



Future City Kitakyushu's Energy-related Efforts

Oct 30, 2015

北九州市
City of Kitakyushu

Outline of Kitakyushu: Geographical Excellence and Blessed with Nature

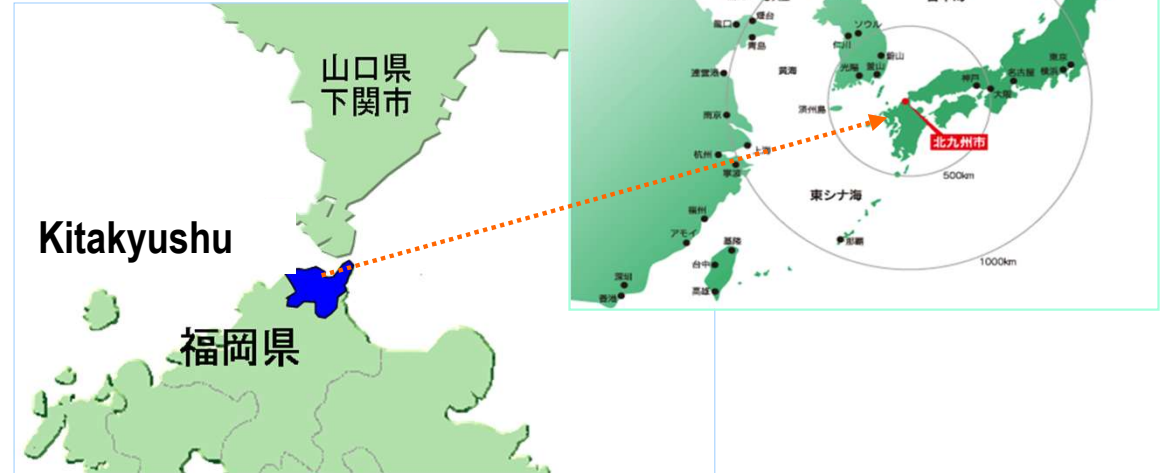


Asia's Gateway

Basic Data of Kitakyushu

- Area : 489.60km²
- Population : 958,669
- Dwellings : 430,166

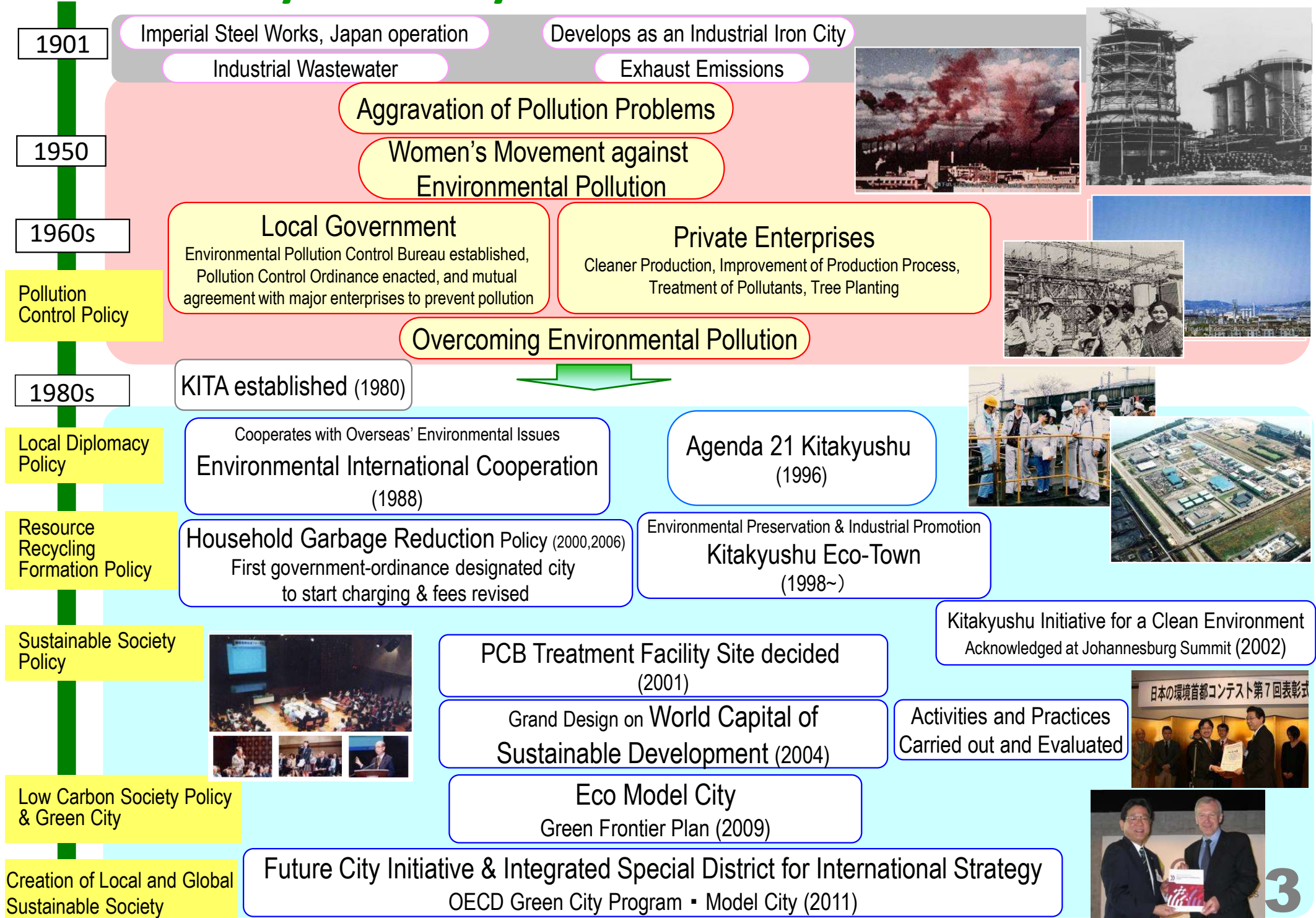
(As of August 1, 2015)



