

ISAP(International Forum for Sustainable Asia and the Pacific) 2015

International Collaborative Research for Innovative Modelling and Monitoring for Low Carbon Society and Eco-Cities in Indonesia

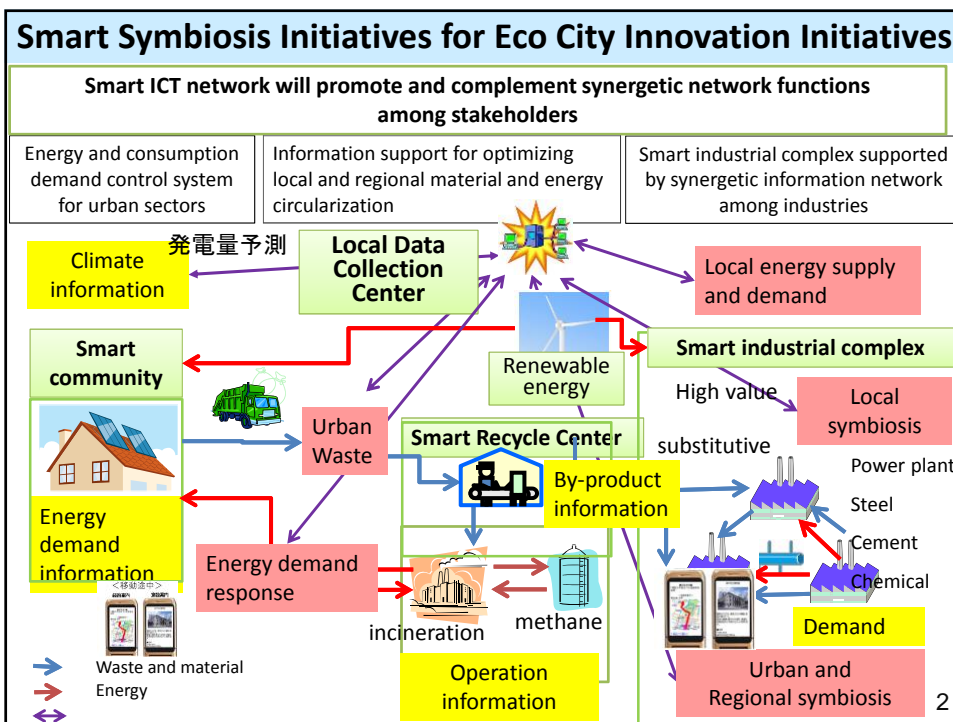
Professor FUJITA, Tsuyoshi, fujita77@nies.go.jp

Director of Social Research Center

Associate Professor FUJII, Minoru

National Institute for Environmental Studies, JAPAN

1



1. Innovative monitoring and regional evaluation system research
2. Integrative modelling research for low carbon society
3. Urban and regional eco-city design model and simulation research

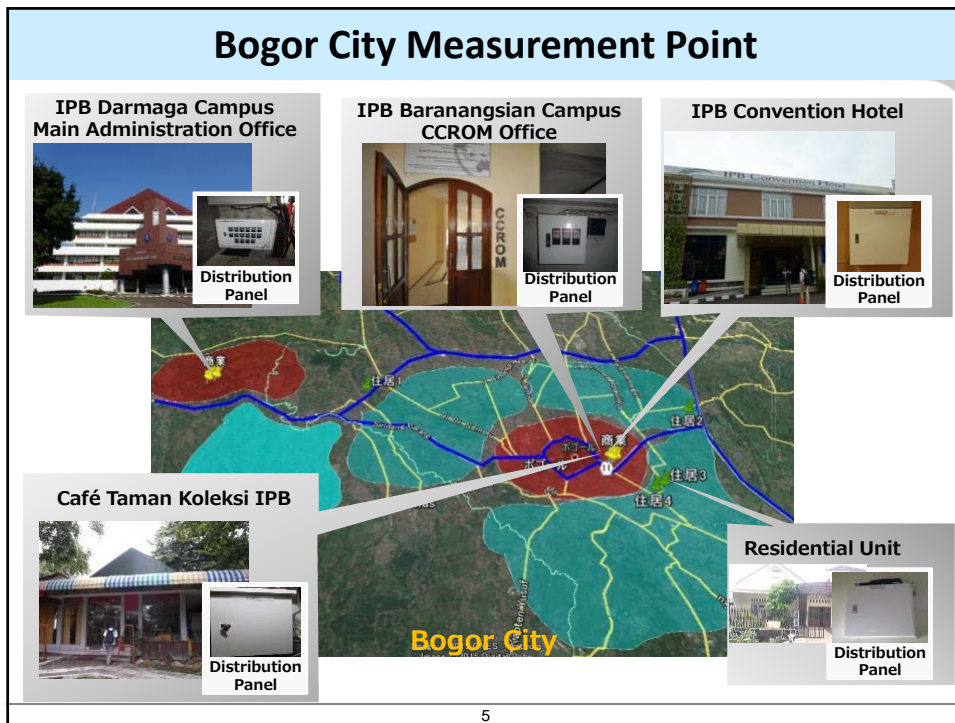
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1. Innovative monitoring and regional evaluation system research

