

# Press Release



New Energy and Industrial Technology  
Development Organization

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

May 17, 2011

## **Participants Selected for a Feasibility Study of a Smart Grid Project in Hawaii —Commencement of a Japan-U.S. Collaborative Demonstration Project for World-leading Remote Island Smart Grids—**

The New Energy and Industrial Technology Development Organization (NEDO) has selected six companies, Hitachi, Ltd., Hewlett-Packard Japan, Ltd., Mizuho Corporate Bank, Ltd., Sharp Corporation, JFE Engineering Corporation and Cyber Defense Institute, Inc. (one proposal), to participate in its Smart Grid Project in the U.S. state of Hawaii. The above-mentioned companies will begin a feasibility study in the near future.

The project, which aims to establish a system model for the integration of clean energy on the island of Maui, will be conducted collaboratively by NEDO, the State of Hawaii, the Hawaiian Electric Company, the University of Hawaii, and other participating entities.

The project is NEDO's fourth overseas smart community demonstration project following projects in the State of New Mexico, United States, Lyon, France, and Malaga, Spain.

### **1. Background**

Since remote islands face common issues such as energy security, high energy costs, and environmental restrictions, the need for renewable energy is greater than that of other areas. The introduction of renewable energy is being promoted particularly in Hawaii and a Smart Grid demonstration\* is being carried out that is being financed by the United States Department of Energy (DOE).

Based on these circumstances, a “Memorandum of Cooperation among the United States Department of Energy and the Ministry of Economy, Trade and Industry of Japan and the State of Hawaii and Okinawa Prefecture Creating the Hawaii-Okinawa Partnership on Clean and Efficient Energy Development and Deployment” was concluded in June 2010,

in accordance with the Japan-U.S. Clean Energy Technologies Action Plan agreed to during discussions held at the Japan-U.S. summit meeting in November 2009. Also, based on the Memorandum, NEDO and the State of Hawaii concluded a Letter of Intent in October 2010 concerning demonstration projects and smart grid technology research. Under these agreements, NEDO, the State of Hawaii, the Hawaiian Electric Company, and the University of Hawaii will collaboratively conduct a demonstration project for world-leading remote island smart grids.

\*On the island of Maui, a smart grid project has already been launched with the budget (US\$ 15 million) provided by the DOE and the project partners.

## 2. Project Overview

This demonstration project will be carried out on the island of Maui, where renewable energy has already been introduced on a large scale. The project will establish and demonstrate a system that can solve such problems as frequency variation due to unstable renewable energy output and distribution system voltage fluctuations. The project will include the following activities:

- (I) Electric Vehicle (EV) Based Remote Island Smart Grid Model on Maui  
In order to mitigate adverse effects on power grids, including the impact of significant changes in power frequencies caused by the fluctuating output of renewable energy, an EV management system (EVMS) will be established to control EV charging and storage batteries installed in power grids and the effectiveness of the system will be demonstrated.
- (II) Smart Grid Model at a Substation with One Distribution Grid Level in Kihei (Maui County)  
With the aim of improving the reliability of distribution systems, which is a common issue across the U.S., a distribution management system (DMS) compatible with higher systems will be introduced into distribution grids connected to PV systems and EV charging for mitigating the effects of voltage fluctuations and excess loads on low-voltage transformers, and the effectiveness of the system will be demonstrated.
- (III) Smart Grid Project for Low-voltage Transformer Level Systems  
A micro DMS ( $\mu$ -DMS) compatible with DMS will be established at a level of low-voltage transformer equipped with PV systems and EV charging for mitigating the effects of excess loads on low-voltage transformers, and the effectiveness of the system will be demonstrated.
- (IV) Comprehensive Research  
Comprehensive research will be collaboratively carried out with the U.S. to analyze and evaluate the effectiveness and economic efficiency of the project. Business models will also be established and assessed.

Specific content of the demonstration project will be determined based on an assessment of the feasibility study results.

NEDO has selected the following participants for a feasibility study of the demonstration project:

Participants: Hitachi, Ltd., Hewlett-Packard Japan, Ltd., Mizuho Corporate Bank, Ltd., Sharp Corporation, JFE Engineering Corporation, Cyber Defense Institute, Inc.

Duration: FY2011 to FY2014; the feasibility study is scheduled to be completed by the end of September, 2011.

Project budget (depending on funding availability): Approximately 30 million yen (feasibility study) and 3 billion yen (demonstration project)

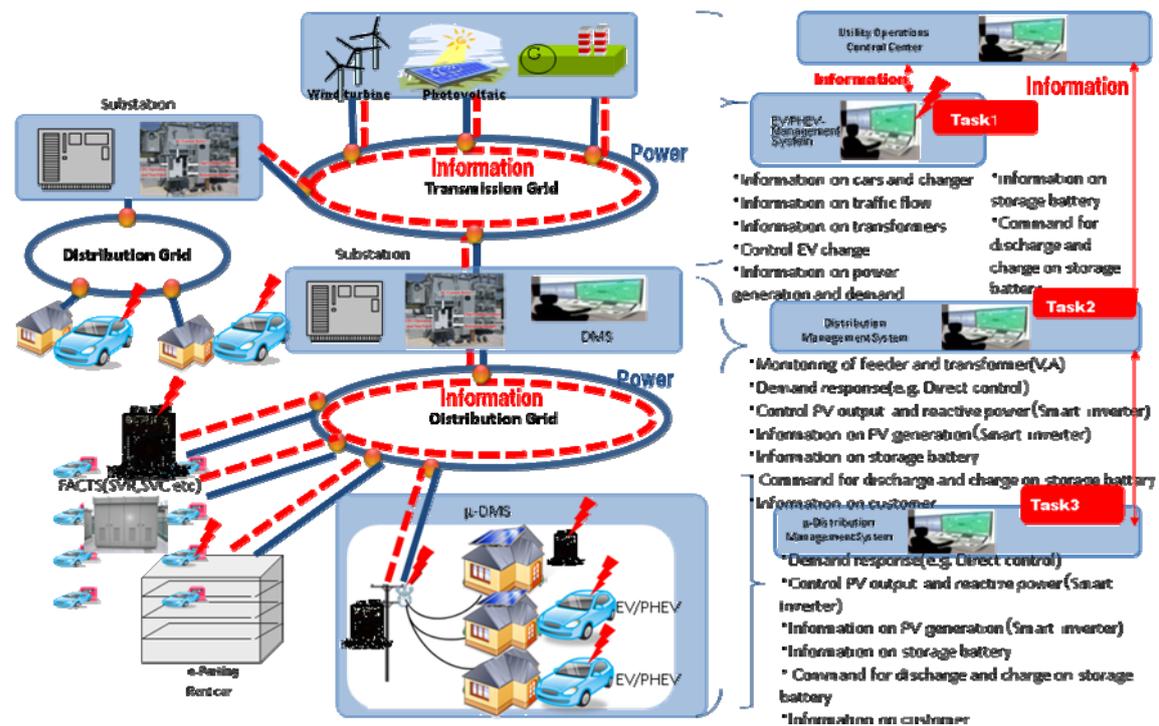
### 3. Contact Persons:

Mr. Hayashi, Mr. Katagiri, International Affairs Department, NEDO

Tel: +81-44-520-5190

Mr. Watanabe, Mr. Kuwahata, Mr. Yahata, Smart Community Department, NEDO

Tel: +81-44-520-5274



Smart Community System Demonstration Project in Hawaii (Image)