

# Green Growth and Green Economy in Japan



**Satoshi Kojima**

Director, Economy and Environment Group  
Institute for Global Environmental Strategies (IGES)

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**IGES** Institute for Global  
Environmental Strategies

## Outline

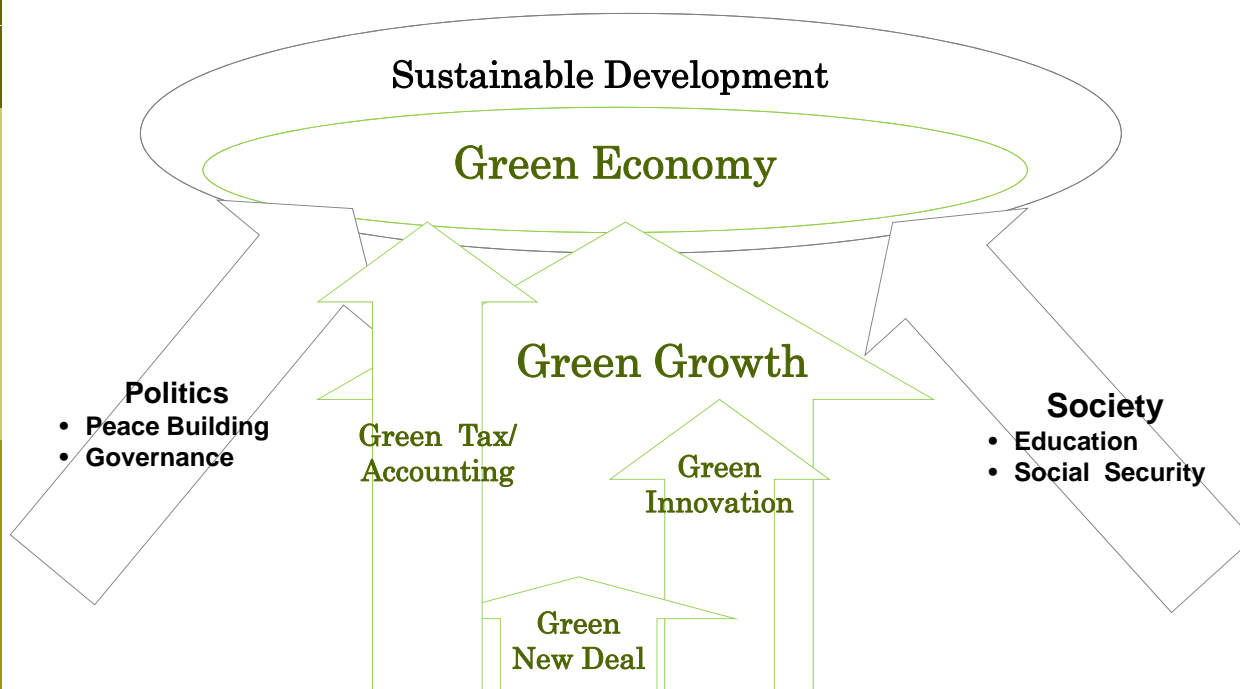
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- Green growth and green economy: conceptual framework
- Green economy policy in Japan
- Green growth policy in Japan
- Japanese focus: green innovation
- Contribution to green economy in Asia
- Conclusion



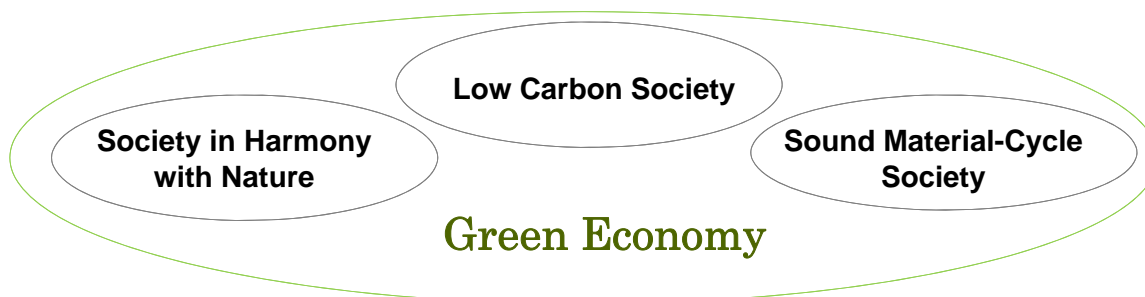
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# Green Economy: Conceptual framework



