



Yokohama Smart City Project (YSCP)



地球温暖化対策事業本部

Climate Change Policy Headquarters

YSCP Vision and Objectives

As one of the largest cities in Japan, Yokohama aims to build the "Next Generation Energy Infrastructure and Social System" that maximizes CO2 reduction in the forefront of innovation. The know-how will be leveraged to deploy abroad as a city-scale infrastructure package.

Background

Increasing need for energy security

Economic development (green innovation)

Cities as center of CO2 emissions

Environmental Model City

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YSCP Vision and Objectives

Ambitious CO2 reduction target (30% by 2025)
Export overseas as a city scale infrastructure package

Assemble Advanced Knowledge, Build in Yokohama, Expand Abroad



- Retrofit solution development
- APEC2010 as touchstone for expansion to Asia-Pacific region

Diverse three areas in Yokohama



- **Urban: Minatomirai 21 Area**

- Highly developed urban center
- High-rise office buildings, international convention center



- **Residential: Kohoku New Town**

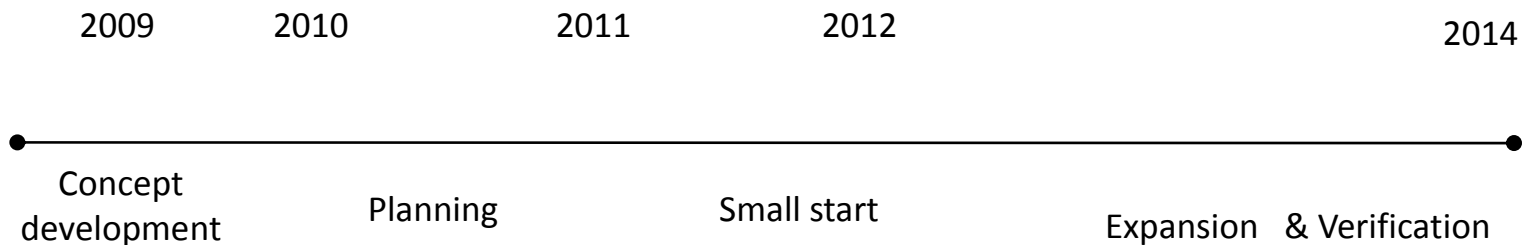
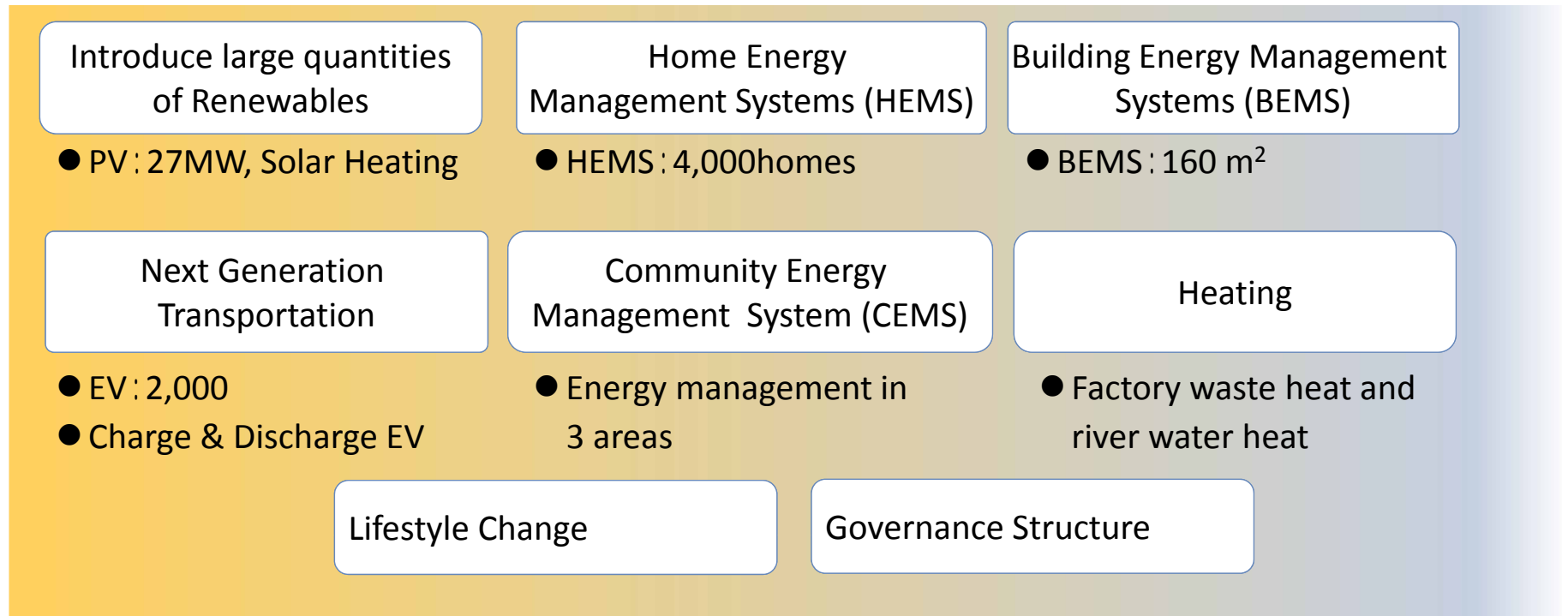
- 60s development zone designed to address Yokohama's housing demand
- Suburban commuter zone with low-rises and shopping centers



