

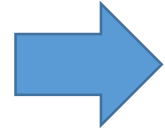
# Initiatives for achieving carbon neutral Smart Home Community connected by a micro-grid

**8 August 2022 (Mon)**

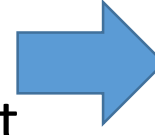
**Osamu Kanda, Supervisor, Department of Futuristic City Promotion,  
Urban Strategy Division, Saitama City**

# Land Re-Zoning Project

Land Re-Zoning Project  
Approx. 32,000m<sup>2</sup> of  
city-owned land

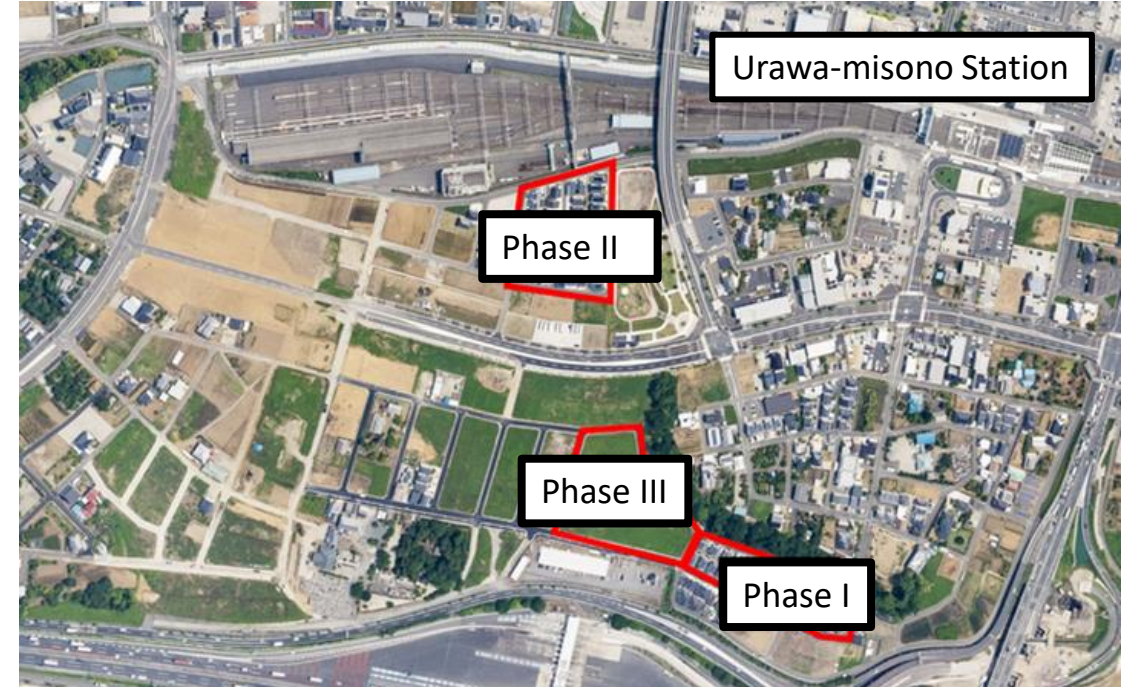
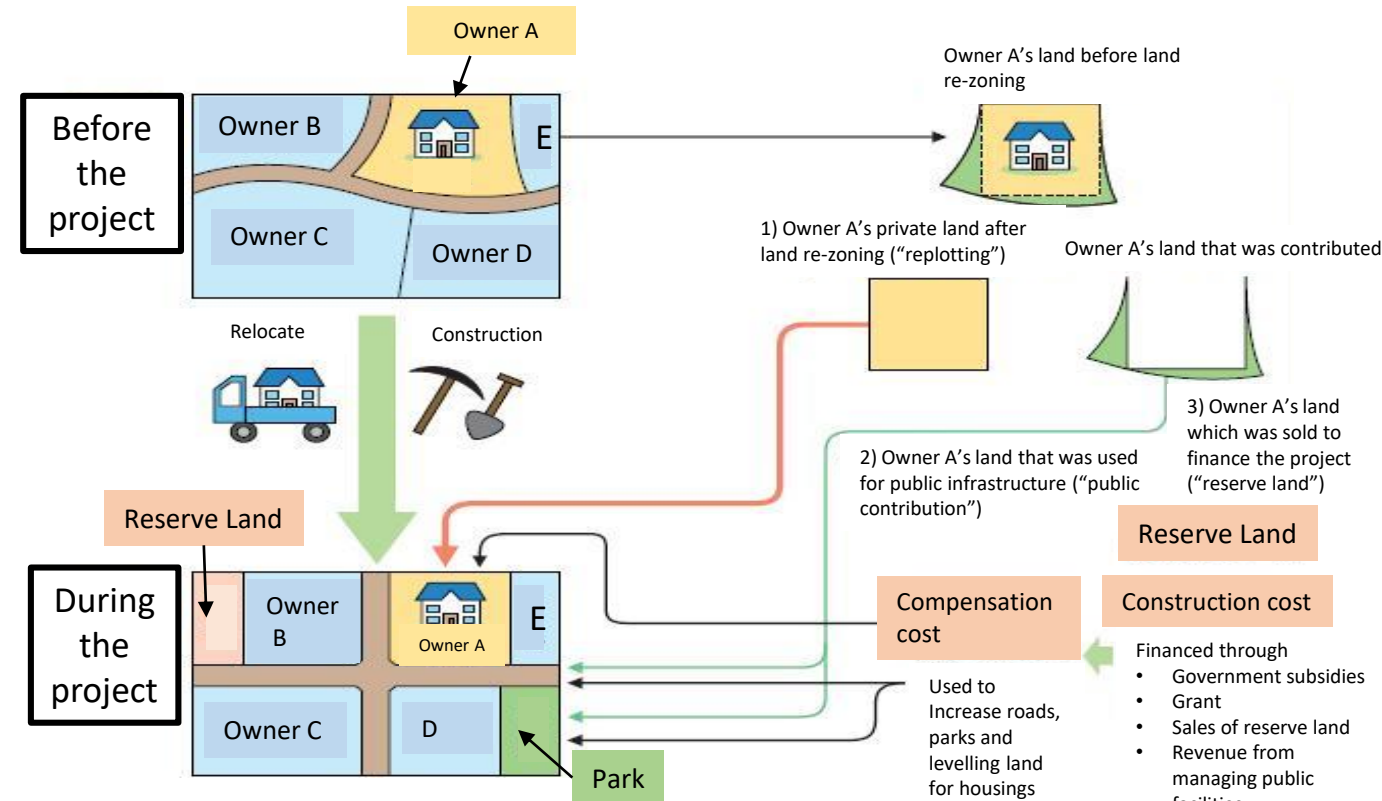


