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# Power and Energy Business Strategy

Hitachi IR Day 2016

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Hitachi, Ltd.

# Power and Energy Business Strategy

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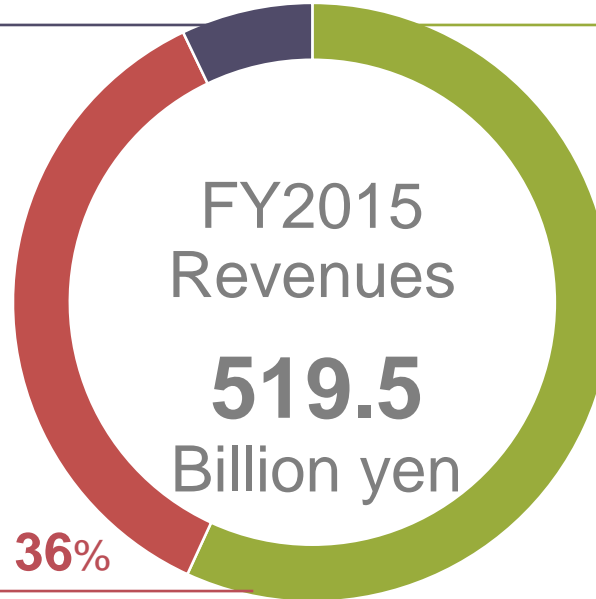
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Strengthen front engineering capabilities in response to market changes

Energy Solutions BU 7%

Power BU 57%



Nuclear Energy BU 36%



Provide solutions based on collaborative creation to all customers in the energy value chain

<sup>\*1</sup> Developed as part of the operations of the International Research Institute for Nuclear Decommissioning (IRID) with subsidies from the Agency for Natural Resources and Energy for expenses related to contaminated water treatment, etc.

<sup>\*2</sup> Iwanuma Rinku Mega Solar Power Plant (28.3MW), a project to support the reconstruction of Iwanuma City  
ABWR: Advanced Boiling Water Reactor

## Growth Strategies

### Energy Solutions BU

- Maximize customer value through solutions using digital techniques by integrating “IT” and “OT”.
- Focus on optimal solutions for further energy reforms, harnessing experience gained through Japanese energy system reforms.
- Achieve priority investment on North American market, which drives global market.

### Power BU

- Promote utilization of IoT and creation of High-value-added services in the Service Business.
- Strengthen the Power Generation Solutions Business.
- Expand the Power Transmission and Distribution Systems Business.

### Nuclear Energy BU

- Continue decommissioning work at the Fukushima Daiichi nuclear power station.
- Step up initiatives for the early restart and long-term safe operation of nuclear reactors.
- Pursue UK’s Horizon Project.
- Expand ABWR/ESBWR to the global market.

## Targets

**Ensure stable revenues in domestic base business, and achieve growth in the global market.**

**Create cash from Service Business and expand Power Generation Solutions and Power Transmission and Systems Businesses.**

**Leverage domestic business to achieve growth and increased revenues in overseas business.**

## Market trends

Overseas

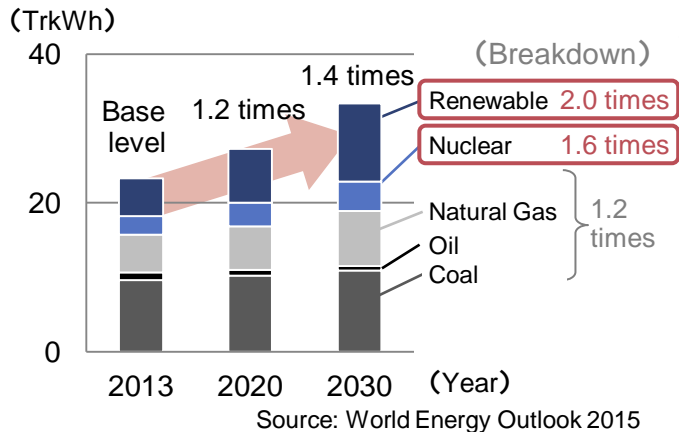
- World electricity generation is expected to expand.
- New legal framework was ratified, and global warming countermeasures are picking up pace (COP21 “Paris Agreement”).
- Demand for renewable energy and nuclear power is growing.
- New markets, such as micro-grid market, are expanding.

