

Climate Actions towards net-zero by 2050



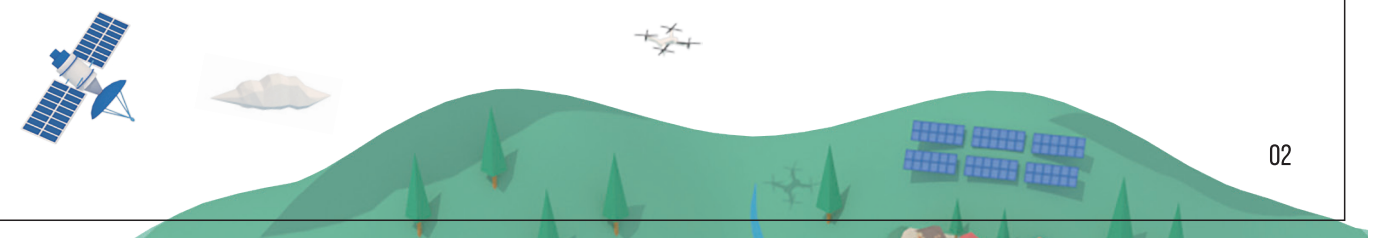


Japan's Policies towards Net-Zero by 2050

- Japan Commitment to Net-Zero by 2050
- Plan for Global Warming Countermeasures and Long-Term Strategy
- New energy system with a Focus on Renewable Energy
- Regional Decarbonization Roadmap

Policy package to support decarbonization worldwide

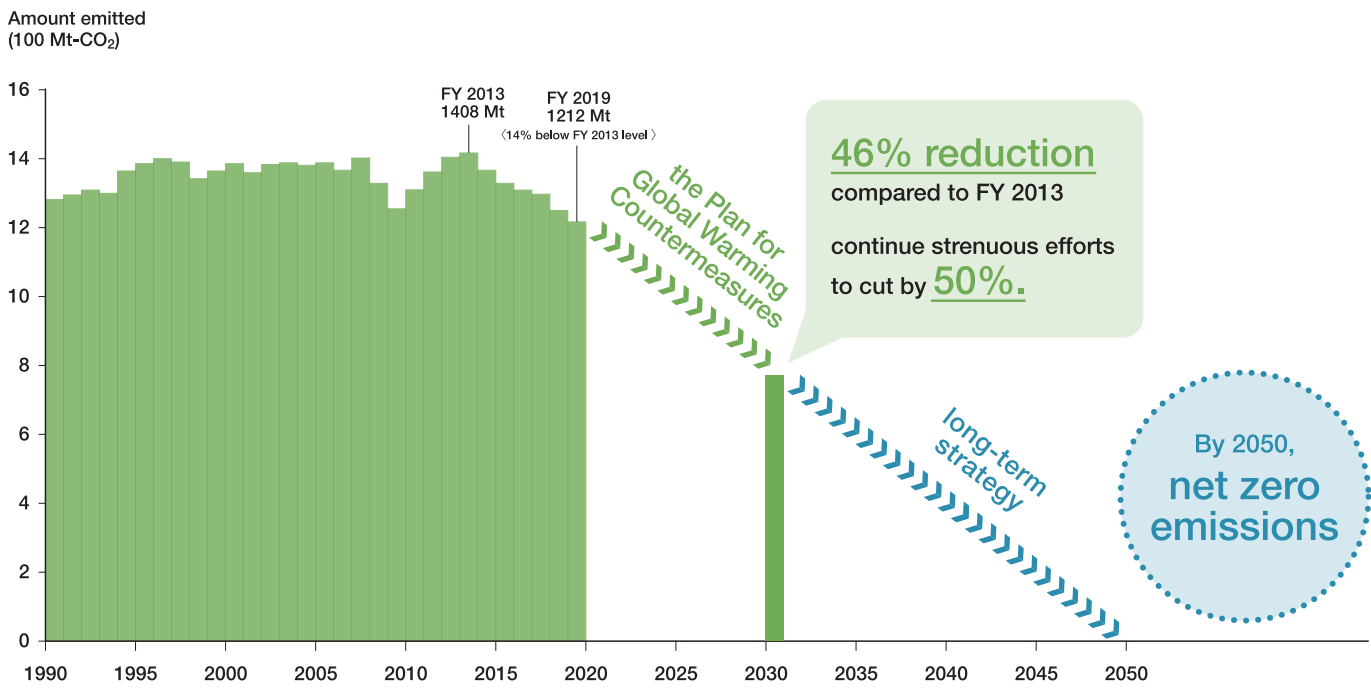
- MOEJ Initiative for Decarbonized Infrastructure
- ASEAN-Japan Climate Change Action Agenda2.0
- Initiative to promote corporate MRV
- Climate and Disaster Risk Reduction Initiative



