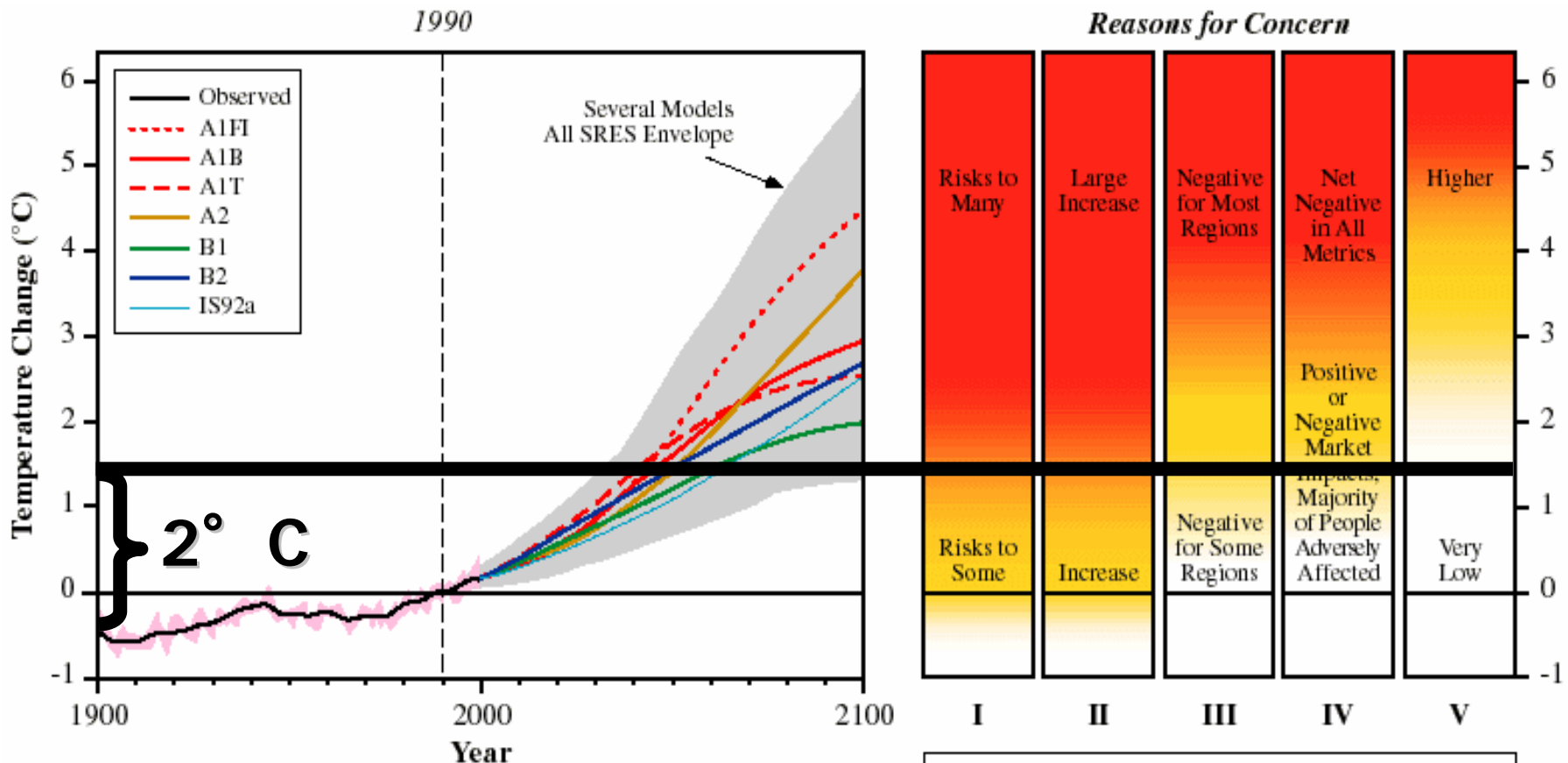


The 11th AIM International Workshop
19-21, February 2006
Tsukuba, Japan

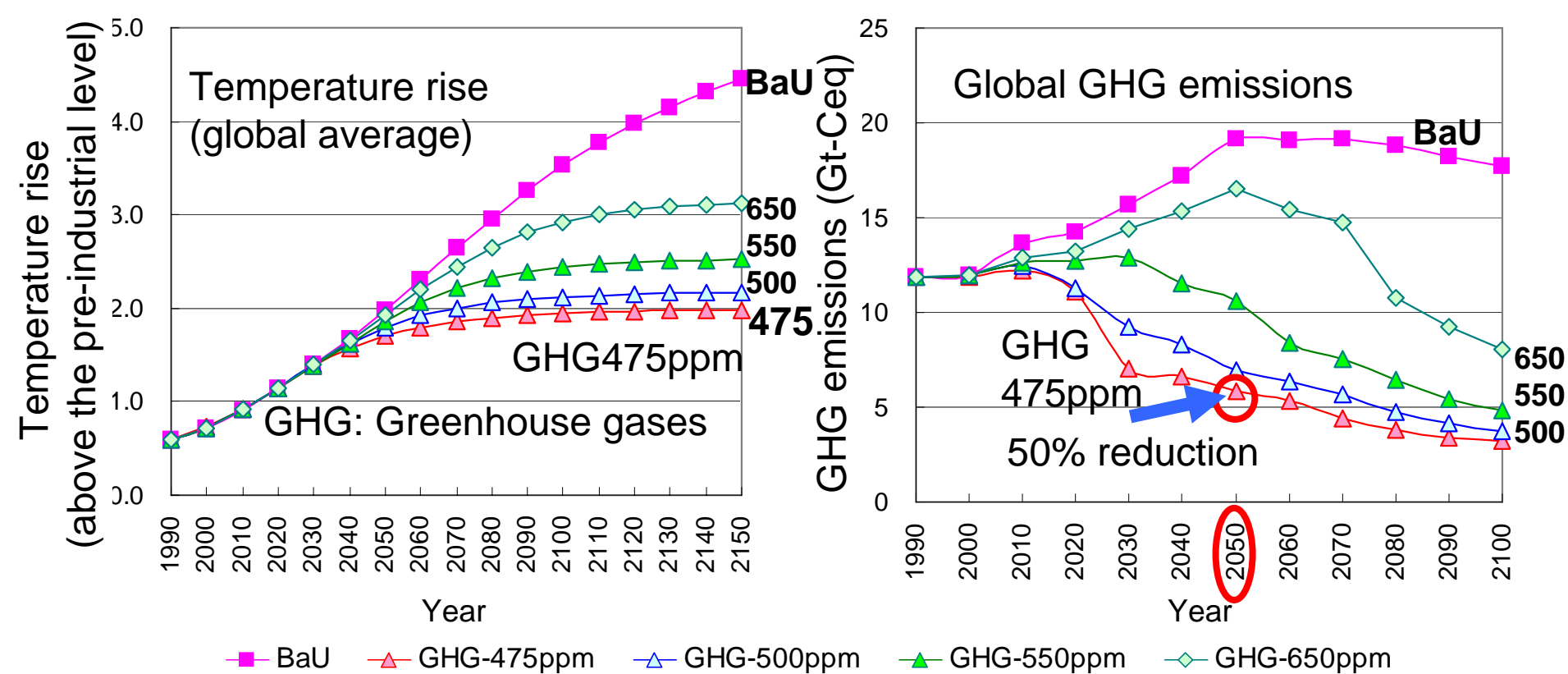
Low Carbon Society Scenarios toward 2050 -Model Development in Japan and Global Challenges-

Junichi FUJINO (fuji@nies.go.jp)
National Institute for Environmental Studies (NIES)

To avoid serious CC impacts, it is necessary to stabilize temperature