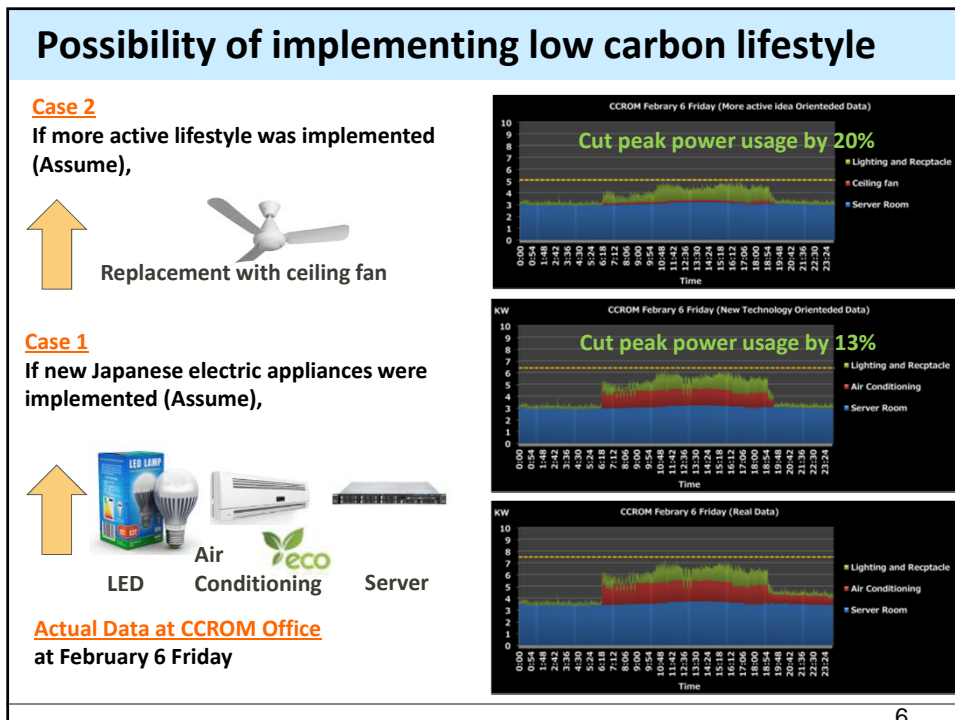
Under Indonesia-Japan comprehensive collaboration,

- ❑ **Innovative social monitoring system** will be developed
 - smart monitoring system for eco-city districts and eco- industrial parks
- ❑ **Academic and policy outcome for integrative research challenges** will be identified
 - strategic technology assessment
 - coordination for sustainable low carbon society strategy planning
 - innovative monitoring system for the systematic project design and carbon credit certification

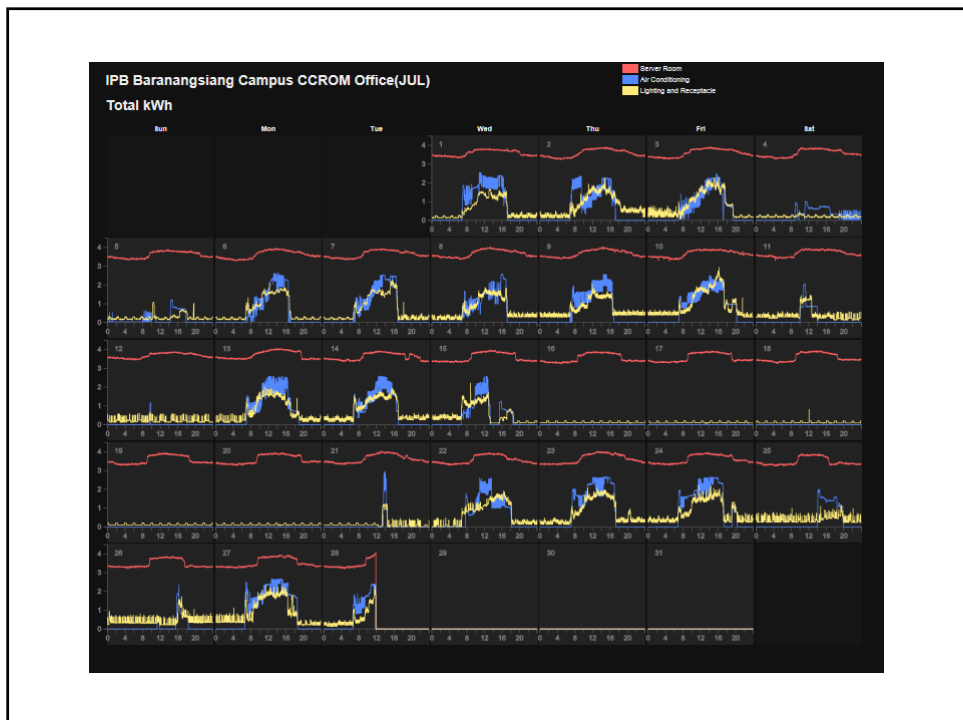
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5



6



Data utilization for action: Touch Point

BOGOR city Industry Sector Emission: 582.9t

Industry Sector Emissions Include:
CO₂ Emissions, due to household energy consumption, from manufacturing, Agriculture/Forestry/Fisheries, mining, and construction industries.