# Green Economy in Japanese policy

- **3 pillars (“Becoming a leading environmental nation in the 21st century”, approved by the cabinet in 2007)**
  - ◆ Low carbon society (e.g. Challenge25: 25% reduction by 2020)
  - ◆ Sound material-cycle society (e.g. 3R initiative)
  - ◆ Society in harmony with nature (e.g. Satoyama Initiative)

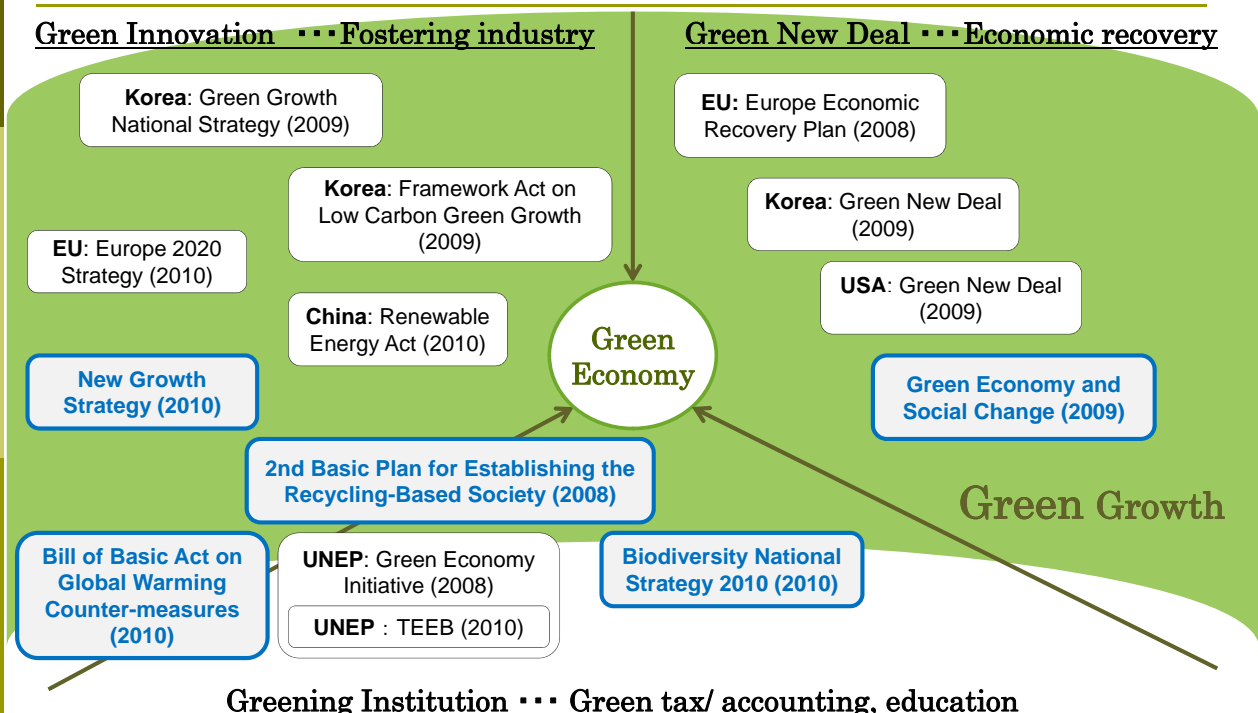


## 8 strategies towards green economy

“Becoming a leading environmental nation in the 21<sup>st</sup> century” (2007) listed the 8 strategies:

1. International leadership to overcome climate change problem
2. Conservation of biodiversity for the sustainable use of ecosystem services
3. Creation of sustainable material-cycles through the 3Rs
4. International cooperation utilizing experience of overcoming pollution
5. **Economic growth centered on environmental and energy technologies**
6. Creation of vibrant local communities for sustainable use of ecosystem services
7. Environmental education
8. Creating a system to support a “Leading Environmental Nation”

## Cross-national comparison of GE/GG policies



## Green New Deal policy in Japan

Minister of the Environment announced “**Green Economy and Social Change**” (**Japanese Green New Deal**) in April 2009.

