



Solar Energy Projects in Japan

December 11, 2010

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**New Energy and Industrial Technology Development
Organization (NEDO)
Japan**

NEDO's Role in R&D



Ministry of Economy, Trade and Industry (METI)

Council for Science and Technology Policy

Budget
¥210 billion in FY2010

**Coordination with
policymaking authorities**



**Number of personnel
1,000**

Finance & Project Management

Academia

Industry

**Public research
laboratories**

(Consortium)

NEDO's Global Development Activities and Networks



State of New Mexico, United States
Japan-U.S. Smart Grid Collaborative Demonstrative Project
 Demonstrate the effectiveness of integrated technologies for dispersed-type power sources, batteries, smart meters and communication technologies targeting establishment of international standards.

France
ADEME
 A joint demonstrative project agreement on a smart grid and power storage (Nov. 2009)
Grand Lyon Community
 A joint demonstrative project agreement on smart community at Lyon confluence (Oct. 2010)



Germany
NOW
 Information exchange agreement on fuel cell and hydrogen technology R&D (May 2010)
BMBF
 A cooperative relationship for the R&D of power storage technology (Sep. 2010)

China
National Development and Reform Commission
 A joint project for coke-oven automatic combustion control system (Nov. 2009)
Chinese Academy of Sciences
 Cooperative relationship to address energy and environmental issues (Oct. 2009)



IRENA
 Affirming possible future collaboration for dissemination of renewable energy utilization (Feb. 2010)

United States
 A cooperative project for smart grid technology development in New Mexico together with LANL, SNL, state and local governments (Mar. 2010)



Spain
CDTI
 A joint technology development agreement (Dec. 2008)
 Collaborative research and demonstration agreement on smart grid-related technology (Sep. 2010)

World Bank
 Collaboration agreement on activities in the energy and environment field, including the establishment of a smart community (Oct. 2010)



Tunisia
 A joint project LOI on Concentrated Solar Power (Jul. 2010)
Morocco
 Future collaboration for solar power utilization

India
 A joint demonstration project for waste heat recovery system (May 2009)
DMICDC
 A joint develop agreement on smart communities in DMIC project (Feb. 2010)

Australia
 Cooperative relationship for utilization of coal, water and renewable energy with Australian government
 A joint project for water-recycling systems with Queensland state government (Aug. 2009)

Singapore
NRF
 Cooperation agreement in R&D of energy, environmental and industrial technologies (Nov. 2010)
EDB, BCA
 Cooperation agreement in joint activities of urban solutions and smart community (Nov. 2010)
PUB
 Joint project agreement for the development of industrial wastewater treatment technology (Nov. 2010)

