

# **Power and Social Infrastructure Business Strategies**

**May 29, 2015**

**Fuji Electric Co., Ltd.**

**Power and Social Infrastructure Business Group**

■ Business Overview

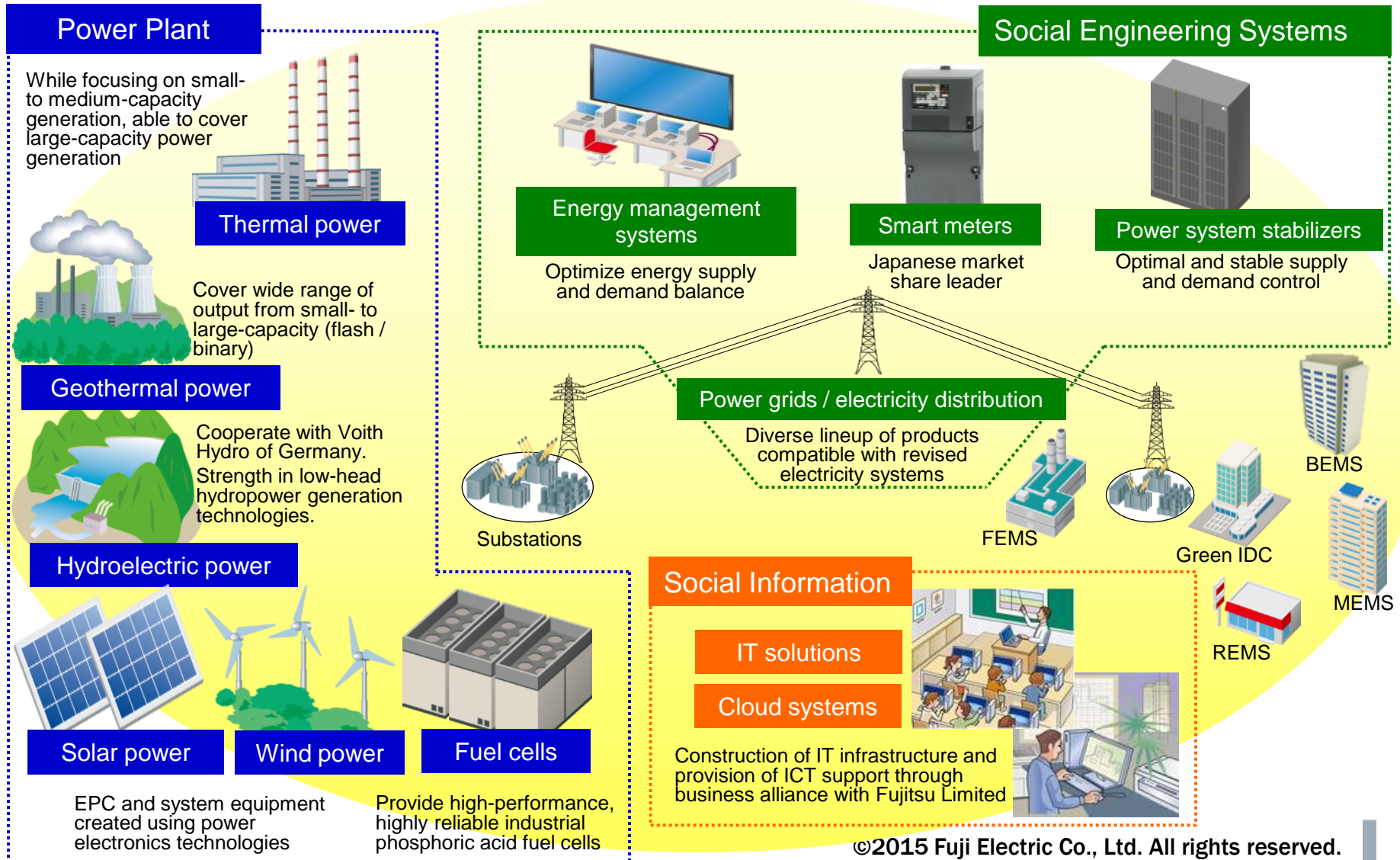
■ Market Trends

■ Business Targets

■ Priority Measures

# Business Overview

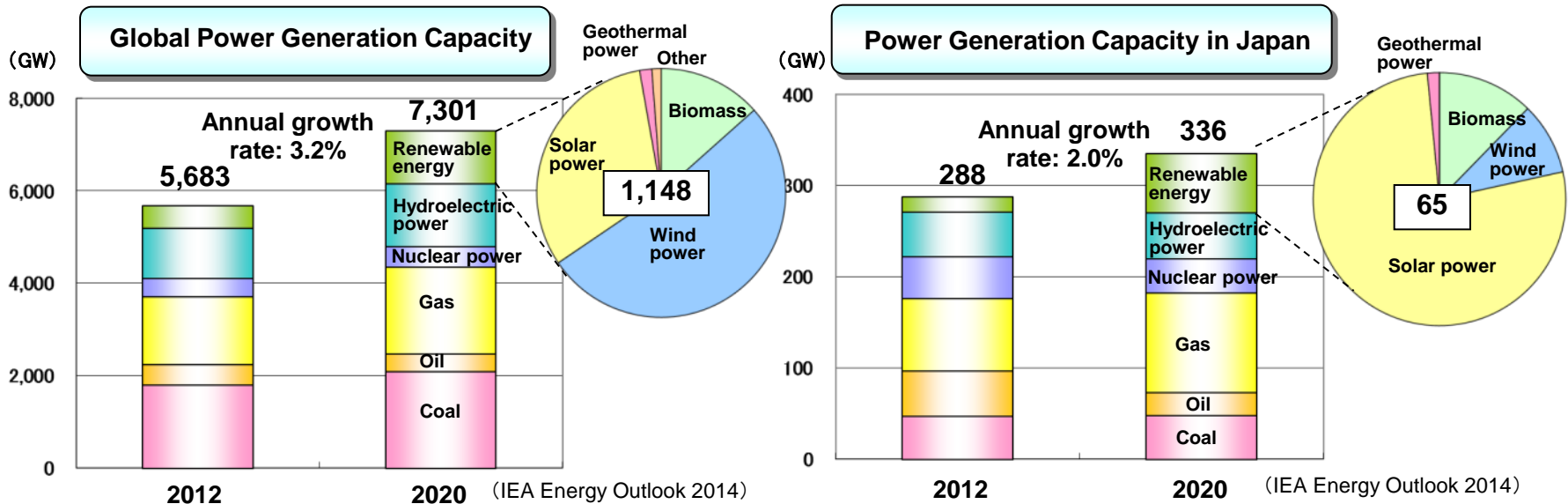
Contribute to the realization of a smart, low-carbon society by generating eco-friendly energy and optimally controlling and providing energy



# Market Trends

# Power Generation Facilities Market Trends

Continuing global growth in electricity demand and increasing installation of generation facilities  
