Integrating Asian Wisdom:
Low Carbon Asia Research Network
LoCARNet for Green Growth

September 2012 Bangkok

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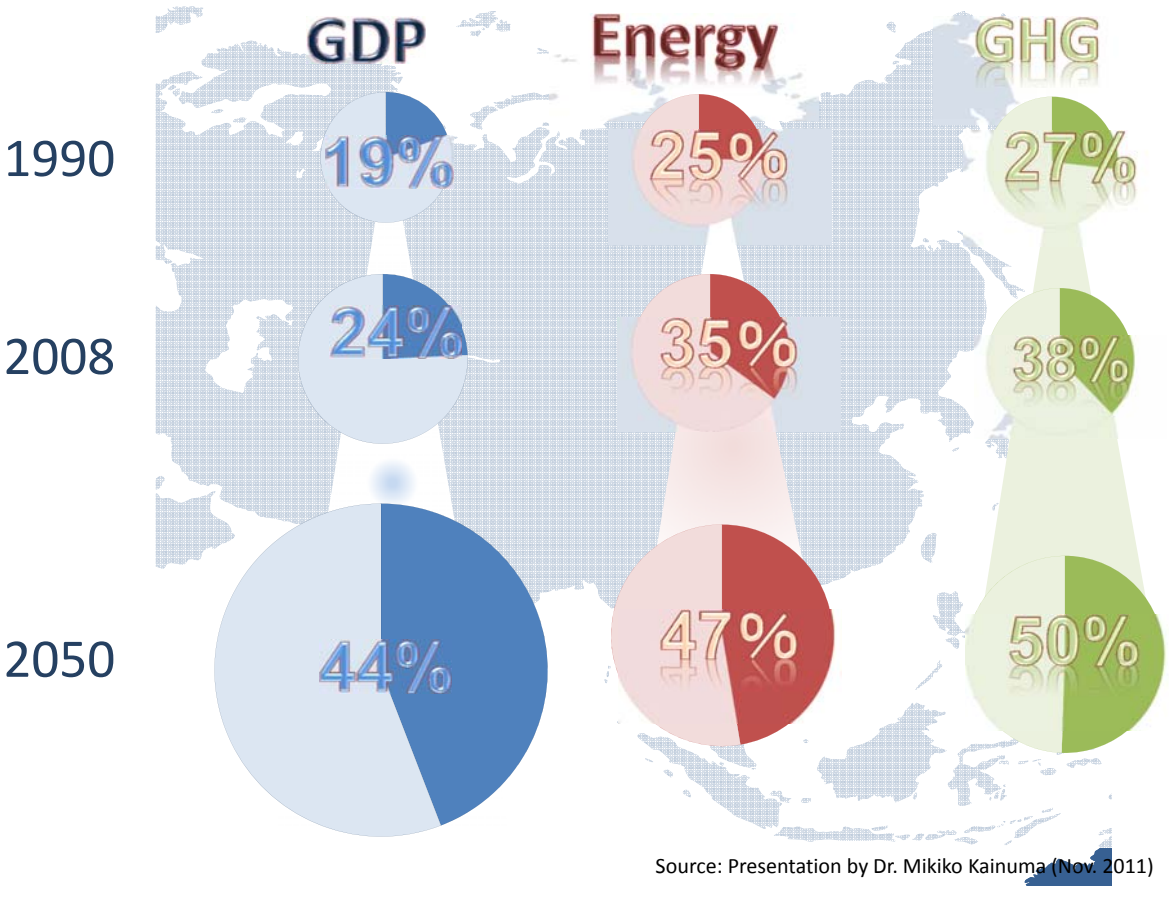
Institute for Global Environmental Strategies (IGES)

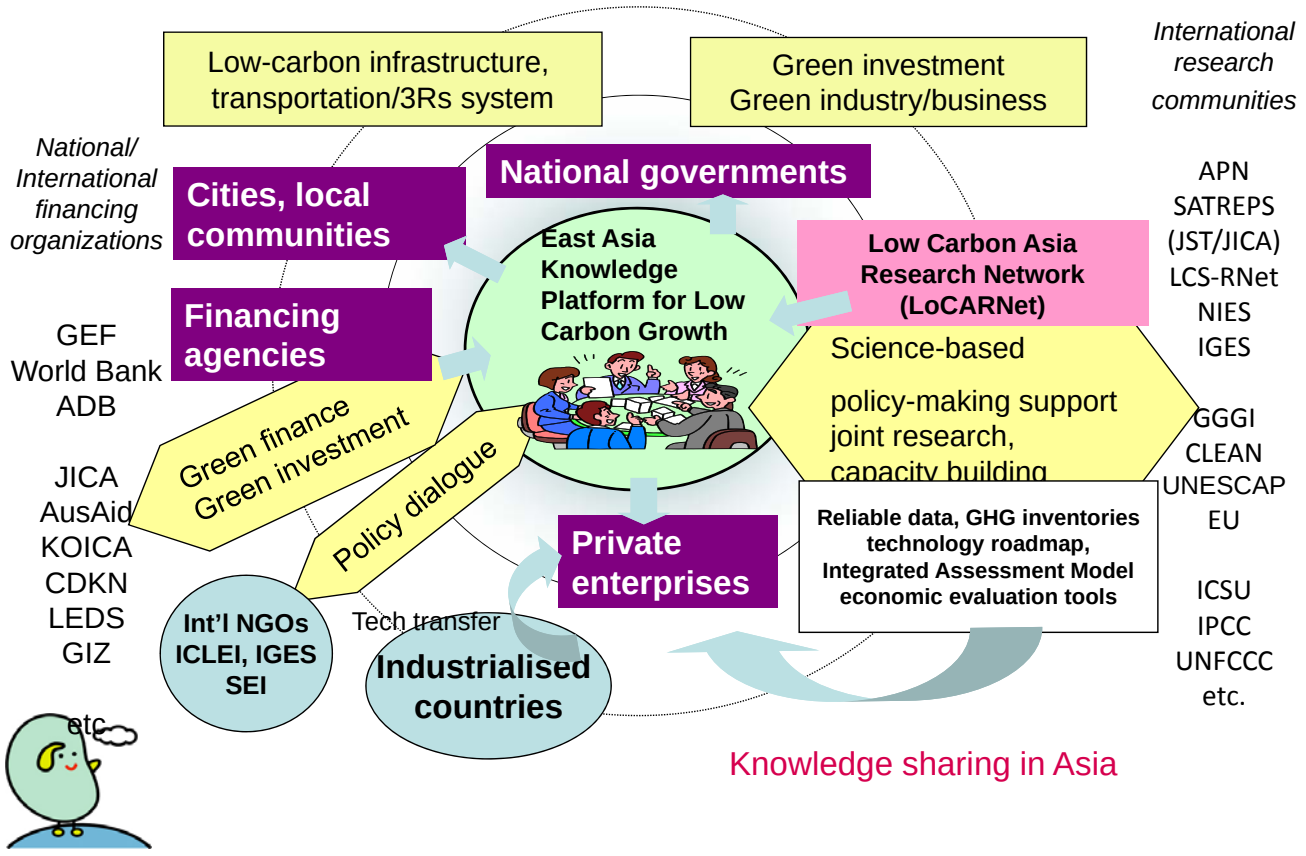
Growing importance of actions towards low-carbon development in Asia