- Located in the West end of the Japanese archipelago, Northernmost of Kyushu Island ⇒ Asia's Gateway
- A manufacturing city boasting integrated industries and technologies ⇒ iron and steel, literature, machinery, ceramics, IC
- A city blessed with rich nature ⇒ with 210km of coastlines, and forest making up approximately 40% of the city



History of Kitakyushu's Environmental Policies



About Eco Model City



《An Eco Model City is...》

A city that takes on the challenge of being pioneers to progress towards the creation of an environmentally friendly and low carbon society, through efforts such as **drastically reducing greenhouse gas emissions**

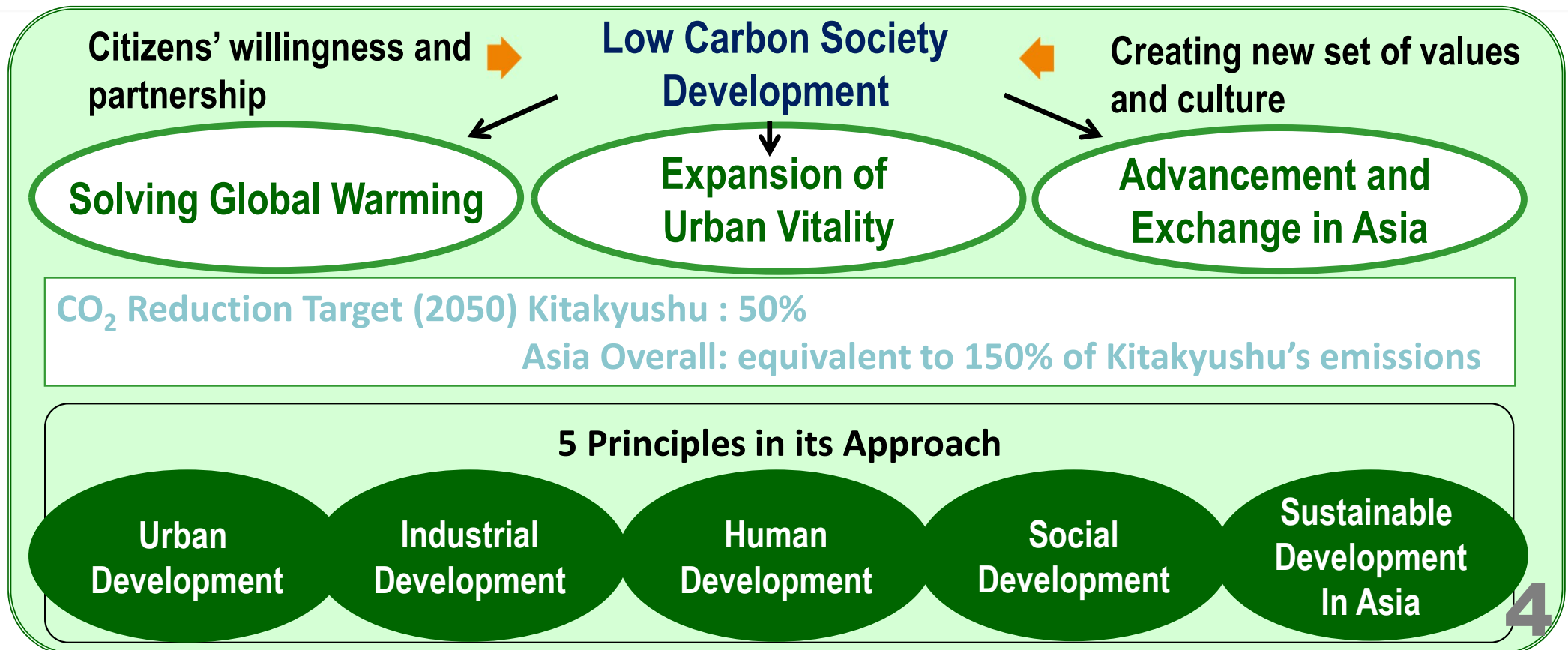
A city it hopes to be:

A 'resource-based' society: build a society with prosperity accumulated over generations

A 'low carbon society': utilize industrial infrastructure

A 'society responding to decreasing birthrate and aging society': create an elderly and child friendly society

'International Environmental Cooperation': contributing to promote international cooperation for Asian Sustainable Development



Kitakyushu's Leading Energy Policies



Energy-related tasks shared by developed countries

Energy-related policies to respond to climate changes
Encouraging energy conservation & CO2 reduction
Diversifying types of energy sources incl. renewable energy
Enhancing energy security

Innovative schemes suggested to overcome these tasks

Creating various energies deriving from renewable energy sources

Implementing hydrogen society

A 'Smart Community' where energy can be cleverly consumed

Innovative approaches taken by Kitakyushu

Kitakyushu Regional Energy Hub Promotion Project

Initiating distribution of various energies (general showroom)

Kitakyushu 'Smart Community' Creation Project

Implementing energy management involving citizens, such as regional power-saving plants

Kitakyushu Hydrogen Town

The first demonstration on a community scale in the world

Kitakyushu Smart Community Creation Project



Implementing Citizen Participation Energy Management with a focus on Regional Power-Saving Plants

- Employing cutting-edge energy-saving equipment originating from regional power-saving plants
- Establishing mechanisms that combine energy demands and supply
- Peak cut by 20% with dynamic pricing
- More than 50% reduction of CO2
- Community platform connecting people
- Only ISGAN Finalist from Asia

SMART SPOT



Basic Data of Higashida District

- Area: 120ha
- No. of persons in employment: approx. 6,000
- No. of residents: approx. 900
- No. of companies: approx. 210
- Annual visitors: approx. 1 million

Characteristics

- Specific energy and power distribution area (H17~)
- Social experiment utilizing by-product hydrogen (H20~)



Specific energy and power supply,
By-product hydrogen-based social experiment, and
Kitakyushu Smart Community Creation Project in