- **Industrial: Yokohama Green Valley**

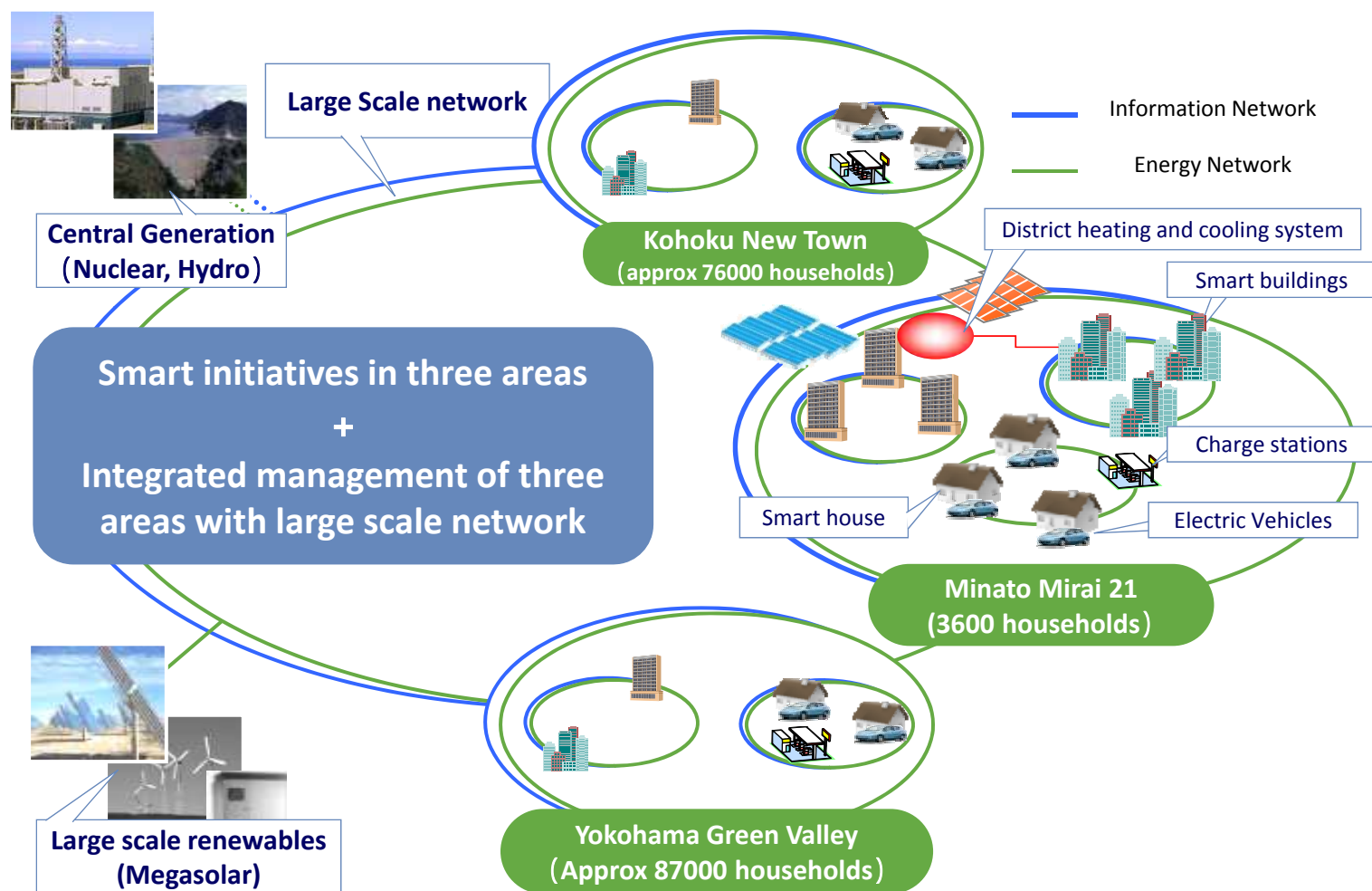
- Industrial redevelopment area on reclaimed land
- Home to Yokohama's local small to medium sized factories, amusement parks and housing complexes

