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LOW-CARBON ASIA SCENARIOS and ACTIONS
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Leading to Green Economy in Asia through Low Carbon Development

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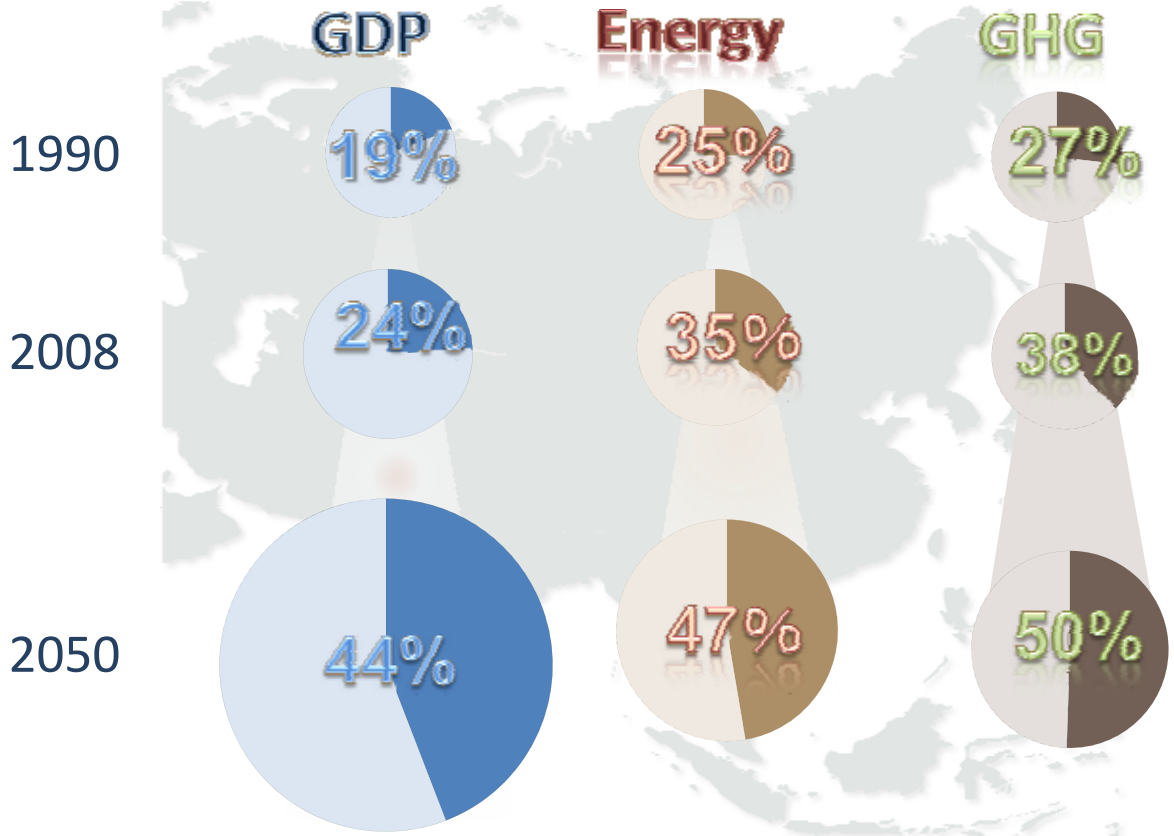
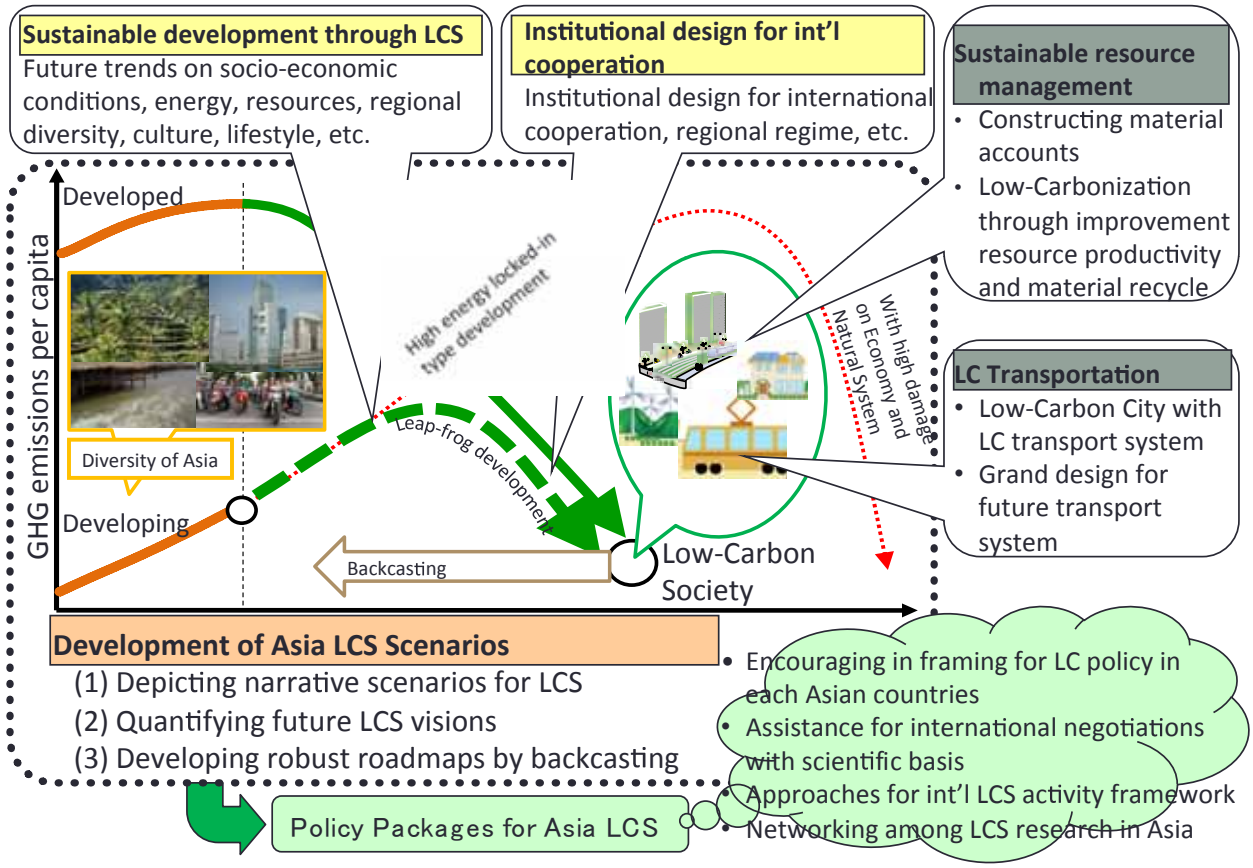
The Fifth International Forum for Sustainable Asia and the Pacific
PL-1. Green Economy and Economic Integration in the Asia-Pacific Region
At Pacifico Yokohama, July 23, 2013

