Integrating Cambodian Wisdom: Research Network for Low Carbon Growth

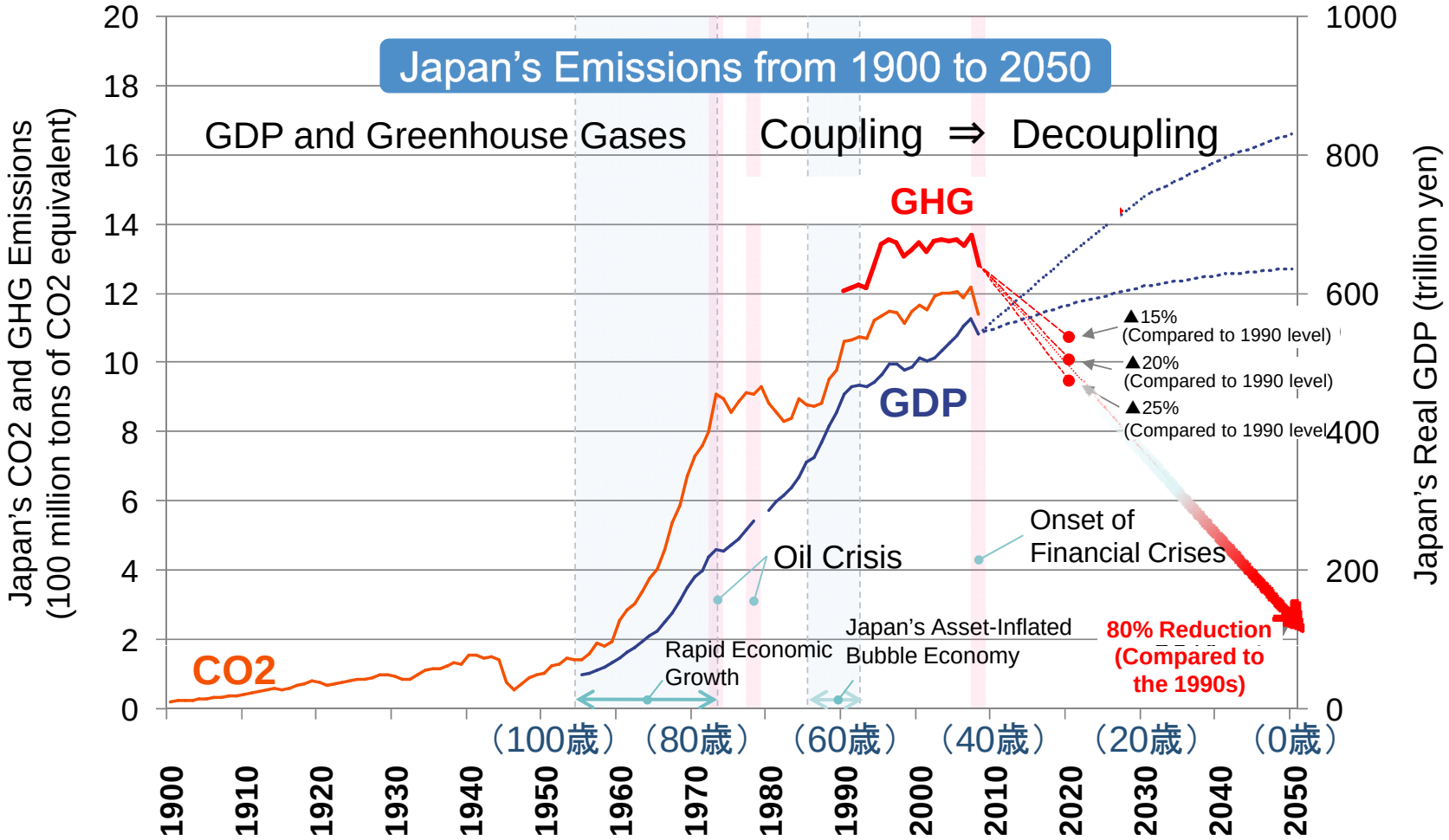
Designing and establishing Cambodian Low Carbon Development Plan
29 May 2012
HIMAWARI Hotel, Phnom Penh

Dr. Shuzo Nishioka
Secretary General, LoCARNet/LCS-RNet
Institute for Global Environmental Strategies (IGES)

Challenges for Japan and Cambodia

Japanese GHG reduction target (2050 80%, 2020 25% from 1990

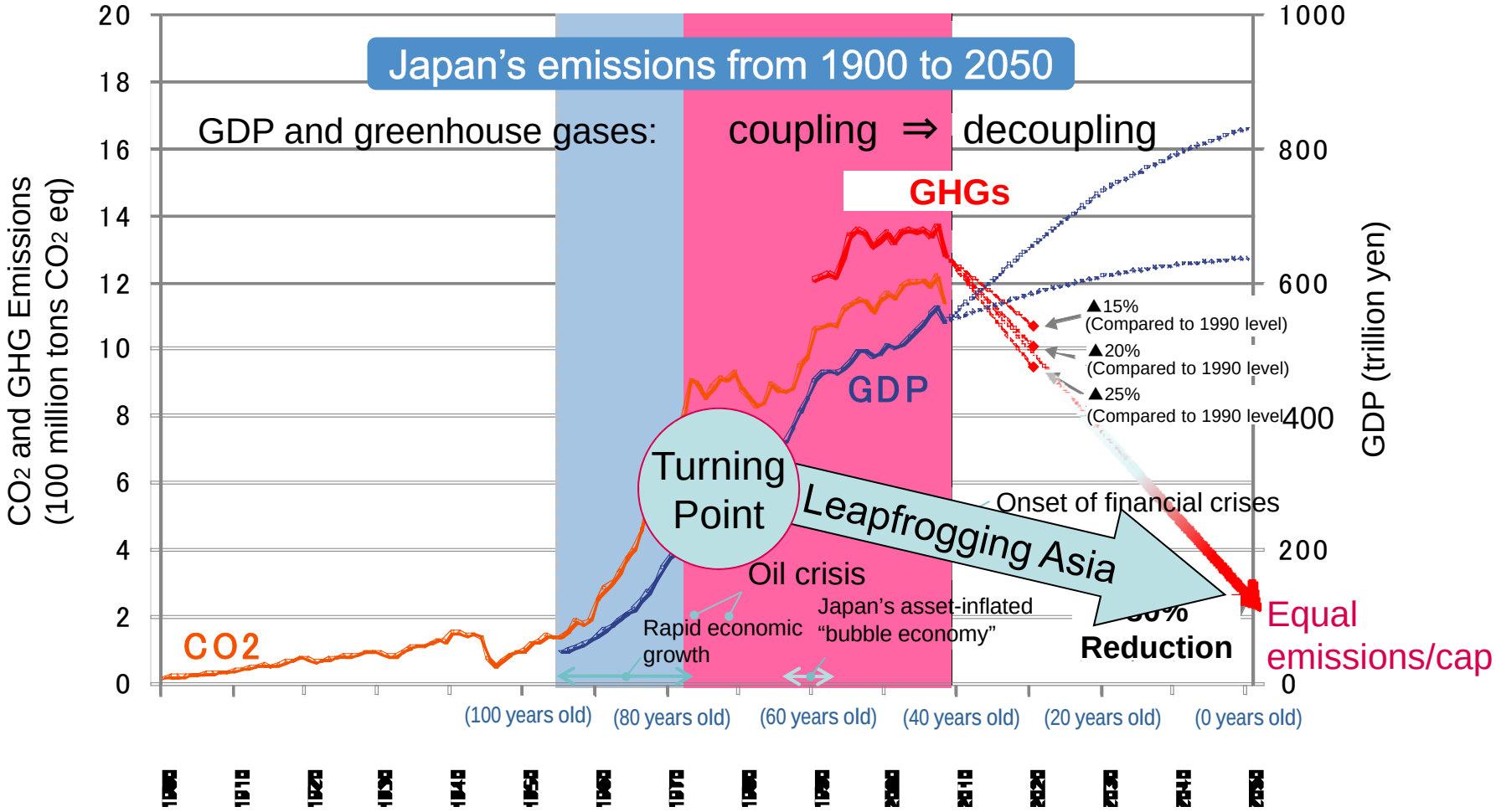
An 80% emission reduction by 2050 will create a largely different society from today. It will be critical to strategically move forward under mid-term 2020 and 2030 targets that take into account this eventual 80% reduction.



2) Future GDP values are assumed values based on scenarios A and B from the NIES Low Carbon Society Research Project 2050