How we calculate CO₂ footprint:
 Car How many times does a car orbit the earth? When a car orbits the earth **71,074** times

Simulation of CO₂ Reduction Potential:

Daily Household Electricity Consumption	Minus 1 Hour	CO ₂ Reduction:	6,490 t
Percentage out of Emissions due to Electricity Consumption:			9 %
Car Usage	Minus 2,200 km	CO ₂ Reduction:	7,290 t
Percentage out of Car Emissions:			12 %
Daily Household Waste	Minus 83 G	CO ₂ Reduction:	13,490 t
Percentage out of Emissions from Waste Disposal:			32 %

Amount of Emissions Reducers: Dehydrating 71 G of Food Waste
 Source: Let's Try: Loose the weight of food waste!

Bogor City's future

Expanding the Areas from Point to Area

Visualizing Energy Trend In Bogor City's Facility

Eco Guide, Applying Japanese Eco Products, Lifestyle Innovation, Evaluate Production Process etc.

Low Carbon Energy Supply and Demand in Bogor City's Area

Eco Campus / Eco-Friendly Model City

Commercial

Residential Area

Industrial Area

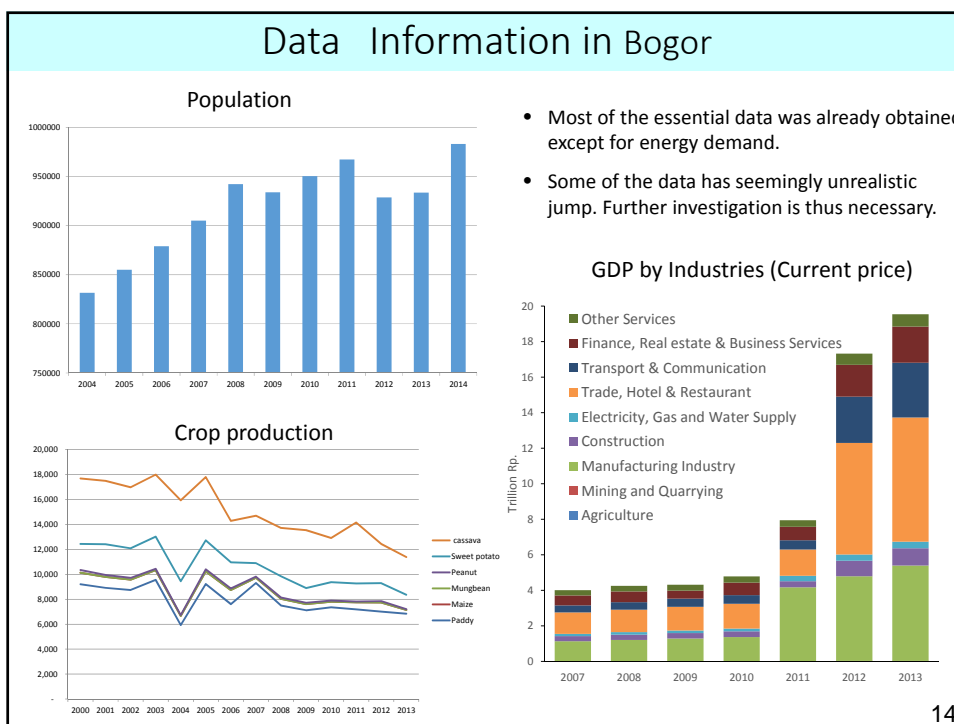
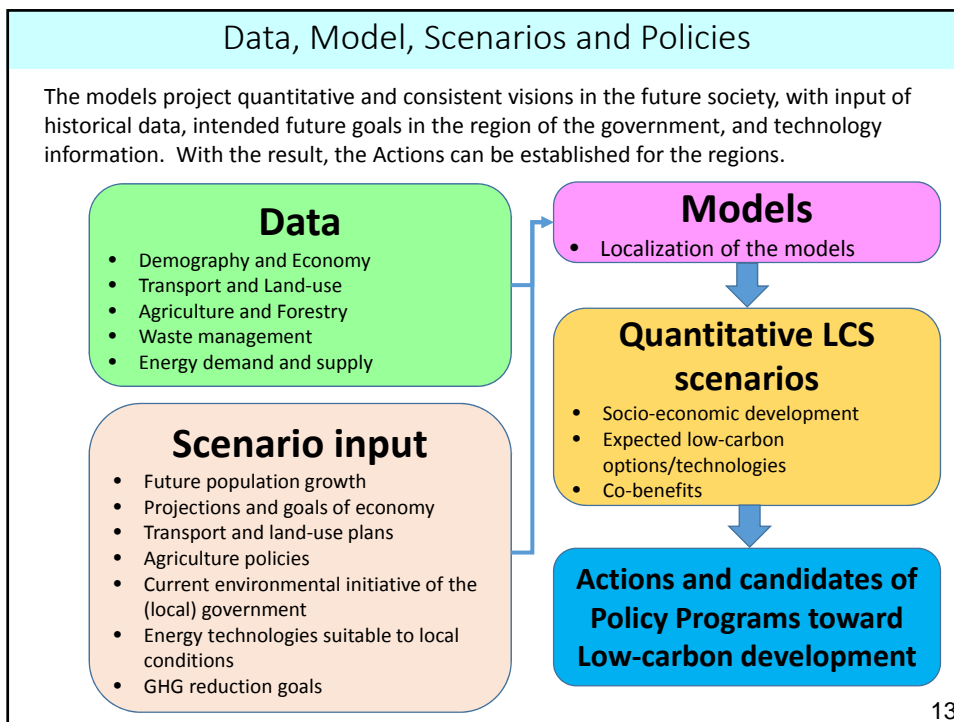
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11