Japan

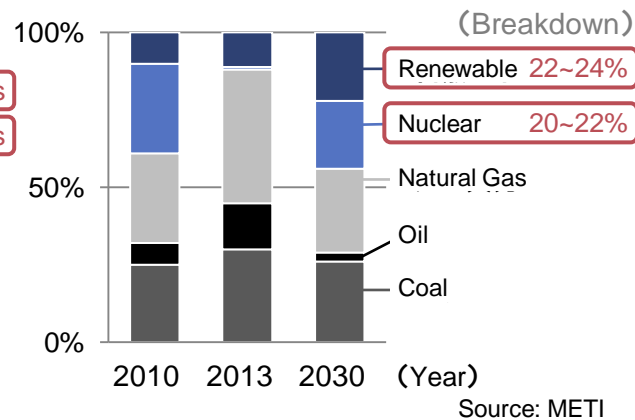
- Full liberalization of the electricity market
- Expanding needs for enhanced grid connection
- Creation of a market for solutions which integrate “IT” and “OT”
- Expansion of wind power market; nuclear power is positioned as important baseload electricity source.

## Market prospects

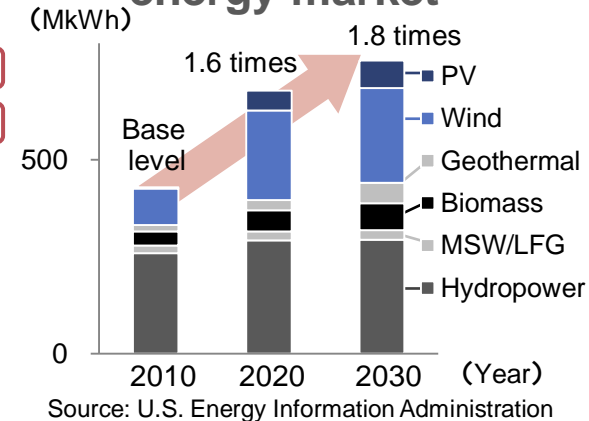
### World electricity generation



### Japan's energy mix



### World renewable energy market

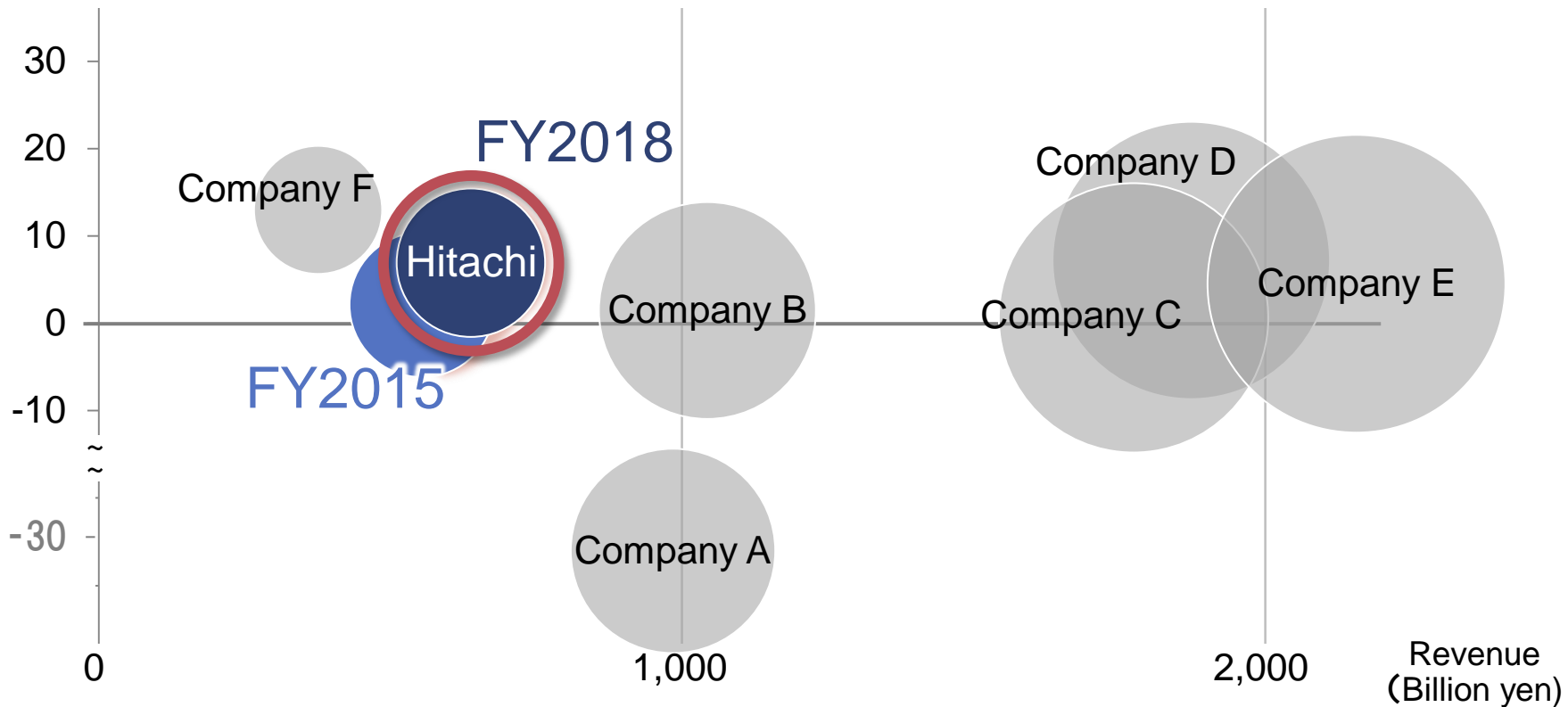


Creation of a market for solutions using digital techniques which integrate IT and OT, expansion of renewable energy and nuclear power markets