Japan struggling to emerge from an economy locked in to high carbon emissions

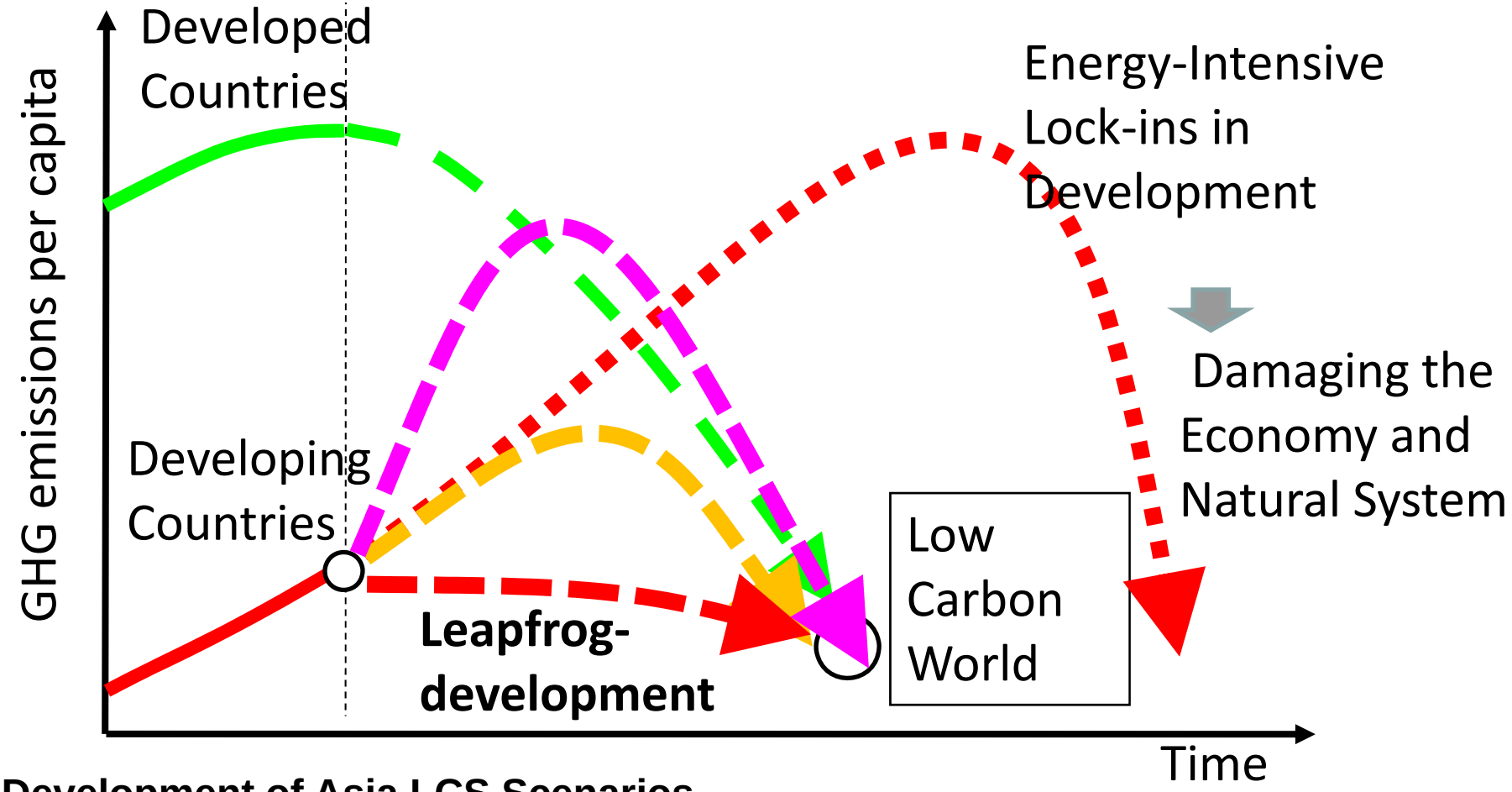
GHG emission reductions of 80% by 2050: An enormous transition towards an unexplored type of society



Future GDP: Based on scenarios A and B from the NIES Low Carbon Society Research Project 2050

Asian responsibilities, future and leapfrog opportunities

Asian LCS scenario studies



Development of Asia LCS Scenarios

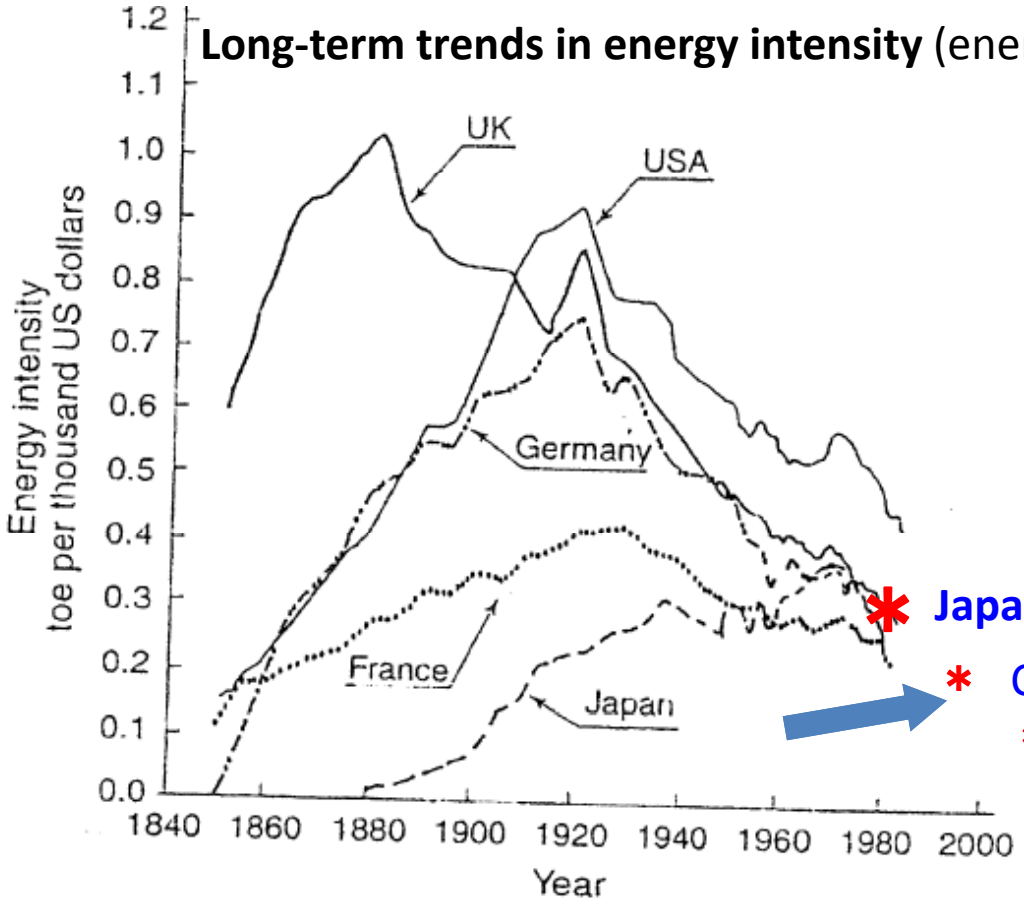
(1) Developing narratives for LCS scenarios
(2) Quantifying future LCS visions
(3) Developing robust roadmaps

Policy Packages for Asia LCS

- Encouraging LCS policies in each Asian country
- Informing international negotiations with science
- Networking LCS research in Asia

Opportunities for Asia:
Freedom from past track of highly energy-dependent technologies

Long-term trends in energy intensity (energy/GDP)



Possibility of Asian countries' catch-up

Japan's leap-frog

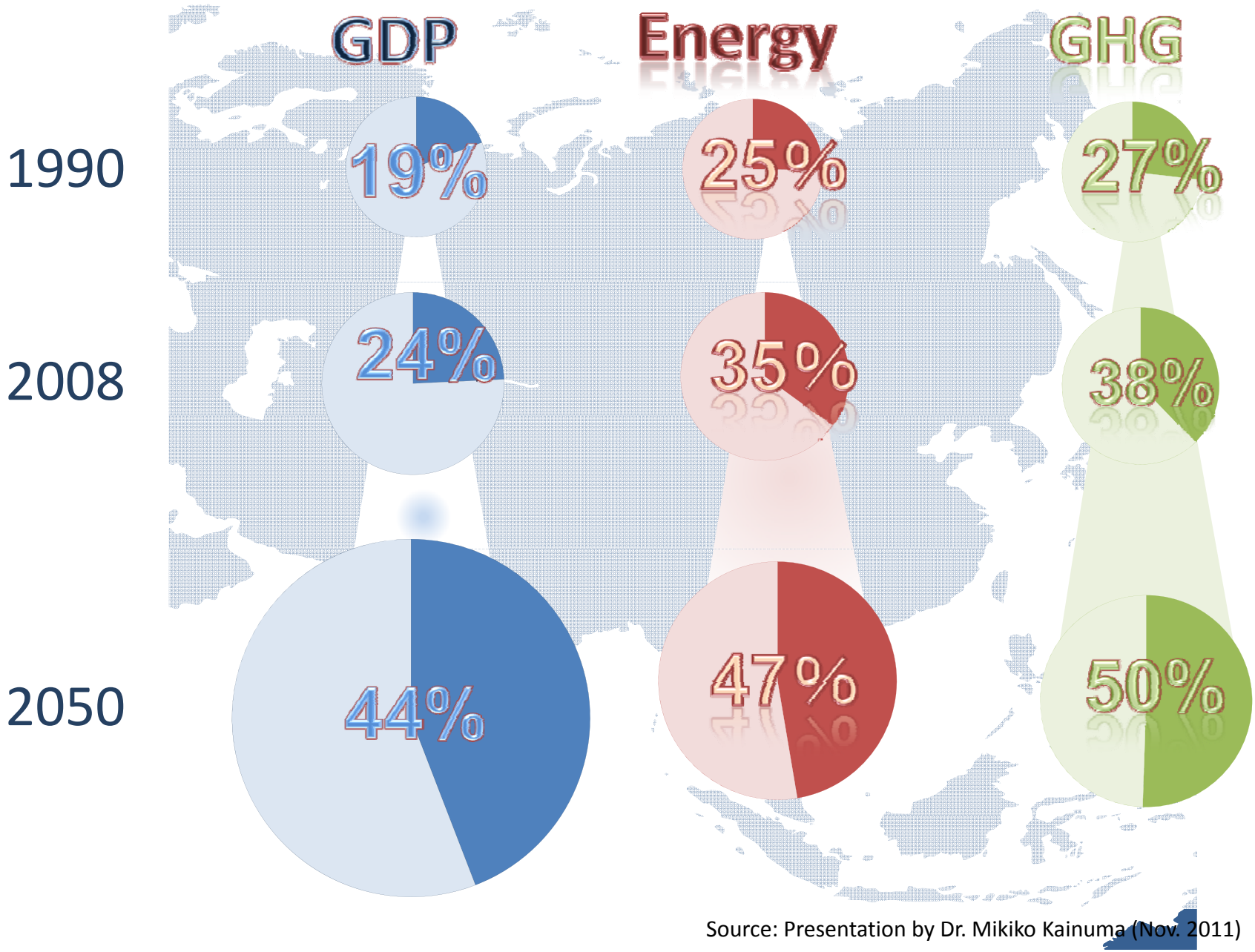
* China/ASEAN ?

* India ?

