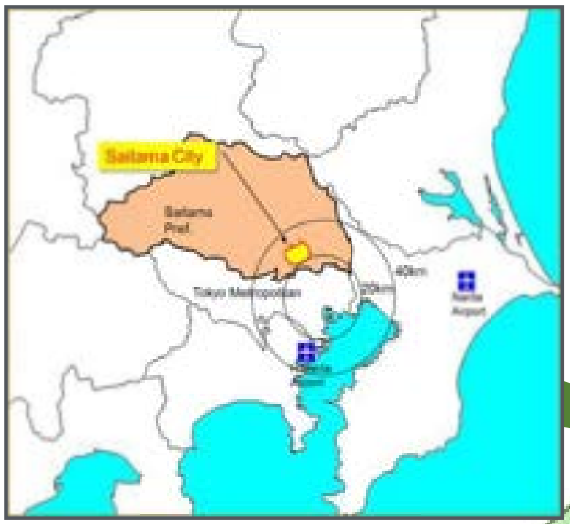
参考資料

Smart City Saitama Model
Smart Home Community in the Misono District Initiative

29 July 2022 (Fri)

Osamu Kanda, Supervisor, Department of Futuristic City Promotion,
Urban Strategy Division, Saitama City

Introduction to Saitama City



30 minutes from Tokyo!

Population: approx. 1,330,000
Area: 217.43 km^2

Views of Saitama City

Views of Saitama City

Culture of Saitama City

named Juun
Style: Moyogi(Curved Trunk)
Estimated Age: 800 years

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Tour de France at the Saitama Criterium

6 November 2022
J:COM presents the 2022
Tour de France at the Saitama Criterium

The Project Stage: Misono District

【Misono District】

・Urban subcenter located in the south-eastern part of Saitama City

・Urawa-misono Station opened in 2001 by the Saitama Railway Corporation

・Saitama Stadium 2002

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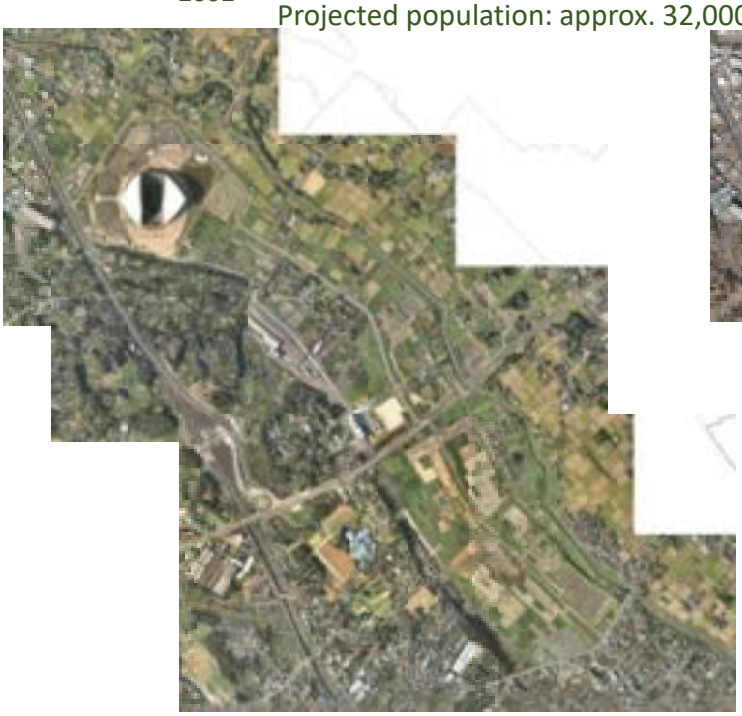
Misono Wing City (land re-zoning project)

Project area: approx. 320 ha
Projected population: approx. 32,000

2002



2021

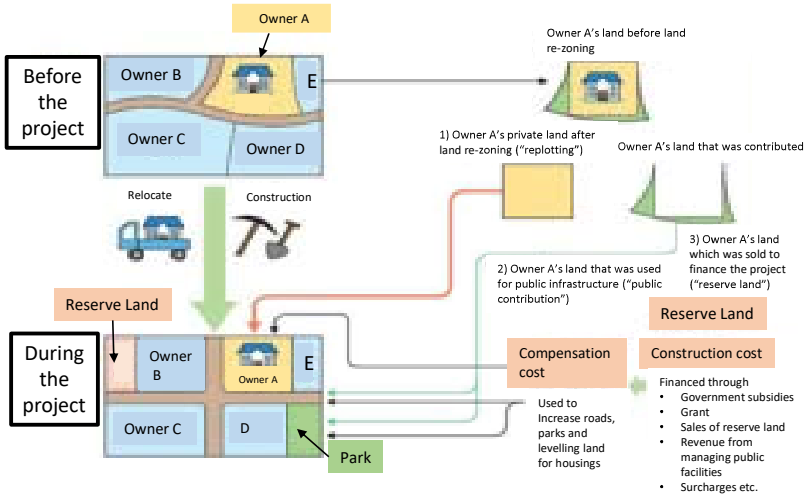
Land Re-Zoning Project

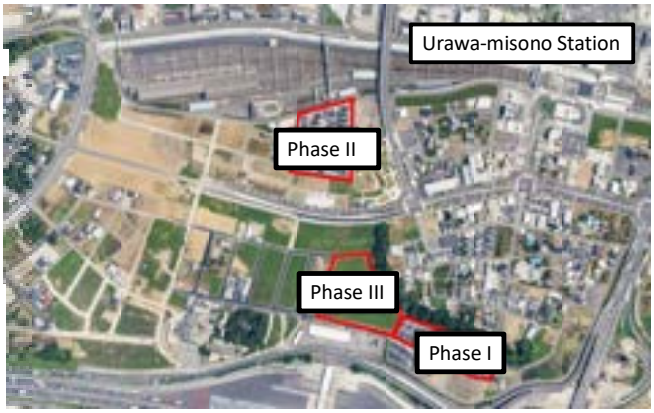
Land Re-Zoning Project
Approx. 320ha of city-owned land

Utilise for community development

Call for project proposals

- City that guarantees energy security and is low-carbon
- Fostering a face-to-face close-knit local community, and a city that is comfortable to live in





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Smart City Initiatives in Saitama City

Smart home community

Hyper energy station

Multi mobility sharing

Decarbonisation + resilience + revitalisation of local economy
From August 2015
Smart City Saitama Model
(illustration of the ideal Saitama City)

Decarbonisation + resilience
From 2011
Special Zone for Next-generation Vehicles and Smart Energy
(decarbonisation, energy security (resilience))

Decarbonisation
From 2009
E-KIZUNA Project
(promoting next-generation vehicles)

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Special Zone for Next-generation Vehicles and Smart Energy

➤11 March 2011 Great East Japan Earthquake
Experience with black outs and gasoline shortages
1) Facilities should be **equipped with self-reliant decentralised power sources**
2) **Multiple sources of energy** are needed for the flow of people and goods in the community
→Saitama City aims to realise an environmental future city that is "comfortable to live in, vibrant and continuously growing".

Strong and flexible low-carbon community model

Creating Smart Home Communities

Supplying diversified energy even during disasters

Building more Hyper Energy Stations

Low-carbon transport, mobility support for the elderly and child-rearing generation

Promoting Low-carbon Personal Mobility

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Misono Wing City (land re-zoning project)

2012

・Originally an agricultural area with few residents, there were virtually no shops and commercial facilities.
・Many landholders were in no hurry to monetise land that was conveniently located near the train station, thus development was slow to start (there was no need to start).
・Developers judged the development of high value-added housing to be high risk because it was difficult to visualise the town's future.

Project proposals were not adopted!

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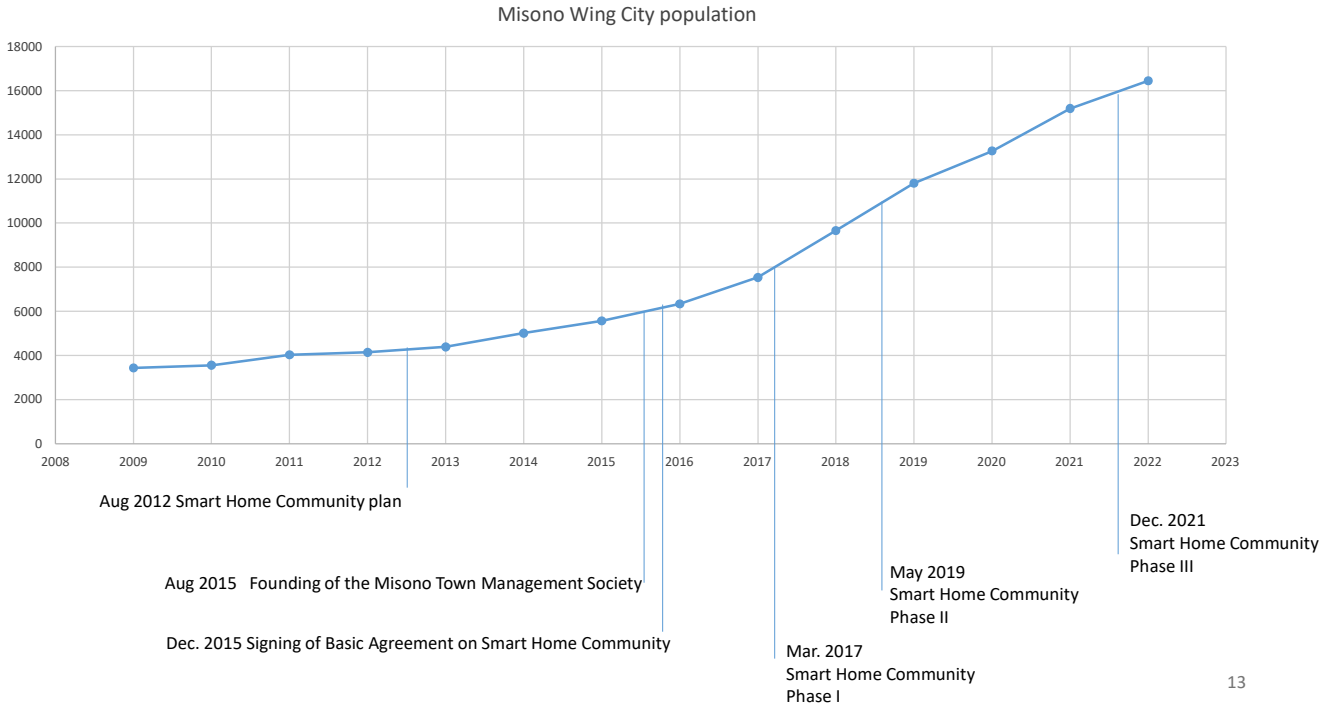
The Challenge: Smart City Saitama Model



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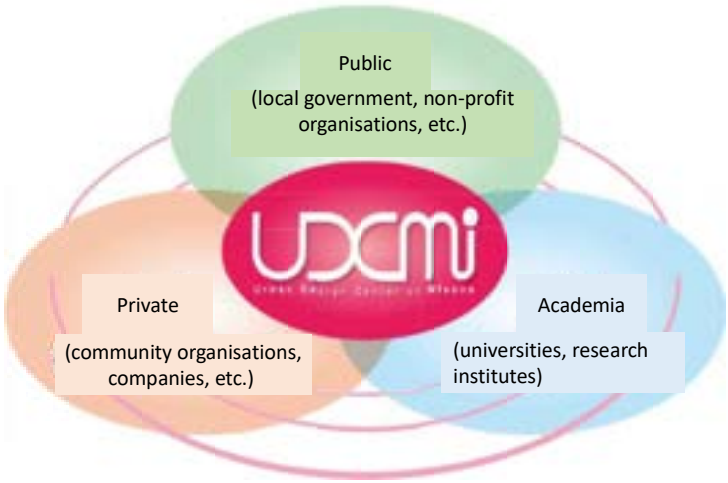
The Challenge: Smart City Saitama Model