Growing Importance of Actions towards Low Carbon Development in Asia



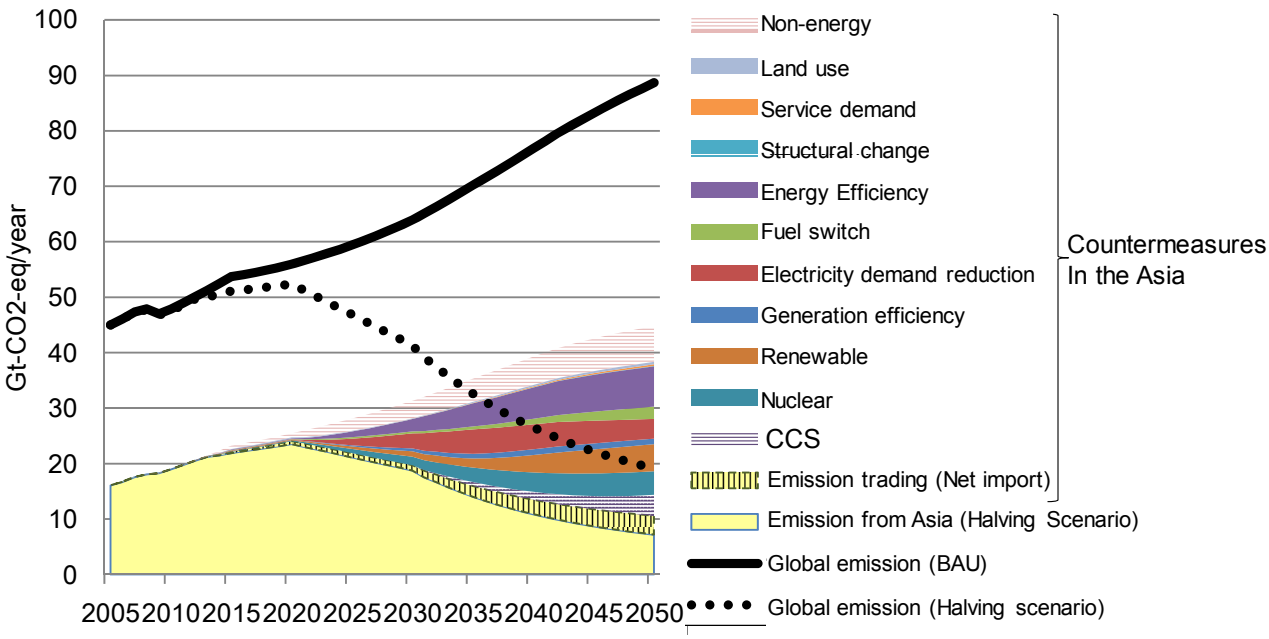
Source: Presentation by Dr. Mikiko Kainuma (Nov. 2011)