Japan's Policies towards Net-Zero by 2050

Japan Commitment to Net-Zero by 2050

- 46 percent reduction in fiscal year 2030 from its fiscal year 2013 levels.
- Continue strenuous efforts in its challenge to meet the lofty goal of cutting its emission by 50 percent.
- To this end, the Long-Term Strategy under the Paris Agreement and the Plan for Global Warming Countermeasures have been fully revised.



Key points of the Plan for Global Warming Countermeasures

Renewable energy, energy efficiency and conservation

Municipalities set promotion areas for renewable energy based on the amended Act on the Promotion of Global Warming Countermeasures
→ Expand renewable energy that brings benefits to the local communities

Expanding houses and buildings that are obliged to comply with energy-saving standards

Industries, transportation, etc.

Supporting Innovation for 2050
→ The 2 trillion yen fund supports research and development and social implementation in priority areas such as hydrogen and storage batteries.

R&D and demonstration projects to support data centers to achieve energy conservation more than 30%

cross-sectoral approach

Setting more than 100 decarbonization-leading areas by FY 2030 (Regional Decarbonization Roadmap)

Reducing emissions in developing countries by using advanced decarbonization technologies etc.
→ Contributing to reduction on a global scale through the "Joint Crediting Mechanism: JCM"

Enjoying a Sustainable Lifestyle

- It has been reported that households account for about 60% of Japan's GHG emissions on a consumption basis.
- Society coming to enjoy Sustainable Lifestyles (Food, Clothing, and Housing)
- New businesses such as digitalization and sharing ones are expected to emerge.
- Key Initiatives: Visualization of information on products and services and encouraging local residents to change behavior through local CO₂ reduction points and incentives (cf. nudge)



Long-Term Strategy towards Net-Zero by 2050

Cross-Sectional measures

Promotion of Innovation

Promote innovation for the practical application and wide use

Promotion of Green Finance

Give support to fundraising and regional financial institutions

Business-Led Promotion of International Application, and International Cooperation

Contribute to the world through the global application of technologies and products with high environmental performance

Budget

Continue to support R&D, social implementation through a fund of 2 trillion yen

Taxation system

Encourage private investments to foster decarbonization measures

Regulatory reforms and standardization

Create demand and promote private investments

Carbon pricing

Inherently promote those that contribute to growth

Human resource development

Environmental education and Innovation-oriented human resource development

Integrated promotion with climate change adaptation

Promote both mitigation and adaptation measures in an integrated manner

National and local governments' own efforts to lead the Society

Install solar power generation equipment at government buildings and realize ZEBs for new buildings

Enhancement of scientific findings

Foster study and research including observations and enhance the foundation for the activities

Long-Term Strategy for Carbon Neutrality

Basic Concept

Climate change countermeasures do not weigh on economic growth. Rather, these measures are the keys to transforming the industrial structure and producing robust growth by dramatically changing our economy and society, promoting investments, and enhancing productivity.

