



Green IT Initiative in Japan

Hisashi Sekine

Director, Digital Consumer Electronics Strategy Office
Commerce & Information Policy Bureau
METI, Japan

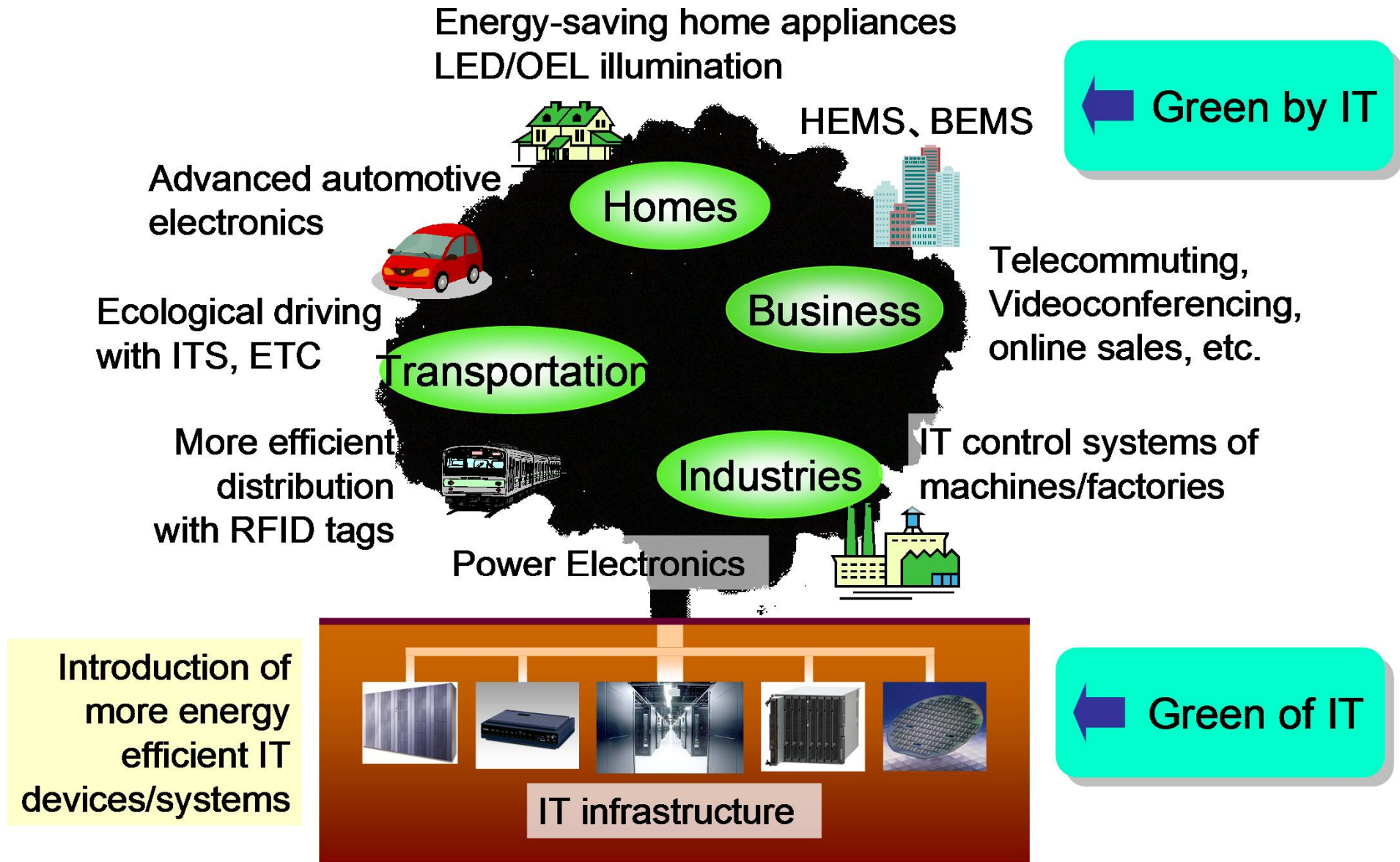
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1. Policies Encouraging Effective Energy Use

IT's Contribution to Combating Climate Change



Summer 2011 Power Supply and Demand Measures (Overview)

