

Current Situation and future prospects of the Japanese energy and environment market

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Japan External Trade Organization (JETRO)



The Japan External Trade Organization (JETRO) is a government-related organization that works to promote mutual trade and investment between Japan and the rest of the world.

■ **Establishment:** July 1958

■ **Office:** Domestic: JETRO Headquarters Tokyo, JETRO Osaka,
The Institute of Developing Economies and
36 regional offices

Overseas: 73 offices (55 countries) (As of March, 2012)

■ **Employee:** 1,545 (824 domestic and 721 overseas) (As of April 1, 2011)

■ **Main activities:** -Promoting FDI into Japan
-Supporting the overseas business of Japanese firms
-Facilitating economic growth in developing countries
through trade promotion

Current situation of the Japanese energy and environment industry (part 1)

-Field of environment-

JETRO Addressing environmental problems

1960's

Dokai Bay, Kitakyushu City

Present



1970's

Coastal area, Kawasaki City

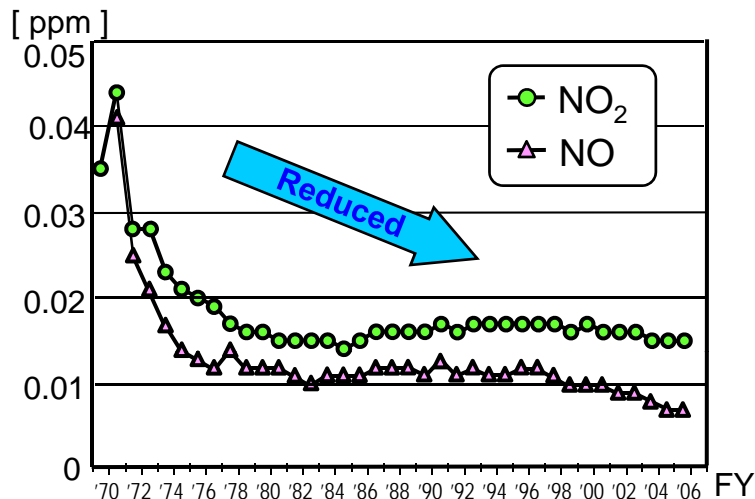
Present



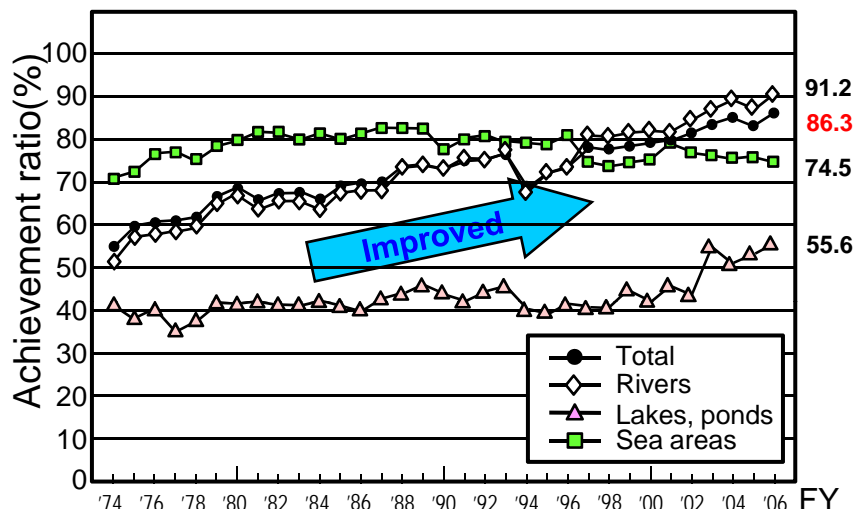
Source: METI

Achievement of Japanese environmental policies to address air, water pollution

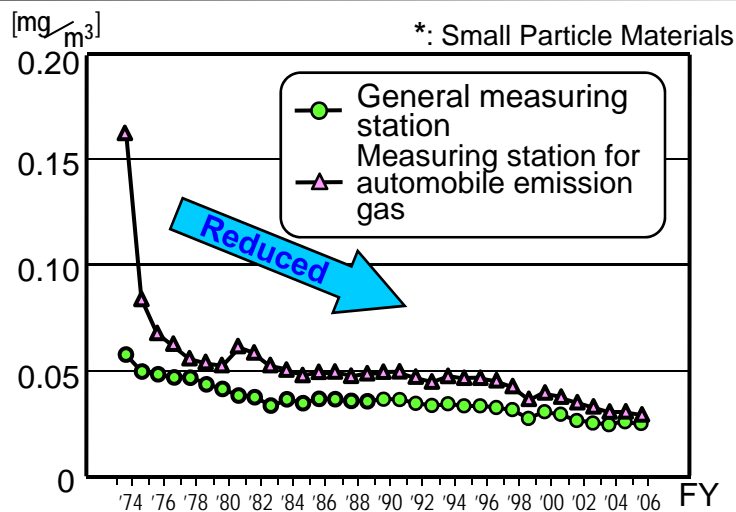
Annual average NOx concentration in the air



Achievement rate of water quality standards (based on BOD and COD)



Annual average SPM* concentration in the air



-NOx and SPM in the air have been significantly reduced since the 1970's.

-In FY 2006, 86% of the total measuring points had satisfied the national water quality standard.

JETRO History of Japanese environmental policies

Phase 1 : mid '50s - first half of '70s

High-economic growth period :

industry generates environmental pollution

Phase 2: mid '70s – mid '80s

Stable economic growth period :

