

ISPLC 2011, Udine

Panel: Smart Grids



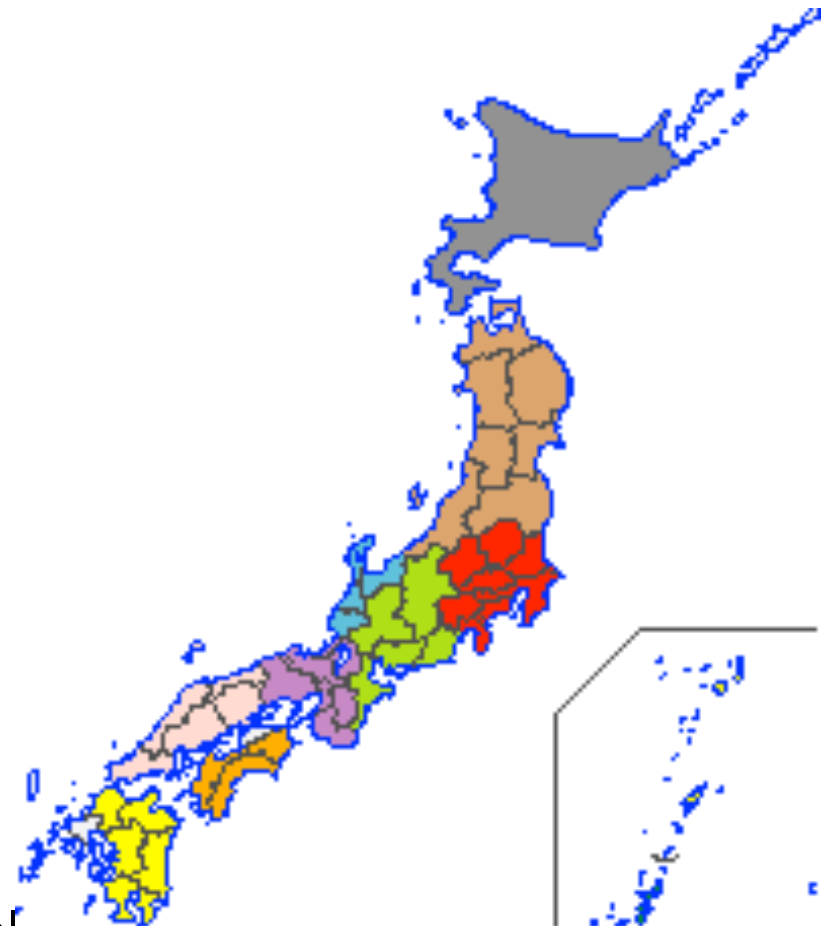