Utilise for  
community development



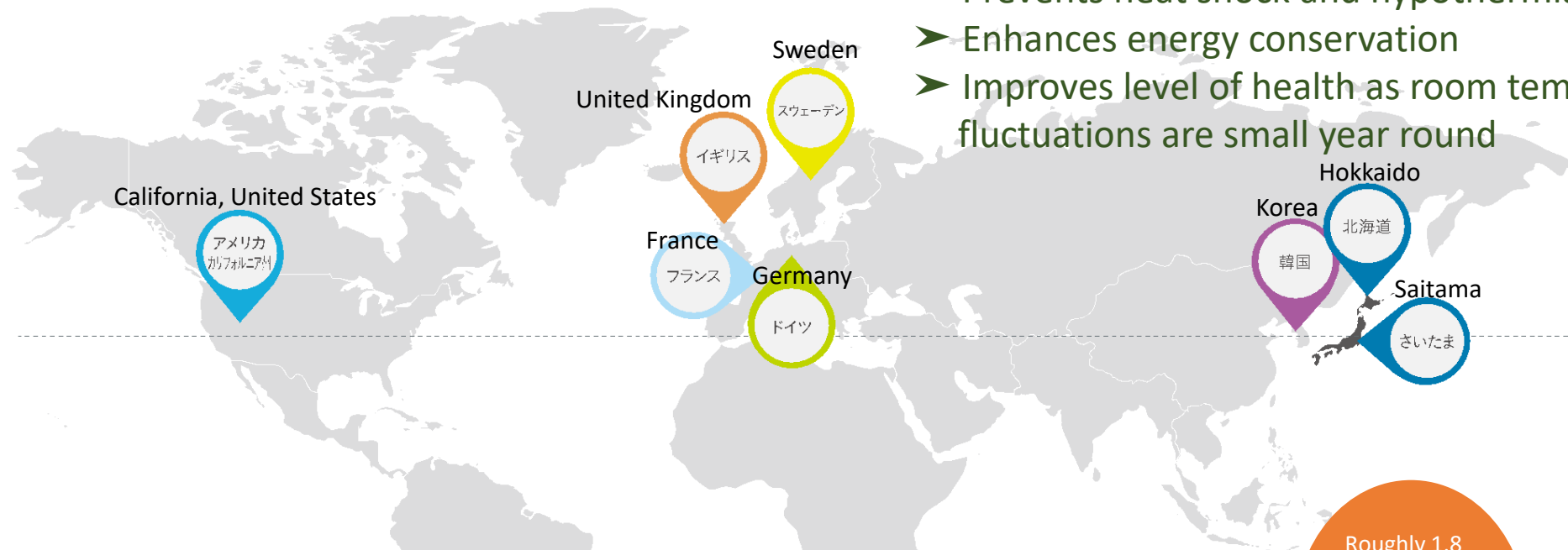
Call for project proposals

- 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



# HEAT20 Grade 2

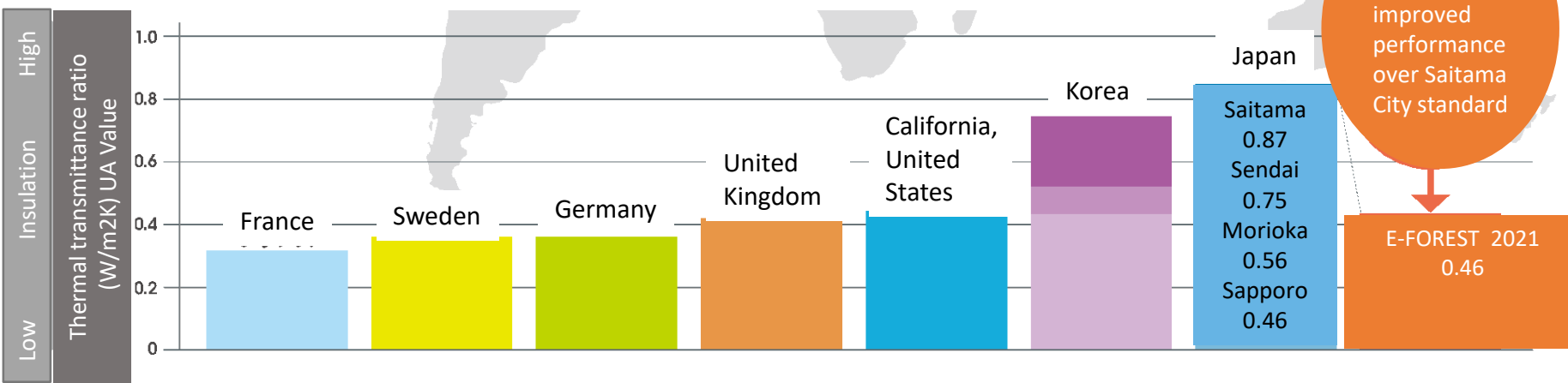
- Highly insulated highly airtight performance housing (HEAT20 Grade 2)
  - Prevents heat shock and hypothermia
  - Enhances energy conservation
  - Improves level of health as room temperature fluctuations are small year round



