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TOSHIBA Smart Community

An Introduction

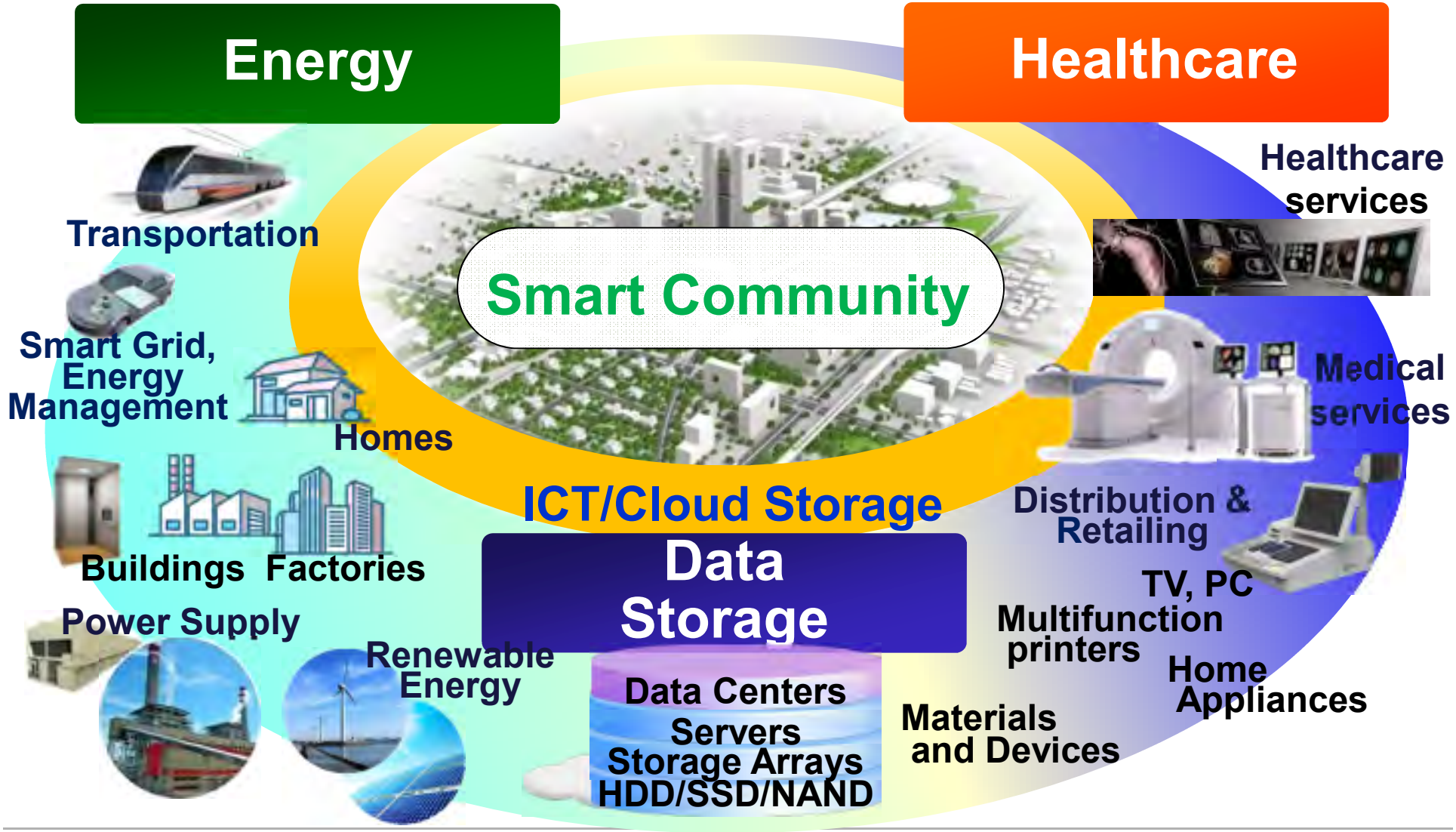
4 October 2013

Smart Community Div.
Toshiba Corporation

TOSHIBA eco style
Toshiba Group contributes to the sustainable future of planet Earth.