raise below 2 degree compared with pre-industrialized level



- I Risks to Unique and Threatened Systems
- II Risks from Extreme Climate Events
- III Distribution of Impacts
- IV Aggregate Impacts
- V Risks from Future Large-Scale Discontinuities



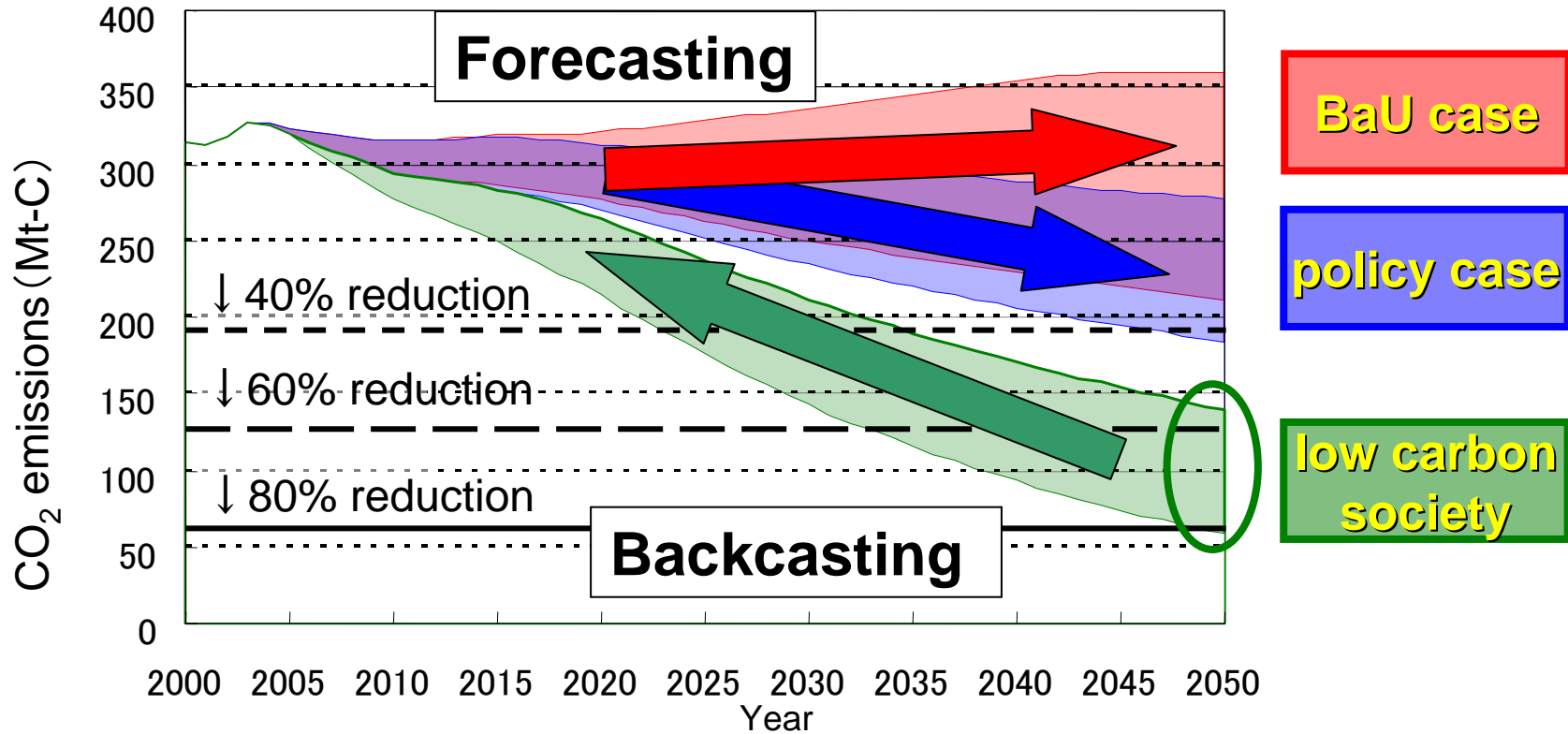
•It is estimated that around 50% GHG reductions in 2050 are required to control temperature rise below 2°C

