# Panasonic’s smart city initiative

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# Contents for today

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- Another large smart city project in Japan

# Short introduction of me

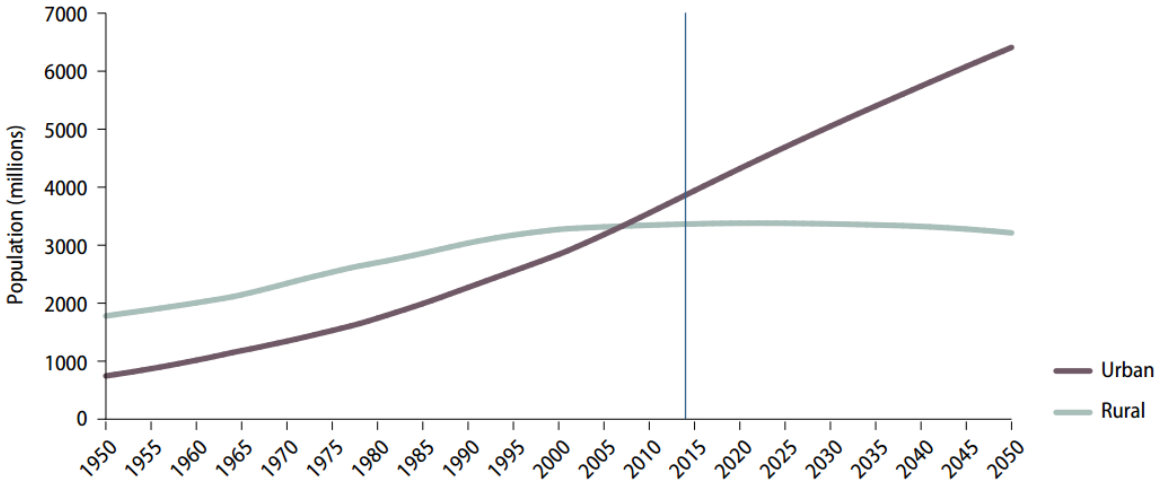
- Worked for the Japan Newspaper Publishers & Editors Association (4 years)
- PhD from Keio University's Graduate School of Media and Governance
- Visiting international student at the University of Georgia (Athens, USA)
- Studied ICT use in local governments under a natural disaster
- Moved to Norway, University of Agder (3 years)
- Involved in EU Horizon 2020 project, SMR (Smart mature resilience)
- Back to Japan summer 2018

- Academic background: policy management

- A Smart City provides effective *integration* of **physical, digital and human systems** in the built environment to deliver a sustainable, prosperous and inclusive future for its citizens.

BSI PAS 180 - Smart Cities Vocabulary

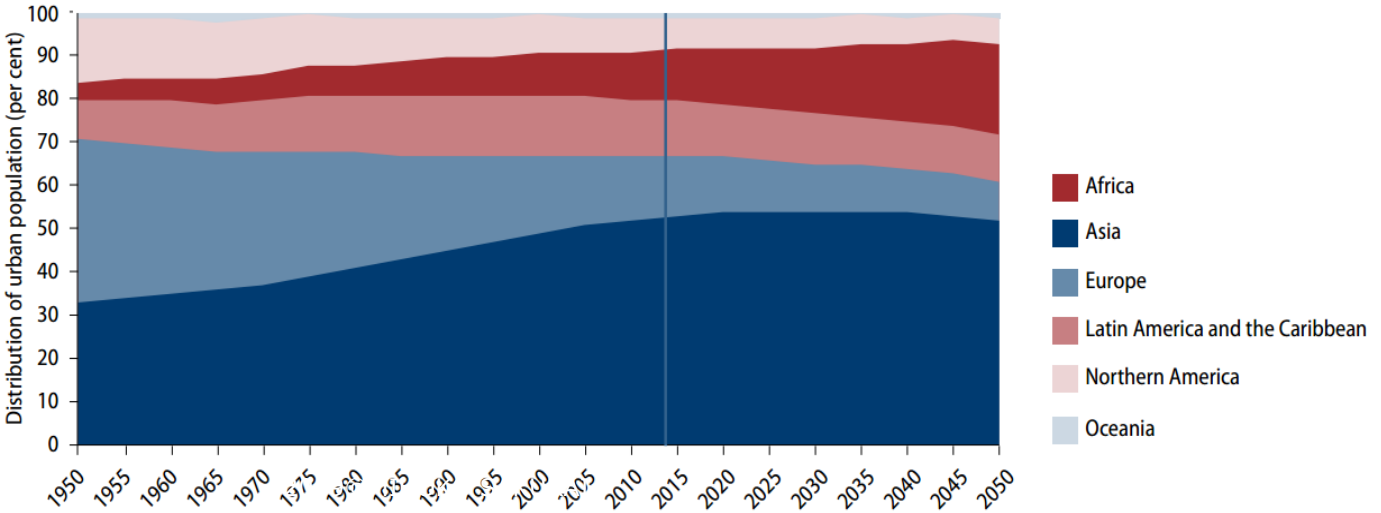
# Background of SC initiatives




54 percent of the world's population now live in cities increasing from 30 percent in 1950.