YSCP Initiatives and Targets



Highlight 1: Community Energy Management System

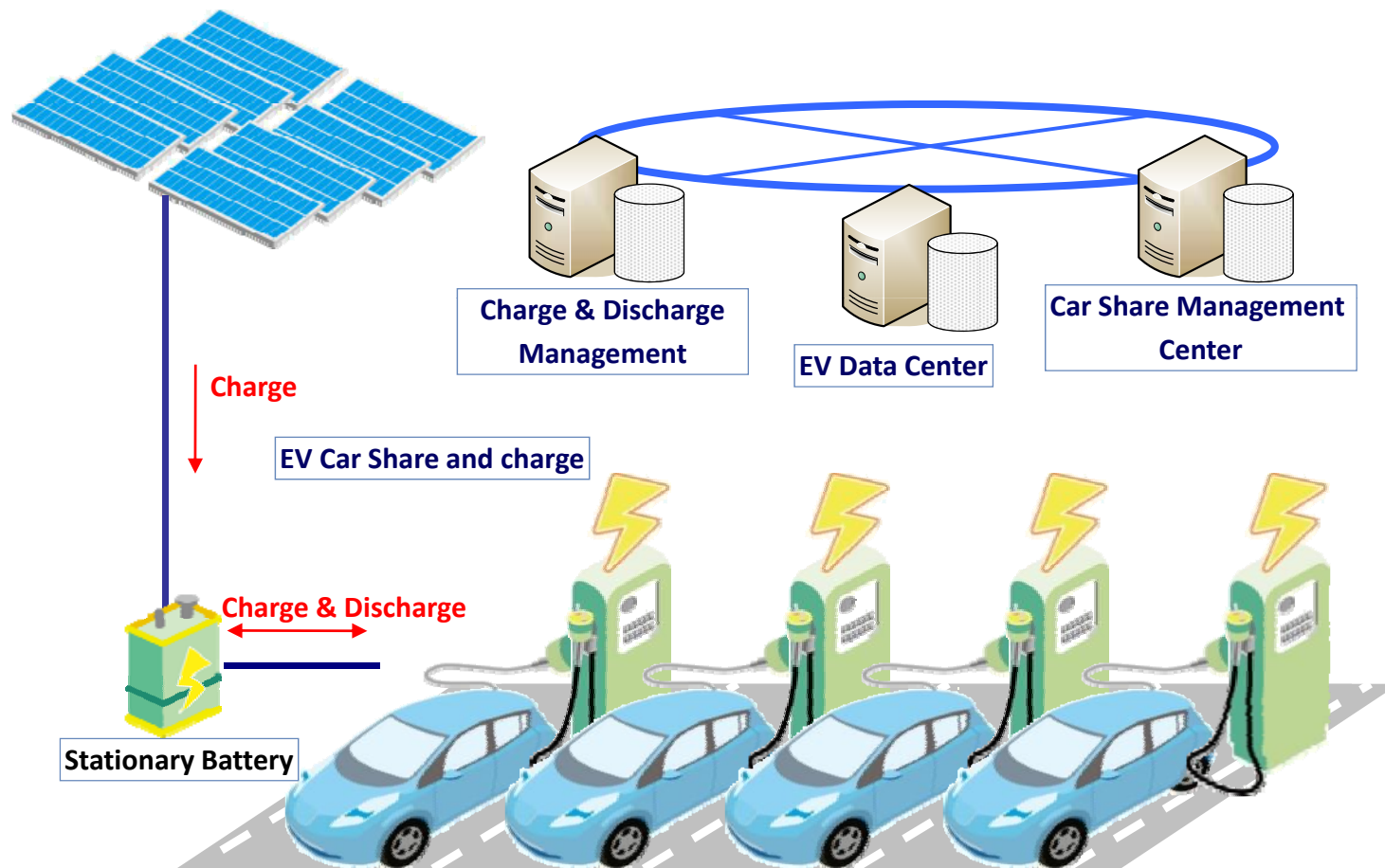
Absorbs power output fluctuation from renewables by integrating stationary battery with Home Energy Management Systems and Building Energy Management Systems