*

- **How can we facilitate technological leap-frogging to promote low carbon development?**
- **What kinds of mechanisms (international/national, market/non market) could facilitate leap-frogging to low carbon technologies?**

Growing importance of actions towards low-carbon development in Asia

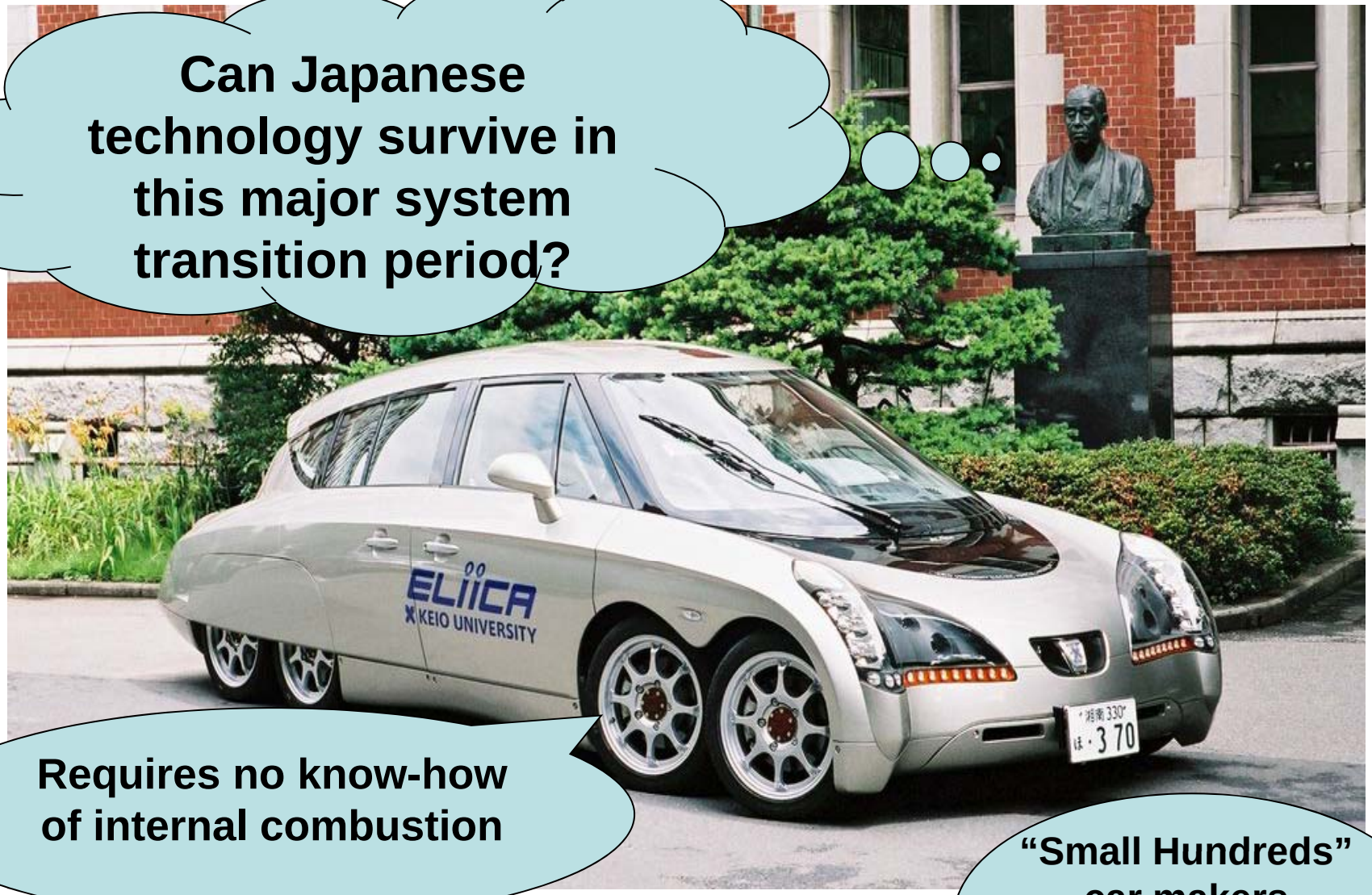


Source: Presentation by Dr. Mikiko Kainuma (Nov. 2011)

Example of Leapfrogging Asia

	Country	*Domestic factors*	*External factors*
Industrial structure	**India:** **IT industry**	**Education/ human resources**	**Soft technology** **Globalization**
Energy structure	**Japan:** **Low energy intensity**	**Technology** **Rapid growth**	**Oil crisis** **Energy security**
Urban structure	**Singapore:** **Transportation, water, housing** **Tokyo:** **Public transportation**	**Small land area** **Strong leadership** **Rapid urbanization**	**Relationship with Malaysia** **In advance of auto age**
Distributed energy	**India:** **Renewable energy, biomass** **Brazil: Ethanol**	**Poor power grid investment; land area** **Sugar cane, scarce oil**	
Information	**China:** **Mobile phones**	**Rapid economic growth, big land area,** **Not enough com-grid**	**IT technology**
Renewable energy system	**China:** **Wind/solar energy**	**Vast land area**	**Climate change**
Agriculture	**Low energy use**	**Self sufficiency**	**Energy price**

Can Japanese technology survive in this major system transition period?



Requires no know-how of internal combustion

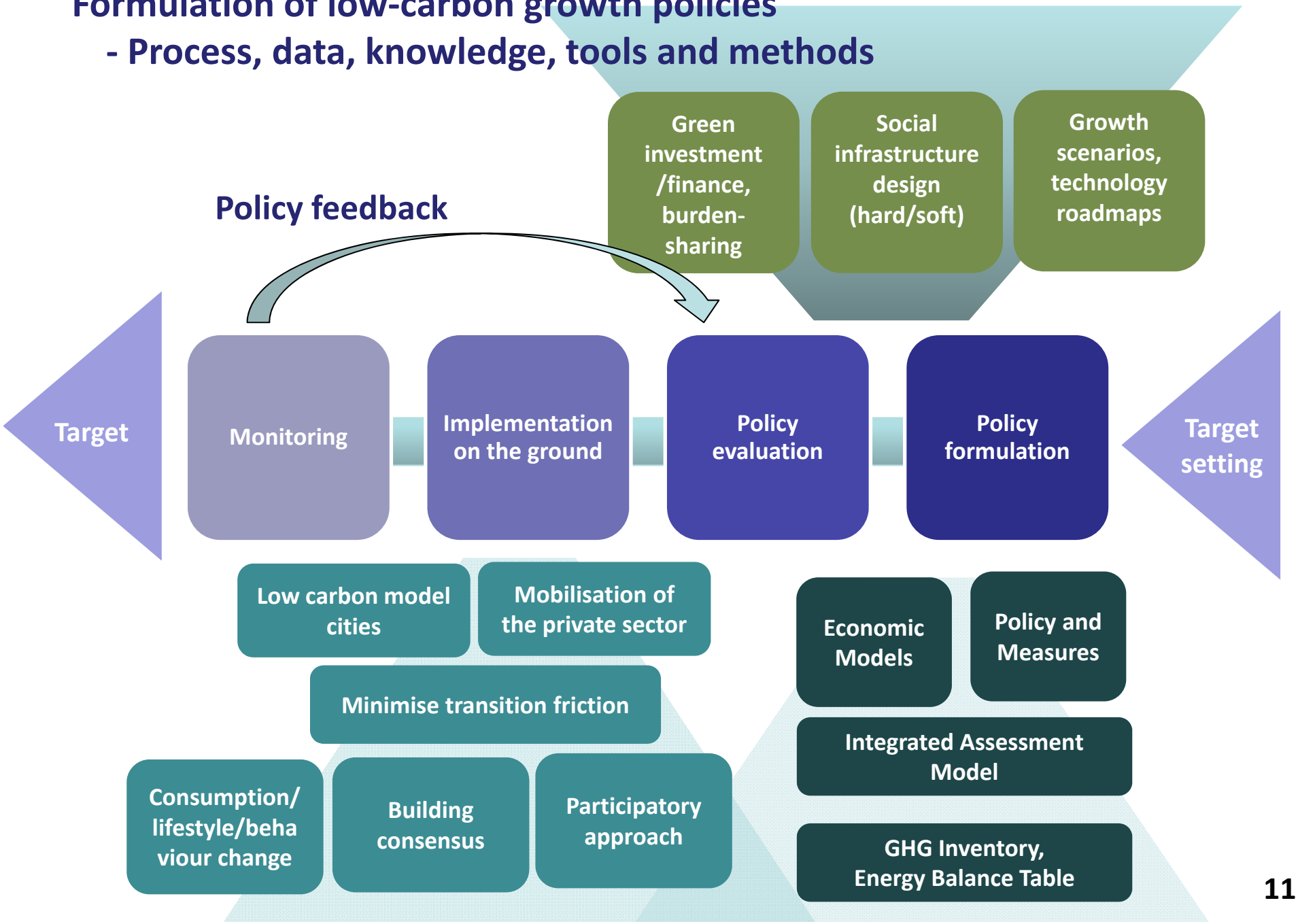
"Small Hundreds" car makers coming into EV market in China

The ELIICA: 4 PASSENGER SEDAN

370km/h MAX.SPEED

Integration of broad Knowledge is necessary for LC growth policy

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



(5) Review Conducted with Cooperation of Multiple Experts & Specialists

Japanese low carbon policy making process involves over 100 experts & specialists from a wide range of fields

Mid- and Long-term Roadmap Subcommittee, Global Environmental Committee, Central Environmental Council

Working Groups for the Mid- and Long-term Roadmap for Global Warming Countermeasures

Reviews conducted from a specialist and technological standpoint concerning policies and measures to achieve mid- and long-term targets(101 members / 49 sessions)

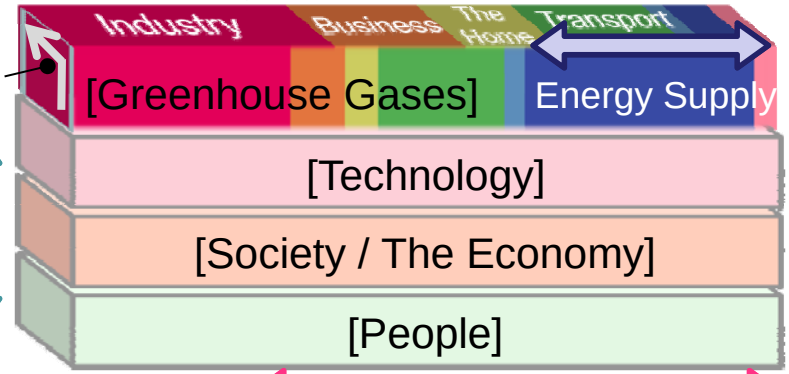
Manufacturing WG
Yoshihiro Fujii (Chair)
(Sophia Univ.)

Buildings WG
Shuzo Murakami (Chair)
(Building Research Institute)

Automobile WG
Yasuhiro Daisho (Chair)
(Waseda Univ.)

Energy Supply WG
Tadashi Otsuka (Chair)
(Waseda Univ.)