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)



# Undergrounding of Power Lines/Common Spaces



Fallen utility poles after Typhoon Jebi  
Sennan City, Osaka Prefecture

(Source) Ministry of Land, Infrastructure, Transport and Tourism website:  
[http://www.mlit.go.jp/report/press/road01\\_hh\\_001086.html](http://www.mlit.go.jp/report/press/road01_hh_001086.html)

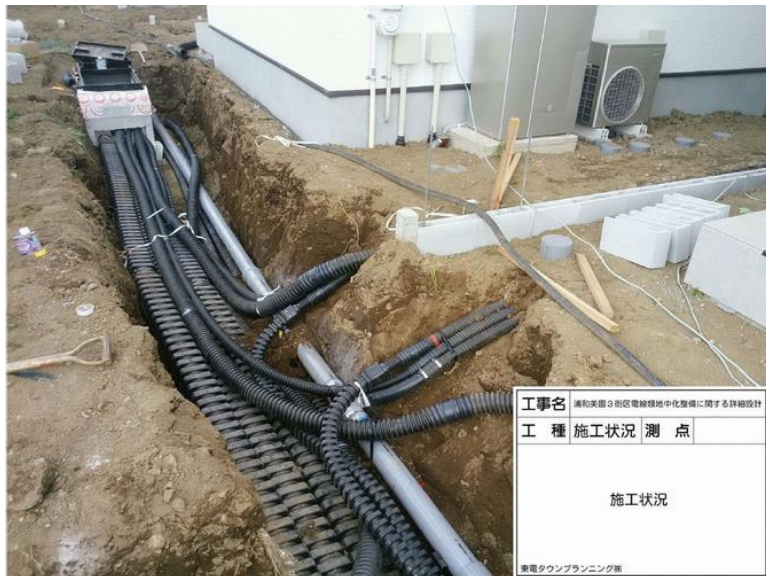


Photo courtesy of Tepco Town Planning Co., Ltd.