# 1-4 Target Position

Expand business and strengthen earning power to become a major global player

Operating income ratio (%)



\*1 Exchange rates: 120 yen per dollar, 125 yen per euro

\*2 Hitachi's estimates of the revenues and operating income ratio of each company's electric power business (excluding thermal power business) (based on FY2014/2015, size of pie chart indicates revenue size.)

\*3 Reflects impact of each company's business reorganization.

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# 2 Summary of 2015 Mid-term Management Plan

	FY2015 Results	Previous Forecast*1	Difference	(Reference) Initial Target under 2015 Mid-term Management Plan*2
Revenues	519.5 billion yen	460.0 billion yen	+59.5 billion yen	500.0 billion yen
Adjusted operating income ratio	2.2%	2.2%	-	-
EBIT ratio	1.1%	5.9%	(4.8)%	11.6%

	Achievements	Tasks
<b>Energy Solutions BU</b>	<ul style="list-style-type: none"> <li>• Started up Energy Solutions Business.</li> <li>• Collaborated with overseas vendors.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish high earning businesses.</li> <li>• Strengthen overseas business (North America, etc.).</li> </ul>
<b>Power BU</b>	<ul style="list-style-type: none"> <li>• Achieved top share of the domestic wind power market, and expanded photovoltaic power business.</li> <li>• Achieved expansion and high earnings in the Service Business.</li> <li>• Strengthened global SCM and competitiveness in the Power Transmission and Distribution Systems Business.</li> </ul>	<ul style="list-style-type: none"> <li>• Minimize costs incurred in thermal power projects.</li> <li>• Expand line-up of wind turbines.</li> <li>• Step up initiatives in response to electricity system reform.</li> </ul>
<b>Nuclear Energy BU</b>	<ul style="list-style-type: none"> <li>• Made steady progress on dealing with Fukushima, new regulations and restarting nuclear power plants.</li> <li>• Made good progress with UK's Horizon project.</li> </ul>	<ul style="list-style-type: none"> <li>• Speed up the restarting of BWRs</li> <li>• Improve the investment attractiveness of UK's Horizon project.</li> </ul>

\*1 As of June 11, 2015  
\*2 As of June 13, 2013, US GAAP

SCM: Supply Chain Management  
BWR: Boiling Water Reactor



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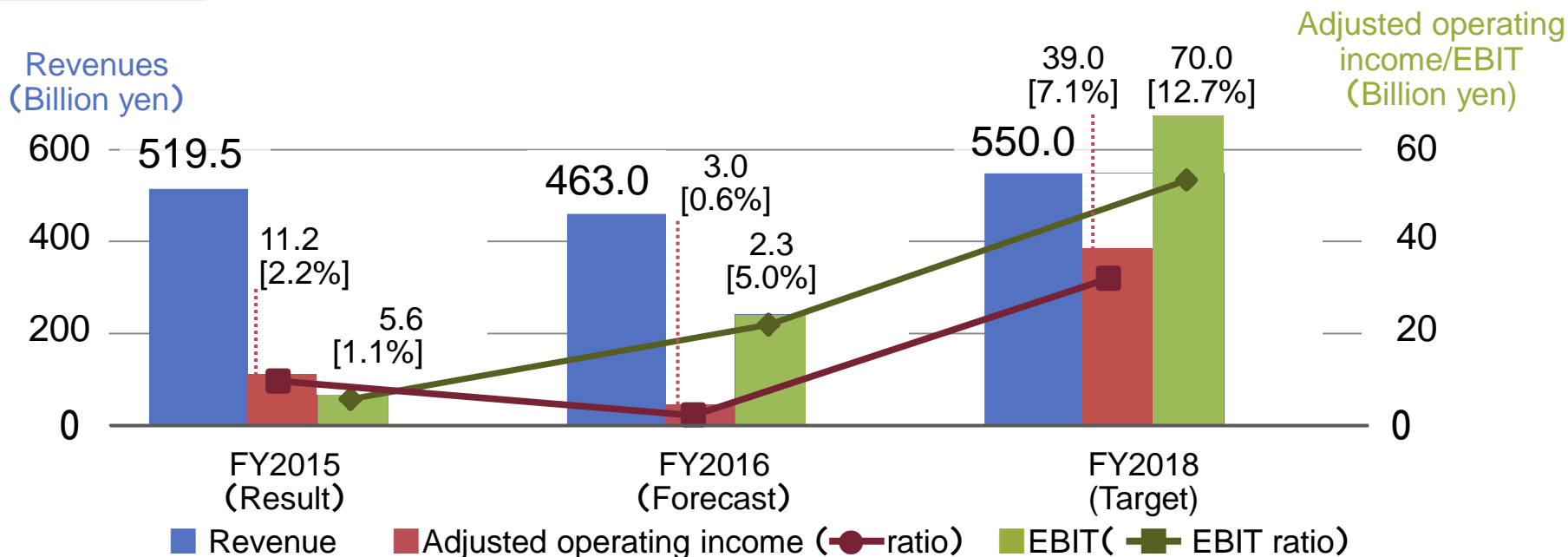
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# 3-1 Business Performance Trends