Factories and Town-Coexisting Urban Development

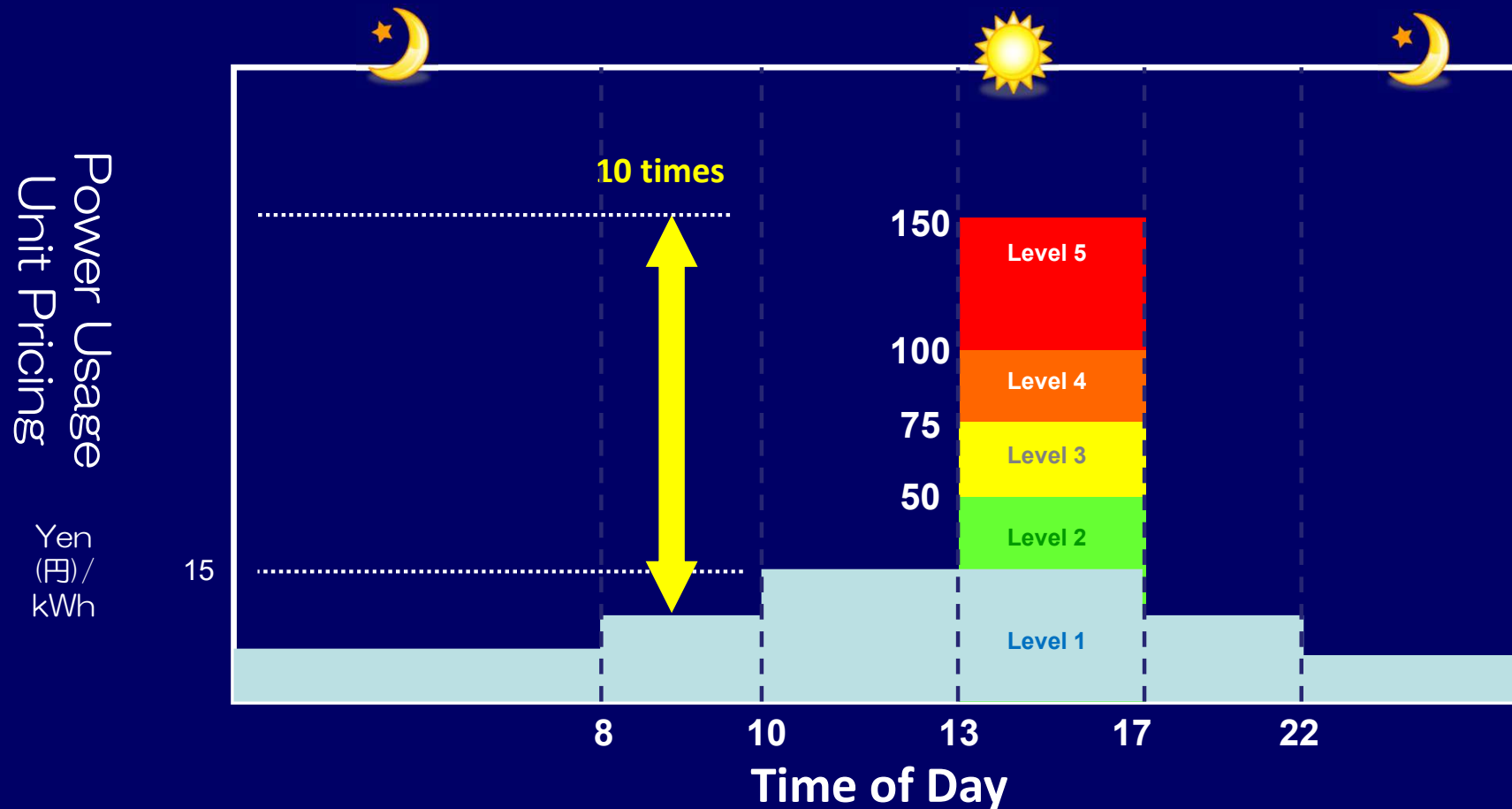
Participants

- Approx. 200 households
- Approx. 50 companies

Example of Dynamic Pricing (DP)