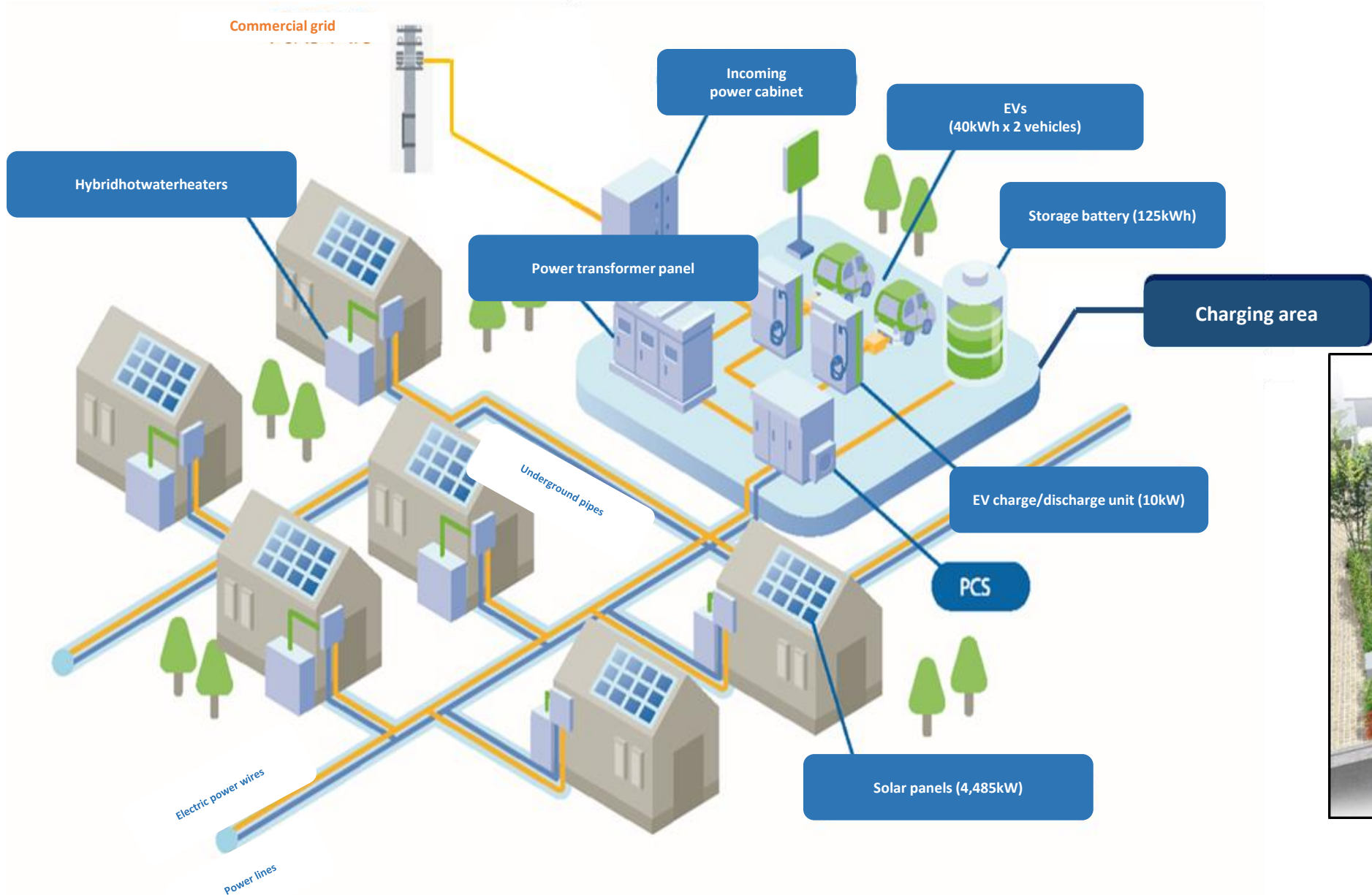
➤ Undergrounding of power lines improves the landscape and protects the town from collapsed utility poles during disasters



