Knowledge-based Investment in Low Carbon Infrastructure
- JICA Support for Global Low Carbon Growth -

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Kyosuke Inada (Mr.), Deputy Head (Climate Change)
Global Environment Department
Japan International Cooperation Agency (JICA)
The Challenge for Low Carbon Growth

Concrete Steps to Materialize Knowledge-based Investment
1. Creating Knowledge Hub
2. Localizing Knowledge
3. Formulating Knowledge-based Policy
4. Linking Policy with Investment
5. Investing in Tangible Infrastructure & Assets
6. Engaging the Private Sector

Direction of Low Carbon Cooperation by JICA
Policy-makers are likely to view this graph “three-dimensionally” - “the third axis” representing “growth”.

The challenge is 1) finding solutions to “leapfrog” under appropriate growth path and 2) incorporating knowledge on such solutions into policy and investment decisions.
1. Creating Regional Low Carbon Knowledge Hub

低炭素ナレッジに関する地域ハブの創出

(active learning & pooling of research findings and past experiences)

One-day Ministerial Dialogue on low carbon growth in East Asia in April 2012 in Tokyo / JICA, NIES and IGES introduced the concept “East Asia Knowledge Platform for Low Carbon Growth”

Dialogue held in the context of the East Asia Summit (EAS)

- Shaping international framework (reducing uncertainty, e.g. REDD+)
- Coping with rapid urbanization and motorization
- Appropriate utilization of market mechanism

2. Localizing Low Carbon Knowledge

Indonesia / Surabaya – Japan / Kitakyushu

- Joint statement by Kitakyushu and Surabaya on *strategic environmental partnership* (March 2011)
- City of Kitakyushu, utilizing JICA studies and other tools, introduced local technologies to Surabaya for green, low carbon growth (*water and waste management*, etc.).

City of Kitakyushu, Japan

- Established “Kitakyushu Asian Center for Low Carbon Societies” to transfer environmental technology to Asian countries for a “Asian low-carbon revolution”

Thailand / Bangkok - Japan / Yokohama

- Both cities announced ambitious GHG emission reduction targets.
- Yokohama has provided support to Bangkok officials in formulating low carbon policy using JICA cooperation framework (*mass transit, renewable and efficient energy, waste, expanding park areas*)

City of Yokohama, Japan

- Launched “Yokohama Smart City Project” to design and build “Next Generation Energy Infrastructure and Social System” to maximize GHG emission reduction
3. Formulating Knowledge-based Policy

ナレッジを活用した政策の策定

(incorporating localized wisdom into decision making - case of Vietnam energy efficiency policy actions)

### Example of Policy Action Cycle (Energy Efficiency)
from Climate Change Development Policy Loan to Vietnam

<table>
<thead>
<tr>
<th>Year</th>
<th>Action</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>2009 Action</td>
<td>Prepare the legislative framework</td>
</tr>
<tr>
<td>2010</td>
<td>2010 Action</td>
<td>Prepare the regulations to enforce the Law</td>
</tr>
<tr>
<td>2011</td>
<td>2011 Action</td>
<td>Research of financial mechanism</td>
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</tbody>
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- **Introduction of Registered Energy Manager system**
- **Introduction of Energy Labeling system**

### Knowledge on Effective Measures for Energy Efficiency (Experience in Japan)

- Survey of local situation
- On-site review of factories
- Awareness raising of local actors
- Training local experts in Japan

### Localization of Effective Measures in the Vietnamese Context

- Save 5-8% of the nationwide energy consumed 2011-2015
- Strengthening data management
- Awareness raising of local actors
- Training local experts in Japan
4. Linking Low Carbon Policy with Investment

低炭素政策を投資に結びつけるJICAの包括的な支援
(comprehensive support framework by JICA)

- JICA handles most of Japan’s bilateral climate related aid, offering comprehensive support using its technical & financial support in alignment with international framework (LEDS, NAMA, MRV, etc.)

2010 mitigation related bilateral aid
(Japan was the largest donor)

5. Investing in Tangible Low Carbon Assets

Prime Minister Dr. Manmohan Singh: “Delhi Metro is a shining example of Japan-India partnership”

- JICA metro projects already in 4 cities (Delhi, Bangalore, Kolkatta, Chennai)
- Knowledge sharing by Tokyo Metro on operational safety
- Wide range of renewable technology eligible for financing thru IREDA
- Technical cooperation to transfer solar power technology to IREDA

Supporting SMEs using Sustainable Finance thru SIDBI (Small Industries Development Bank of India)

Recent ODA loan projects include:
- Rural electrification in southern and western India (accessing 3 million)
- Upgrading transmission and distribution system (urban and rural)
- “Energy Saving Equipment List” Locally available energy saving equipment
- Enhancing capacity of intermediary bank and raising awareness of SMEs

Delhi Metro is a shining example of Japan-India partnership.
6. Engaging the Private Sector

民間セクターの参加を促進

(bridging the gap between business and sustainable development - case of Indonesia geothermal energy)

- JICA discusses with the Government of Indonesia on private sector engagement policy in geothermal
- Regulatory environment is improved
- Private sector finance is crucial to develop geothermal, a low-carbon solution to Indonesia’s power supply
- JICA listens to the private sector to identify barriers for participation
- Technical Cooperation for preparation of master-plans
- Concessional Loans for construction of high priority geothermal power plants
- Public funds not enough to develop the estimated 27,000 MW potential in Indonesia’s geothermal power
Direction of Low Carbon Cooperation by JICA

Comprehensive Assistance

Climate Change, A Global Agenda

Climate Compatible Sustainable Development

<Mitigation: Low-carbon Society>
- Strategic Mitigation Actions
- Low-carbon Technologies
- Efficient Use of Resources, etc.

Energy, Transport, Forestry, Waste Management, etc.

Reduction of GHG Emission
- Responding to Climate Change

Equitable Growth

Sustainable Development

Human Security

Policy Dialogue
- Public-Private Partnership

Research / Studies

Policy & Institutional Reform, Finance Mechanism, Human Resource Development

Disaster Risk Management, Water, Agriculture, Sanitation, etc.

<Adaptation: Climate Resilient Society>
- Climate Modeling / Vulnerability Assessment
- Enhancing Adaptive Capacity
- Resilient Infrastructure

(June 2012 http://www.jica.go.jp/english/operations/climate_change/overview.html)