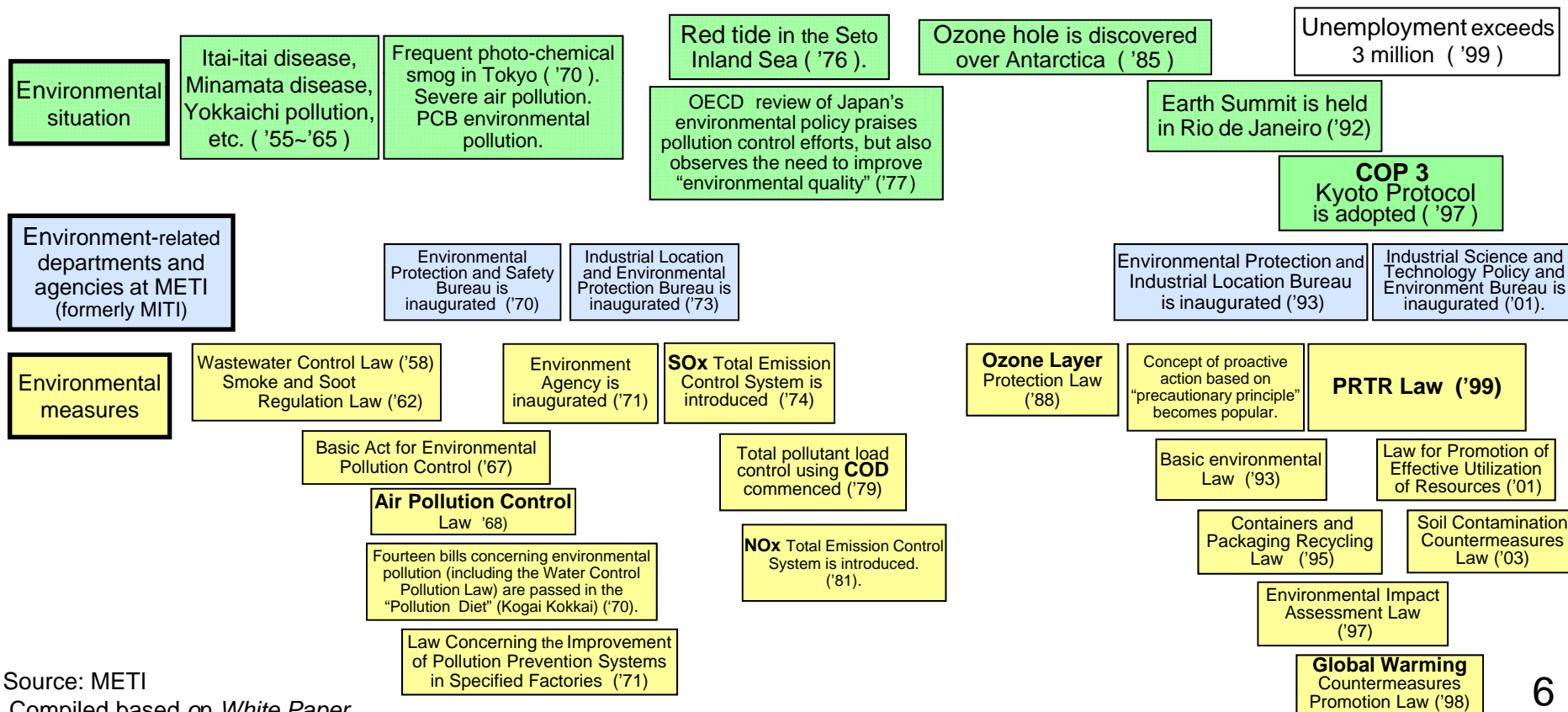
pollution caused by households

becomes apparent

Phase 3: second half of '80s

People begin to recognize

global environmental problems



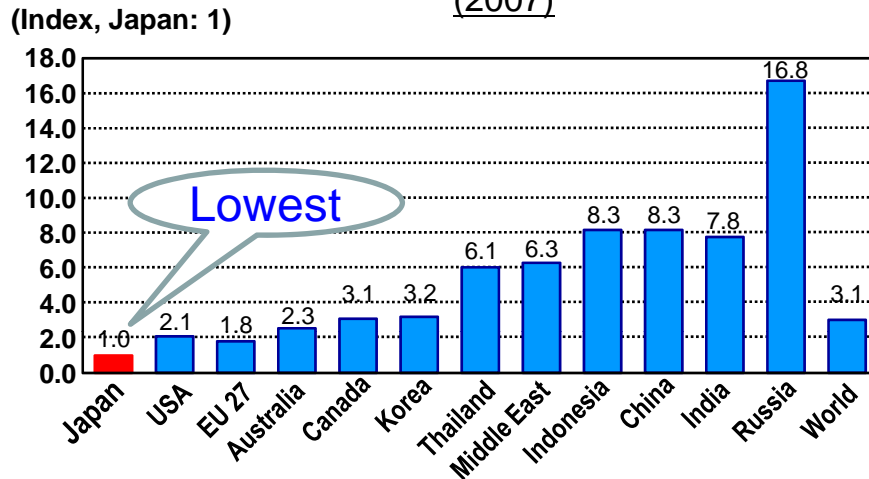
Source: METI
Compiled based on *White Paper on the Environment 2002*.

Current situation of the Japanese energy and environment industry (part 2)

-Field of energy conservation-

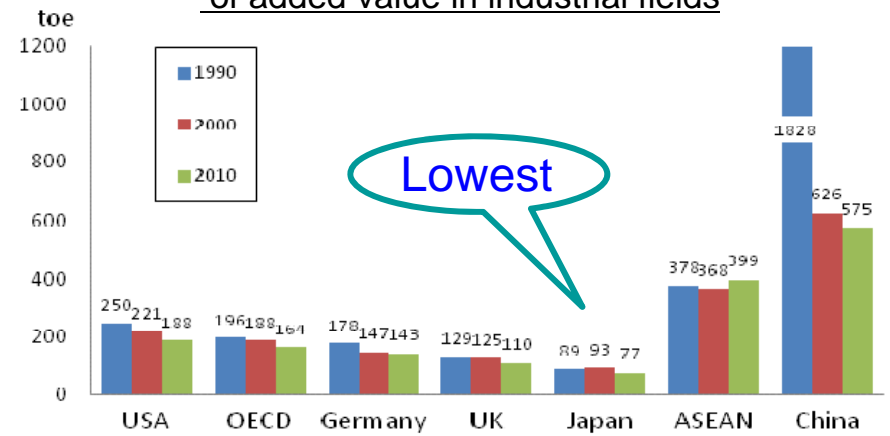
JETRO Japan: the world's best energy efficient country

Global energy consumption per unit of GDP
(2007)



Source: Energy White Paper (METI, 2011)

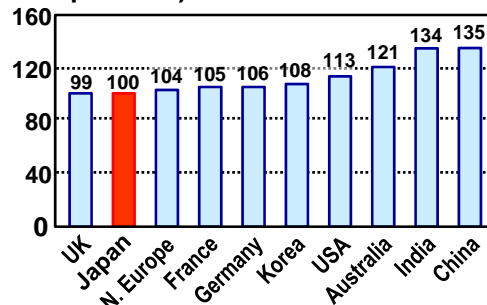
Total energy consumption per US\$1 million
of added value in industrial fields