Ongoing introduction of large-scale thermal power generation and renewable energy in Japan



- **Annual growth rate of 2.6% for global energy demand**

- Developed nations: 1.1% annual growth (IEA Energy Outlook 2014)
- Emerging nations: 3.9% annual growth

- **Improvement of economic performance through higher efficiencies, and reduction of environmental impact**

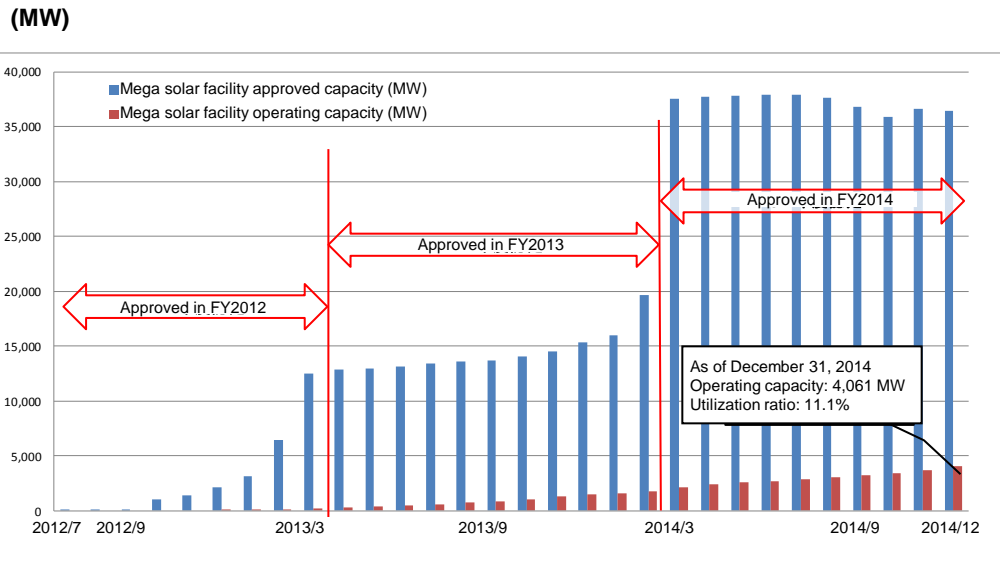
- **Promotion of geothermal power generation system introduction by government measures and subsidies**