Achieves efficient energy management by managing both demand side and stationary energy storage

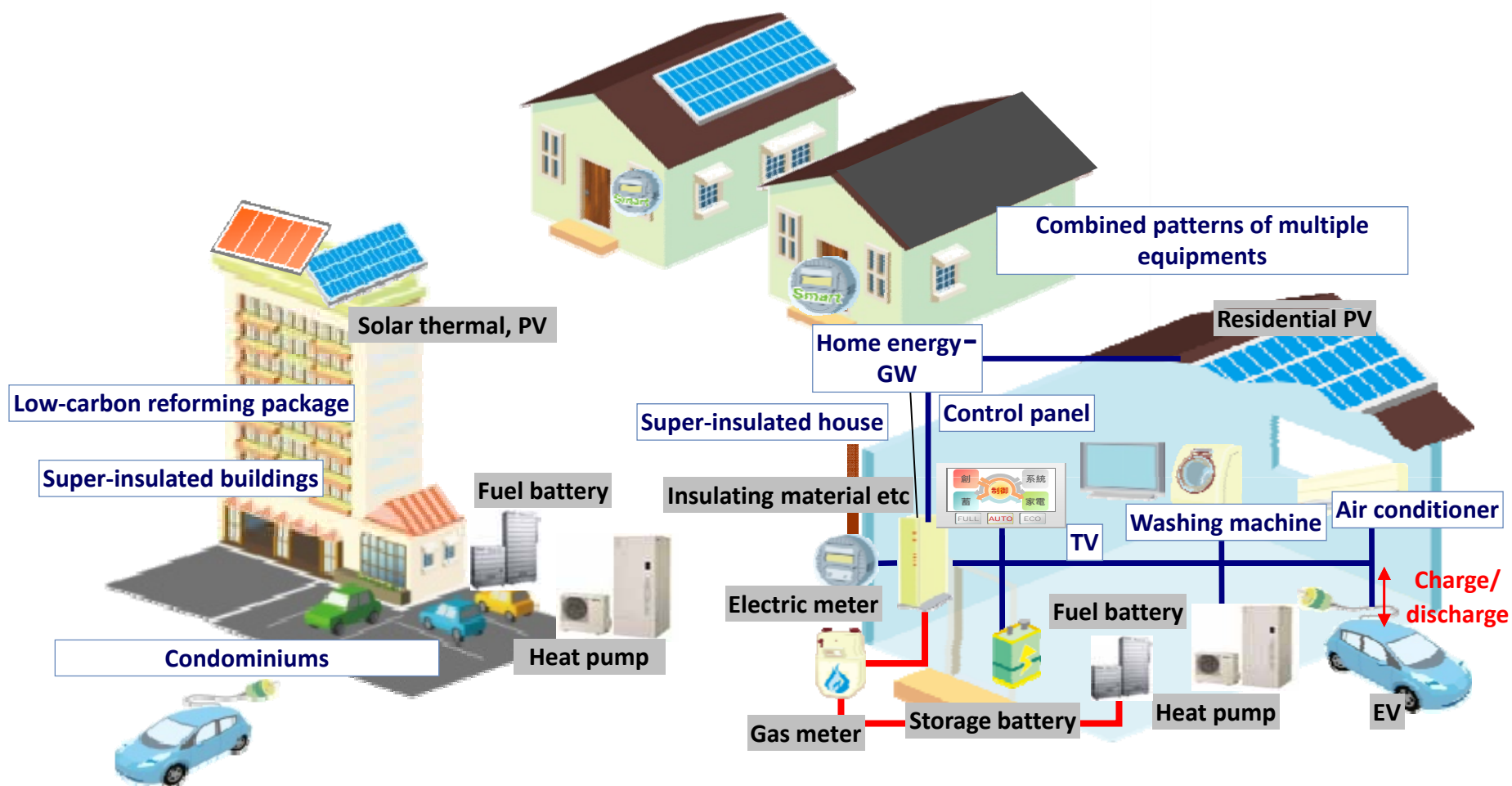
Highlight 2: Energy Management with Charge and Discharge Enabled EV