Research Project on Asia Low Carbon Society Scenarios toward 2050



Pathway and Countermeasures for Low Carbon Asia

- The Asian region has enough potential to move forward with low carbon growth in line with global common target – stabilization of climate change.
- Asia's best practice for low carbon development through leap-frogging will widening the opportunity for achieving low carbon society at the global level.



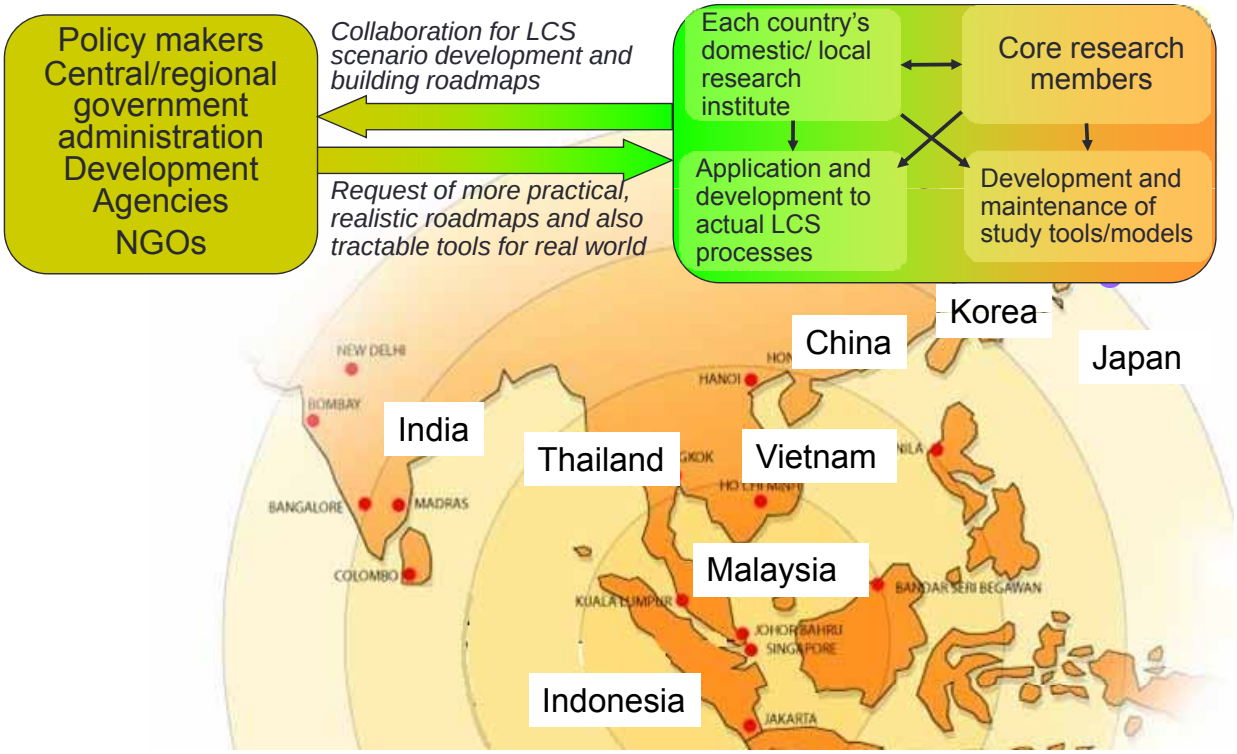
Asia is the Asia – Similar but Different

- Asia is a region and shares common problem – climate change, but has large diversity.
- Each country is different in natural resources, cultures, industrial structures, lifestyles, governances and so on.