East Japan (TEPCO and Tohoku EPCO area)

(1) Rolling blackouts

Instituted for 10 working days over March 14-28

- ① Negative impact on daily lives and industrial activity
- ② 'Not implemented in principle' as of 8 April

(2) Summer power supply and demand measures

Planned restraint of peak-time power use aimed at **minimizing impact on daily lives and economic activities**

- ① **Demand reduction target of 15%** set for large and small customers (enterprises) and households (up until 30 Sept.)
- ② **Power use restrictions** instituted for large customers (contract electricity of 500kW or more) (until 9 Sept. in East Japan, 22 Sept. in Tokyo)

Power-saving cooperation and low temperatures

→ Power demand reduction of **more than 15%**

※ Power use restrictions in affected areas lifted as of 5 Sept.

※ Power use restrictions in TEPCO area lifted earlier than originally planned (22 Sept. → 9 Sept.)

Central and West Japan (Chubu, Kansai, Hokuriku, Chugoku, Shikoku and Kyushu EPCO area)

(1) Power supply-demand tightens

Operation of nuclear power plants not resumed → Supply-demand balance tightens across all six central and western Japan power utilities

(2) Summer power demand measures

Calls for power-saving and flexible power-sharing **avoid the need to apply power use restrictions**

- ① Kansai EPCO area: Power-saving of **more than 10%** overall (until 22 Sept.)
- ② Other utility areas: Power-saving to the extent of not interfering with daily lives and economic activities (until 22 Sept.)

Power-saving cooperation and low temperatures

→ Power demand reduction of **approx. 10%**

FY2011 Third Supplementary Budget: Key METI Requests

- Risk that a peak power shortfall of around 10% (16.56 million kW) and an electricity cost hike of around 20% (more than three trillion yen) could destabilize people's lives and accelerate the hollowing-out of domestic industry
- To avoid this risk, drawing on funds from the supplementary budget and the initial budget to institute support measures for power-saving campaigns and supply expansion toward reform of the energy structure and economic stimulation

I . Support recovery of affected areas

(1) Support for rebuilding/recovery

- Corporate financing measures for SMEs and medium and large enterprises
- Support for SME recovery in affected areas, etc.
- Measures to counter reputational damage and support for sales channel creation

(2) Response to nuclear power station incidents

- Recovery from nuclear damage
- Field trials of new disaster-response technologies