2. Integrative modelling research for low carbon society

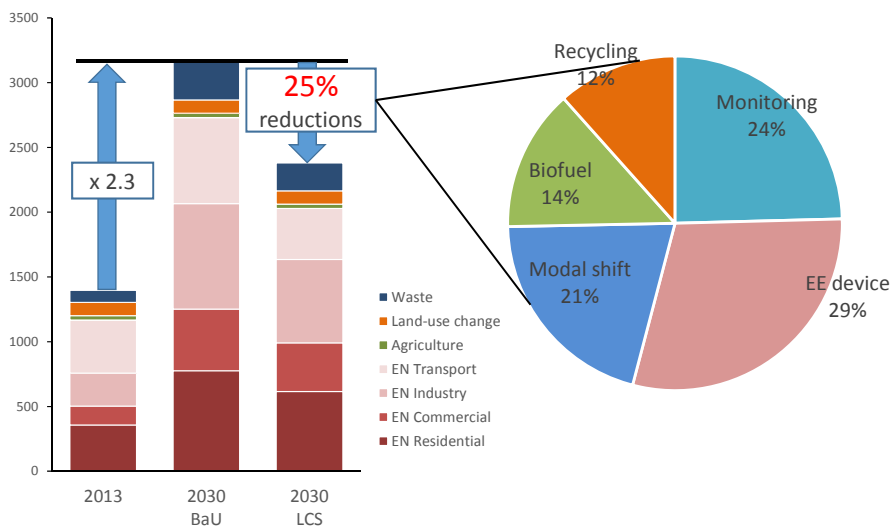
- ▣ **Assessment of mitigation technologies and financial policies for low carbon development**
 - Particularly focusing in the fields of agriculture, forestry, and land use sectors in Indonesia
 - Scenario development of Indonesia using ExSS and AFOLU
 - Policy assessment based on AIM/Enduse model and AIM/CGE model
 - Mitigation actions in Indonesia (RAN-GRK), and their economic impacts

12



GHG emissions by sectors and contribution by LC measures

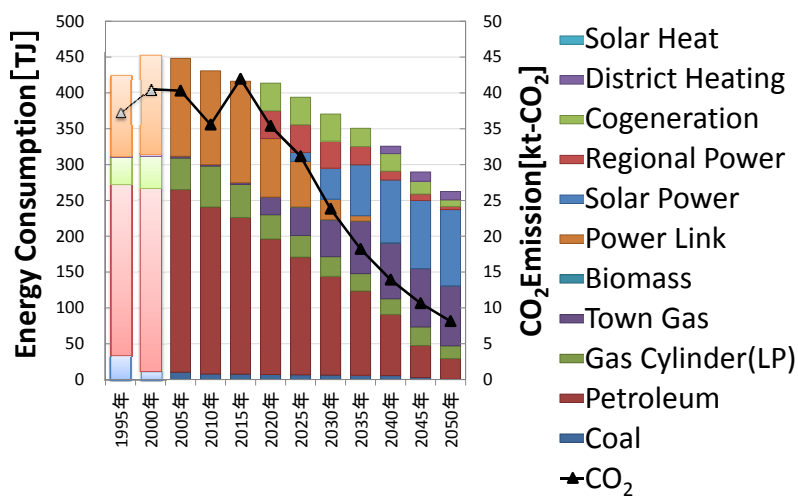
- Result of the sample scenario shows GHG emissions in Bogor City will be 2.3 times greater in 2030 BaU compared to 2013 level.
- The examples of low-carbon measures can reduce the emission by 25% in LCS scenario.
- The model can also shows contribution of the low-carbon measures in different sectors.



