

*Japan – UK Joint Research Project*

The 3<sup>rd</sup> Low Carbon Society

# Shiga's scenario for a sustainable society in 2030

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# Background behind the project

## Threats to the sustainability

(1) Problems are becoming more serious on a global scale

We are facing...  
Global warming  
Overuse of natural resources  
Ecosystem crisis

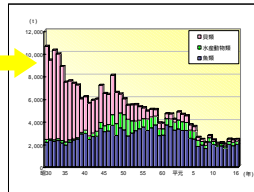
*If these continue...*

Climate change & extreme weather events  
Environmental damage  
Damage and loss to the economy/society  
Depletion of natural resources  
Destruction of the ecosystems

Affected by these global environmental problems...

(2) Transformation of Lake Biwa Basin

In Lake Biwa Basin:  
Decline in fish catch  
Spread of invasive species  
Accumulation of waste including CO2  
Our alienation from nature and the lake



Decreased water quality  
Destruction of the ecosystems



**Urgent and firm actions for building a sustainable society are needed**

**Vision in 2030**

**A resource-rich, secure and prosperous society where its natural environment – first and foremost, Lake Biwa' ecosystem – is protected, and citizens' well-being is being improved continually through sustainable development in environmental, social and economic dimensions.**

## Shiga in 2030

- From Vision to Reality :A scenario for a Sustainable Society in Shiga
- GHG emissions are halved by the renovation of social systems and technology.
- All industries develop in an environment-friendly manner.
- We live in harmony with Lake Biwa ecosystem and make wise use of natural resources.
- Compact urban development is carried out in appropriate scale and form.
- Social infrastructure improvement accelerates the use of public transportation.
- Lake Biwa retains an important role as a source of recreation for citizens. (Etc.)



Illustration: Akemi Imagawa

**By envisioning an ideal society and using a “backcasting approach”, we can identify policies and measures needed to attain the goals.**

## Goals

Building a low carbon society

**Reduce greenhouse gas emission by 50% from its 1990 level by 2030**

## Policies and Measures

- Building a low carbon society
  - Reduce our demand for energy
  - Use energy effectively
  - Shift to low-GHG energy sources
- Restore Lake Biwa healthy ecosystem
  - Conserve and protect sound ecosystems
  - Secure a sound aquatic environment
  - Restore lively relation between Lake Biwa and citizen

# Policies and Measures to achieve a Low Carbon Society

Policies and measures that can be enacted at the local level, based upon cutting-edge cases

Emission reduction by sector	Measures and Policies		
	Reduce demand for energy	Increase energy efficiency	Convert to low greenhouse gas producing energy sources
Household 1,132 (kt-CO <sub>2</sub> )	<input type="checkbox"/> Introduction of locally-based "Eco-Point" system <input type="checkbox"/> Promote the spread of long-lasting housing <input type="checkbox"/> Promoting environmentally-friendly housing that matches Shiga's environmental vision <input type="checkbox"/> Eco-drive promotion <input type="checkbox"/> Promotion of "cool biz"/ "warm biz" eco-friendly dress codes	<input type="checkbox"/> Enaction of household-based ESCO project <input type="checkbox"/> Maintaining housing complexes to ensure efficient land use <input type="checkbox"/> Promoting increased greenery in residential properties <input type="checkbox"/> Promoting improved insulation and energy reduction of houses <input type="checkbox"/> Support for HEMS introduction <input type="checkbox"/> Promoting introduction of hybrid cars and trains <input type="checkbox"/> Promoting use of light cars	<input type="checkbox"/> Promoting introduction of renewable energy sources <input type="checkbox"/> Promoting introduction of cars using renewable energy sources
	<input type="checkbox"/> Network with global warming prevention committee members to fight global warming		
	<input type="checkbox"/> Promote education and awareness of environmental issues		
	<input type="checkbox"/> Promote eco-friendly housekeeping books and institute award system		
	<input type="checkbox"/> Provide information on eco-housing		

