



Ministry of the Environment
Government of Japan

*Japan's global and domestic initiatives
toward Low Carbon Society*

Ministry of the Environment, Japan

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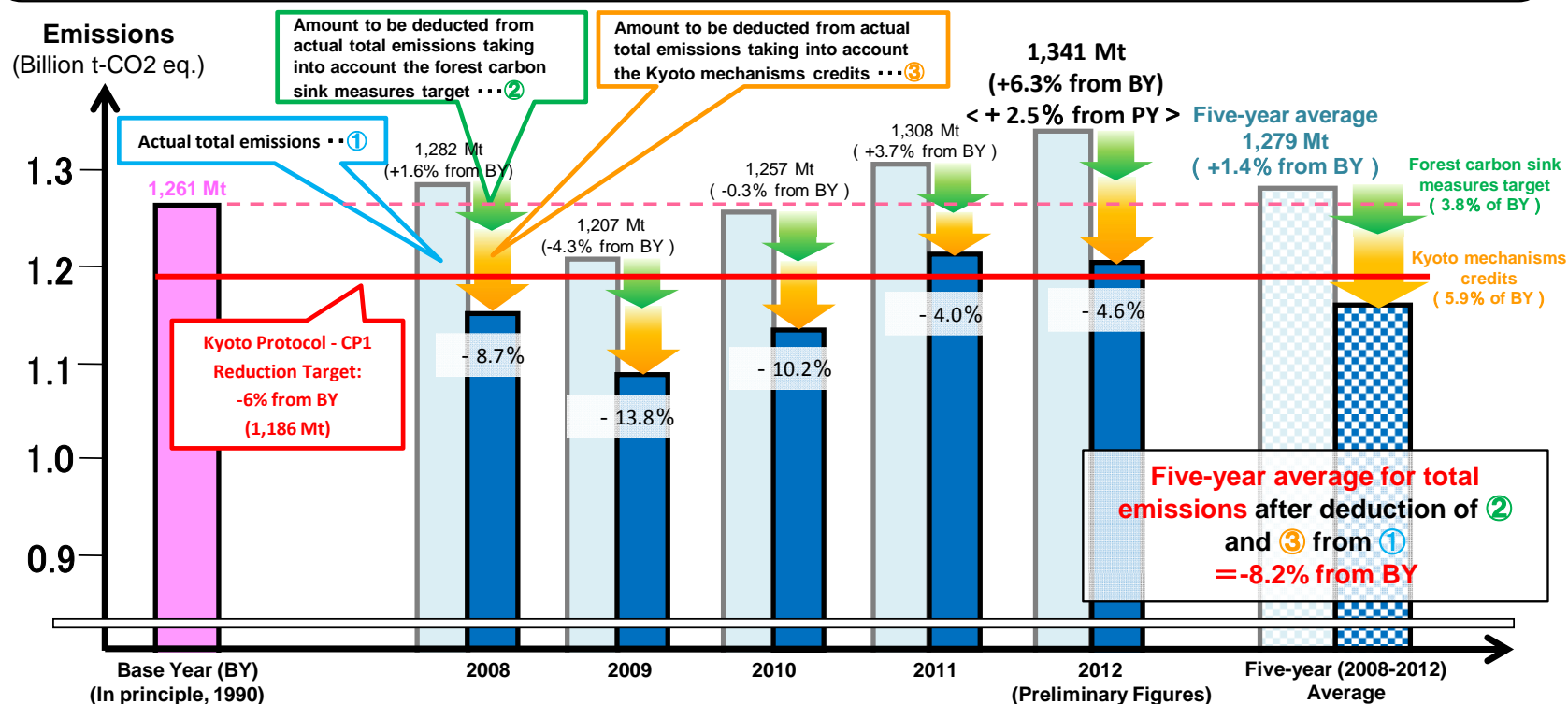
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1. Current Status of Japan's GHG Emission

Japan's GHG emissions during 1st Commitment Period under KP

Japan's Greenhouse Gas Emissions and Achievements Status for Emission Targets under the Kyoto Protocol

- Japan's total greenhouse gas emissions (preliminary figures) in FY2012 were **1,341 Mt CO₂ eq.** (an increase of 6.3% compared to the base year (BY) and 2.5% compared to the previous year (PY))
- If the **forest carbon sink measures target¹** is achieved and **Kyoto mechanisms credits²** are taken into account, the five-year average for total emissions during the first commitment period (CP1) of the Kyoto Protocol (FY2008-FY2012) shows an 8.2%³ decrease compared to the total emissions of the base year; therefore, it is estimated that Japan will have achieved its target for the CP1 of the Kyoto Protocol (-6 % below base year level).



1: Forest carbon sink measures target: About 3.8% (47.67 Mt CO₂/yr.) of the base year emissions according to the Kyoto Protocol Target Achievement Plan.

2: Kyoto mechanisms credits:

Acquired by the government: Total credits that were contracted as of FY2012 year-end through the Kyoto Mechanisms Credit Acquisition Program (97.528 Mt) divided by 5 (yrs.)

Acquired by the private sector: The amount of credits that were acquired by the Federation of Electric Power Companies of Japan (According to the Environmental Action Plan by the Japanese Electric Utility Industry [FY2009 to FY2013])

3: Total emissions and removals for the Kyoto Protocol target will be finalized after the technical review process under the Kyoto Protocol and the Convention to be conducted in FY2014. Also, the Kyoto mechanisms credits will be finalized after the true-up period for the first commitment period (expected to be completed in the second half of 2015 or later).