Sectoral visions and direction of measures



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



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



Industry

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



Community and Living

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

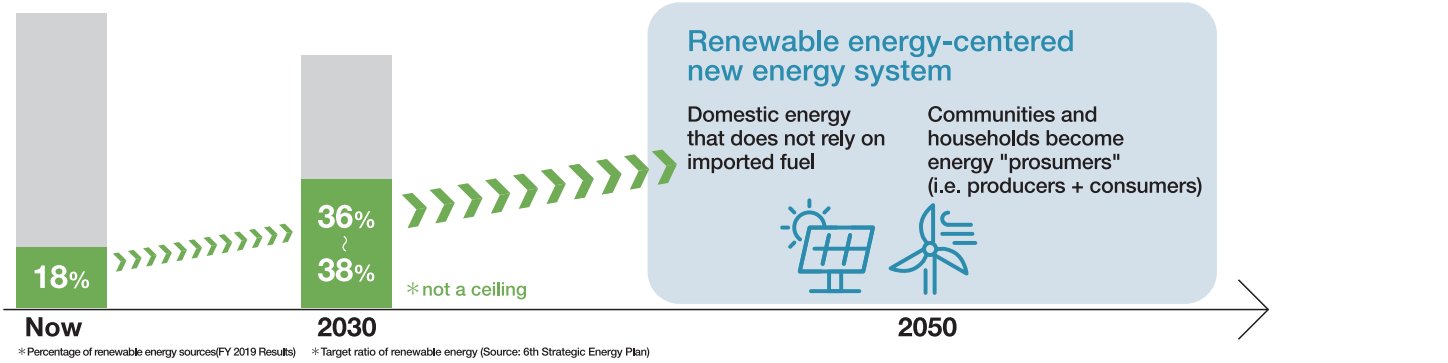


Measures for Carbon Sink

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

New Energy System with a Focus on Renewable Energy

- In 10 years, renewable energy will be the major source of energy in the power mix.
- Beyond 2030, we are moving towards new energy system centering on renewable energy.
- Local areas and households will be energy producers rather than just consumers.
- Major actions: cost reduction of renewable energy, development of necessary infrastructure such as power grids and storage batteries, introduction of renewable energy in harmony with local communities and nature.



Renewable energy-centered new energy system

Domestic energy that does not rely on imported fuel

Communities and households become energy "prosumers" (i.e. producers + consumers)

Now 18% 2030 36% ~ 38% 2050

* Percentage of renewable energy sources(FY 2019 Results) * Target ratio of renewable energy (Source: 6th Strategic Energy Plan)

* not a ceiling

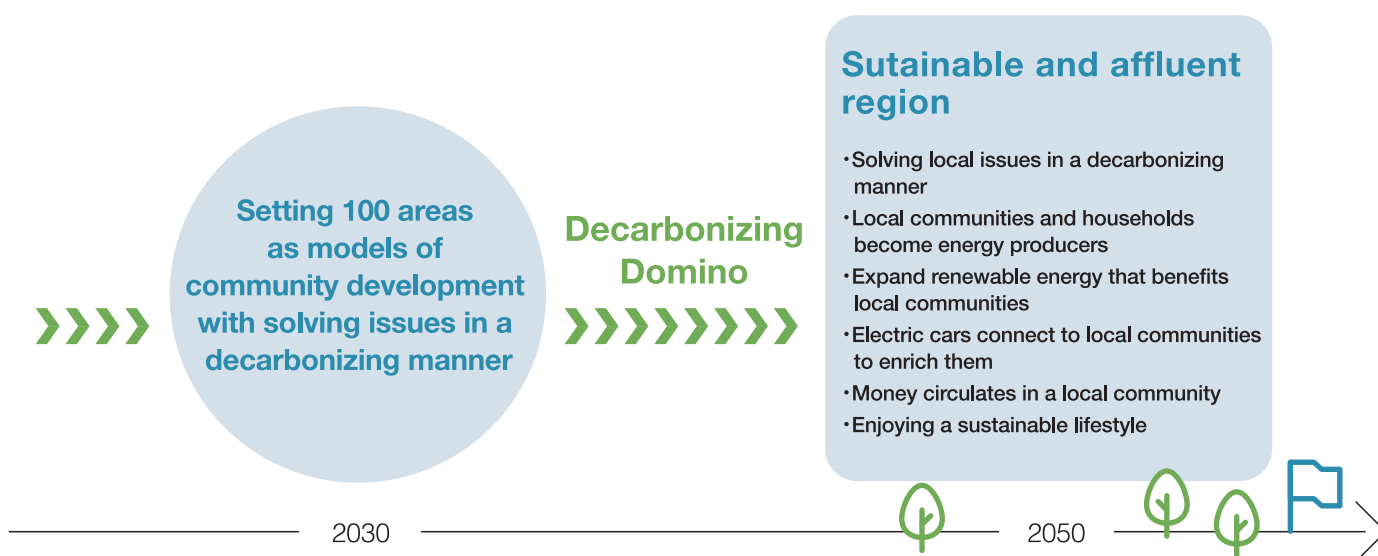
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Regional Decarbonization Roadmap

In order to achieve net-zero by 2050 through cooperation between the national and local governments, Council for National and Local Decarbonization was held as a forum to discuss forum to discuss actions closely related to local initiatives and the lifestyles of the people. Regional Decarbonization Roadmap was formulated on June 9, 2021.