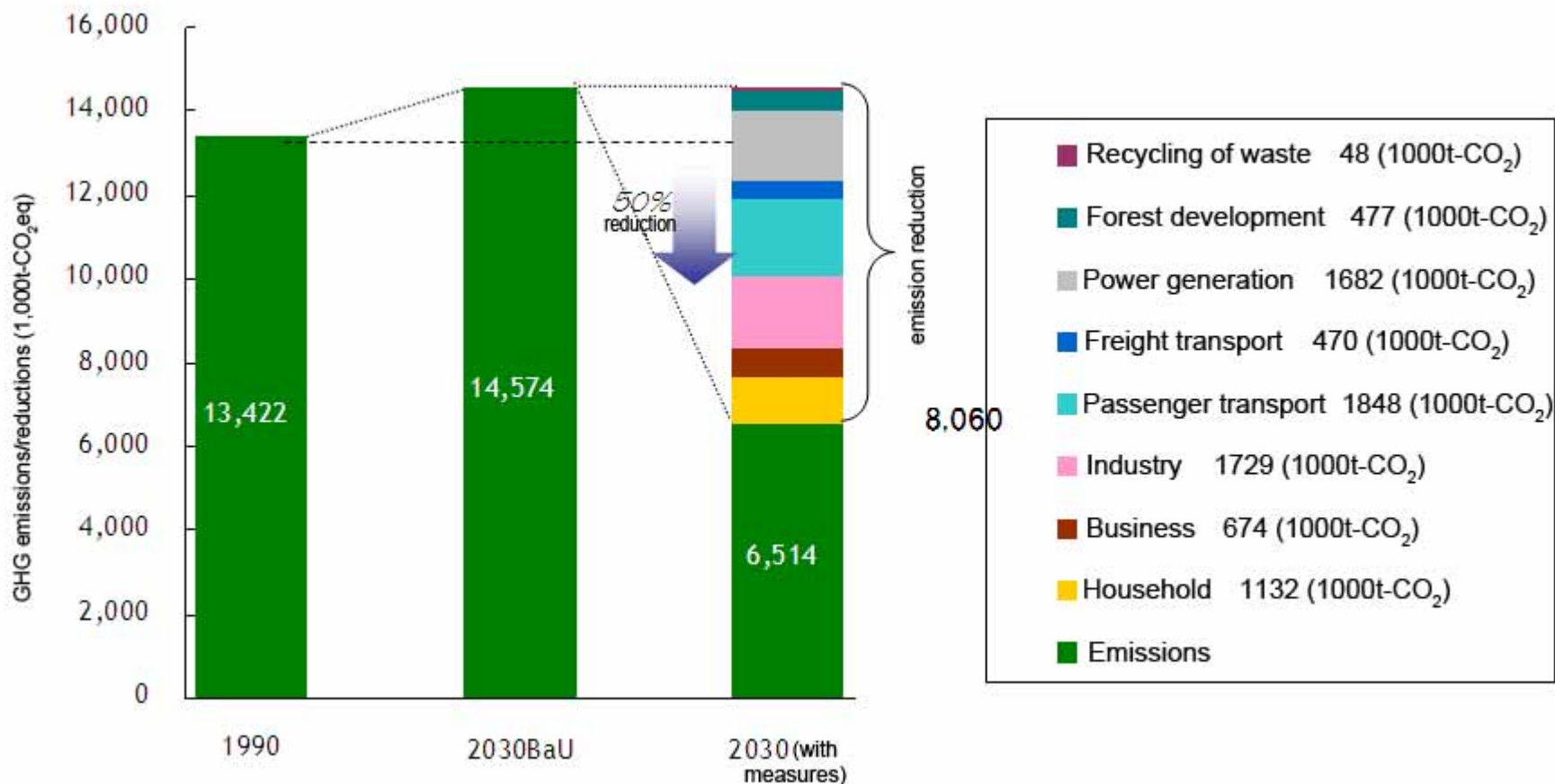
Emission reduction by sector	Measures and Policies		
	Reduce demand for energy	Increase energy efficiency	Convert to low greenhouse gas producing energy sources
Business 674 (kt-CO <sub>2</sub> )	<input type="checkbox"/> Eco-drive promotion <input type="checkbox"/> Encouraging retailers to locate businesses in city centers; discouragement of relocation to suburbs <input type="checkbox"/> Promotion of "cool biz"/ "warm biz" eco-friendly dress codes	<input type="checkbox"/> Support for ESCO introduction <input type="checkbox"/> Support for BEMS introduction <input type="checkbox"/> Support for businesses seeking to reduce their burden on the environment <input type="checkbox"/> Promotion of replacement purchase of new equipment with the "Top Runner" system <input type="checkbox"/> Promoting greenification of building roofs and walls <input type="checkbox"/> Promoting introduction of hybrid cars and trains <input type="checkbox"/> Promoting use of light cars	<input type="checkbox"/> Promoting introduction of renewable energy sources <input type="checkbox"/> Promoting introduction of cars using renewable energy sources
	<input type="checkbox"/> Promotion of "cool biz"/ "warm biz" eco-friendly dress codes	<input type="checkbox"/> Support for industries in reducing their burden on the environment	<input type="checkbox"/> Promoting introduction of renewable energy sources
Industry 1,729 (kt-CO <sub>2</sub> )	<input type="checkbox"/> Support for research of carbon-reducing technology		
Transport (Passenger) 1,848 (kt-CO <sub>2</sub> )	<input type="checkbox"/> Eco-drive promotion <input type="checkbox"/> Park-and-Ride <input type="checkbox"/> Promoting use of public transportation <input type="checkbox"/> Introduction of bicycle taxis <input type="checkbox"/> Compact cities	<input type="checkbox"/> Encouragement of carpooling in concentrated residential areas <input type="checkbox"/> Monitoring and public announcement of actual fuel consumption <input type="checkbox"/> Promoting introduction of hybrid and electric cars	<input type="checkbox"/> Promoting introduction of cars using renewable energy sources <input type="checkbox"/> Introduction of cruise ships using renewable energy sources