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

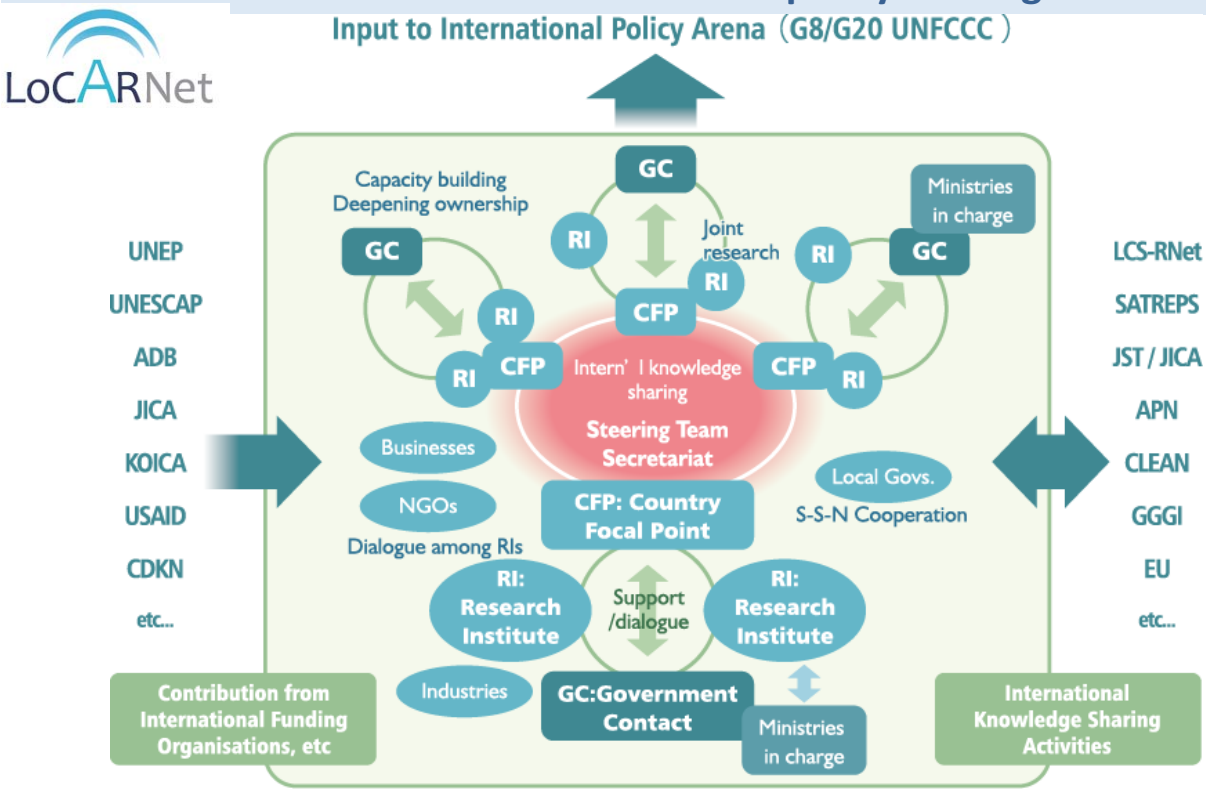
LoCARNet as Think Tank

for East Asia Knowledge Platform for Low-Carbon Growth



Framework of "Low Carbon Asia Research Network (LoCARNet)"

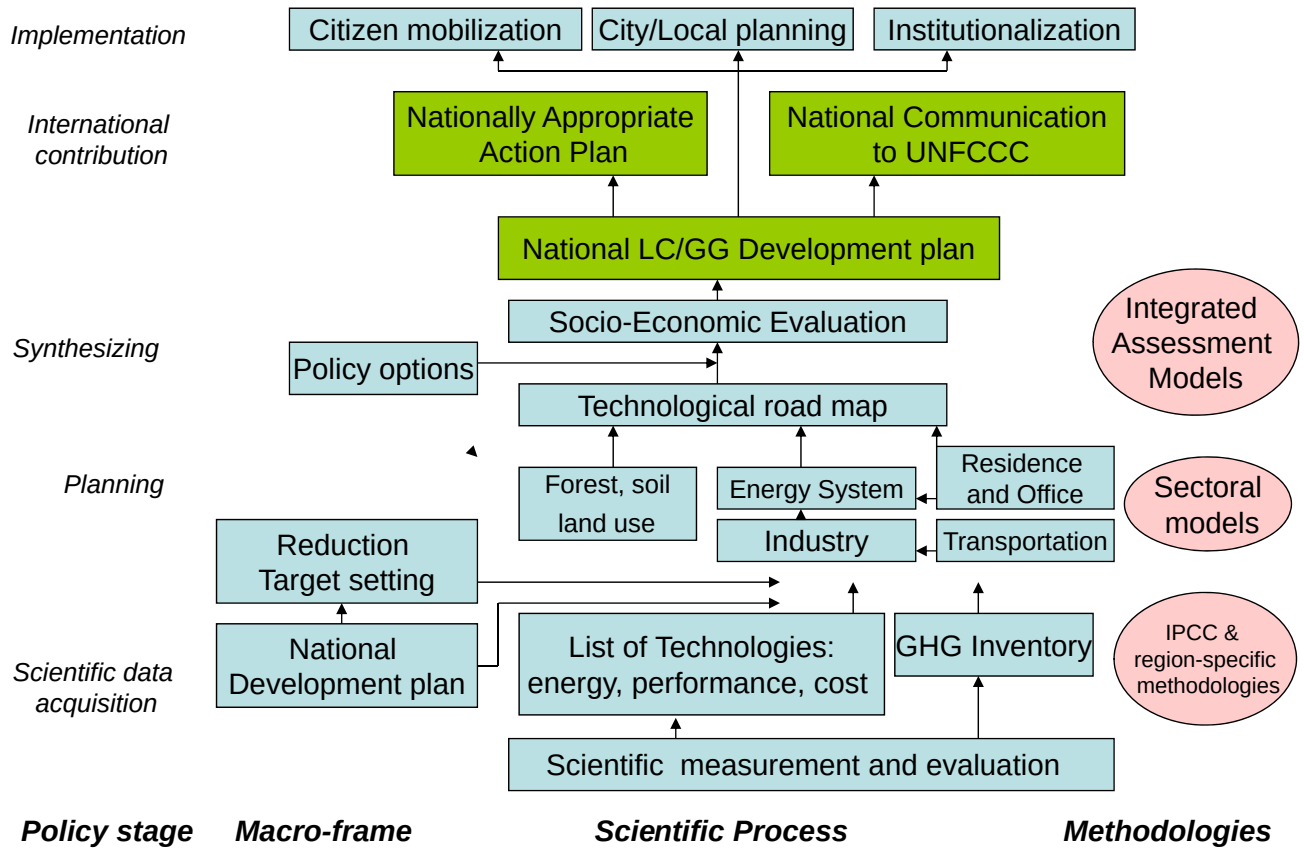
LoCARNet is a multi-layered, flexible, open network for researchers to contribute to low carbon policy-making.



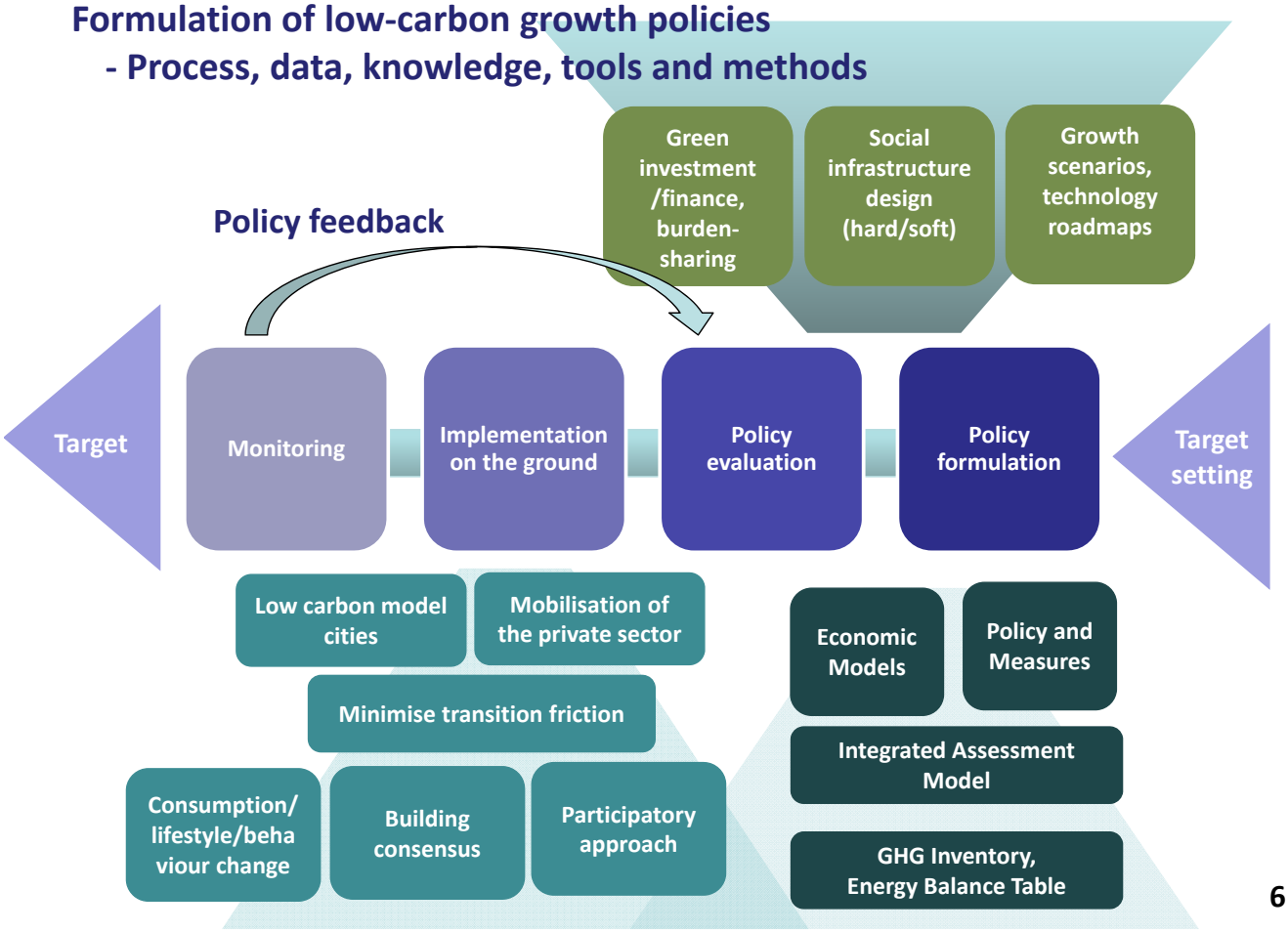
LoCARNet - Activities and Uniqueness
目的と特色