Area Management: Establishment of the Urban Design Center of Misono (UDCMi)



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Developing Area Management

Utilising public spaces

Misono town spaces

Marché events Misono Market Last Friday of every month, 3:00 to 7:00 pm

Clean-up events

Blue flag: Ayase River Clean-up Walk in Misono

AI on-demand taxi

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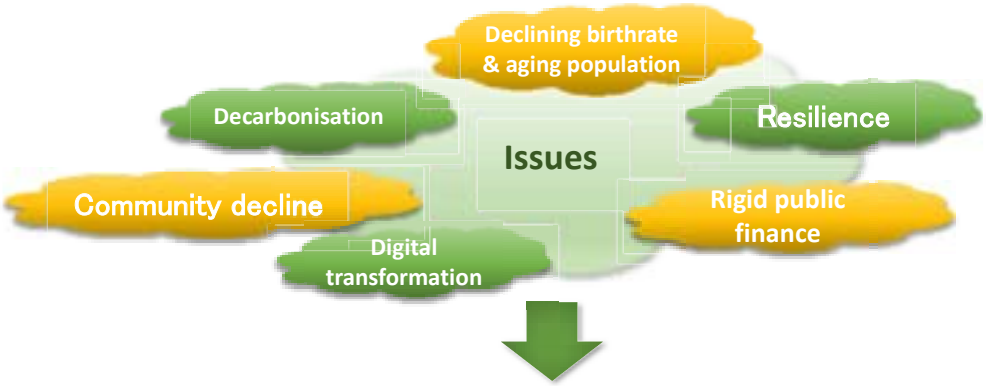
The Challenge: Smart City Saitama Model



Harnessing the power (technology/know-how) of private companies
Streamlining operation and services of local government

◆ **Focusing on creating a "Data-driven Smart City" to achieve sustainable growth and development!**

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Multi Mobility Sharing

From the “Open Street” App
HELLO CYCLING (screenshot)

Mobility as a Service

Mobility station of the future

Open Street
(Providing the project platform)

ENEOS
(Energy supply & management)

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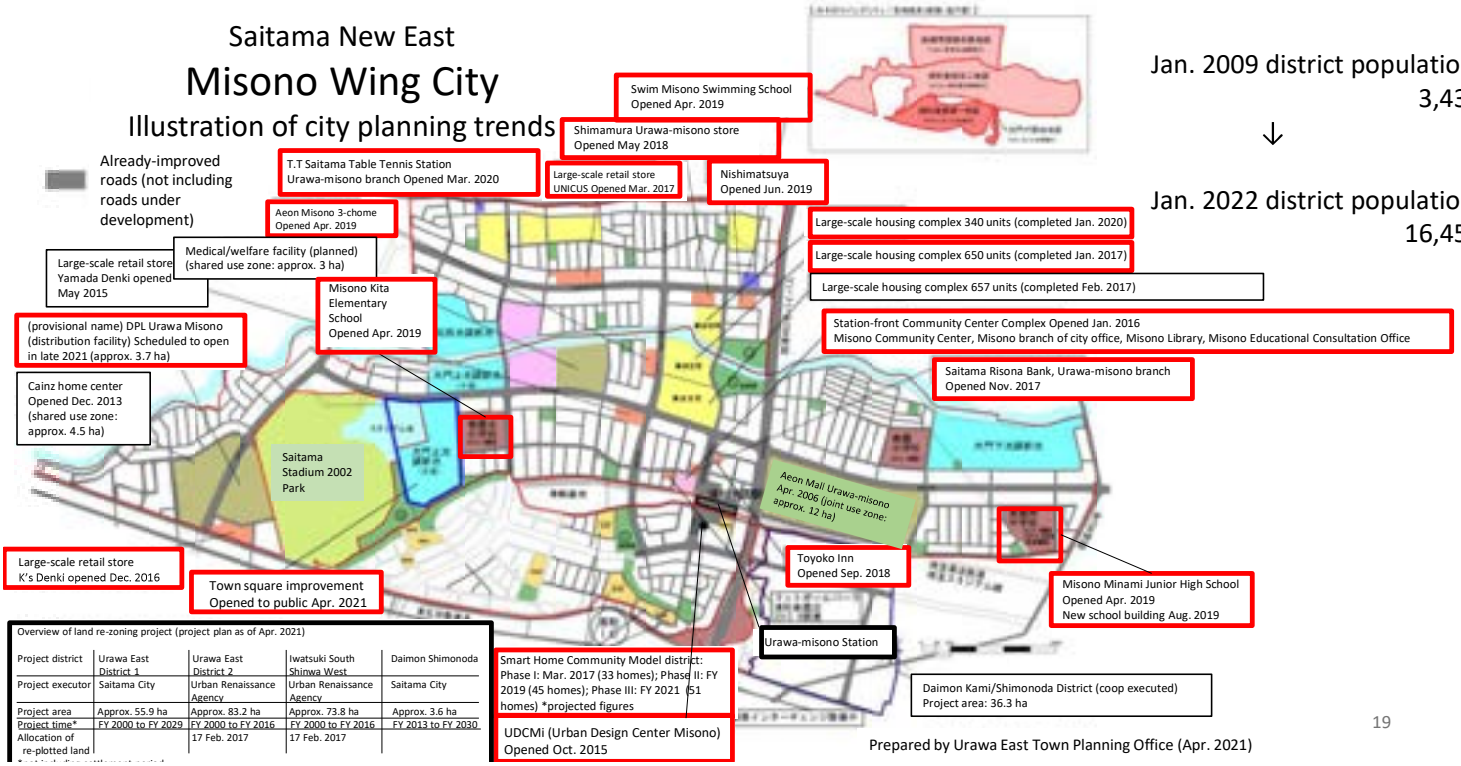
Transition of the Misono District

Saitama New East

Misono Wing City

Illustration of city planning trends



Overview of land re-zoning project (project plan as of Apr. 2021)

Project district	Urawa East District 1	Urawa East District 2	Iwatsuki South Shinwa West	Daimon Shimonoda
Project executor	Saitama City	Urban Renaissance Agency	Urban Renaissance Agency	Saitama City
Project area	Approx. 55.9 ha	Approx. 83.2 ha	Approx. 73.8 ha	Approx. 3.6 ha
Project time*	FY 2000 to FY 2029	FY 2000 to FY 2016	FY 2000 to FY 2016	FY 2013 to FY 2030
Allocation of re-plotted land		17 Feb. 2017	17 Feb. 2017	

Jan. 2009 district population: 3,431

↓

Jan. 2022 district population: 16,451

Prepared by Urawa East Town Planning Office (Apr. 2021)

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Project Implementation Structure

Selection of companies based on proposals

- City that guarantees energy security and is low-carbon
- Fostering a face-to-face close-knit local community, and a city that is comfortable to live in

● Partners in town improvements and housing construction

POLUS GROUP

Takasago Construction

AQURAHOME CO., LTD.

＋ **Saitama City**

Dec. 2015

Agreement signed with 3 companies and project launched

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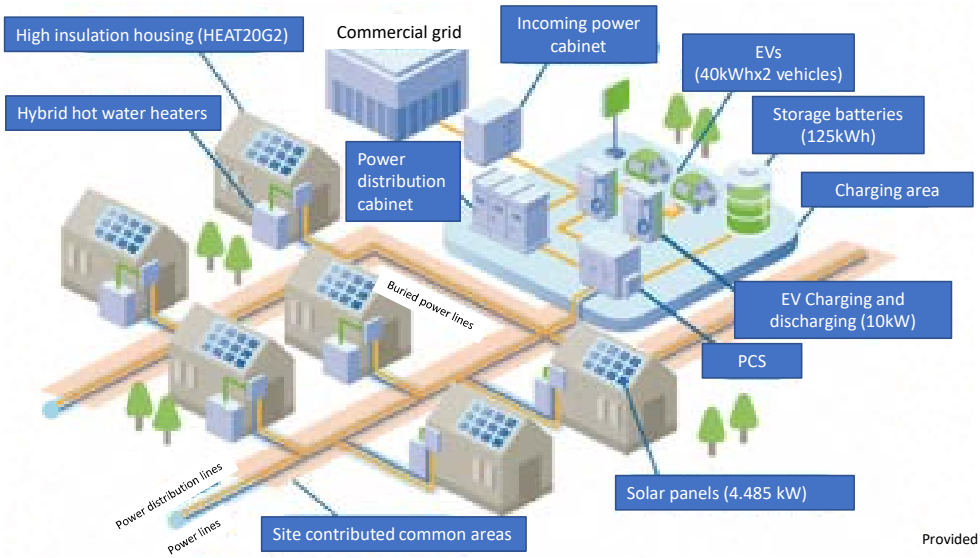
Smart Home Community

○ Decarbonisation and energy security

- ➢ Visualisation of electricity usage (HEMS)
- ➢ Installation of solar panels
- ➢ Underground power lines improves landscape and removes risk of utility poles collapsing during a disaster



Provided by: Looop Inc

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Undergrounding of Power Lines

Fallen utility poles after Typhoon Jebi
Sennan City, Osaka Prefecture

➢ Undergrounding of power lines improves the landscape and protects the town from collapsed utility poles during disasters

(Source) Ministry of Land, Infrastructure, Transport and Tourism website: http://www.mlit.go.jp/report/press/road01_hh_001086.html

Photo courtesy of Tepco Town Planning Co., Ltd.

Photo courtesy of POLUS GROUP

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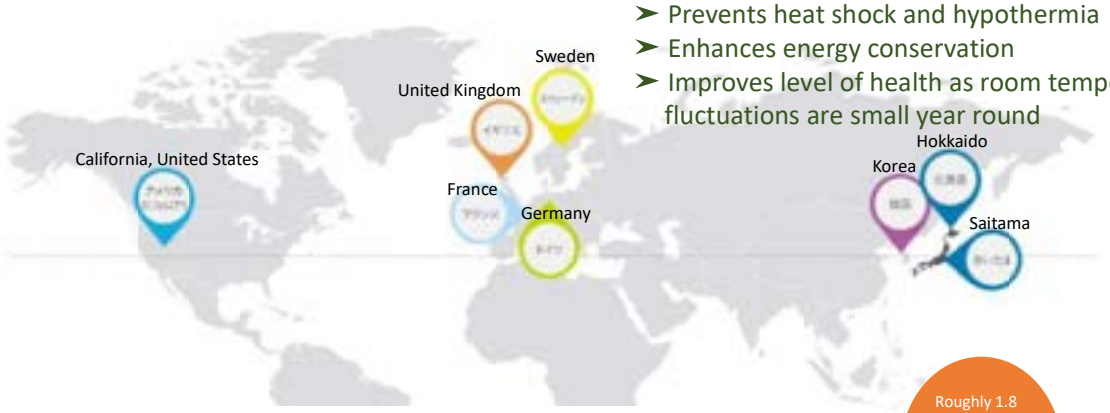
HEAT20 Grade 2

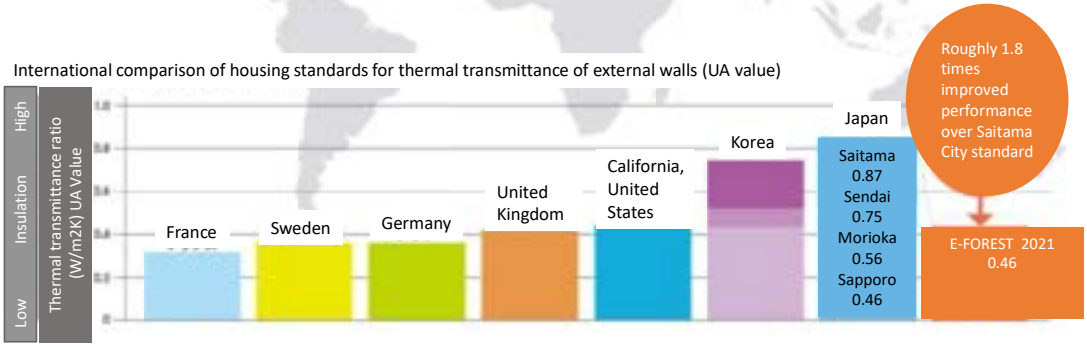
- Highly insulated highly airtight performance housing (HEAT20 Grade 2)
  - ➢ Prevents heat shock and hypothermia
  - ➢ Enhances energy conservation
  - ➢ Improves level of health as room temperature fluctuations are small year round



High airtightness and high insulation standard "HEAT20 Grade 2"

With a UA value of 0.46, the average thermal transmittance of external walls maintains a room temperature of approximately 15° C even when the building is not heated in winter, thereby preventing hypothermia and heat shock.