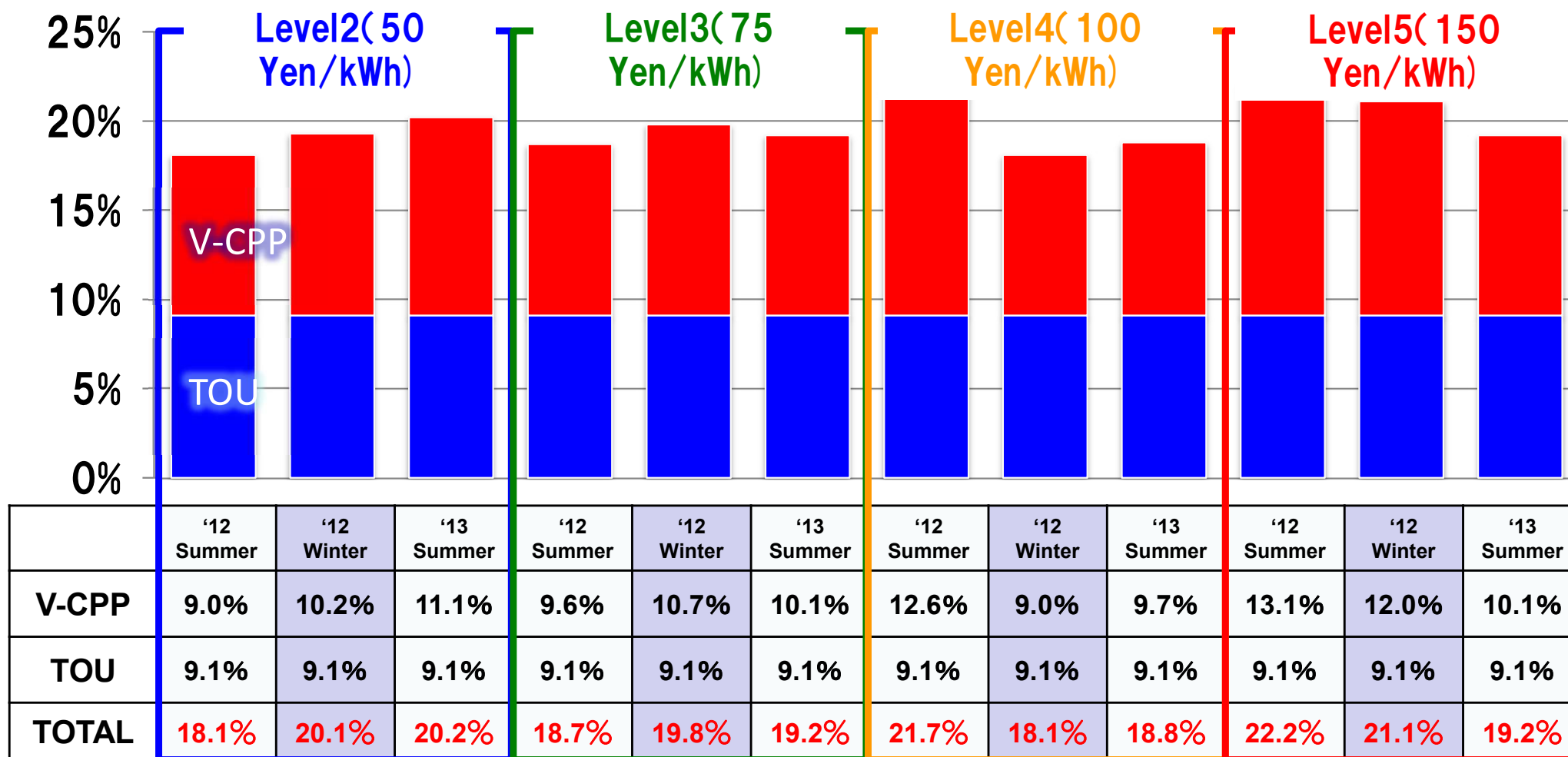


Dynamic Pricing for Summer 2022



- June – September
- When the highest temperature expected for the next day is over 30 degrees Celsius, power consumer is notified after 2 o'clock in the afternoon
- 48 times (actual outcomes: 40 times)

Effects of Dynamic Pricing (DP)



- Observed **approximately 20%** peak-cut results throughout summer to winter
- Although **price elasticity demand** caused by peak-cut results following the cost increase **was detected in the summer of 2012**, with the continued verification process, price elasticity disappeared.