Source: 2011 JETRO Global Trade and Investment Report

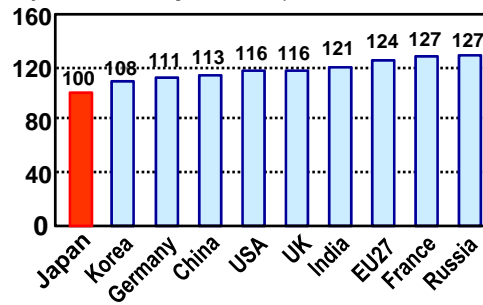
Comparison of energy basic unit of main Industrial sectors
in major countries (2005)

Energy consumption index per
power generated by thermal plants
(Index of Japan: 100)



Source: ECOFYS BV, the Netherlands (2008)

Energy consumption index per 1-ton of
iron production by blast furnace
(Index of Japan: 100)



Source: Estimation by the Research Institute of
Innovative Technology for the Earth (2009)

JETRO Governmental policies for energy conservation

	International Circumstances	Domestic measures
1973	First oil crisis	
1978		Establishment of the Energy Conservation Center, Japan Launch of Moonlight Project (until 1993): Development of energy conservation technologies including gas turbine and heat pump systems
1979	Second oil crisis	Establishment of the so-called "Energy Saving Act" Inauguration of the qualified energy manager system
1980		Establishment of New Energy Technology Development Organization (NEDO)
1988	First conference of Intergovernmental Panel on Climate Exchange (IPCC)	
1992	United Nations Conference on Environment and Development (Rio Environment Summit) Enactment of the UN Framework Convention on Climate Change	Establishment of the Environmental Basic Act
1993		New Sun Shine Project (new energy, energy conservation technology development): ceramic/gas turbines, etc.
1995	First Conference of the Parties to the UN Framework Convention on Climate Change (COP1) Implementation of International Energy Star Program	
1997	Adoption of Kyoto Protocol at COP3	Keidanren (Federation of Economic Organizations) enacted its Voluntary Action Plan on Environment Constitution of the Law Concerning the Promotion of Measures to Cope with Global Warming
1999		Revision of the Energy Saving Act (Introduction of second class energy management specified plant system and Top Runner method)
2000		Energy conservation labeling system
2002	The World Summit on Sustainable Development in Johannesburg	Enforcement of the Basic Act on Energy Policy, Enactment of the RPS Law
2005	Kyoto Protocol went into force	
2006		
2009	COP15: Post-Kyoto protocol approach being negotiated	Manifestation of the mid-term goal for GHG reduction
2011	COP17: Post-Kyoto protocol approach not yet decided	Great East Japan Earthquake

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1993		Energy conservation technology development):
1995	First Conference Convention on Implementation	
1997	Adoption of Kyoto Protocol	Governmental organizations) enacted its Voluntary Action Plan on Environment Promotion of Measures to Cope with Global Warming
1999		(Introduction of second class energy management Top Runner method)
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Lawmaking

Energy Saving Act (Enacted in 1979)

- A multi-faceted approach to promote energy saving by the combination of regulations, voluntary and economic means.
- Sets responsibility and educational goals for industrial, transport and construction sectors respectively.
- E.g. Top Runner Program, Energy Manager System.

Economic means (subsidy system, etc.)

- Government and municipality led energy saving projects and support programs for installation of energy saving devices.

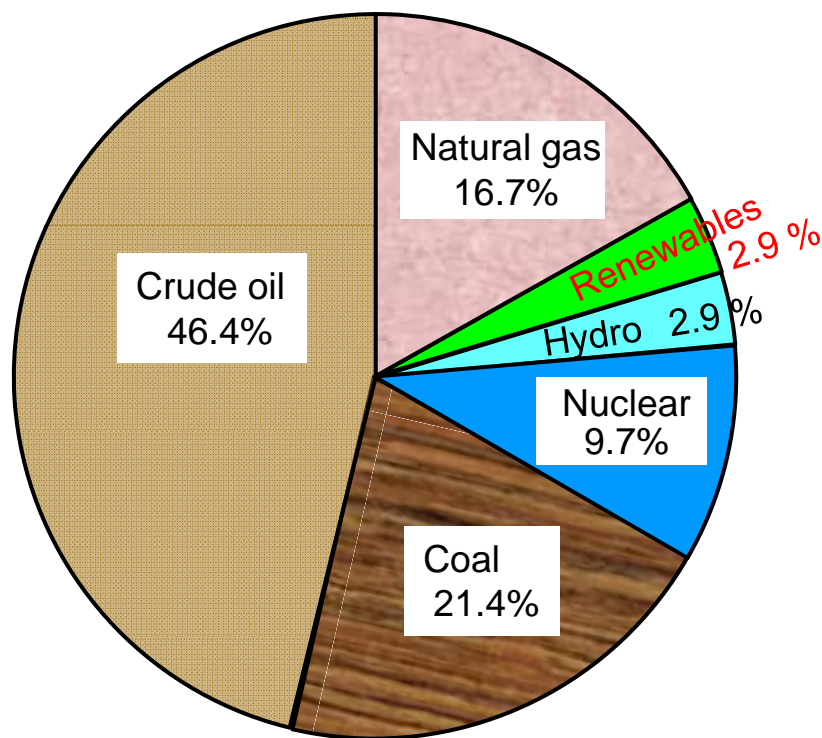
Development and distribution of new technologies

- Support programs in R&D and technological promotion
- E.g. funds for heat pumps, secondary battery development.