2. Japan's New GHG Emission Target

Japan's New Emissions Reduction Target for 2020

**New Target:
3.8% reduction compared to 2005 level**

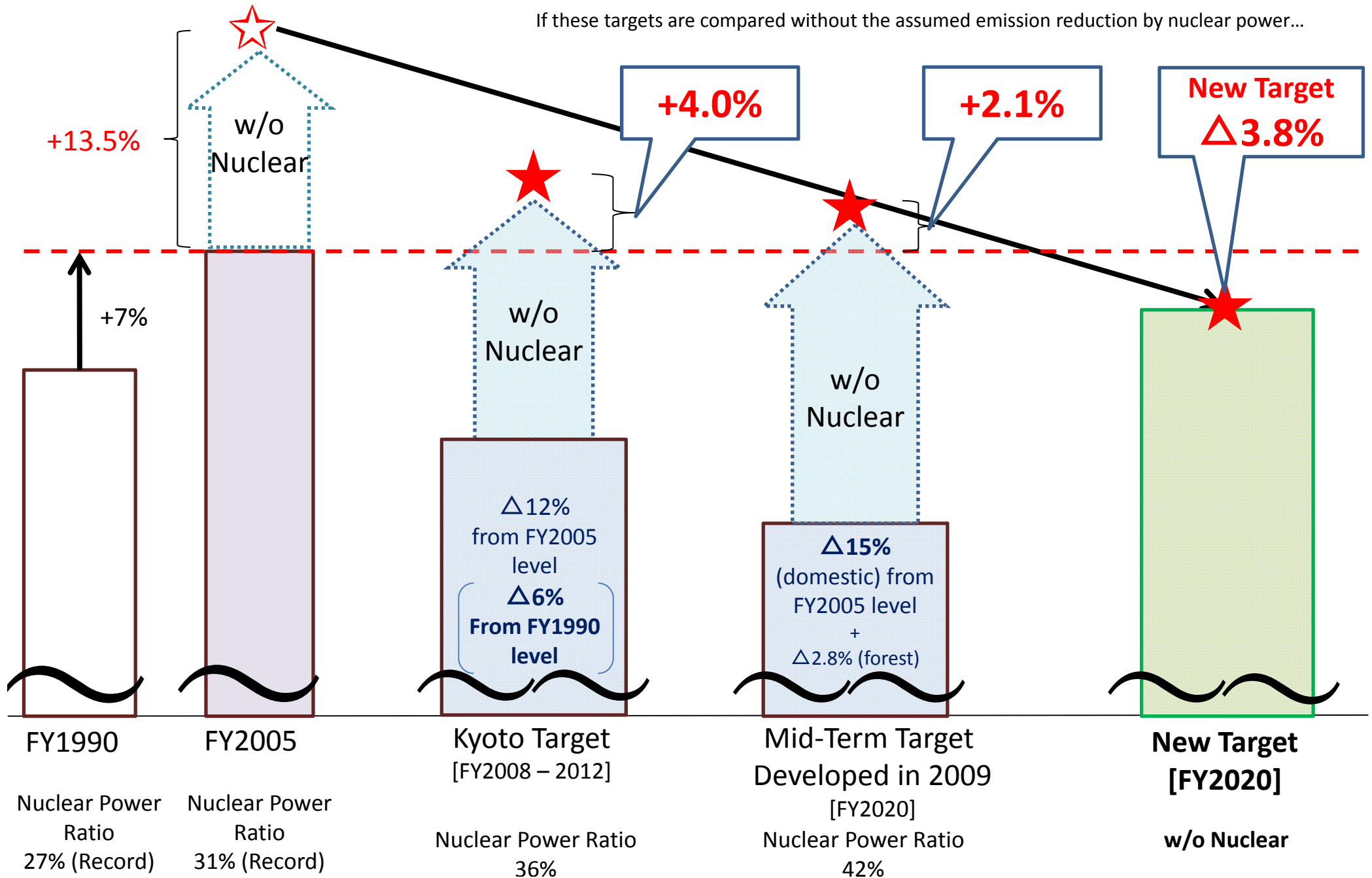
This target has been formulated as:

- a target at this point
- determined without taking into account the emissions reduction effect by nuclear power, given that the energy policy and energy mix is still under consideration.

Japan will come up with a firm target based on further review in line with the progress of consideration of the energy policy and energy mix.

New Target vs. Past Targets

If these targets are compared without the assumed emission reduction by nuclear power...



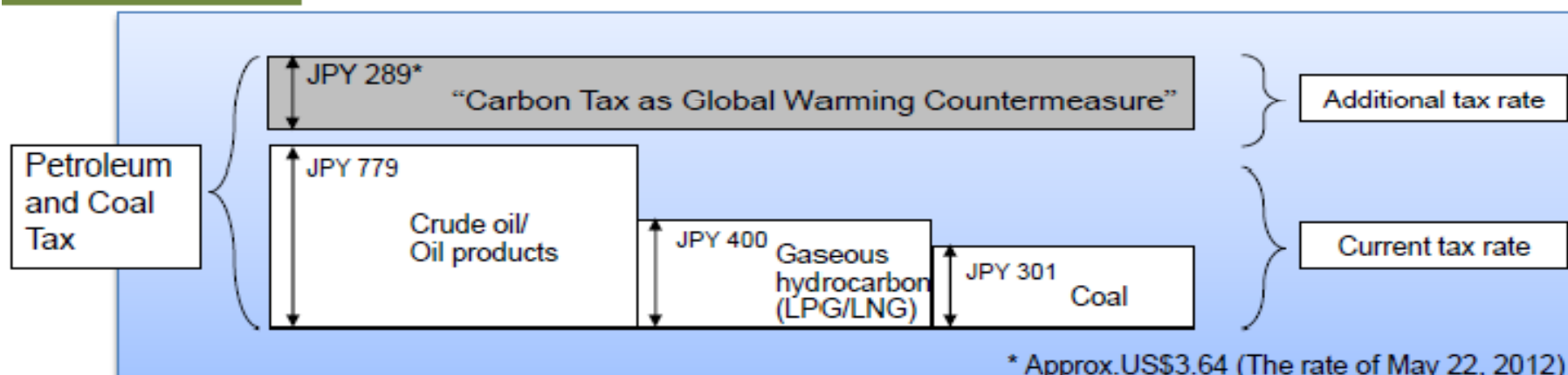
3. Japan's Domestic Policy on Climate Change

Tax for Measures to Cope with Global Warming

- Tax rate corresponding to the amount of CO2 emissions for all fossil fuels (JPY 289/t-CO2)
- Enforced from Oct. 2012 and increases in the tax rate gradually over 3 and a half years
- All the tax revenue will be allocated for curbing energy-oriented CO2 emissions

Tax Rate

Tax Rate per t-CO2 of “Carbon Tax as Climate Change Countermeasure”



Enforcement Stage

Object of Taxation	Current Tax Rate	From Oct. 1, 2012	From Apr. 1, 2014	From Apr. 1, 2016
Crude oil/Oil products [per 1 kl]	(JPY 2,040)	+ JPY 250 (JPY 2,290)	+ JPY 250 (JPY 2,540)	+ JPY 260 (JPY 2,800)
Gaseous hydrocarbon [per 1 t]	(JPY 1,080)	+ JPY 260 (JPY 1,340)	+ JPY 260 (JPY 1,600)	+ JPY 260 (JPY 1,860)
Coal [per 1 t]	(JPY 700)	+ JPY 220 (JPY 920)	+ JPY 220 (JPY 1,140)	+ JPY 230 (JPY 1,370)

Tax Revenue

[1st year] JPY 39.1 billion ; [Normal year] JPY 262.3 billion (about US\$3.31 billion)

➔ To be used for introduction of renewable energy and enhancement of energy-saving measures, etc.