Increase usage of solar power and lower well to wheel EV CO2 footprint by developing Charge and Discharge enabled EVs that can be leveraged as clean energy storage in the three areas



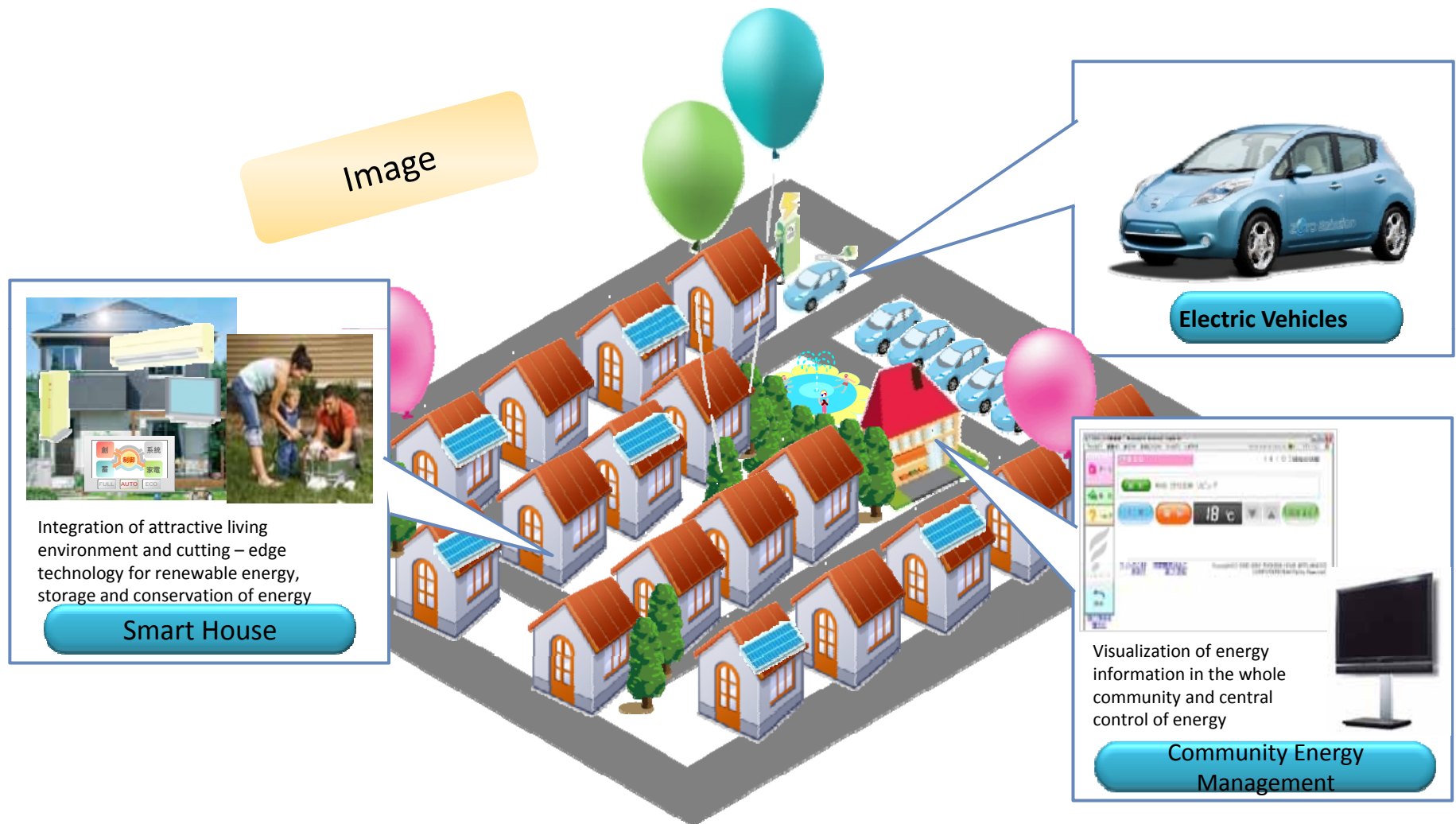
Maintains EV user satisfaction and minimize societal cost