- **Network of leading researchers/research organizations'** who are deeply involved in low-carbon growth policy processes in this region.
- **Science-Science-Policy Dialogue**: LoCARNet promotes research for policies towards low-carbon growth by enabling a sufficient amount of dialogue among/between scientists and policy-makers.
- **Ownership of knowledge by countries**: LoCARNet encourages collaboration amongst researchers in-country whose research capacity and scientific knowledge are firmly grounded in their home countries.
- **South-South-North Collaboration**: LoCARNet aims to increase in research capacity in the AP region through knowledge sharing and information exchange, in the scheme of not only north-south cooperation, but also south-south regional cooperation.

Structuring Science-based National Low Carbon/Green Growth Strategies



Formulation of low-carbon growth policies - Process, data, knowledge, tools and methods



What research area/ topics should be strengthened using synergy of regional cooperation?

Ex.

- Inventory data of region specific items
- Energy demand side data
- Development of forestry and land-use simulation model
- Utilization of integrated assessment models for nationally/ regionally harmonized LC policy

- Economic evaluation methodology for Low carbon growth
- Low carbon city management
- Comparative study of effectiveness of LC policy and measures among region
- Reform of power system

- Transportation system: good practices
- Waste management in relation to LC policy
- Mobilizing local society
- Asian value and behavior
- …….

Low Carbon Asia Research Network (LoCARNet)
1st Annual Meeting

"How to mobilise the wisdom towards low-carbon development in Asia"

Date: **16 and 17 October 2012**

Venue: Novotel Bangkok on Siam Square (tbc), Bangkok, Thailand

Organisers:

- Co-organisers (tbc):
  - **APN**: Asia-Pacific Network for Global Change Research
  - **ADB**: Asian Development Bank
  - **JGSEE**: Joint Graduate School of Energy and Environment, Thailand
  - **LoCARNet/IGES**: Low Carbon Asia Research Network / Institute for Global Environmental Strategies
- Supporters (tbc):
  - **MOEJ** :Ministry of the Environment, Japan
  - **TGO**: Thailand Greenhouse Gas Management Organization

Programme (tentative): 6 keynote sessions, 6 group sessions, 3 dialogues with researchers and policy-makers, etc.

LoCARNet
International Research Network for Low Carbon Societies

Towards sound science-based low-carbon policy in the region, the annual meeting aims:

- to exchange up-to-date scientific knowledge on common LC Growth research topics in this region (through dialogues among researchers/research institutes)
  - → Use of Integrated Assessment Model, Land Use and Forestry, GHG Inventory, Low Carbon City, Local Level Practices/Local Decisions/Local Initiatives, Institutionalisation of Low-Carbon Green Growth, etc…
- to exchange views on research needs between policy-makers and the research community (through dialogues between policy-makers and researchers/research institutes)
- to explore potential collaboration areas for joint research in the region (**S-S cooperation**)
- to develop plans for LoCARNet future activities
- to pick-up/extract recommendations from research communities in this region, addressed to world leaders on climate change and low-carbon development

LCS·R Net

International Research Network for Low Carbon Societies

Prioritise policy targets

Stable climate > Energy > Economy

Backcasting for policy formation Long-term

Short-term

Nature

Energy

Economy

Sustainable society

Stable climate
Low carbon society

Society with technologies having low dependence on energy

Green economy
Green Investment
Green Finance

Survival

Safety

Convenience

Amenity

Priority of QoL

Progress of

"Low Carbon Asia Research Network (LoCARNet)"

as a central core for providing knowledge

Pre-history:

- 2009-2011 Asia:

  IGES/NIES' workshops to promote dialogues between policy-makers and researchers in Indonesia, Thailand, Cambodia, Vietnam and Malaysia⇒ recognized growing importance of research society for low-carbon growth in Asia

- 19 October 2011 Phnom Penh:

  Japan proposed "Low Carbon Asia Research Network at ASEAN +3 EMM

- April 2012 Tokyo:

  Minister of Environment of Japan declared launching of LoCARNet, as an element of 'East Asia Knowledge Sharing Platform for Low Carbon Growth' at the "East Asia Low Carbon Growth Partnership Dialogue",

- Organization in process now

Progress of

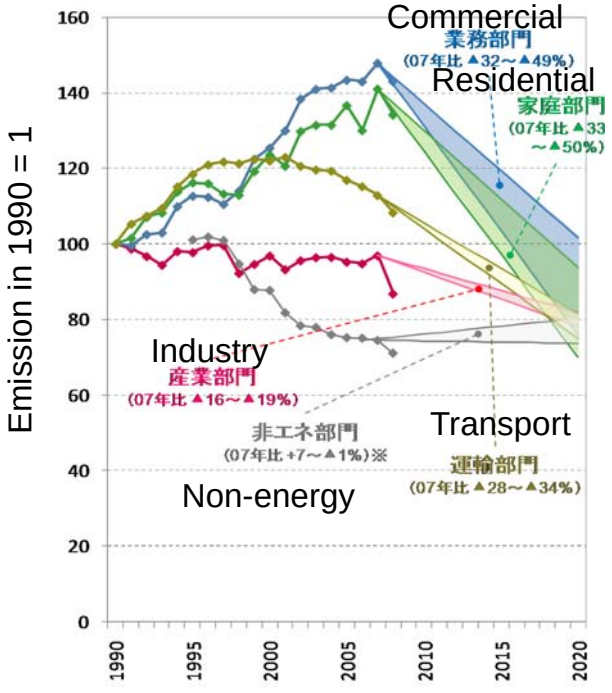
"Low Carbon Asia Research Network "

planed activities in 2012

- **2012 May**: APN Fund (0.3mil.US$/y) for LoCARNet established (Low Carbon Initiative in Asia-Pacific Network for Global Change Research for Regional-based research/ Capacity Development/Networking activities
- **2012 July 9**: Policy-makers' panel at Johor Bahru Symposium on LoCARNet future activities from policy-makers' point of view
- **2012 July 23 (at ISAP, IGES)**: LoCARNet Kick-off Meeting to discuss on future activities, research needs, knowledge exchange/capacity building system and organization by leading researchers in the region
- **2012 July 24 (at ISAP, IGES)**: Report its progress to "East Asia Knowledge Platform for Low Carbon Growth - Knowledge in Action for Policy and Investment" session
- **2012 September 18 Oxford:** Session on "Regional co-operation: Asian case study" at LCS-RNet 4th Annual Meeting
- **2012 16-17 October at Bangkok :** LoCARNet First annual meeting
  ⇒Report/recommendation to UNFCCC COP18, ASEAN＋3、、、
- **2013 ⇒** LoCARNet will be expected to become an **autonomous researchers' network** based **on south-south cooperation** in the region.