•Japan may require more reduction (60-80%).
 Other country-level 2050 scenarios have been studied (UK 60%, Germany 80%, France 75%, and so on).

•Impacts will occur even in 2°C temp control.
•Adaptation is necessary.

Calculated by
 AIM/Impact[policy]
 Model

Path toward Low Carbon Society, Japan



Energy Saving devices
Energy Supply change

Urban System Change
Industry Structure Change
Information Technology
Renewable energy
Consumption Behavior

Depict “Japan Low carbon society 2050”

What kind of demands/services,
Japanese needs in 2050?



Depict living and
working style

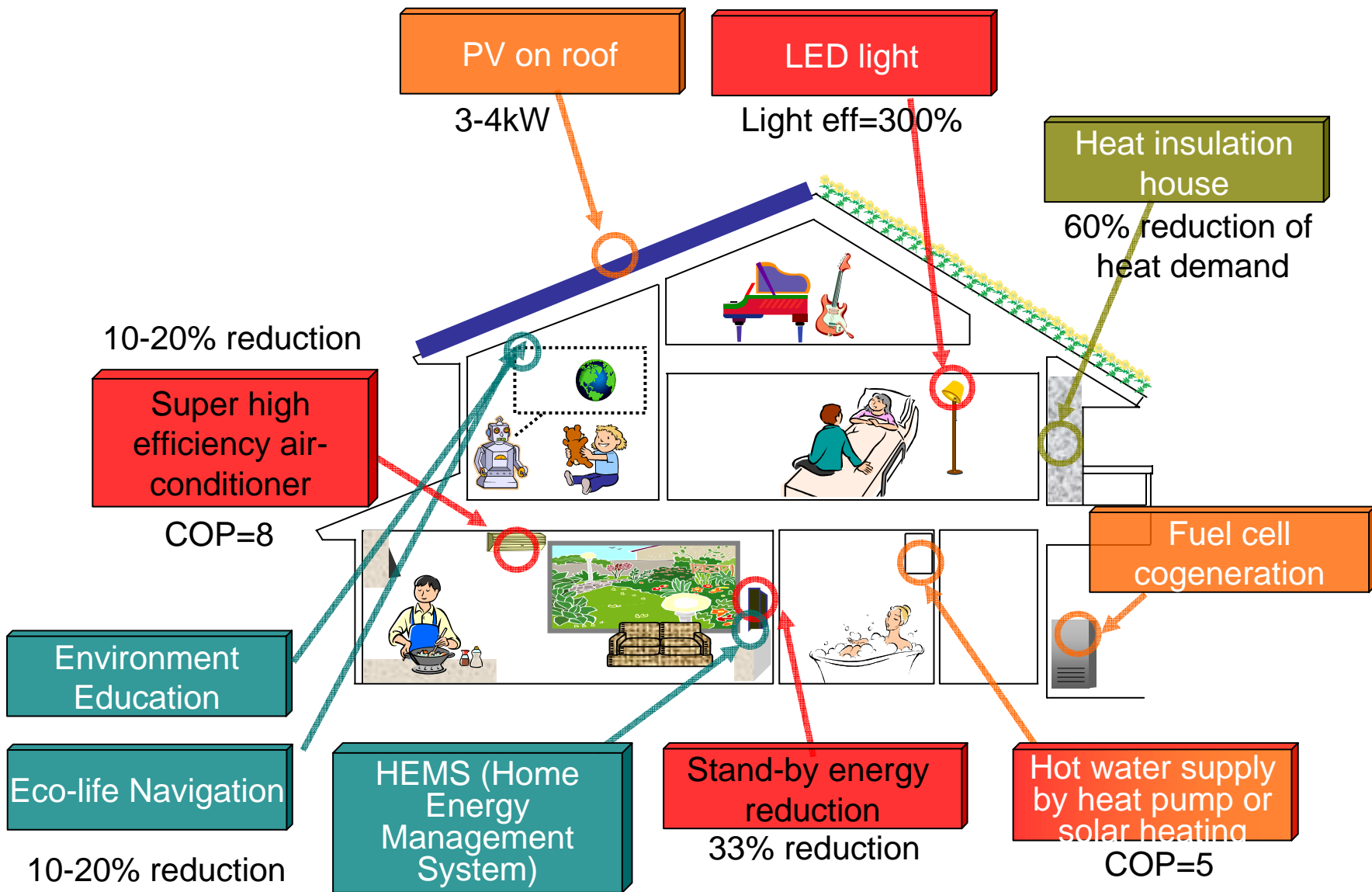
Desired future: The society allows wider range of choice