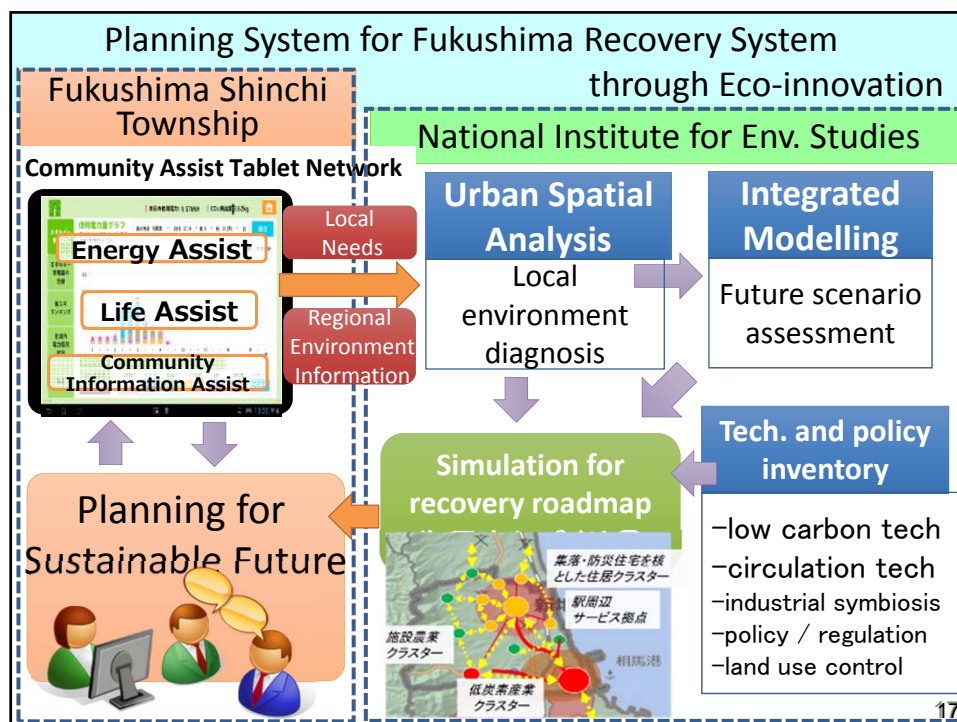
15

Macro Scope Technology Assessment for Local Government

Assessment for Suitable Technology Assessment for the Low Carbon Future (80% Reduction in 2050 from 1990) in Shinchi Town of Fukushima