Impute of CO2 from power generation

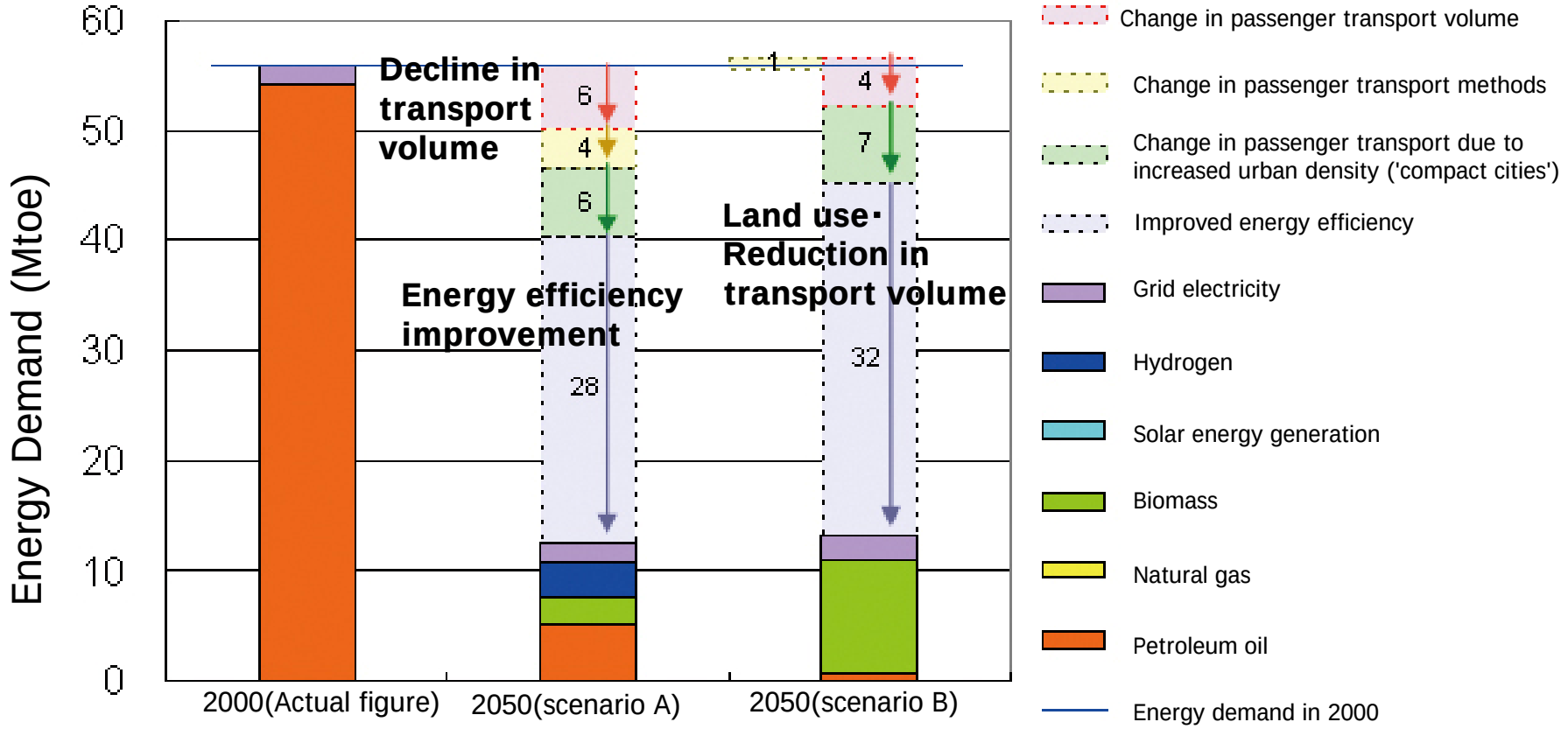


Macroframe WG
Itaru Yasui (Chair)
(National Institute of Technology and Evaluation)

Local Development WG
Tetsuo Yai (Chair)
(Tokyo Institute of Technology)

Communications and Marketing WG
Junko Edahiro (Chair)
(Japan for Sustainability)

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.)

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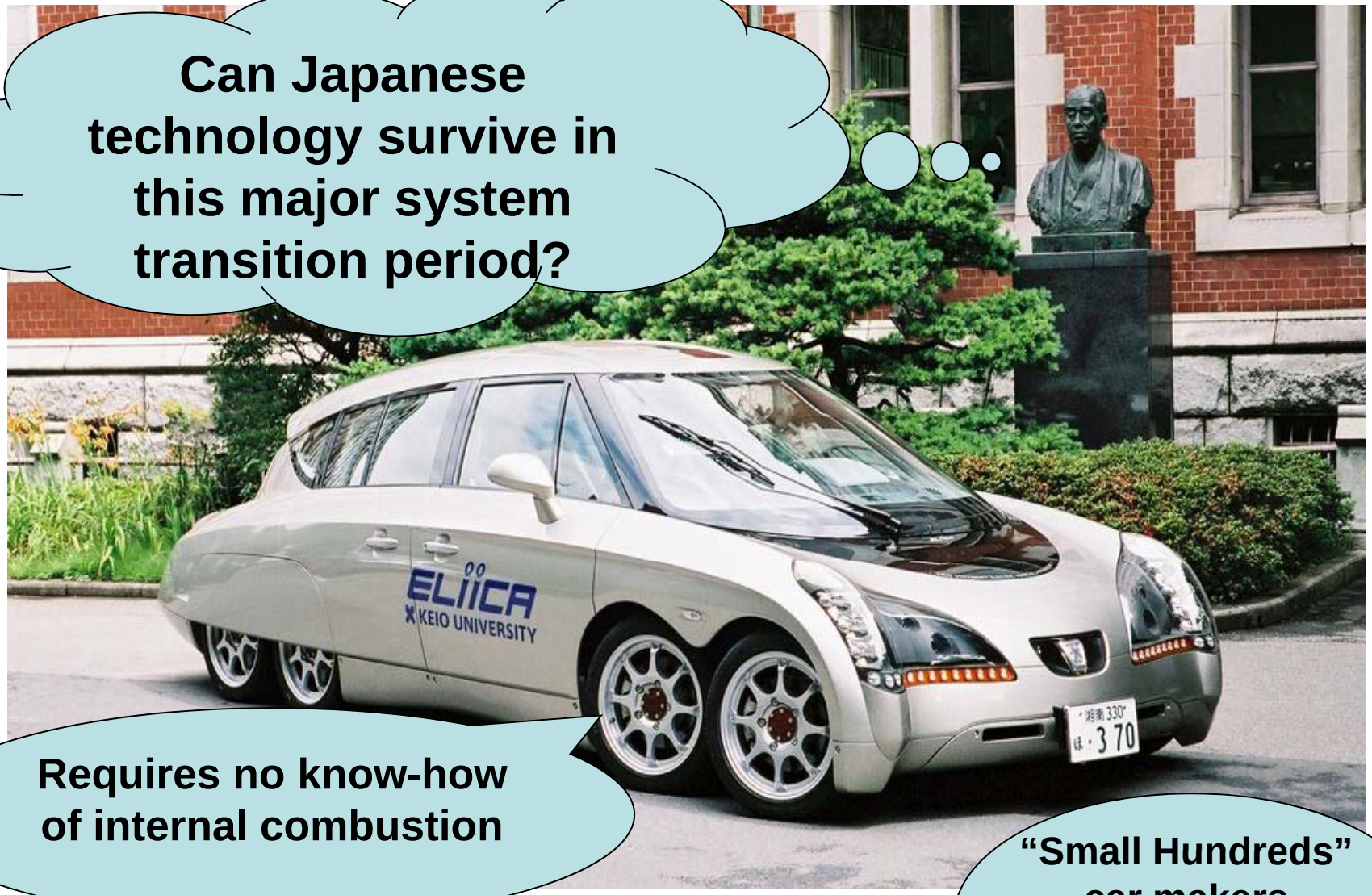