Historical and projected GHG emissions

GHG emissions trends



Reduction rate in 2020

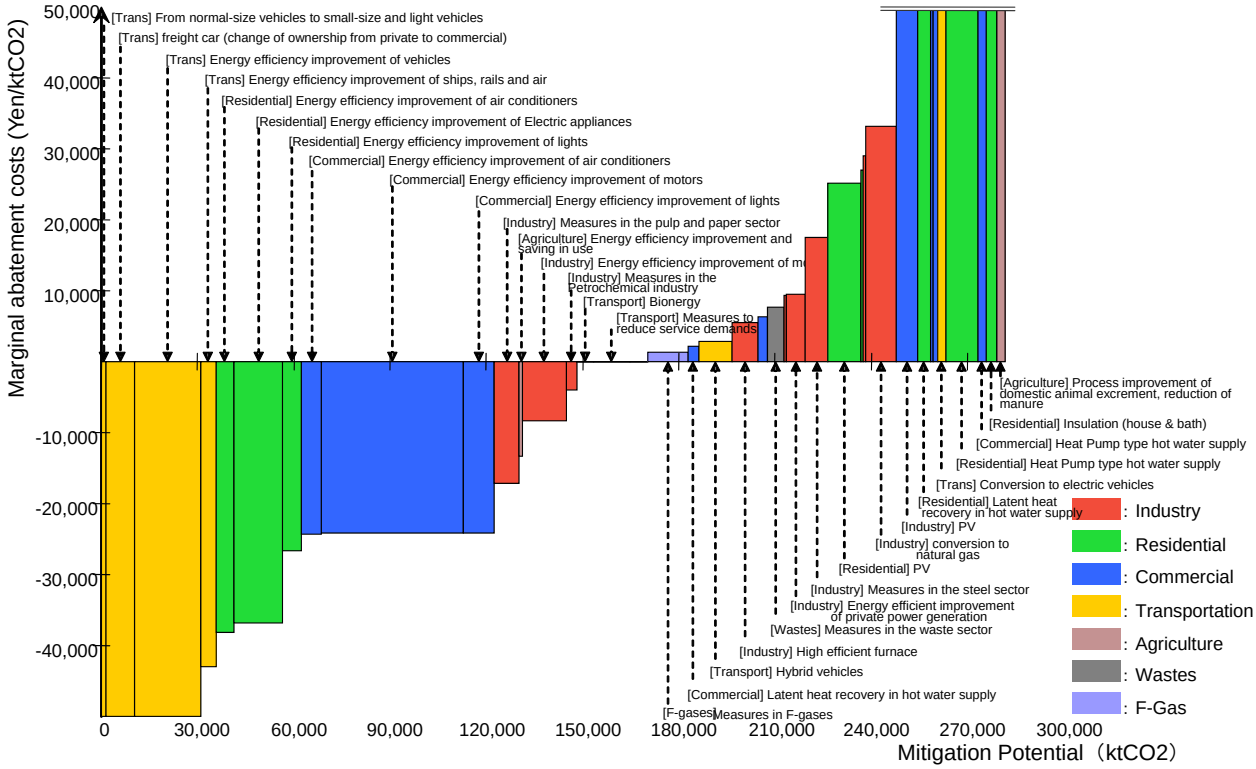
to 2007	▲15%		▲20%		▲25%	
Industry	▲16%	▲10% ▲5%	▲17%	▲10% ▲7%	▲19%	▲11% ▲8%
Residential	▲33%	▲19% ▲14%	▲40%	▲24% ▲17%	▲50%	▲31% ▲19%
Commercial	▲32%	▲19% ▲13%	▲40%	▲25% ▲15%	▲49%	▲31% ▲18%
Transport	▲28%	▲27% ▲1%	▲31%	▲30% ▲1%	▲34%	▲32% ▲1%
Non-energy	7%	7% 0%	1%	1% 0%	▲1%	▲1% 0%

to 1990	▲15%		▲20%		▲25%	
Industry	▲18%	▲13% ▲5%	▲19%	▲13% ▲6%	▲22%	▲14% ▲8%
Residential	▲6%	14% ▲20%	▲16%	8% ▲23%	▲30%	▲3% ▲27%
Commercial	1%	20% ▲19%	▲11%	11% ▲22%	▲25%	2% ▲27%
Transport	▲19%	▲18% ▲1%	▲22%	▲21% ▲1%	▲25%	▲23% ▲2%
Non-energy	▲20%	▲20% 0%	▲25%	▲25% 0%	▲26%	▲26% 0%

Left: total reduction
Right: upper: reduction within the sector
lower: reduction due to energy sector

Reduction potential and cost of Technologies

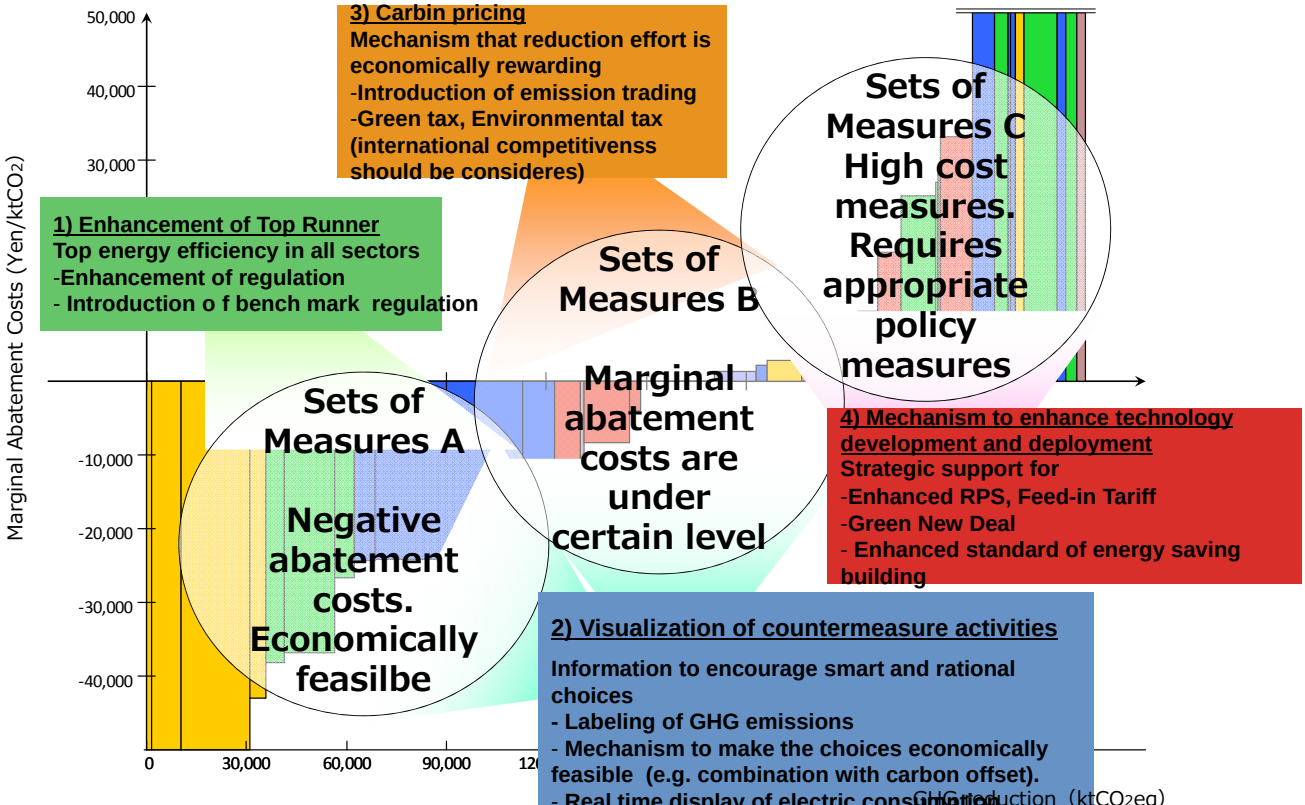
Marginal Abatement Cost to Reduce GHG emissions in 2020