16

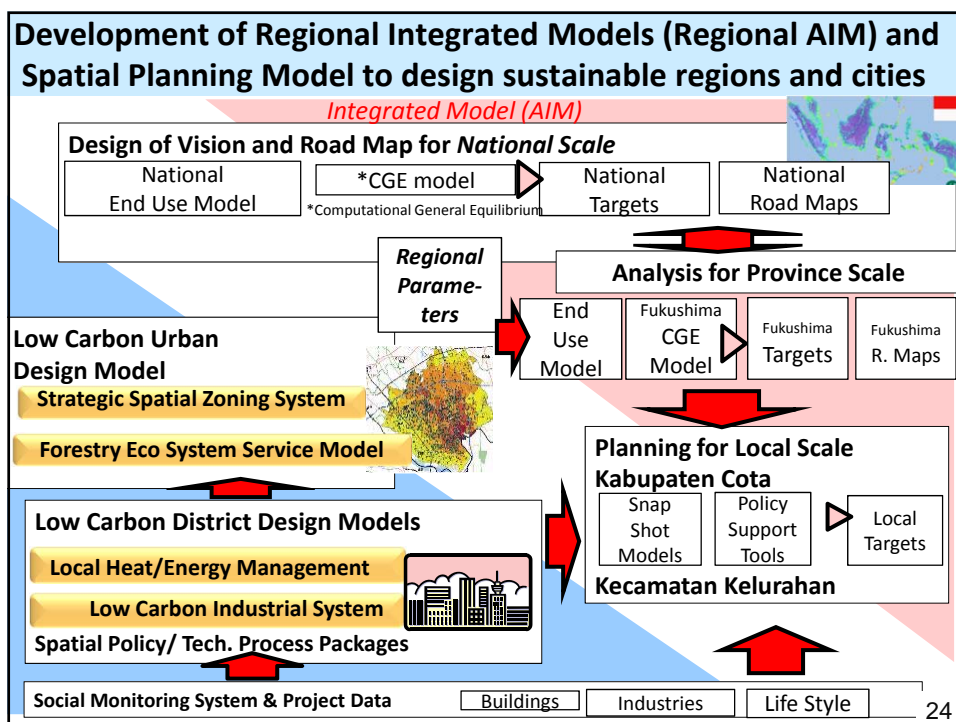


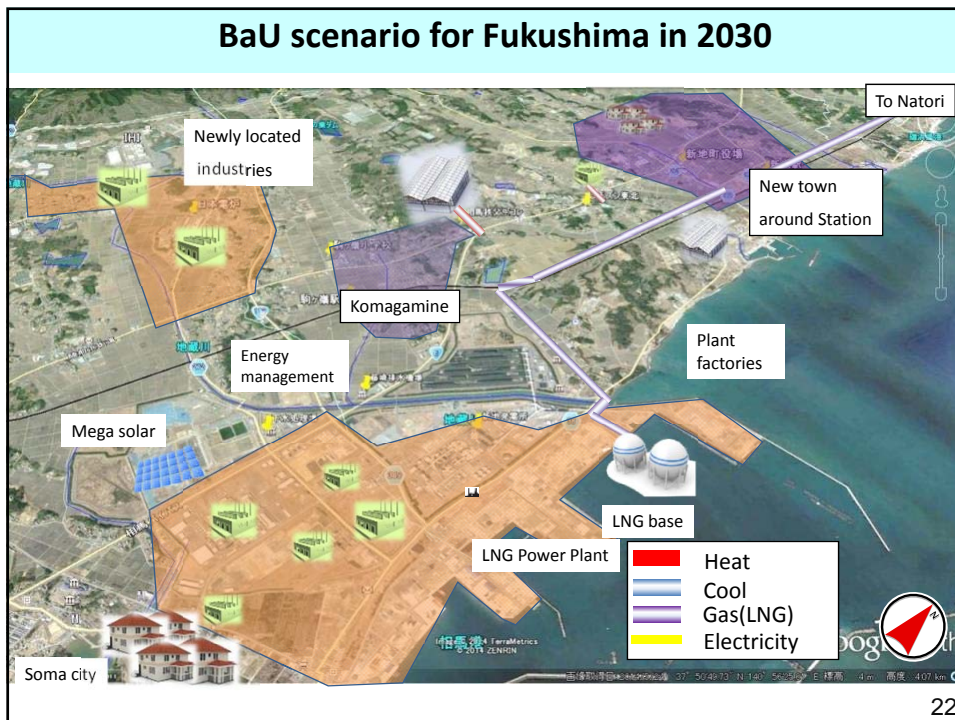
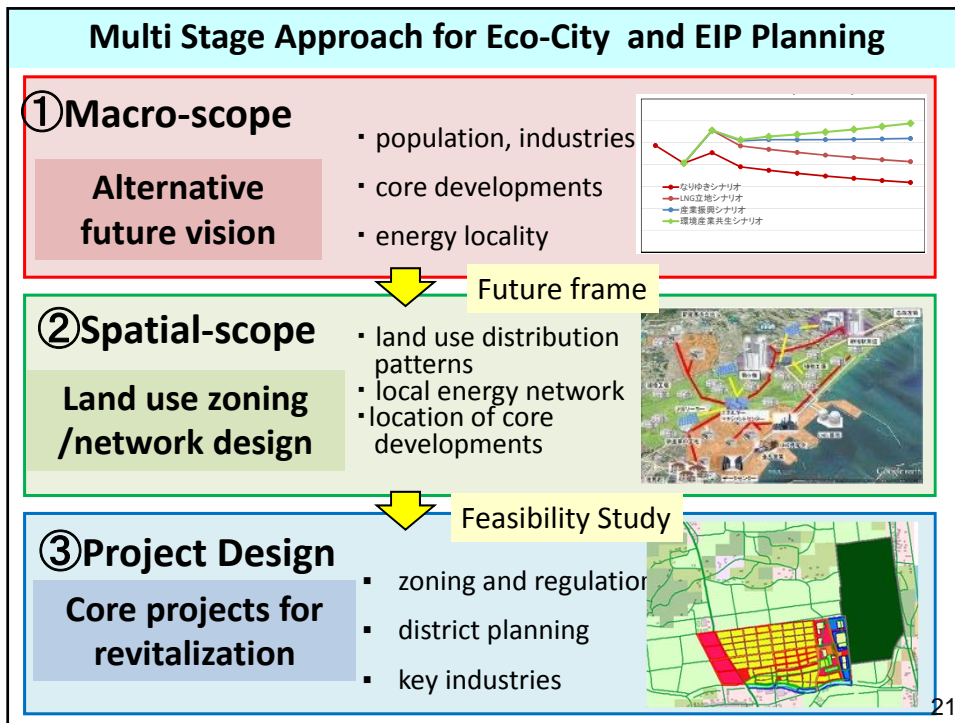
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