Post-quake energy policies and market

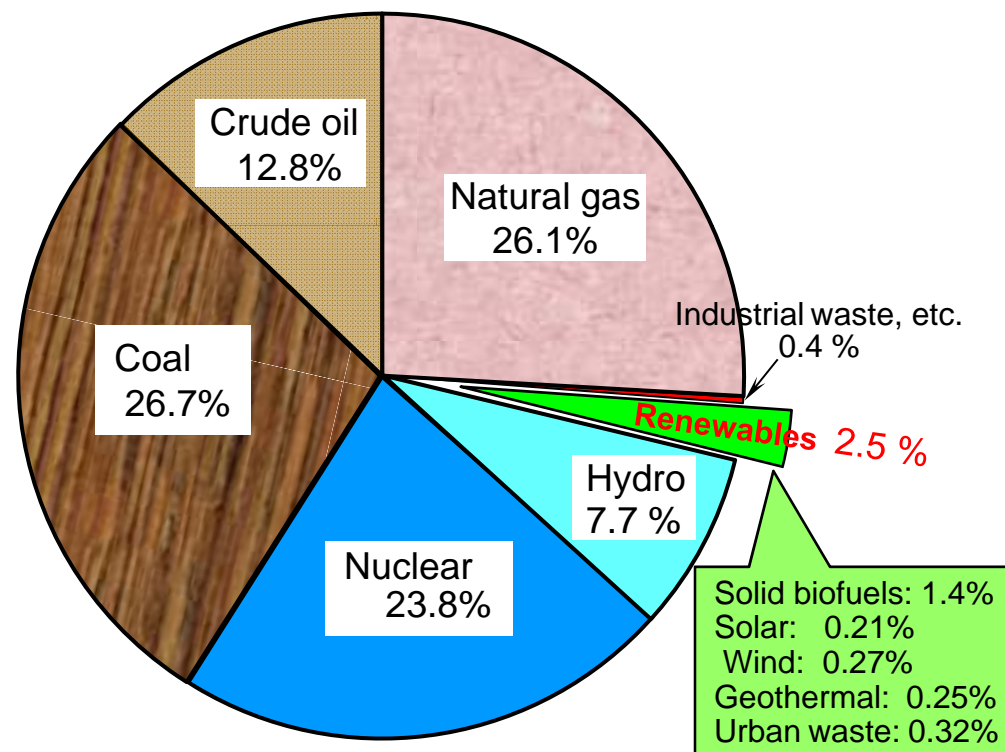
JETRO Energy and power generation portfolios

Energy portfolios



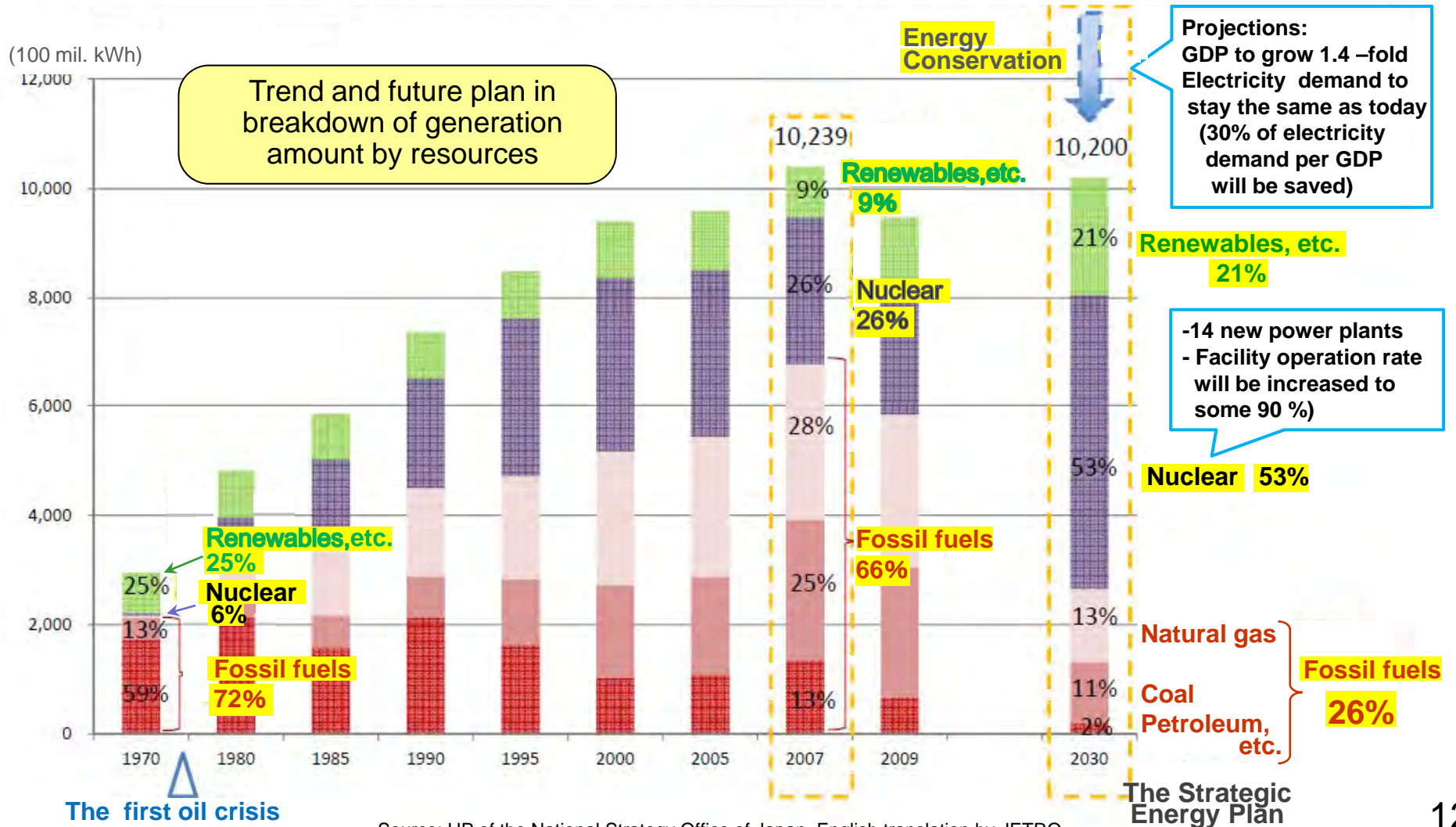
Primary energy supply in FY2008:
554.65 million kL