Highlight 3: Home Energy Management System



- Introduces combined patterns of multiple PV and energy saving equipments to houses and buildings
- Examines to minimize the costs by combining with reforming and expansion of efficiency by insulating materials

Smart Community Exhibition (November 7-14, 2010)



Demonstration of EV (1)



100% EV – Nissan LEAF



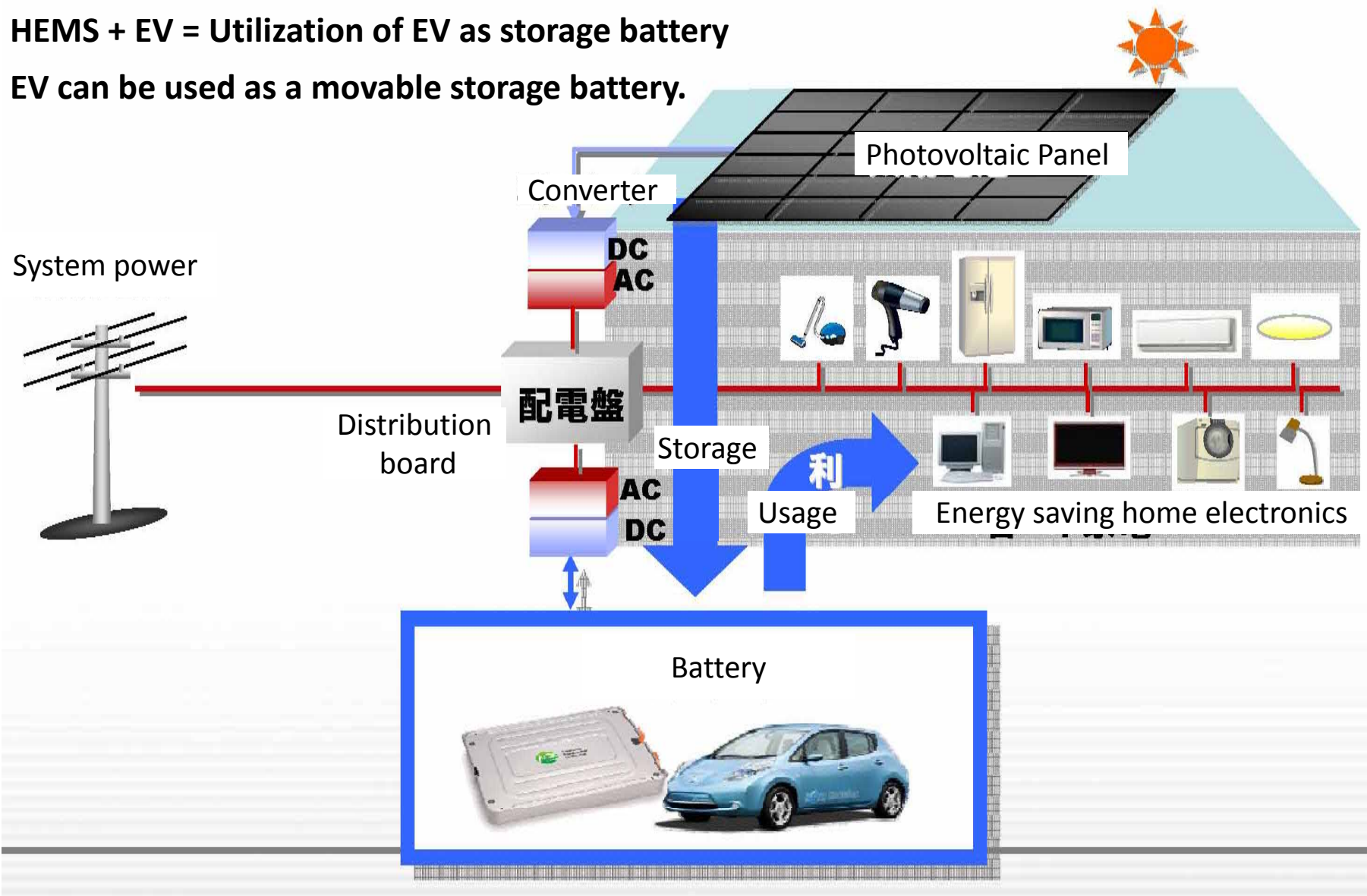
Two-Seat Mobility for Short Distance Ride