# Policies and Measures to achieve a Low Carbon Society

Emission reduction by sector	Measures and Policies		
	Reduce demand for energy	Increase energy efficiency	Convert to low greenhouse gas producing energy sources
Transport (Freight) 470 (kt-CO <sub>2</sub> )	<input type="checkbox"/> Promote non-automobile-reliant transport <input type="checkbox"/> Eco-drive promotion <input type="checkbox"/> Reduce "food mileage" through local production, local consumption <input type="checkbox"/> Reduce "wood mileage" through local production, local consumption		
Common to all sectors	<input type="checkbox"/> Comprehensive efforts to prevent global warming (Global Warming Prevention Ordinance, etc.) <ul style="list-style-type: none"> <li>Establishment of goals and policies to reduce CO<sub>2</sub> emissions in various sectors</li> <li>Formulate and publicly release emission reduction propositions</li> <li>Mandatory cooperation with local government</li> <li>Energy-reduction agreement for 24-hour business operators</li> </ul> <input type="checkbox"/> Promotion of green purchasing <input type="checkbox"/> Introduction of a locally-based carbon offset system <input type="checkbox"/> Environmentally-friendly operation of public works projects		
Energy providers 1,682 (kt-CO <sub>2</sub> )			

Emission reduction by sector	Measures and Policies		
	Reduce demand for energy	Increase energy efficiency	Convert to low greenhouse gas producing energy sources
Non-energy emissions 48 (kt-CO <sub>2</sub> )	<input type="checkbox"/> Promotion of recycled products accreditation system <input type="checkbox"/> Promotion of waste products 3R (Reduce, Reuse, Recycle) system <input type="checkbox"/> Promote recycling of construction materials <input type="checkbox"/> Recall and proper disposal of CFCs <input type="checkbox"/> Promotion of Shiga tax on waste materials <input type="checkbox"/> Support of R&D for technologies to reduce industrial waste <input type="checkbox"/> Support of R&D for wastewater treatment technologies		
Increase of carbon absorption 477 (kt-CO <sub>2</sub> )	Secure carbon sinks (forested areas, etc.) <input type="checkbox"/> Establish local production, local consumption of lumber <input type="checkbox"/> Promote the spread of wooden houses <input type="checkbox"/> Maintaining forested areas		
Total 8,060 (kt-CO <sub>2</sub> )			

# GHG emissions and reduction by sectors



*note.* Bau (“Business as Usual”) depicts the case in which no additional measures were taken to reduce CO<sub>2</sub> emissions