- First of all, we will promote **problem solving × decarbonizing regional development** from 100 locations nationwide.
- Local entities take priority measures such as for self-consumption solar power generation, and energy saving in houses and buildings.
- Expanding to national and overseas markets like Domino Effect, creating sustainable and affluent regions nationwide.
- Key Initiatives: Utilizing Human Resources, Information, and Finance. Innovating Lifestyles and Rules.



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-)

An independent law focusing only 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-)

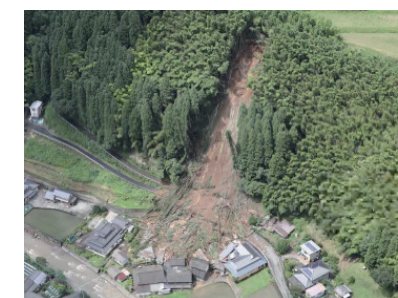
The Cabinet Secretariat and 12 ministries and agencies will periodically review the progress of adaptation policies.

5. Efforts in the local communities

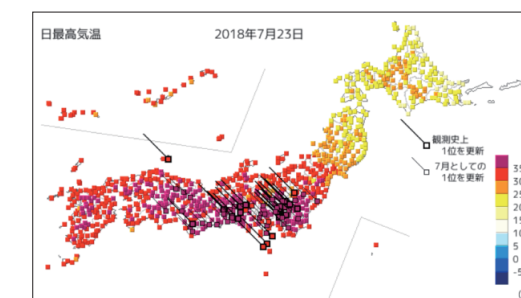
Local governments promote adaptation measures suitable for local situations. Local Adaptation Centers to disseminate adaptation info were established in 34 out of 47 prefectures.

6. international cooperation

Knowledge and technical supports utilizing Asia-Pacific Climate Change Adaptation Information Platform (AP-Plat). 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.

Policy Package to Support Decarbonization Worldwide

Ministry of the Environment Decarbonization Initiative

Announced on June 15, 2021

MoE Japan is strengthening key public private partnerships to promote the development of environmental infrastructures overseas through JCM, which is attracting growing expectations, allowing GHG emission reductions to be realized in partner countries to contribute to the achievement of Japan and partner country's NDC.

Aiming for a cumulative GHG emission reduction of about 100 million tons of CO₂ from JCM projects through public private partnerships by 2030. (approx. 10 billion USD as maximum Investment size through public-private partnerships).

Renewable Energies
(Solar Power, Wind Power, Hydro Power, Geothermal Energy, Biomass Energy, Green Hydrogen, and so forth)



Solar Power



Wind Power

Green Logistics
(Non Fluorocarbon Cooling System, Modal Shift, Airports, Ports and Harbors, and so forth)



High Efficient Freezer



Modal Shift

Waste management Infrastructure
(Waste to Energy, Recycling system, Landfill and so forth)



Waste to Energy



Improvement of landfill(Fukuoka method)

Actions to create favorable conditions for JCM projects

1. Formulation of Global Rules

Leading the discussion on Paris Agreement Article 6 (market mechanism), making JCM as global rule for Article 6

2. Diversification of Funds

Cooperating with public finance institutions and multilateral development Banks (JBIC, JOIN, ADB, World Bank), Develop guidance for private finance JCM projects