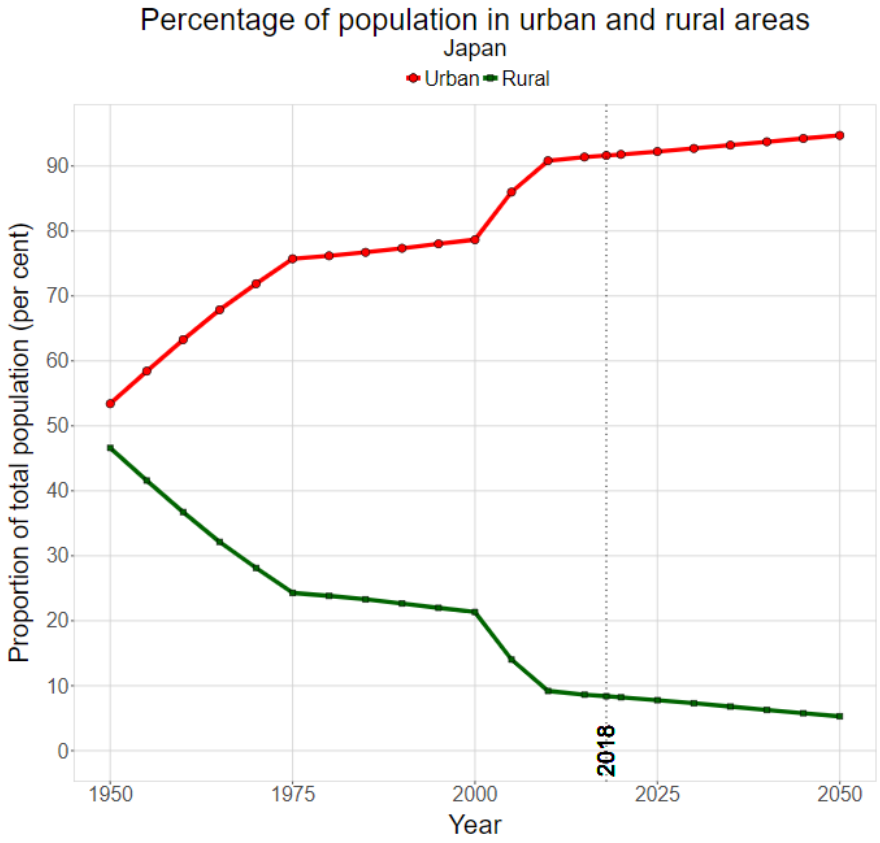
In most places urbanization is expected to continue in the next years.

By 2050, 66 per cent of the world's population is projected to be urban.



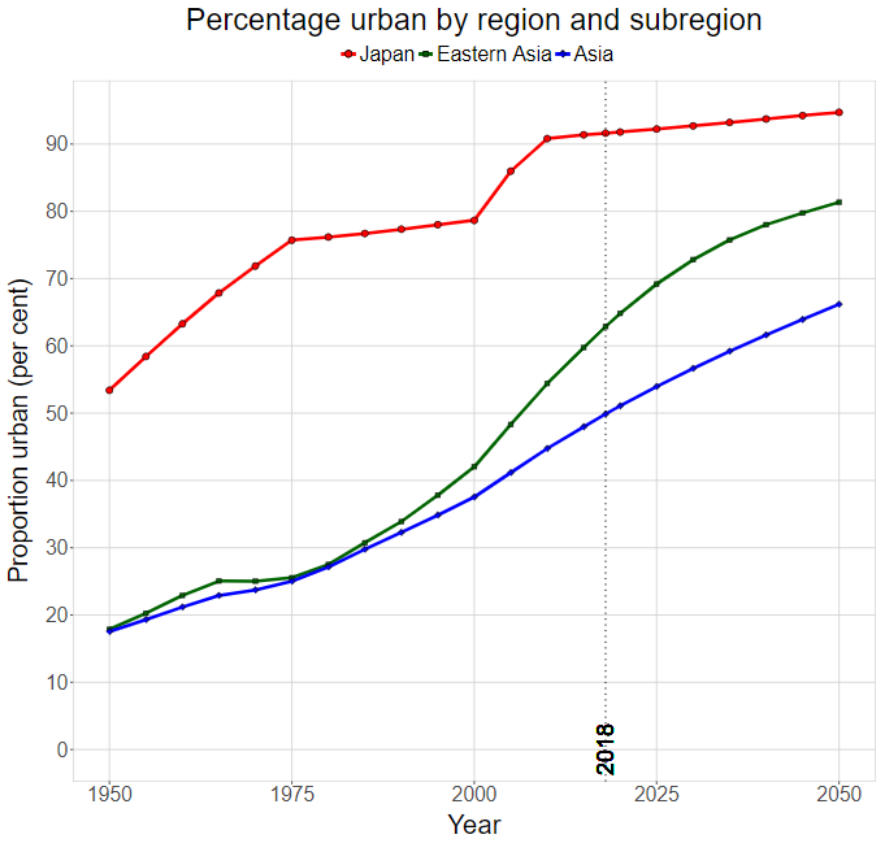

Source: World Urbanization Prospects, United Nations, 2014 Revision

# Situation in Japan






***Note:*** Urban and rural population in the current country or area as a percentage of the total population, 1950 to 2050.



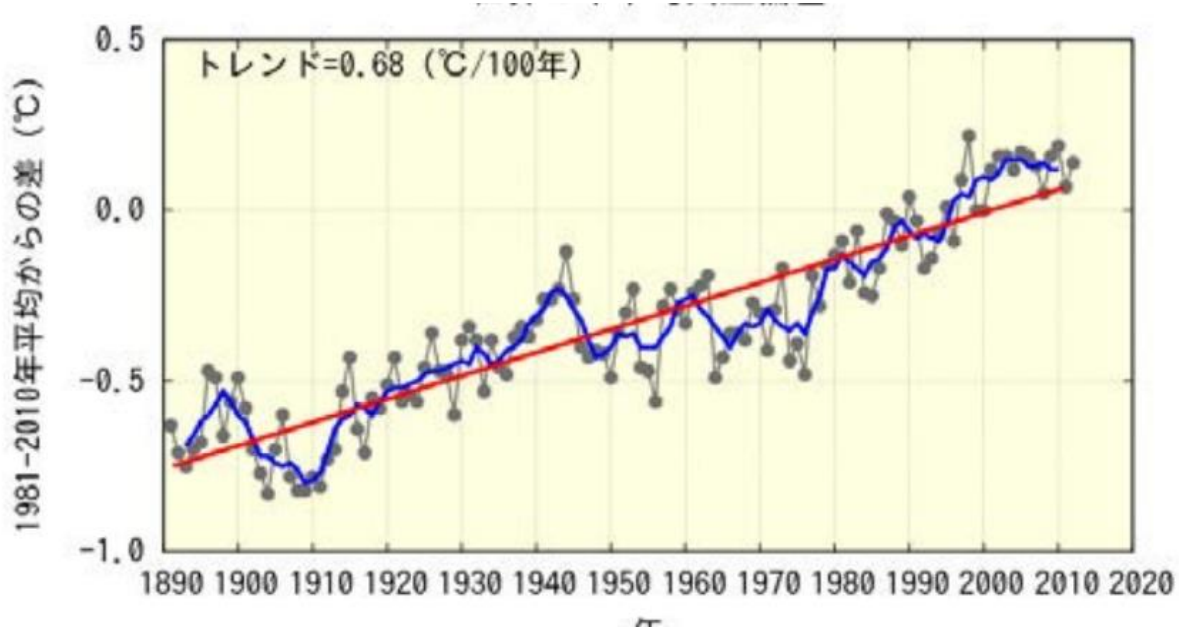



***Note:*** Proportion of urban population in the current country as compared to its subregion and region. The proportion is expressed as a percentage of the total population, 1950 to 2050.