International comparison of housing standards for thermal transmittance of external walls (UA value)



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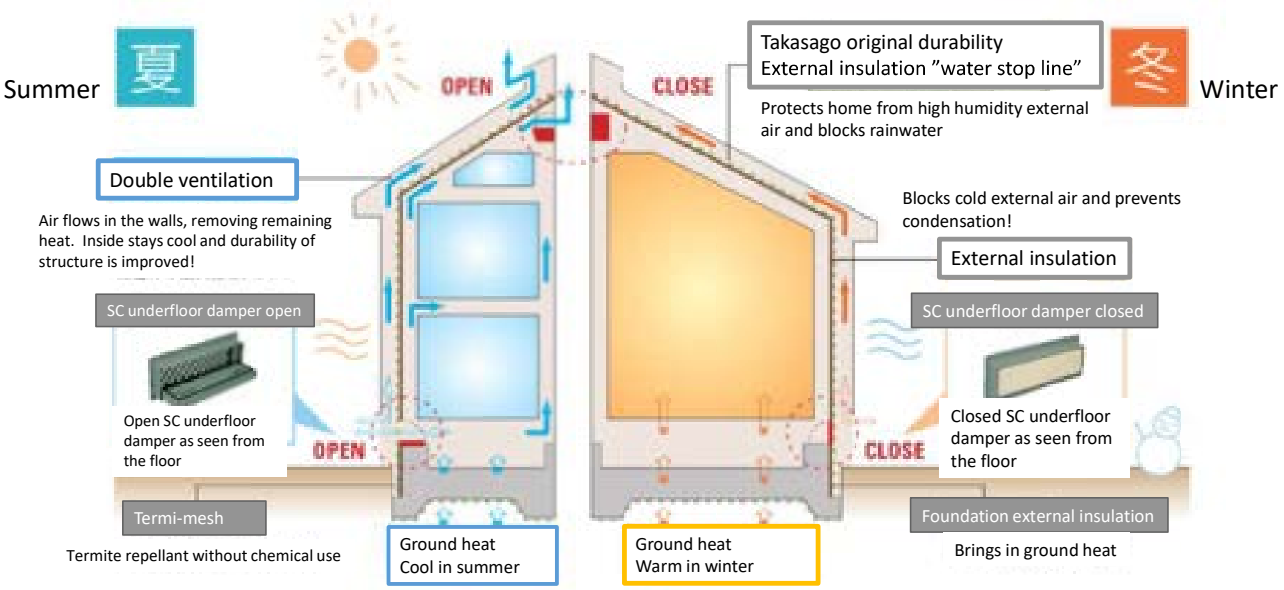
Example of Housing Specifications



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Example of Housing Specifications

Cut a tree down in Saitama forest, a new tree is planted.

Reforestation

Healthy forests absorb more CO2 and are a major contribution to cutting carbon…

Thinning of the forest
Tree felling

Nishikawa Forest

First we must tackle global warming in by caring for our nearby forests.

Eco: Protecting nearby forests while building homes
Building homes with Saitama-grown trees.
When a tree is cut down from Saitama forest, a new tree is planted in Saitama forest.

Building homes with Saitama-grown trees.

Residents

Utilisation of lumber

Distribution

Reducing CO2 emissions from transport of lumber (wood mileage).

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Common Spaces

- Layout that facilitates neighbourly relationships between residents
- Formation of management associations, mini-events for residents

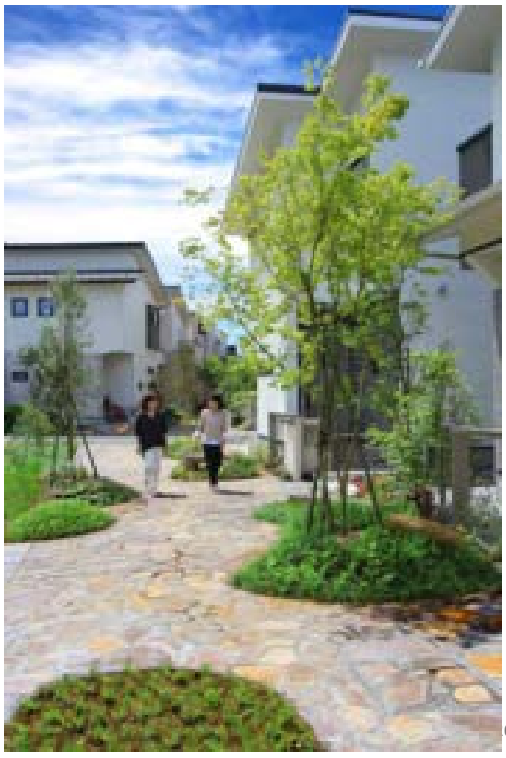

Photo courtesy of POLUS GROUP

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Thank you for your attention!

Growing with You
Saitama City

For more information: Department of Futuristic City Promotion, Urban Strategy Division, Saitama City
TEL: 048-829-1329
E-mail: e-kizuna.project@city.saitama.lg.jp

KL City
Introduction to eneplaza

2022.7.29

Energy Innovation Section, GX Promotion Department
Electricity Business Division, Looop Inc.

Introduction

eneplaza is a decarbonized and resilient smart home community in Urawa Misono, Saitama City.

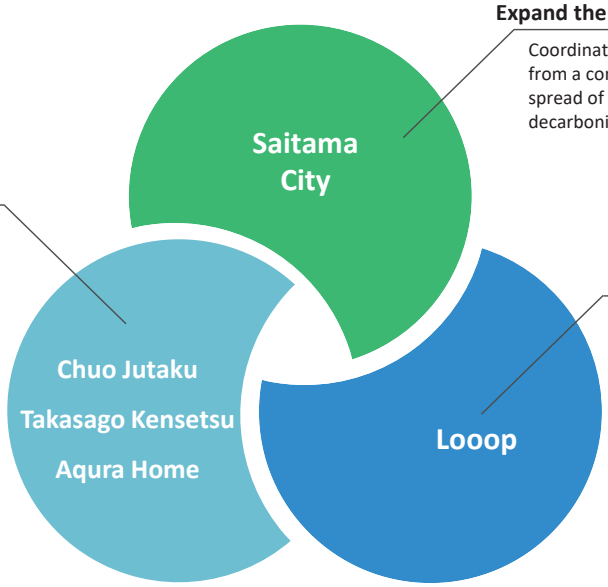
Creation of a model to promote the spread of decarbonized, circular communities in Phase 3 of the Smart Home Community Project

Expand the reach of the Saitama Smart City Model

Coordinate the progress of urban development from a comprehensive perspective to promote the spread of the Saitama Smart City Model and decarbonization

Design smart home communities

Saitama Smart City Model
Design smart home communities



Develop decentralized energy systems

Build eneplaza (energy plaza) to supply, share, and manage energy in the city center

eneplaza

eneplaza was introduced as the finishing touch to the Smart Home Community Project in order to achieve Saitama City's vision of becoming carbon neutral by 2050.

- **Saitama City and Looop jointly applied for and were selected** to receive the Ministry of the Environment's FY2019 Subsidy for CO_2 Emission Control Measures in September 2019.
- Phase 3 of Urawa Misono E-Forest contains 52 plots (including 1 charging area).
- Residents will start to move into this area from December 2021. All units have been sold as of June 2022.

Source: Saitama City website

Smart Home Community Project (Phase 3)

Awards

Good Design Award 2021

GOOD DESIGN AWARD 2021

FY 2021 Minister of the Environment's Award for Climate Action

FY 2021
Climate Action
Minister of the Environment Award

FY 2021 New Energy Award (Community Partnership Category) New Energy Foundation Chair's Award

FY 2021
New Energy Award

(Award name)
New Energy Foundation Chair's Award

(Award-winning project)
Saitama Smart City Model centered around Phase 3 for the Urawa Misono area

(Community Partnership Category)
Organizer: New Energy Foundation

Visit by Environment Minister Tsuyoshi Yamaguchi (Jan 2022)

Environment Minister Visits Advanced "Decarbonized" Area in Saitama City

Carbon zero +Follow
January 13, 2022 18:58

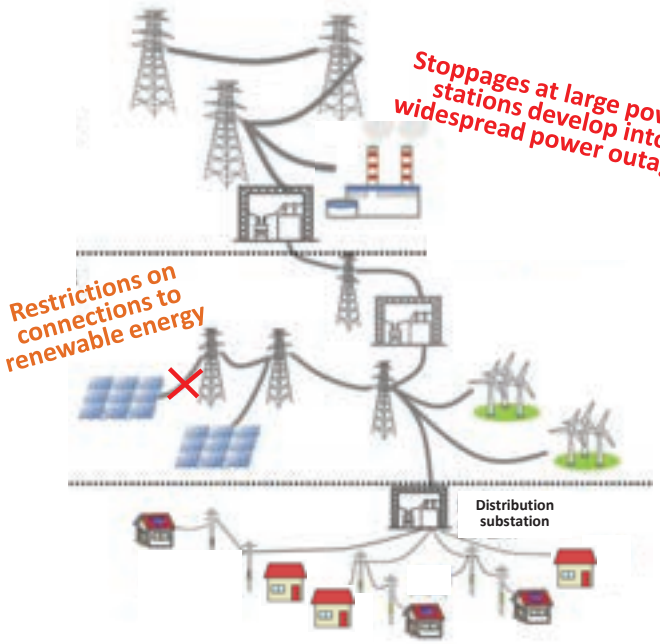
Save

Environment Minister Yamaguchi (second from left) and Saitama Mayor Shimizu Hayato (second from right) are briefed on the area in Saitama City that is promoting decarbonization initiatives (January 13, Midori-ku, Saitama City)

Environment Minister Yamaguchi Tsuyoshi visited the Urawa Misono area in Midori Ward, Saitama City on March 13 to inspect the city's "decarbonization" efforts. Saitama City's initiatives are likely to attract attention as a leader in decarbonization-focused urban development with the Ministry of the Environment planning to invite local authorities that are actively working on decarbonization to take part in a subsidy program to be launched on March 25.