Orders received	598.3	465.3	
Order Backlog	642.8	645.1	
Service revenue ratio	47%	48%	40%
Overseas revenue ratio	9%	13%	16%

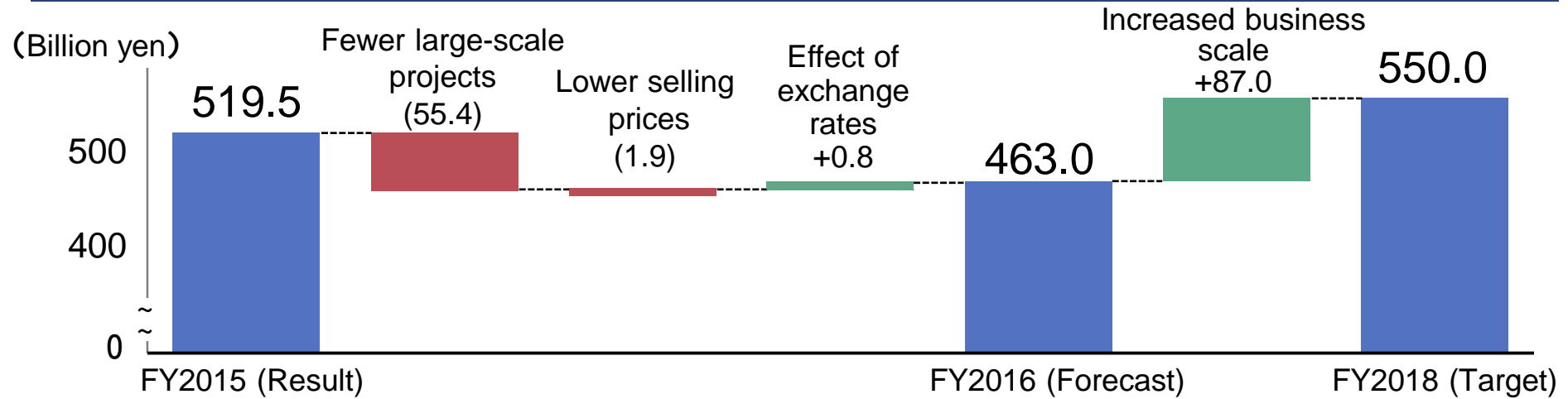


\*Power and Energy business performance do not include the performance of Information Technology system business for power and energy which is recorded in Energy Solutions BU.

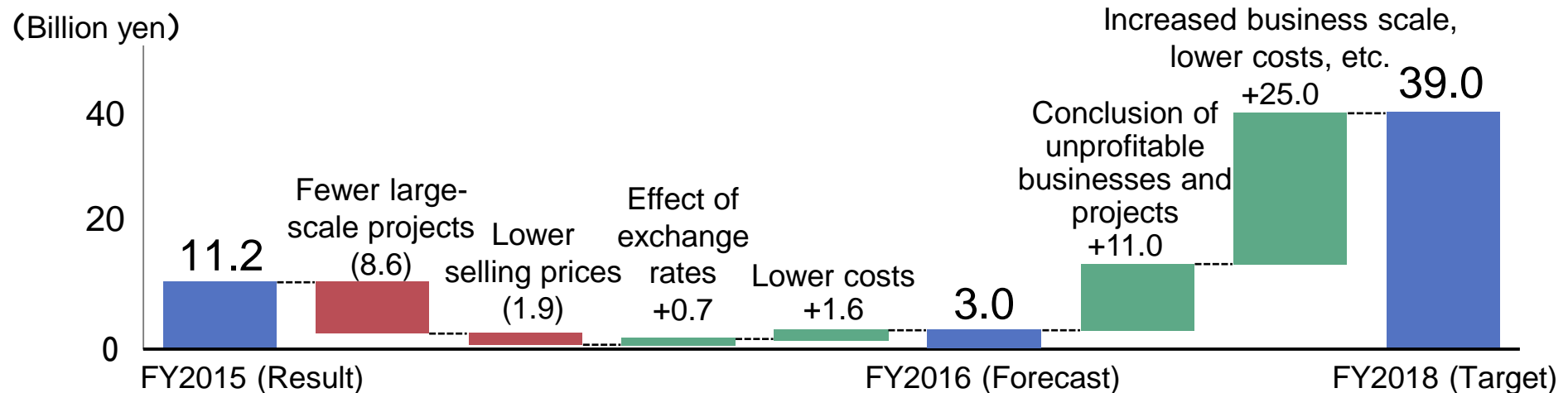
The performance of Information Technology system business for power and energy is recorded in Information and Telecommunication Systems segment.  
EBIT: Earnings Before Interest and Taxes