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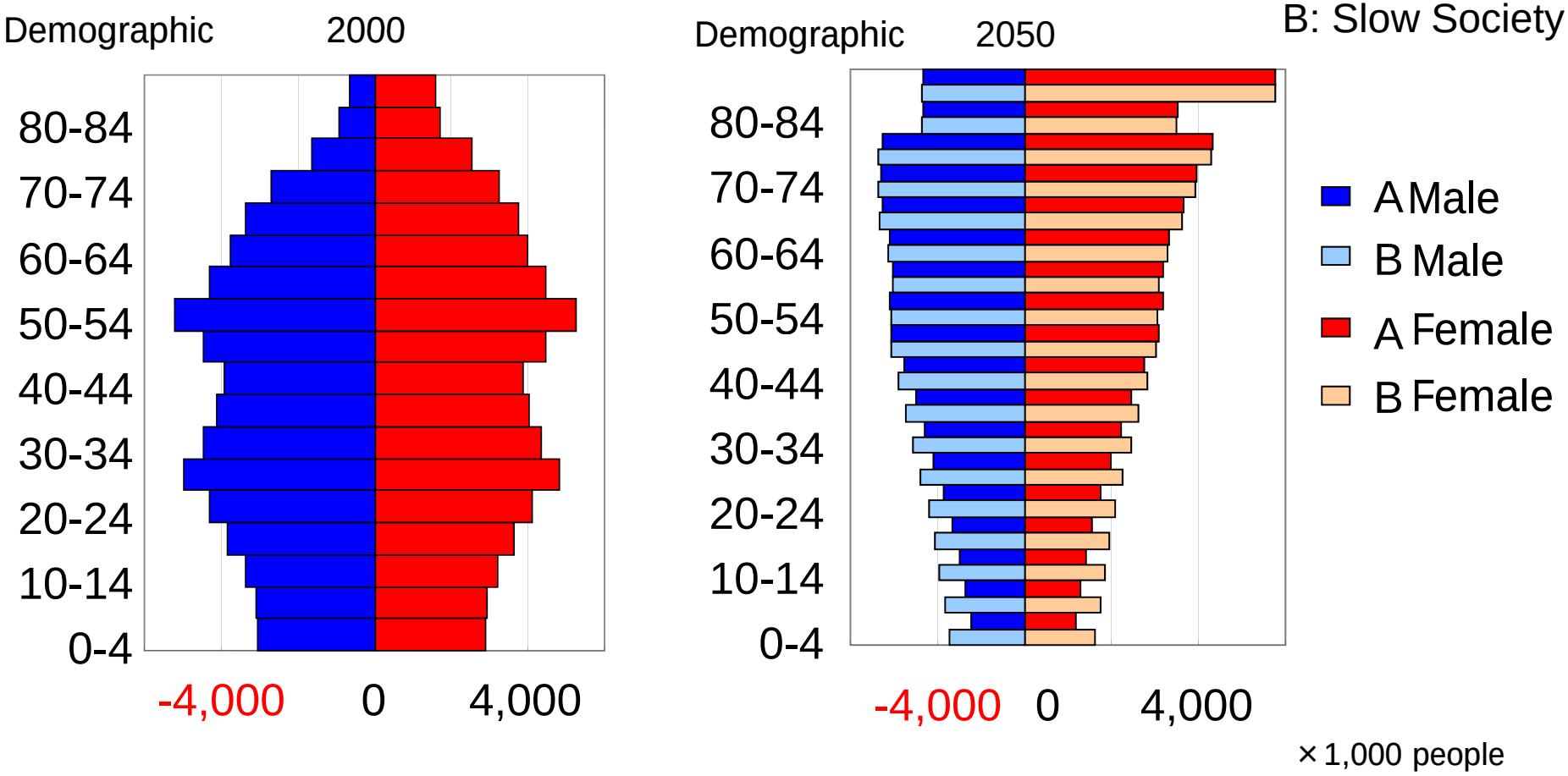
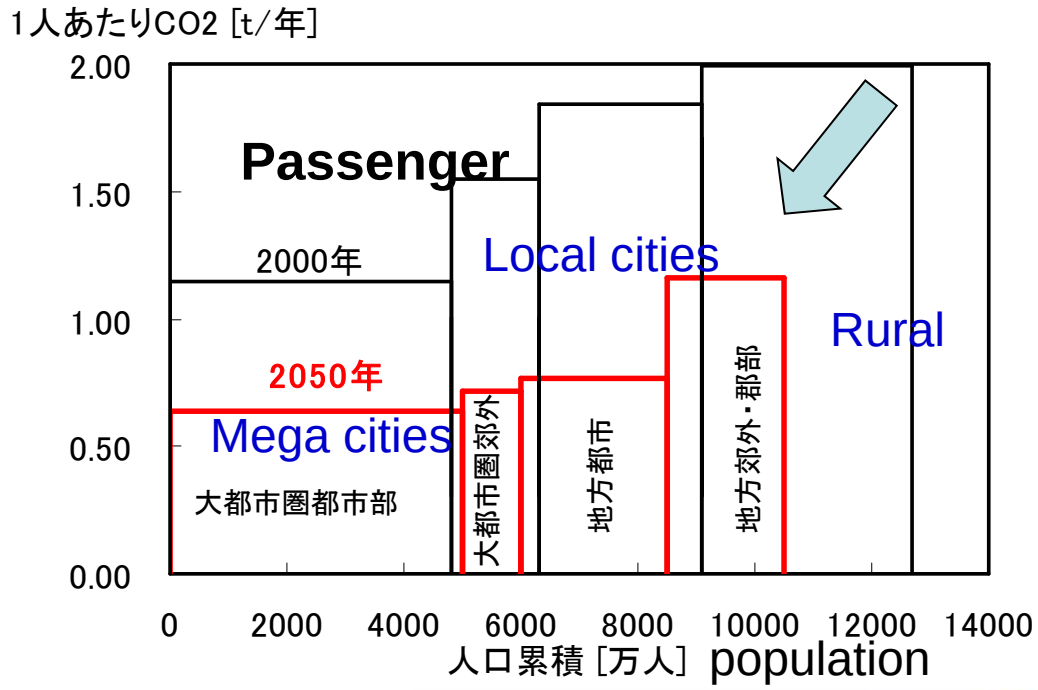
Japan as the global front runner of aging societies

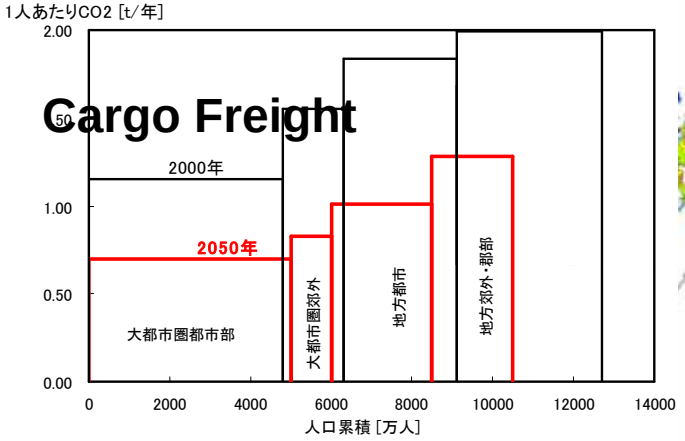
1200 million ⇒ ＜1000 million

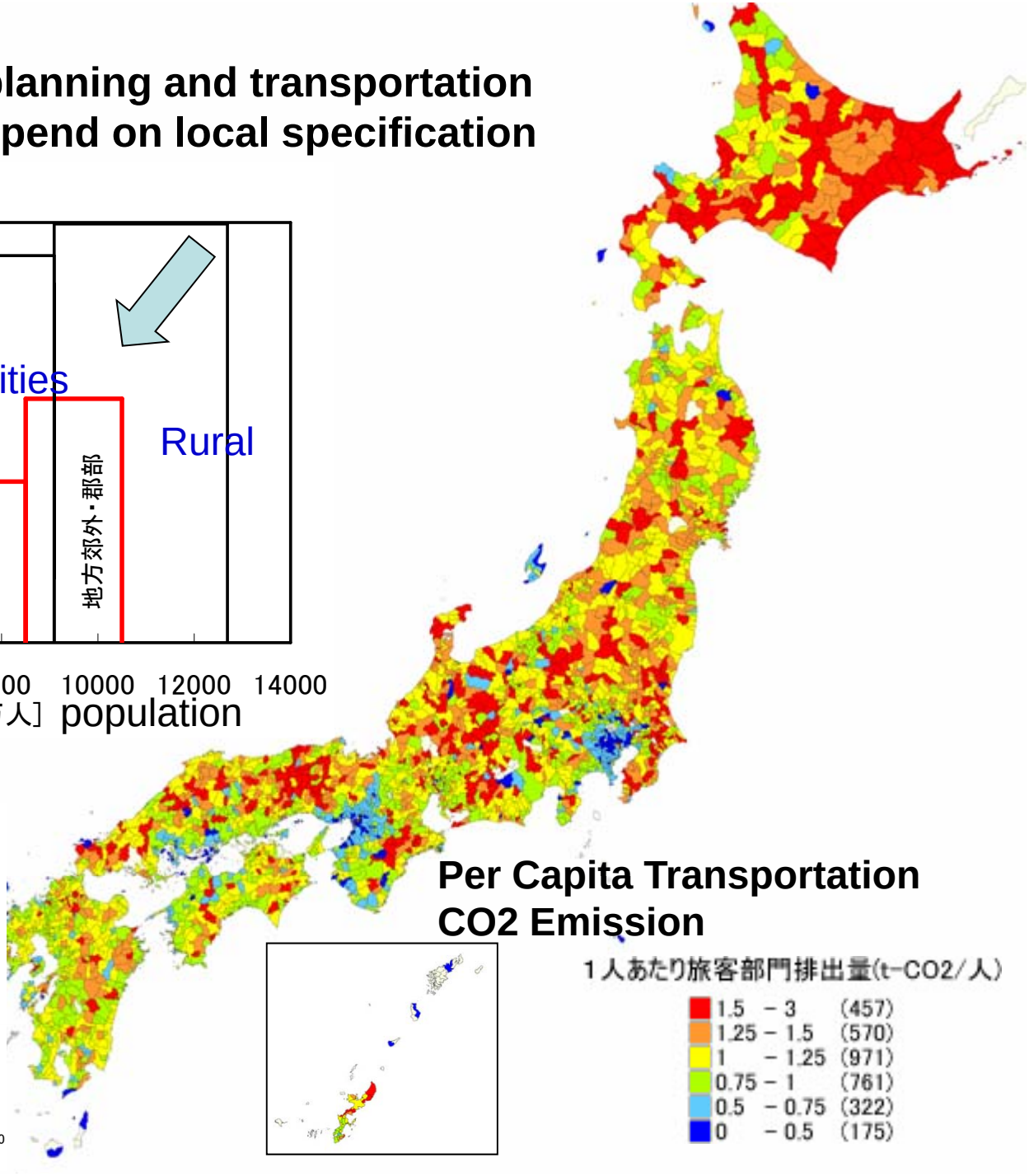
Scenario
A: Vital Society
B: Slow Society