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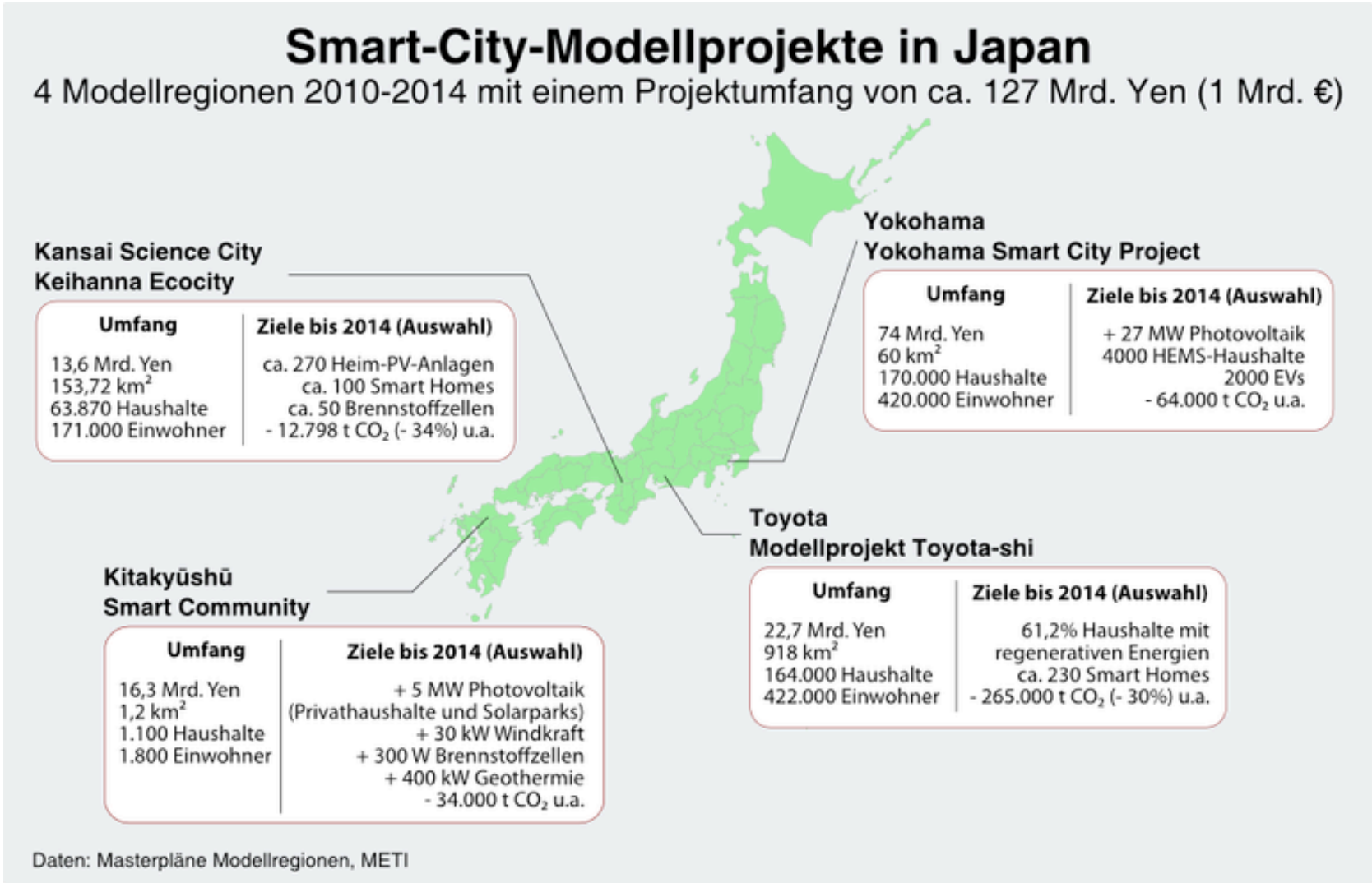
Some Special Features of Japan