United Nations, Department of Economic and Social Affairs, Population Division: World Urbanization Prospects 2018. (https://esa.un.org/unpd/wup/Country-Profiles/)

# Background of SC initiatives

- Average temperature in the past 100 yearts

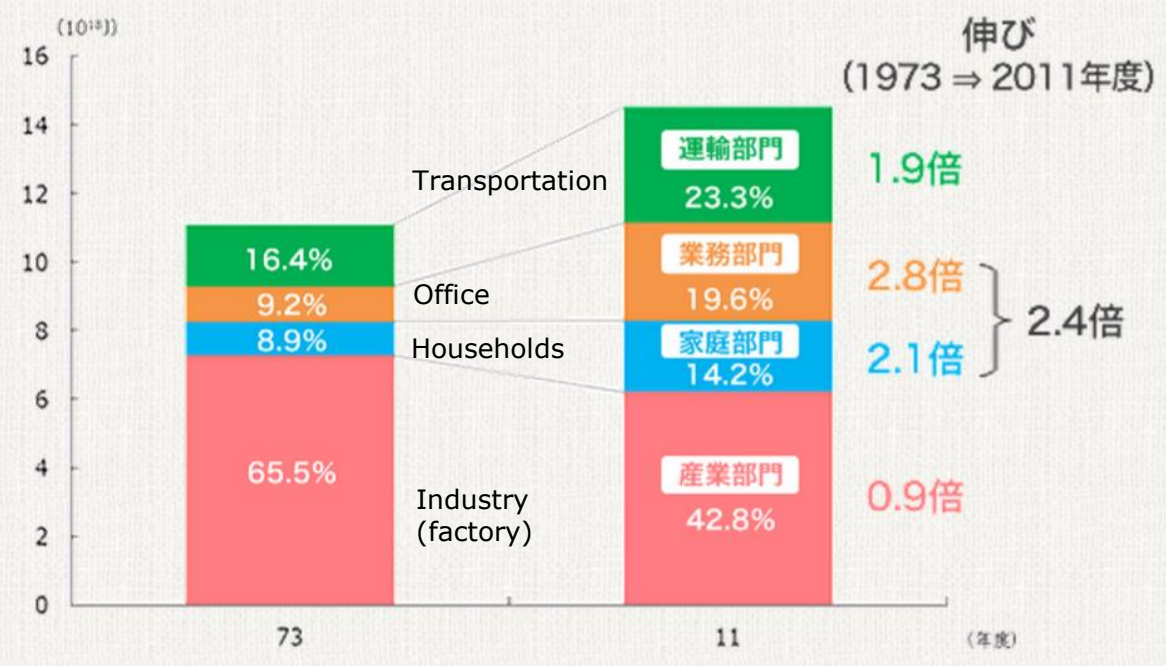



+0.68 ℃

Source：Ministry of Environment, Japan, 2013

# Background of SC initiatives

- Energy consumption trend (1973-2011) in Japan



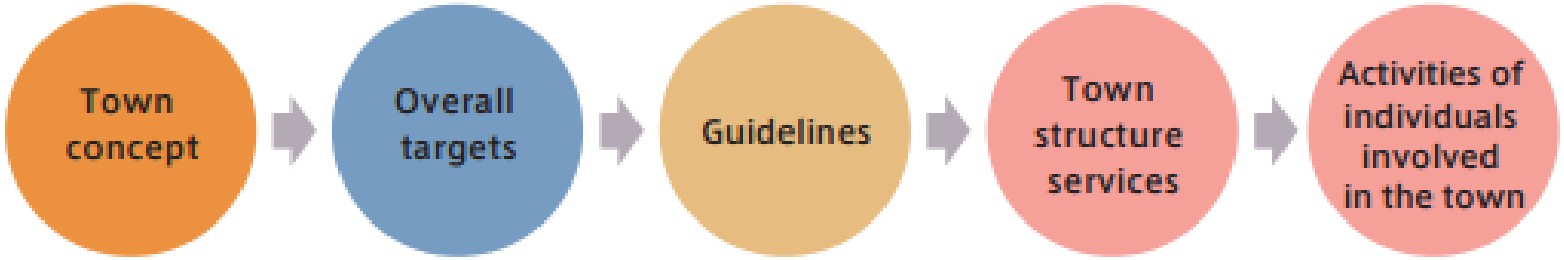

Source：Agency for Natural Resources and Energy, Japan, 2013

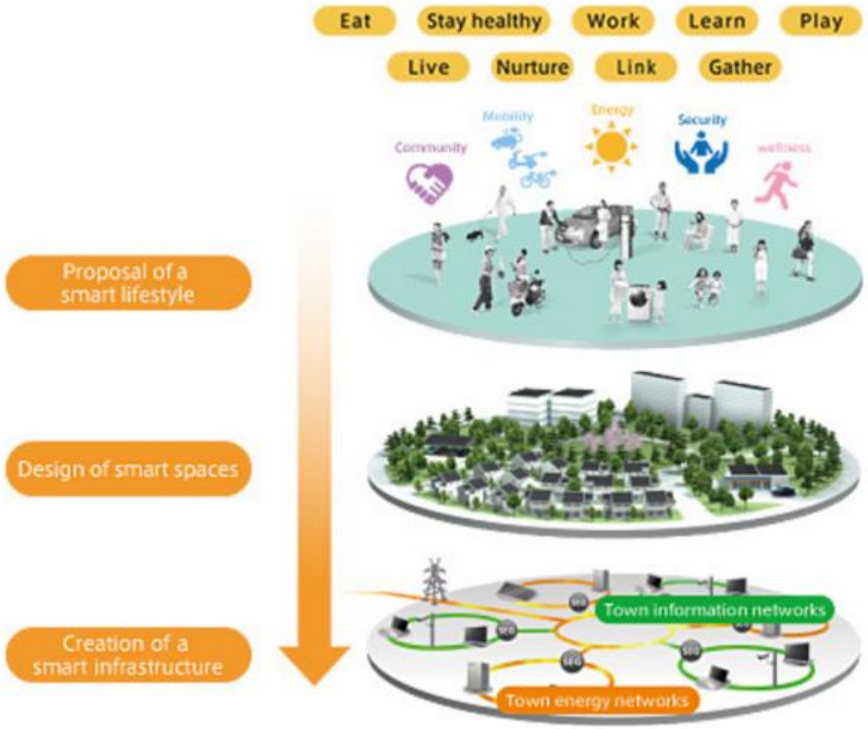
# Fujisawa Sustainable Smart Town

http://fujisawasst.com/EN/movie/

# Town overview

- Time frame: 100-year
- Number of detached houses: 1,000
- Population size: 3,000
- Facilities
  - Committee Center
  - Commercial facilities (shops, offices, incubation center)
  - Wellness Square (elderly care, nursery school)
  - Community Solar Power Generation System
  - Delivery Center



# Town design concept

1) What kind of lifestyle would be appropriate for residents to embrace the smart life?
2) What kind of space would such a lifestyle require to allow one to call it smart?