(source) This graph was originally created by the Shiga Prefecture Sustainable Society Research Team

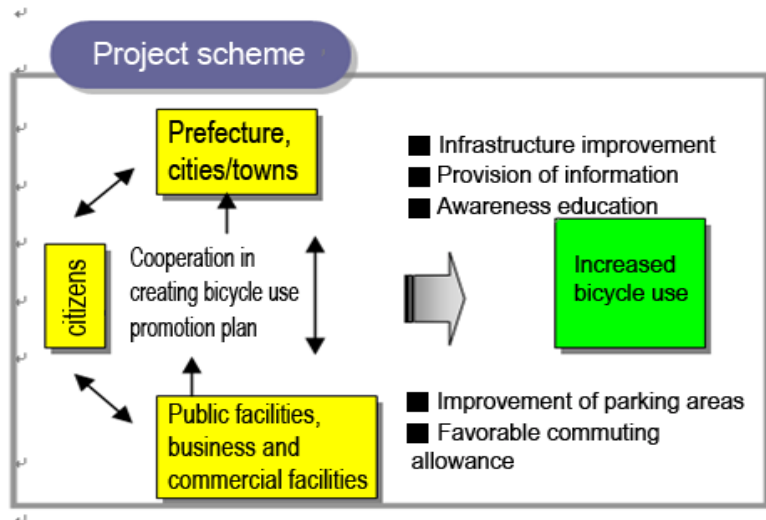
# Actions for a low carbon society

## Sustainable transportation and compact cities

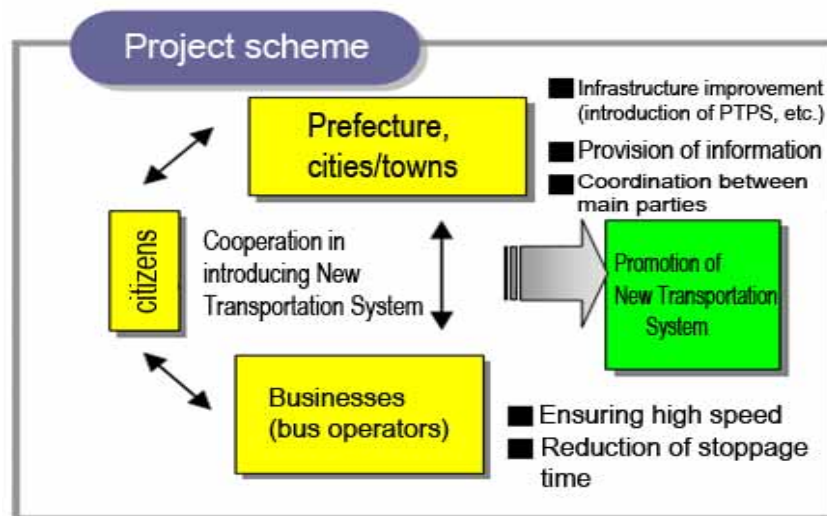
To encourage peoples to switch from private cars to less GHG-producing transportation methods, we promote use of bicycles and the introduction of the “New Transportation System”

Future tasks also include building compact cities and the introduction of Light Rail Transit (LRT).

### <Promotion of bicycle use>



### <“New Transportation System” (using buses)>



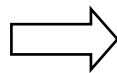
### Further efforts and implementations

A sustainable transportation system



Introduction of LRT

Sustainable community building



Compact cities

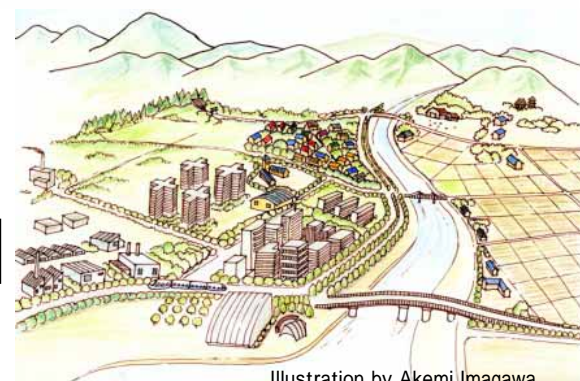


Illustration by Akemi Imagawa