Current status of Japan’s climate policy mix

Takeshi Kuramochi, PhD

Climate and Energy Area
Institute for Global Environmental Strategies (IGES)

International Conference on Climate Change Policy Coordination and Policy Mix
29 November, 2013, Seoul, South Korea

The contents of this presentation are the opinions of the presenter and do not reflect the views of IGES.
Outline

- Introduction to IGES
- Overview of energy and climate policy development in recent years (2009 – present)
- Current energy and climate policy mix
- Summary
Introduction to IGES
Overview

- Established in 1998
- Charter signed in 1997 in the occasion of UNFCCC COP3 (Kyoto)
- Main funders: Ministry of the Environment (MoE)
- Located in Hayama (near Yokohama)
- International: ~1/3 of 100 research staff from abroad
Mission

“To create effective strategies and propose practical solutions to support sustainable development, especially in the Asia-Pacific region”

→ Contribute to Policy Formulation through information dissemination and policy recommendations based on research outcomes
Research Areas at IGES

- **Natural Resources and Ecosystem Services**
- **Climate and Energy**
- **Sustainable Consumption and Production**
- **Green Growth and Green Economy**
- **Business and Environment**
- **Integrated Policies for Sustainable Societies**
- **Sustainable Cities**
- **Green Growth and Green Economy**
- **Bilateral Operation**
  - Beijing Office
- **Multilateral Operation**
  - Regional Centre in Bangkok

29 November, 2013. Seoul, South Korea.
Climate and Energy Area

Research topics

1. Future climate regime (post-2020)
2. Sustainable Energy System
3. Low carbon development policies in Asia: NAMA, MRV, and other approaches
4. Climate finance and investment
5. Market mechanisms
Latest publications from Climate and Energy Area

Overview of energy and climate policy development in recent years

Pre-Fukushima
Change of ruling party (Sept 2009)

- Democratic Party of Japan (DPJ) took over power from Liberal Democratic Party (LDP)

- Copenhagen Accord (2009)
  - 25% reduction by 2020 vs. 1990 levels
  - Fast-Start Finance: USD 15 billion between 2010 and 2012
Bill of the Basic Act on Global Warming Countermeasures (2010)

- Legally enshrine mid-long term GHG mitigation targets
  - 25% by 2020, 80% by 2050

- Establishment of:
  - Economy-wide ETS
  - Full-fledged renewable FIT
  - Green tax scheme

→ Passed the Lower House, but not the Upper House…
2010 Basic Energy Plan

- Energy-related CO₂ in 2030: -30% vs. 1990
- No roadmap for achieving 2020-25% target
- 14 additional nuclear plants by 2030

Centralized power generation
Source: METI (2010)
Overview of energy and climate policy development in recent years

Post-Fukushima
New energy and climate strategy under DPJ government

Three basic philosophies:

- **Realization of new best-mix of energy sources**
  - Draw up a scenario of reduced dependence on nuclear energy
  - Utilize a clear and strategic schedule to avoid energy shortfalls and price rises
  - Thorough review of nuclear power policies and operate under a new framework

- **Realization of new energy systems**
  - Distributed energy system
  - Seek to make an international contribution as advanced problem-solving nation

- **Formation of national consensus**
  - Stimulate national discussions overcoming the confrontation between nuclear proponents and opponents
  - Verify objective data
  - Formulate innovative energy and environmental strategies while maintaining dialogue with a broad range of national people

Innovative Strategy on Energy and Environment (Sept 2012)

- Nuclear phase-out during 2030s
- Electricity generation in 2030:
  - 20% lower vs. 2010 Basic Energy Plan
  - Share: 30% renewables, 15% CHP
- GHG mitigation: around -20% vs. 1990 levels in 2030 (5-9% for 2020)
  → Did not become legally binding

Bye DPJ, hello again LDP

- LDP back in power after a landslide victory in Lower House elections in Dec. 2012
  - Bill of Global Warming Basic Act scrapped in Nov. 2012
- LDP now majority in both Houses
- LDP cabinet to scrap the “Innovative Strategy”
  - New Basic Energy Plan by the end of 2013 (?)
Revised 2020 mitigation target and new pledges (new from Warsaw!)

- 2020 target: -3.8% from 2005 levels
  - +3.1% vs. 1990 levels
  - Assumes no restart of nuclear plants
  - Positioned as tentative target

- 16 billion USD climate finance in three years (2013-2015)
  - Includes both private and public finance

Current status of Japan’s climate policy
Japan has achieved KP-CP1 target

Current mitigation targets

2020 target (announced in Warsaw COP):
- -3.8% vs. 2005 levels (+3.1% vs. 1990)

2050 target (4th Basic Environment Plan, 2012):
- “aspire to reduce GHG emissions by 80% by 2050 compared to 1990”
Japan’s energy and climate policy mix