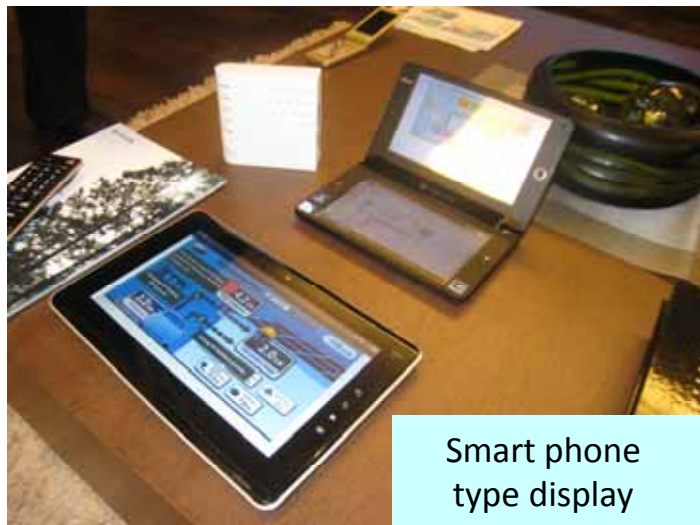
Demonstration of EV (2) – linkage with HEMS

HEMS + EV = Utilization of EV as storage battery

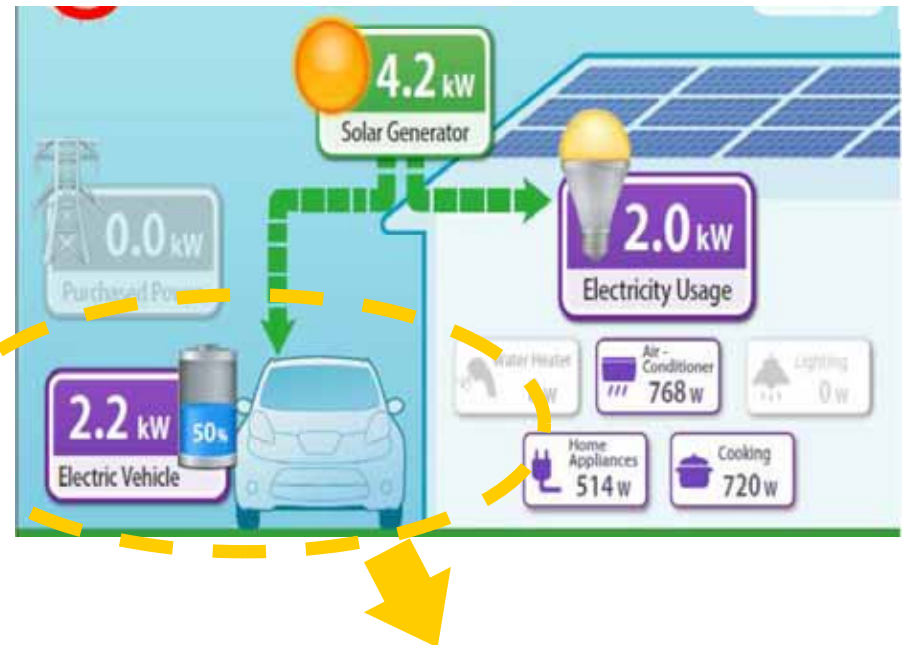
EV can be used as a movable storage battery.



Demonstration of EV (3) - linkage with HEMS



Choice of actions by consumers based on visualization of energy use



*Development and verification of discharging function of EV by 2013

Demonstration of EV (4) - linkage with CEMS



CEMS sends signals to EV and storage battery to charge through HEMS when the surplus electricity is generated by PV