- Rising demand in Africa and Central and South America, following trend in Indonesia

- **Ongoing expansion of thermal power generation centered on IPP and PPS operators**

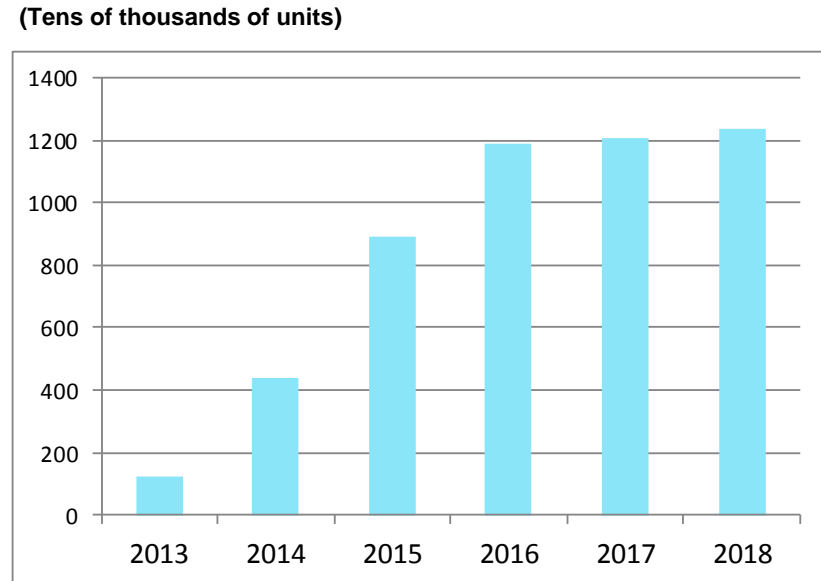
- **Increasing installations of highly efficient ultra-supercritical coal-fired thermal power and combined-cycle power generation systems**

## Japanese Mega Solar Facility Approval and Operational Status



Source: Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry

## Smart Meter Market Forecast



(Fuji Electric's estimates)

### [Mega Solar Trends]

- Only 11% of approved generation facilities operational (as of December 31, 2014)
- Ongoing demand for construction expected to last through 2018
  - Approximately three years required to build large-capacity mega solar facility

### [Smart Meter Market Trends]

- Full-fledged, nationwide deployment of smart meters from 2014
- Market expansion to meet meter replacement demand over period of approximately 10 years beginning with 2015

## [FY2015 Japanese IT Market Outlook]

**Contraction or stagnancy projected in markets for all customer groups except academic due to rebound from Windows XP replacement demand surge in FY2014**

## [Trends by Customer Group]

Academic: Increased investment in response to Future School Promotion Project and education IT infrastructure installation plans

Private sector: Sluggish IT infrastructure investment among small- to medium-sized companies

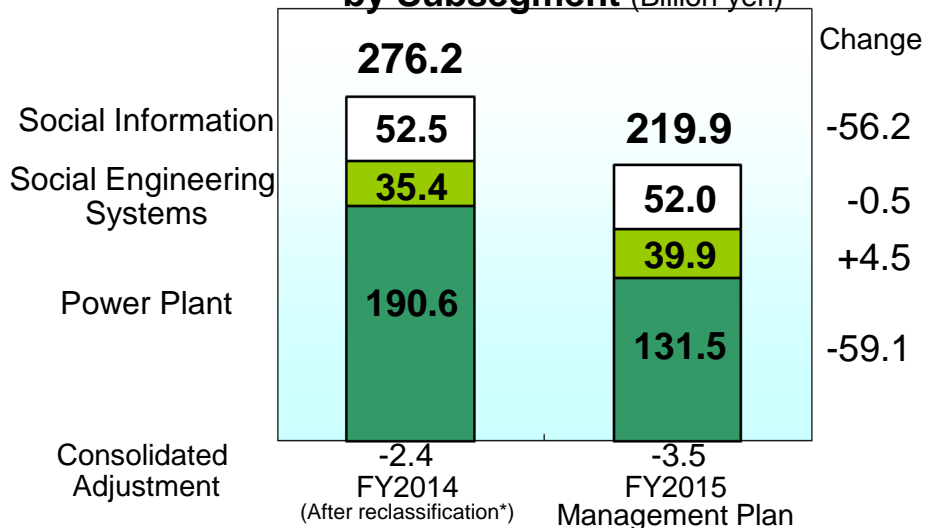
Public: Reduction of maintenance costs on government-sponsored projects and conclusion of ongoing, large-scale business negotiations