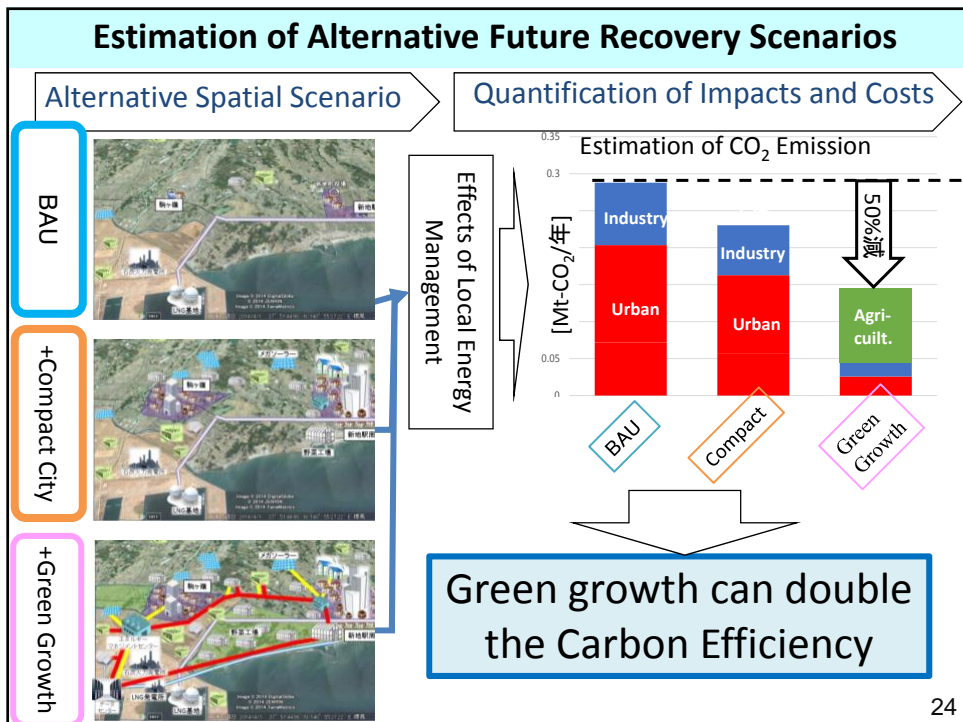
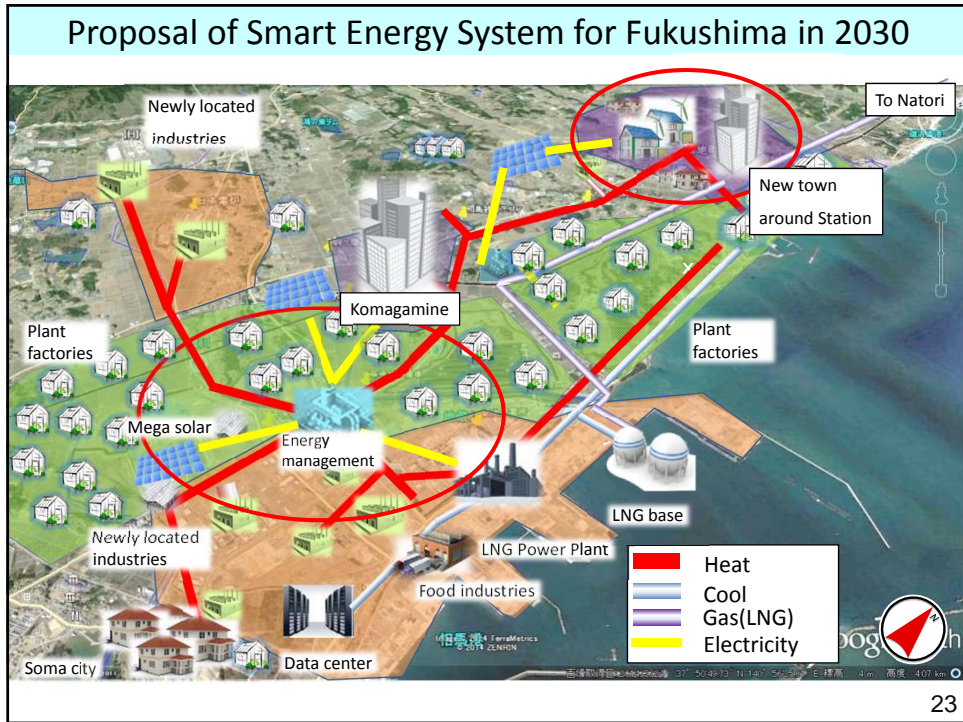
3. Urban and regional eco city design model and simulation research

