

**Wednesday, 16 November**  
**Japan Pavilion**

**Toward the Balance**  
**between**  
**Emissions and Removals**

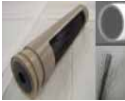
**Toshiaki Nagata**  
**Global Environment Partnership Office**  
**Ministry of Economy, Trade and Industry**

Technologies to integrate energy systems

Core technologies constituting energy systems

Innovative technologies in each area

Energy Saving



1. Production Process

Innovative separation membrane, catalyst

2. Structural material

Ultralight and heat-resistant

Energy Storage



3. Battery

Post lithium battery

4. Hydrogen

CO<sub>2</sub> free hydrogen

Energy Generation



5. Photovoltaic

Perovskite structure, quantum dot

6. Geo-Thermal

Hot dry rock geo-thermal, super critical geo-thermal

7. CO<sub>2</sub> fixation and utilization

# Long-term Global Warming Countermeasures Platform

“The Long-term Global Warming Countermeasures Platform” was launched in July 2016. The platform, consisting of members from the government, industry and academia, will discuss measures for reducing greenhouse gas emissions on a long-term basis from 2030 onward.

## Long-term Global Warming Countermeasures Platform (government, industry and academia)

### Task Force for the Expansion of Investment

**Focus:**  
Means to advance global warming countermeasures while expanding investment

### Task Force for Overseas Expansion Strategies

**Focus:**  
Contributing to global emission reductions through inter alia Japanese technologies

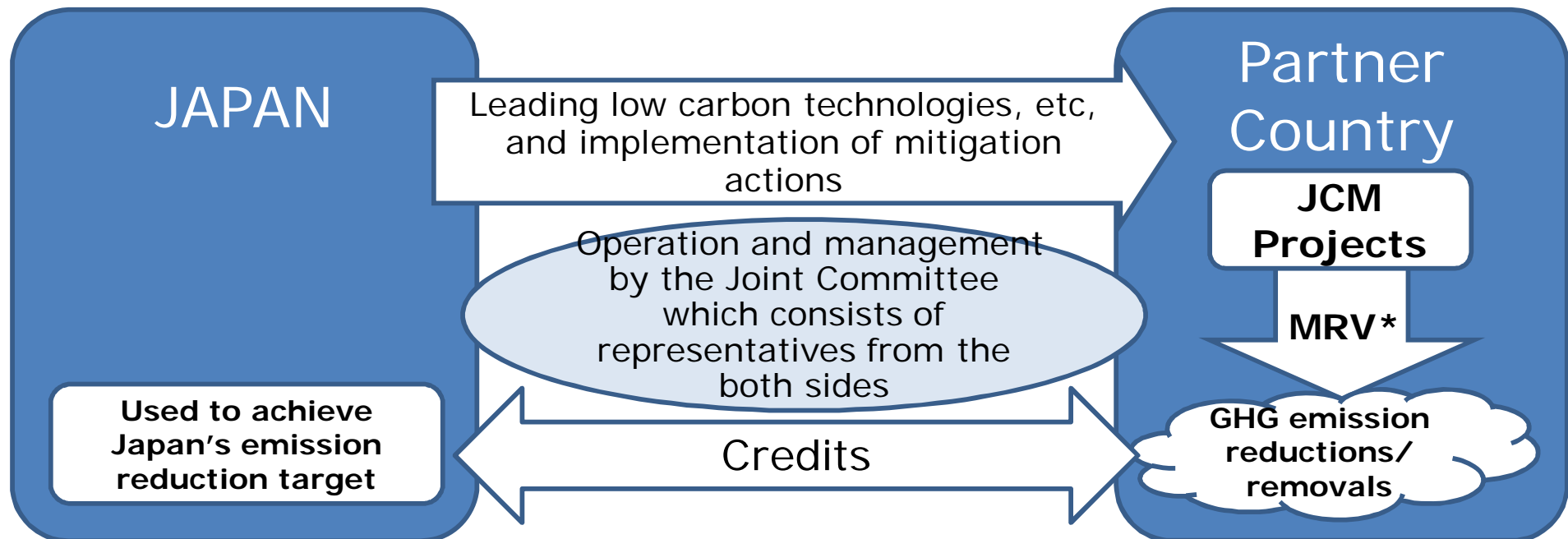
### Innovation Investment “the Energy & Environment Innovation Strategy towards 2050”

**Focus:**  
Means to advance private-public cooperation and international joint research to foster innovation that enables significant emission reductions

- **Consists of accomplished experts from a wide range of business fields**
- **First meeting held in September 2016, 2 done, 2 to go**
- **Final report to be published by the end of March 2017**
- **Focused areas of discussion**
  - ◆ **Schemes for promoting GHG emission reduction projects**
  - ◆ **Visualization of international cooperation**
  - ◆ **Private sector involvement in adaptation efforts**

# Basic Concept of the JCM

- Facilitating diffusion of leading low carbon technologies, products, systems, services, and infrastructure as well as implementation of mitigation actions, and contributing to sustainable development of developing countries.
- Appropriately evaluating contributions from Japan to GHG emission reductions or removals in a quantitative manner and use them to achieve Japan's emission reduction target.
- Contributing to the ultimate objective of the UNFCCC by facilitating global actions for GHG emission reductions or removals.