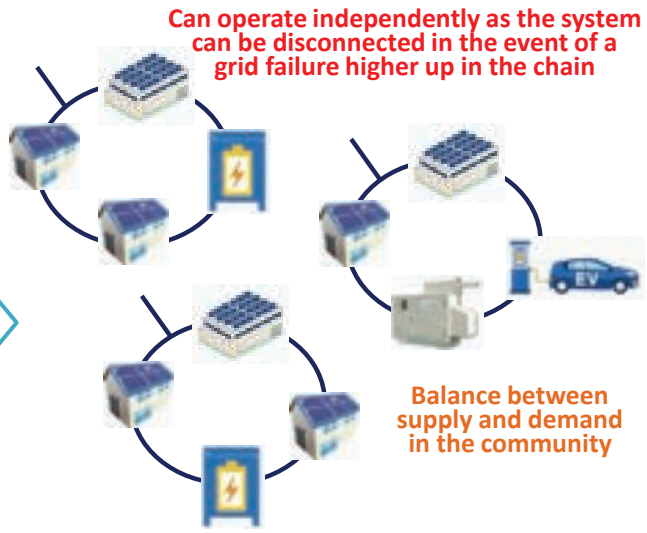
Source: The Nikkei (January 13, 2022)

Centralized power systems -Current challenge-



Electricity generated in areas located a distance away is delivered to consumers via long transmission and distribution lines

Decentralized power systems -One type of solution-



Electricity is produced locally on site for local consumption

Power generation side

- PV
- Storage battery

Demand side

- Hot water heaters
- Variable price menu
- EV sharing

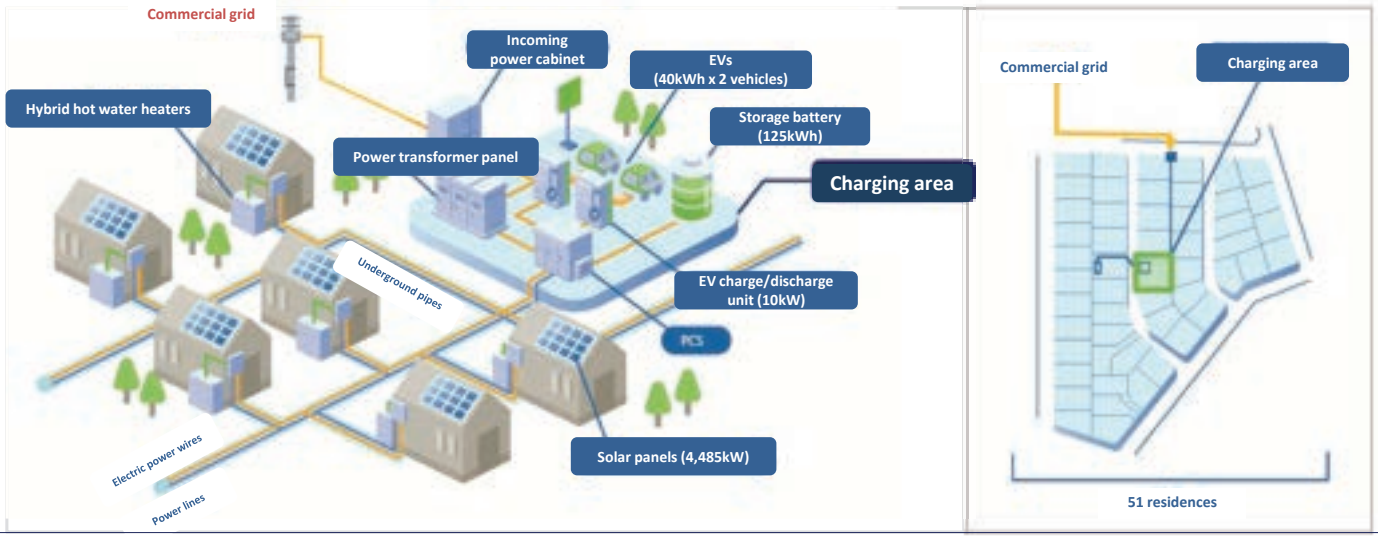
Integration and exchange at the community level

Matches power generation to demand and vice versa

Achieves integration and exchange of renewable at the community level

eneplaza Power System

・Looop supplies electricity in the area as a registered specified electricity transmission and distribution utility (power generation → distribution → retail).
・Creation of smart city aiming at decarbonization (maximizing self-sufficiency with renewable energy) and strengthening resilience.



■ **Power generation side**
・With the installation of solar panels on 51 residences, electricity generated on roofs is collected by the PCS in charging areas, converted from DC to AC, and then distributed to individual homes.
・Any surplus electricity that is generated is stored in large storage batteries and EVs, and then distributed to individual homes.
・Electricity supply can continue uninterrupted as microgrids return to a state of independent operation even in the event of a grid power outage.

■ **Demand side**
・With the installation of hybrid water heaters in 51 residences, autonomous control systems are used to heat water when surplus solar power is generated (using Looop's own control logic)
・Provision of a dynamic pricing rate menu (MISONO Renewable Energy Power) in which the unit price of metered electricity changes according to surplus electricity generated with solar power. The system displays the unit price and usage for the following day on a device installed in individual homes to encourage customers to adjust their behavior.
→Creation of “Demand Side Flexibility” maximizes the ratio of self-sufficiency with the use of renewable energy

Features of eneplaza

POINT 1

Increase local production and consumption rates for energy

・Installation of solar panels on the roofs of all residences
・Centralized electricity generation and storage systems

POINT 2

Safeguard resilience

・Installation of power and telecommunication lines underground
・Design of microgrids capable of independent operation
・Introduction of V2G (Vehicle to Grid) technologies

POINT 3

Value-added creation

・Hot water control according to generation of surplus power
・Dynamic pricing rates
・Shared mobility services

Increase local production and consumption rates for energy

Development of Looop's own power grid for the integration and exchange of generated electricity

☐ Installation of solar panels on the roofs of all residences

・Installation of solar panels (approx. 4.4kW) on the roofs of all 51 residences (installation of solar panels with a capacity of approx. 228 kW across the entire area)

☐ Centralized electricity generation and storage systems

・Installation of large power conditioners and storage batteries in the centrally located charging area

・Aggregation of all electricity generated by solar panels in the charging area and appropriate distribution in line with electricity usage in individual residences (integration and exchange of electricity)

・Two electric vehicles (EVs) are also located in the charging area. During the week, these vehicles are used for energy management, but they are available to residents for car-sharing services on weekends and holidays (Promotes decarbonized transportation)

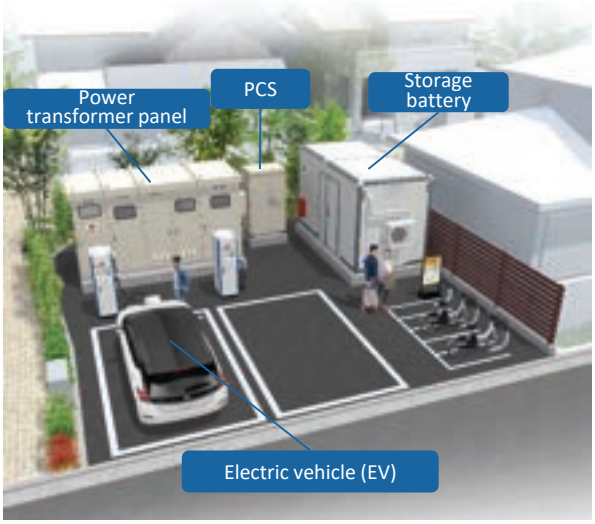


Illustration of charging area

Safeguard resilience (Secure energy in the event of a disaster)

Build up energy security to ensure a stable supply of electricity in the event of a disaster

☐ Installation of power and communication lines underground

・Reduced risk of power outages due to disasters with the installation of underground power and communication lines in the area

☐ Design of microgrids capable of operating independently

・Design of microgrids capable of ensuring uninterrupted electricity supply in the event of a grid power outage using solar power, storage batteries and EVs within the area

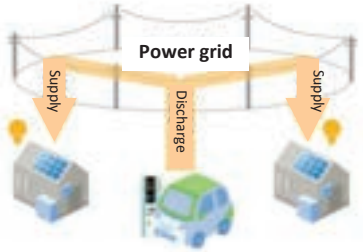
・State-of-the-art energy system with uninterrupted connections to the grid when the grid is restored.

☐ Introduction of V2G (Vehicle to Grid) technologies

・V2G is used to connect electric vehicles (EVs) to the power grid and extracts electricity charged to storage batteries in EVs for supply to other locations.

・The area's power grid maintained by Looop serves to support a stable supply of electricity in the event of a power outage with the integration and exchange of electricity discharged from EVs in the area (Maximizes available supply time).

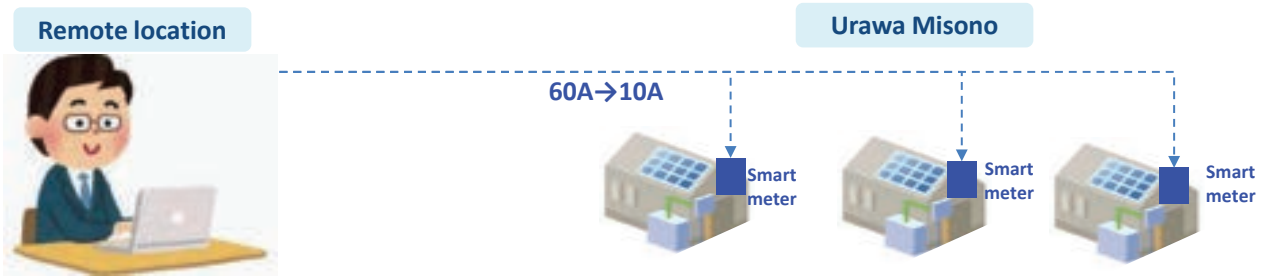
Illustration of area



V2G conceptual diagram

※1 [Calculation conditions] Assumptions of fair weather, power failure with 90% electricity remaining in storage batteries and 100% in EV batteries (2 EVs), power consumption limited to 1,000 W in individual households, and high power consumption in the area

In the event of a grid power outage and independent operation, current limiting is carried out using smart meters to ensure an uninterrupted supply of electricity with the used of limited power storage resources.
Current limiting (60A→10A) is carried out remotely at the instruction from management.



Current limiting instructions sent to smart meters

In autonomous operation, up to 1,000 W is available at the same time!

Examples of what can be used

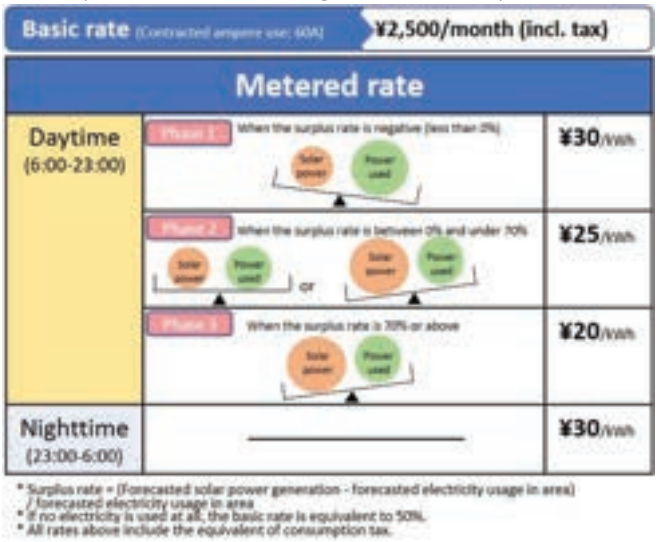
Dynamic Pricing

Use of electricity when a large amount of solar power is generated is eco-friendly for your wallet and the environment

☐ Lower electricity rates when surplus power is generated

・Looop offers independent daily forecasts of surplus rates for solar power for the following day based on information such as weather forecasts and the amount of electricity consumed by individual households.

・Electricity rate plans are offered to households in the area in which the metered price fluctuates according to forecasted surplus rates.



Rate structure for MISONO Renewable Energy Power

MISONO Renewable Energy Power

Customers are notified about the metered rate for the following day around 19:00 on the previous day via a smart speaker (Amazon Echo Show8) that is on loan to individual households.