- ❑ **Development of regional scale integrated assessment model** for designing low carbon society in Indonesia
 - energy sectors and non-energy sectors such as forest management and material recycling system
- ❑ By establishing environmental database consisting of urban scale statistical data; **monitoring network data as well as spatial GIS and satellite information, strategic district design and urban design** will be identified for low carbon society and eco cities.(TBR)

19

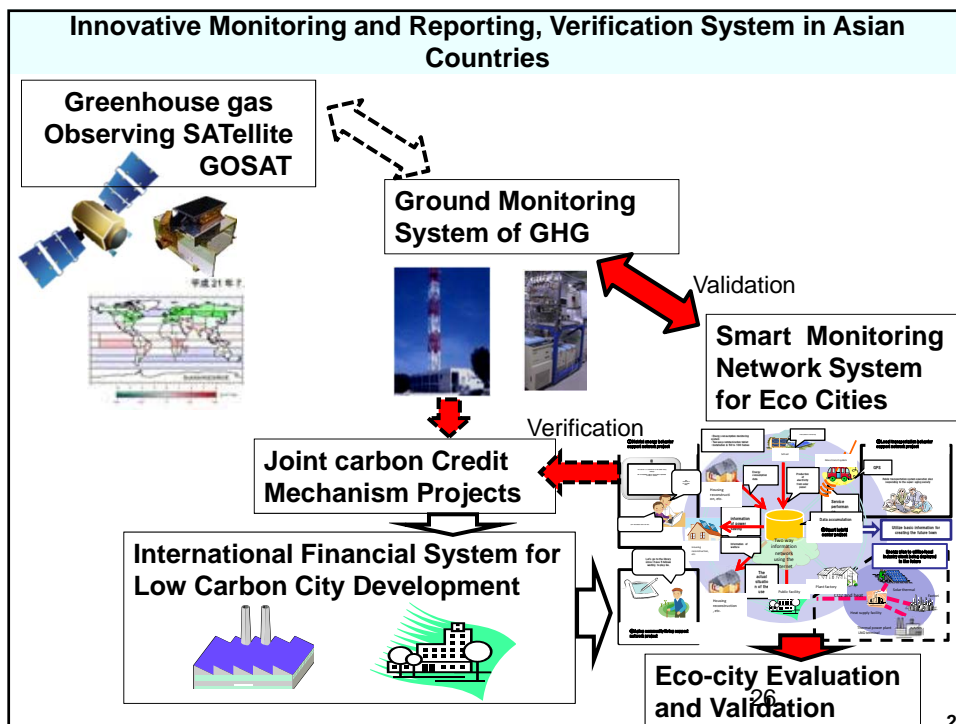






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25



Research Project of Local CO2 Future Tech-A; 2014-

- Integrative Assessment

to identify technology effects with policy system implementation focusing CO2 and other socio-environmental effects

- Inter-temporal Assessment

to identify the suitability of technology and policy packages based on the future targets and present situations

- Inter-Scale Assessment

to identify the suitability of technology and policy packages based on the future targets and present situations

- Interactive Assessment

to apply methodology and tools into local planning and decision making process for Fukushima Restoration plans after radio-active pollution removal

27

List or related publications

- Yong Geng, Fujita Tsuyoshi, Xudong Chen; Evaluation of Innovative Municipal Solid Waste Management through Urban Symbiosis: A Case Study of Kawasaki, Environmental Sci and Tech., 2009 (revised)
- Rene Van Berkel, Tsuyoshi Fujita, Shizuka Hashimoto, Minoru Fujii; Quantitative Assessment of Urban and Industrial Symbiosis in Kawasaki, Japan, Environmental Science & Technology, Vol.43, No.5, 2009, pp.1271-1281, 0129, 2009
- Rene van Berkel, Tsuyoshi Fujita, Shizuka Hashimoto, Yong Geng; Industrial and Urban Symbiosis in Japan: Analysis of the Eco-Town Program 1997-2006; Journal of Environmental Management, vol.90, pp.1544-1556, 2009
- Shizuka Hashimoto, Tsuyoshi Fujita, Yong Geng, Emiri Nagasawa; Achieving CO2 Emission Reduction through Industrial Symbiosis: A Case of Kawasaki, Journal of Environmental Management, 2008 (submitted)
- Yong Geng, Qinghua Zhu, Brent Doberstein, Tsuyoshi Fujita; Implementing China's Circular Economy Concept at the Regional Level: a review of progress in Dalian, China, Journal of Waste Management, vol.29, pp996-1002, 2009
- Yong Geng, Rene Van Berkel, Tsuyoshi Fujita; Regional Initiatives on Promoting Cleaner Production in China: A Case of Liaoning, Journal of Cleaner Production, 2008 (submitted)
- Zhu Qinghua, Yong Geng, Tsuyoshi Fujita, Shizuka Hashimoto; Green supply chain management in leading manufacturers: Case studies in Japanese large companies, International Journal of Sustainable Development and World Ecology, 2008 (submitted)
- Yong Geng, Pang Zhang, Raymond P. Cote, Tsuyoshi Fujita; Assessment of the National Eco-industrial Park Standards for Promoting Industrial Symbiosis in China, J. of Industrial Ecology, Vol.13, No.1, pp.15-26, 2008
- Looi-Fang Wong, Tsuyoshi Fujita, Kaiquin Xu; Evaluation of regional bio-energy recovery by local methane fermentation thermal recycling systems, Journal of Waste Management, vol.28, pp.2259-2270, 2008

Thank you for your Attention

28