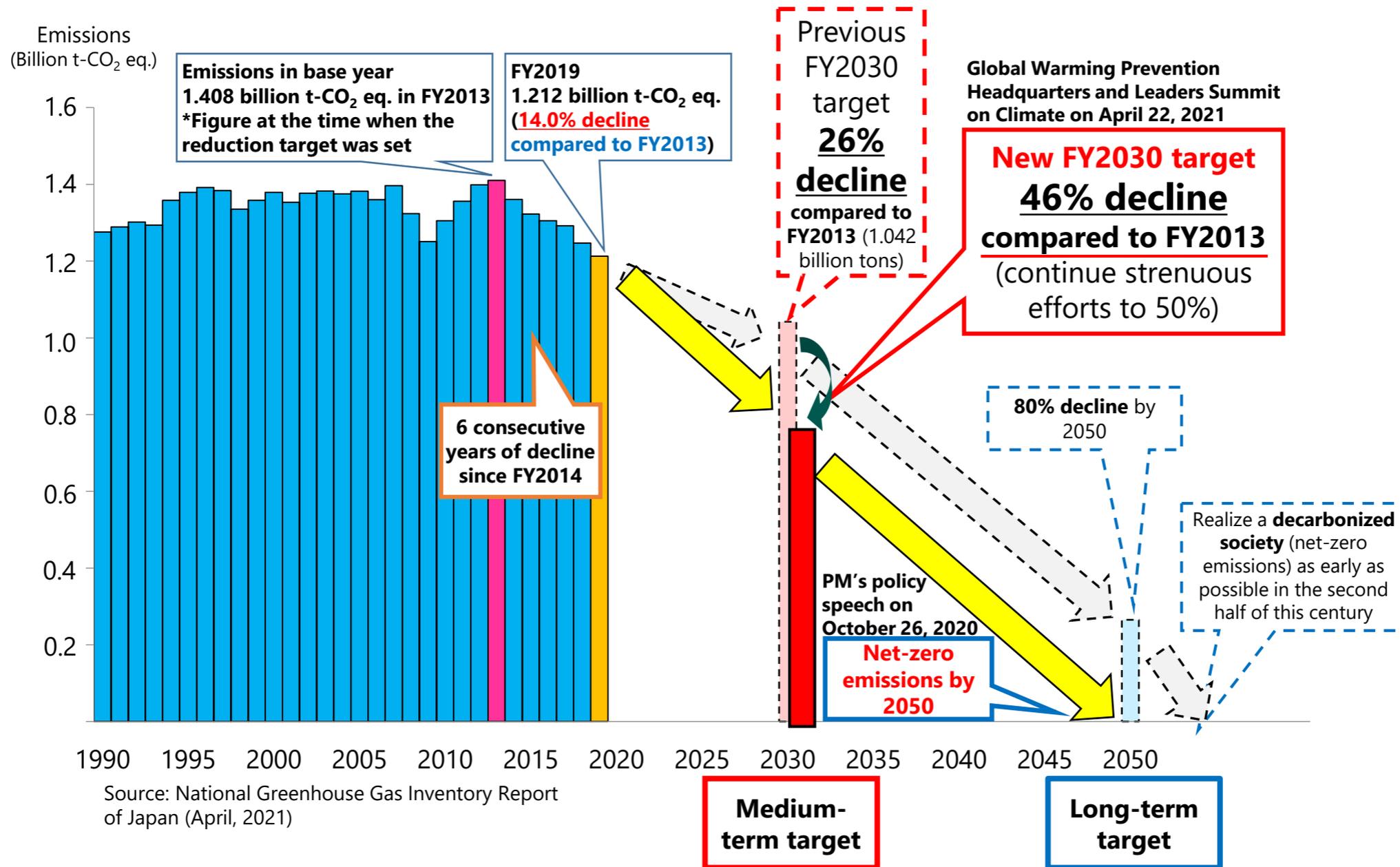


環境省

Ministry of the Environment

Reference

Japan's Medium- and Long-term Targets for GHG Reduction



NDC / the Plan for Global Warming Countermeasures



- Posted Updated Japan's NDC on the website of the United Nations Framework Convention on Climate Change (UNFCCC).
- Revised the Plan for Global Warming Countermeasures to achieve **carbon-neutrality by 2050, reduction target* for FY2030.**

* Japan aims to reduce its greenhouse gas emissions by 46 percent in fiscal year 2030 from its fiscal year 2013 levels. Furthermore, Japan will continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent

Greenhouse Gas Emissions and Removals (million tons-CO ₂)	Actual Data in FY2013	Estimated emissions in FY 2030	Reduction rate	Conventional target	
		1408	760	▲46%	▲26%
Energy-related CO ₂	1235	677	▲45%	▲25%	
In each sector	Industry sector	463	289	▲38%	▲7%
	Commercial and others sector	238	116	▲51%	▲40%
	Residential sector	208	70	▲66%	▲39%
	Transport sector	224	146	▲35%	▲27%
	Energy conversion sector	106	056	▲47%	▲27%
Non-energy related CO ₂ , Methane, N ₂ O	134	115	▲14%	▲8%	
Fluorinated gases	39	22	▲44%	▲25%	
Removals by LULUCF	-	▲48	-	(▲37 million tons-CO ₂)	
Joint Crediting System(JCM)	Aiming for a cumulative GHG emission reduction of about 100 million tons of through public-private partnerships (approx. 10 billion USD) as maximum Investment size.			-	

Break through for the Local Decarbonization: Innovation and Social Implementation by MOEJ

- Promote deployment of innovative technologies for early achievement of a decarbonized society on a subnational level
- Proceed with the social implementation of decarbonization technologies and utilize them to create local businesses and jobs

Floating offshore wind power generation facility in Goto, Nagasaki Prefecture



Source: Quote from the Natural Energy Utilization Report No.10, Renewable Energy Institute

Data center fully powered by renewable energy in Ishikari, Hokkaido Prefecture



Data provided by KYOCERA Communication System Co., Ltd.