- Regional Monopoly
 - 10 companies
 - Each company does all of
 - Generation
 - Transmission
 - Distribution
- Robust Power Network
 - Layered Structure
 - Small Numbers of I/O
 - Private Communication Networks
(Optical, Metal and Wireless with exclusive Channel,
- Low Non-technical-loss Rate



Smart City Model Projects in Japan



Picture is taken from <http://www.ichgmbh.com/>

Smart City Model Projects of Japan



- New Mexco, USA
- Lyon, France
- Málaga, Spain

why in foreign countries ?

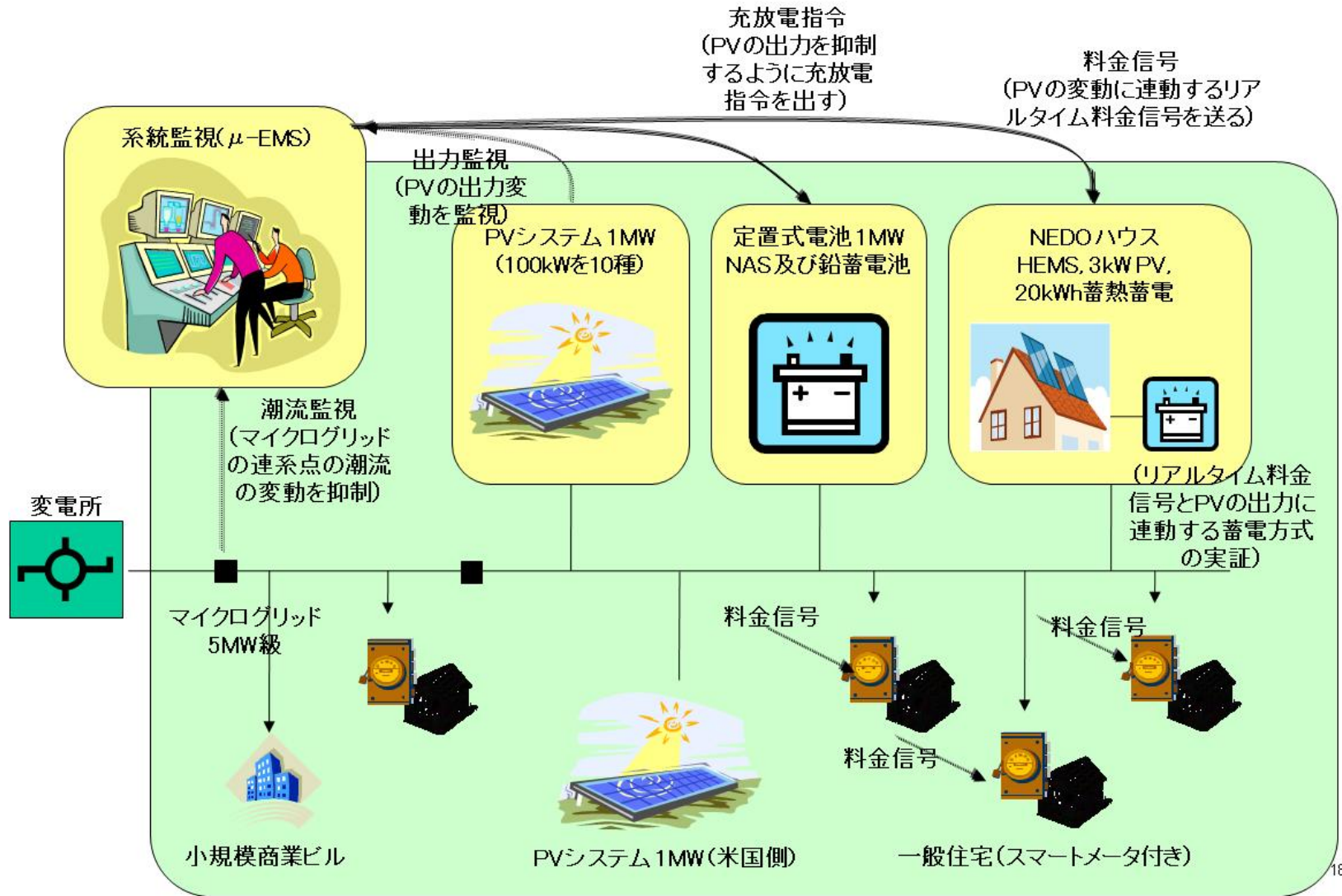
- experiences in foreign environment
- a showcase of Japanese technologies
- contributions
to international development and standardization



In New Mexco, USA

- Los Alamos County
 - Demonstration Distribution Feeders
 - Demonstration House
- Albuquerque
 - Demonstration Self-Dependent Building

In Los Alamos, New Mexico, USA



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Albuquerque, In New Mexco, USA



Town Center

- Received Voltage 1 ϕ 120V、 3 ϕ 480V
- City Gas available
- Office and Restaurant
- Future demand 500-600kW