- **Greening social overhead capital (public investment)**
  - ◆ Renovation of public buildings e.g. schools to eco-building
  - ◆ Renovation of transportation/city to eco-friendly system
  - ◆ Investment in forestry for carbon mitigation
- **Greening consumption (mainly through eco-point schemes)**
  - ◆ Promotion of energy-saving home electric appliances
  - ◆ Promotion of next generation eco-housing
  - ◆ Promotion of next generation vehicles and biofuels
- **Greening investment (through carbon market and green tax)**
  - ◆ Introduction of domestic cap-and-trade
  - ◆ Greening tax
  - ◆ Carbon offsetting, carbon foot-print

## New Growth Strategy: Policy targets

- Cabinet approved “New Growth Strategy” as the direction of Japanese economic/industrial policy on 18 June 2010.
- Aim to create new demand and employment through 4 priority areas.
- Green growth through green innovation is one of them.

	New demand	Job creation
<b>Green innovation</b>	<b>JPY 50 trillion (USD 415 billion)</b>	<b>1.4 million jobs</b>
Life innovation	JPY 50 trillion (USD 415 billion)	2.8 million jobs
Asian economy	JPY 12 trillion (USD 100 billion)	0.2 million jobs
Tourism	JPY 12 trillion (USD 100 billion)	0.6 million jobs

# New Growth Strategy: Green innovation

## <Energy Sector>

- Renewable energy
- Nuclear power plant
- Efficiency improvement in thermal power generation
- Low power consumption ICT
- Smart grid

## <Transportation>

- Promotion of modal shift
- Next-generation vehicle

## <Targets by 2020>

- ¥50 trillion-scale environmental related new market
- 1.4 million new environmental related employment
- Reduction emission by 1.3 billion t-CO<sub>2</sub> at the global level

## <Resource>

- Promotion of recycling
- Invention of alternative materials for rare-metal

## <Building>

- Energy-saving home electronics
- Eco-house
- Heat-pump
- LED and organic EL
- Environmental concierge

# Contribution to green economy in Asia

## ■ Utilise green innovation in Japan to greening economy in Asia

- ◆ Promote infrastructure development as a package in Asian countries, e.g. high speed train (Shinkansen), urban transportation, water infrastructure, energy infrastructure, and eco-city.
- ◆ Not only increased export of green products for infrastructure development but also consequent economic growth in Asian countries will provide larger market for Japanese producers.

## ■ Clean Asia Initiative (Ministry of the Environment)

- ◆ Realise green economy (low carbon economy, sound material-cycle economy and economy in harmony with nature) in Asian countries through ODA.

## Classification of green industry

**Matured:** Industry with

- well-developed technology
- tangible success in both domestic and foreign markets

**Example:** Car industry (Hybrid car)

**Take-off:** Industry with

- well-developed technology
- tangible success in domestic market
- no entry or only a short-period of entry in foreign market

**Example:** Energy (nuclear energy), Transportation (high-speed rail), Construction (low-carbon housing), Water, Recycling

**Premature:** Industry with small domestic market

**Example:** Car industry (Electric car), Energy (Biomass energy)

**Supportive:**

Industry which support industrial sectors listed left for their smooth promotion of green activities

**Example:**

Financial institution, Trading company

## Examples of integrated infrastructure system

	Electricity	High-Speed Rail	Water Business
Manufacturing part	Toshiba Hitachi Mitsubishi Heavy Industries	Nippon Sharyo Hitachi Kawasaki Heavy Industries	Toray etc
Construction part	Construction company (Obayashi etc)	Construction company (Obayashi etc)	Construction company (Obayashi etc)
Operation part	Electric power company (Tokyo Electric Power Company etc)	Japan Railways Private railway company	Bureau of Waterworks
Finance part	Japan Bank for International Cooperation Commercial bank, Trading company		