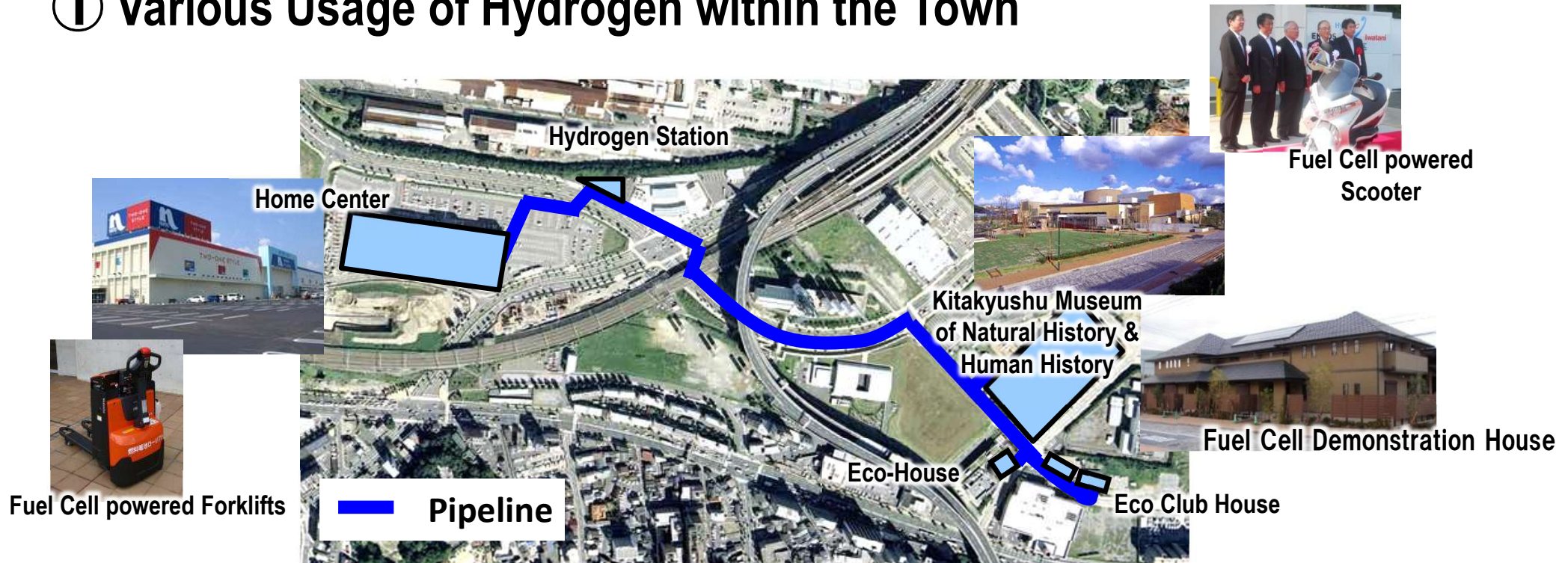
(v-CPP (variable Critical Peak Pricing) . . . the dynamic pricing plan
 TOU (Time Of Use) . . . seasonal pricing plan (pricing plan that has been applied to
 primarily all-electric dwellings)

Kitakyushu Hydrogen Town

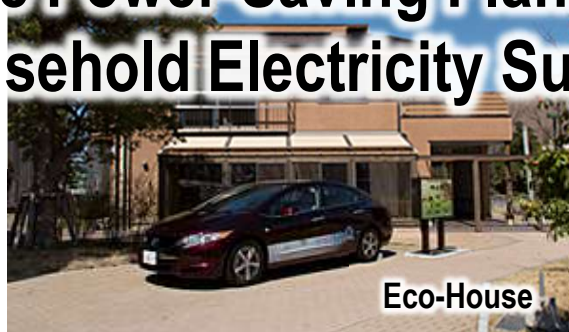


The first demonstration on a community scale in the world

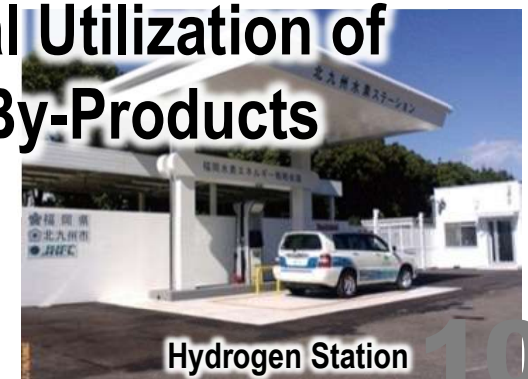
① Various Usage of Hydrogen within the Town