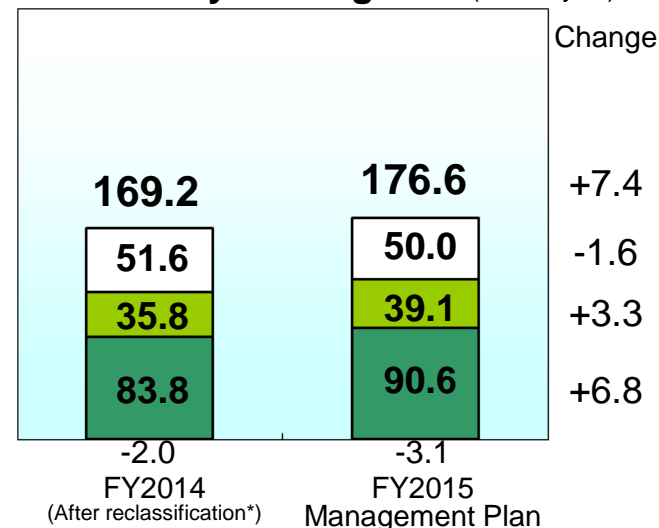
# Business Targets

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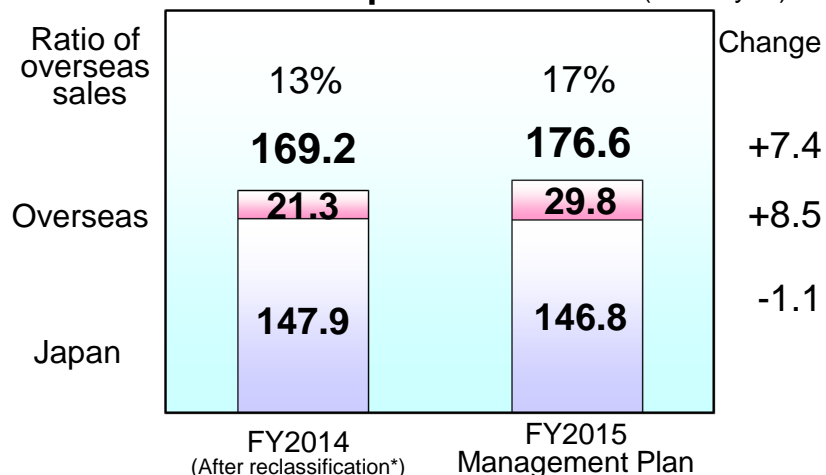
### Amount of Orders Received by Subsegment (Billion yen)



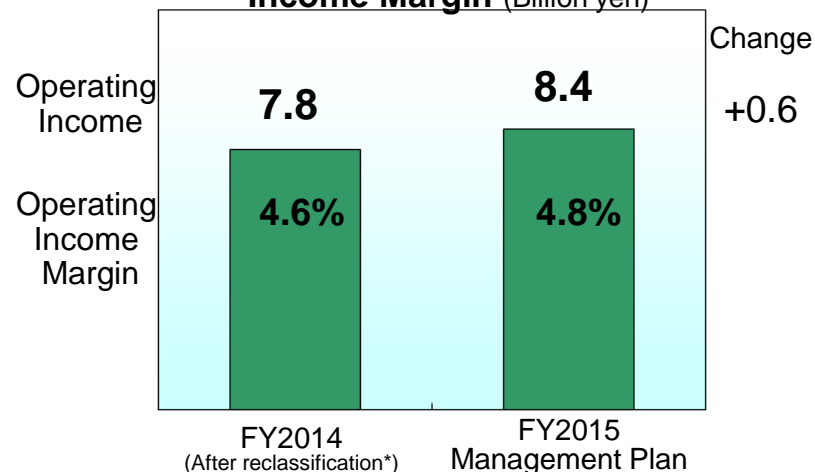
### Net Sales by Subsegment (Billion yen)



### Net Sales in Japan / Overseas (Billion yen)



### Operating Income / Operating Income Margin (Billion yen)



\* FY2014 figures have been restated to reflect the change in business divisions instituted in FY2015.