3) What kind of technology and infrastructure would be required to build this space ?

<9 keywords for living in the town>

Eat, work, learn, nurture, play, keep healthy, gather, connect

# Overall target (in terms of energy self-sufficiency)

1) Reduce CO2 emissions by 70 % compared to the 1990s
2) Reduce water usage by 30 % compared to 2006
3) Increase in reusable energy use up to 30 %
4) Secure 3 days worth of emergency kits (lifeline)

Energy

Mobility

Security

Wellness

Community

# Fujisawa SST Council

## Lead organizer

Panasonic Corporation

## Organizers

Gakken Holdings Co., Ltd.
Gakken Cocofump Holdings Co., Ltd.

Culture Convenience Club Co., Ltd.

Koyama medical & welfare group

Dentsu Inc.

Tokyo Gas Co.,Ltd.

PanaHome Corporation

NIPPON TELEGRAPH AND TELEPHONE EAST CORPORATION

Sumitomo Mitsui Trust Bank, Limited

MITSUI & CO., LTD.

Mitsui Fudosan Co.,Ltd.
Mitsui Fudosan Residential Co.,Ltd.

Yamato Transport Co., Ltd.

## Members

AIN PHARMACIEZ INC.

Accenture

SUNAUTAS Co.,Ltd.

SOHGO SECURITY SERVICES CO.,LTD.

## Advisory board

Keio Research Institute at SFC

Tokyo Electric Power Company, Incorporated (TEPCO)

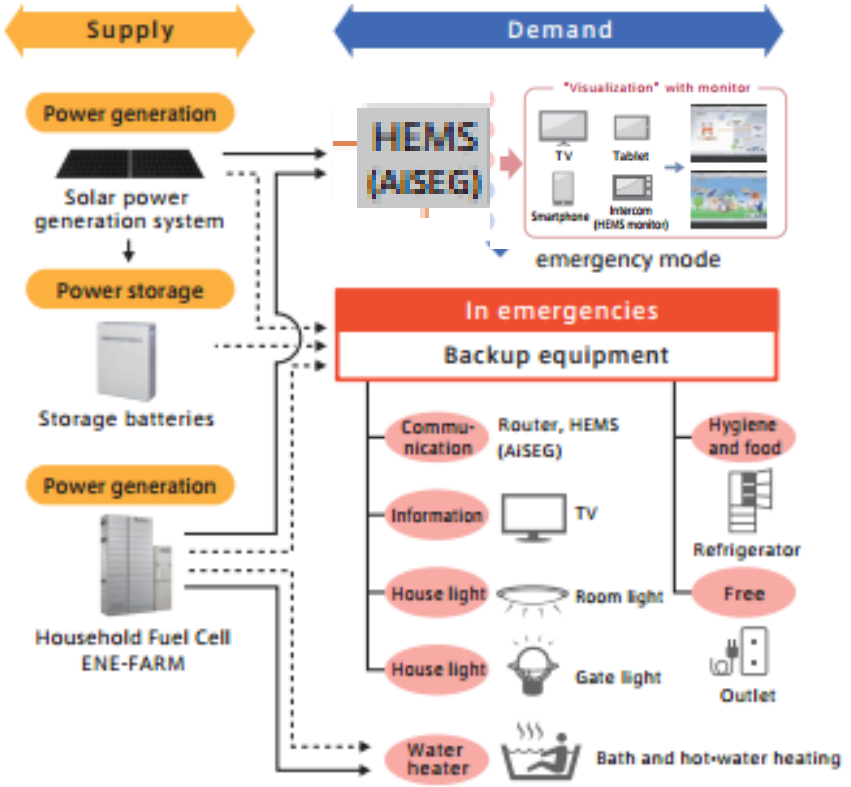
NIHON SEKKEI, INC.