Smart City Model Projects of Japan



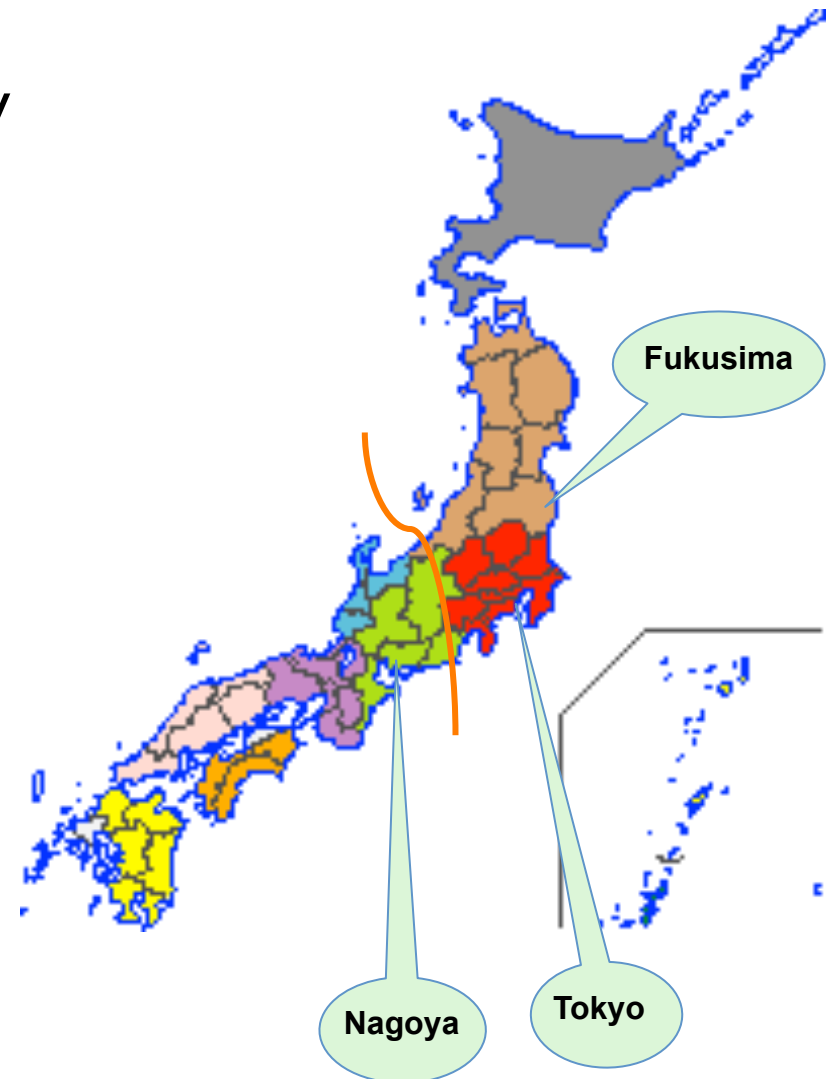
- Lyon, France (-2015)
 - Toshiba
 - Zero-CO2-Emission Building, which even produce energy than it requires.
 - Administration of EVs + Charge Stations
- Málaga, Spain (-2015)
 - Mitsubishi & Hitachi
 - Smart Community
 - In corporation with Malaga Smart City Project.
 - Green Energy + Storage
 - Traffic/Mobility with CO2 reduction
 - 5000Myens >50M\$

After March 11, 2011



- Hidden Costs of NC
 - Spot Light on Green Energy

- Rolling Blackout
 - Self-dependent factory, campus, house
 - Necessity of Larger Capacity to Exchange Energy between companies





Summary

- Already Robust Smart Power Networks
 - not prepared for bidirectional flow of energy in distribution networks
- Model Projects in Japan, USA, and Europe
 - to support development of SG technology
- Not only electricity
- Green mobility
(PHV, EV +Green Energy with smart controls)
 - Smart Community than SG.

Something has changed after Mar. 11.