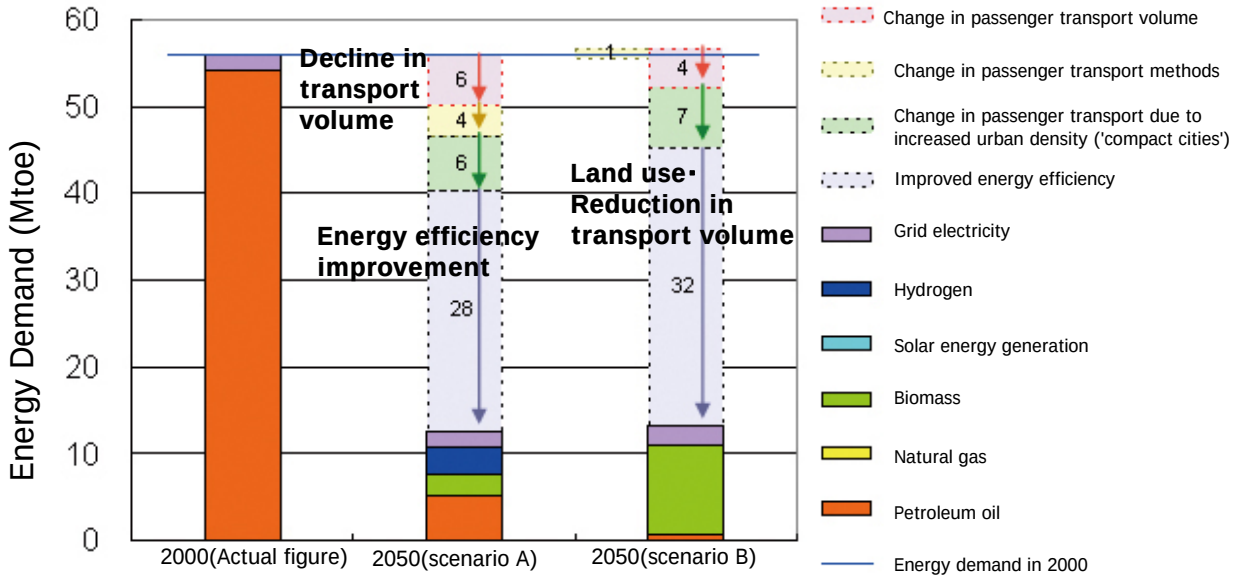
Note: MCII, Payback time is 3 years except 10 years in Insulation and PV. Mitigation potential is compared to the emissions in Frozen Case

Countermeasures to implement technologies

Feasible with Four sets of countermeasures to achieve the target of 2020

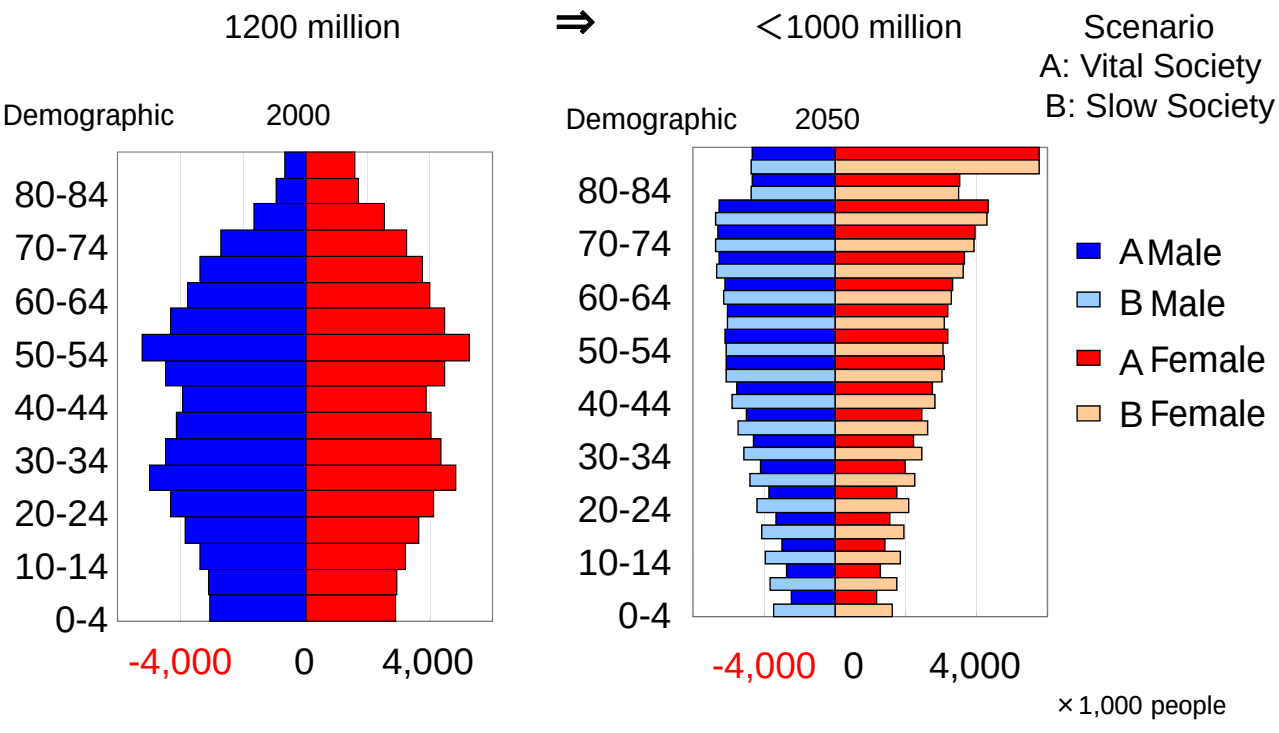


Example: Passenger transport sector can achieve 80% reduction in energy demand via suitable land use & improved energy efficiency

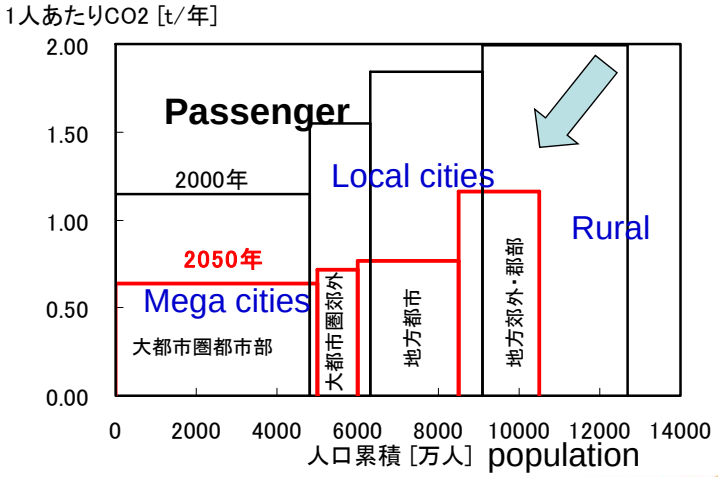


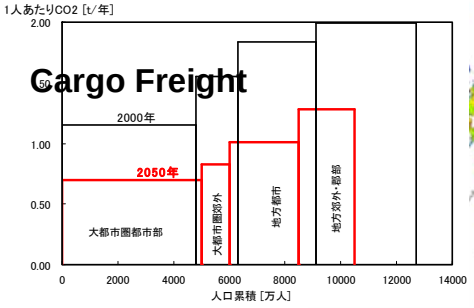
Change in passenger transport volume: reduction in total movements due to population decline
Change in passenger transport methods: modal shift using public transport system (LRT etc.)
Change in passenger transport due to increased urban density ('compact cities'): reduced travel distance due to proximity of destination
Improved energy efficiency: improvements in automobiles & other passenger transport devices (hybrids, lightweight designs etc.)

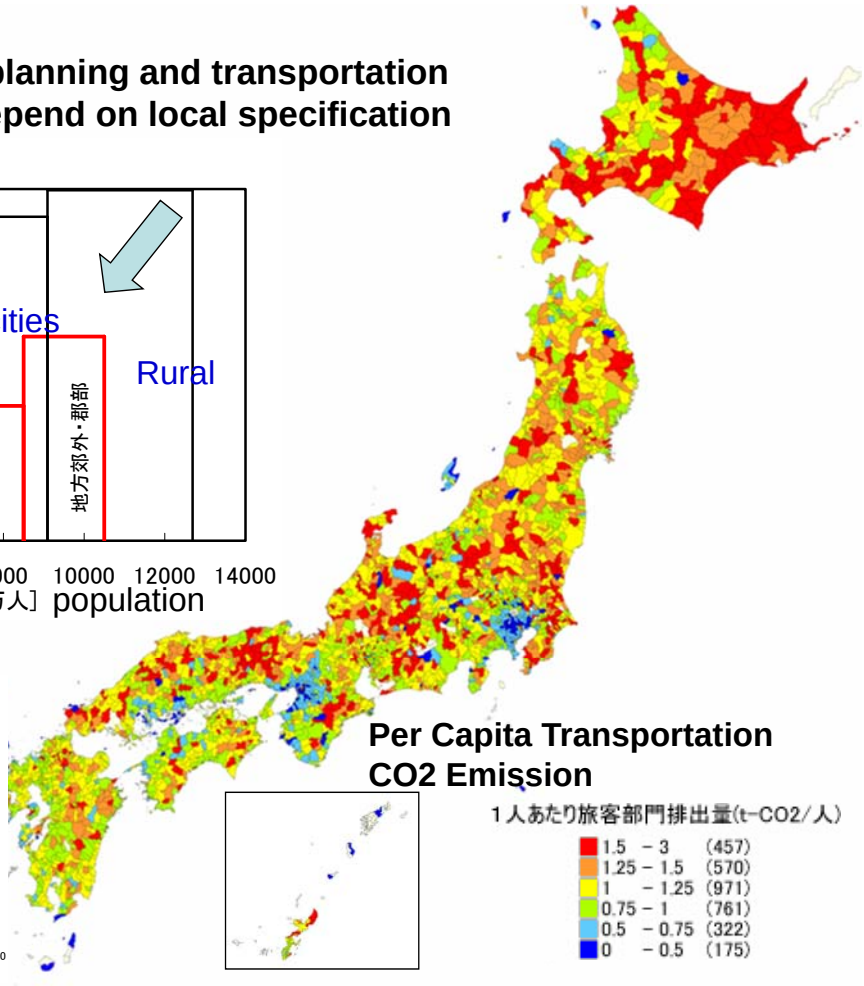
Japan as the global front runner of aging societies