CO₂ reduction effect of the tax

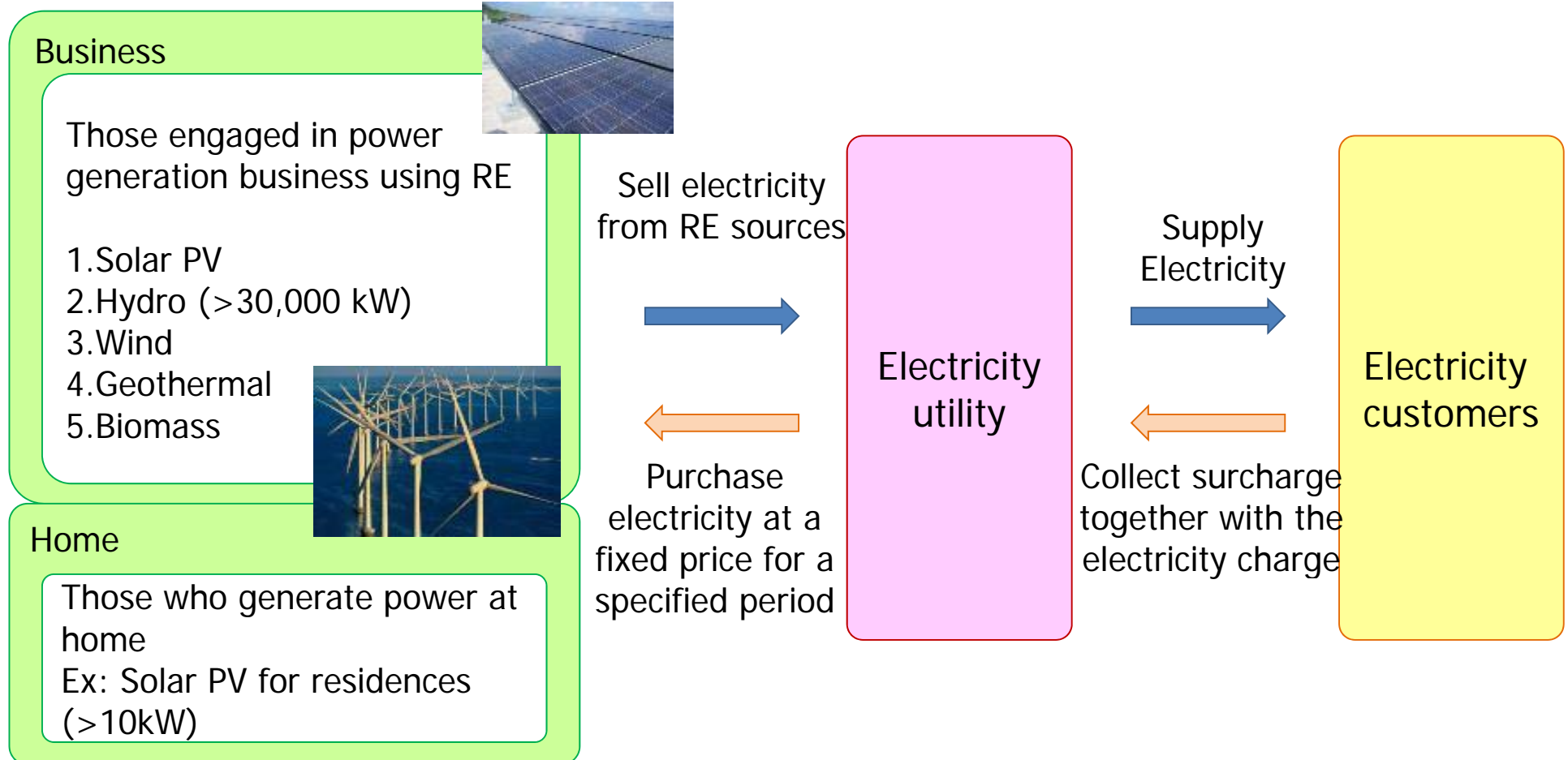
○ The overall CO₂ reduction effects (both price and revenue effect) from energy is estimated to be -1.5% to -2.2% (6 to 24 million CO₂) in 2020 compared with 1990 levels.

Estimated CO₂ reduction effect by tax for global warming measures

	2020
Price effect	-0.2% (Approx. 1.76 tonnes of CO ₂ reduction)
Revenue effect	-0.4% to -2.1% (Approx. 3.93 to 21.75 million tonnes of CO ₂ reduction)
Total	-0.5% to -2.2% (Approx. 5.69 to 23.5 million tonnes of CO ₂ reduction)

Feed-In Tariff (FIT) for Renewable Energy

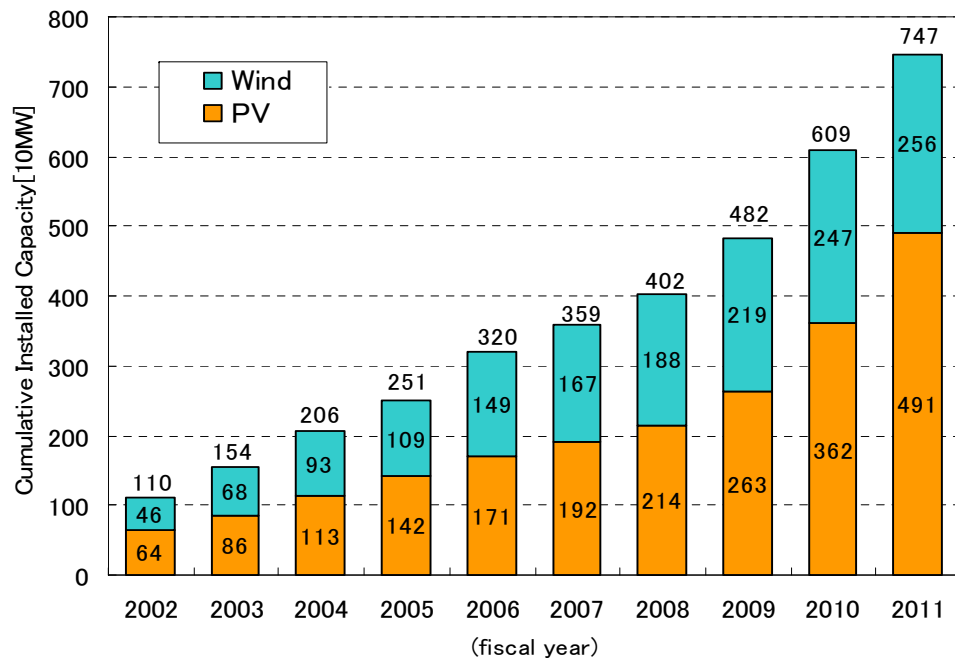
The bill for introducing FIT scheme for RE was adopted by the Diet in July 2011 and launched in July 2012.