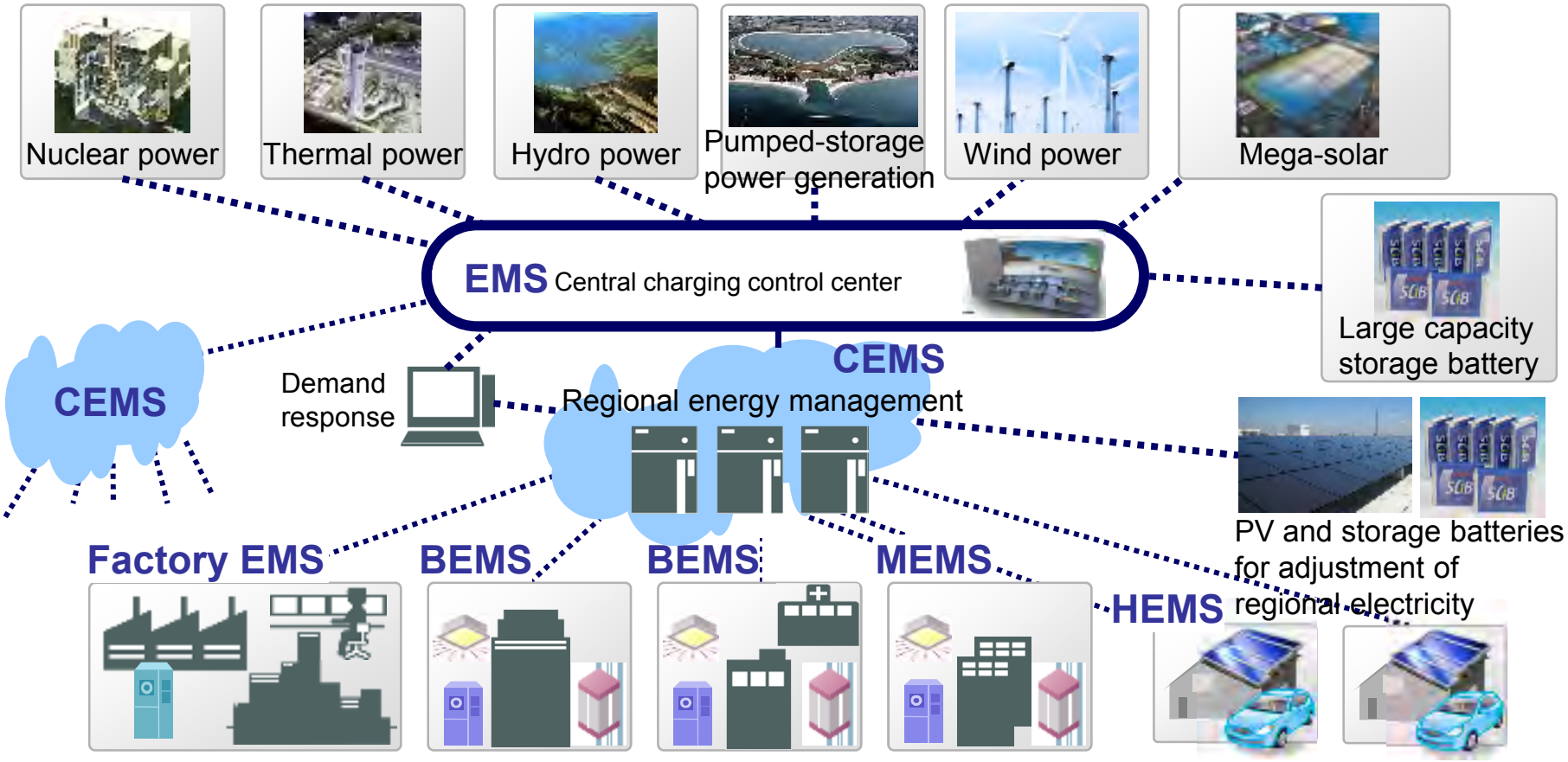
New Management Vision for Smart Communities