Scenario A: Vivid, Technology-driven	Scenario B: Slow, Natural-oriented
Urban/Personal	Decentralized/Community
Technology breakthrough Centralized production/recycle	Self-sufficient Produce locally, consume locally
Comfortable and Convenient	Social and Cultural Values

Considering global relationship, energy security, other environmental problems

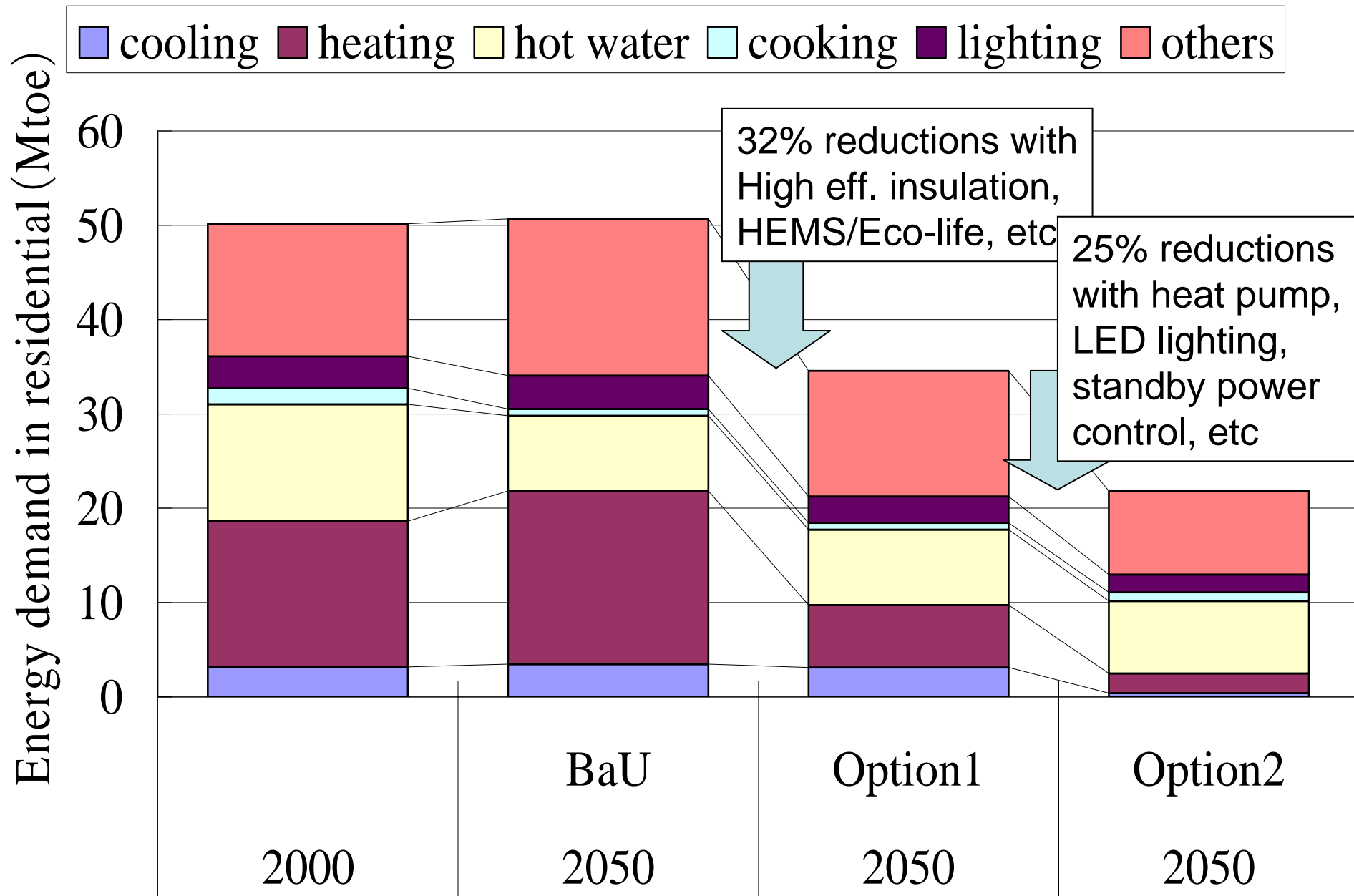
**We do research to depict various kinds of future
qualitative and quantitative**