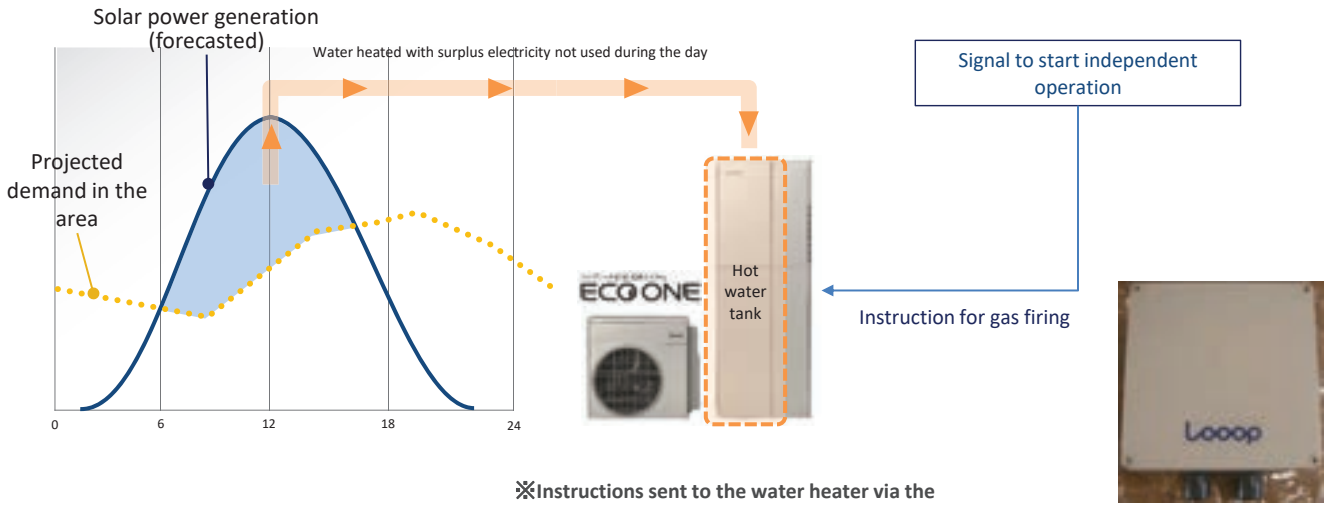
Image of smart speaker screen

Effective use of renewable energy by shifting electricity use to times when surplus electricity is high!

Hybrid hot water control

- Projected solar power surplus is based on forecasts for solar power generation, demand, and electricity usage for heating water.
- Maximizes the use of solar power heating water when there is a surplus of power.
- Instructing gas firing automatically, the area can use electricity which generated on roofs and stored in a large batteries, for purposes other than hot water supply in the event of a power outage.

Regular hours | **Power outage**

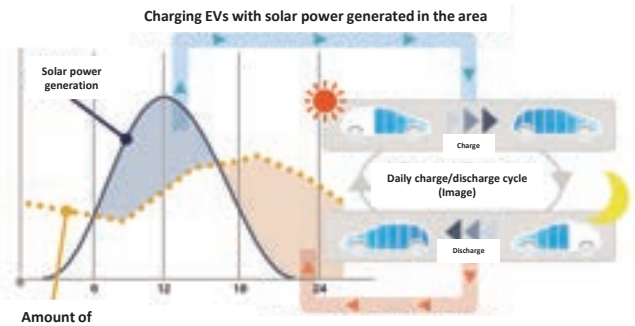


※Instructions sent to the water heater via the communications controller

Shared services for EVs and bicycles

- EVs located in the charging area are used as storage batteries during the week for energy management. On weekends and holidays, these vehicles are used by residents for car-sharing services. These EVs are also used as mobile storage batteries during disasters.
- Looop provides bicycle-sharing services in cooperation with OpenStreet Co., Ltd. (5 bicycles are located in the charging area)

Charging and discharging electricity with EVs (image)



Daytime	**Charge electricity generated by solar power** * Electrical circuits, including power purchased from grid
Nighttime	**Discharge electricity stored in EVs to supply to the area**
In a disaster	**Discharge electricity stored outside to the area using "mobile storage batteries" in the event of a disaster to ensure uninterrupted supply**

Shared cycle service

Urawa Misono E-Forest

Available 0	Open parking 5	Booked returns 0

Operated by: OpenStreet

352-10 Shimonoda-Tsurumaki, Midori-ku, Saitama City, Saitama Prefecture

eneplaza uses smart technology to create safe, comfortable and decarbonized lifestyles.

Under normal circumstances

■ **Energy costs**

Rates
- Less expensive annual rates (at least 1%) than the renewable energy menus of other major electricity providers

Demand management
- Lower electricity rates as a result of changes in behavior based on dynamic pricing
- Optimal control for water heaters depending on the status of surplus electricity

Housing performance
- Reduced energy costs with ultra-high insulation specifications for buildings

■ **Comfortable lifestyle**
- Use of smart home devices to visualize electricity rates
- Accessible EVs and bicycle sharing services on weekends

In emergencies

■ **Resilience**
- Uninterrupted use of electricity in the event of a power outage as the microgrid operates independently
- Use of EVs to supply electricity at power supply spots nearby if they are used as mobile storage batteries

High Level Talks on Zero Carbon City Kuala Lumpur

T2KLLCS

TOKYO TO KUALA LUMPUR LOW CARBON SYSTEM

A case for successful city-to-city collaboration towards accelerating net-zero transition

Ho Chin Siong
Chau Loon Wai

08 August 2022

Project of developing a policy framework for building energy efficiency through city-to-city collaboration between **Kuala Lumpur** City Hall and **Tokyo** Metropolitan Government

T2KLLCS

2019-2021

3 phases

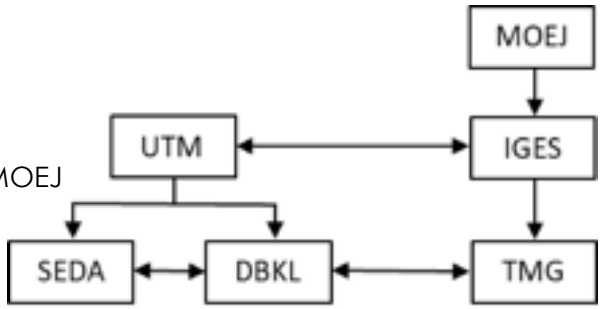
TOKYO METROPOLITAN GOVERNMENT

Partners:

Sponsor:

Ministry of the Environment

PHASE 1 (FY2019)



25, 27 Mar 2019 Initiation Discussions (via emails)
Apr-May 2019 Outreaching to DBKL, SEDA, TMG
17 May 2019 UTM Official Communications with IGES and MOEJ
27-28 Jun 2019 Kick-off Meeting @ KL
10 Jul 2019 Skype Meeting
29-31 Jul 2019 ISAP @ Tokyo

23 Aug 2019 T2KLLCS Launching @ KL

16 Oct 2019 APUF7 IGES Side Event @ Penang
17 Oct 2019 TMG & IGES Visit to DBKL
11 Dec 2019 COP25 Japan Pavilion Side Event @ M
13-18 Jan 2020 Training @ Tokyo
2 Mar 2020 Final Reporting to MOEJ

PHASE 1 (FY2019) OUTCOMES

Building Envelope	1	Infiltration - Airtight Building Envelope
	2	Reduce Direct Sunlight - Shading, Window Blind
	3	Insulation - Green Roof, Roof Insulation, Wall Insulation, Window Tinted, Window Glass
Air-Conditioning System	4	Outdoor Air Ventilation Control
	5	Zoning & Control of Air Distribution System - VAV, Temperature & Humidity Control, Setback & Shut-off Control, Off-hour control
	6	High Efficiency Fan System
	7	High Efficiency Air Filtration
	8	Effective Piping & Ducting Insulation
	9	High Efficiency Unitary Air Conditioning System - Single Split, Package, Multi Split, VRF
	10	High Efficiency Centralized Air Conditioning System - Chiller, Hydronic System, Cooling Tower
	11	Control of Centralized Air Conditioning System - Automation & Optimization
Lighting	12	Lighting Control - Daylight Control, Luminance Control, Zoning Control, Motion Control, Off-hour Control
	13	High Efficiency Lighting System - Indoor & Outdoor
Energy Management Control System	14	Control of Equipment, Monitoring of Equipment, Integration of Equipment and Other Sub-systems, Energy related Data Collection and Analyses
Renewable Energy	15	Solar PV

	Scenario 1	Scenario 2
CO_2 EMISSION IMPROVEMENT	35%	47%
Approach	Moderate	Aggressive
CO_2 EMISSION REDUCTION	12.5 million kgCO2e/year	16.9 million kgCO2e/year
Monetary saving	MYR 7 million/year	MYR 9 million/year

PHASE 2 (FY2020)

14 May, 4, 10, 17 Jun 2020 Four (4) Pre-Project ZOOM Meetings

23 Jun 2020 Kick-off Meeting

7, 24 Jul; 5 Aug; 1 Sep 2020 ZOOM Meetings

24 Jul 2020 DBKL Mayor signed the TMG-DBKL MoU

4, 7, 22 Sep 2020 WEBEX Meetings

1 Oct 2020 Datuk Seri Mahadi Che Ngah Appointed 13th Mayor of KL

21 Oct 2020 ICLEI Daring Cities 2020 – Launching of Carbon Neutral KL 2050

27 Oct, 10 Nov 2020 WEBEX Meetings

22 Dec 2020 ZOOM Meeting

6 Jan 2021 ZOOM Meeting

14 Jan 2021 International Forum on SDG for Regional Revitalisation

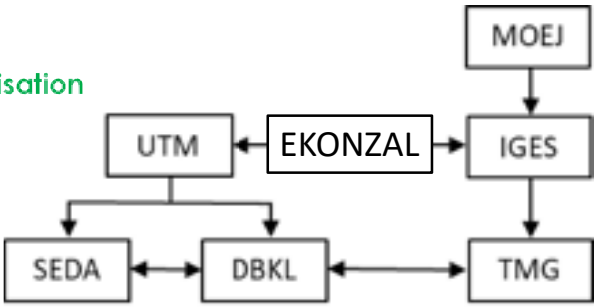
21 Jan 2021 Solar PV Installation Evaluation Discussion @ KL

25, 27 Jan 2021 ZOOM Meetings

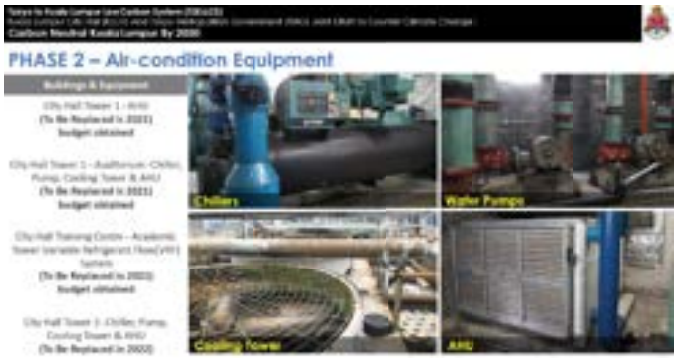
5 Feb 2021 T2KLLCS 2021 Webinar

5 March 2021 Final Reporting to MOEJ

17 March 2021 Zero Carbon Cities International Forum

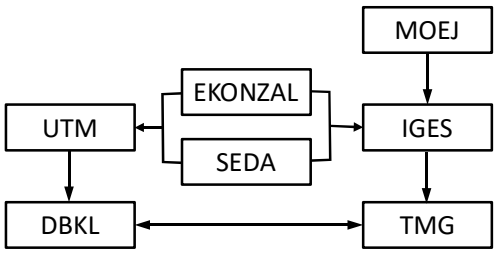


PHASE 2 (FY2020) OUTCOMES- RM 28mil budget



PHASE 3 (FY2021)