II . Avoid industrial hollowing-out

(1) Encourage companies to locate in Japan

(2) Promote infrastructure and system exports

(3) Rare earth measures

III . Realize a new 'best mix' of energies

(1) Secure a stable power supply

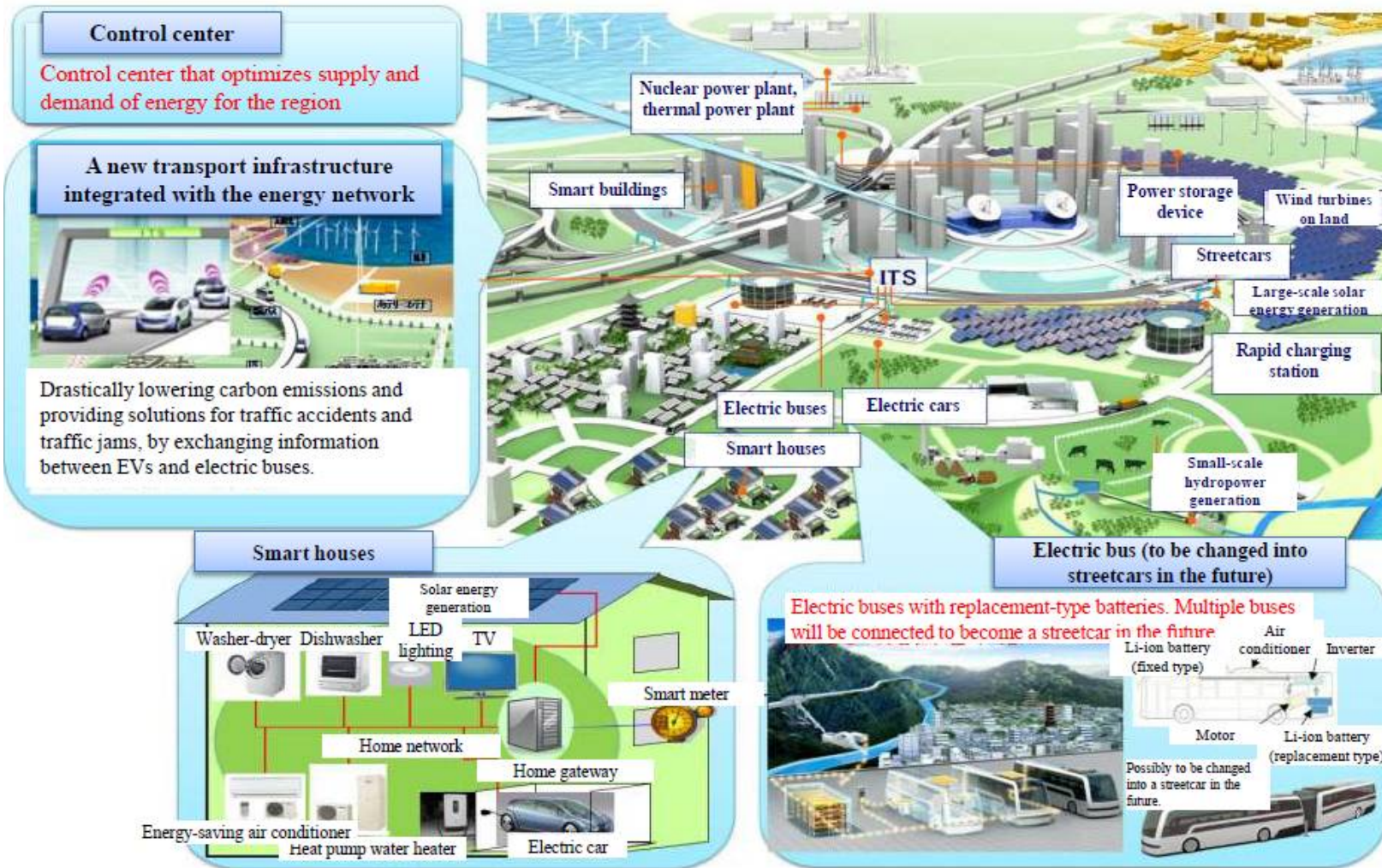
- Establish energy-saving eco subsidies

(2) Secure natural gas to ensure power supply

(3) Develop disaster-resistant oil and gas manufacturing and supply facilities and oil product supply networks

Smart Communities

Smart communities use IT not just for the stable management of power grids in terms of the introduction of sustainable energies, etc., but also to ensure efficient management of energy systems, including the dispersed management of power supply and demand in homes, offices and communities, and comprehensive energy and transport systems premised on the introduction of electric vehicles (storage batteries). They also use a diverse range of information such as energy use data to create new services.



Smart Community Promotion Policies

1) Develop and share strategies using a government-private sector platform (Smart Community Alliance)

- Develop a shared vision, develop system architecture, work together to promote specific projects, etc.

2) Launch local trials toward realizing smart communities

- Launch new social infrastructure and new town-building experiments as of 2010

3) Work toward developing international standards for smart communities

- Take a strategic approach in promoting the development of international standards to expand the market while at the same time blackboxing Japan's particular areas of strength

4) Take smart community systems offshore

- Take a government-private sector mission to the US to conclude an MOU between the Smart Community Alliance and the US GridWise Alliance on smart grid cooperation. Take a similar mission to Europe.
- Conduct feasibility studies and offshore trial projects, with the government and private sector working together to actively target East Asia (India, Southeast Asia, China, etc.) and other newly-emerging markets.
- Engage in top-level economic diplomacy, provide tailored platforms, enhance and strengthen government support tools, etc.