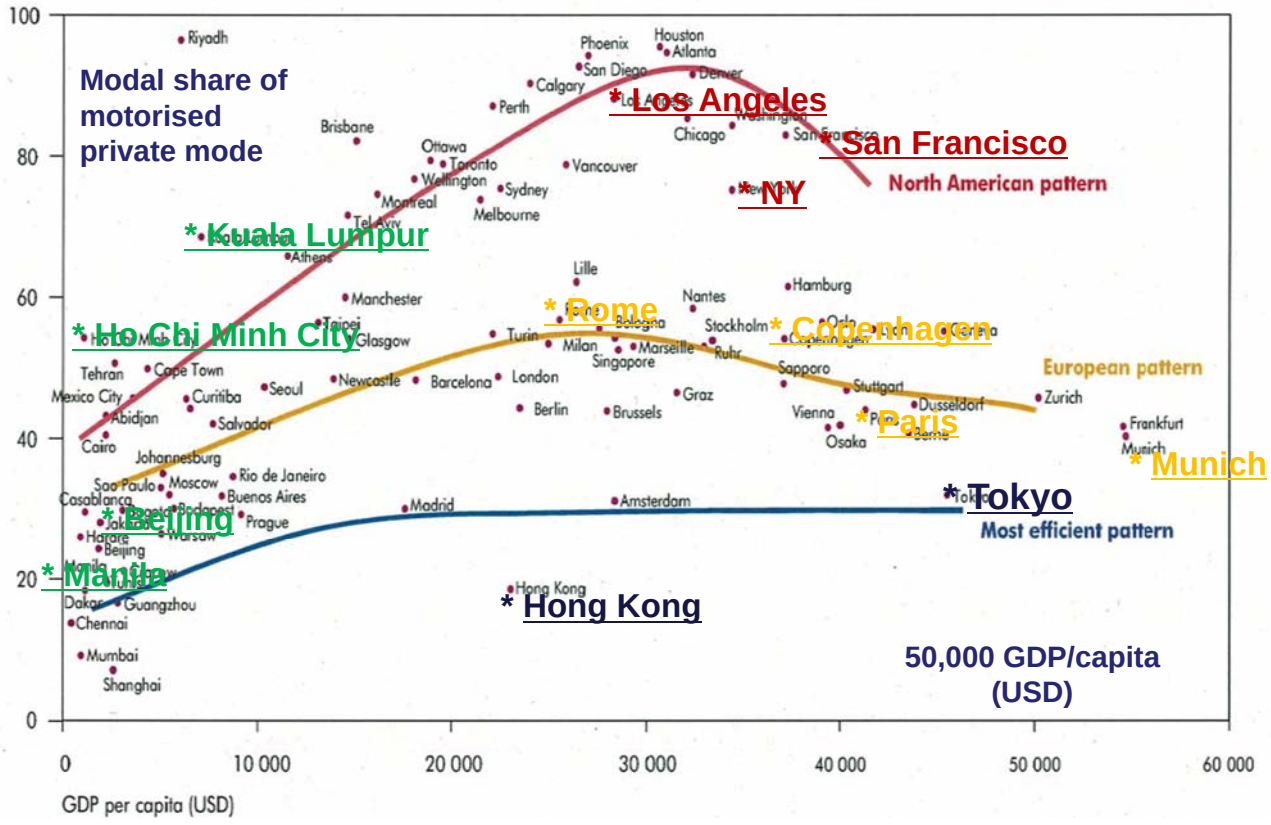
Land-use planning and transportation strategy depend on local specification