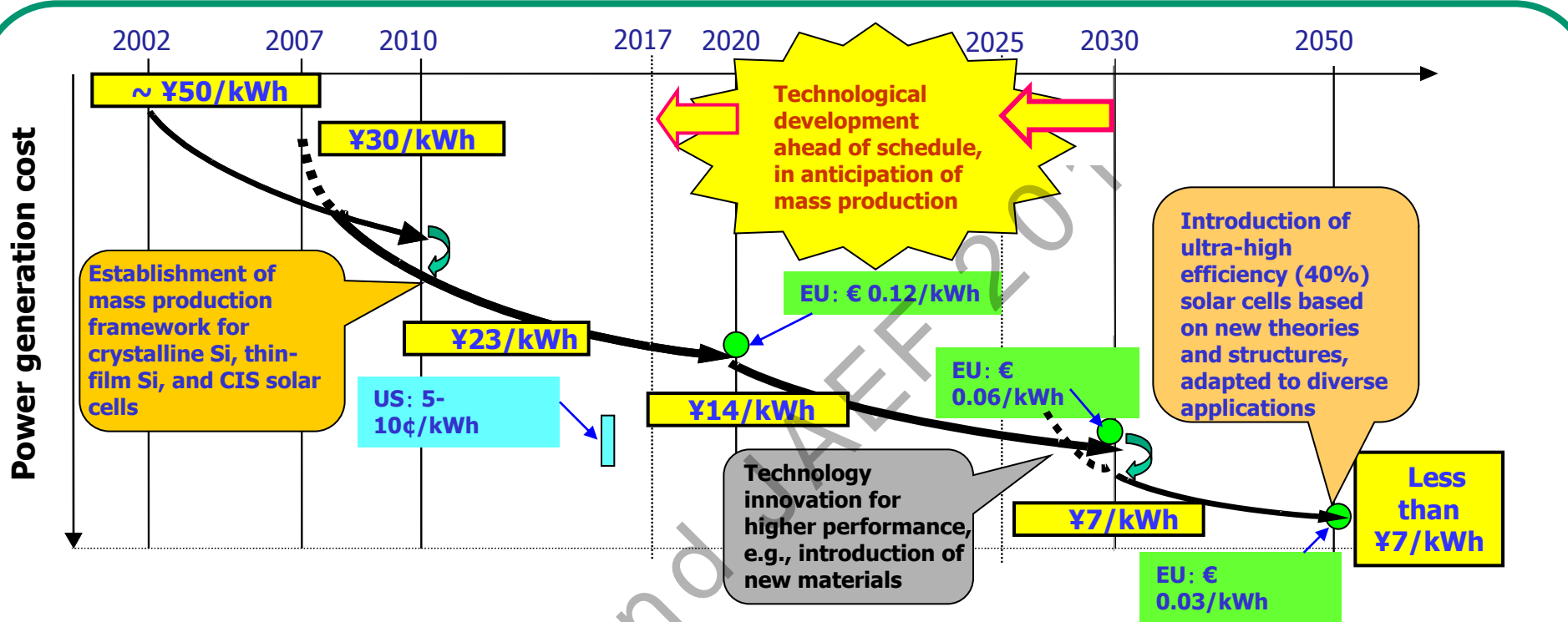


Emirate of Ras Al Khaimah, UAE
Project on Water Saving Recycling Systems
 Establish a business model in which industrial water is reclaimed from sewage to be utilized for industry by means of collecting water treatment fees in an industrial area where the water supply and sewage infrastructure is not yet fully functioning



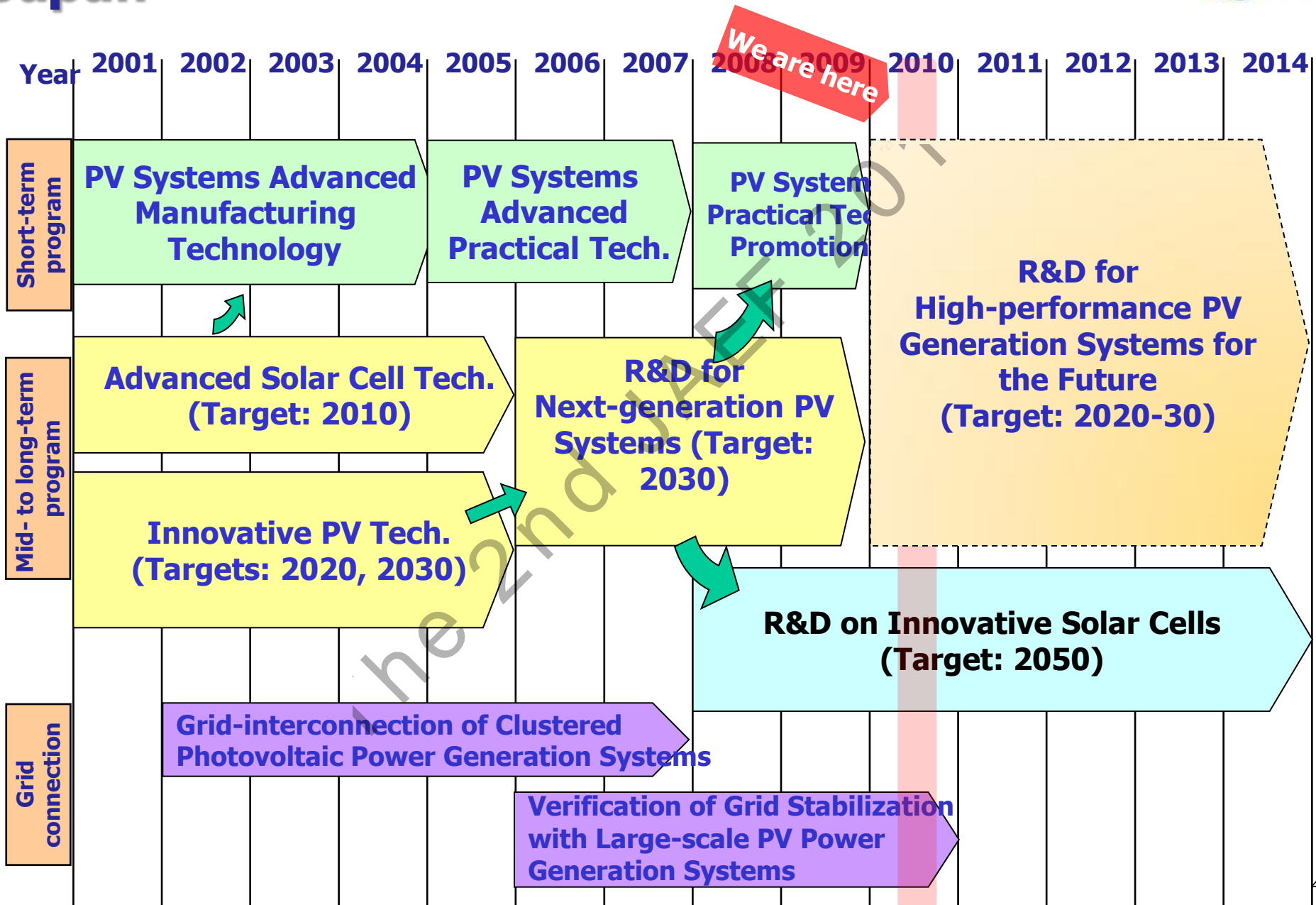
Bangkok, Thailand
Disseminating Japan's advanced energy conservation technology
 Introduce a downsized energy conservation air-conditioning system which utilizes a night time power to the Electricity General Authority of Thailand (EGAT) targeting overseas practical application of the system.