2. Green IT Promotion Initiative

Green IT Initiative in Japan

- Establishment of the Green IT Promotion Council (February 2008)

IT-related industry groups, research institutes, universities, government bodies and others work together to promote green IT

Strengthen Cooperation among Industry,
Academia and Government

Government's Role

- Assist the development of innovative technologies
- Promote the dissemination of energy-efficient technologies and products
- Standardize the measurement of environmental contributions

International Partnerships and Collaborations

- Hold international symposiums
- Collaborate with overseas organizations
- Government and industries in US, Europe and Asia

Establishment of Green IT Awards

- The Green IT Promotion Council established the Green IT Awards in 2008 to promote green IT efforts by industry and academic bodies. The awards include the Minister of Economy, Trade and Industry Award and the Commerce and Information Policy Bureau Director-General Award for the categories “of IT” and “by IT”

by IT

Minister of Economy, Trade and Industry Award

**Panasonic Group,
SANYO Electric Co., Ltd.**

Energy-saving efforts through cooperative control of energy-creation, energy-storage, and energy-saving devices utilizing IT
– Large-scale demonstration tests in Kasai Green Energy Park–

Commerce and Information Policy Bureau
Director-General Award

Ubiteq, Inc.

UBITEQ GREEN SERVICE, an energy-saving solution that uses IT to reduce power consumption by more than 40%, well over the required target of 15%

of IT

Minister of Economy, Trade and Industry Award

NTT DATA CORPORATION
Private cloud system “Lindacloud®”

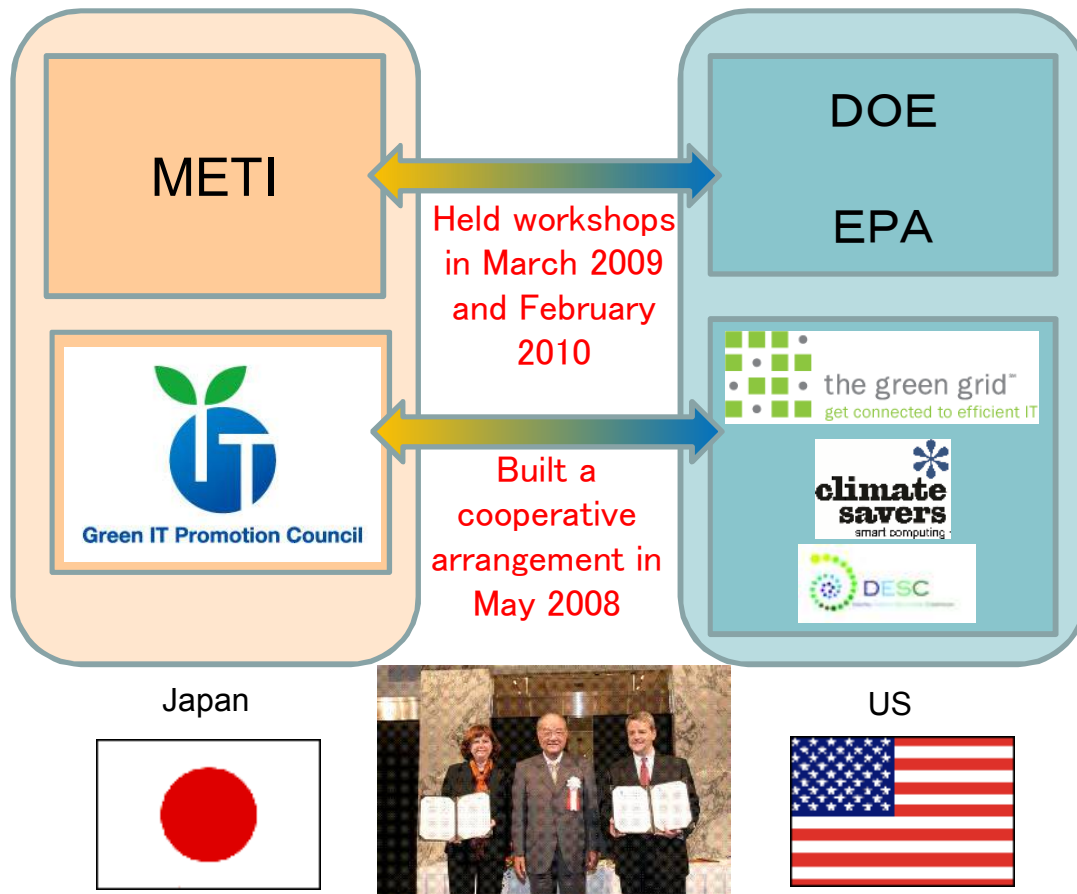
Commerce and Information Policy Bureau
Director-General Award

Alps Green Devices Co., Ltd.
Liquialloy™ power inductor
“GLMC Series”