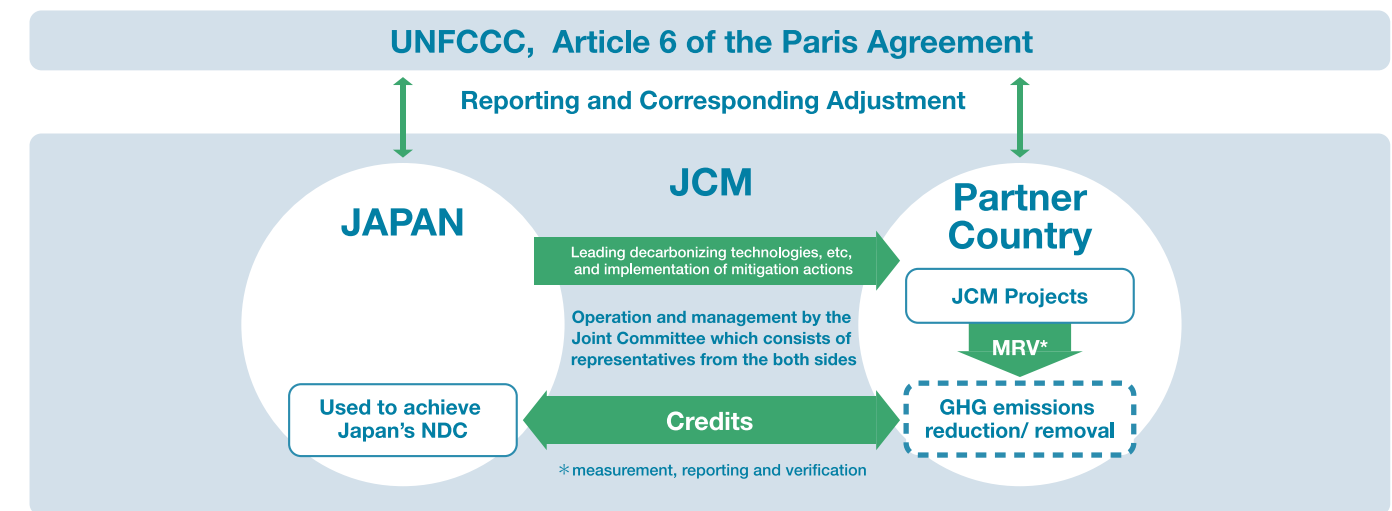
3. Global and Regional Expansion

Expanding partners in the Indo Pacific region target areas, introducing advanced technologies through cooperation with third countries including the US and Australia

4. Facilitation of Decarbonization Market

Promoting transition to decarbonization , from the formulation of a long term strategy to its implementation, spreading Japan's efforts on Zero Carbon Cities (Decarbonization Domino Effect), utilizing "JPRSI" (public private platform for environmental infrastructure)

