Cities: Front Runners of Low-Carbon Asia

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Cities: frontrunners of low carbon world

Findings from International Research Network for Low Carbon Societies

• Cities provide an excellent opportunity to promote a Low Carbon Society: To build a LCS, it is necessary to mobilise all the elements that make up society. Existing systems which are already complicated and locked into an old "high carbon" regime, need to be transformed to achieve the LCS. Cities contain all the elements needed to form a LCS. The administrative system generally falls under the control of a single local authority whose competence is wider than that of national authorities. As such, cities can form a test bed for social experiments in LCS which can be replicated in other cities. (Bologna, 2009)

• Cities will play a major role in shaping the transition to a low carbon societies. Low carbon society impacts citizens, both where and how they live. Cities are crucial actors since they can directly influence the planning of key issues such as traffic, urban land-use, building and waste management. Already, several cities have begun to autonomously act on self determined targets that support a low carbon society. For instance, local governments and municipalities in cities have set med- and long term mitigation targets, identified demand side and supply side options, made concrete action plans, and concrete governance mechanisms and institutions to involve relevant stakeholders. The role of cities, including the influence of those constituencies, need to be mainstreamed in national and international level climate policy. (Berlin, 2010)

• The risk of lock-in: Without active climate policies, humanity will be locked-in to carbon intensive development paths; industrialized countries will slow down the turnover of their capital stock while emerging economies will build the bulk of infrastructures in ways that will be hard to re-shift at a later date. (Paris, 2011)

As per the Kyoto Protocol framework for period subsequent to first commitment period (2013 onwards) "An effective framework capable of promoting concrete efforts to reduce emissions by non-signatory U.S. and exempt developing major emitter nations such as India and China is needed."
Rapidly Expanding Asian Cities

Population: rise and shrink

Asia: 40 Years ahead
People are still concentrating to urban area, and most of Asia urban areas are still in the transition stage.

Asia: 40 years ahead
Dependency ratios of population will change drastically in next forty years.

Japan: World Front Runner of Aged Society

Successes and failures in Japan
- Public transportation: Tokyo
- Urbanization and abandoned rural district
- Revitalization: City of Toyama
What Toyama LRT means

- Improving access to stations
- Introducing feeder bus services
- Promoting long-term residence around stations
- Promoting planning for an attractive city
- Putting in place an information space for city planning based on public transportation systems
- Comprehensive design plans

Multi-benefits: developing public transportation systems and revitalizing communities

Toyama City: an example of the introduction of an LRT (Light Rail Transit) system and revitalizing communities

What Toyama LRT achieved

Multi-benefits: bringing senior citizens to the city in large numbers, a modal shift, more sightseers and more people outside of office hours.

Japan’s mid- and long-term targets:

- Japanese low carbon plan
- EV
- Urban revitalization
Infrastructure is important
Example: Passenger transport sector can achieve 80% reduction in energy demand via suitable land use & improved energy efficiency

Energy efficiency improvement
Land use
Reduction in transport volume
Decline in transport volume
Grid electricity
Hydrogen
Solar energy generation
Biomass
Natural gas
Petroleum oil
Energy demand in 2050

2050 vision of compact city and rural life for aged society

Uniqueness in Asia?
- Philosophical or conceptual? -
In contrast with other type of proactiveness
Role of philosophy or political system, or tradition?
- Thailand: Sufficiency economy led by the King
- Bhutan: “Land of Gross Happiness to Save our Planet” policy to promote sustainable development alongside with spiritual survival. → former King Jigme Singye Wangchuck, who has opened Bhutan to the age of modernization
- Gandhi: Increase self-sufficiency,
- China: New five year plan – increase urban population of 45 million, increase forested area, not to reduce agricultural land, in a way to decoupling carbon emission and development

Leapfrog Possibility in Asia

Asian Opportunity: Free from past high-energy-depending technology track
Formulation of LCS
- To make real progress

Low Carbon Cities: Asian advantage and challenge

- Free hand to draw low carbon development plan
- Rapid economic growth and urbanization
  - Huge opportunity of investment in infrastructure
  - Risk of lock-in to obsolete system?
- Enough technologies already exist
  - "Leapfrogging" opportunity in technology
- International co-operation in progress towards Low Carbon World

« Needs long-sighted, deliberate decision now