Three major pillars for the creation of Smart Communities



Energy Solution

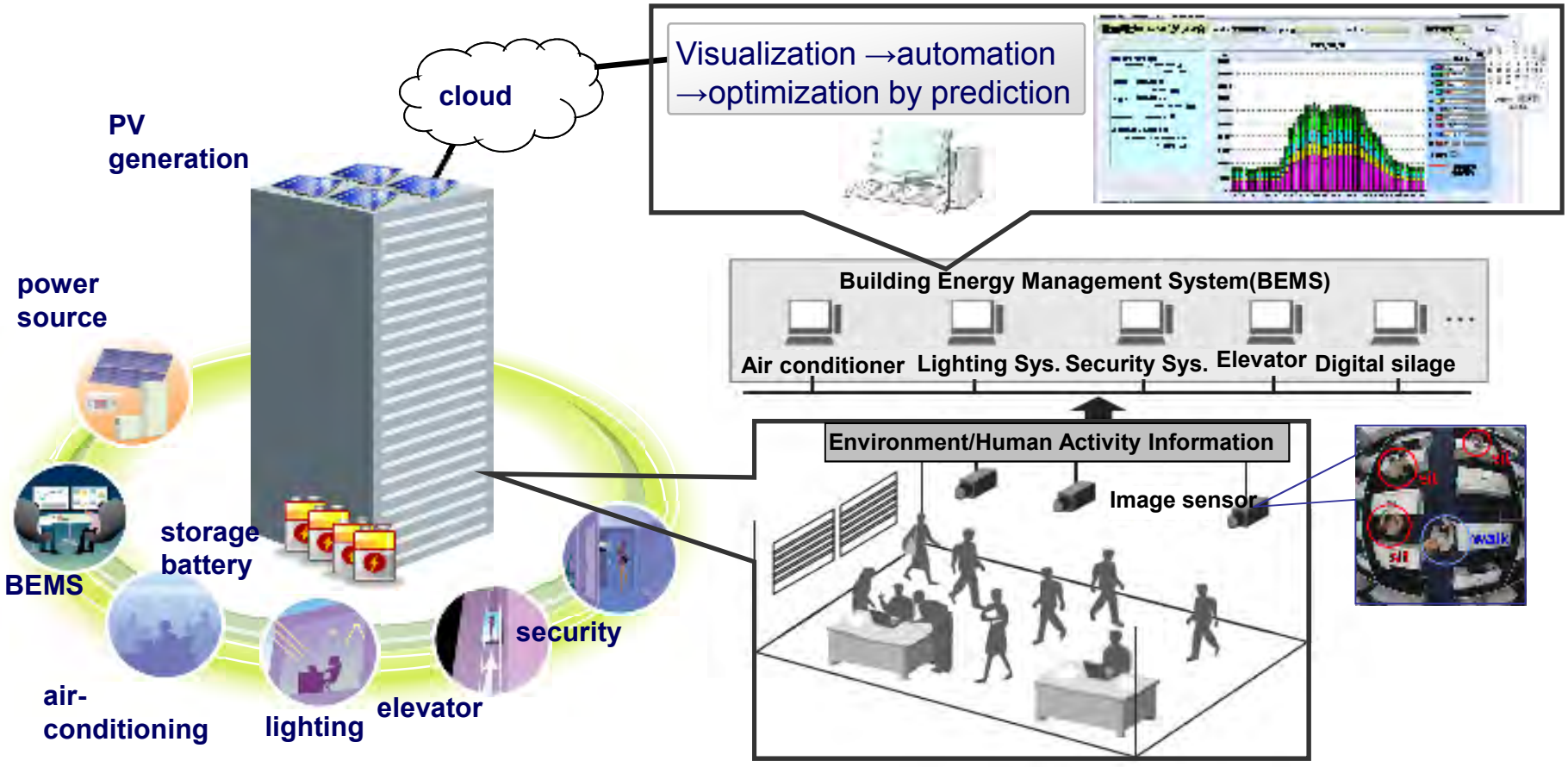
Regional energy management in accordance with main grid



- Stabilization of renewable energy supply, lowers power costs
- Realization of energy saving and efficient use in the region with Demand Response

Building Solution BEMS

Pursue comfort and efficiency through creating, accumulating and saving energy



Toshiba's BEMS achieves 9-12% of energy saving by optimized control of facility, demand response, and peak shift(*)

(*)Target value is based on the findings of the Toshiba, it is not a guarantee for individual cases.