Fujisawa City

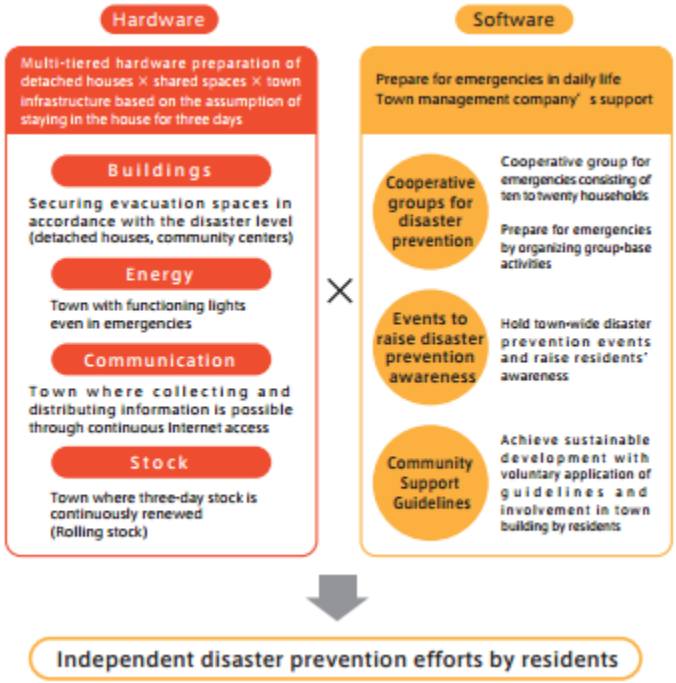
Fujisawa SST Management Company

# Energy


Conceptual image of emergency backup power supply system for detached houses




Hardware and software preparation for emergencies



# Security

ter prevention purposes by ensuring safety in emergencies. In addition to monitoring by cameras, a certain number of street lights will remain illuminated to ensure safety, and house entrance lights as well as room lights will provide faint street lighting.



Surveillance camera

Linked to a system

LED Street lights with sensors

Security concierges




※The above is a conceptual image.

# Mobility

**Fujisawa SST residents**

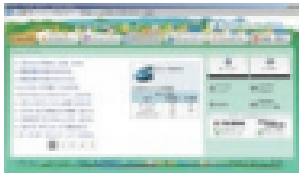
Inquiries and reservations ↓ ↑ One-stop service

## Total mobility service center

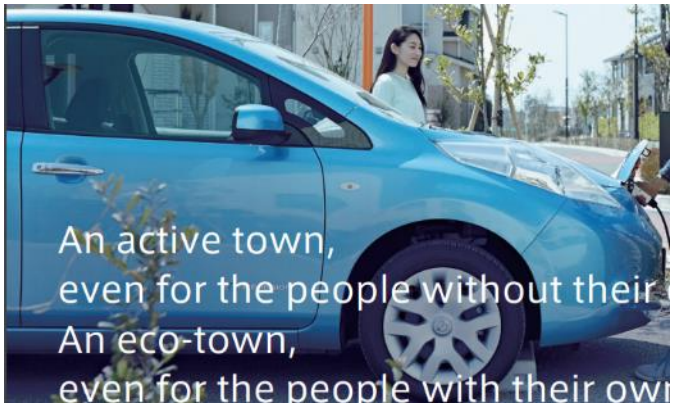
- Car and bicycle sharing
- Rental cars and their delivery
- Environmental automobile inspections and maintenance
- Purchase of used cars
- New and used car sales
- Insurance window

Streets are narrow in Kamakura. Electric scooters are convenient to avoid traffic jams.

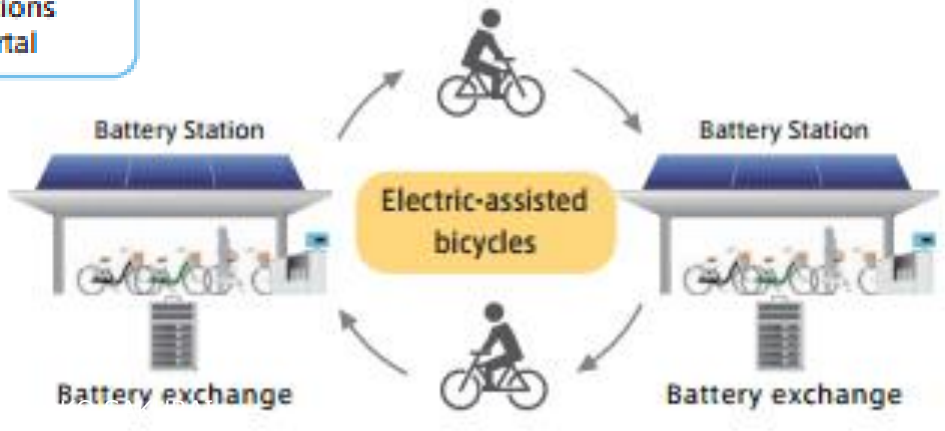
Advice from concierge



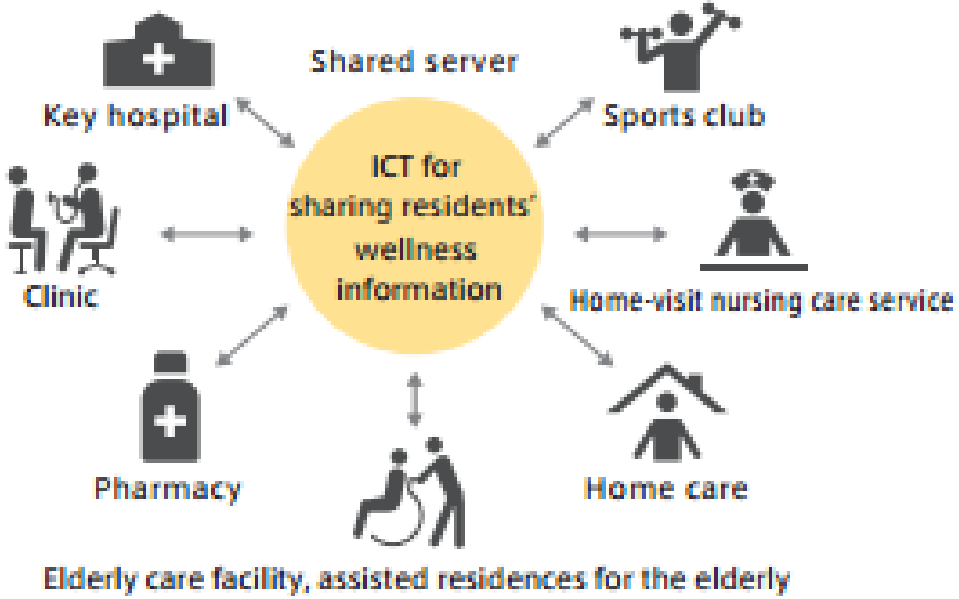
Getting information and making reservations via the town portal