Depict Future Image: Residential sector in 2050

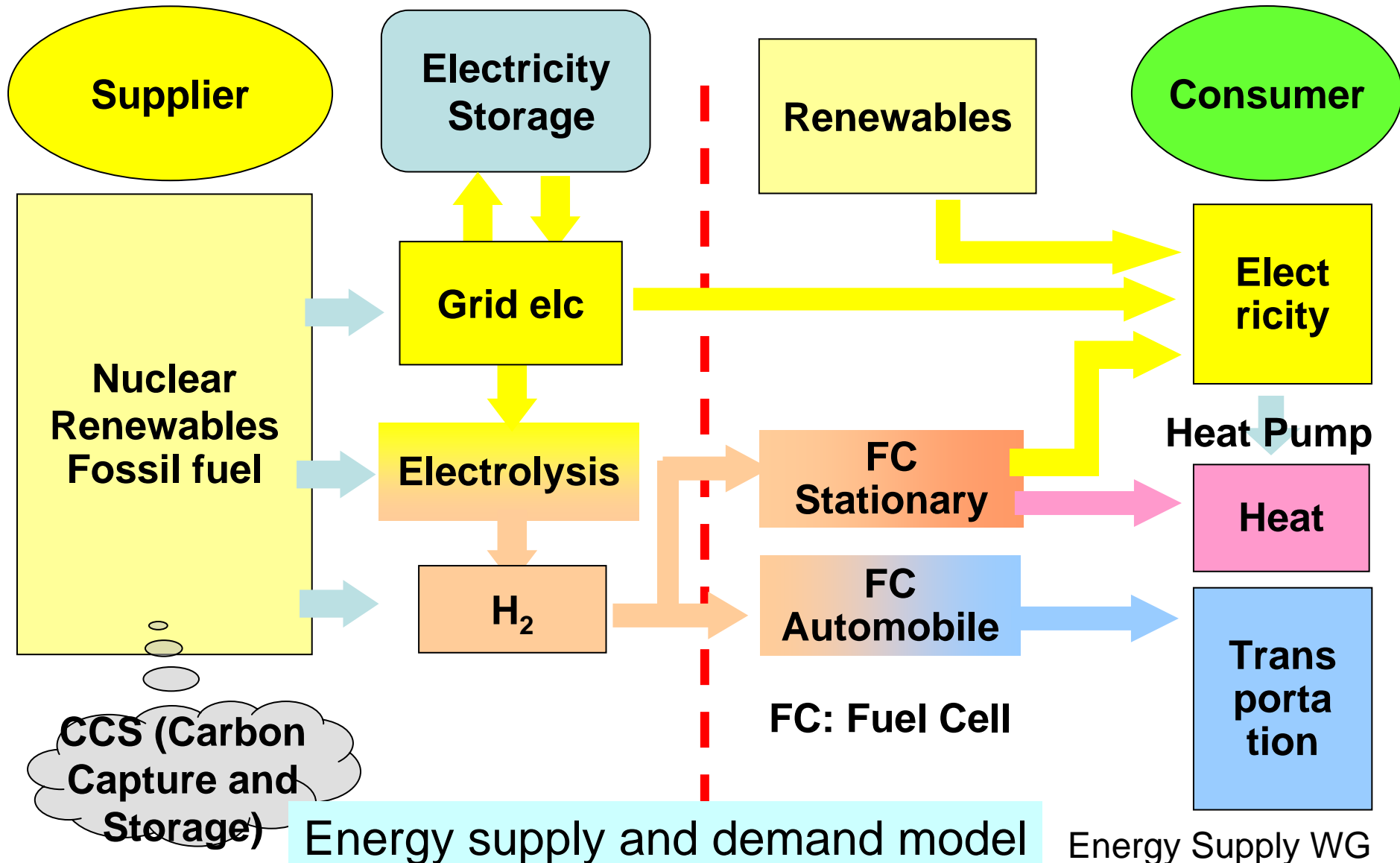


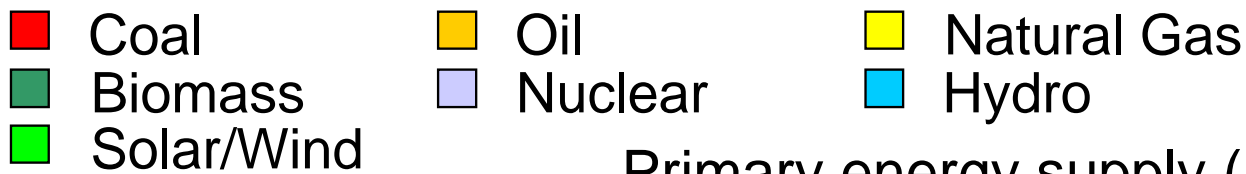
- Efficient use
- New energy
- Infrastructure
- Eco-lifestyle