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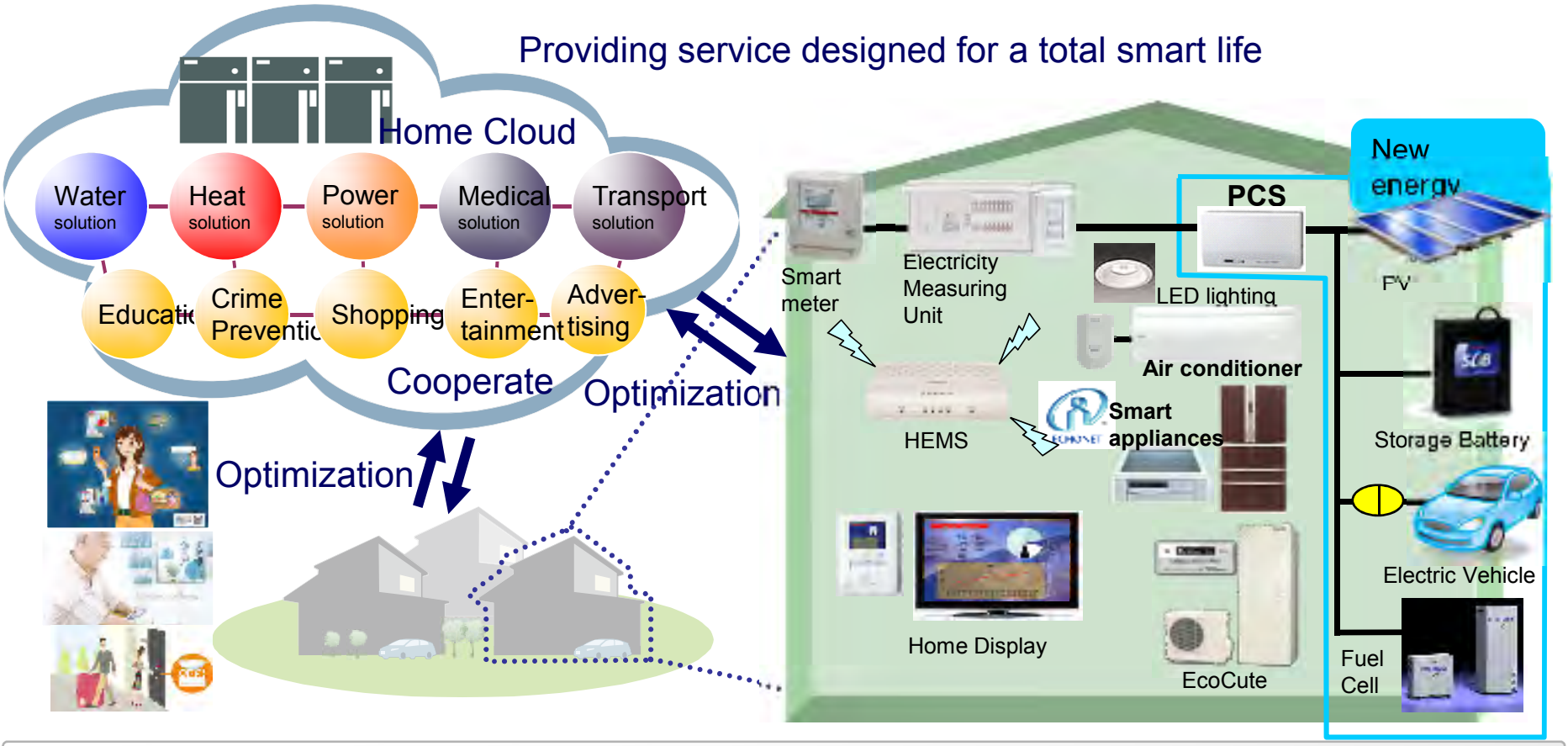
Home Solution　HEMS