Power generation portfolios

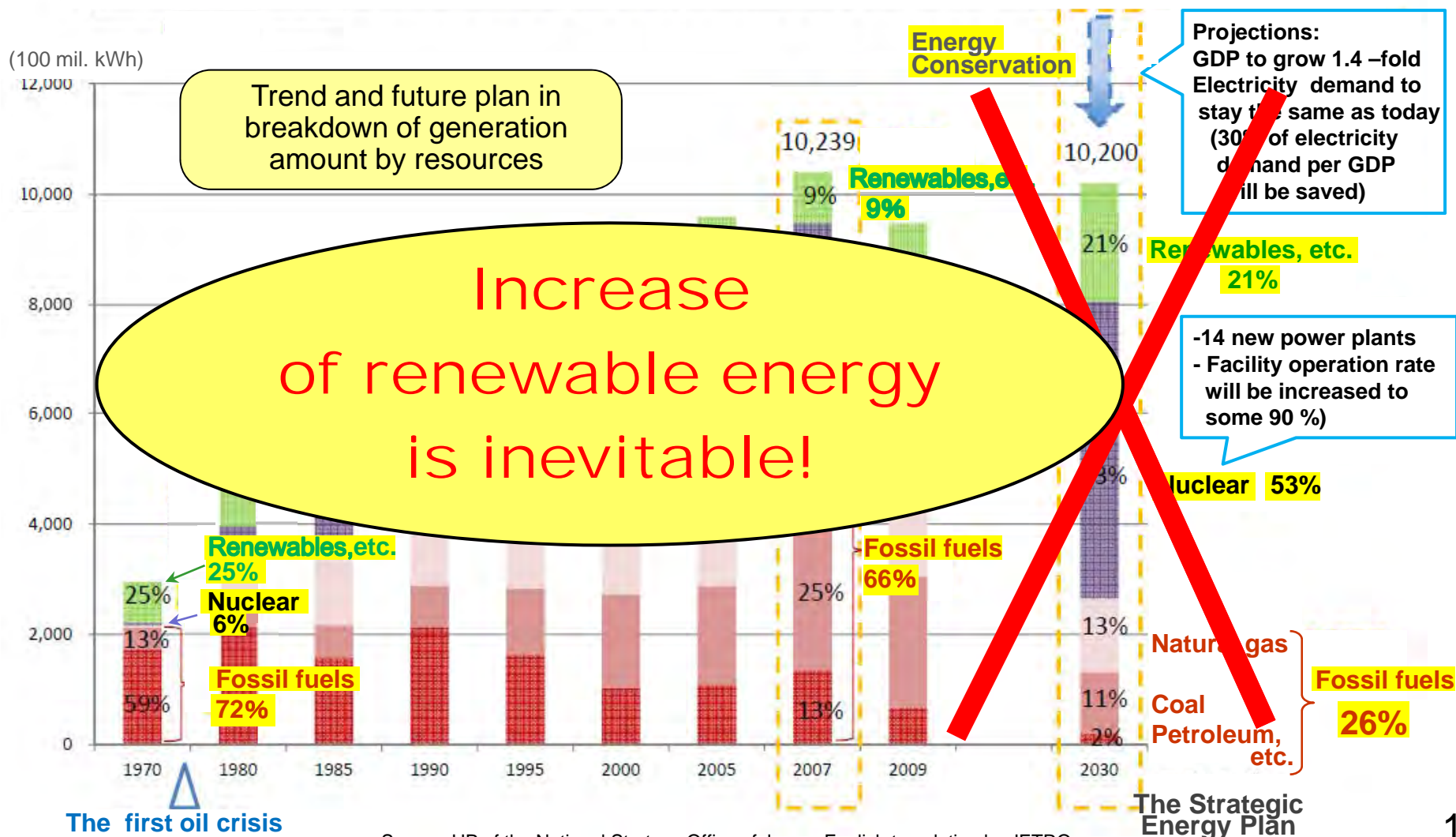


Total generation amount in FY 2008:
113,836 GWh

Amount from renewable energy in FY 2008:
2,644 GWh

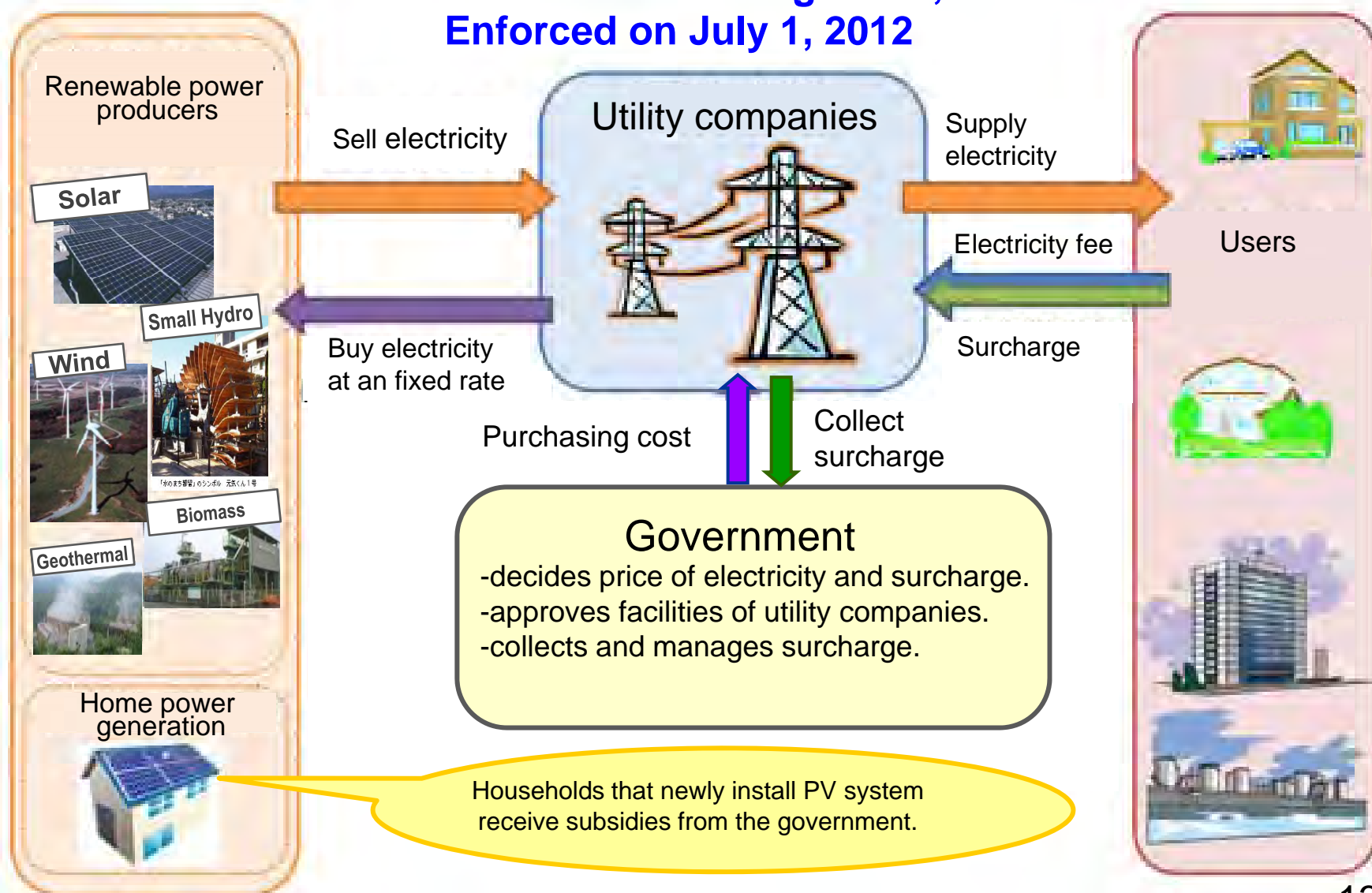


Source: HP of the National Strategy Office of Japan, English translation by JETRO