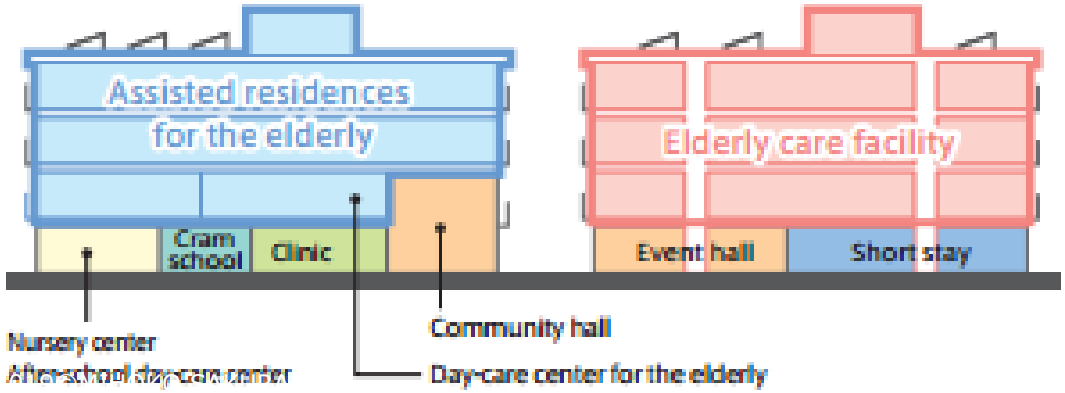




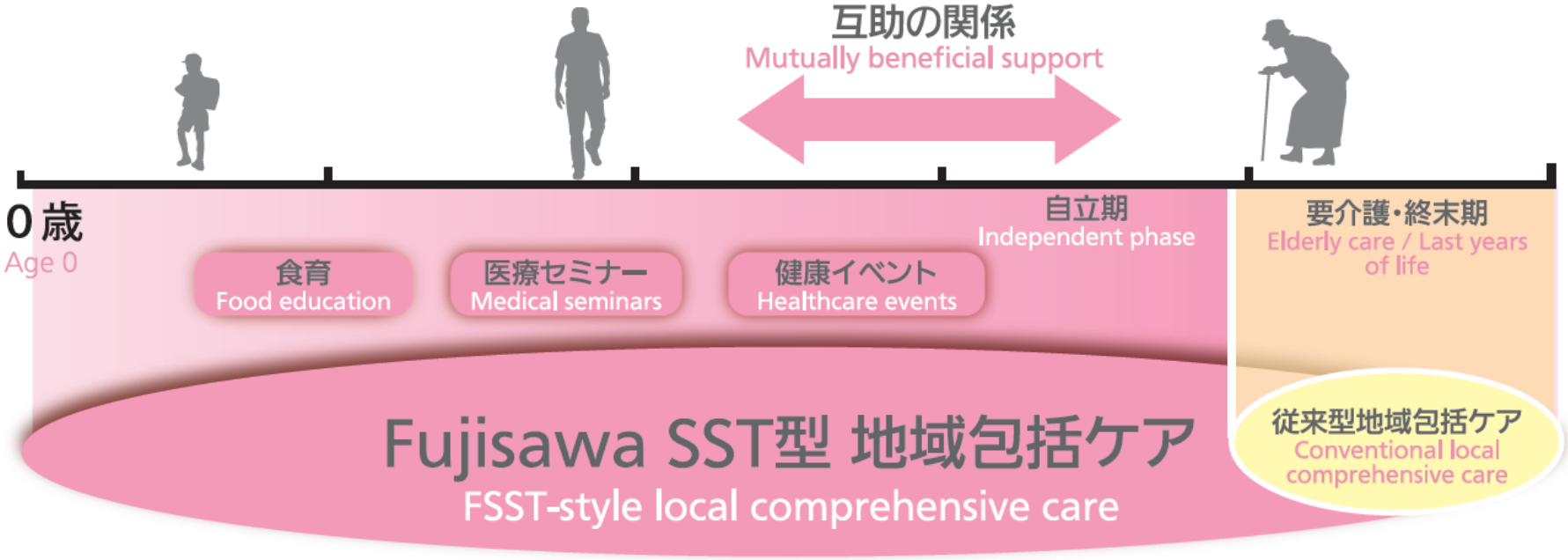
# Wellness




Elderly care facility, assisted residences for the elderly

# FSST型地域包括ケア
## FSST-style local comprehensive care

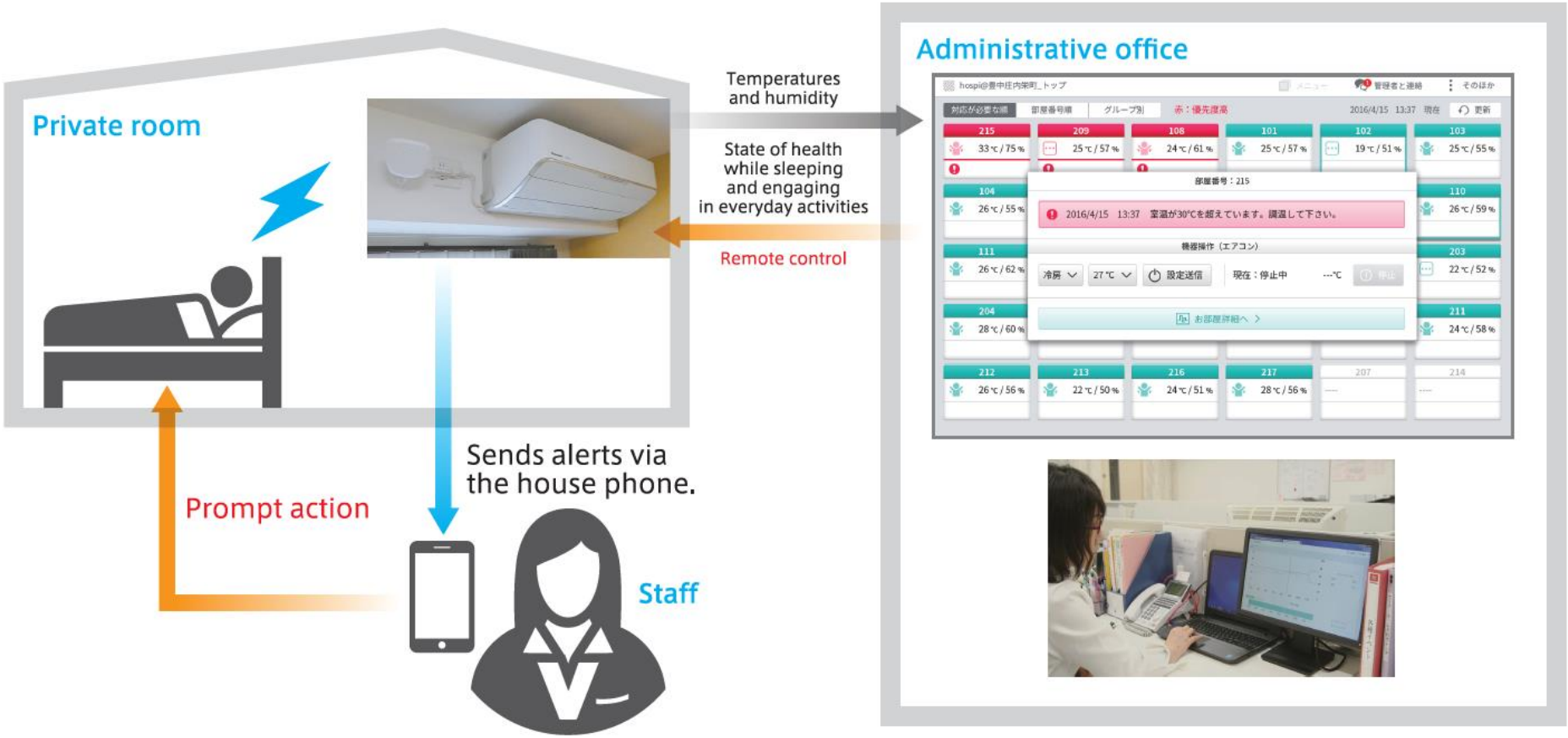



- 介護／医療／看護のシームレスな情報連携により最適なサービスを提供
- 住民へのヘルスケア教育を発信、世代を問わない未病教育への取り組み（神奈川県未病センター 認証）
- 互助の関係を育む環境づくり

- Provides the best possible care through the seamless cooperation of elderly care / medical care / nursing care providers.
- Provides healthcare education to local residents. Undertakes initiatives to help people stay healthy regardless of age. (Certified by the Kanagawa Mibyo Center.)
- Creates an environment where mutually beneficial support is encouraged.