Japan's PV R&D Roadmap (PV2030+)



Target (completion of development)	2010 or later	2020 (2017)	2030 (2025)	2050
Power generation cost	Equivalent to household electric rates (¥23/kWh)	Equivalent to commercial electric rates (¥14/kWh)	Equivalent to power generation costs (¥7/kWh)	Used as general power source (less than ¥7/kWh)

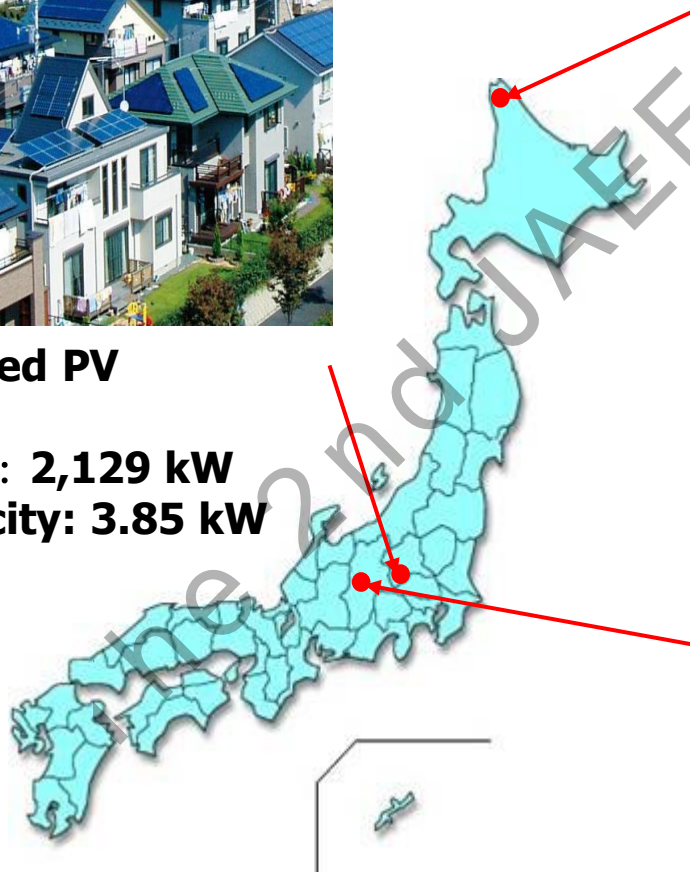
Overview of NEDO's PV R&D Programs in Japan



NEDO's PV Demonstration Project in Japan



Number of installed PV systems: 553
Total PV capacity: 2,129 kW
Average PV capacity: 3.85 kW



5 MW (Most PV cells are the crystal type)



2 MW (26 types of PV cells)

NEDO's CSP Project in Japan (FY1974 - FY1984)