Land-use planning and transportation strategy depend on local specification

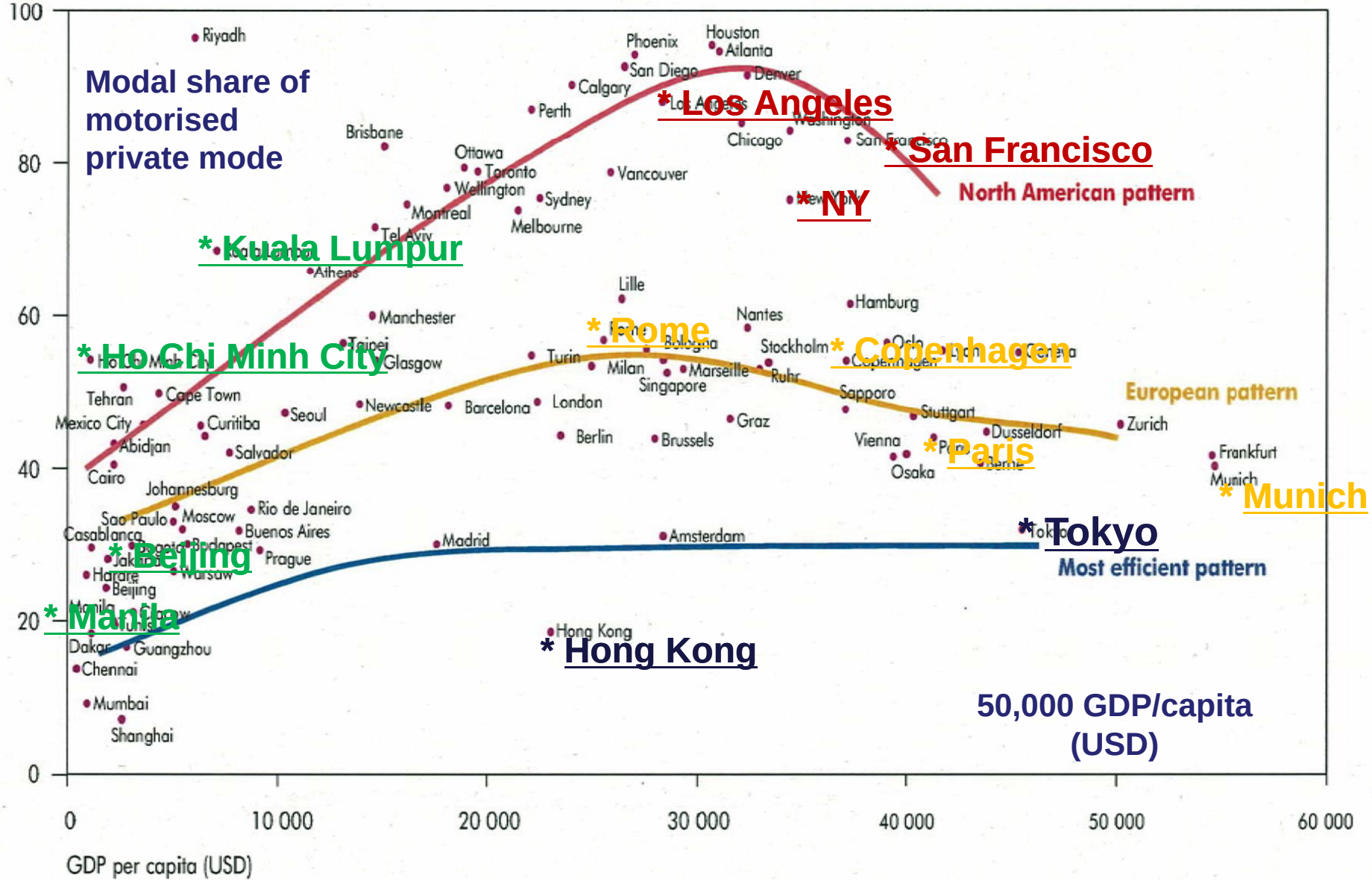






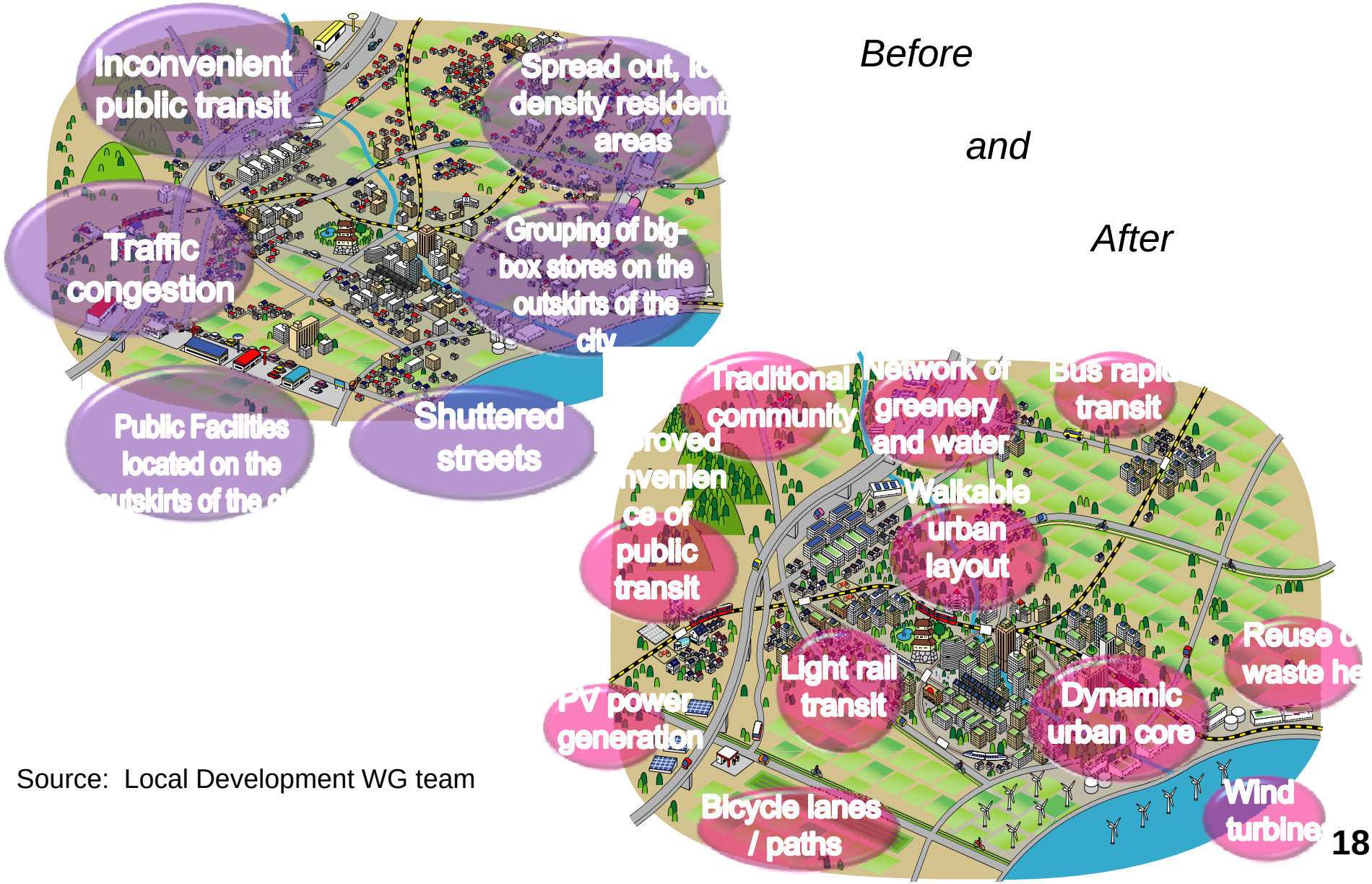
Per Capita Transportation CO2 Emission

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

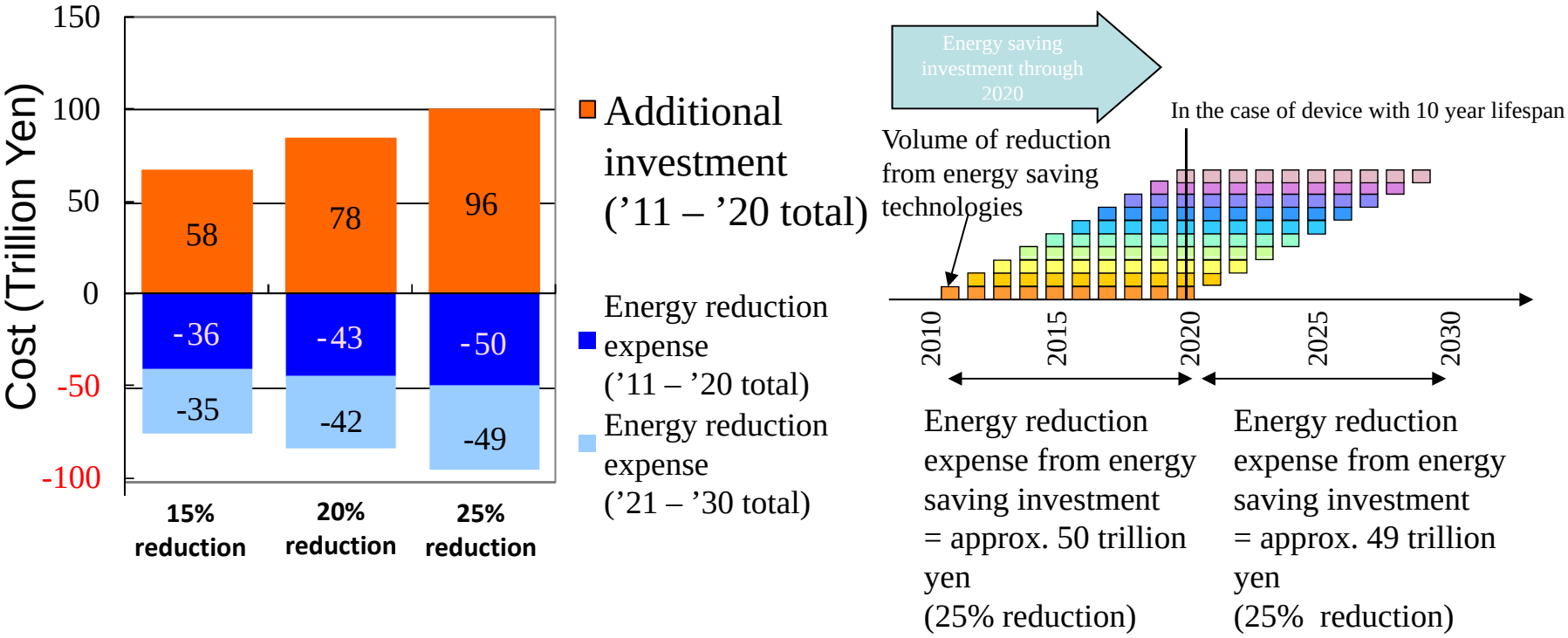


Source: Local Development WG team

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.