## A concrete example of integrated infrastructure

### Construction of Nuclear Power Plant in Vietnam (Second Term )

Scale	Approximately 100 billion yen
Contents	Construct 2 one-million-kilowatt-class nuclear power plants
Vender	<ul style="list-style-type: none"> <li>• International Nuclear Energy Development of Japan: INED (half-public and half-private)</li> </ul>
Condition given by Vietnam	<ul style="list-style-type: none"> <li>• Introduction of verified high technology</li> <li>• Long-term stable supply of nuclear fuel</li> <li>• Management of radioactive waste</li> <li>• Technology transfer</li> <li>• Human resource development</li> <li>• Financial assistance</li> </ul>
Support provided by Japan	Comprehensive support including <ul style="list-style-type: none"> <li>• Joint procurement of uranium</li> <li>• Further financial assistance</li> </ul>
Note	<ul style="list-style-type: none"> <li>• The Government of Japan guaranteed to satisfy the conditions given by Vietnam. This was one of the important success factors.</li> <li>• Tokyo Electric company-Toshiba-Hitachi employ a boiling water reactor while Kansai Electric Company-Mitsubishi Heavy Industry adopt a pressurized water reactor. Firms do not always have common business interest.</li> </ul>

## Conclusions (1)

- **Conceptual framework to understand GE/GG policy**
  - ◆ It seems useful to sort out on-going discussion on GE/GG issues.
  - ◆ Classification of green economy policy based on the relation with existing economic policy is useful to understand direction of various players/countries.
  - ◆ Redirection of existing policies to green economy (stimulus package as GND, industrial development policies as Green Innovation, etc.) is relatively easy to implement.
- **Characteristics of Japanese GE/GG policy**
  - ◆ The current green growth policy focuses on green innovation.
  - ◆ Greening institution, social system is relatively weak.
  - ◆ Contribution to global green economy is mentioned, but concrete measure is not clear.

## Conclusions (2)

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### ■ Challenges

- ◆ Definition of green economy and effective measures to promote green economy may depend on the status of economic development among others. Japan, as one of the most developed economy, should establish green economy underpinned by qualitative development rather than conventional economic growth.
- ◆ More research is needed to demonstrate such qualitative development based green economy. For example, reducing unemployment without economic growth but through structural change such as shifting labour force to agriculture and forestry may be an effective measure towards green economy in Japan.

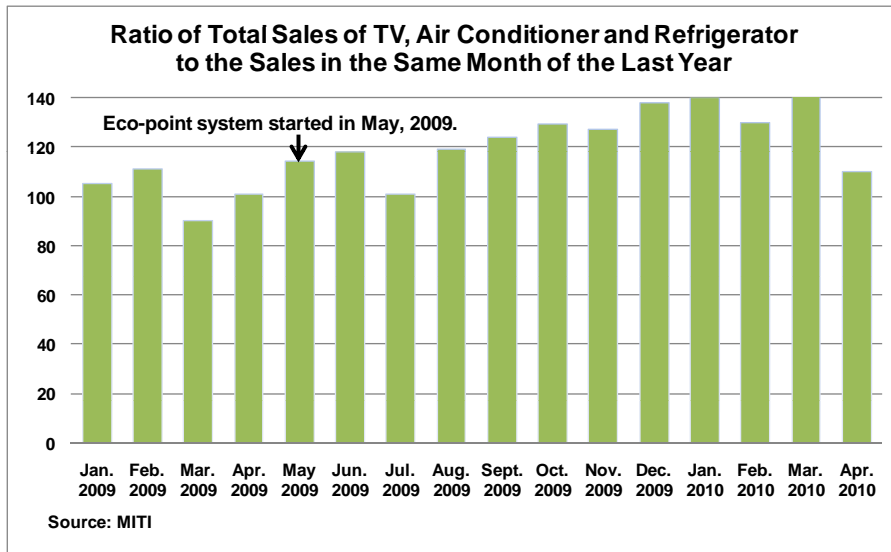
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*Thank you for your attention.*

Contact address: [kojima@iges.or.jp](mailto:kojima@iges.or.jp)