Business division change: Transference of sales directed at METAWATER Co., Ltd. (Social engineering systems → Industrial plant)

Transference of switchboard operations (Social engineering systems → Power supply)

# Priority Measures

## Achieve orders growth in conjunction with expanding demand for electricity

- Acquire orders related to thermal power and geothermal power generation
- Expand thermal and geothermal power after sales businesses primarily through M&A activities conducted overseas
- Continue capturing orders for solar power generation systems
- Expand orders for fuel cells

## Domestic thermal and geothermal power generation

- Increase orders for thermal power generation (IPP, PPS)
- Accelerate efforts to acquire combined-cycle and ultra-supercritical coal-fired thermal power generation orders
- Expand binary geothermal power generation orders

## Overseas thermal and geothermal power generation

- Thermal power: Expand orders in Asia and the Near and Middle East through acquisition of new customers
- Geothermal power: Continue acquiring orders in Asia, and expand orders in the African and Central and South American markets

## After sales businesses

- Enhance service lineup to expand business
  - Utilize bases to expand overseas after sales businesses
- Existing: Indonesia, Taiwan**  
**Planned: U.S., Middle East**



SUR IPP  
(Combined-Cycle Power Plant / Oman)



Okinawa Electric Power Company, Incorporated  
Yoshinoura Thermal Power Plant  
(Combined-Cycle Power Plant)



Idemitsu Oita Geothermal Co., Ltd.  
Takigami Binary Geothermal Power Plant  
(Artist rendition of completed plant)

## Leverage robust product lineup to expand orders for thermal and geothermal power generation

### Highly efficient thermal power generation

Model series of highly efficient and reliable reheat turbines  
Cover wide range of output from medium- to large-capacity

Reheat turbine product lineup



KN

SCRH

FET-R



High performance with single-cylinder turbines

High performance at sub-critical levels



Compatible range spanning from sub-critical to ultra-supercritical (~300bar/610/620° C)

100

200

300

400

500

900

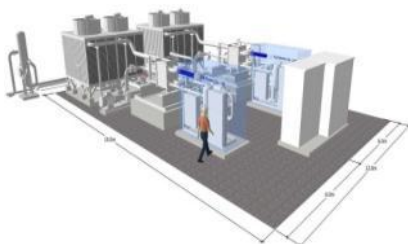
1,000 (MW)

### Binary geothermal power generation

Robust product lineup

Cover wide range spanning from 100 KW hot spring power generation to installations with capacity of more than 10 MW

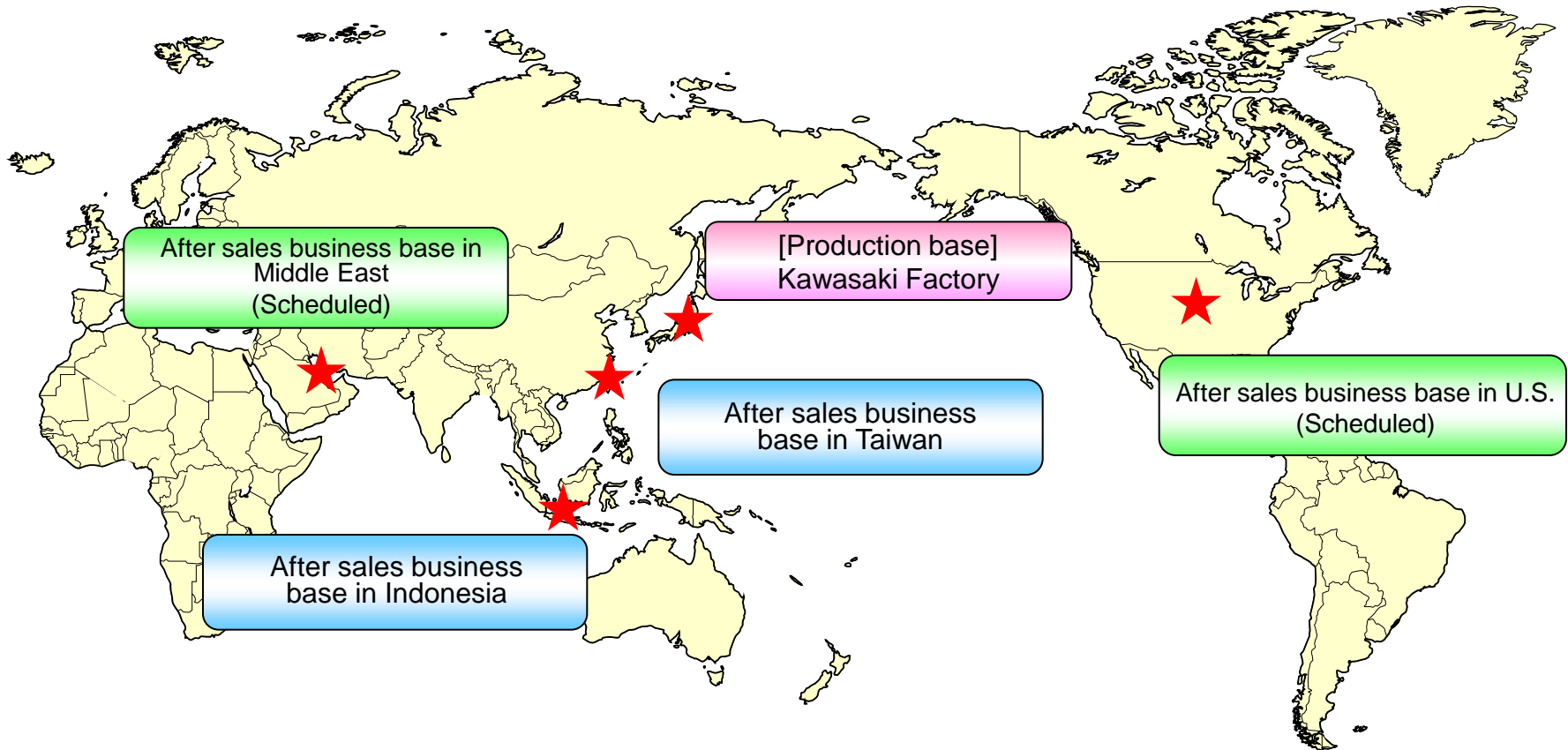
- Three standard models (heat source over 110° C): 2 MW, 6 MW, and 10 MW
- Products based on standard models that are customizable to meet needs of specific projects
- Two standard models for generation from hot springs: 125 KW generation from steam, 125 KW generation from hot water