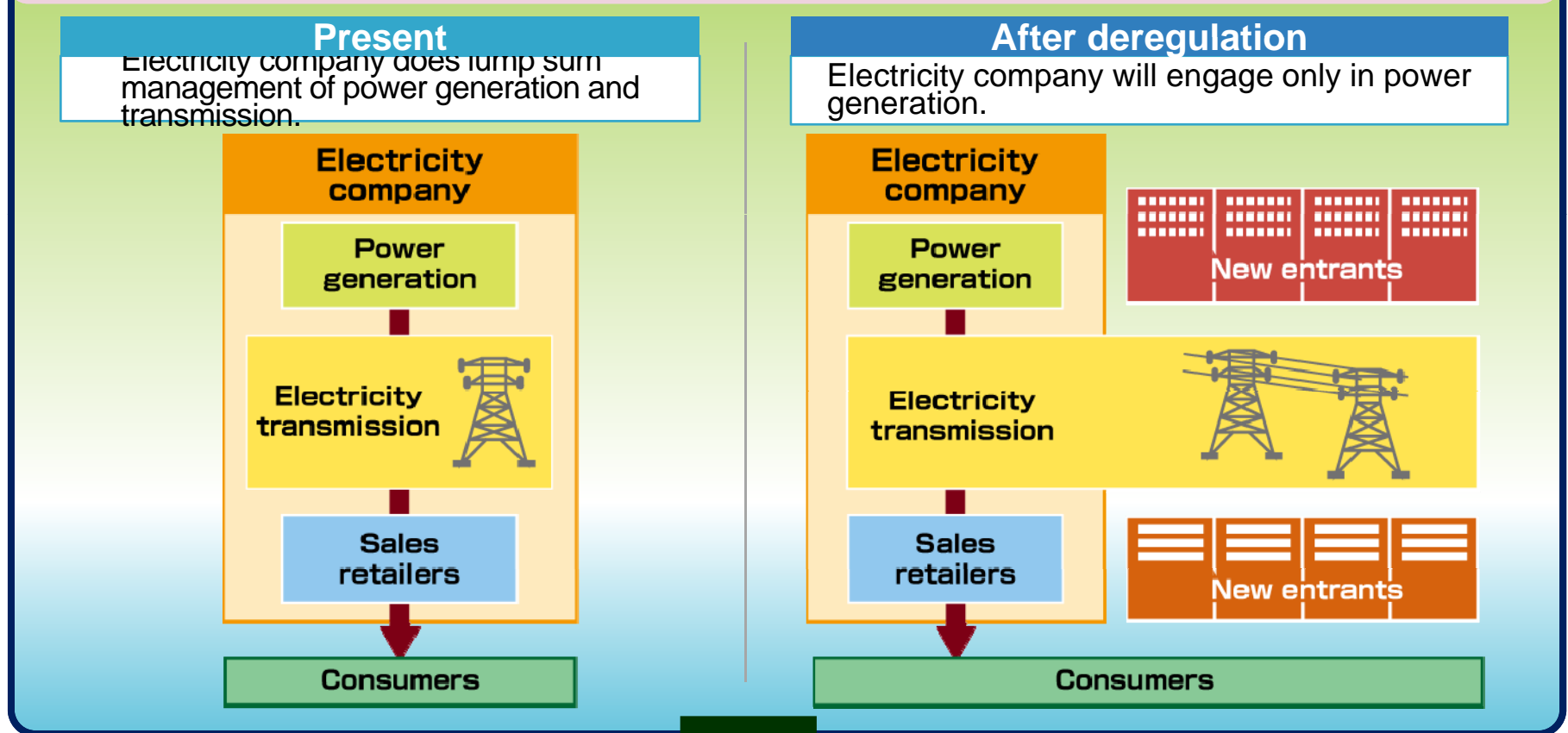


Source: HP of the National Strategy Office of Japan, English translation by JETRO

Established on August 26, 2011
Enforced on July 1, 2012



**Trend towards separation of power generation and transmission businesses
Promotion of entry of power producers and electricity sales retailers**



Entry of retailers from private sectors and overseas

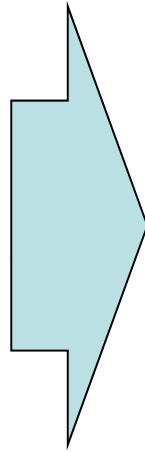
Advanced green technologies and energy projects

PV generation installed mainly for housing use



NEDO*'s field test project on new photovoltaic power generation

(Photo: provided by Ohta City)



Plans to establish mega solar power plants for industrial use fully in progress



Solar power plant in Ougishima launched by TEPCO** with the maximum output of 13MW

(Source : TEPCO)

Foreign companies enter the Japanese PV market

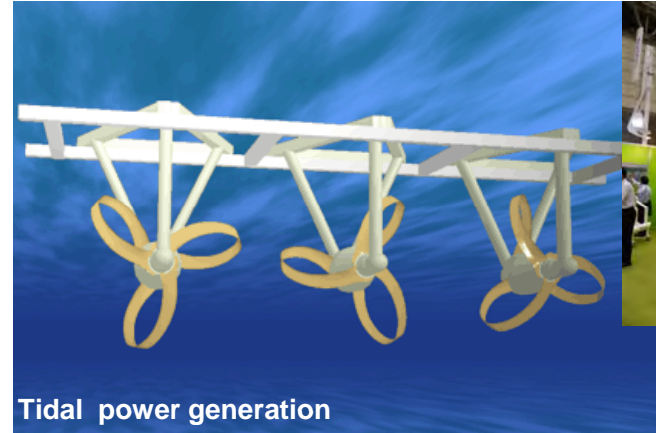
- Canadian Solar: reportedly plans to build a factory in disaster-hit Tohoku.
- SunEdison (US): building a mega solar power plant, and Osaka prefectural government decides to give a grant.