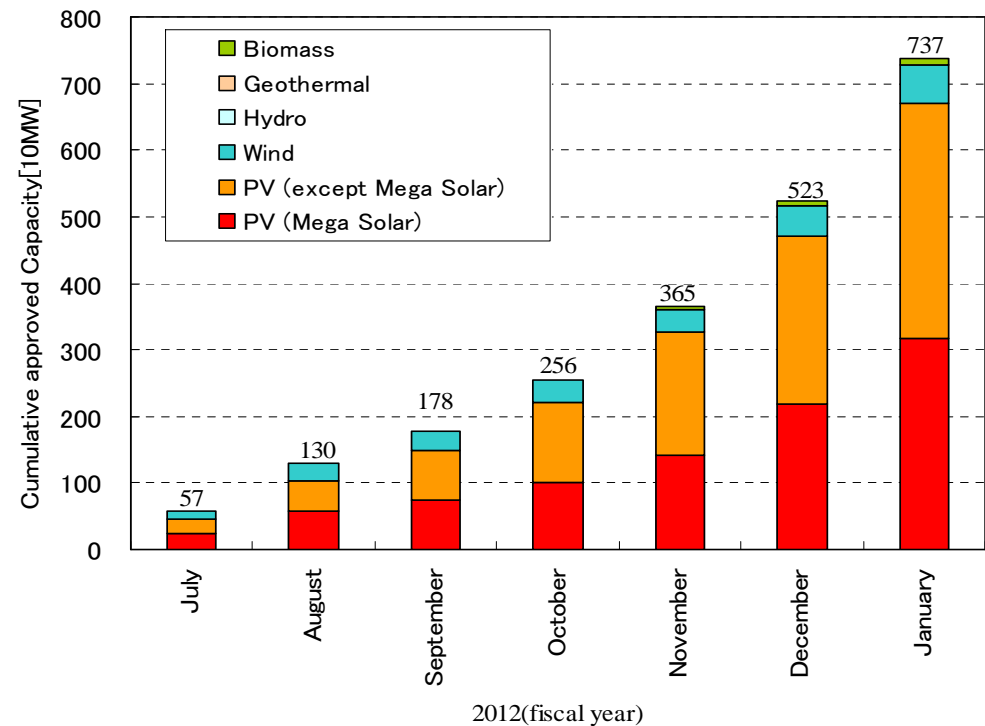
Deployment of Renewable Energy

- ✓ The use of RE has been enhanced by the commencement of Feed-in Tariffs(FIT) in July 2012, and the installed-capacity for 7 months from July 2012 to the end of January 2013 increased up to approximately 7,300 MW.
- ✓ 7,470MW of Wind and Solar PV was installed by 2011, and approximately the same amount has been approved within less than a year after the introduction of FIT.

Cumulative Installed Capacity before FIT

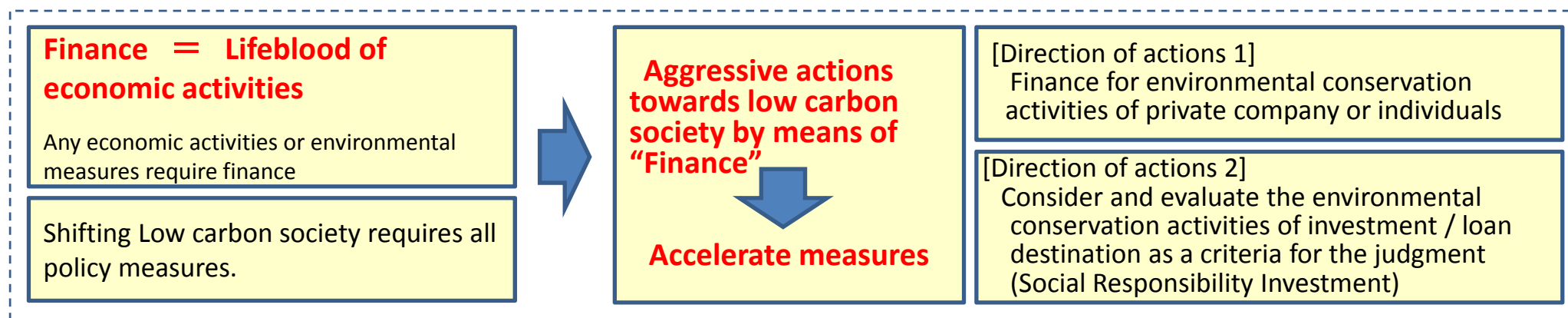


Cumulative Approved Capacity under FIT※



※ Cumulative approved capacity is different from installed capacity”. It shows capacity of RE power plants approved by the minister of METI which may not always be installed and operated.

Promoting Environmental Finance



■ Major policies by Ministry of Environment for promoting Environmental Finance

1. Interest Subsidy scheme for Global Warming Measures investment

Interest subsidy will be provided to Global Warming Measures investments of private companies through a financial agency which implement environmental rating loan

- Interest subsidy for Global Warming Measures investment by supplementary budget (Finished)
- Interest subsidy for promoting environmental friendly business

2. Promoting Eco-lease for household and business

Promoting low carbon devices by means of lease

3. Promoting environmental information disclosure of private company

In order to promote environmental information disclosure which is useful for investors, revise Environmental Reporting Guideline and improve effectiveness and usefulness of the disclosed information


■ For further promotion of environmental finance

MoE Shall support voluntary actions in line with “**Principles for Financial Action towards a Sustainable Society** of financial agencies


National campaign on solutions to global warming

- Runs “National campaign on solutions to global warming” in order that government and citizens can work together for preventing global warming and shifting towards low carbon society.
- Calls for practicing “6 challenges” proposed in the campaign to citizens and companies, and promote various projects namely, “Cool Biz”, “Warm Biz”, “Smart Move”, and “Morning Challenge” Fostering . In order to manage the power shortage by the Great East Japan Earthquake, power conservation actions are also in place
- Calls for members of “Individual Challenger”, and “Company/organization challengers” who agreed with the national campaign (As of June 2012, Individual: 920,000 members, Companies: 25,000 members)
- Information on latest CO₂ facilities or devises is provided through various measures including SNS

6 Challenges

-  Let's choose eco-friendly lifestyle
-  Let's choose energy efficient products
-  Let's choose renewable energy
-  Let's choose eco-friendly house/building
-  Let's support products & actions related to CO₂ reduction
-  Let's participate in local actions against global warming