# Thermal and Geothermal Power Expansion of After Sales Businesses

## Enhancement of service lineup

- Enhance lineup of services for optimizing plant lifecycles
- Bolster lineup of remote monitoring systems
- Strengthen ability to respond to onshore, onsite maintenance needs



## Solar power generation systems

- Strengthen relationships with Japanese power producers and partners to ensure orders
- Boost competitiveness by leveraging engineering capabilities grounded on robust track record
- Promote differentiation using SiC-equipped PCS

## Fuel cells

- Overseas: Expand orders in Germany and South Africa through collaboration with European companies
- Japan: Continue acquiring orders for feed-in tariff (FIT) projects utilizing sewage biogas



Kisozaki reclaimed land mega-solar (49MW)  
(Scheduled for completion in 2015)  
(Mie Prefecture and Aichi Prefecture)



Fuel cell for Chamber of Mines of South Africa (100 KW)  
(Scheduled for completion in 2015)  
(South Africa)



Expand business against backdrop of electricity system reform and realization of smart communities

- Increase orders and boost profitability of smart meters
- Boost orders in smart community field  
(particularly electricity distribution)

## Smart meters

### Expand orders

- Expand orders by improving upon strengths in terms of quality, costs, and delivery times made possible by position as share leader in Japan

### Improve profitability

- Improve profitability by launching low-cost meters
- Boost productivity by conducting capital investment for automation, etc.



Automated assembly line



Smart meters

## Power system stabilizers

Respond to grid stabilization needs arising for penetration of renewable energy systems

- Expand orders by strengthening relationships with battery manufacturers
- Strengthen competitiveness by combining highly efficient PCS with optimal control technologies

## Services for Power Producer and Supplier

Acquire orders for services for Power Producer and Supplier (PPS)

- Commercialize cloud service systems matched to range of users
- Acquire customers and expand orders through collaboration with other companies

## Overseas ODA projects

Continue acquiring orders for overseas ODA projects

- Expand orders by leveraging plant engineering capabilities grounded on robust track record



Kingdom of Tonga  
Microgrid for Isolated island  
(Scheduled for completion in 2015)

- PV panels (1 MW)
- Electricity storage system for grid stabilization
- PCSs (500 KW × 4)
- Complete high-voltage switchboard system
- Grid monitoring and control system



Republic of Kiribati  
Solar power generation system  
(Scheduled for completion in 2015)

