

Collaborative Initiatives on Energy System Transition with Innovative Technologies, Policies and Financing

OMOTE Takashi
omote-takashi@meti.go.jp

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Ministry of Economy, Trade and Industry(METI)

1. Virtuous Cycle of Environment and Growth

2. Innovation

3. Example of Innovation 1 : CCUS

4. Example of Innovation 2 : Hydrogen

5. Finance

6. Global Partnership (CEFIA)

Virtuous Cycle of Environment and Growth

(1) Innovation

Promoting disruptive innovation for practical application and wide usage of cross-sectoral decarbonization technologies.

(2) Green Finance

Visualizing corporate efforts in innovation for finance.

(3) International Collaboration

Promoting business-led application of decarbonization technologies together with policy/institutional development and international rule making.

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Innovation Action Plans

for establishment of innovative technologies by 2050
(39 themes in 16 technological challenges in 5 fields)

- with i) cost targets, estimation of GHG reduction potential,
- ii) contents & formation of R&D,
- iii) process from basic research to demonstration.

Acceleration Plans

① Promotion by headquarters

[**Green Innovation Strategy Promotion Meeting (tentative name)**] Discuss long-term support from basic research to implementation; Revision of Innovation Action Plans.

② Gathering the wisdom of the world

[**Zero-Emission Research Bases**] e.g. Global Zero Emission Research Center.
[**Zero-Emission Creators 500**] Intensive support to young researchers.
[**Strengthen support to promising technologies**] e.g., Utilization of “advanced research program” and the Moonshot R&D Program, Creation of “Circulating and Ecological Economy”.

③ Increase in private investment

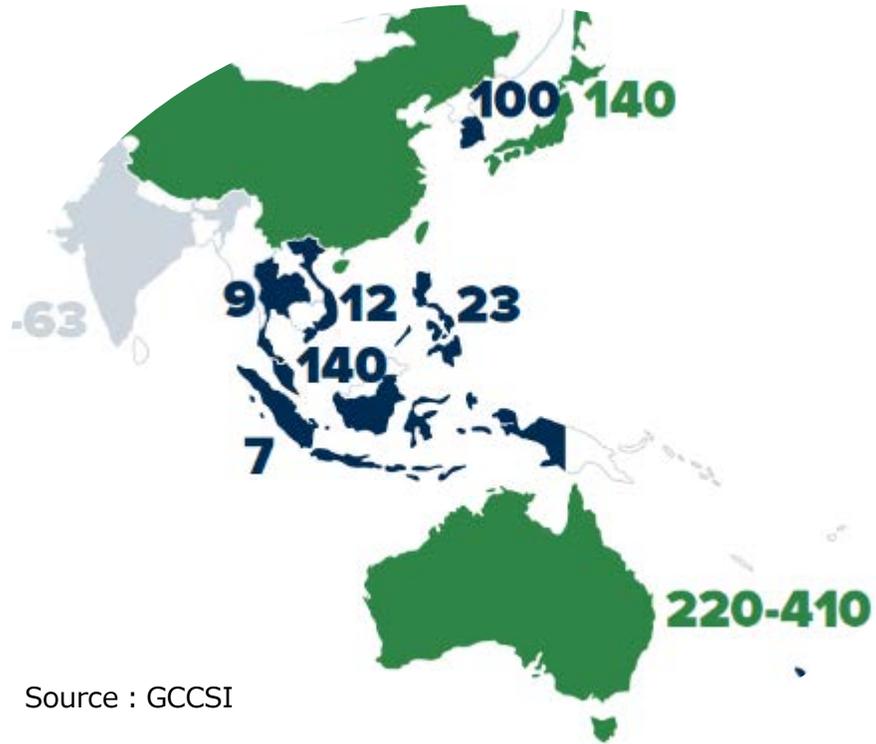
[**Promoting green finance**] Disclosure of corporate climate-related information in line with TCFD recommendations, Promotion of dialogue between industrial sector and financial sector.
[**Zero-Emission Challenge**] Improvement of investors’ access to corporate information.
[**Zero-Emission Start-up support**] Promotion of VC investment for R&D startups.