Parabolic trough plant:1000 kW,

Solar tower plant:1000 kW

Joint CSP Project with Tunisia



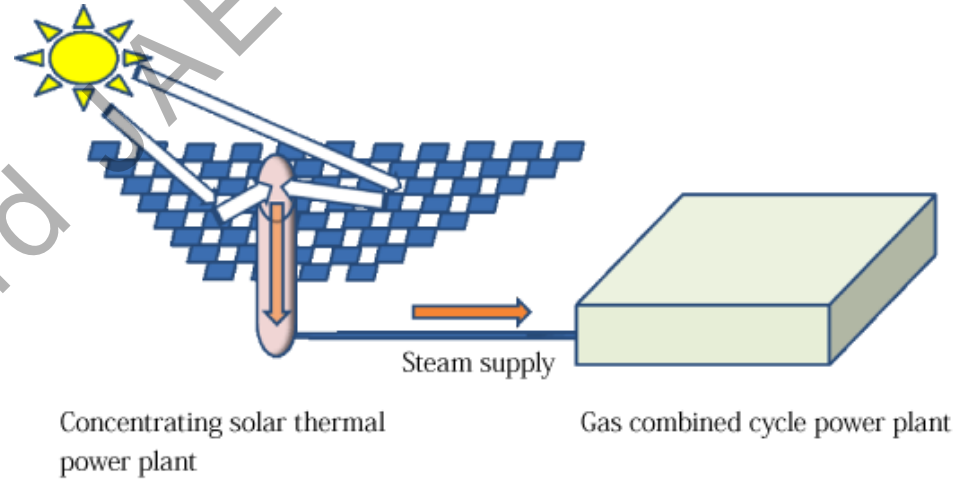
- Japan's first national project for overseas concentrating solar power generation
- It is positioned as part of the Tunisia Solar Plan promoted by the Tunisian government

Signing ceremony of LOI concerning the joint CSP project



NEDO and Tunisian ministries (MDIC and MIT) and STEGER signed the LOI in Tunis on July 23, 2010

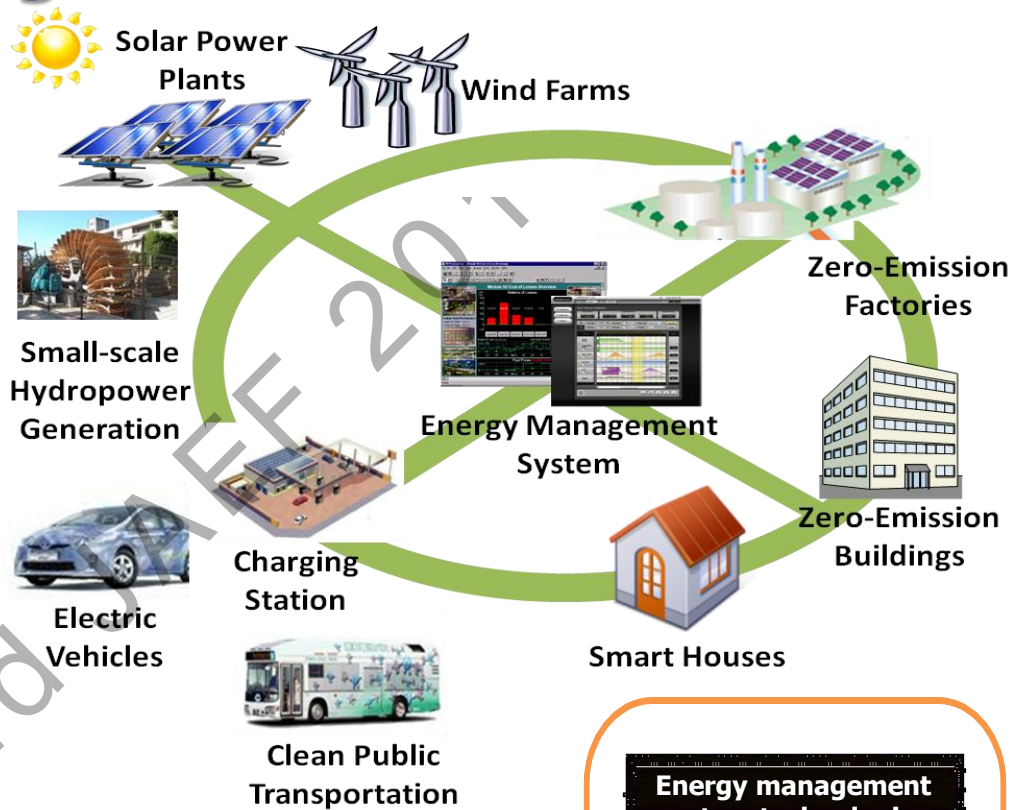
Conceptual image of ISCC (ISCC; integrated solar combined cycle)



**CSP (solar tower type):
5 MW
(NEDO portion)**

**Gas combined cycle thermal power plant: 20MW
(Tunisia portion)**

Smart Grid Technologies



Wide-area monitoring and control technologies (WAMS, PMU)

Automatic distribution system

Cooperative control system with dispersed power sources and consumers (Cooperative control system with renewable energy, storage battery system for electric companies' grids, and local energy management system)

Monitoring and controlling system for electric transmission and distribution networks

Superconducting electric transmission and high-voltage DC transmission

Power electronics applied equipment

Advanced technologies enabling effective operations of electric companies' grids

AMI, Smart Meter

Power conditioning technologies

Advanced interface technologies

Energy management system technologies (HEMS, BEMS, FEMS, and demand response)

Electric vehicle connecting technologies (V2G etc.)