Cooperation with the US

- Japan's Green IT Promotion Council has exchanged MOUs with three US groups for cooperation
- In February 2010, Japan, the US and the EU held a second government-private sector joint workshop for establishing new data center standards

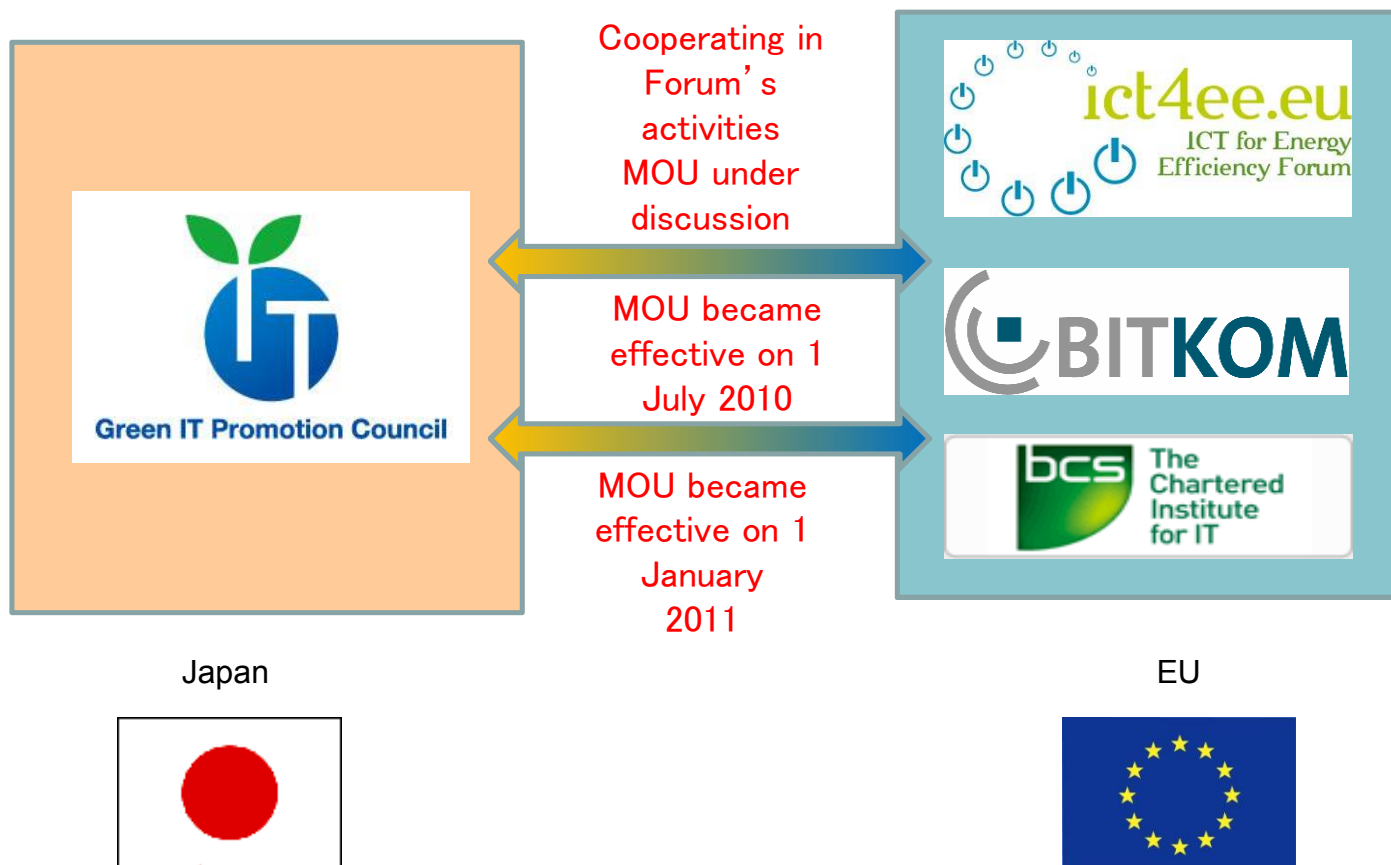


<Examples of cooperation>

- Establishing new data center standards
- Harmonizing policies to disseminate energy-saving home electronics