- PV panels (400 KW)
- PCSs (100 KW × 4)
- Complete set of electrical equipment

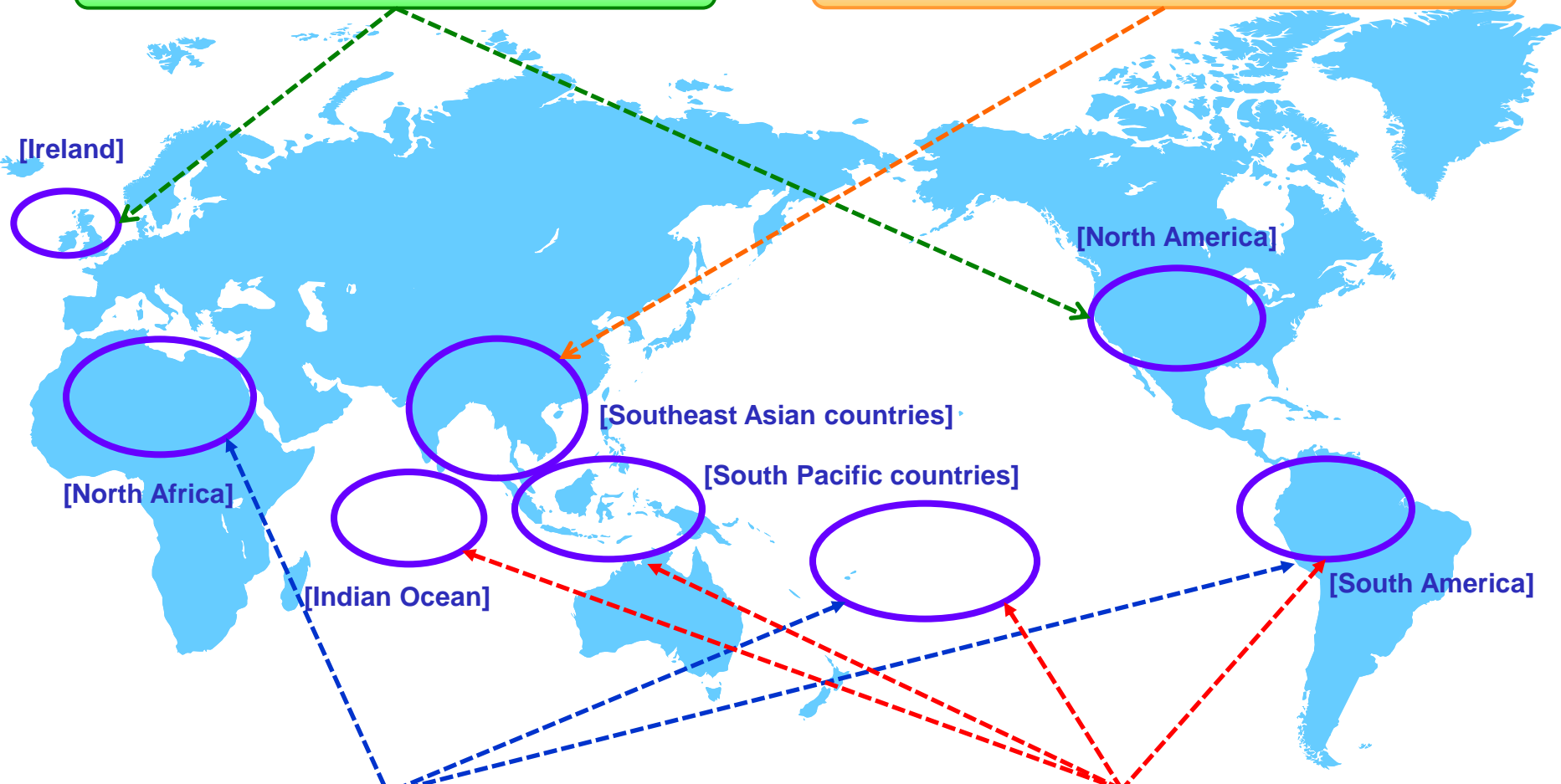
\* Designed in consideration of future installation of electric storage system to stabilize power grid and create microgrid

# Smart Communities Ongoing Acquisition of Orders for Overseas ODA Projects

## Leverage robust track record and expertise forged into Japan to expand overseas

Electric storage systems

Demonstration project in Kitakyushu City



[Ireland]

[North America]

[Southeast Asian countries]

[South Pacific countries]

[North Africa]

[Indian Ocean]

[South America]

Renewable energy generation and grid stabilization

Microgrids for isolated islands

## Accelerate and strengthen initiatives targeting new fields and growth fields

### <Academic>

- Expand operations by providing one-stop service
  - Promote sales of products compatible with Future School Promotion Project (ICT solutions for elementary and junior high school classrooms)
  - Advertise school operation support systems