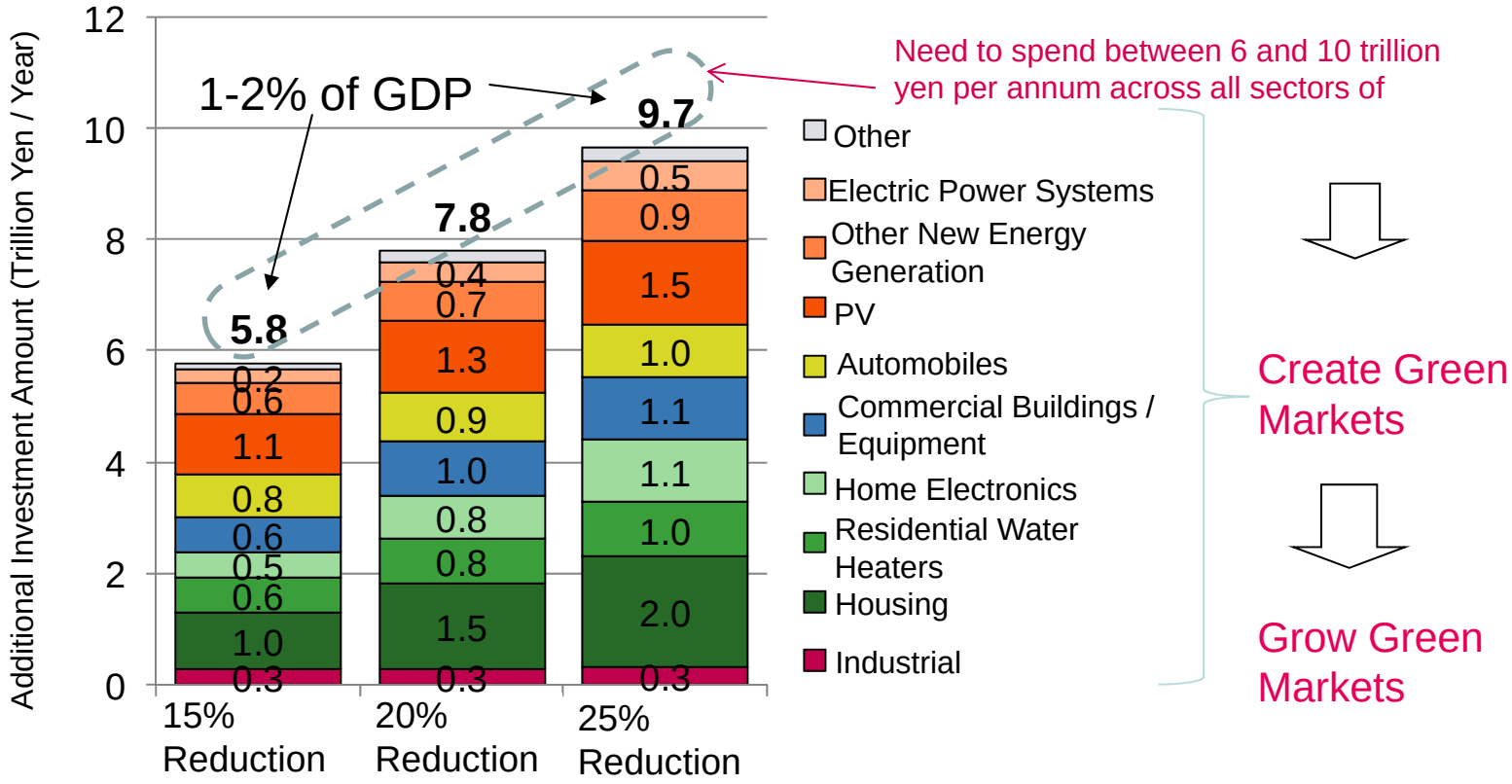
<Low-carbon investment amount and energy reduction expense>



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.

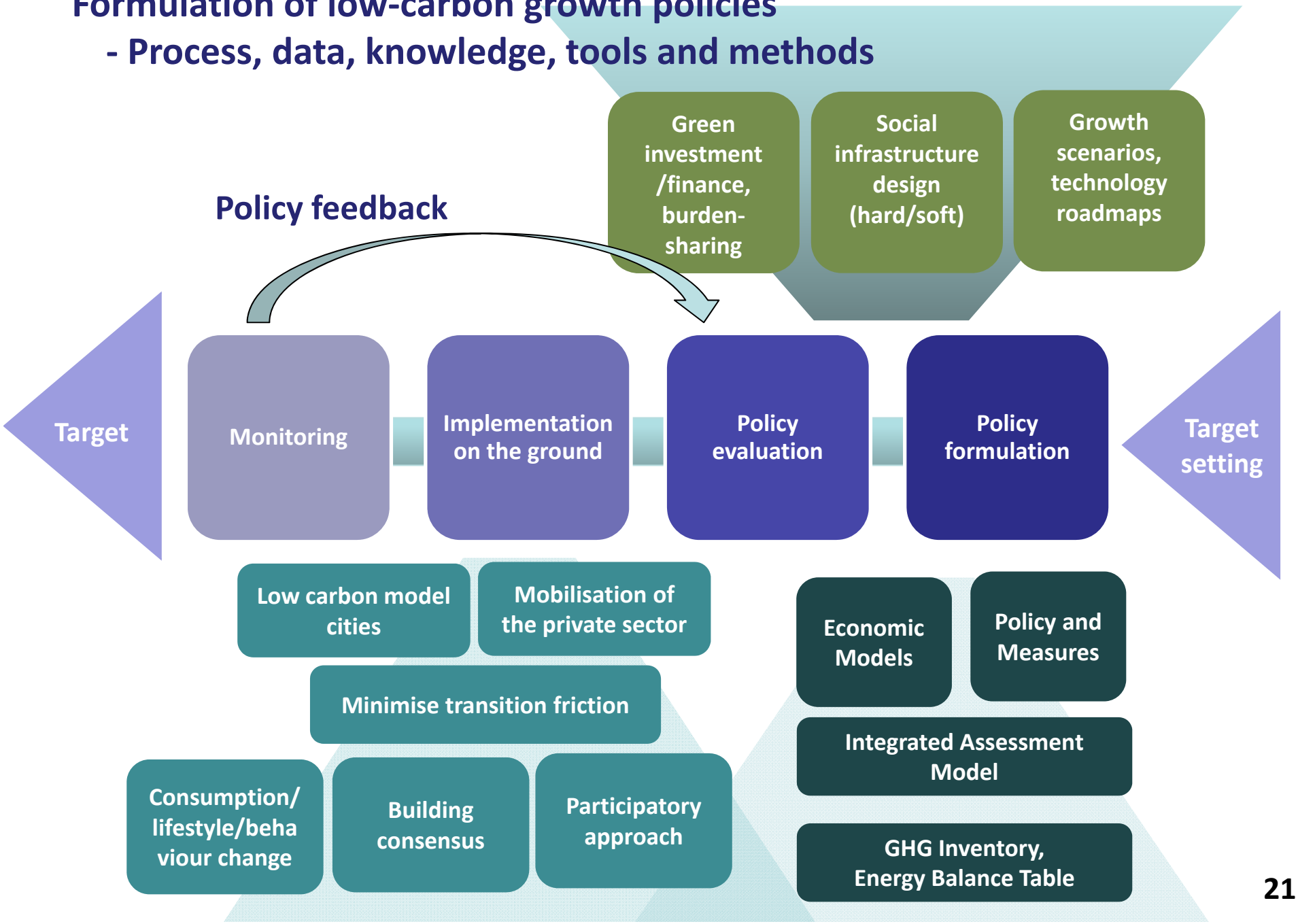
[Additional Investments Required to Achieve CO2 Reduction Target]



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.

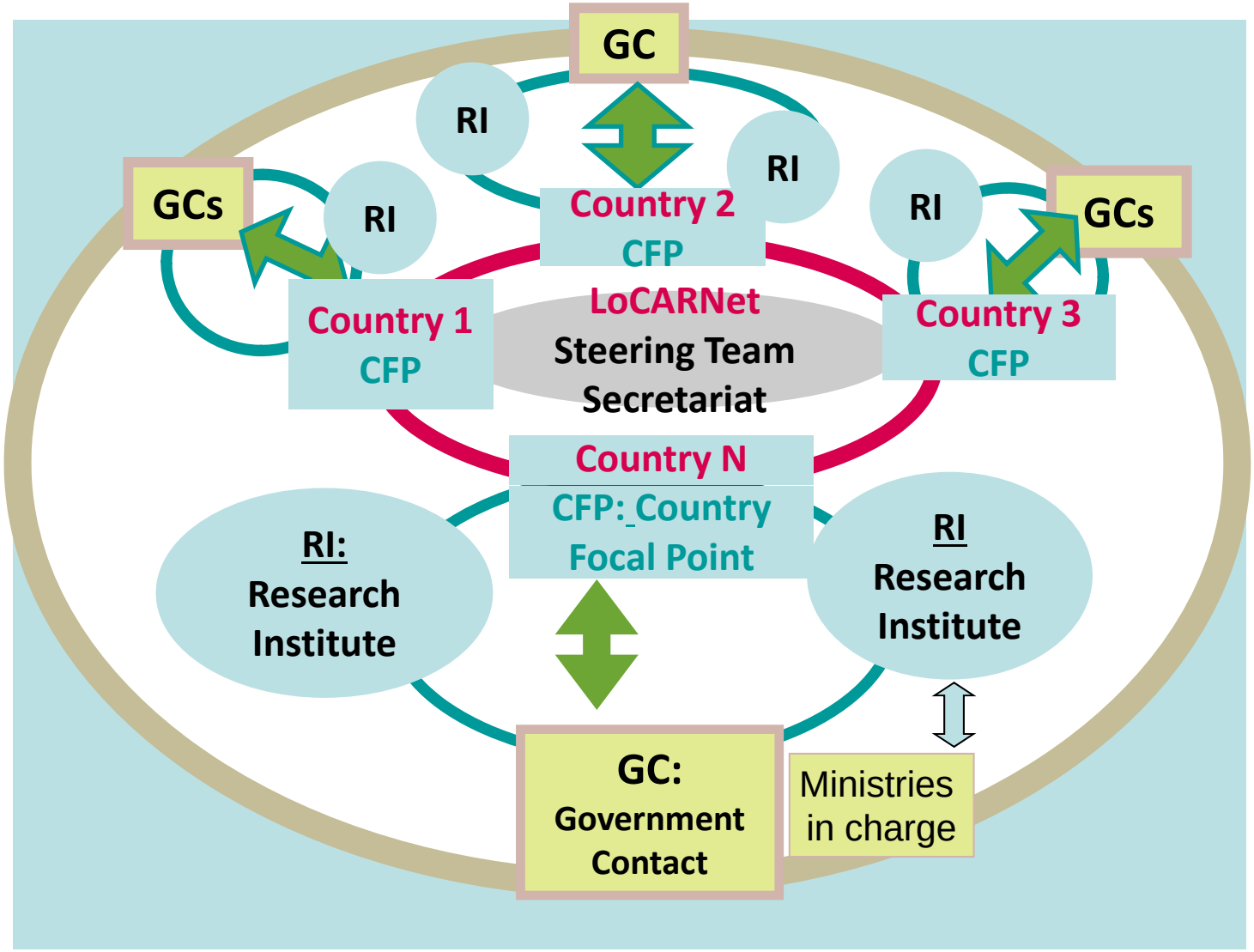
Formulation of low-carbon growth policies
- Process, data, knowledge, tools and methods



Integration of Asian wisdom:
Proposal of LoCARNet
Low Carbon Asia Research Network