Provide household with various optimized services

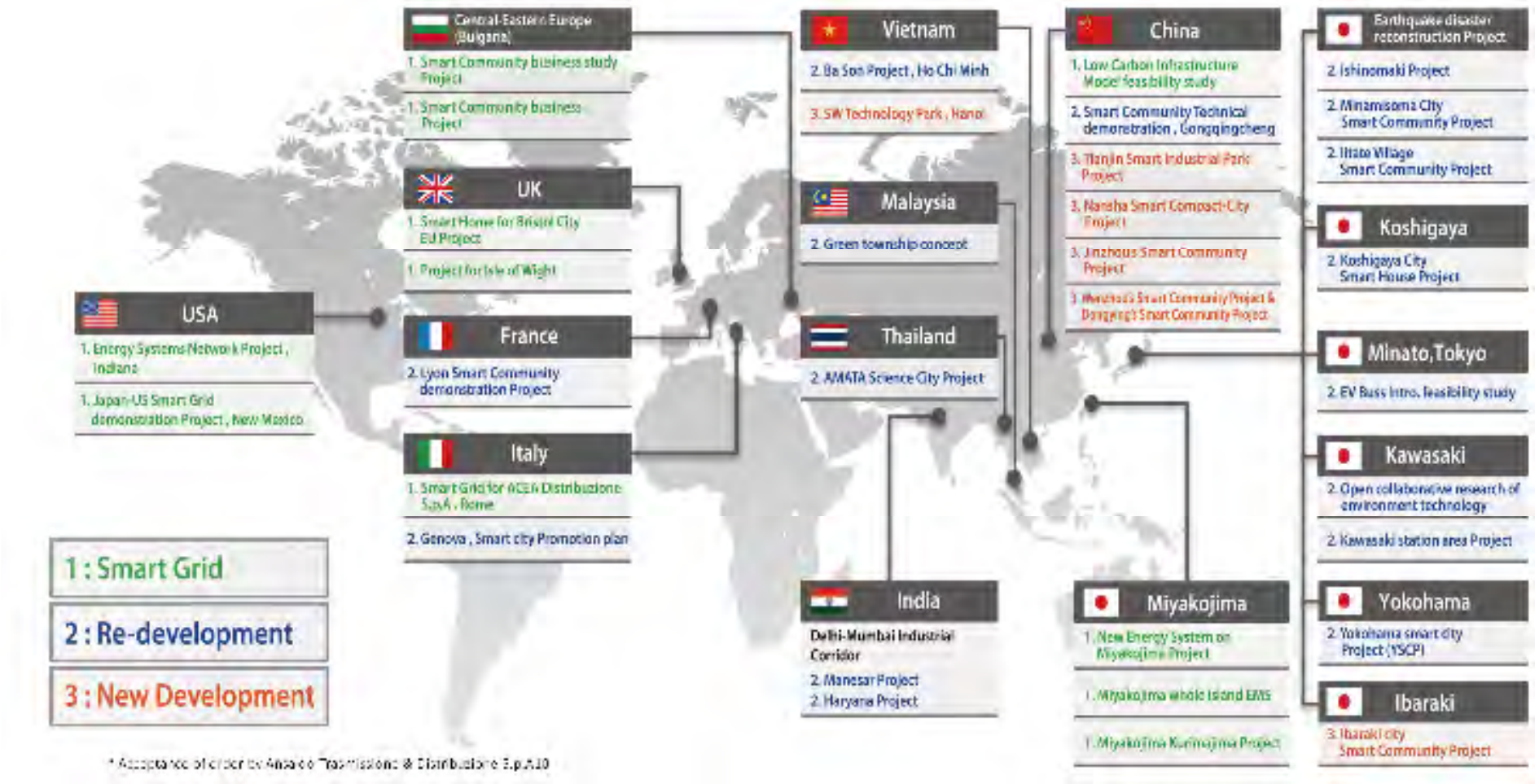


Realizing energy saving of 10% by visualization and of 5-10% by peak shift with demand response based on total control of smart home, energy equipment, and EV charging(*)

(*)Target value is based on the findings of the Toshiba, it is not a guarantee for individual cases.

Smart Grid/Community Projects Worldwide

Globally expanding Smart Community by meeting each regional challenge



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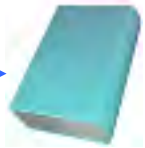
France: Lyon Project

Project Objective

Achieve the "20-20-20", environmental policy of EU 5 years in advance through the use of innovative Japanese technologies in the redevelopment district.