7 Apr 2021 DBKL-UTM T2KLLCS 2021 Way Forward Discussion
21 Apr, 3, 9 Jun, 1 Jul 2021 Four (4) Pre-Project ZOOM Meetings
7 Jul 2021 TMG-KL extended (Jakarta) Webinar 2021
19 Jul 2021 Kick-off Meeting
29 Jul 2021 ZOOM Technical Meeting
2 Aug 2021 UTM-DBKL Google Meeting (Work Plan and Roadmap)
9 Aug 2021 IGES-UTM ZOOM Meeting
18 Aug 2021 ZOOM 2nd Technical Meeting
6 Sep 2021 DBKL-UTM Technical Meeting (Project Scoping and Data Update)
22 Sep 2021 TMG and IGES Feedback (via email)
5 Oct 2021 IGES-UTM ZOOM Technical Discussion
6 Oct 2021 T2KLLCS Action Plan Discussion (Google Meet) – Mayor Chaired
15 Oct 2021 DBKL-AEON-TMG-IGES-UTM-SEDA ZOOM Meeting (Wangsa Maju CNGC Collaboration)
10, 11 Nov 2021 COP26 @ Glasgow UNFCCC Official Side Event, MOEJ SE, LoCAR-Net SE, C40 SE etc.
7 Dec 2021 Menara 1 Reduction Potential Calculation Template (via email)
9 Dec 2021 LCBS for EE Retrofit and O&M (via email)



PHASE 3 (FY2021) OUTCOMES

PHASE 3 (FY2021) OUTCOMES

FY2021: Complete the ASEAN first comprehensive public building energy efficiency system

	Components	Deliverables
1	Conduct retrofit in FY2021 to 3 projects identified in FY2020	Implement
2	Identify 2nd round of EE retrofit and RE budgeting in FY2021	Budget
3	Draft low carbon public building guidance (for retrofits)	Document
4	Draft low carbon public building guidance (for O&M)	Document
5	Draft low carbon public building procurement plan for 2030	Document
6	Present at COP 26	Presentation

Apply to public buildings in Wangsa Maju and others

Beyond T2KLLCS…

Smart City Saitama Model

さいたま市

TOKYO METROPOLITAN GOVERNMENT

Zero Emission Tokyo Strategy 2050

Wangsa Maju Carbon Neutral Growth Centre

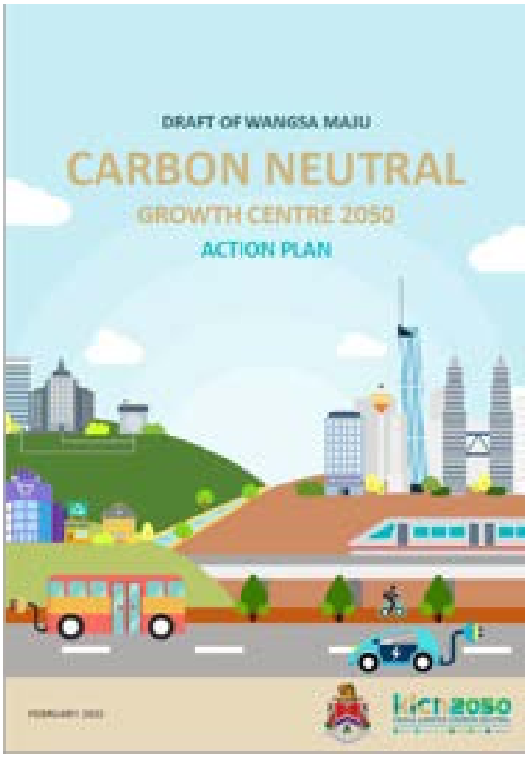
Carbon Neutral Kuala Lumpur Vision 2050

Beyond T2KLLCS…

Accelerated adoption of EE and RE installation in public buildings, infrastructure and private buildings in Wangsa Maju CNGC – **VISIBILITY IS KEY!**

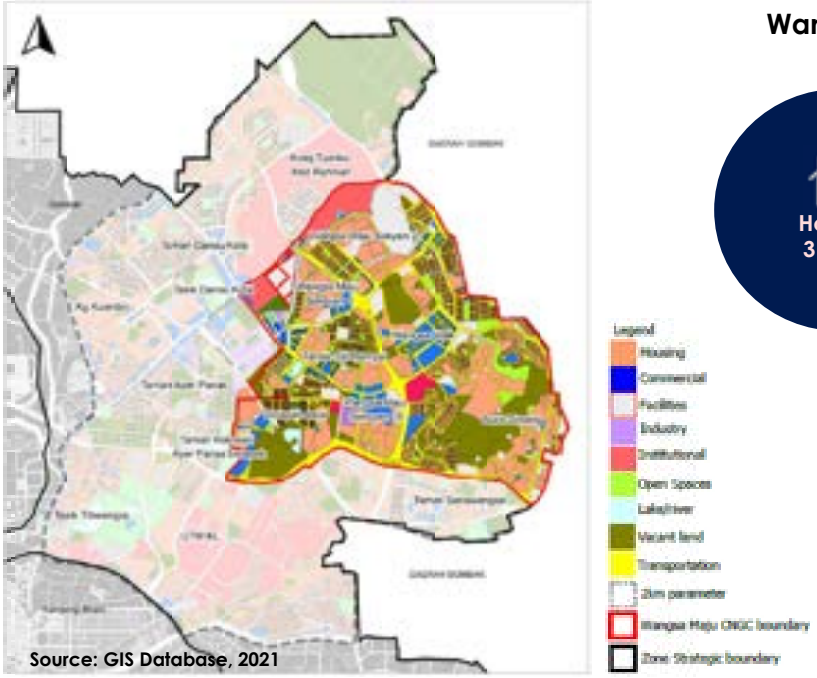
Low Carbon Building Specification for EE Retrofit & Low Carbon Building Specification for Operation and Maintenance (O&M) as recommended guidelines

Utilisation of localised GHG emission reduction potential calculation template for EE and RE in buildings



2.0 WANGSA MAJU CNCG ACTION PLAN – A SHOWCASE

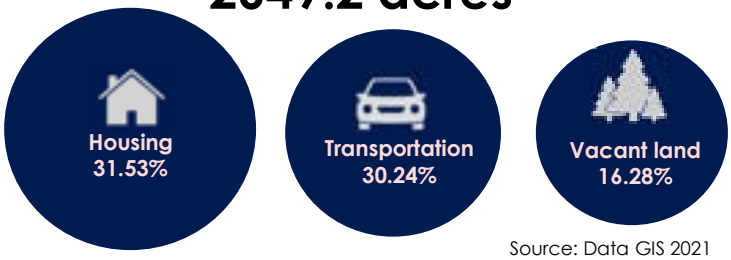
Wangsa Maju Carbon Neutral Growth Centre Profile



Source: GIS Database, 2021

Wangsa Maju Carbon Neutral Growth Centre

2649.2 acres



Source: Data GIS 2021

To develop the Wangsa Maju Growth Centre into a **thriving, prosperous, carbon neutral urban precinct**, serving **as a pioneer showcase** that is up-scalable to other Kuala Lumpur Strategic Zones for a progressive transformation of Kuala Lumpur into a **carbon neutral city by 2050**.

WANGSA MAJU CNCG 2050 ACTION PLAN

Carbon Neutrality Opportunities in Wangsa Maju Growth Centre

(1)Solar on Infrastructure
1a.Rooftop Solar PV
1b. Solar for Pedestrian Mist
(2) Floating Solar PV
(3) District Energy System

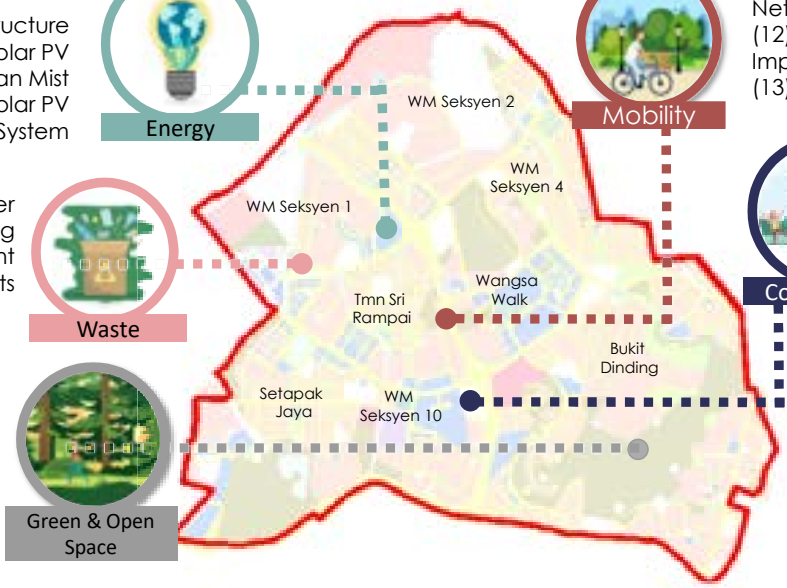
Energy

(4) Anaerobic Digester
(5) Waste Composting Plant
(6) Waste Recycling Points

Waste

(7) Open Space and Forest Protection
(8) Vertical/Roof Garden
(9) Linear Urban Parks
(10) River Cleaning

Green & Open Space



(11) Pedestrian Cycling Network
(12) Public Transportation Improvement
(13) Station Area Planning

Mobility

Community

(14) Eco Park
(15) Community Farming
(16) Introduce Community Water and Energy Saving Program
(17) Transforming the Existing Resident Association into Carbon Neutral Community
(18) Zero Waste Community
(19) Carbon Neutral Challenge Program in Schools
(20) Strengthen School Community through Concentrated Efforts

THANK YOU!

UTM-Low Carbon Asia Research Centre
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Faculty of Built Environment & Surveying
Universiti Teknologi Malaysia
81310 UTM Johor Bahru
Johor, MALAYSIA

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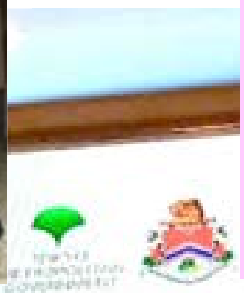
High Level Talks on Zero Carbon City Kuala Lumpur

August 8th 2022

Developing an Institutional Framework Towards
Kuala Lumpur Zero Carbon City and Neighbourhood
in Collaboration with Tokyo Metropolitan Government and Saitama City

By:
Junichi Fujino
Ryoko Nakano

IGES
Institute for Global Environmental Strategies



"Project overview of this city-to-city collaboration"

Junichi Fujino (IGES)
Ryoko Nakano (IGES)

Aug 8, 2022@DBKL

Aug 2019

KL Mayor declared carbon neutral by 2050. TMG Governor promised her support.

March 2021
Tokyo &
Online

Zero Carbon City International Forum（March 2021）

Offered policy recommendations to KL on buildings while reducing own emissions

Announced aim to achieve carbon neutral by 2050 with TMG's support

Praised the collaboration between TMG and KL saying it could serve as a good practice that could begin a domino effect for decarbonization

https://www.iges.or.jp/jp/events/20210317）

KL Mayor said at least 30% renewable electricity.

Feb 2021
Online

Participants (150 persons)：ICLEI HQ, Malaysian municipalities, Jakarta, Ho Chi Minh and other ASEAN municipalities, Japanese companies

T2KLLCS 2021 Webinar

Introduced how the T2KLLCS was being implemented to municipalities in Malaysia and in ASEAN (such as Jakarta)

The Mayor of KL raised the idea of a new regulation in KL City in which real estate developers should use at least 30% renewable energy-derived electricity

The Mayor of KL

TMG Senior Director for Climate Change and Energy, Environmental Bureau

ICLEI HQ

KL's carbon neutral challenge was well recognized and highlighted at Climate COP26 in Glasgow.