② Mobile Power-Saving Plant: FCV Household Electricity Supply



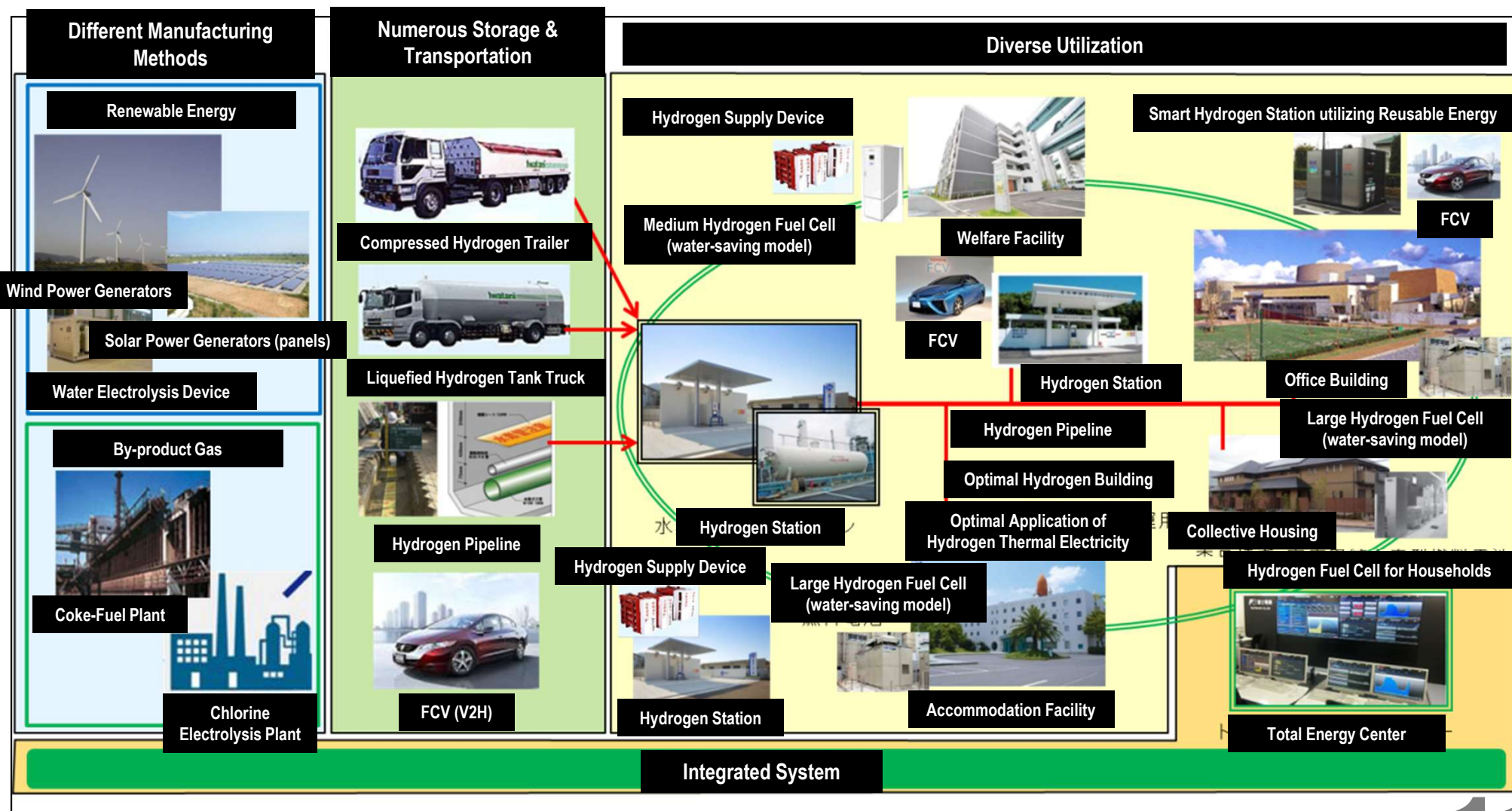
③ Regional Utilization of Hydrogen By-Products



Kitakyushu's Hydrogen Strategies



An optimum city complete with a variety of storage & transportation facilities combined with diverse utility, and a stable and affordable hydrogen supply chain.



Various projects conducted across Asia



Through 93 projects, Kitakyushu is advancing as a smart city in Asia

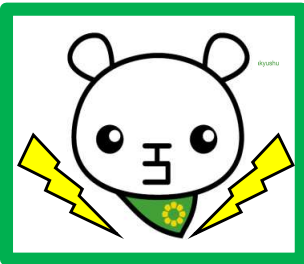
- November 2012 Signs Green Sister City Agreement with Surabaya, Indonesia (exporting life infra, including energy, water treatment, waste treatment)
- April 2014 Signs **Sister City Agreement** with **Haiphong, Vietnam** (introducing 'advanced water treatment technology' in the area of water supply area to the locals)
- July 2014 Commenced correspondence with cities in China (Shanghai, Wuhan, Tangshan and Tianjin) for the purpose of improving China's air pollution

85 Japanese companies are conducting affiliated projects in 49 cities in across Asia





About G7 Kitakyushu Energy Ministerial Meeting



G7 Kitakyushu Energy
Ministerial Meeting will be held!

1-2 May 2016

Kitakyushu wants to share its efforts with the world

- ❑ Green Energy Port Hibiki Project
 - A general hub for wind power generation industries
- ❑ Regional Energy-based Promotion Project
 - Accelerating high efficiency thermal generation and offshore wind power generation locations
- ❑ Hydrogen-related Project
 - Developing the Kitakyushu Hydrogen Town into an enterprise