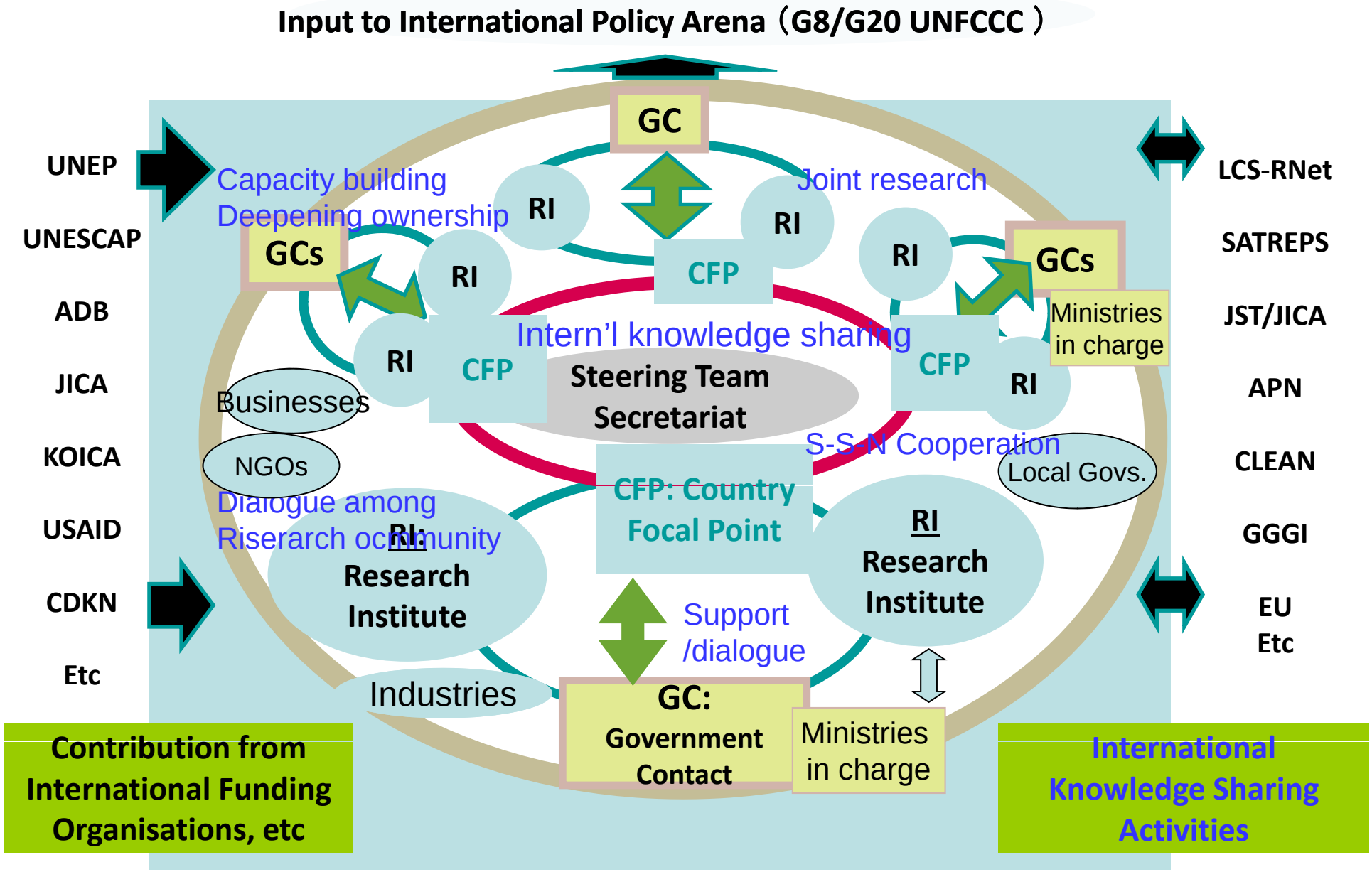
Low Carbon Asia Research Network (LoCARNet)

research communities dedicating to LC-Growth policy processes working with Government



Low Carbon Asia Research Network (LoCARNet)

of research communities dedicating to LC-Growth policy processes



Low Carbon Asia Project
Research Institutions/ researchers' network
who dedicating directly in LCS policy making process

LCS·R Net

Mohamad Bin
SA'ELAL
Malaysia

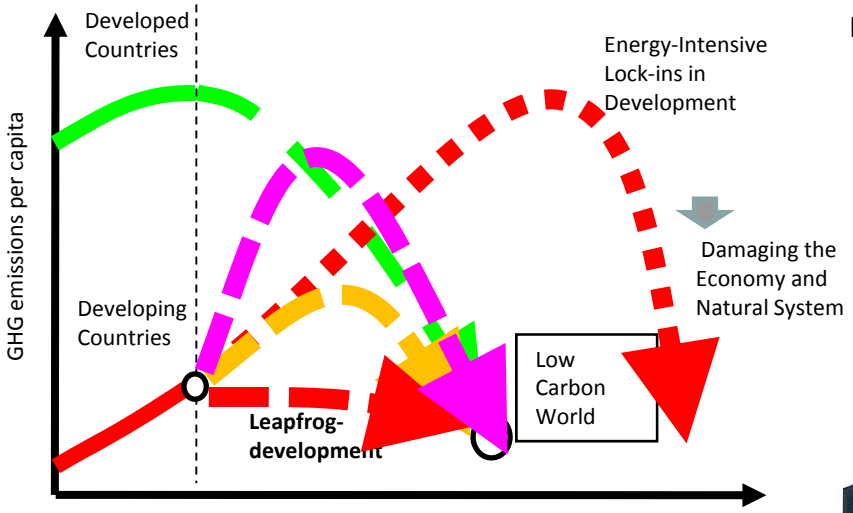
Sirintornthep
TOWPRAYOON
Thailand

Rizaldi BOER
Indonesia

Ho Chin
SIONG
Malaysia

Mikiko
Kainuma
Japan

Bundit
LIMMEECHOKCHAI
Thailand



Yutaka
MATSUZAWA
Japan

Hak MAO
Cambodia

Jiang
KEJUN
China

NIES JAPAN

国家发展和改革委员会能源研究所
Energy Research Institute National Development And Reform Commission

환경부 국립환경과학원

IGES

JGSEE
The Joint Graduate School of Energy and Environment

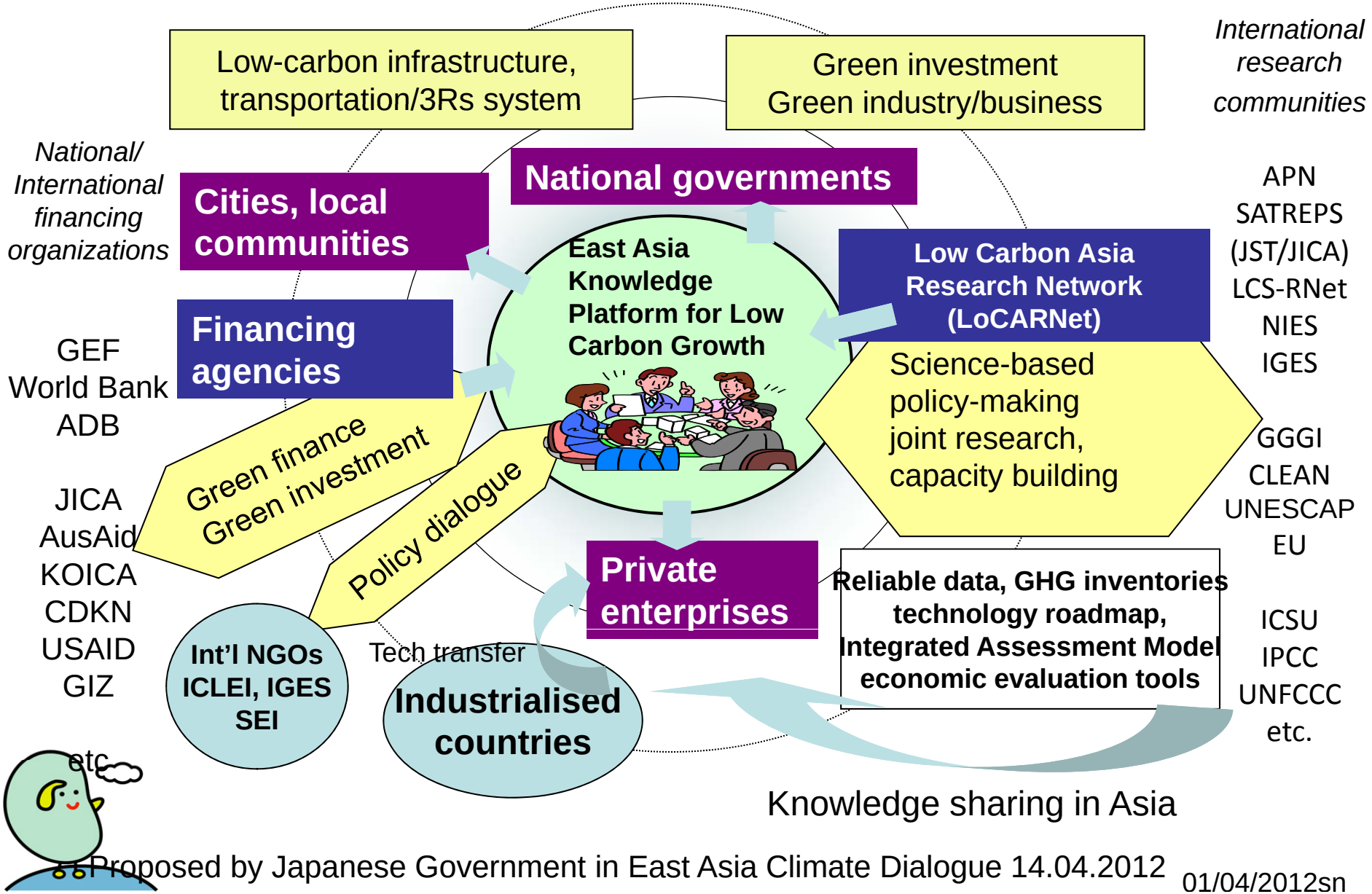
環境省
Ministry of the Environment

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

ISKANDAR
REGIONAL DEVELOPMENT AUTHORITY

East Asia Knowledge Platform for Low-Carbon Growth

to lead sustainable low-carbon world through high & strong growth
Asian research, knowledge, policy, investment & collaboration



Proposed by Japanese Government in East Asia Climate Dialogue 14.04.2012

01/04/2012sn


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