## Smart air conditioner monitoring service

Based on the combination of an air conditioner compatible with a cloud service and a non-contact sensor, this system keeps an eye on residents' health and safety by detecting information about their living spaces and lives while at the same time guaranteeing their privacy. It detects information such as residents' body motions during sleep and their presence in their private room, and sends it to the nursing care staff. This will help improve nursing care services as well as the staff work efficiency.



# Community

The town portal interface



# Delivery SQUARE


# IoT delivery box



Automated delivery car for on-demand delivery service

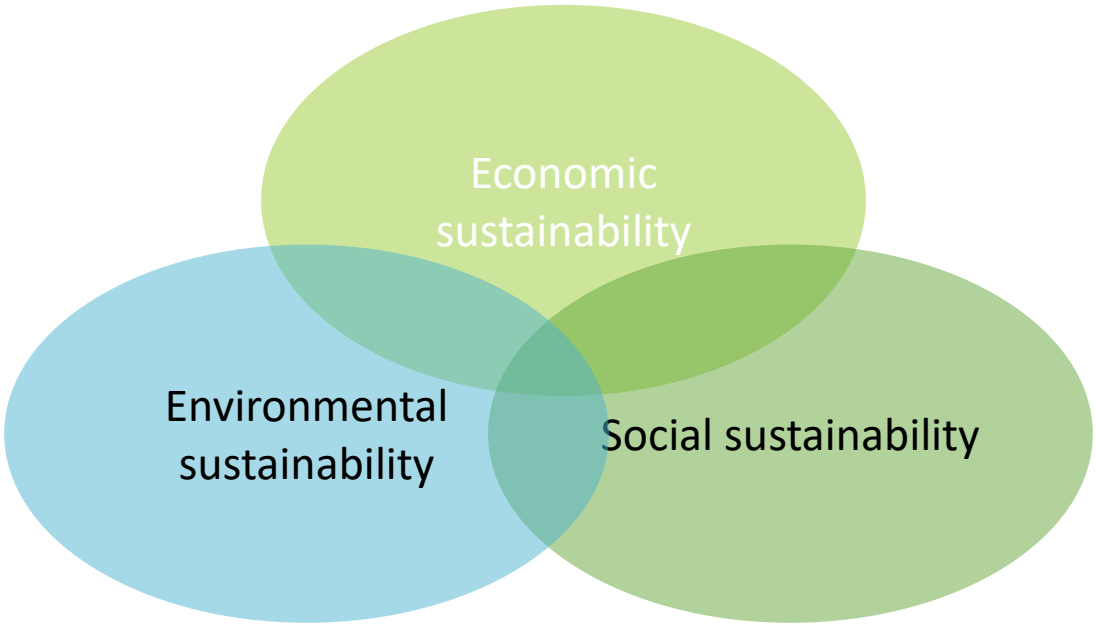
*prototype

■ロボネコヤマト自動運転走行実験

# The Triple bottom line framework of sustainability

The notion of sustainability entails a comfortable standard of living in the capacity of nature