Energy demand in residential sector, 2050



Possible Energy Supply System for the Future

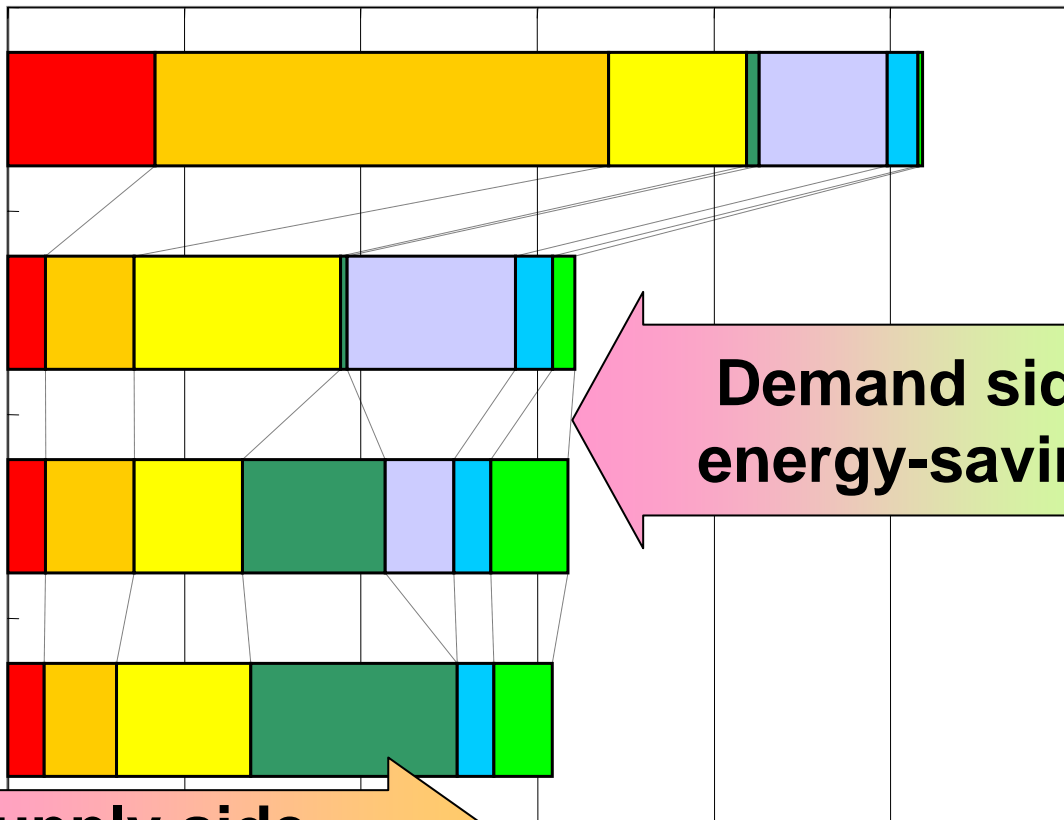




Primary energy supply (Mtoe)

0 100 200 300 400 500 600

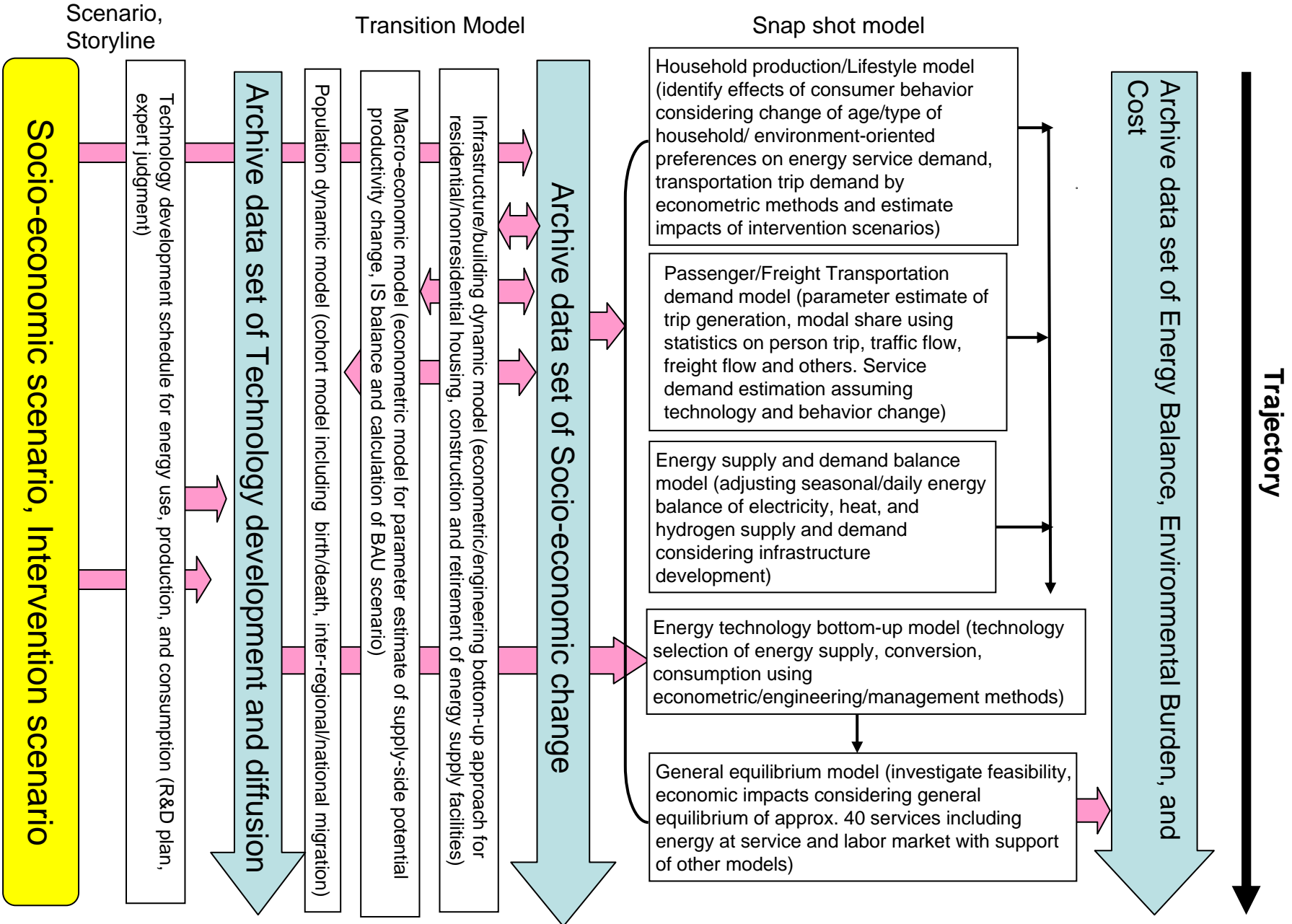
2000



Demand side energy-saving

Supply side countermeasures

Both supply side and demand side countermeasures are required to achieve 70% CO₂ reduction by 2050