Zero-Emission Initiatives for global collaboration throughout the international conferences

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Potential of CCUS

Storage potential in Southeast Asia
191Gt



Global storage resource estimate(GIGATONNE)

Tomakomai CCS demonstration project



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Policies to Realize a "Hydrogen Society"

Production

Overseas unused energy

Brown coal

Byproduct hydrogen

Overseas renewable energy

CCS

Water electrolysis

Renewable energy (power to gas)

Solar power

Wind power

Water electrolysis



Demonstration project in Fukushima

Transport and supply (supply chain)

Nationwide promotion of hydrogen station

(160 stations in 2020, 320 in 2025)



Liquefied hydrogen pilot carrier



Use

Fuel cell vehicles

(FCV, FC buses, FC trucks, FC trains etc.)



Fuel cell cogeneration

(ENE-FARM, etc)



Hydrogen power generation



Others

Use in the industry sector

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Promoting Transition Finance

- Promote financing not only for already de/low-carbonized activities such as renewables but also for transition actions towards the de/low-carbonization of GHG emitting industries and sectors.
- Made a proposal to the International Capital Market Association (ICMA), which is currently working on a new set of principles for “transition finance”.

Concept of the Proposal

In developing the concept of “financing for a transition”,

- (1) international principles should adopt an inclusive and flexible approach that can be applied to various circumstances of countries and regions without excluding specific sectors/industries or technologies from its scope
- (2) further details should be considered by each country or region based on its respective circumstances

Proposal for international principles on transition finance

(Standard for alignment with the Paris Agreement)

- It should be finance for a transition towards achieving the Paris Agreement goals and the reduction target of each country based on the Paris Agreement.

(Standards for business entities)

- It should be finance for a business entity that is proactively pursuing a transition, for example, by providing a mid- to long-term vision or an action plan.

(Standards for Projects)

- It should be finance for a project in a GHG emitting industry or sector that achieves or implements the level of best performance of low GHG emissions in line with a reputable global or regional standard for such a sector or industry. E.g., investment in installing cutting-edge high- efficiency power generators, production of highly efficient automobiles, etc.

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Renewable Energy and Energy Efficiency 1

■ Demonstration Projects in Asia

Malaysia		EV Buses with Fast-charging System	2014~
Indonesia		CNG Vehicles and Refueling Infrastructure	2016~
India		Optimal Control Technology on Energy Center for Steel Plants	2016~
Thailand		Energy-saving Cellulosic Sugar Production System	2016~
China		Energy Management System for Aggregation of Power Demand and Supply Adjustment	2017~
Indonesia		Mobile Battery Sharing System	2018~

(Source: NEDO)

■ Capacity Building programs

By providing training programs in Japan and dispatching experts in Asian countries, Japan supports institutional arrangements which enable policy makers to introduce cleaner technologies in those countries.

e.g. Energy Efficiency law and guidelines, FIT scheme, Geothermal, etc.



Dispatch of experts



Training program

■ Business and Government's Missions

Japanese Business Alliance for Smart Energy Worldwide (JASE-W) has dispatched a group of enterprises and government officials to Asian countries to promote business matching through international public-private cooperation.



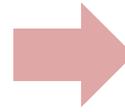
Business Forum

Cleaner Energy Future Initiative for ASEAN (CEFIA) 1

The 16th ASEAN+3 MINISTERS ON ENERGY MEETING (AMEM+3)
Bangkok, Sep.2019



The 22nd ASEAN Plus Three (APT) Summit
Bangkok, Sep.2019



ASEAN
THAILAND 2019
ADVANCING PARTNERSHIP
FOR SUSTAINABILITY

Strongly endorsed by ASEAN+3 Ministers and Leaders

The 1st Government-Private Forum on CEFIA
Manila, Nov.2019



Cleaner Energy Future Initiative for ASEAN (CEFIA) 2

- Improve business environment to promote business-led energy transitions, de-carbonization and the “Virtuous Cycle of Environment and Growth”
- Attract public and private financing, particularly ESG investment, through demonstrating transformative achievement and being evaluated properly

Key components of CEFIA



Enhance ESG investments