7 points of power conservation in house

-  1 Take care to switch off
-  2 Reduce stand by power losses
-  3 Power conservation through air-conditioner
-  4 Power conservation through refrigerator
-  5 Power conservation through lighting
-  6 Power conservation through TV
-  7 Other power conservation

Super Cool Biz

Suggestion of comfortable lifestyle even in the room temperature settings of 28 degree Celsius

SUPER COOLBIZ

Super Cool Biz Logo

Cool Share Logo

COOL SHARE



Poster of Cool Biz

Warm Biz

Suggestion of comfortable lifestyle even in the room temperature settings of 20 degree Celsius



Smart Move – Eco transportation-

Suggestions of low CO₂ emissions move to reduce CO₂ emissions associated with transportation

Not only environmental friendly but also comfort, convenient and healthy lifestyle is named “smart move” and promote to company, organization and public

「移動」を「エコ」に。
smart move

Morning Challenge! (Challenge to morning lifestyle)

Suggestions of new morning lifestyle to reduce CO₂ emissions



CO₂ reduction effects
Shorten the use of lighting, Air-conditioner, TV for 1 hour/day (annual reduction per household)
[Lighting] Approx. 85kg of CO₂ reduction
[Air Conditioner] Approx. 58kg of CO₂ reduction
[TV] Approx. 22kg of CO₂ reduction
(Total) Approx. 165kg of CO₂ reduction



Morning Challenge! Website

Campaign on Lighting "Akari Future Plan"

◆ Background

- CO₂ emissions from residential and commercial sectors has been increasing. Lighting accounts for 13% of the residential sector (second largest after refrigerator).
- In 2008, Ministry of Economy, Trade and Industry called for shifting from incandescent lamp to more energy efficient products by 2012
- Major home appliance manufacturers would stop producing incandescent lamp by 2012
- For that reasons, two Ministers (MOE and METI) have jointly requested again to manufacturers and retailers

◆ "Akari Future Plan" kick-off meeting

Date: 13/June/2012

◆ "Akari Future Plan" website



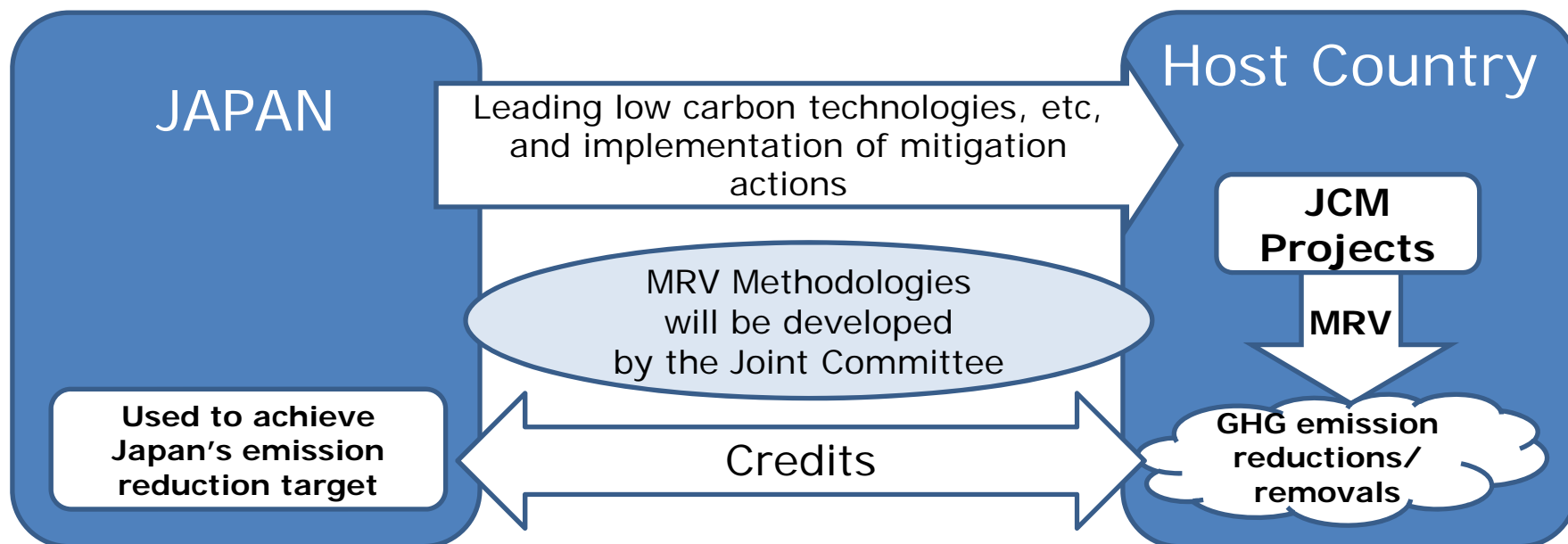
◆ "Akari Future Plan" Poster and Leaflet



4. Japan's Action to the Global GHG reduction

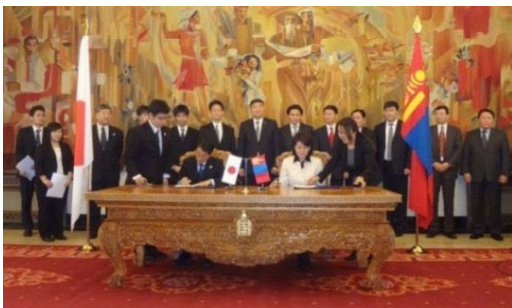
Basic Concept of the JCM

- 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 to GHG emission reductions or removals from Japan in a quantitative manner, by applying measurement, reporting and verification (MRV) methodologies, 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, complementing the CDM.



Countries with which Japan has signed on bilateral documents

- Japan has held consultations for the JCM with developing countries since 2011 and signed the bilateral document for the JCM with Mongolia, Bangladesh, Ethiopia, Kenya, Maldives, Viet Nam, Lao PDR and Indonesia.