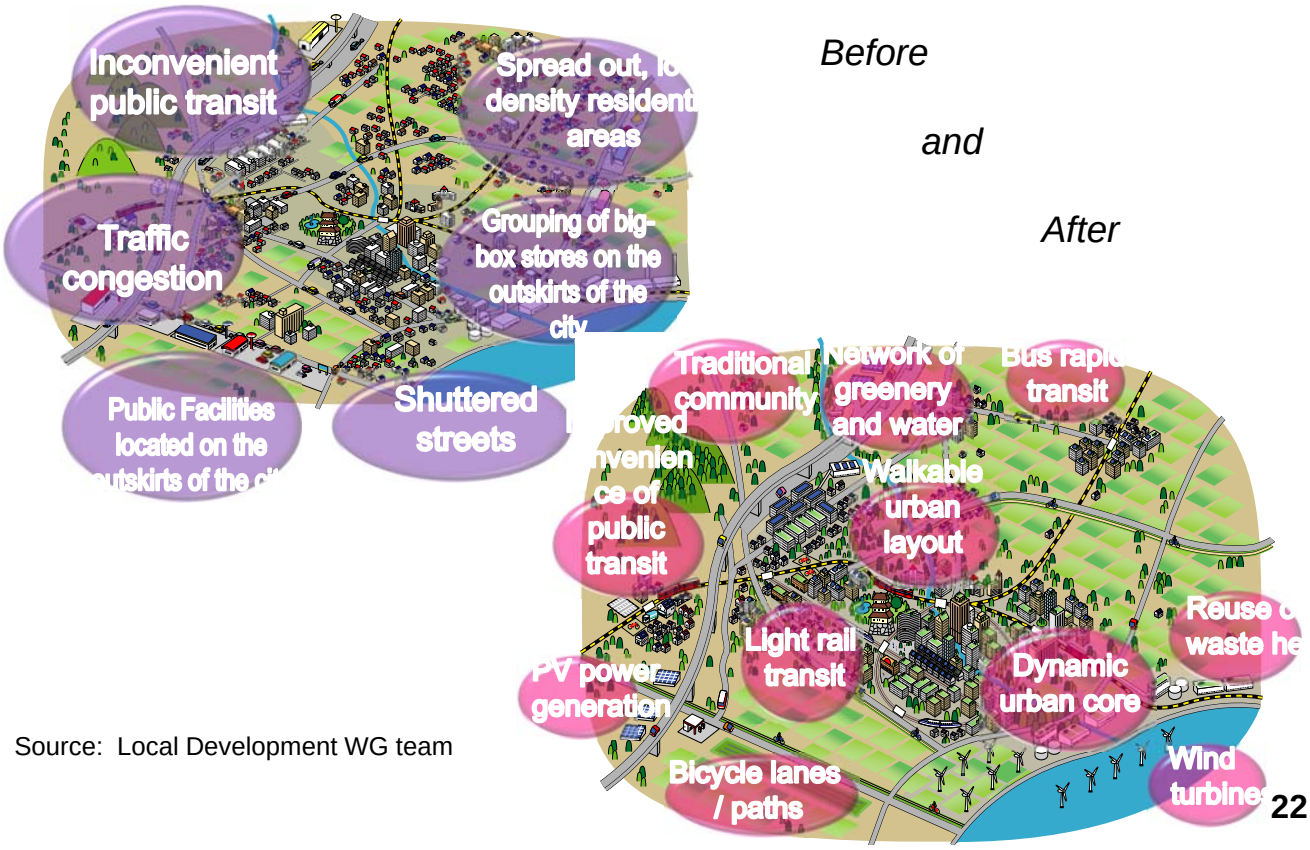


Asian advantage:
Still able to design efficient infrastructure to avoid lock-in



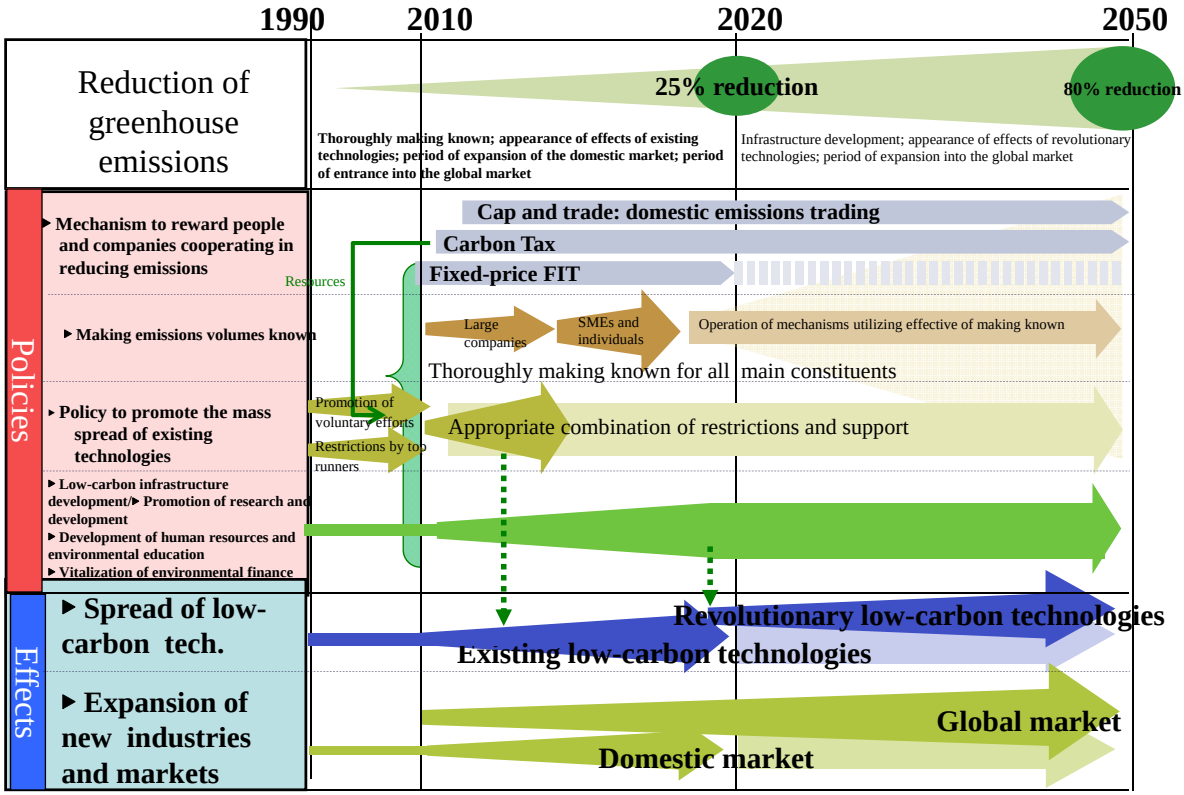
Source: IEA (2008)

2050 vision of compact city and rural life for aged society



Source: Local Development WG team

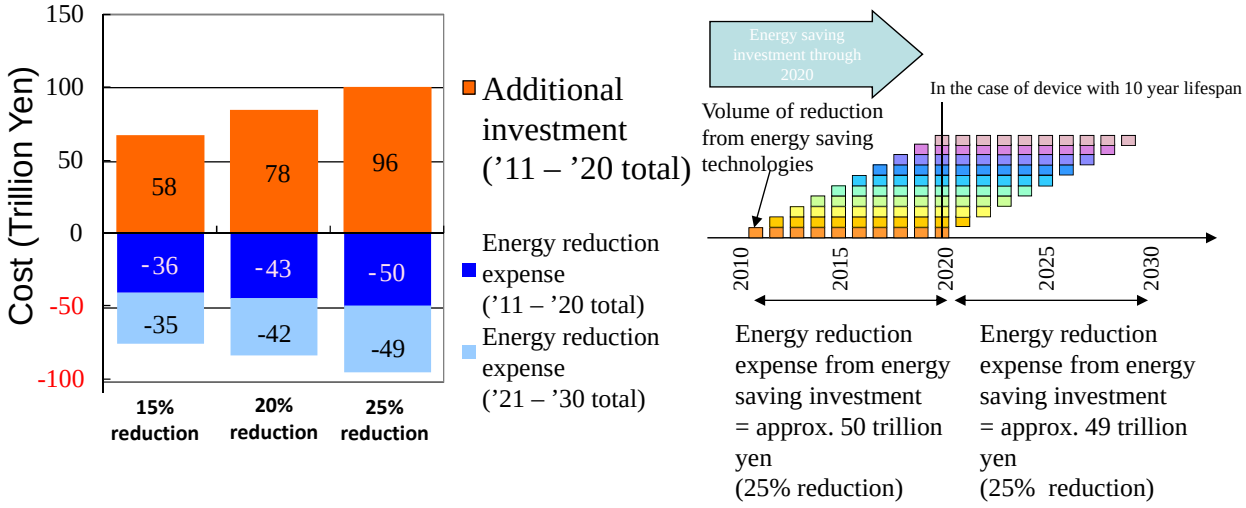
Overall roadmap: policies and effects



Relationship between low-carbon investment and energy reduction expense

- As for the investment amount for global warming, half of the overall investment amount will be collected by 2020 and an amount equal to the investment amount will be collected by 2030 based on energy expenses that can be saved through technologies introduced.

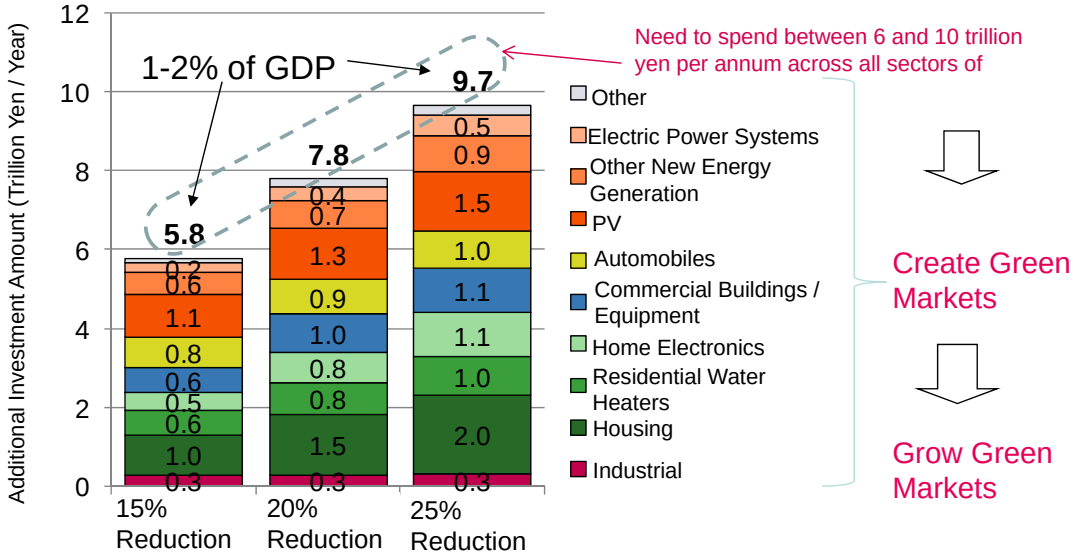
<Low-carbon investment amount and energy reduction expense>



Huge green business opportunity accompanied by transition to low carbon society

Japan needs to invest on average 6 to 10 trillion yen per annum in additional funds to achieve a ▲15% to ▲25% by 2020. If this spending is not spread across all sectors of society, Japan will face difficulty in implementing the necessary countermeasures to achieve this target. Yet, this also means Japan will need to create new markets on par with this spending.