Basic concept of the JCM and contribution to net-zero

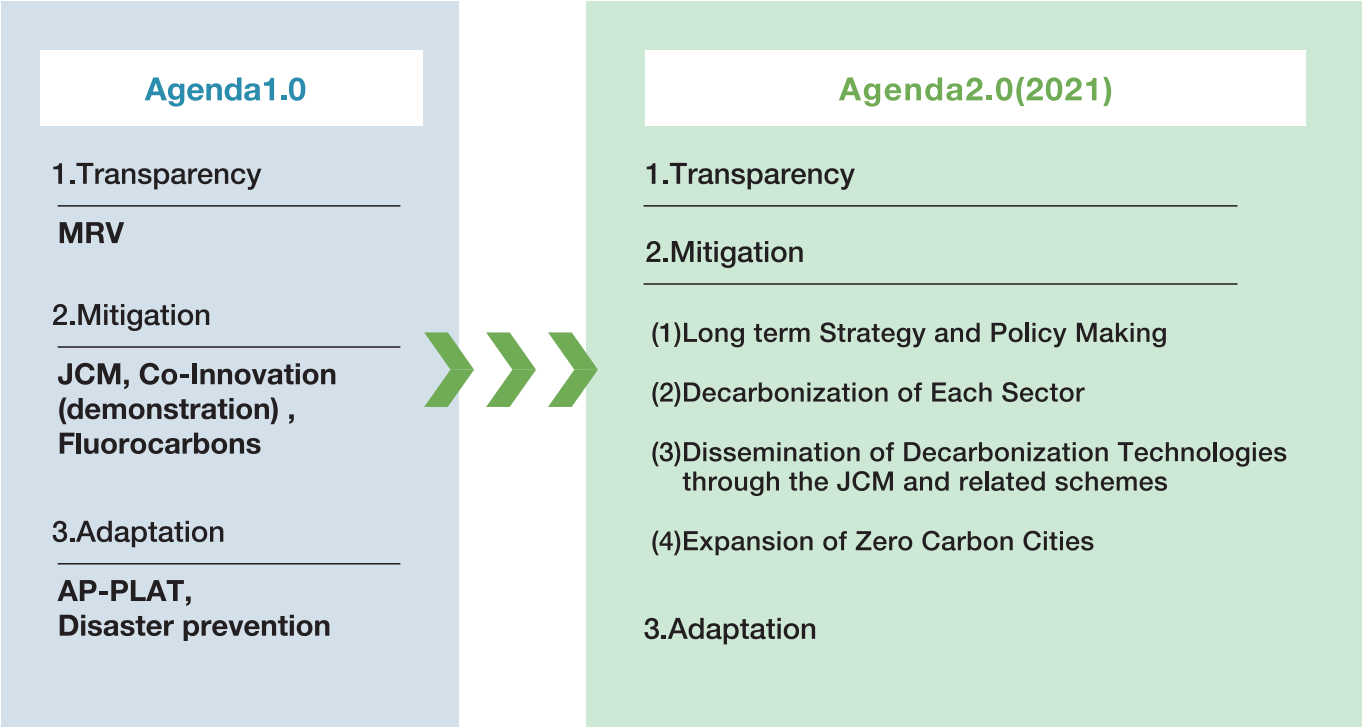


Cooperation towards achieving net-zero

- With the expected agreement on the rules of Article 6 of the Paris Agreement at COP26 in this year, market mechanisms under the Article 6, including the JCM, will benefit not only for GHG emission reductions, but also for the sustainable development of the partner countries.
- Growing expectation for the JCM, allowing GHG emission reductions to be realized in partner countries and contributing to the achievement of both Japan and partner country's NDC.
- MoE Japan is strengthening key public-private partnerships to promote the development of "environmental infrastructures" overseas through JCM.

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.

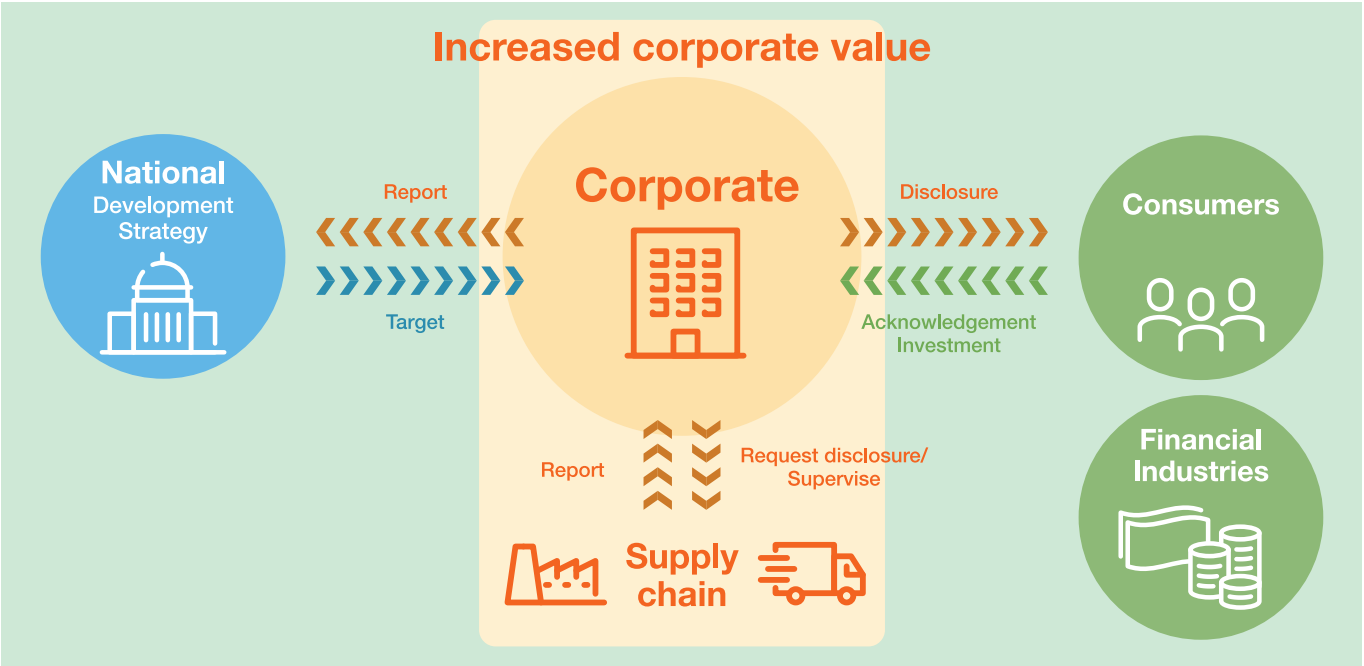


PaSTI: "Partnership to Strengthen Transparency for Co-Innovation"

The Partnership to Strengthen Transparency for Co-Innovation (PaSTI) initiated by the MOEJ, has supported developing countries to strengthen transparency actions with promoting the engine of non-state actors, based on utilization of low-carbon technologies and know-how.