Socio-economic value

Energy value

Population
dynamic
model

Macro-
economic
model

Household
production/
Lifestyle
model

residential

commercial

trans
portation

industry

Building
Dynamic
model

Transportation
Demand
model

Energy balance model

Energy technology
bottom-up model

Total balance
check

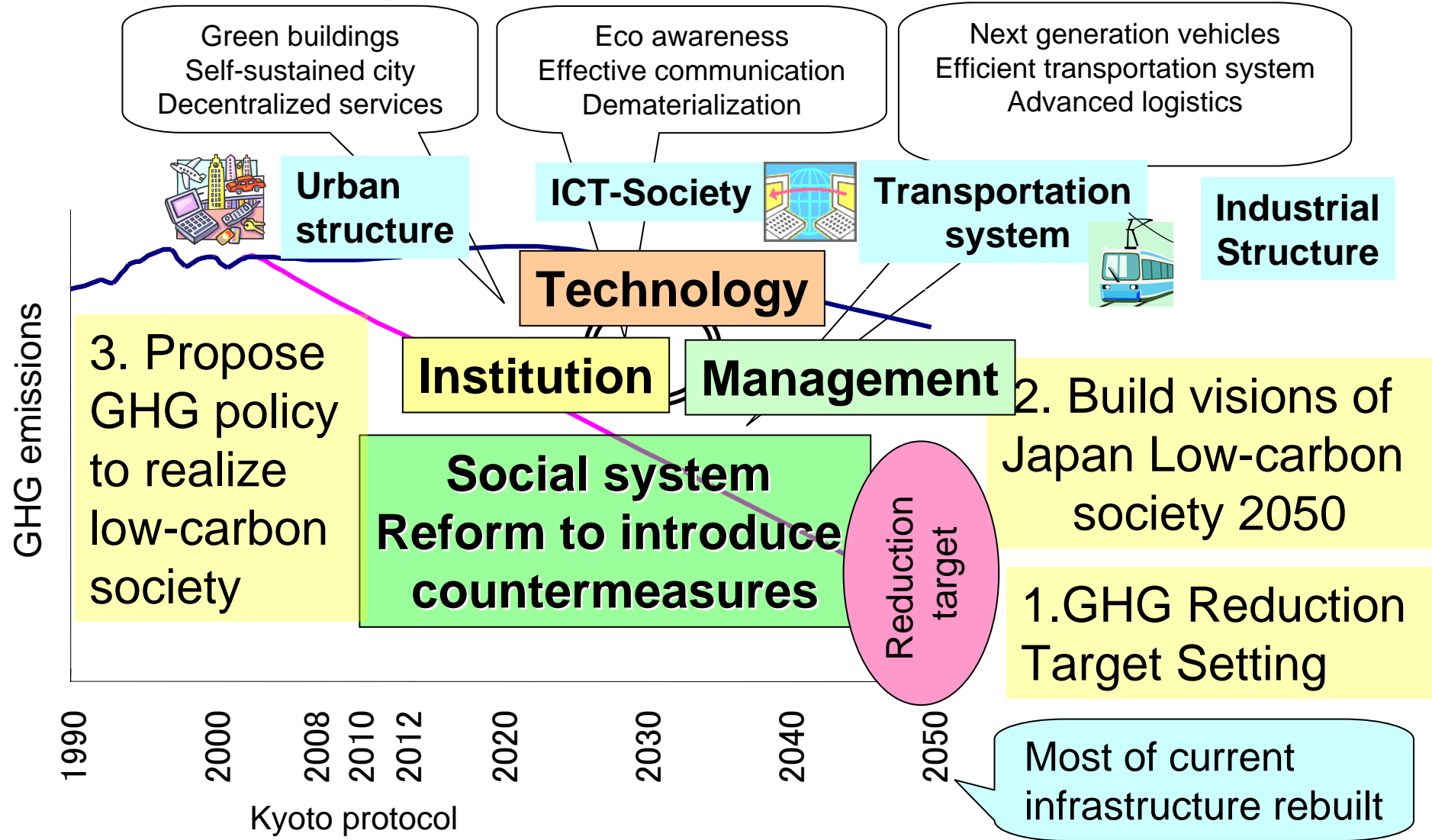
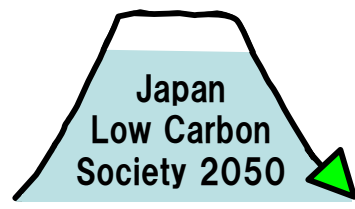
Infrastructure model (transportation, urban development
energy supply, and so on)

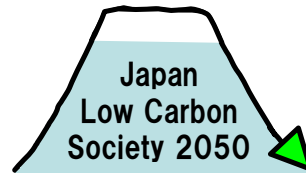
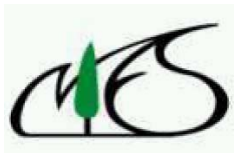
General equilibrium model

AIM Models for 2050 scenario development
(AIM: Asia-Pacific Integrated Model)