# 3-2 Business Performance Trends

## Revenue

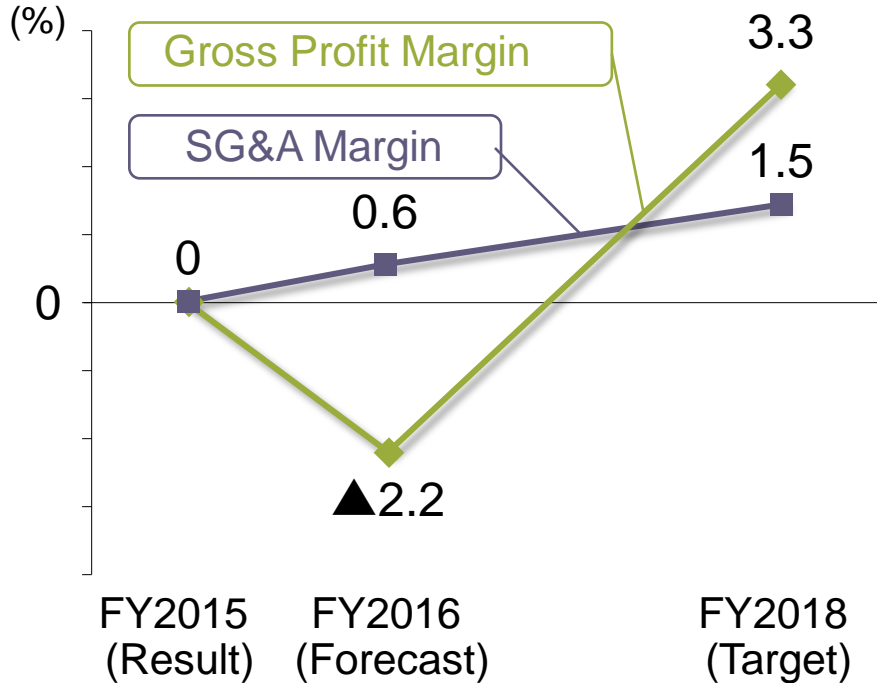


## Adjusted Operating Income Ratio



## Strengthen operating foundations by reviewing business efficiency

### Improvement rate



#### SG&A

- Overhaul fixed costs in Japan
  - Optimize workforce in Japan
  - Promote BPO for indirect operations
- Review indirect costs
  - Continuously review business operations

#### Gross Profit

- Upgrade production technologies of global manufacturing bases
- Strengthen development capabilities in core production technology at mother factories
- Establish global supply chain
- Improve productivity through IT innovation

#### Cash Generation

- Shorten end-to-end lead time
- Tighten cashflow management for individual projects
- Continue activities to reduce inventories

### CCC

FY2015 (Result)	FY2016 (Forecast)	FY2018 (Target)
87.0 days	91.0 days	75.0 days

## FY2018 Target

Provide solutions based on collaborative creation to all customers in the energy value chain

- Provide solutions using digital techniques to the new markets
- Provide highly reliable systems and services to the electricity infrastructure market

	FY2018	Vs. FY2015
Revenue	550.0 billion yen	5.9% increase
Adjusted operating income ratio [EBIT ratio]	7.1%[12.7%]	4.9%[11.6%] improvement