CO₂ capture and utilization project (CCU*) in Saga, Saga Prefecture



*Carbon capture and utilization

Sold to an algae cultivation company and commercialized as cosmetic products and dietary supplements



CO₂ capture project in Omuta, Fukuoka Prefecture



* Bio-energy carbon capture and storage

Negative emission technology also stated in the IPCC report
Capture capacity of 500 tons per day

SIGMA POWER Ariake Corporation Mikawa Power Plant (49 MW)
*Burn only biomass

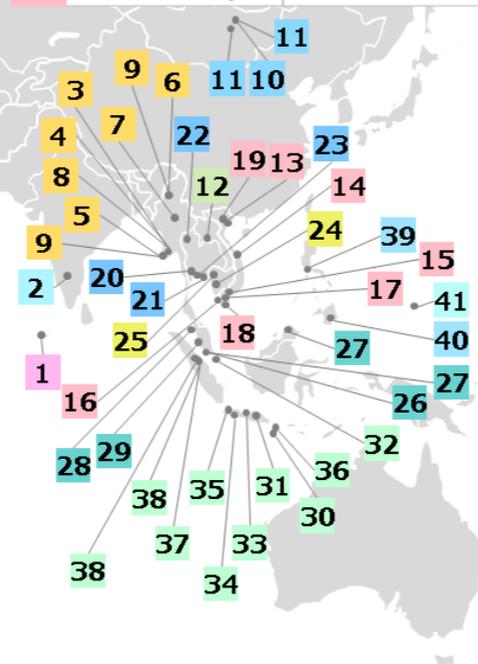
Cities joining the city to city collaboration program (FY2013~2021)

Participation by **13** countries **41** cities・regions
 Japan **17** local government

*Project in FY2021

Foreign city	Japanese city	Foreign city	Japanese city
Maldives			
1 Malé	Toyama		
India			
2 Bangalore	Yokohama		
Myanmar			
3 Yangon (region)	Kitakyushu		
4 Yangon(city)	Kawasaki		
5 Ayeyarwady	Fukushima		
6 Sagaing	Fukushima		
7 Mandalay	Kitakyushu		
8 Yangon City	Fukuoka		
9 Sagaing Region, Ayeyarwady Region	Fukushima		
Mongolia			
10 Ulaanbaatar	Sapporo・Hokkaido Government		
11 Ulaanbaatar city and Tuv aimag	Sapporo		
Lao PDR			
12 Vieng chan	Kyoto		

Foreign city	Japanese city
Vietnam	
13 Hai Phong	Kitakyushu
14 Da Nang	Yokohama
15 Ho Chi Minh	Osaka
16 Kiên Giang and others	Kobe
17 Can Tho	Hiroshima
18 Soc Trang Province	Hiroshima
19 Hanoi City	Fukuoka



Foreign city	Japanese city	Foreign city	Japanese city
Thailand		Indonesia	
20 Bangkok (Bangkok Port-Laem Chabang Port)	Yokohama (Yokohama Port Pier)	30 Denpasar	Tokyo Union
21 Rayong	Kitakyushu	31 Surabaya	Kitakyushu
22 Chiang Mai	Kitakyushu	32 Batam	Yokohama
23 Eastern Thailand (EEC)	Osaka	33 Semarang*	Toyama
Cambodia		34 Bandung	Kawasaki
24 Phnom Penh	Kitakyushu	35 Special Capital Territory of Jakarta	Kawasaki
25 Siem Reap	Kanagawa	36 Bali*	Toyama
Malaysia		37 Rokan Hulu, Riau	Kawasaki
26 Iskandar Development Area	Kitakyushu	38 Rokan Hulu Regency and Pekanbaru City	Kawasaki
27 Iskandar Development Area・Kota Kinabalu	Toyama	39 Gorontalo	Ehime
28 Penang and others	Kawasaki	*Joint project for Bali and Semarang	
29 Kuala Lumpur	Tokyo	Philippines	
		40 Quezon	Osaka
		41 Davao	Kitakyushu
		Palau	
		42 Koror	Kitakyushu
		Chile	
		43 Renca, Santiago	Toyama

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Adaptation measures for Small Island Developing States (SIDs)

In order to promote the climate change adaptation measures for transportation infrastructure, Ministry of the Environment Japan and Tokyo University developed Climate Change Risk assessment methodology for Coastal Airports Operations in SIDs.

- 1) Developed risk assessment methodology at Faleolo Airport in Samoa.
- 2) Verified tool's portability at Pohnpei Airport in FSM