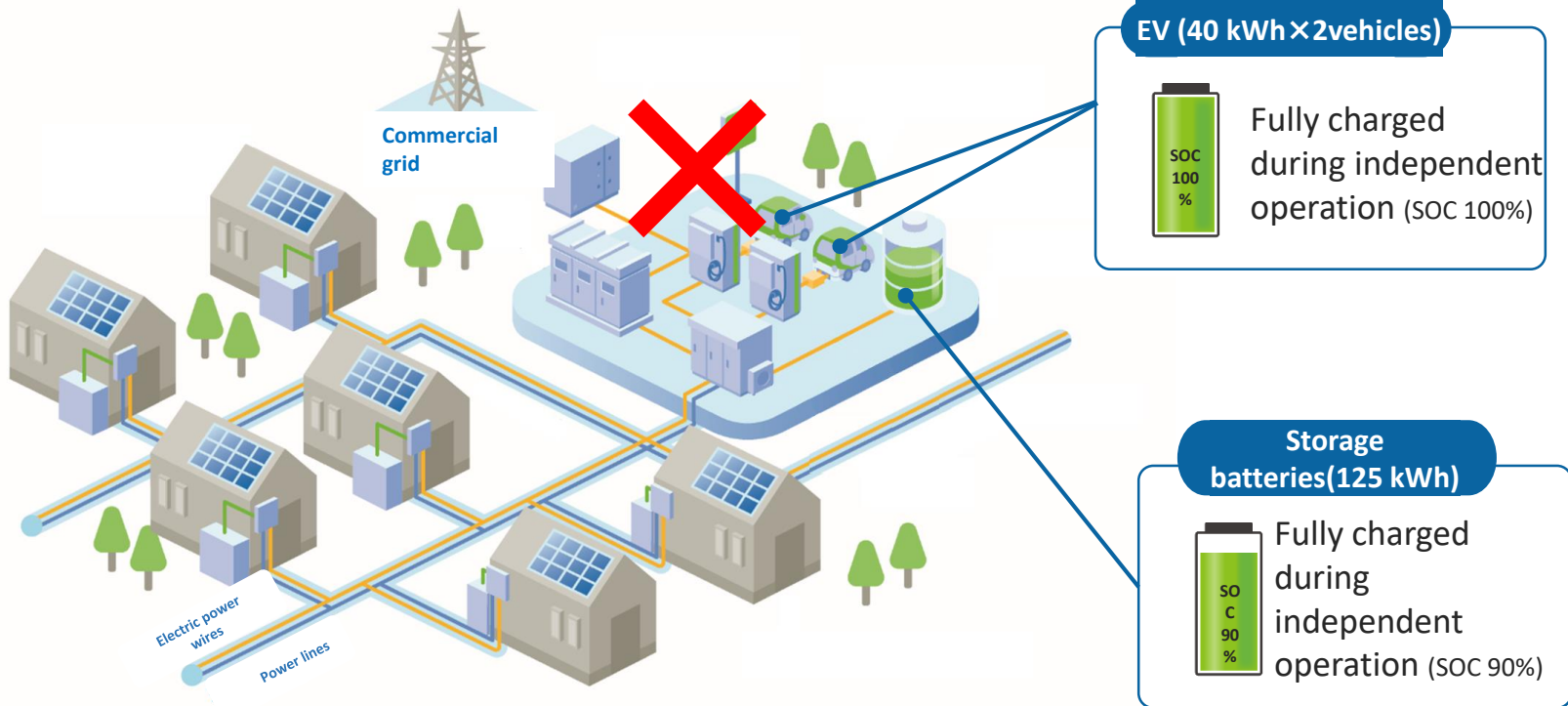
➤ Layout that facilitates neighbourly relationships between residents  
➤ Formation of management associations, mini-events for residents