Mongolia
On January 8, 2013
(Ulaanbaatar)



Bangladesh
On March 19, 2013
(Dhaka)



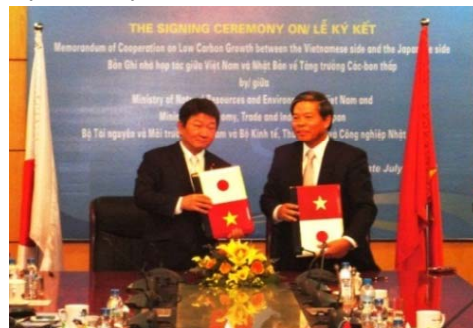
Ethiopia
On May 27, 2013
(Addis Ababa)



Kenya
On June 12, 2013
(Nairobi)



Maldives
On June 29, 2013
(Okinawa)



Viet Nam
On July 2, 2013
(Hanoi)



Lao PDR
On August 7, 2013
(Vientiane)



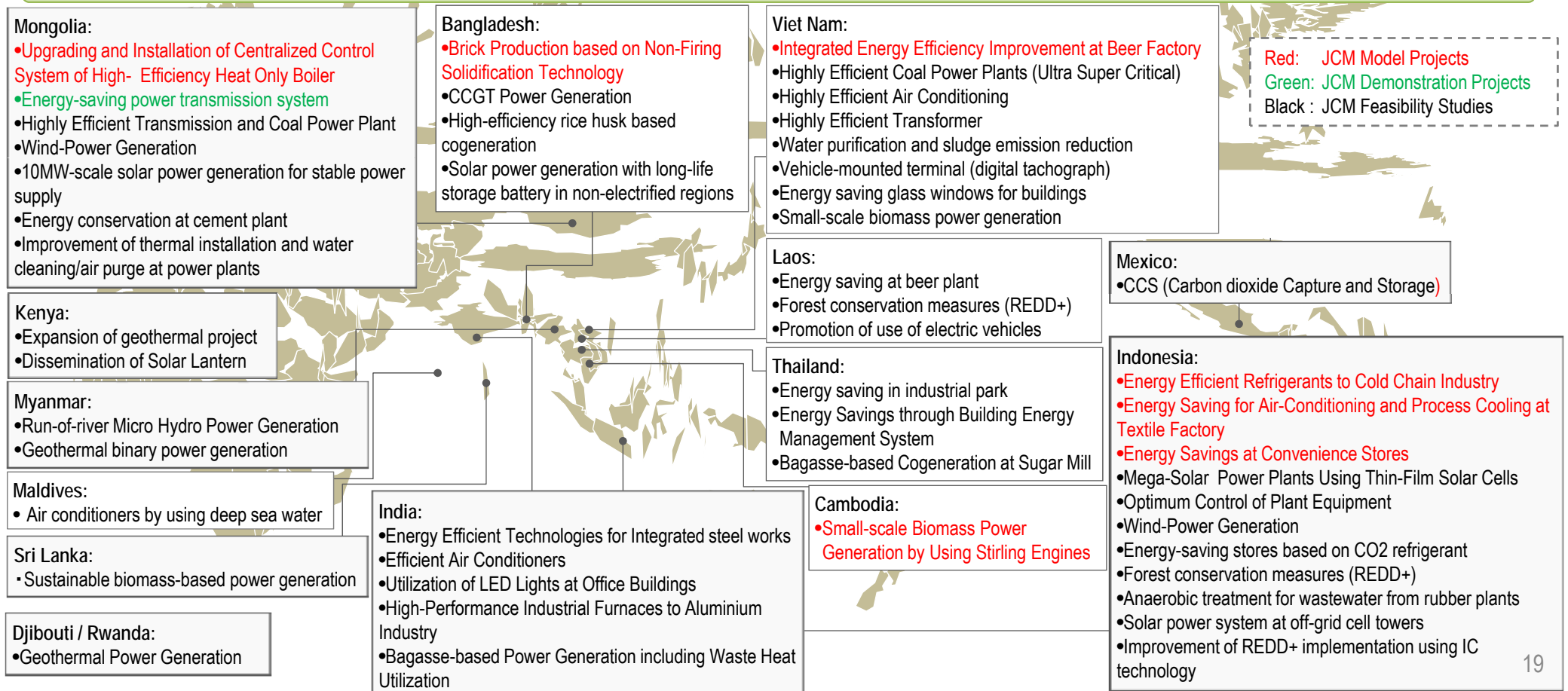
Indonesia
On August 26, 2013
(Jakarta)

- Japan held the 1st Joint Committee with Mongolia, Bangladesh, Ethiopia, Kenya, Viet Nam and Indonesia respectively.

Approaches for promoting JCM project formulation

- Implementation of JCM Demonstration Projects and Financing Program for JCM Model Projects
- Establishment of the JCM Special Financing Scheme (JSF) in collaboration with JBIC and NEXI
- Establishment of a fund to assist emission reduction projects which cooperate with projects assisted by JICA, etc.
- Assistance to cities and islands as a whole
- Utilization of the consultative meetings of relevant ministries, agencies, and organizations.

Example of JCM Feasibility Studies/Model Projects /Demonstration Projects (2010 to 2013)

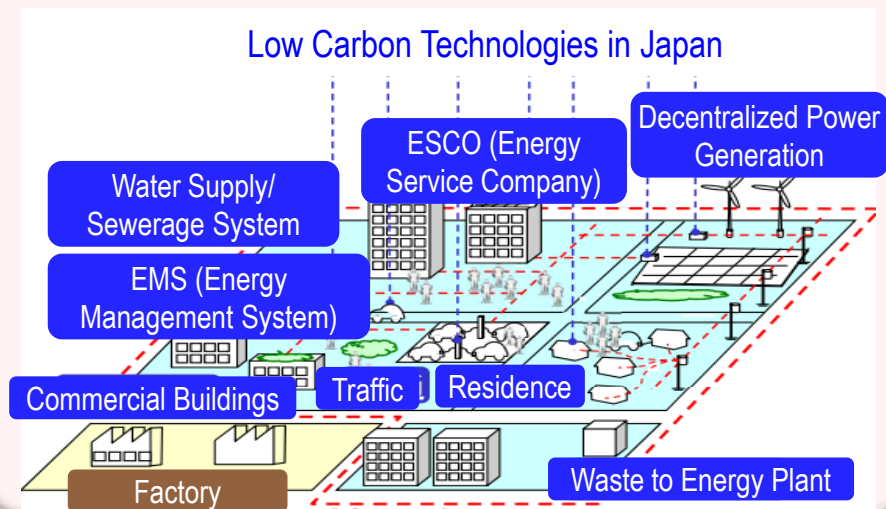


Financial Support Program for the International Deployment of Low-Carbon Technologies ～Achieving “Leapfrog” Development in Developing Countries～

Japan helps developing countries in Asia Pacific region **“Leapfrog” toward Low-Carbon Societies** by Japanese advanced low-carbon technologies .

Basic Concept

- Creation of “ Low Carbon Societies” by de-carbonizing social infrastructure (water supply and sewerage, waste to energy plant, etc.) in developing countries.
- Large-scale deployment of Japanese advanced low-carbon technologies
- Transfer technologies, know-how and social systems as a package



Approach

- ★ Deploying Japan's advanced low-carbon technologies in Asia-Pacific region, in cooperation with development assistance agencies including JICA.
- ★ Establishing the “Joint Crediting Mechanism (JCM)” which provides win-win solution for developing countries and Japan.