\*measurement, reporting and verification

# 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 and Thailand.



Mongolia  
Jan. 8, 2013  
(Ulaanbaatar)



Bangladesh  
Mar. 19, 2013  
(Dhaka)



Ethiopia  
May 27, 2013  
(Addis Ababa)



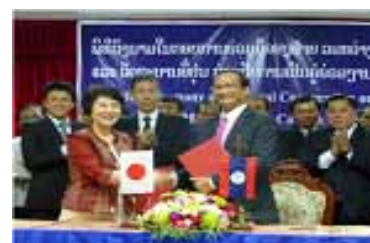
Kenya  
Jun. 12, 2013  
(Nairobi)



Maldives  
Jun. 29, 2013  
(Okinawa)



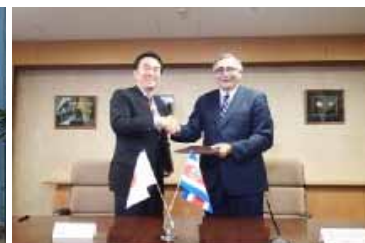
Viet Nam  
Jul. 2, 2013  
(Hanoi)



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)



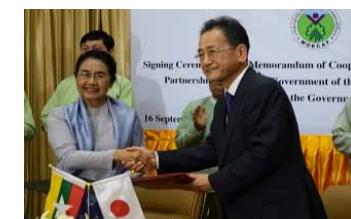
Mexico  
Jul. 25, 2014  
(Mexico City)



Saudi Arabia  
May 13, 2015



Chile  
May 26, 2015  
(Santiago)



Myanmar  
Sep. 16, 2015  
(Nay Pyi Taw)



Thailand  
Nov. 19, 2015  
(Tokyo)

➤ In addition, the Philippines and Japan signed an aide memoire with intent to establish the JCM.

# Registered Projects (1/2)

No.	Country	Project Title	General description of project
MN001	Mongolia	Installation of High-Efficiency Heat Only Boilers in 118th School of Ulaanbaatar City Project	Introducing high-efficiency HOBs to fulfill the demand of new heat facilities for the school buildings. Optimizing boiler operation through the implementation of operation management and technical guidance.
MN002	Mongolia	Centralization of Heat Supply System by Installation of High-Efficiency Heat Only Boilers in Bornuur soum Project	Introducing high-efficiency HOBs to fulfill the demand for heat supply system in the public buildings. Optimizing boiler operation through the implementation of operation management and technical guidance.
VN001	Viet Nam	Eco-Driving by Utilizing Digital Tachograph System	Improving transportation fuel efficiency by installing digital tachographs, in which the quantity of fuel consumption and running distance are continuously analyzed and provide feedbacks and advices to the drivers based on the analyzed data.
VN002	Viet Nam	Promotion of green hospitals by improving efficiency / environment in national hospitals in Vietnam	Installing inverter room air conditioners (RACs) and Energy Management System (EMS) to optimize operation of multiple inverter RACs in national hospitals
VN003	Viet Nam	Low carbon hotel project in Vietnam: Improving the energy efficiency of commercial buildings by utilization of high efficiency equipment	Installing high-efficiency equipment of hot water supply, air conditioning management system and LED lighting for improving the energy efficiency of hotels
VN004	Viet Nam	Introduction of amorphous high efficiency transformers in power distribution systems in the southern part of Viet Nam	Introducing 1,618 amorphous high efficiency transformers which reduce transmission and distribution loss in the power distribution system of southern Vietnam.
ID001	Indonesia	Energy Saving for Air-Conditioning and Process Cooling by Introducing High-efficiency Centrifugal Chiller	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.

# Registered Projects (2/2)

No.	Country	Project Title	General description of project
ID002	Indonesia	Project of Introducing High Efficiency Refrigerator to a Food Industry Cold Storage in Indonesia	Introducing advanced energy efficient cooling system using natural refrigerant in the food industry cold storage.
ID003	Indonesia	Project of Introducing High Efficiency Refrigerator to a Frozen Food Processing Plant in Indonesia	Introducing advanced energy efficient cooling system using natural refrigerant in the frozen food processing plant.
ID004	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Karawang, West Java	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID005	Indonesia	Energy Saving for Air-Conditioning at Textile Factory by Introducing High-efficiency Centrifugal Chiller in Batang, Central Java (Phase 2)	Improving energy saving for air-conditioning and process cooling by introducing high-efficiency centrifugal chiller equipped with high-performance economizer cycle, and super-cooling refrigerant cycle in a textile factory.
ID006	Indonesia	Installation of Inverter-type Air Conditioning System, LED Lighting and Separate Type Fridge Freezer Showcase to Grocery Stores in Republic of Indonesia	Introducing high-efficiency facilities to the grocery stores for saving energy as below; <ul style="list-style-type: none"> <li>- Inverter-type air conditioner</li> <li>- LED lighting</li> <li>- Fridge freezer showcase with natural refrigerant</li> </ul>
PW001	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.
PW002	Palau	Small Scale Solar Power Plants for Schools in Island States	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.
PW003	Palau	Small Scale Solar Power Plants for Commercial Facilities in Island States II	Installing high quality solar cell modules with high conversion efficiency with a monitoring system which realizes appropriate operation and management.



# Efforts for GHG emission reductions (image)

Given the relatively small share of Japan's GHG emissions in the world, international cooperation, such as infrastructure export, is critical for Japan's contribution to the global emission reductions.