Nov 2021 Glasgow

COP26
"Glasgow"

2021 United Nations Climate Change Conference-side event hosted by UTM and IGES 2021

Date and Time: Wed, 10 Nov 2021 (11:30-12:45)
Room: Forth Room (44 pax) Scottish Event Campus
Glasgow United Kingdom

Call for an integrative approach: Climate, biodiversity, disaster risk reduction and SDGs

Key International Collaborations-Integrative approach in Planning climate actions

HO CHIN SIONG and Chau Loon Wai
UTM Low Carbon Asia
UNIVERSITY TECHNOLOGY MALAYSIA

UTM

5

Visualize Carbon Neutral at "Wangsa Maju" special district with new partner "Saitama City" where selected as one of 26 Japanese "Decarbonization Leading Areas"

April 2022

(1)Solar on Infrastructure
1a.Rooftop Solar PV
1b. Solar for Pedestrian Mist
(2) Floating Solar PV
(3) District Energy System

(4) Anaerobic Digester
(5) Waste Composting Plant
(6) Waste Recycling Points

(7) Open Space and Forest Protection
(8) Vertical/Roof Garden
(9) Linear Urban Parks
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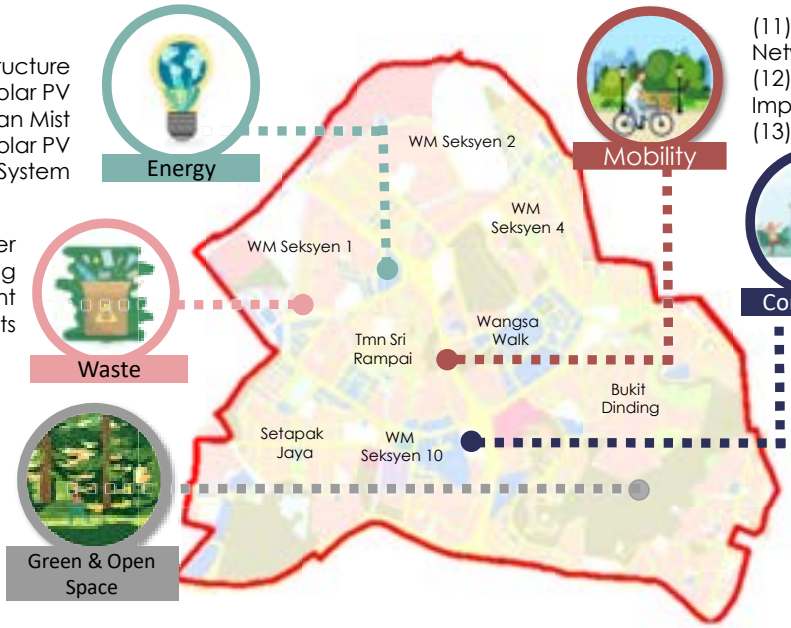

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(19) Carbon Neutral Challenge Program in Schools
(20) Strengthen School Community through Concentrated Efforts

6

MOEJ "Developing an Institutional Framework Towards Kuala Lumpur Zero Carbon City and Neighbourhood in Collaboration with Tokyo Metropolitan Government and Saitama City" Project [Phase 2]

Tokyo Metropolitan Government (TMG)

Support KL for sustainable policies and buildings ("Zero emission Tokyo Strategy" (by 2050), "Carbon Half" (by 2030) at whole city level

Saitama City Hall (Saitama)

Support KL for sustainable energy management (Misono "Smart Home Community"), sustainable mobility ("Shared Multi-Mobility") at neighbourhood level

Looop:
Private sector: energy management

IGES:
Main coordinator

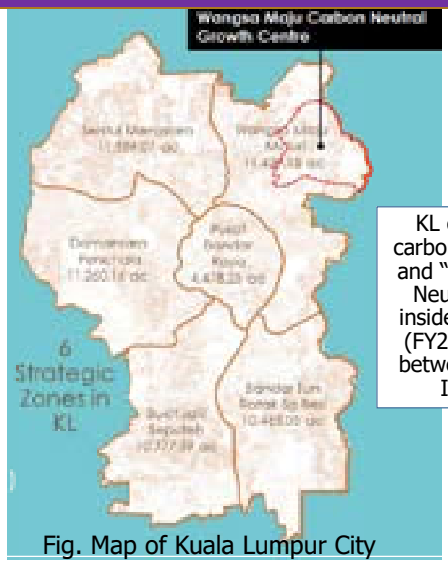


Fig. Map of Kuala Lumpur City

Kuala Lumpur City Hall (KL)

Streamline and enhance zero emission policies, ways to develop a zero emission neighborhood

KL city mayor declared carbon neutral city by 2050 and "Wangsa Maju Carbon Neutral Growth Centre" inside KL through "Phase1 (FY2019-2021)" activities between KL and TMG with IGES, UTM, SEDA

SEDA (Sustainable Energy Development Authority):
Public sector: energy management and policies

Universiti Teknologi Malaysia:
Local coordinator

FY2022-FY2024 at max

1 year: Introduce CN measures of TMG (city-wide) and Saitama (neighborhood etc.), early implementation with KL City Hall's budget.
2 year: Support localization of the introduced policies, mechanisms, of which some will be tested in the "Wangsa Maju Carbon Neutral Growth Center"
3 year: Action plan for "Wangsa Maju Carbon Neutral Growth Center" will be incorporated into concrete project proposals and support is offered for KL city wide decarbonization and to other cities.

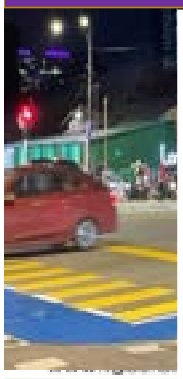
7

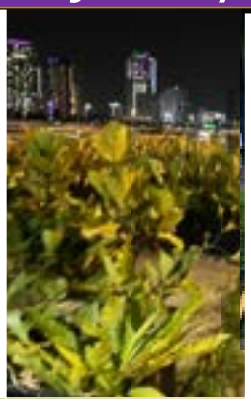
KL mayor shared not only city-whole but also district-wise carbon neutral initiative to H.E. Yamaguchi, Minister of the Environment Japan and the world.

July 2022
Tokyo & Online

…partnership with Tokyo Metropolitan Government and IGES has enabled Kuala Lumpur City Hall's …steady progress to achieve carbon neutrality by 2050

Our journey towards zero carbon city shall continue.



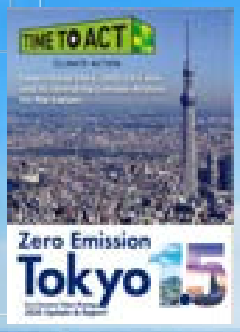


Thank You

TIME TO ACT
CLIMATE ACTION

8 August 10:30-12:00 (MYT), 11:30-13:00 (JST)
High Level Talks n Zero Carbon City Kuala Lumpur

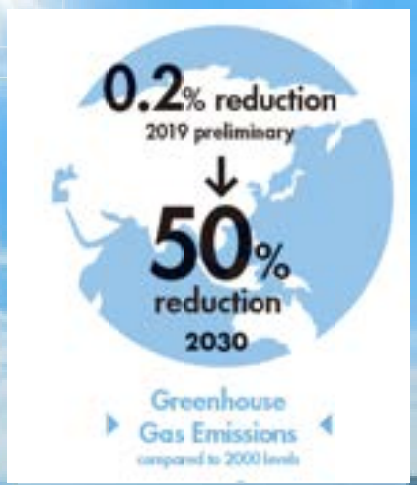
Tokyo Initiatives
for achieving carbon neutral
-Fast forward to "Carbon Half" by 2030



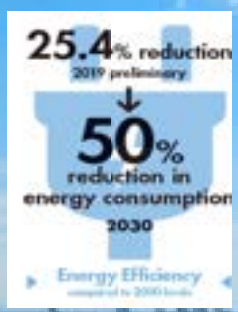
Bureau of Environment
Tokyo Metropolitan Government

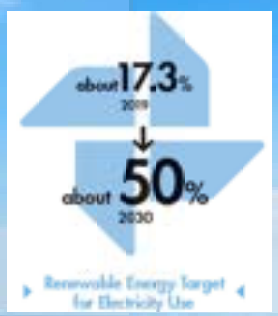
Tokyo

Yuriko Koike,
Governor of Tokyo



2030 GOALS

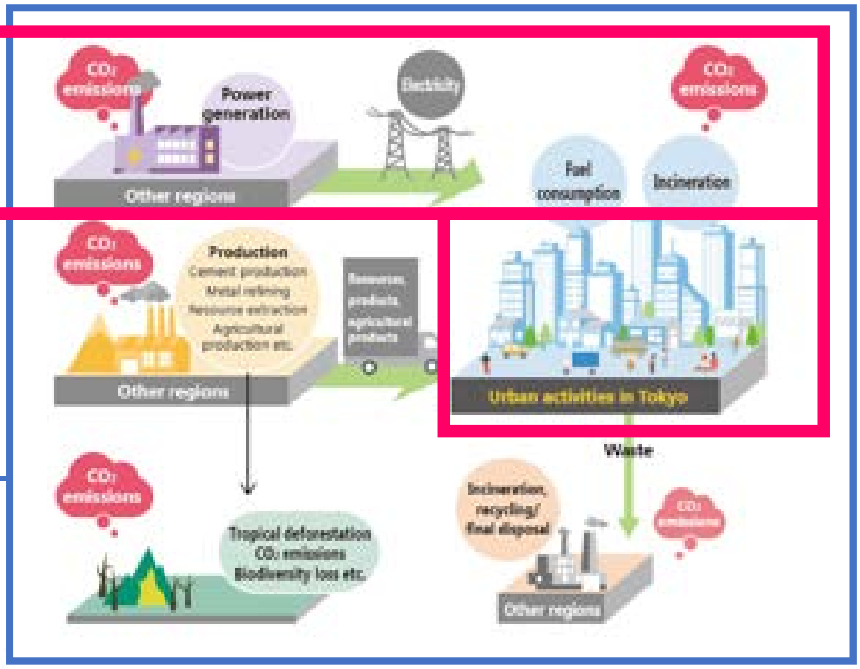




CO2 Resulting from Urban Activities

GHG Emissions in Tokyo

Consumption -based GHG Emissions

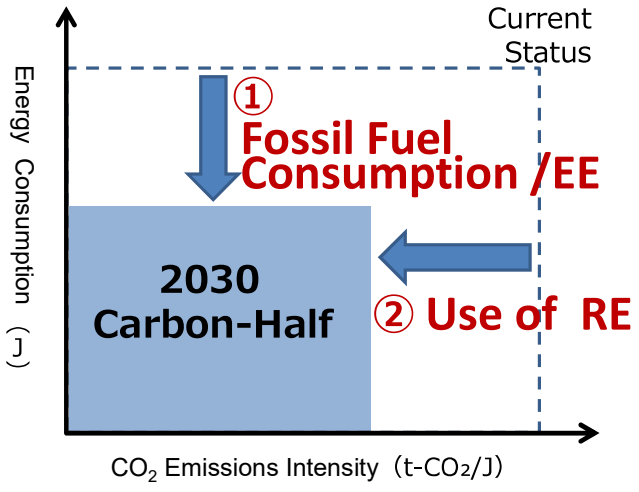


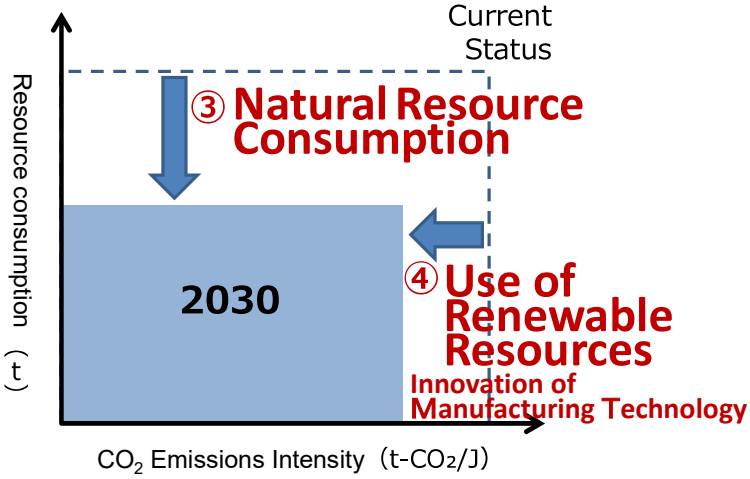
Basic Concept of "2030 Carbon-Half"