# PPA (Power Purchase Agreement)



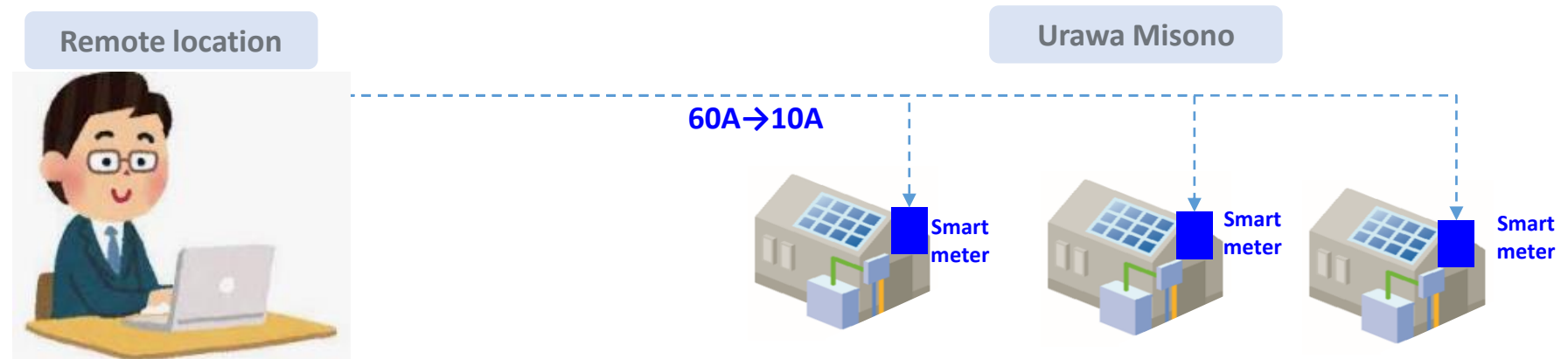
# Safeguard resilience



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

Examples of what can be used

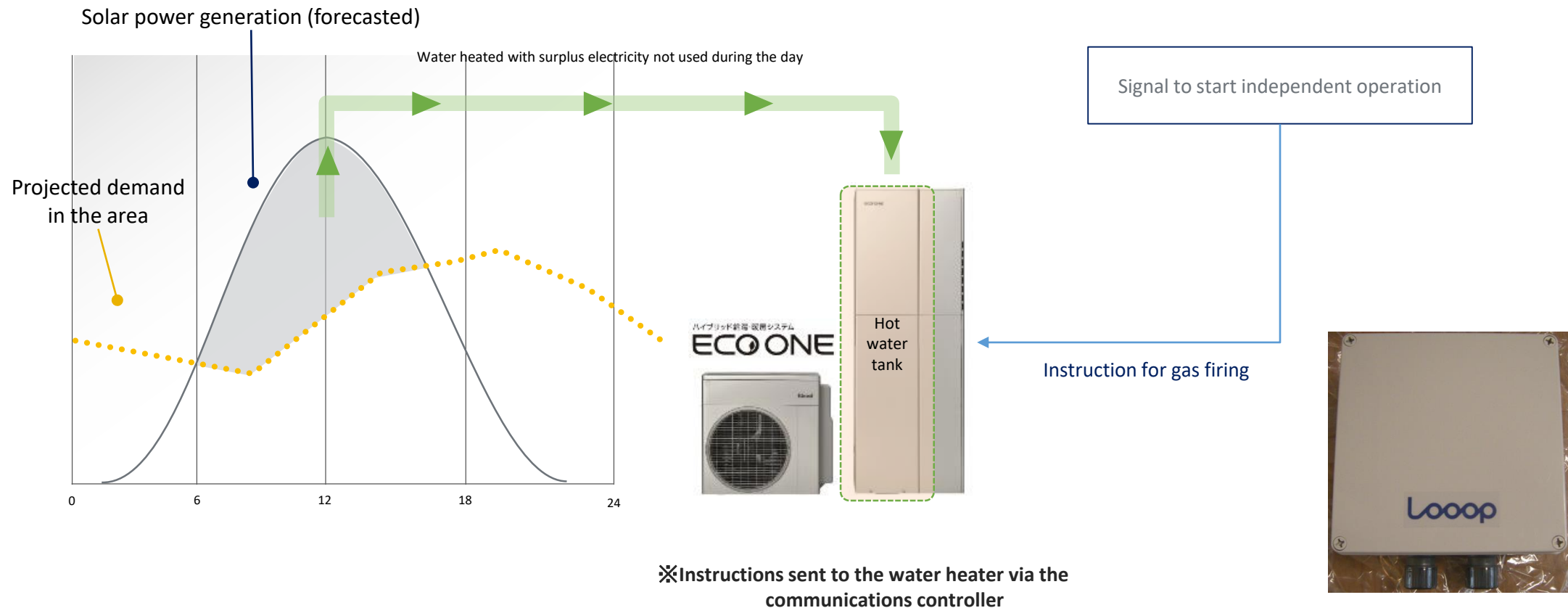
Refrigerator 300 W	Smartphone 5 W	TV 500 W	Lights 80 W



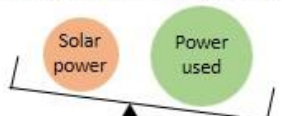
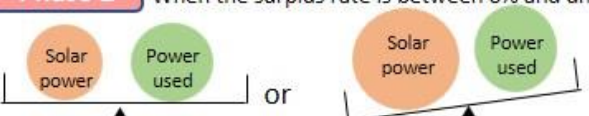
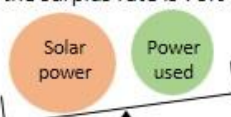
## Hybrid hot water control