* NEDO: New Energy and Industrial Technology Development Organization

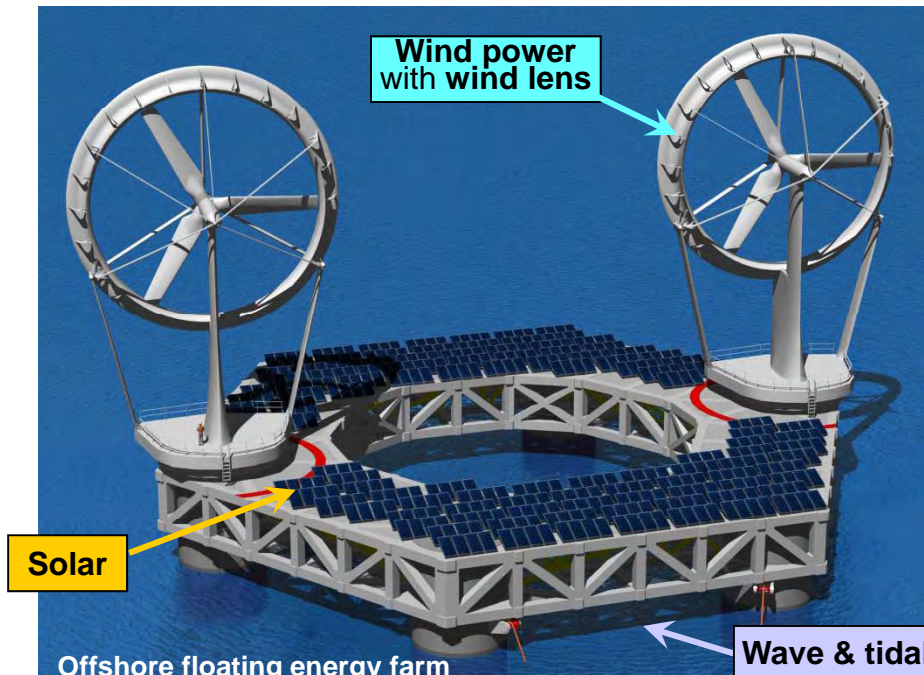
**TEPCO: Tokyo Electric Power Company



High-efficiency gyro wave-activated power generation system
(Gyrodynamics Ltd.)



Tidal power generation
(Loopwing, Co., Ltd.)

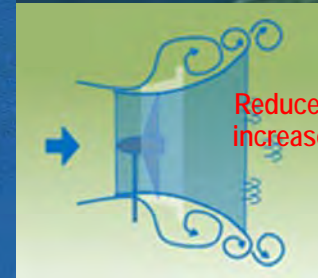


Solar

Wind power with wind lens

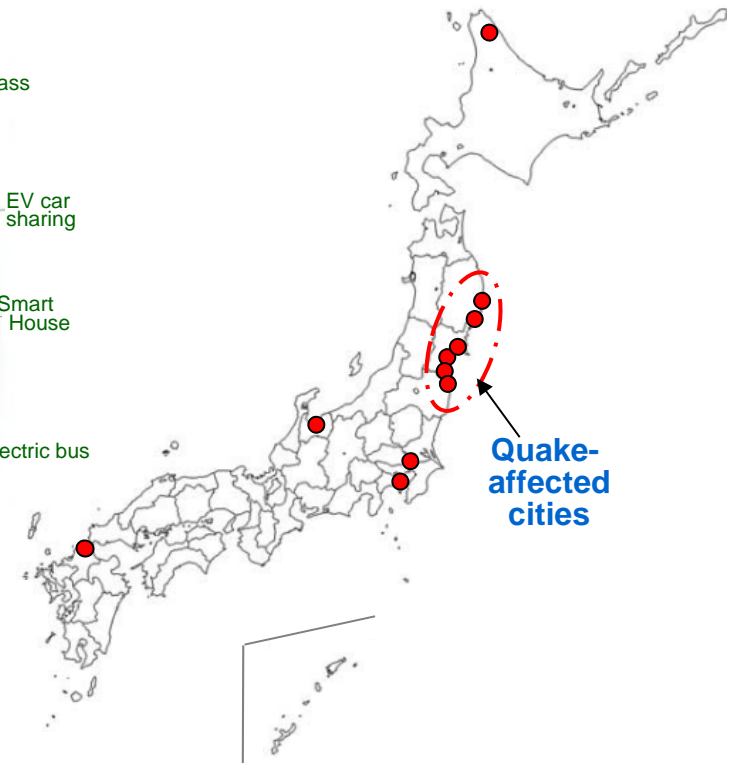
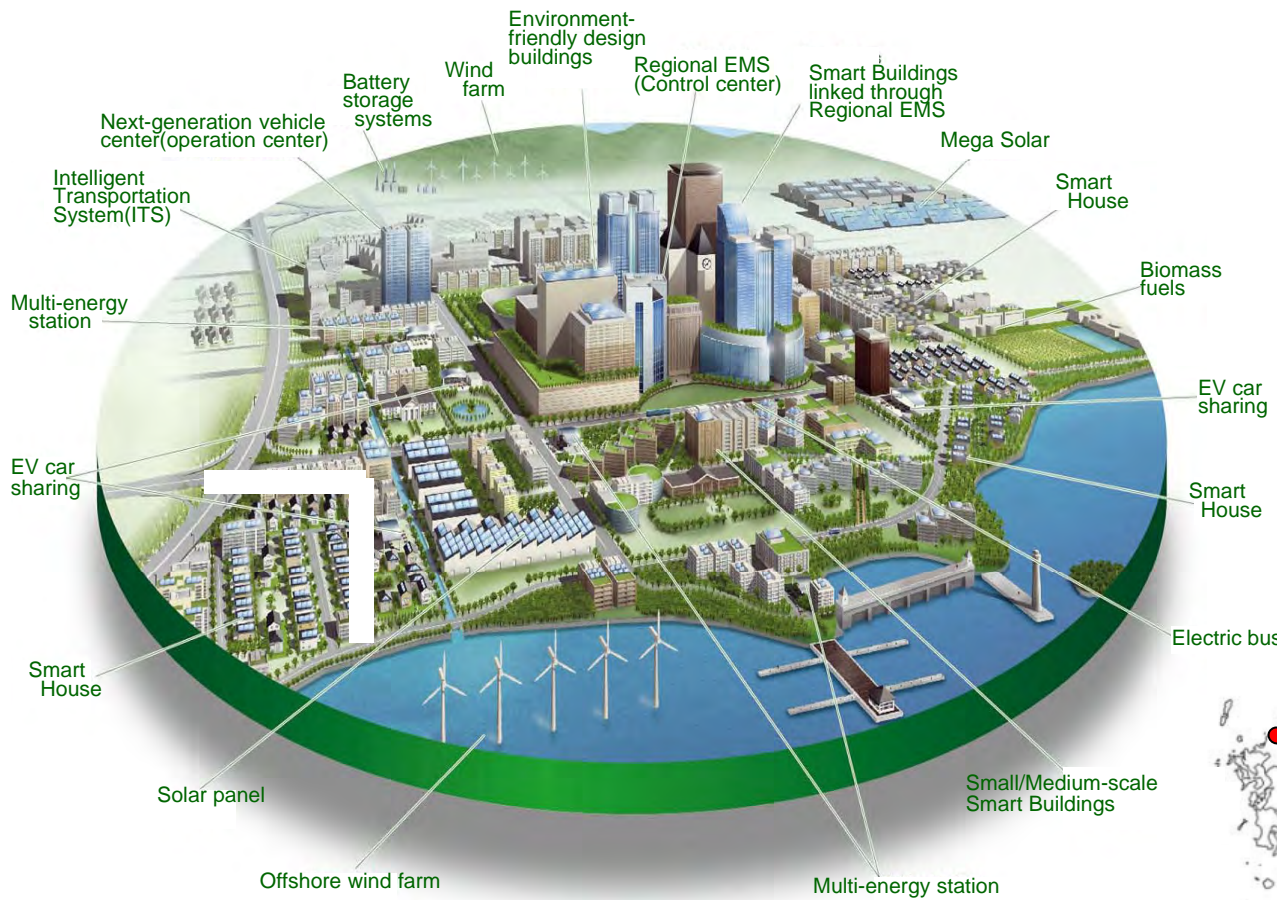
Wave & tidal