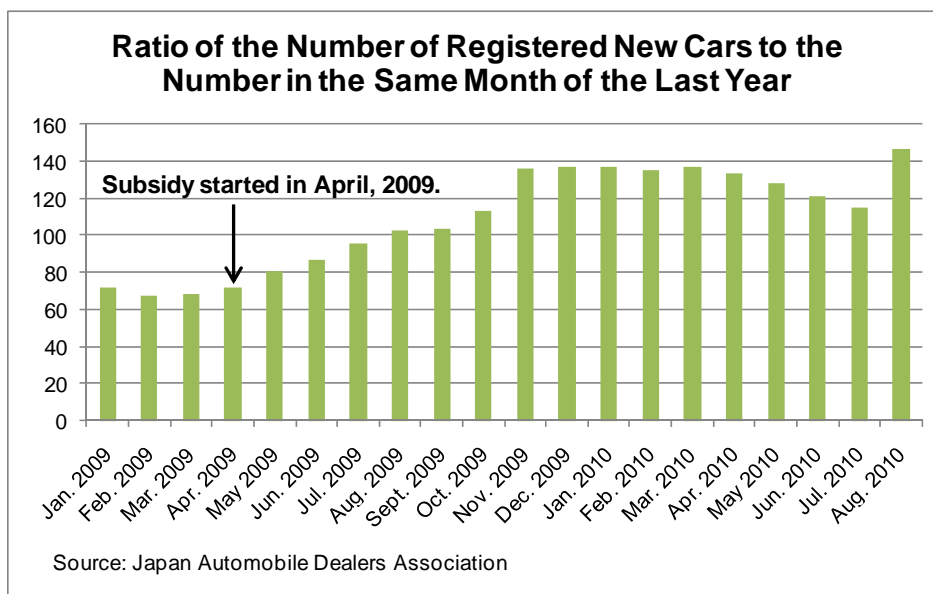


## Appendix 1: Outcome of Eco-Point System for Home Electric Appliances



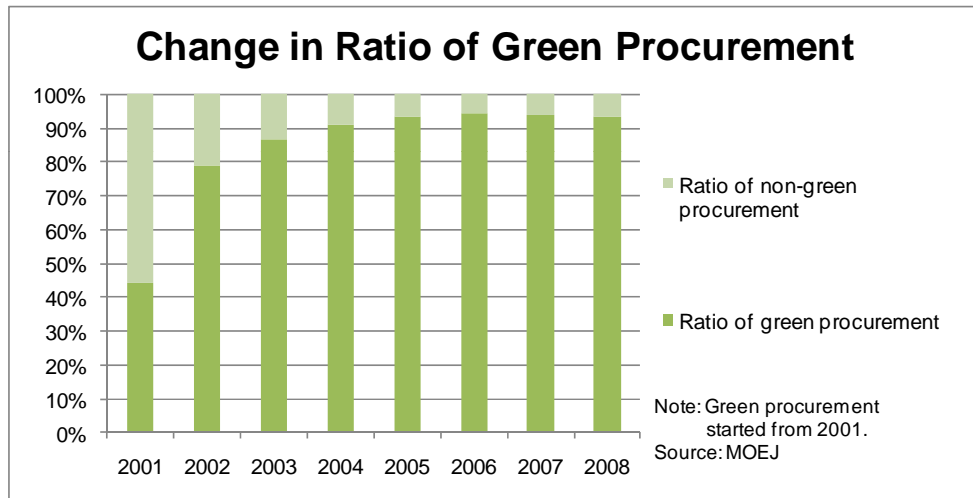
- Until April of 2010, 193.5 billion eco-points (in total) were issued.
- From May of 2009 to April of 2010, the total sales of TV, air conditioner and refrigerator increased 30% from the same period of the previous year.

## Appendix 2: Outcome of Subsidy for Environmentally-Friendly Cars



- From April of 2009 to March of 2010, the total number of registered new cars increased 10% from the same period of the previous year.

## Appendix 3: Outcome of Green Procurement Law



- From 2004 to 2008, more than 90% of public procurement is green procurement (i.e., commodities whose ratio of green products is over 95% in total purchase).
- In 2008, green procurement saved 0.3 million ton-CO<sub>2</sub> of GHG emissions.