# Power and Energy Business Strategy

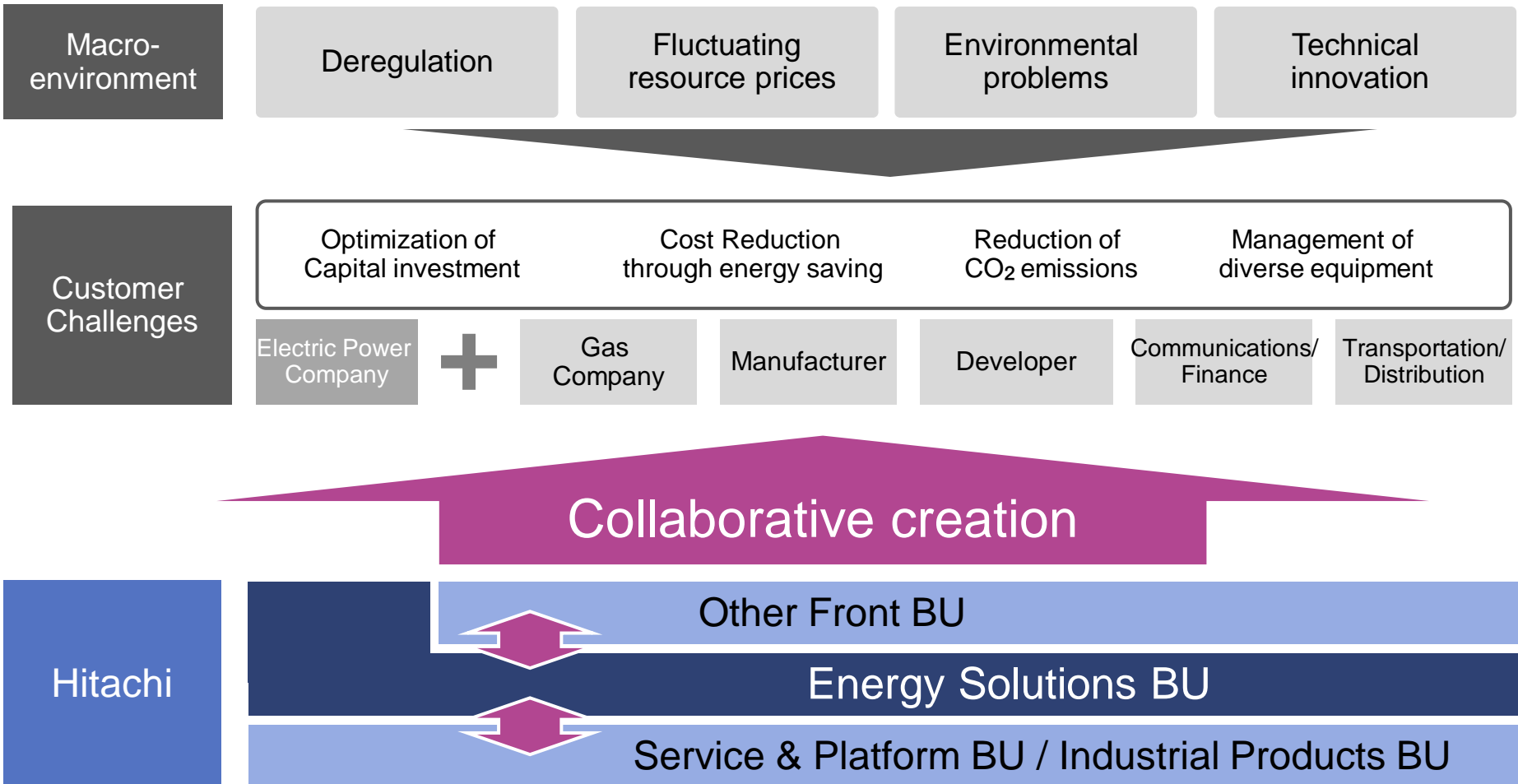
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# 1)-1 Aim of Establishment

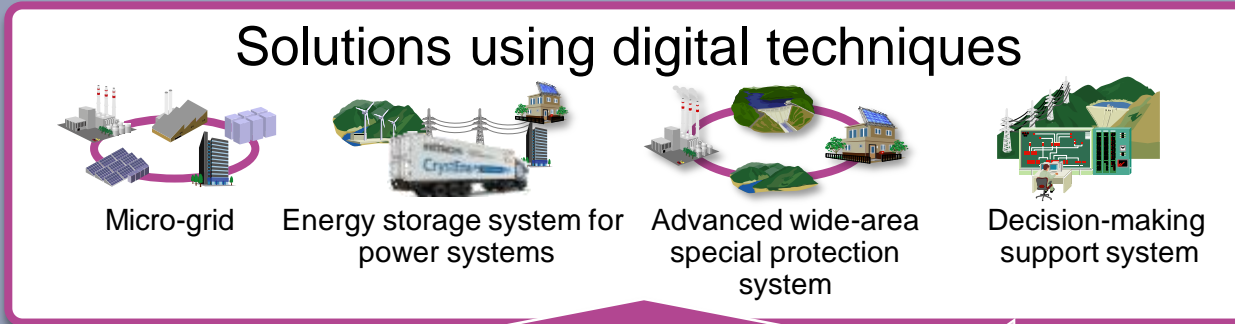
Provide solutions to energy challenges through collaborative creation with customers.  
Provide energy solution core to Front BU for different markets.