Cooperation with EU

- The Green IT Promotion Council is cooperating with ICT4EE Forum in activities such as developing metrics
- The Green IT Promotion Council has exchanged MOUs with BITKOM and BCS which became effective on 1 July 2010 and 1 January 2011 respectively





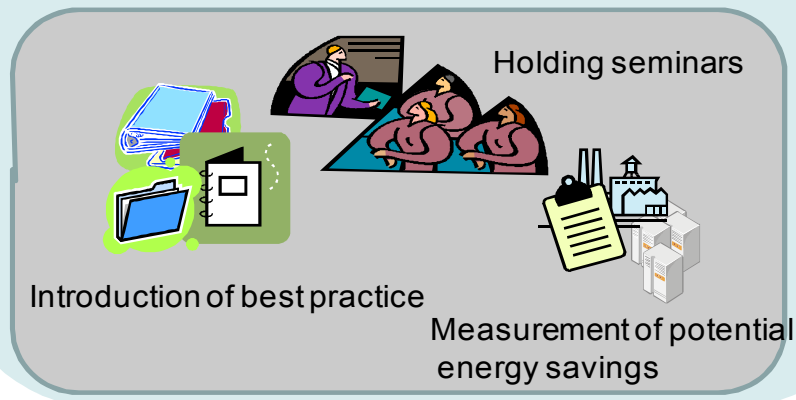
3. Promotion of Green IT in Asia

Cooperation with Asia ①

○ At the AEM-METI meeting in September 2008, METI proposed the Asia Knowledge Economy Initiative, a future-oriented project based on green IT that makes use of Japan's experience

Asia Knowledge Economy Initiative (Sep.2008)

- Dispatch Green IT missions
- Introduce best practices
- Measure potential energy savings through IT for factories and buildings
- Hold seminars within Asia



Ensure corporate information security

Green IT

Assistance for IT personnel training

Common trustmark system

Cooperation with Asia ②—Asia Green IT Forum

- The Second Asia Green IT Forum was held on 5 October 2010, bringing together delegates from the governments and industries of eight Asian countries (Japan, China, Korea, India, Malaysia, Singapore, Thailand, and Vietnam, Chinese Taipei, Indonesia, and the Philippines).
- The participants issued a joint statement to enhance their future cooperation.

【 Asia Green IT Forum 】



< Specific items of common understanding >

- ① Promotion of green IT and the global expansion thereof toward achieving a low-carbon society
- ② Mutual green IT cooperation in Asia
- ③ Sharing information on and encouraging the introduction of best practices
- ④ Promoting green IT analysis in Asia
- ⑤ Boosting energy efficiency in data centers
- ⑥ Promotion of international partnership
- ⑦ Forum continuation and sharing information

Cooperation with Asia ③

Training Program on Green IT for Asia

— Training in Japan —

Trainees from eight Asian countries were invited to Japan to learn about green IT initiatives and cases here.

October 7-14, 2011 Tokyo, Japan

Invitations were extended to 30 green IT professionals from industry, business and government in China, Singapore, Vietnam, Malaysia, Thailand, India, Indonesia and the Philippines.



Cooperation with Asia ④

Training Program on Green IT for Asia

– Expert Dispatch to Malaysia –

An expert from Japan was sent over to conduct training in Malaysia, Presenting an overview of green IT in Japan and some specific cases.