✓ **Now until 2030 : Crucial period for establishing the building blocks needed to achieve** significant reductions from 2030 to 2050

Reduce GHG emissions in Tokyo

Contribute to reducing GHG emissions in other regions





What the Russian-Ukrainian Crisis Reveals

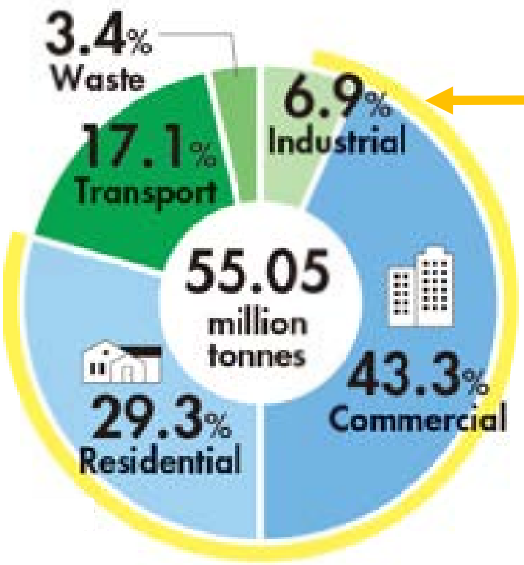
◉Tokyo: Area of high resource and energy consumption

Energy saving
(High heat insulation,
High efficiency equipment)

Renewable energy utilization

◉Advancing both decarbonization and energy security

CO2 Emissions in Tokyo



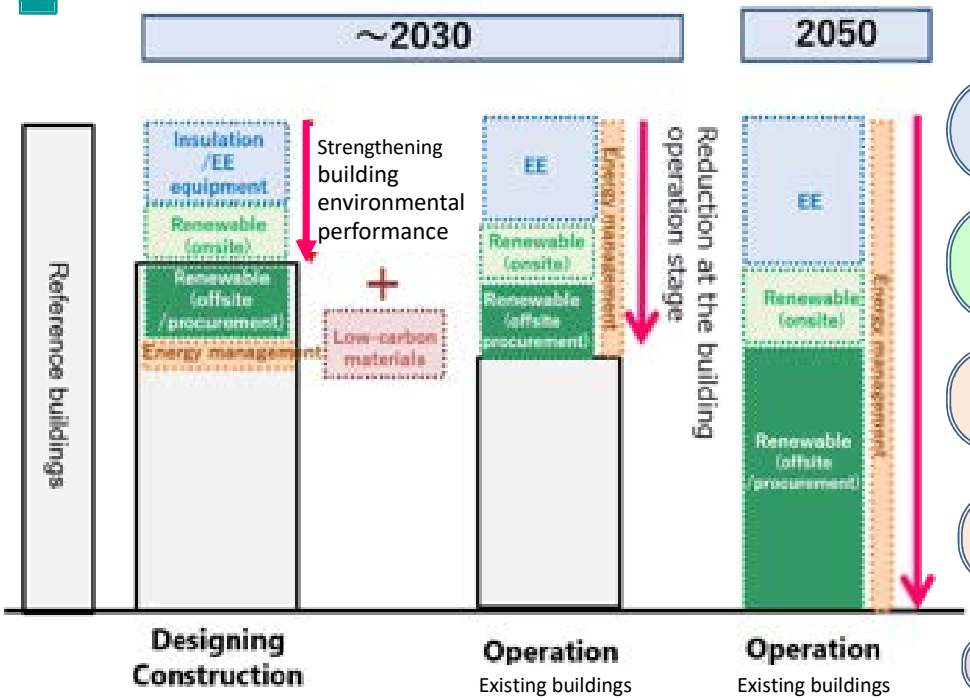
Sectoral breakdown of energy-related CO_2 emissions in Tokyo (FY 2019)

Buildings account for approx. **70%**

✓ Buildings shape the city

✓ **Expanding zero emission buildings** is a common goal of cities around the world

Policy Direction of Building Measures



＜Main measures＞

Energy saving
(Strengthen insulation/EE)

Renewable power
(Equipment installation, Procurement)

Functions for energy storage

Advanced energy management

+

Low-carbon materials

Strengthening Each Programs for Buildings by the Tokyo Metropolitan Environmental Security Ordinance

	New Building	**Existing** Building
Large	**Green Building Program** — Update High heat insulation / High EE equipment RE(PVs, etc) equipment Energy storage (Installation preparation of charger)	**Tokyo Cap & Trade Program** ～Mandatory CO2 reduction～ — Update Energy Efficiency RE(PVs, etc) equipment /RE Power procurement
2,000㎡ ↑ 2,000㎡ ↓		
Medium &small	**New program** for mainly residential houses — New **High heat insulation / High EE equipment** **RE(PVs, etc) equipment** **Energy storage** (Installation preparation of charger)	**Carbon Reduction Reporting Program for SMEs** — Update Energy Efficiency RE(PVs, etc) equipment /RE Power procurement
District	**District Plan for EE Program** — Towards creating the zero-emission district — Update EE RE Energy **storage** and advanced **energy management**	

Objective of Amending the Tokyo Ordinance for Buildings

✓ **Early updating of social infrastructure in Tokyo towards decarbonized city, in the wake of two crises**

Reduce energy consumption

Generate power, **Store** and **use** power

Building (incl. house)

District (ex, creating the zero-emission district)

Benefits of the Tokyo itself

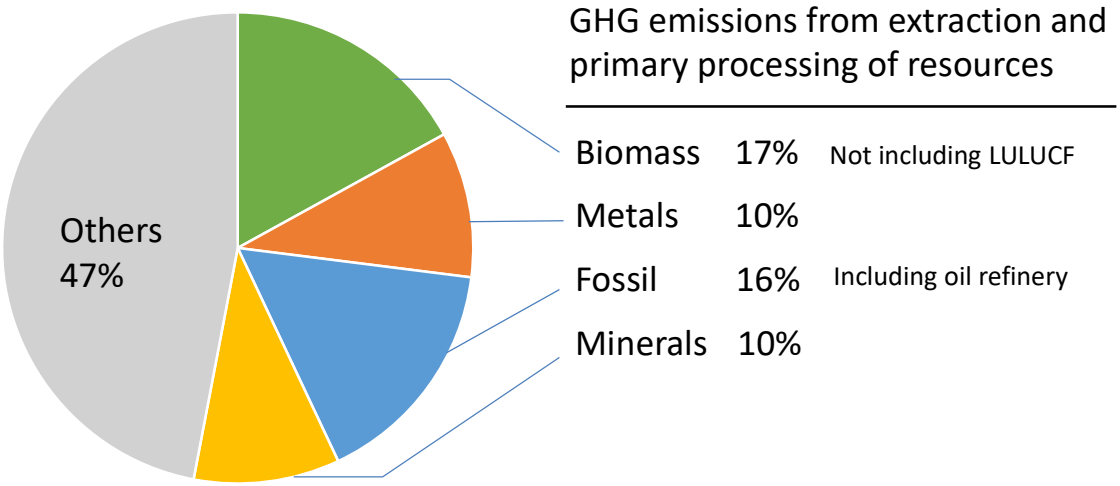
9

Tokyo's Plastic Strategy

Yasuo FURUSAWA
Chief Specialist for circular economy
Bureau of the Environment, TMG

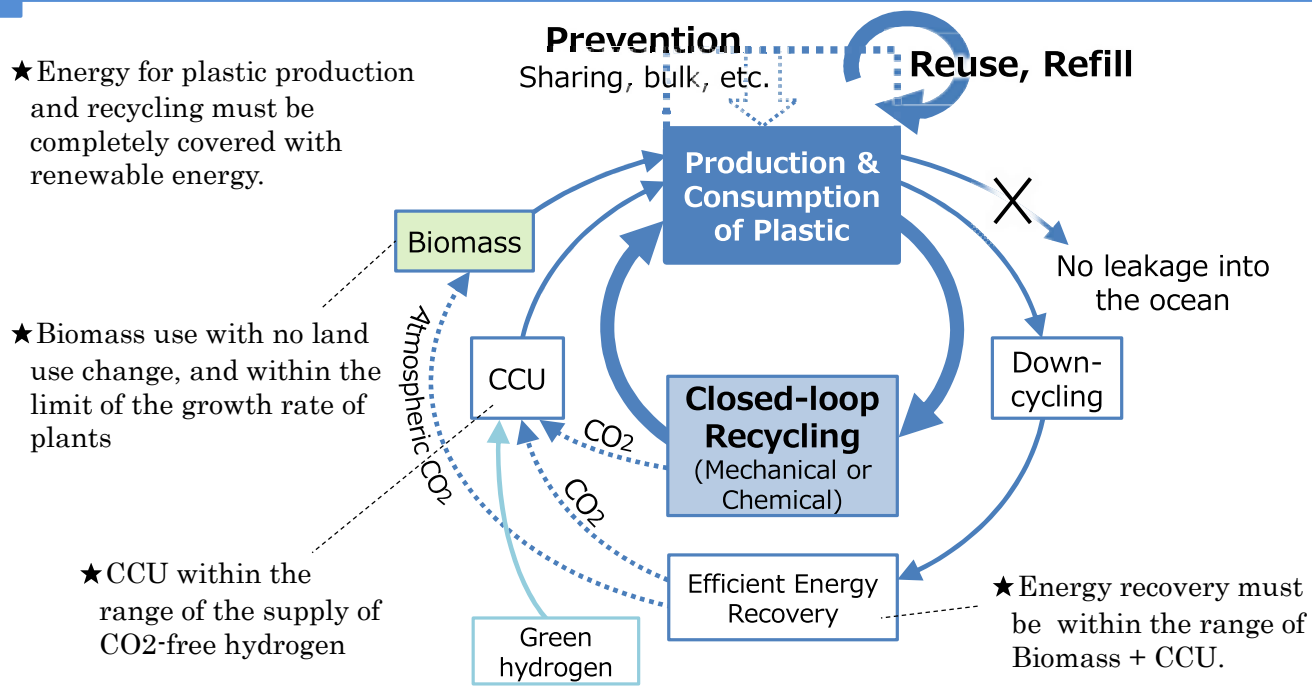
Half of the GHG emissions comes from Resources

Ratio to the global GHG emissions



IRP (2019). *Global Resources Outlook 2019: Natural Resources for the Future We Want*

CCC: Carbon-closed Cycle



3

Innovations we need

Innovation in business models:

- Rethinking the way we make, sell and buy, and use things
- Significant reduction of single-use plastics
- Shift to a reuse-based system

Innovation in recycling system:

- Easy-to-recycle product design
- Take-back scheme by retailors and manufacturers
- Recycling technologies including advanced sorting system, solvent-based extraction, depolymerization and other chemical recycling

4

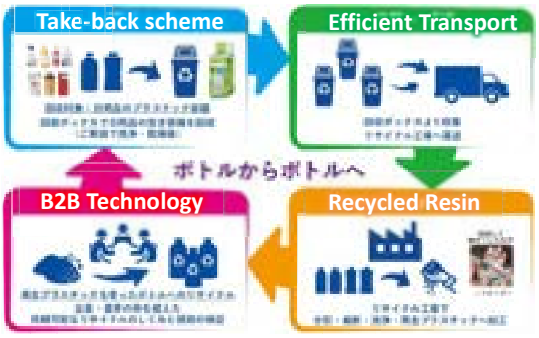
Projects for Circular Innovations

Loop

A global platform for reuse

Re&Go

Reusable cups for take-outs from cafés & CVSs including Starbucks and Lawson



Take-back and B2B recycling

- Take-back scheme of used plastic containers
- R&D for bottle-to-bottle recycling technology
- Collaboration between major brands (Kao, Unilever, P&G, Lion)

5

Circular Innovation Forum

Circular Innovation Forum 2021

Governor of Tokyo

Vice-mayor of Amsterdm

6