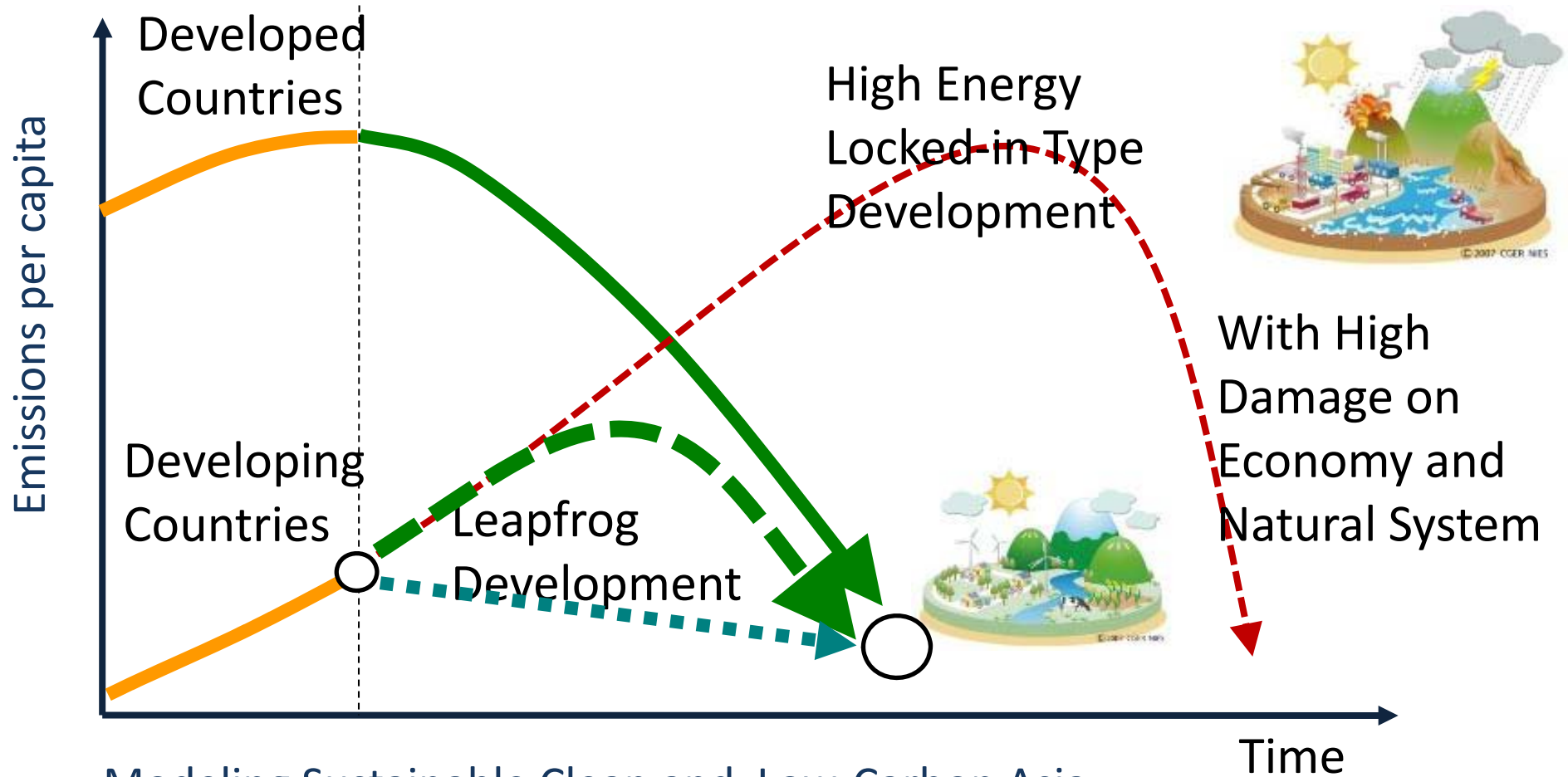
[Support for Initial Costs]

— New Financial support for “Leapfrog” development

[Support for establishing the JCM Framework / Creating the JCM projects]

— Promoting JCM Feasibility Studies and Capacity Building

Green Growth Path



Modeling Sustainable Clean and Low-Carbon Asia

“Asian Low-Carbon Society Scenario Development Study” FY2009-2013, funded by Global Environmental Research Program, MOEJ

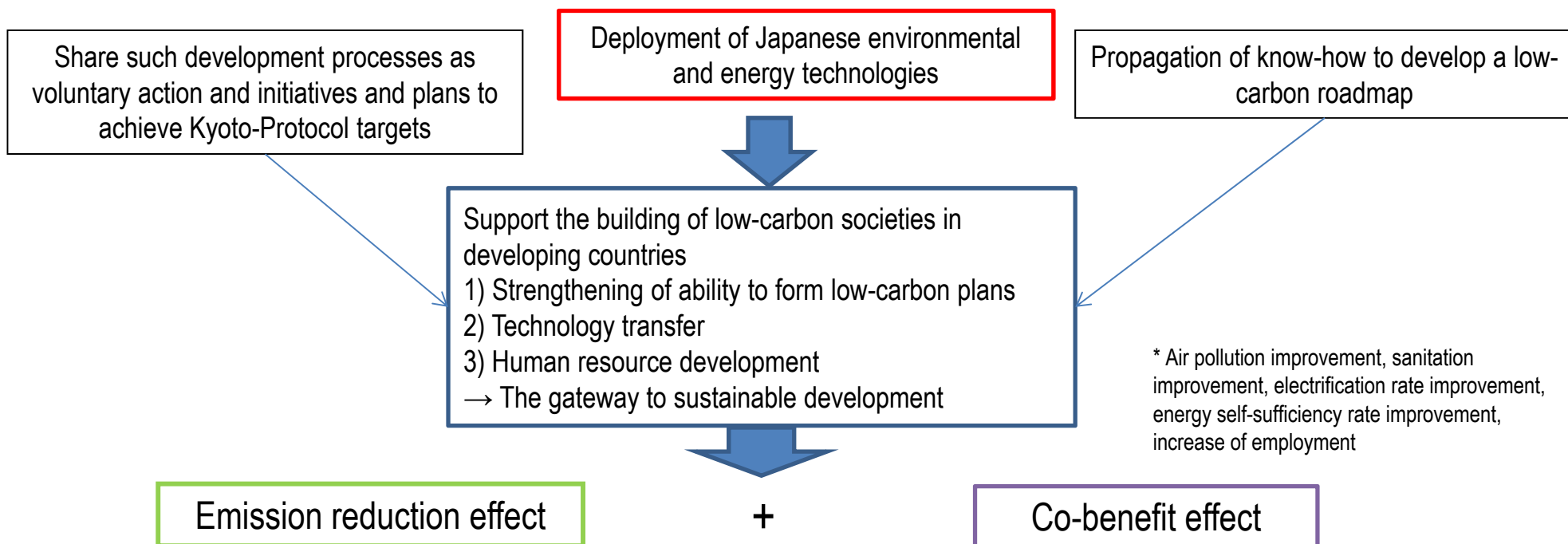
<http://2050.nies.go.jp/index.html>

Supporting development of low-carbon planning in developing countries

An early shift towards low-carbon societies in developing countries is essential in order to achieve a 50% reduction in global emissions by 2050.