Huge economic activity: Around 30% of global primary energy is consumed in Asia	Win-win strategy: We need strategies to solve both climate change and other issues in Asia.
Developing countries: Future GHG emissions will drastically increase.	Issues to overcome: Biomass is related to energy security and food security.
Other issues such as MDGs: Each country has many important issues to be solved –poverty, pollution...	Globalization: Activities in Asia are liked to the global activities.

Masui, T. (2009). Introduction of Advancement of Low-Carbon Society Scenario Studies in Asian Countries, Japan Low-Carbon Society Scenarios toward 2050 Project Symposium, 12 Feb, 2009 at Tokyo.

Our Scenario Development Approach: Collaboration with local stakeholders



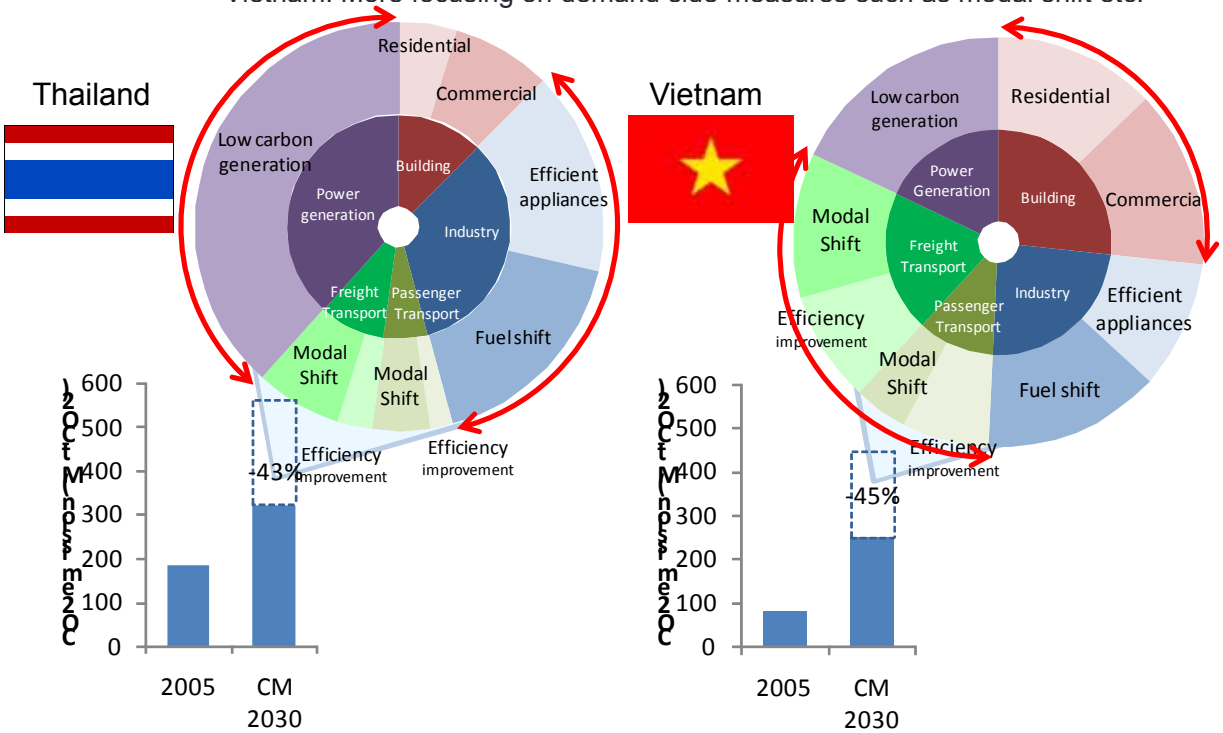
http://2050.nies.go.jp/LCS

Country and Regional Low Carbon Development Scenarios

All information is available from http://2050.nies.go.jp

The effects of countermeasures differ by country

- Scenarios of each region vary in terms of combination of actions and their effects.
  Ex) Thailand: Higher reductions from power generation and fuel shift in Industry
  Vietnam: More focusing on demand side measures such as modal shift etc.