Offshore floating energy farm
(Kyusyu University)



Reduced air pressure increases wind speed

Wind lens mechanism
Triples generation amount

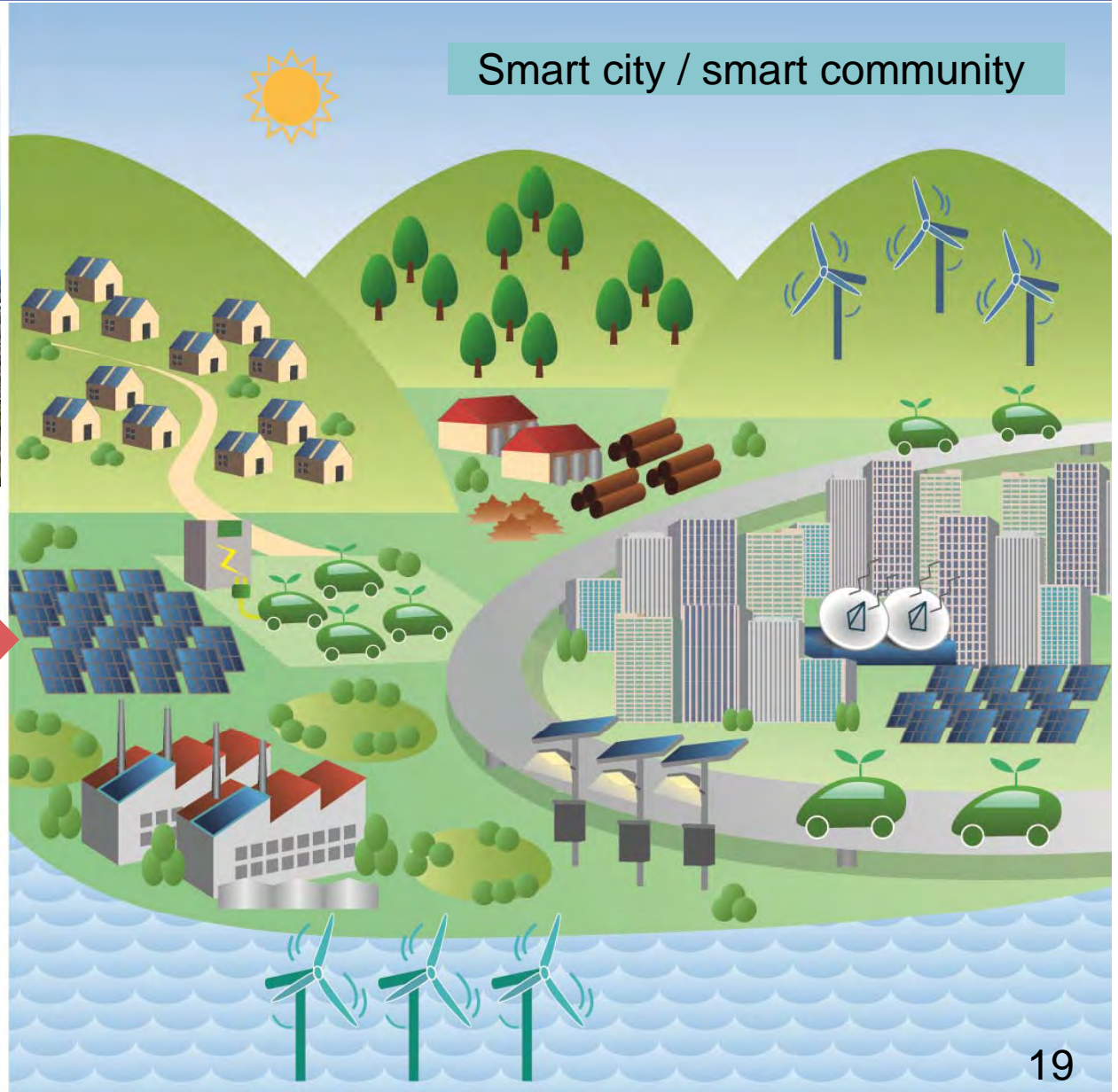


Source: Smart City Planning Inc.

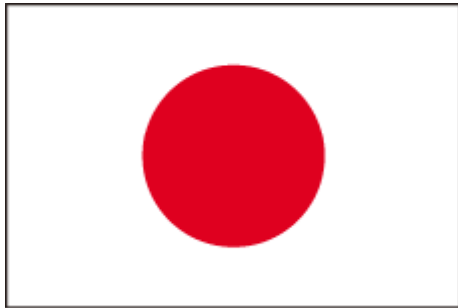
Image of Smart City

"Future City" Initiative

Green energy generation & smart city design for rebuilding quake-affected areas



JETRO



Thank you very much !

Merci beaucoup !