# 1)-2 Main Businesses

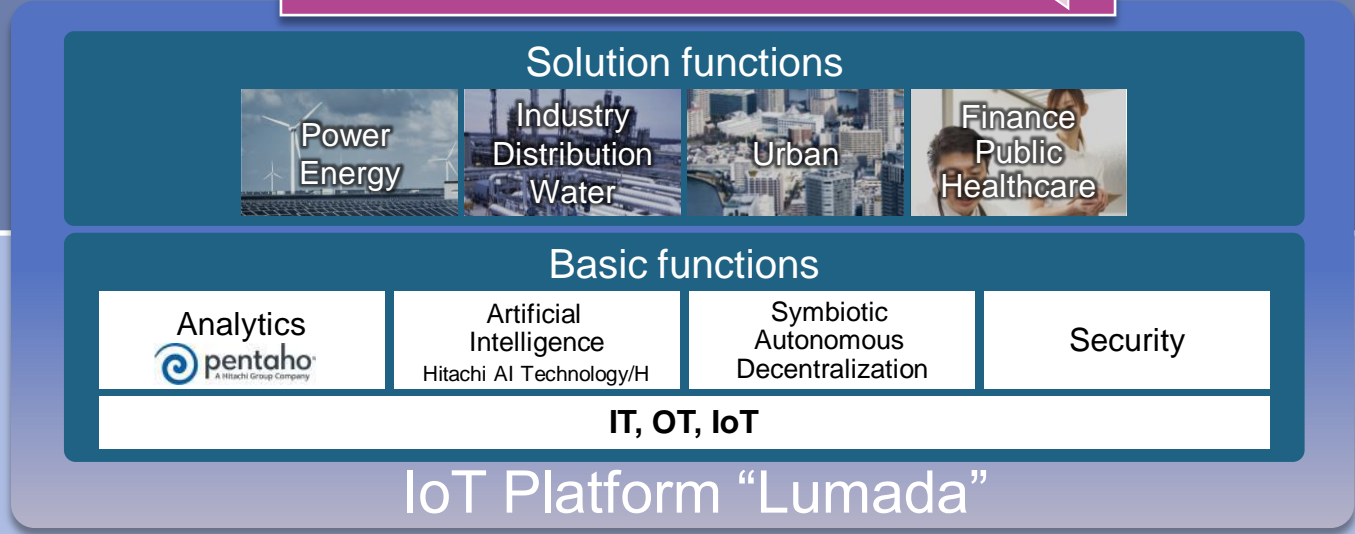
Provide optimal solutions through IoT platform and SI, and collaborative creation with customers

Energy Solutions BU



Components

Service & Platform BU





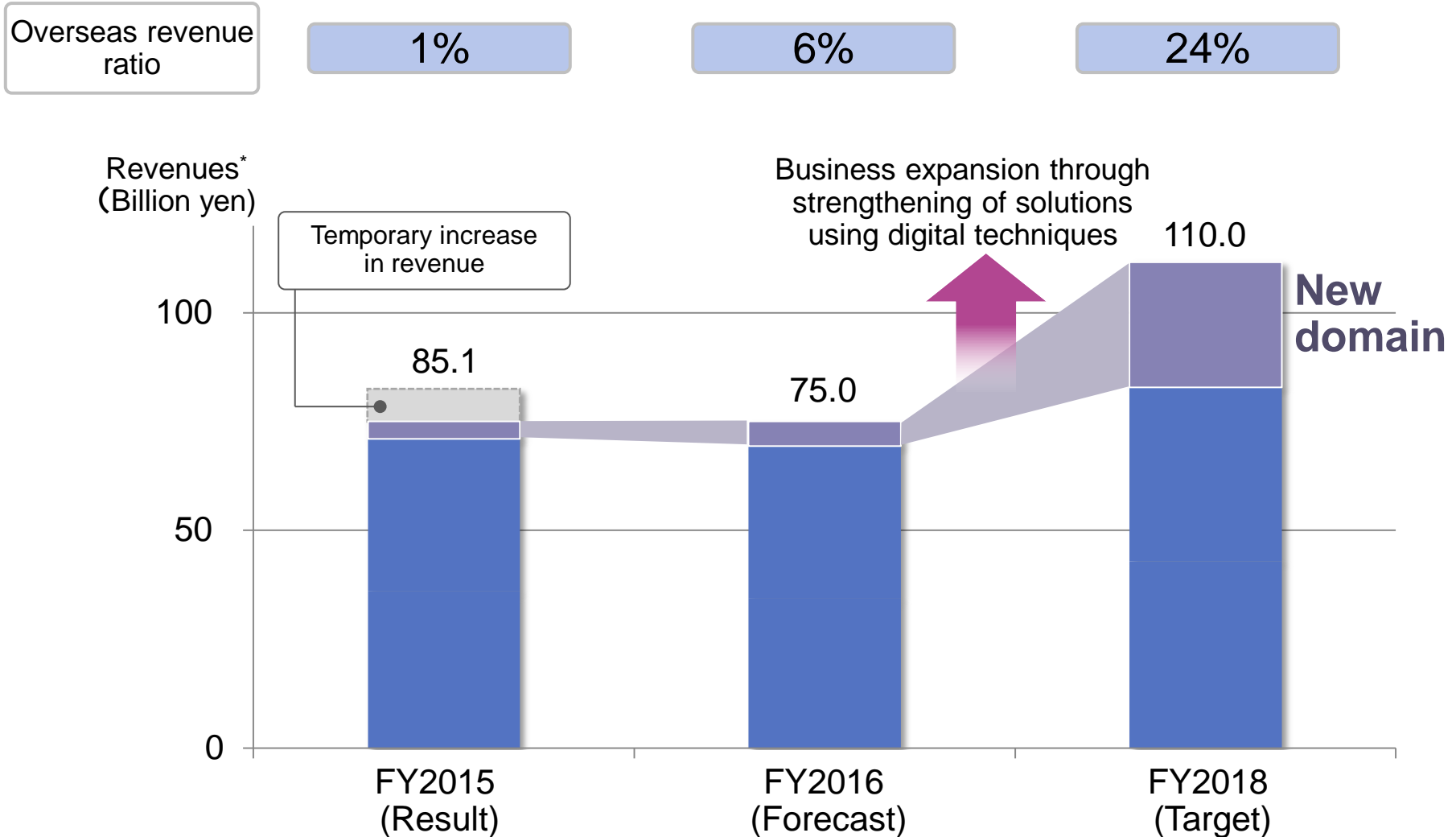
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## 2) Business Performance Trends