GRANDLYON

Redevelopment Action Plan



Support

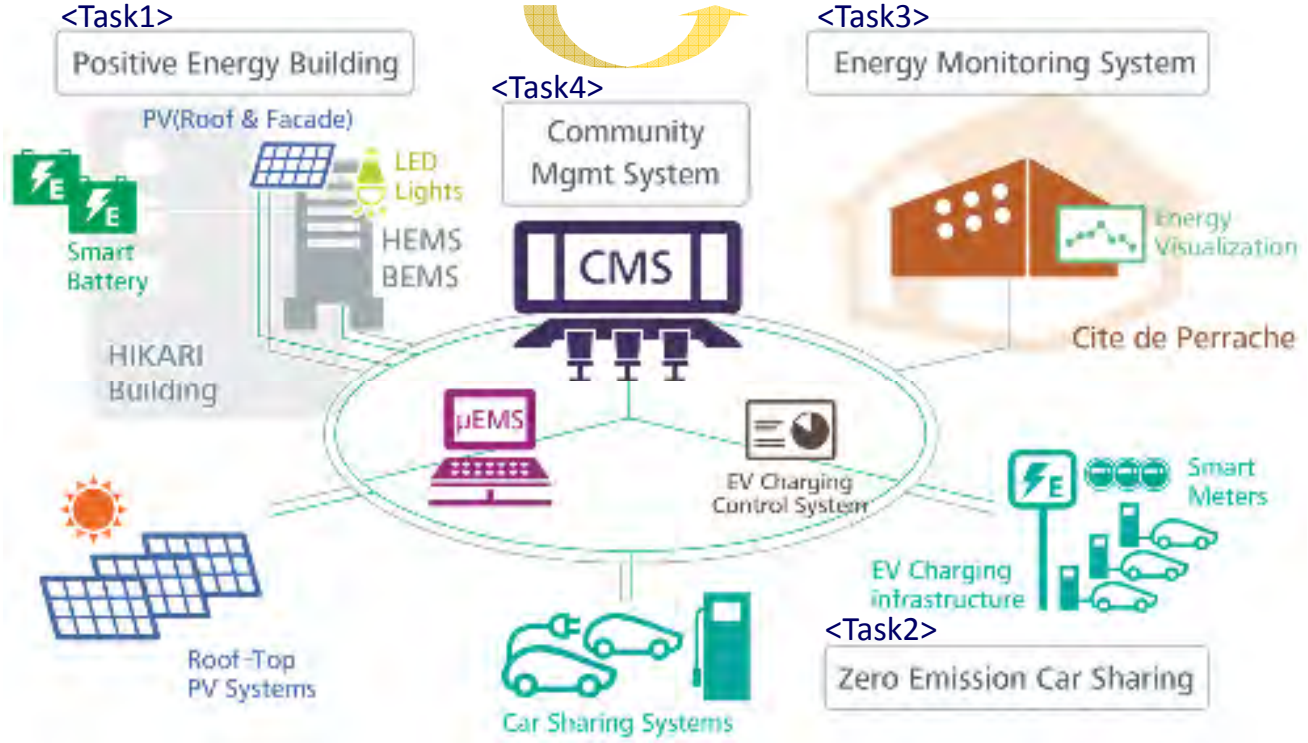
WWF

The emission of GHG in 2020 is same as 1990's with economic growth.

- ✓ Zero Carbon
- ✓ Zero Garbage
- ✓ Sustainable Mobility
- ✓ Local and Sustainable Material
- ✓ Local and Sustainable Food
- ✓ Water Sustainable Management
- ✓ Natural Housing and Biodiversity
- ✓ Local Culture and Heritage
- ✓ Economic development
- ✓ Quality of Life

LYON SMART COMMUNITY

Redevelopment District in Lyon Confluence, 150ha



PROJECT OVERALL

Realize zero increase in CO_2 emission and prevent traffic congestion with district-wide development.