◆ Period

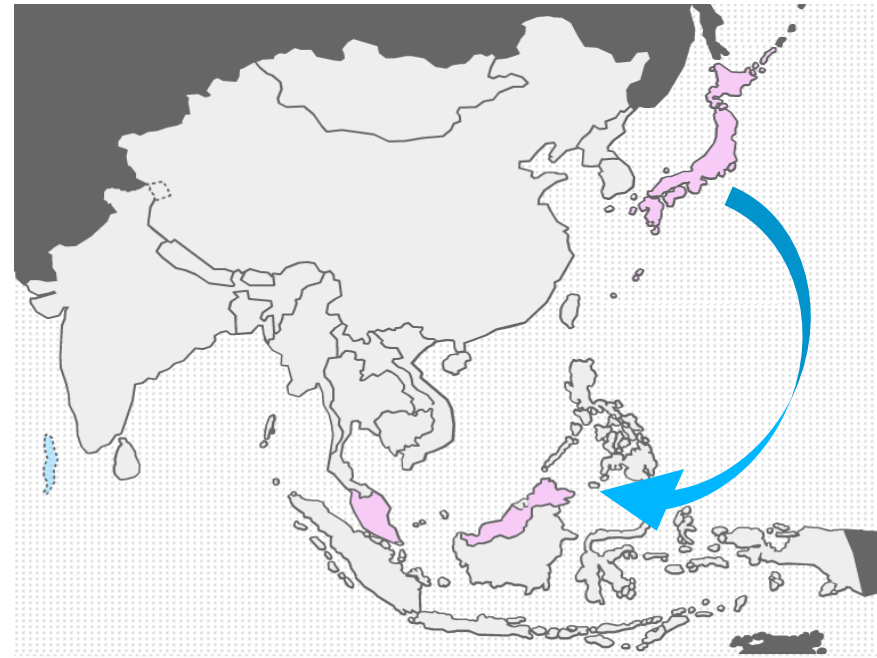
- 1) 28 Nov.-2 Dec. 2011, KL, Malaysia
- 2) End of January 2012, KL, Malaysia

◆ Counterpart in Malaysia

Malaysia Green Technology Corporation

◆ Training

- Japan's green IT policies, GIPC efforts
- Measuring and predicting the energy-saving effect of green IT
- Specific green IT cases
(data centers, plants, buildings)



Surveys on Energy-Saving by IT

The government of Japan conducts surveys on energy-saving by IT which utilize advanced Japanese energy-saving and control technologies in ASEAN countries

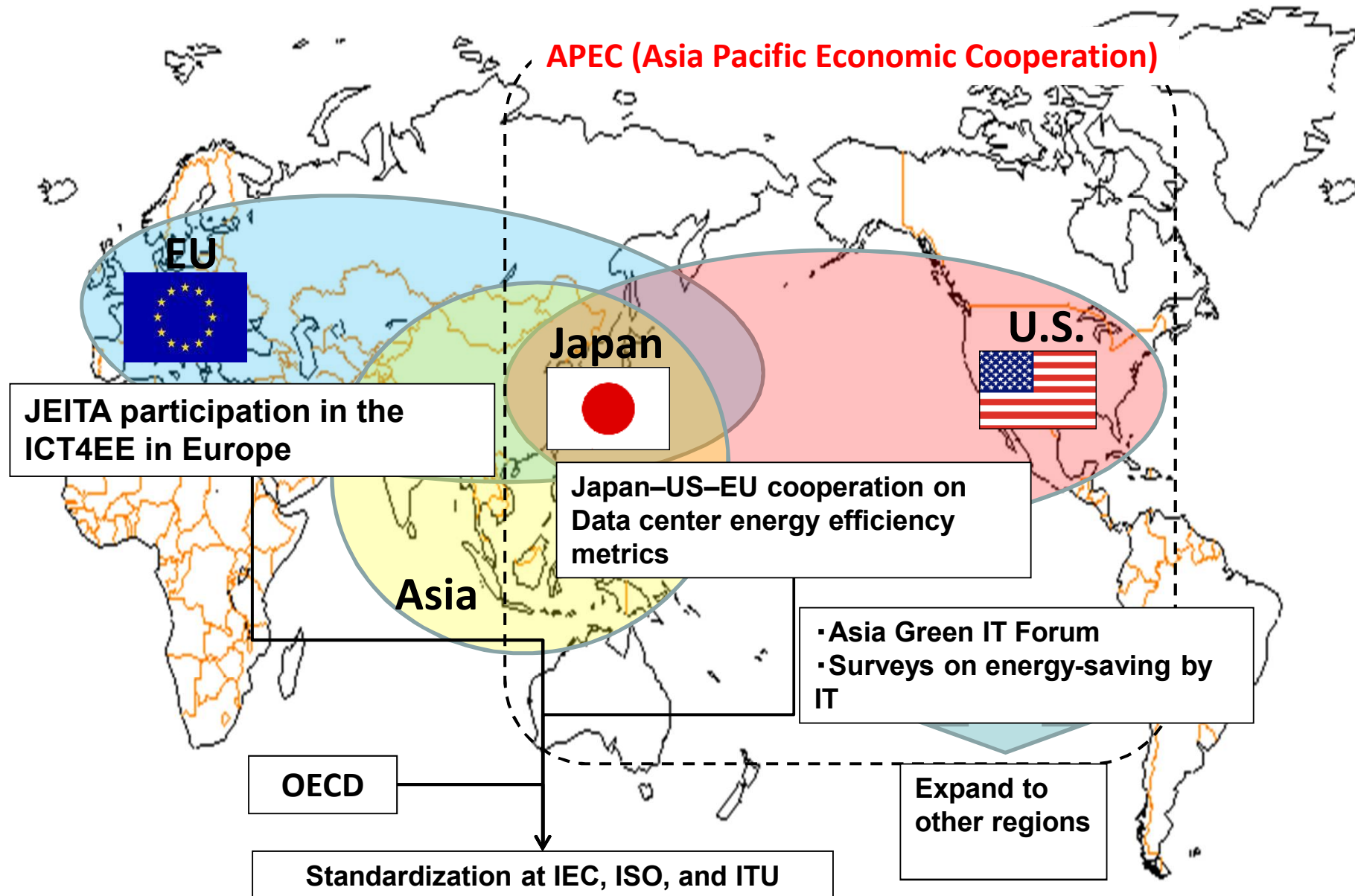
- Japan covers the cost
- Member companies of Green IT Promotion Council conduct the surveys
- Surveys have been conducted at the following facilities