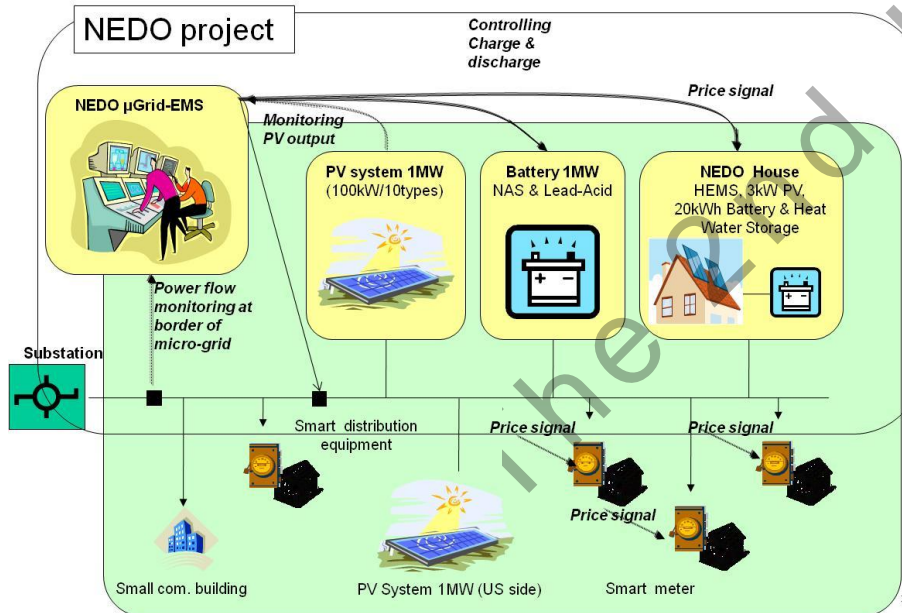
Consumers' energy management technologies

Japan-U.S. joint researches on Smart Grid

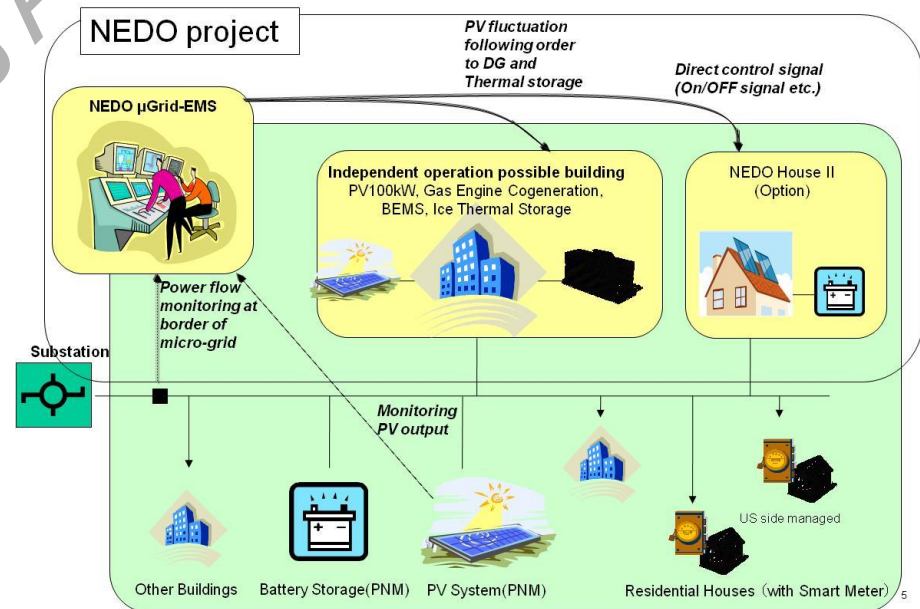


Japan (METI/NEDO) and the State of New Mexico, LANL, SNL, etc. are conducting demonstration research in New Mexico.

NEDO smart grid in Los Alamos (Residential area)



NEDO smart grid in Albuquerque (Business area)



**For further information,
please visit NEDO's website.**

<http://www.nedo.go.jp/english>

**Thank you very much for
your kind attention.**