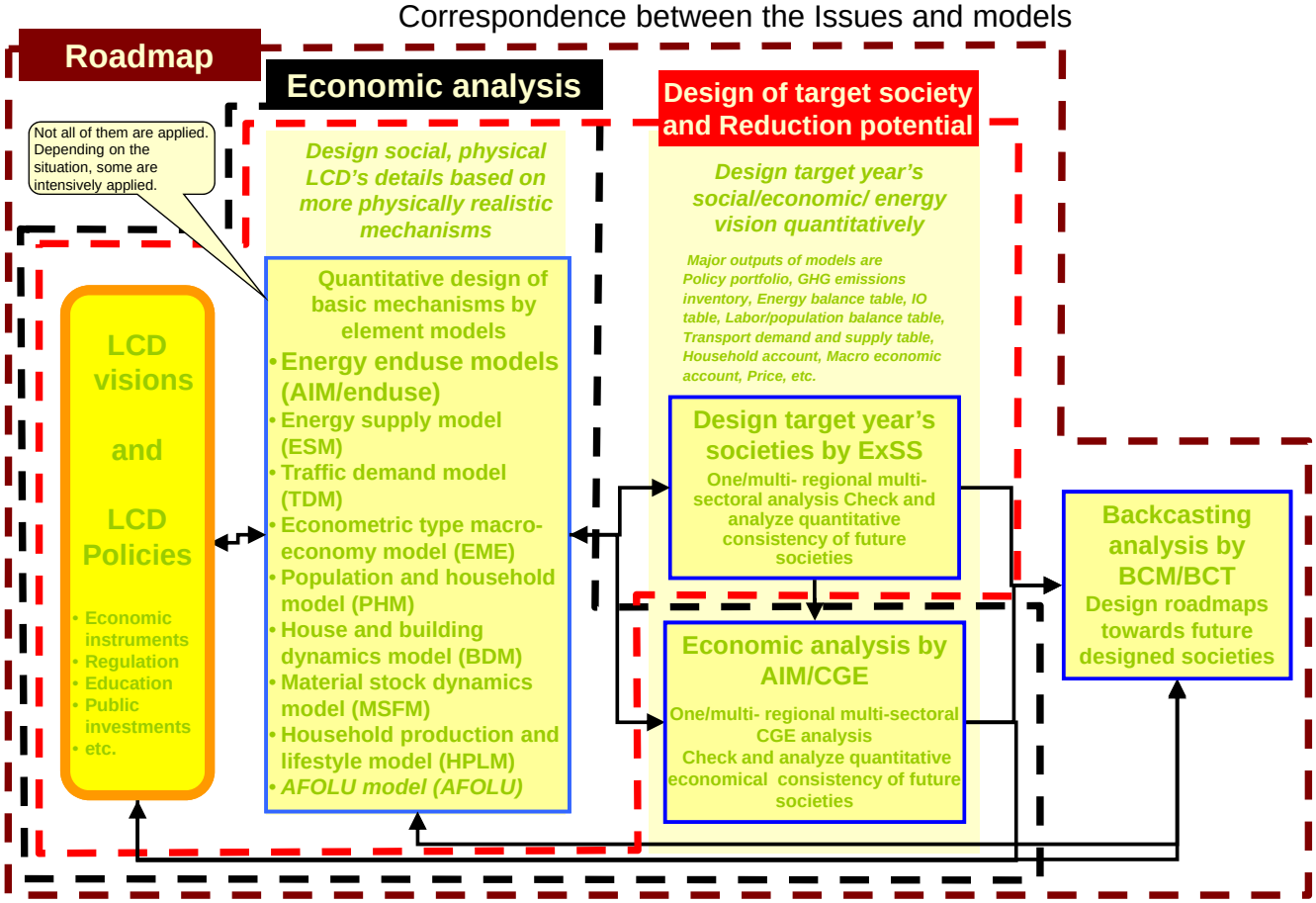
[Additional Investments Required to Achieve CO2 Reduction Target]



Comments from the Roadmap Subcommittee

- Japan needs to develop policies that reward consumers who chose and companies that manufacture low-carbon products.
- Japan needs to proactively move forward with investments that contribute to green innovation.

Correspondence between the Issues and models



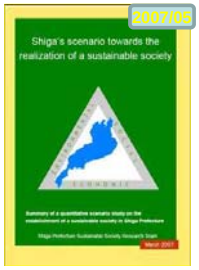
National level collaborative studies now going on

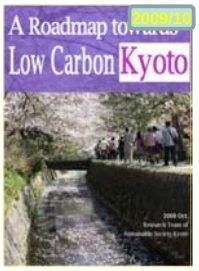
National Studies

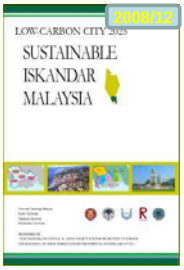
	Progress up to now	Collaborating Research Institutes
China	Extending ERI's national study (Low Carbon development, China) with AIM models. Preparing provincial energy, industrial, and economic database in order to integrate national level and provincial level scenarios	Energy Research Institute(ERI), National Development and Reform Commission
India	Constructing Indian national scenarios with "Conventional Mitigation" and "Sustainable development" which corresponding to global 2 C scenarios	Indian Institute of Management, Ahmedabad
Thailand	Thailand national study using coupled CGE and enduse model and applying Thailand NAMA	Thammasat University
Indonesia	Indonesia national study using coupled Energy/enduse model and AFOLU model	Institut Teknologi Bandung Bogor Agriculture University
Vietnam	Preliminary analysis of Vietnam energy related and AFOLU related GHG emission reduction was finished	Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE), Institute of Meteorology, Hydrology and Environment, Ministry of Natural Resources and Environment
Bangladesh	Preliminary analysis of Bangladesh LCS with energy ExSS. Finished	Department of Environment, Bangladesh
Malaysia	Extending the reduction plan of the 2nd National Communication with ExSS and AFOLU models	Universiti Teknologi Malaysia

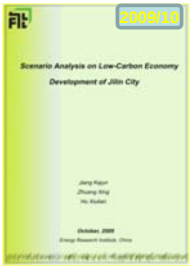
Brochures introducing national and regional specific LCD studies

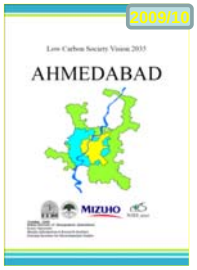
Communication and feedbacks of LCD study to real world

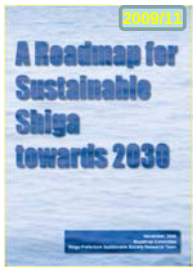


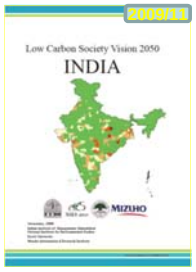


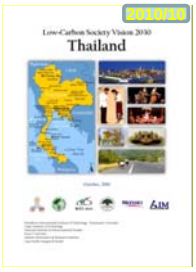


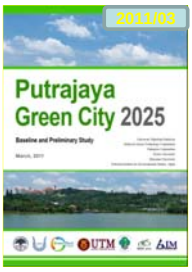


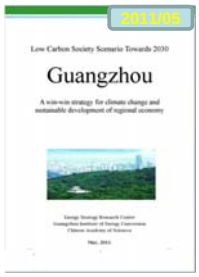


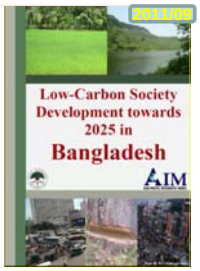


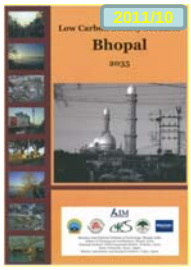


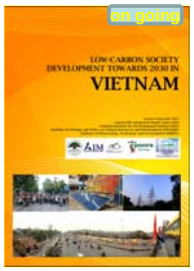












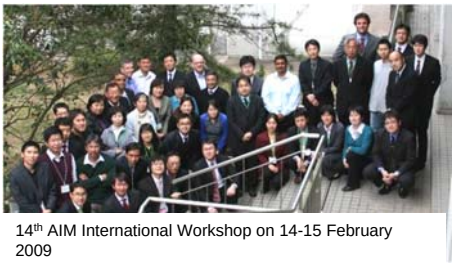
Asian Low Carbon Development Scenario Making and Capacity Building Activity Since 1991

15th AIM International Workshop on 20-22 February 2010

AIM Training Workshop on 27-31 October 2008

AIM Training Workshop on 16-20 October 2006

Asian Modeling Meeting at Tsukuba on 17-18 September 2009



14th AIM International Workshop on 14-15 February 2009

AIM Training Workshop on 2-14 August 2010

1st AIM International Workshop on 1-2 February,1996

17th AIM International Workshop,17-19, February 2012

16th AIM International Workshop on 19-21 February 2011

AIM Training Workshop on 22-26 October 2007


Integrating Asian wisdom
Thank you for your kind attention!
Save our common climate