<Task4>

Open data analytic engine for the global district

<Task1> HIKARI

Renewable energy, storage, energy saving and energy management

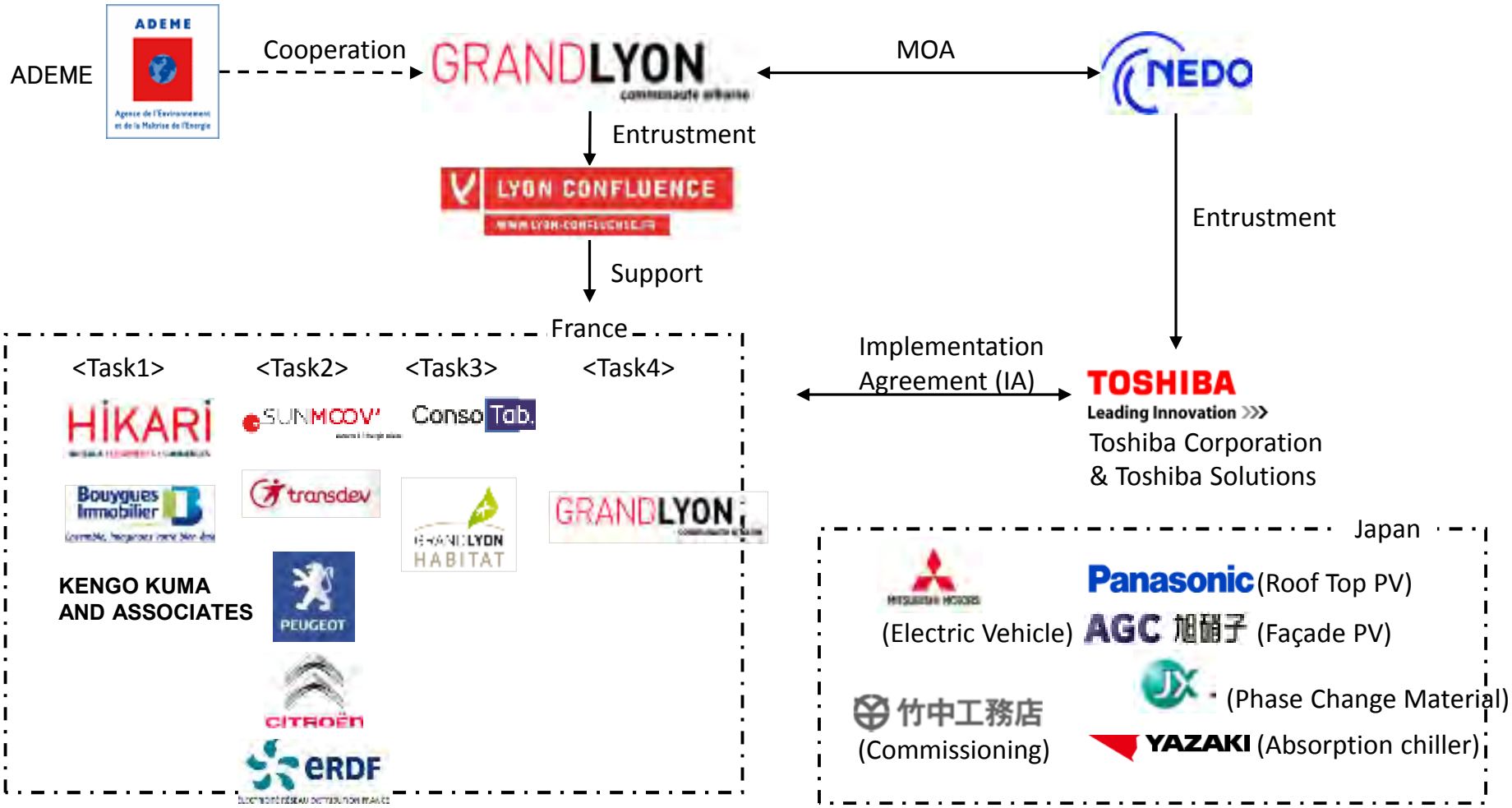
<Task2> SUNMOOV

EV sharing operation powered by PV

<Task3> ConsoTab.

Visualization and recommendation of energy with smart devices

PROJECT ORGANIZATION



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Japan: YOKOHAMA Smart City Project (YSCP)

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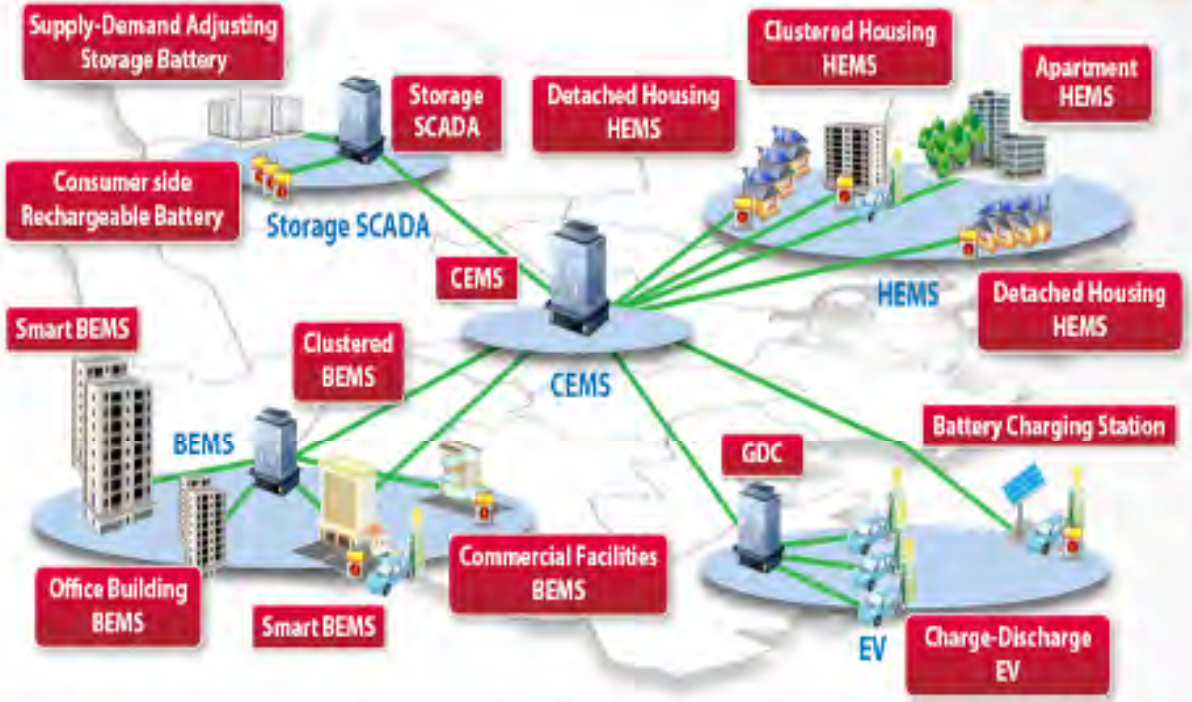
Construct a society aiming to cut CO2 emissions by 30% (*1)



Scale

Population: about 420,000 people (about 170,000 households)
Space: about 60 km2
Area: Minato Mirai area, Kohoku New Town, Kanazawa Green Valley

Business Potential Evaluation

Investment Recovery
HEMS = 3 years
BEMS = 5 years

HEMS (4,000 units)
- 10% CO2 reduction by visualization, 10% CO2 reduction by DR, total of 20% CO2 reduction (*2)
- First DR for mansions at "Park Homes Okurayama"