Regular hours

Power outage



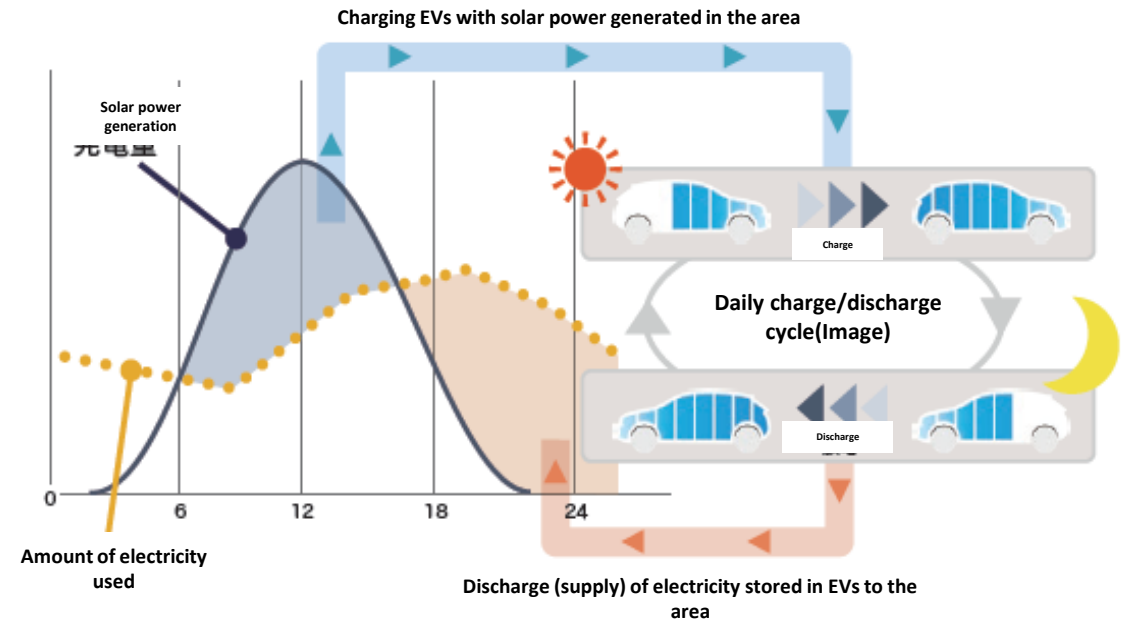
## Dynamic Pricing

<b>Basic rate</b> (Contracted ampere use: 60A) <b>¥2,500/month (incl. tax)</b>		
<b>Metered rate</b>		
Daytime (6:00-23:00)	<b>Phase 1</b> When the surplus rate is negative (less than 0%) 	<b>¥30/kWh</b>
	<b>Phase 2</b> When the surplus rate is between 0% and under 70% 	<b>¥25/kWh</b>
	<b>Phase 3</b> When the surplus rate is 70% or above 	<b>¥20/kWh</b>
Nighttime (23:00-6:00)		<b>¥30/kWh</b>

- \* Surplus rate = (Forecasted solar power generation - forecasted electricity usage in area) / forecasted electricity usage in area
- \* If no electricity is used at all, the basic rate is equivalent to 50%.
- \* All rates above include the equivalent of consumption tax.

## Shared services for EVs

### 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



Thank you for your attention!



さいたま市

For more information: Department of Futuristic City Promotion, Urban Strategy Division, Saitama City

TEL: +81-48-829-1329

E-mail: [e-kizuna.project@city.saitama.lg.jp](mailto:e-kizuna.project@city.saitama.lg.jp)