Ten Actions toward Low Carbon Asia

- Each action gives an essential philosophy for formulate concrete strategy for Low Carbon Asia – There is a lot of ways for achieving Low Carbon Asia, but every ways should follow at least one of ten philosophies.

Action 1 Urban Transport
Hierarchically Connected Compact Cities

Action 2 Interregional Transport
Mainstreaming Rail and Water in Interregional Transport

Action 3 Resources & Materials
Smart Ways to Use Materials that Realize the Full Potential of Resources

Action 4 Buildings
Energy-Saving Spaces Utilizing Sunlight and Wind

Action 5 Biomass
Local Production and Local Consumption of Biomass

Action 6 Energy System
Low Carbon Energy System Using Local Resources

Action 7 Agriculture & Livestock
Low Emission Agricultural Technologies

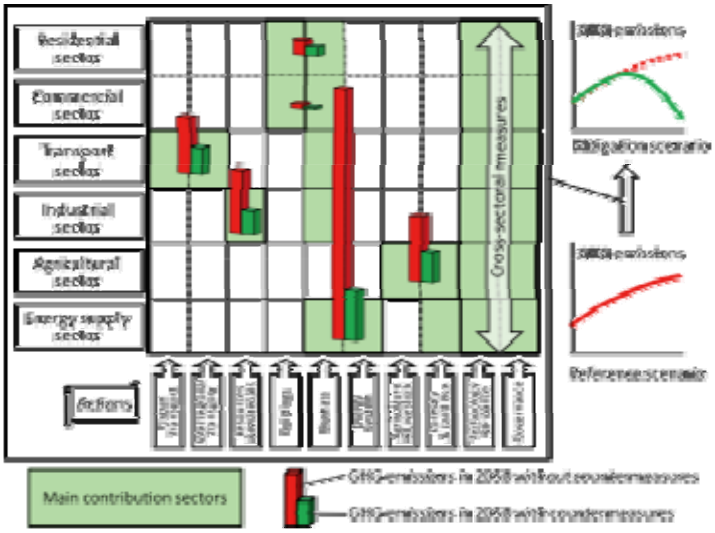
Action 8 Forestry & Land Use
Sustainable Forestry Management

Action 9 Technology & Finance
Technology and Finance to Facilitate Achievement of LCS

Action 10 Governance
Transparent and Fair Governance that Supports Low Carbon Asia

Focus of Actions on GHG Reductions in Asia

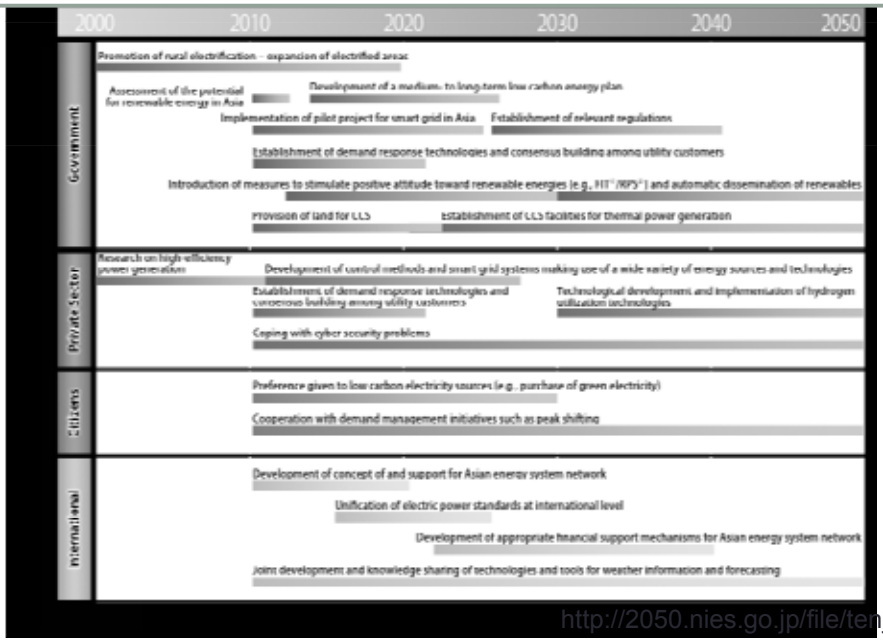
- Actions 1 to 6 focus on the mitigation of CO_2 from the use of energy and materials. Action 7, on the other hand, is targeted at the reduction of N_2O and CH_4 emissions from agriculture. Action 8 deals with the land use related emissions and absorption of CO_2.
- Actions 9 and 10 are cross-sectoral; they facilitate the previous eight actions and enhance their effects, through providing incentives and financial support for technology development and diffusion, and establishing transparent and fair governance system.