PaSTI aims to deliver three key outputs.

-  Promoting the engagement of non-state actors such as private companies and local governments with incentive mechanism.
-  Enhancing the capacities and institutional structure in each country under their national development strategies.
-  Strengthening and streamlining the transparency action at subnational, national and regional level.



Ministry of the Environment, Japan is proceeding the development of GHG emissions measuring and reporting (M&R) guidelines by private sectors for the ASEAN region.

This guideline intends to support each ASEAN state to develop such M&R system according to each national circumstance.

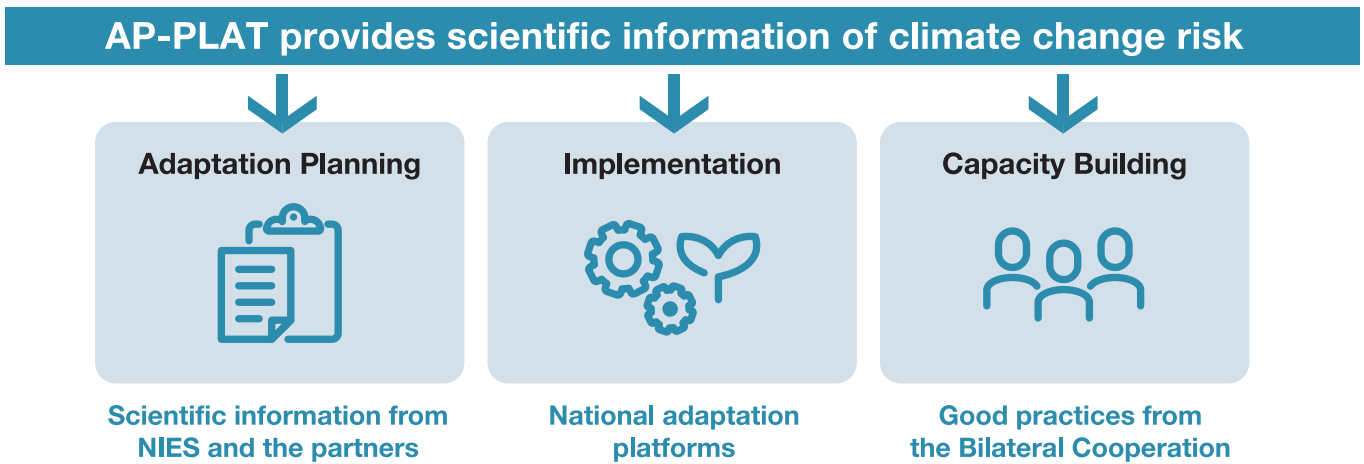
Climate and Disaster Risk Reduction Initiative

- Adaptation measures to avoid and mitigate the impacts of climate change, including disaster risk reduction, are of high priority for developing countries. Japan will cooperate in capacity building and other areas while making use of our country's disaster risk reduction technologies.
- It also promotes utilizing NbS (Nature-based Solutions)

- Development of website and video teaching materials to share good practices and knowledge of NbS* in and out of Japan with administrators of developing countries.
- Development of Coastal Airport BCP** Risk Information Method.
- These products will be shared on the Adaptation Information Website (AP-PLAT) and utilized for international cooperation such as climate finance disaster prevention projects.

*NbS: Nature-based Solution
** BCP: Business Continuation Plan

AP-Plat: Asia Pacific Climate Change Adaptation Information Platform



"AP-Plat: Asia Pacific Climate Change Adaptation Information Platform" (AP-PLAT)

Core Pillars of actions in cooperation with the partners under the AP-PLAT

1. Develop scientific knowledge/information on projection of climate change impacts in the region
2. Showcase supportive toolkits for officials and stakeholders engaged in adaptaion planning
3. Build capacity on climate change impact assessment, adaptation

