Energy security and low carbon development for Asian and Pacific cities: Challenges and opportunities

“International Symposium on Cities and Carbon Management: Towards Enhancing Science-Policy Linkages”

16 November 2009, Tokyo

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1. The Asia-Pacific & UNESCAP

- Population: 4.1 billion people or 2/3 of the global population
- 1.6 billion of world’s urban population
- Land surface: 40% of global land area
- 12 of 19 cities are “megacities”*
- 44 million added each year to region
- 120,000 people added each day
- 17 of 27 largest cities Asian in 2025*
- Ecological footprint 3-5 times higher than global per capita average
- 2/3 of world’s poor and slum population

* UN World Urbanization Prospects (2007 revision) Highlights
Energy consumption & demand

Motor Vehicles in Use - Passenger Cars per Thousand People

Emissions of CO2 - from Transport (IEA)

World Energy Outlook 2008 - GLOBAL ENERGY TRENDS TO 2030
Energy Situation in Asia-Pacific

Theme Study on Energy Security & Sustainable Development in AP
64th Commission, Bangkok, April 2008

- High dependency on fossil fuels aggravating AP’s vulnerability to energy prices
- Share of fossil fuel consumption to remain 82% in 2030 under BAU scenario
- LDCs are most vulnerable to high oil price
- Regional energy system baseline scenario would require US$9 trillion up to 2030
- Shift to “quality of growth” and sustainable energy paradigm

<table>
<thead>
<tr>
<th>Country</th>
<th>Total Oil Supply (Thousand bpd)</th>
<th>Import (Thousand bpd)</th>
<th>Dependency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>China</td>
<td>5421.49</td>
<td>2023.96</td>
<td>37.33</td>
</tr>
<tr>
<td>Japan</td>
<td>5160.04</td>
<td>5224.50</td>
<td>100.00</td>
</tr>
<tr>
<td>India</td>
<td>2485.00</td>
<td>1710.64</td>
<td>68.84</td>
</tr>
<tr>
<td>Thailand</td>
<td>815.48</td>
<td>598.43</td>
<td>73.38</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>2032.33</td>
<td>2055.82</td>
<td>100.00</td>
</tr>
<tr>
<td>Philippines</td>
<td>316.04</td>
<td>318.82</td>
<td>100.00</td>
</tr>
<tr>
<td>New Zealand</td>
<td>136.55</td>
<td>110.44</td>
<td>80.88</td>
</tr>
</tbody>
</table>
Dilemma with fossil fuels

Unsustainable energy-economy-environment nexus

- Deepening fossil fuel dependence
- Vulnerability to energy prices
- Unsustainable economic growth
- Increasing GHG emissions
- Vulnerability to climate change
- Deteriorating environmental sustainability
- Adverse impact on MDGs/poverty, social inclusiveness
2. Energy use in cities

Blackout of August 2003

Let’s not forget.
Learn from the past.
Prevention better than cure.
2. Energy use in cities

100 units of fossil fuel

- Fossil fuel power plant: 61.5 units
- Power transmission: 38.5 units
- Building facilities: 22 units

Lost through inefficient generation and heat loss: 3.5 units
Lost through transmission & distribution: 35 units
Wasted through inefficient end use: 13 units

### 2. Energy use in cities

**High Performance Green Buildings Can...**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Benefit</th>
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<tbody>
<tr>
<td>70%</td>
<td>Reduce solid waste</td>
</tr>
<tr>
<td>40%</td>
<td>Reduce water use</td>
</tr>
<tr>
<td>35%</td>
<td>Reduce carbon emissions</td>
</tr>
<tr>
<td>30%</td>
<td>Reduce energy use</td>
</tr>
<tr>
<td>20%</td>
<td>Reduce maintenance costs</td>
</tr>
<tr>
<td>10%</td>
<td>Increase building value</td>
</tr>
<tr>
<td>5%</td>
<td>Increase rent</td>
</tr>
</tbody>
</table>

Source: United States Green Building Council & CoStar Group
3. UNESCAP Working on Sustainable Cities

What is Green Growth?
Green Growth is a policy focus for the Asia and Pacific region that emphasizes environmentally sustainable economic progress to foster low-carbon, socially inclusive development.