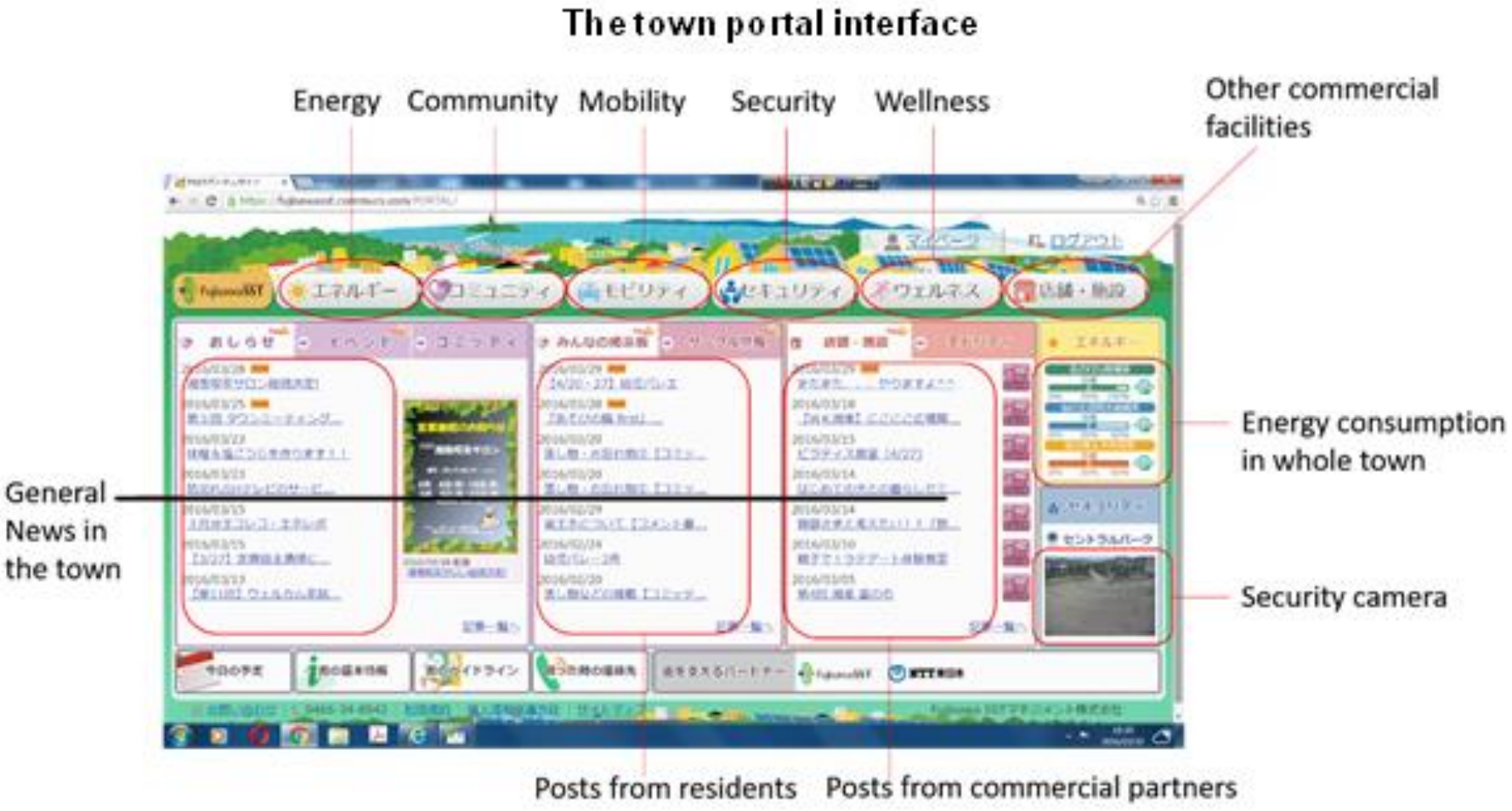
**Economic, environmental**, and **social** sustainability should be incorporated into a single structure



# IS projects and town goals

| | Information systems in the town | Corresponding town goals |
|---|---|---|
| Social sustainability | The town portal | Community building, connecting people, engagement of residents, communication with all stakeholders in the town<br>Delivery of integrated town services (gateway to each service) |
| | 50 integrated security cameras and LED street lamps.<br>Photos from security cameras can be shown in tablet and other mobile devices/home computers. | Security and safety |
| | Emergency warning in VIERA TV | Security and safety |
| | SNS: SOY LINK | Community building, connecting people, engagement of residents, communication with all stakeholders in the town<br>Note: this system is a trial |
| Environmental sustainability | Home Energy Management System (HEMS)<br>Energy consumption report and eco-life recommendation report as output from HEMS | Monitor energy use in each household for creation, storage, and saving energy to fulfill the following numeral target:<br>•$CO_2$ reduction by 70% (compared to the 1990)<br>•Detached homes to emit zero $CO_2$<br>•Renewable energy use of up to 30% |
| Environmental / social sustainability | IoT delivery, on-demand delivery services | Create a novel distribution system<br>Achieve energy efficiency |
| Social sustainability | Monitoring service for elderly people | Keeping healthy<br>Record individual health information and share with related institutions |

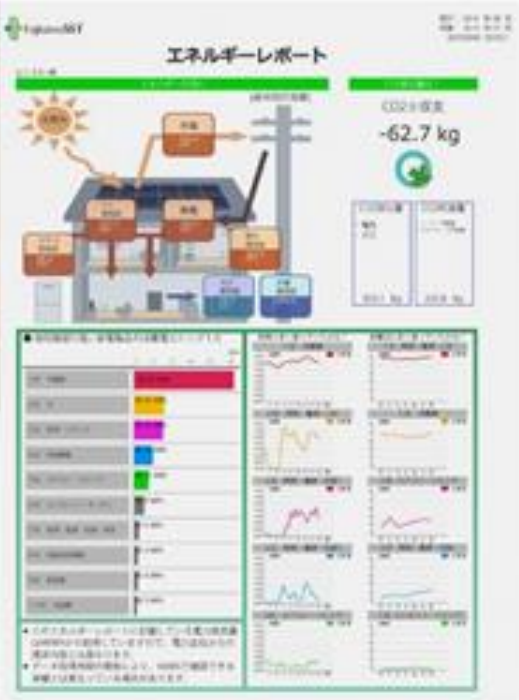
Interface for the Town Portal



# Interface for HEMS output and eco-life recommendation report

HEMS output interface on a tablet device

Energy consumption report




Eco-life recommendation report

# Kashiwa-no-ha Smart city project

https://www.youtube.com/watch?v=Pq6Tlo_VpbU&feature=youtu.be

# Conclusion

- Fujisawa sustainable smart town generates new services.
- FSST potentially approaches all aspects of sustainability, i.e., Environmental, Economic, and Social sustainability.
- Panasonic formed a platform for collaboration among cooperate partners and residents.
- This platform plays a key role in creating new services.
- Various cooperate partners try new attempts with residents in different service domains.
- ICTs are foundation of these new attempts and services.

Thank you for your attention!!