Recommendation for Accelerating Low Carbon Asia (1)

- To accelerate low carbonization of Asia in line with each philosophy, recommended strategies for an LCS in Asia are formulated.
- Recommendation designs by taking into account the interrelationships between individual policies and the sequence in which they should be implemented.

Example: Recommendation for Low Carbonizing of Energy System by 2050 (Action 6)



http://2050.nies.go.jp/file/ten_actions.pdf

Recommendation for Accelerating Low Carbon Asia (2)

- Recommendation also reveals the necessary actions to be taken by governments, private sector, citizens, and international cooperation agencies on a priority basis.

Example: Recommendation for Low Carbonizing of Energy System by 2050 (Action 6)

Role of Government

Contribute mainly to the establishment of a low carbon energy system through medium- and long-term policy and planning as well as introduction of supportive regulations, which provides a clear direction to citizens as well as other countries regarding the realization of a low carbon society as a national policy. The government policy includes targeted technological and financial incentives and institutional interventions to accelerate widespread use of local renewable resources.

Role of Private Sector

Technological innovation in the industrial sector will accelerate low carbonization of the energy system by means of renewables. The technologies include grid control systems and smart grids with various energy sources such as renewables, cogeneration, and hydrogen. Technology innovations on the demand side are also a key to achieving a low carbon energy system. Key technologies include those for energy efficiency and demand response. The industrial sector will play a central role in consensus building among stakeholders, including households and governments, which will accelerate the diffusion of such innovative technologies.

Role of Citizens

Choose low carbon energy (e.g. renewables) and energy efficient technologies and thereby contribute to reduced energy demand and peak shifting; alter consumption behavior such as increasing their use of non-motorized or mass transport.

International Cooperation

International bodies will promote the establishment of an Asia grid network among Asian countries by using international financing mechanisms. The development of uniform standards and infrastructure are keys to achieving the Asia grid network. In addition, to promote the international dissemination of weather information toward the use of renewable energy, targeting local areas in particular, joint development and sharing of weather information and forecasting tools are necessary to achieve a low carbon energy system in the Asian region.

http://2050.nies.go.jp/file/ten_actions.pdf

Low Carbon Development link to Green Economy?

- OECD[1)] pick-up 10 sectors as key for green economy:
  - *Natural Capital*
    - Agriculture → Action 7 and 8
    - Fisheries
    - Water
    - Forests → Action 5 and 8
  - *Energy and Resource Efficiency*
    - Renewable Energy → Action 5 and 6
    - Manufacturing → Action 3
    - Waste → Action 7 and 8
    - Buildings → Action 4
    - Transport → Action 1 and 2
    - Tourism
    - Cities

- Based on a definition by Burkart[2)], a green economy has following 6 categories:
  - Renewable Energy → Action 5 and 6
  - Green Buildings → Action 4
  - Clean Transportation → Action 1 and 2
  - Water Management
  - Waste Management → Action 7 and 8
  - Land Management → Action 5 and 8

Green Economy is essential for Low Carbon Development in Asia – The opposite is true.

1) UNEP (2011): Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication
2) http://www.mnn.com/green-tech/research-innovations/blogs/how-do-you-define-the-green-economy

Leading to Green Economy in Asia through Low Carbon Development: From Challenge to Opportunity

- GHG mitigation in Asia require a lot of challenges such as enhancing renewables and improving energy efficiencies, in contrast, these actions will create lots of windows of opportunity for growth of economy.
- Considering the need of the Asian countries to address a number of environmental and development concerns in parallel, it is necessary to formulate leapfrogging development strategies under the philosophy shown in “Ten actions toward Low Carbon Asia”.
- Implementing the strategy enables a shift to low carbon emissions and low-resource consumption societies, while simultaneously improving the economic standards of living in a green and sustainable way.