To assist the capacity development of policy and decision makers, UNESCAP is focusing on the following paths as the most important policy measures to enhance Green Growth:

- **Sustainable Consumption and Production (Demand-side Management)**
- **Greening Business and Markets**
- **Sustainable Infrastructure**
- **Green Tax and Budget Reform**
- **Investment in Natural Capital**
- **Eco-efficiency Indicators**
What is Kitakyushu Initiative (KI)?

- Promotes local initiatives targeting control of air and water pollution, minimization of all kinds of wastes and other related urban environmental problems.
- KI Network is comprised of 62 cities from 18 countries in Asia and the Pacific region.

“KI aims to strengthen local initiatives and promote inter-city cooperation, to achieve tangible improvements in the urban environment.”
Eco-efficient and Sustainable Urban Infrastructure Development in Asia and Latin America

<table>
<thead>
<tr>
<th><strong>Duration:</strong></th>
<th>3 years (2008-2010)</th>
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<tbody>
<tr>
<td><strong>Countries:</strong></td>
<td>Selected cities / countries in Asia-Pacific and Latin America and the Caribbean</td>
</tr>
<tr>
<td><strong>Executing Agencies:</strong></td>
<td>United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and United Nations Economic Commission for Latin America and the Caribbean (ECLAC)</td>
</tr>
<tr>
<td><strong>Co-operating Agencies:</strong></td>
<td>United Nations Human Settlements Programme (UN-HABITAT)</td>
</tr>
<tr>
<td><strong>Beneficiaries:</strong></td>
<td>Policy-makers, planners and decision-makers, both at local and national level, responsible for urban infrastructure development (consultation with academics)</td>
</tr>
<tr>
<td><strong>Funding from Development Account:</strong></td>
<td>US$ 753,000</td>
</tr>
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Pro-poor and sustainable solid waste management in secondary cities and small towns

Phase I: ESCAP (in partnership with Waste Concern): US$ 4,532,327
Phase II: Waste Concern: US$ 5,500,000
Funding: Gates Foundation

- **Project Vision**
  Increased income and improved working conditions of informal sector waste pickers participating in the project and a significant reduction in greenhouse gas emissions emanating from solid wastes in the participating towns.

- **Project Objective**
  Local governments, civil society organizations and organizations of the poor, particularly organizations of waste pickers, develop and implement town-wide solid waste management strategies that are decentralized, pro-poor, low-carbon and financeable through the sale of carbon credits.
## Low Carbon Development Initiatives

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
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<tbody>
<tr>
<td>17+18 June 2009</td>
<td>Expert Group Meeting on “Towards a Low Carbon Development Path for Asia and the Pacific: Challenges and Opportunities to the Energy Sector”</td>
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<tr>
<td>18 June 2009</td>
<td>Policy Dialogue on Energy Efficiency for Low Carbon Development in Cities: Challenges and Opportunities</td>
</tr>
<tr>
<td>19 June 2009</td>
<td>Asia-Pacific Forum on Low Carbon Economy – China 2009 - Mayors’ Forum</td>
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4. What are the Challenges?

- Policy decision-makers lacking scientific facts and studies
- The poor are not centre of focus – 1 billion urban slum dwellers (stakeholders consideration)
- Lack of platforms to continuously share information and experience
- Weak policy guidance to the scientific community
- Poor governance structure and corruption for poor decisions taken
5. What are the Opportunities?

- Green building technologies require scientific prowess in energy efficiency
- Government support to low carbon/clean energy technologies R&D
- Academic inputs to urban energy planning and low carbon cities (smart grids)
- Policy dialogue and networking for urban development planning & strategies
5. What are the Opportunities?

1. Sharing experiences:
   - Japanese low carbon society
   - Low carbon city initiatives in China: low carbon city, solar city, low carbon reconstruction
   - Global: C-40

2. Low carbon urbanization: urban infrastructure, buildings, transport

3. Low carbon lifestyle/consumption pattern

4. Technology transfer/cooperation

5. Low carbon adaptation
6. How can UN play a bridging role?

• Coordinate international forum
• Support existing initiatives
• Implement projects & replicate
• Promote policy dialogues
• Specialized expertise in planning & recommendation
• Study tour, training & fellowships
• Regional & subregional workshops on specific topics
Thank you

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