Research project on Japan Low-carbon society scenario

studied by 60 Japanese researchers





Welcome to

NIES COP11 and COP/MOP1 side event

**Global Challenges Toward
Low-Carbon Economy (LCE)
-Focus on Country-Specific Scenario Analysis-**

Panelists from 8 countries



Ms Zhu

Prof Shukla Fujino

Dr Sands

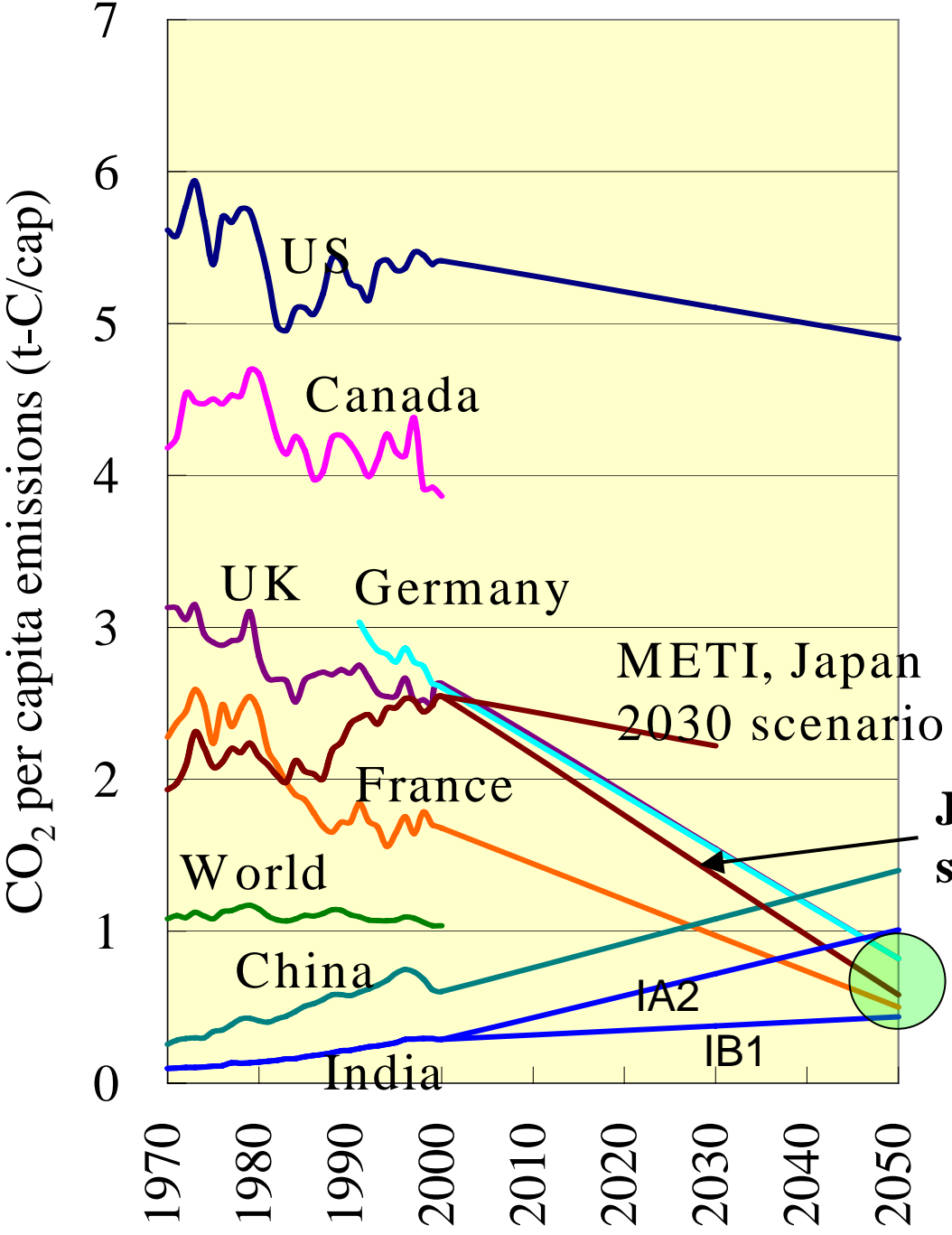
Organized by

National Institute for Environmental Studies (NIES), Japan

All materials are available at

http://2050.nies.go.jp/2050sympo/cop11_side.htm

Current per capita CO₂ emissions and Target



Japan 2050 scenario

Target for Low Carbon Economy

Japan – UK Joint Research Project

Developing visions for Low Carbon Society through sustainable development

Objectives

- 1) Understand the necessity for drastic reduction of greenhouse gas (GHG) emissions in order to achieve a Low Carbon Society (LCS) based on scientific findings, and to and disseminate this understanding;
- 2) Review country-level studies on GHG emissions scenarios;
- 3) Investigate pathways to achieve a LCS at country level in a globally harmonized manner, which are composed of concrete actions and innovations including both legal/social/ behavioral systems and technological solutions;
- 4) Identify bottle-necks, barriers and opportunities for achieving a LCS;
- 5) Contribute to the development of international cooperation between researchers working towards a LCS; and
- 6) Share the images of a Low Carbon Society

Japan – UK Joint Research Project

Developing visions for Low Carbon Society through sustainable development

Project Format

(1) Organizations leading on the research

Japan: NIES

UK: UK Energy Research Centre (UKERC) and Tyndall
Centre for Climate Change Research

(2) International Workshops

The first international workshop will be held in Japan from June 14 to 16, 2006, involving researchers and governmental officials from about 20 countries, and international organizations. Prior to the workshop, a public symposium will be held in Tokyo on June 13, 2006.

A second workshop will be held in 2007

Key messages

- 1. Large amount of GHG reductions are required.**
- 2. Image of low carbon society is necessary to achieve drastic GHG reductions.**
- 3. Both supply-side and demand-side reductions are required. Model studies are necessary to find consistent path toward 2050 low carbon economy.**
- 4. It's time to action. It takes time to change social system, infrastructure...**
- 5. We need further research collaboration with Asia-Pacific countries, US and other countries.**

Japan Low Carbon Society Scenarios toward 2050

2050.nies.go.jp