### <Private sector>

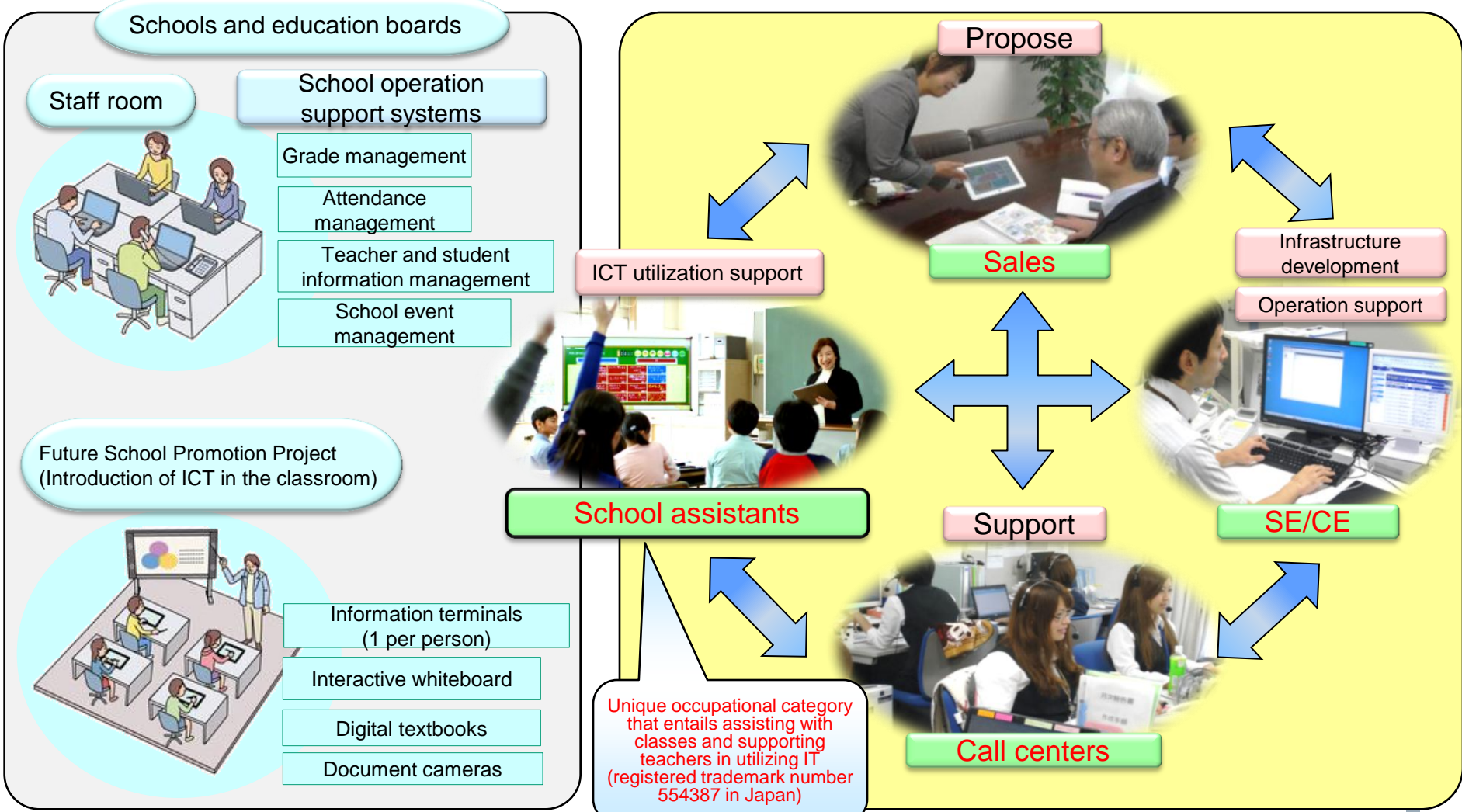
- Expand service package business
  - Promote sales of solutions for customer information management, patent management, and pharmaceutical information management

### <Public>

- Strengthen ICT infrastructure development and operation support solutions businesses through business alliance with Fujitsu Limited

# Priority Measure Example: One-Stop Service Provision (Academic Field)

Support installation of ICT into all areas of academia through one-stop service system encompassing proposals, introduction, operation, and maintenance that are realized through effective utilization of school assistants and integrated management of sales, SE, CE, and call centers



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