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Energy conversion</th>
<th>Industry</th>
<th>Commercial</th>
<th>Transport</th>
<th>Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Laws and regulations</strong></td>
<td>Energy Conservation Act (business establishments)</td>
<td>Top Runner Standards</td>
<td>Insulation standards</td>
<td>Insulation standards</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Emission standards</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sectoral benchmarks</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subsidies</strong></td>
<td>Emissions Trading Scheme</td>
<td>JVETS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Taxation</strong></td>
<td>High efficiency furnaces and boilers</td>
<td>Green Investment Tax Break</td>
<td>Petroleum and Coal Tax, etc.</td>
<td>Global Warming Tax</td>
<td>Eco-car tax</td>
</tr>
<tr>
<td><strong>Others</strong></td>
<td>JVETS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from MOE 2012 (http://www.env.go.jp/council/06earth/y060-102/mat02-2.pdf)
Mitigation policy measures

“The Big Three”
- FIT for renewables
- Global Warming Tax
- (Emissions trading scheme)

Other measures
- Energy efficiency standards
- Industrial voluntary actions
- Power plant CO$_2$ emission standards

Others
- Climate diplomacy
Feed-in Tariff (FIT) for renewables

- FIT Act* entered into force in July 2012
- Superseded RPS
- Applies to most renewables** and all electricity generated***

** Includes wind, solar, small hydro (<30MW), geothermal and biomass that does not affect existing industrial processes such as pulp and paper production.
*** Net metering will still be applied to residential solar PV smaller than 10kW.
Feed-in Tariff (FIT) for renewables

- FIT quite favorable for solar PV
  - Started at 42 JPY (~0.45 USD)/kWh (now 38 JPY/kWh)
  - 93% of approved facilities (July 2012 – June 2013)

- Electric utilities pass on all extra costs to end-users
  - Power industry not deregulated

- 80% reduction of FIT surcharge for large consuming companies (based on use per sales)
  - Manufacturing: x8 or more than sectoral average
  - Non-manufacturing: x14 or more than sectoral average
Feed-in Tariff (FIT) for renewables

Some issues

- Utilities permitted to refuse access
- > 80% of approved facilities not operating
  - Price fixed at the time of approval
  -> Providing perverse incentives?

Global Warming Tax

- Introduced in October 2012
  - Positioned as increase of existing fossil fuel tax
- Taxation of 289 JPY/t-CO₂ by FY2016
  - Gradual increase over 3.5 year period
- Expected revenue: ~260 billion JPY after 2016
  - Revenues for promoting EE, RE, distributed generation, etc

Global Warming Tax

Global Warming Tax

- Large consumers exempted from existing FF tax are also exempted from GWT
  - Iron and steel, coke, cement, etc.
- Electric utilities not exempted, but pass on extra costs to end users
- Larger impact expected from the use of tax revenues
  - 1.76 Mt/yr by “price effect”
  - 3.93-21.75 Mt/yr as a result of “budget effect”

Emissions trading scheme

- Nationwide: only voluntary schemes in operation
  - JVETS (cap-and-trade/subsidy)
  - J-Credit (baseline-and-credit)
- Mandatory nationwide ETS unlikely to be implemented in the near future
- Regional: Tokyo and Saitama ETS in operation
Other measures
Energy efficiency (EE) standards

- Standards under the Energy Conservation Act (not mandatory)
  - Business establishments (-1%/yr encouraged)
  - Top Runner Standards (appliances, cars)
  - Sectoral benchmarks (from 2010: power, industry)*

- Housing/building insulation standards (not mandatory)
  - Current standards set in 1999

- Most targets and benchmarks not expressed in CO₂ terms yet...

Industrial voluntary actions

Keidanren’s “Commitment to a Low-Carbon Society” *

- Continuation of Voluntary Action Plan for post-2012 (target year: 2020)
- Flexibility in setting targets
  - Energy vs. emissions
  - Total quantity vs. intensity
- Emphasis on life cycle emissions reduction and technology transfer overseas

Power plant CO$_2$ emission standards (as part of env. impact assessment)

- Unabated coal-fired plants allowed if BAT
- Need consistency with national mitigation targets
- Excess emissions vs. gas-fired to be offset, if no mitigation framework for the power sector

Climate Diplomacy

Diffusion of Japan’s energy efficient technologies
Joint Crediting Mechanism (JCM)*

- Supplement CDM, considered for UNFCCC “various approaches”
- 50% of initial cost subsidized, get half the credits
- Emphasis on energy efficiency projects
- Potential impact not known

Climate finance contributions

- Largest Fast-Start Finance contributor (public, face value)*
  - Includes metro, fossil power plants, etc

- USD 16 billion for 2013-15
  - Both public and private finance
  - Likely to continue supporting high-efficiency coal power plants

*: See WRI/ODI/IGES 2013 report for details
Summary

- Among the key mitigation policy measures (FIT, carbon tax, ETS), only FIT is delivering visible impact for now
  - Economy-wide ETS unlikely in the near future
  - Impact of carbon tax yet to be seen

- Burden on power and energy-intensive industrial sectors (large ones) due to mitigation measures is limited
  - Pass on the costs to end-users (power sector)
  - Exemption and reduction measures (industry)
Summary

- Most EE measures are not mandatory
- \( \text{CO}_2 \) mitigation not yet mainstreamed in EE policies
- Mitigation overseas as economic opportunity
Thank you!

E-mail: kuramochi@iges.or.jp
Website: www.iges.or.jp