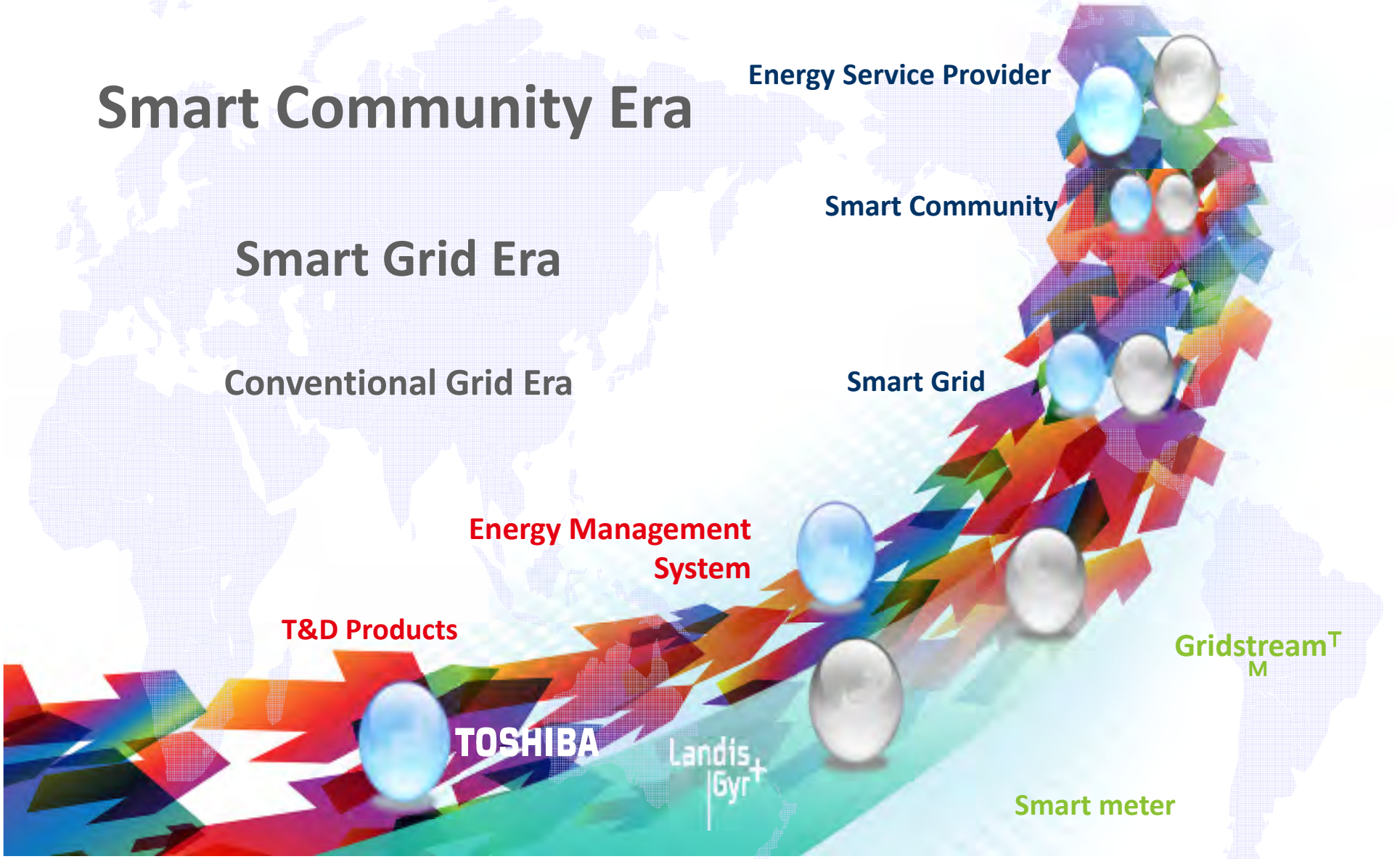
BEMS (800,000 sqm)
- 15% CO2 reduction by smart BEMS (*2)
- 5% improvement by building management (integrated BEMS) (*2)

EV (2,000 cars)
- 30% CO2 reduction per set (*4)

Smart City Expo 2011 Urban City Award

*1 Reduction target compared to Yokohama city action guideline FY2004
*2 Cut target before and after installing system
*3 Mitsui Fudosan Residential Co.,Ltd.
*4 Estimation reflecting life cycle

CEMS : Community Energy Management System
BEMS : Building Energy Management System
HEMS : Home Energy Management System
SCADA : Supervisory Control And Data Acquisition

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