No.	Facilities	Survey outline
1	Data Center	Facility survey / facility optimization planning / effectiveness monitoring / facility plan etc.
2	Public Facility (airport, school, hospital etc.)	Air-conditioning operation and maintenance control / ventilation facility control / lighting facility control etc.
3	Plant, Factory (petroleum industry, chemical industry, electric industry, paper/pulp industry, steel industry etc.)	Air-conditioning facility survey / fan & compressor survey / operation and maintenance survey / efficiency survey / advanced control etc.

Surveys on Energy-Saving “by IT” in Asia (2011)

Field	Surveying company	Country	Outline of surveys
Data Center	IDC FRONTIER INC.	Viet Nam	<Consortium with NEC> - Know-how to construct of environment-responsive energy saving data center - Optimization of air-conditioning by outdoor air-conditioning system - Implementation of measurement of DPPE
	NTT DATA INTELLILINK CORPORATION	Singapore	- Facility of data center (power supply, air-conditioning, lighting) -Countermeasure to power supply losses - Proposal of High Voltage Direct Current(HVDC) Power Supply system - Implementation of measurement of DPPE
Public Facilities	MITSUBISHI ELECTRIC CORPORATION	China	- Facilities of municipalities (power supply, IT equipment, lighting) against a background of construct of the guideline for energy monitoring system for office buildidngs of state institution - Possibility of improving energy efficiency by solutions for visualizing and analyzing energy saving
	NEC CORPORATION	China	<Consortium with IDC FRONTIER> -Possibility of improving energy efficiency by autonomous control of "EnePal PC Pack" for visualizing and reducing power consumption of PCs in office in data center
	PANASONIC CORPORATION	Viet Nam	- Possibility of “replacement of equipment” and “introduction of Energy Management” etc. by analyzing and visualizing power consumption
	YAMATAKE CORPORATION	Singapore	- Possibility of replacement of equipment and introduction of BEMS (building energy management system) for office building by visualizing power consumption for heat source , air-condition equipment, lighting etc.
Plant, Factory	HITACHI, LTD.	China	<Consortium with YOKOGAWA ELECTRIC> -Accessories for utilities (fan, pump, compressor etc.) - Estimation of energy saving by controlling rotation, etc.
	YOKOGAWA ELECTRIC CORPORATION	China	<Consortium with HITACHI> - Plant with no integrated management of equipment and operation - Estimation of energy saving by IT solutions without significant replacement of facility

Japanese Policy Cooperation in International Arena



Conclusion

1. Green IT helps to ease tight power demand

Green IT was used as one energy-saving measure in Japan following the earthquake, tsunami and ensuing nuclear incident.

2. Green IT dissemination, awareness-raising and business creation in Asia

Energy-saving, greater power efficiency, carbon emission reductions, cost reductions

3. Development of standards for data centers

Establishment of DPPE as an international standard reflecting the efficiency of IT devices