Provide Japanese technology, experience and know-how. Support the building of low-carbon societies which suit the circumstances of developing countries (planning / legislation, etc.), and make self-reliant low-carbon planning possible in developing countries

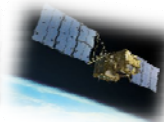
- Realize global reductions in greenhouse gas emissions
- **Expand the market for environmental and energy technologies** for which Japan takes the lead



Lead to a positive spiral of low-carbon action by industry, government, universities and the private sector in Japan and in developing countries

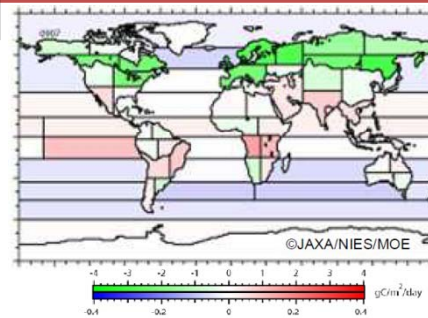
Low Carbon Asia Research Network (LoCARNet), etc.

Monitoring of the effects of the introduction of low GHG and low-carbon technology with satellite observation



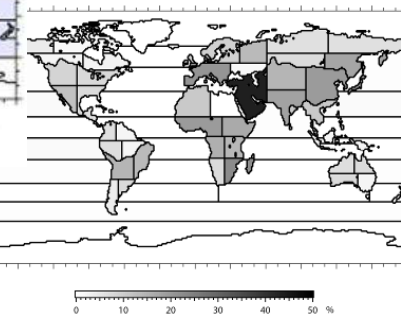
The role of a new state-of-the-art GHG observing satellite "GOSAT"

1. Utilize CO2 concentration data from satellite observation to make quantitative estimates of the CO2 concentration balance for the entire globe
2. Verify the useability of satellite CO2 concentration data



1. Absorption/emission in 64 regions across the globe, estimated with output from the observation network on the ground and the from "IBUKI" (left)

2. Averaged annual reduction in the uncertainty of assumed CO2 balance (%) in 64 regions across the globe, by combining observation data gathered by "IBUKI" with ground-based observation data (right)

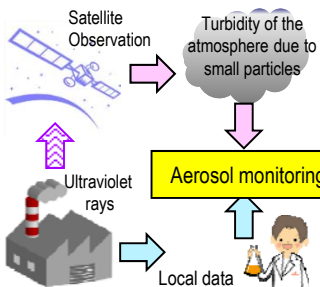


Development of the "GOSAT-2", aiming for launch in FY 2017

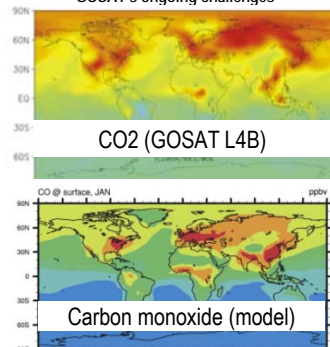
The advantage of "GOSAT-2"

1. Perform comprehensive measurement of black carbon (BC) in addition to CO2, etc.
 2. Analyze the energy-oriented CO2 emission and its reduction potential, by country
 3. Analyze CO2 emissions by major cities or large point sources
 4. Verify the CO2 emission reduction effects achieved through introduction of low-carbon systems using data from "GOSAT-2"
- Utilize this technology in the future to promote the shift to low-carbon societies in other Asian countries under JCM.

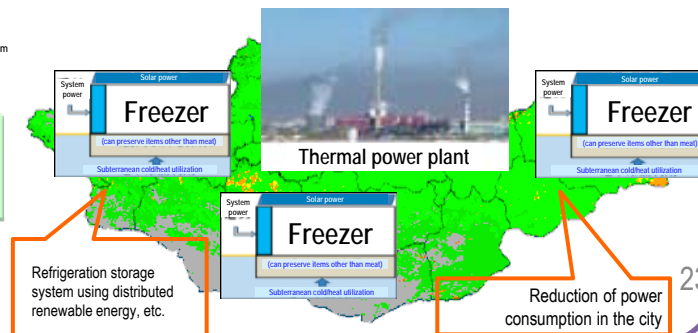
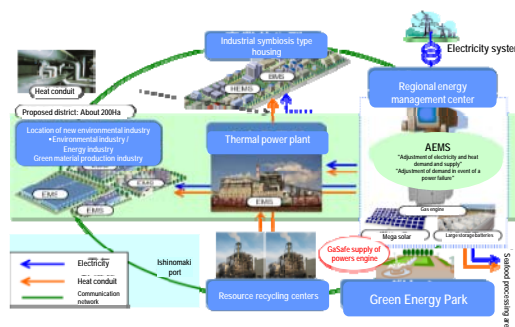
1. Air pollution reduction, aerosols, etc.
-New challenges for GOSAT's successor-



2. and 3. Low-carbon society building
-GOSAT's ongoing challenges-



4. Industrial symbiosis-type regional energy network system (Left: Example in Indonesia)
Balancing the use of distributed renewable energy and sustainable grazing (Right: Example in Mongolia)



Promotion of CO2 technology assessment

In the environmental technology field, fusion with technologies from other fields is taking place, and it is difficult for research institutions and industries to get a birds-eye view of these trends.

* For example, in the case of superconducting power transmission, evaluation from a variety of standpoints, such as CO2 reducing effects, environmental effects, feasibility, cost, receptiveness of the public, is required.

The government will conduct verification of the effects of low-carbon technology and technology assessment (evaluation of the utility and environmental impact of the technology), appropriately grasp technological needs, and provide information to research institutions and industry.

- **Stimulate the development and diffusion of next-generation technology and promote further reduction in GHG emissions as well as new economic growth**