\* Includes revenue of Information Technology business for power and energy which is recorded in Information and Telecommunication Systems segment.

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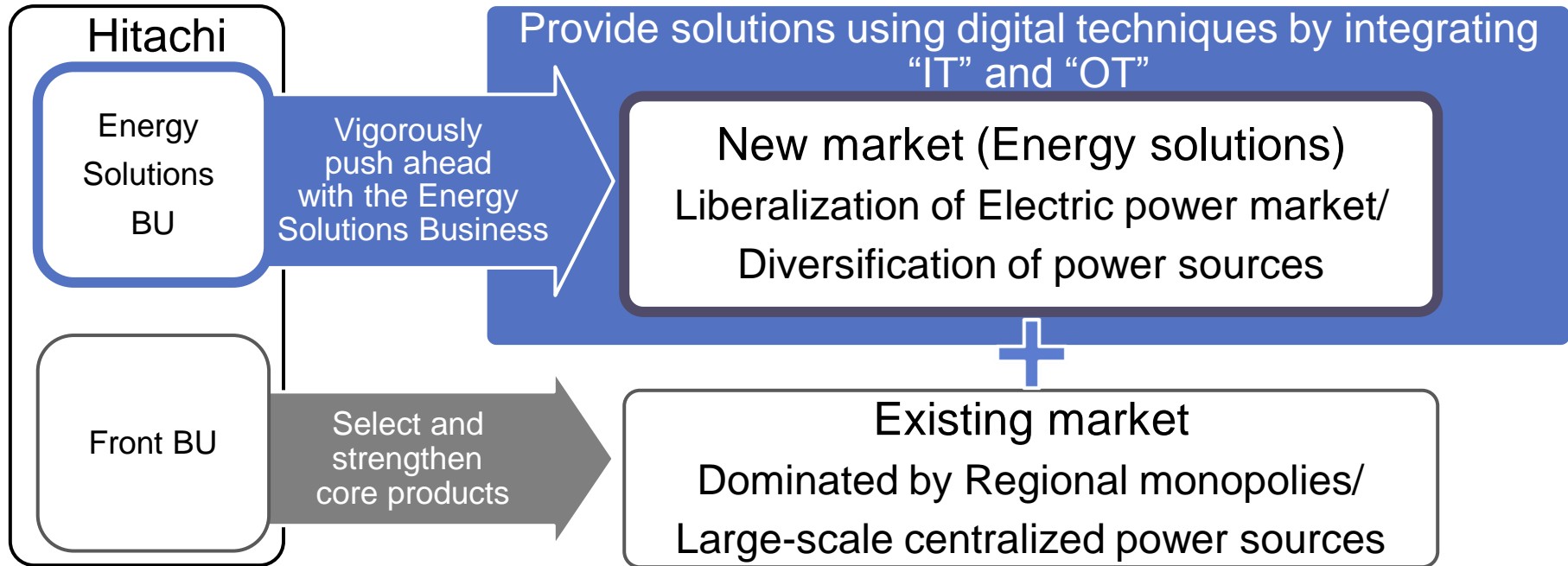
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# 3)-1 Business Policy

We focus on providing solutions using digital techniques, and consolidating position in the global market.



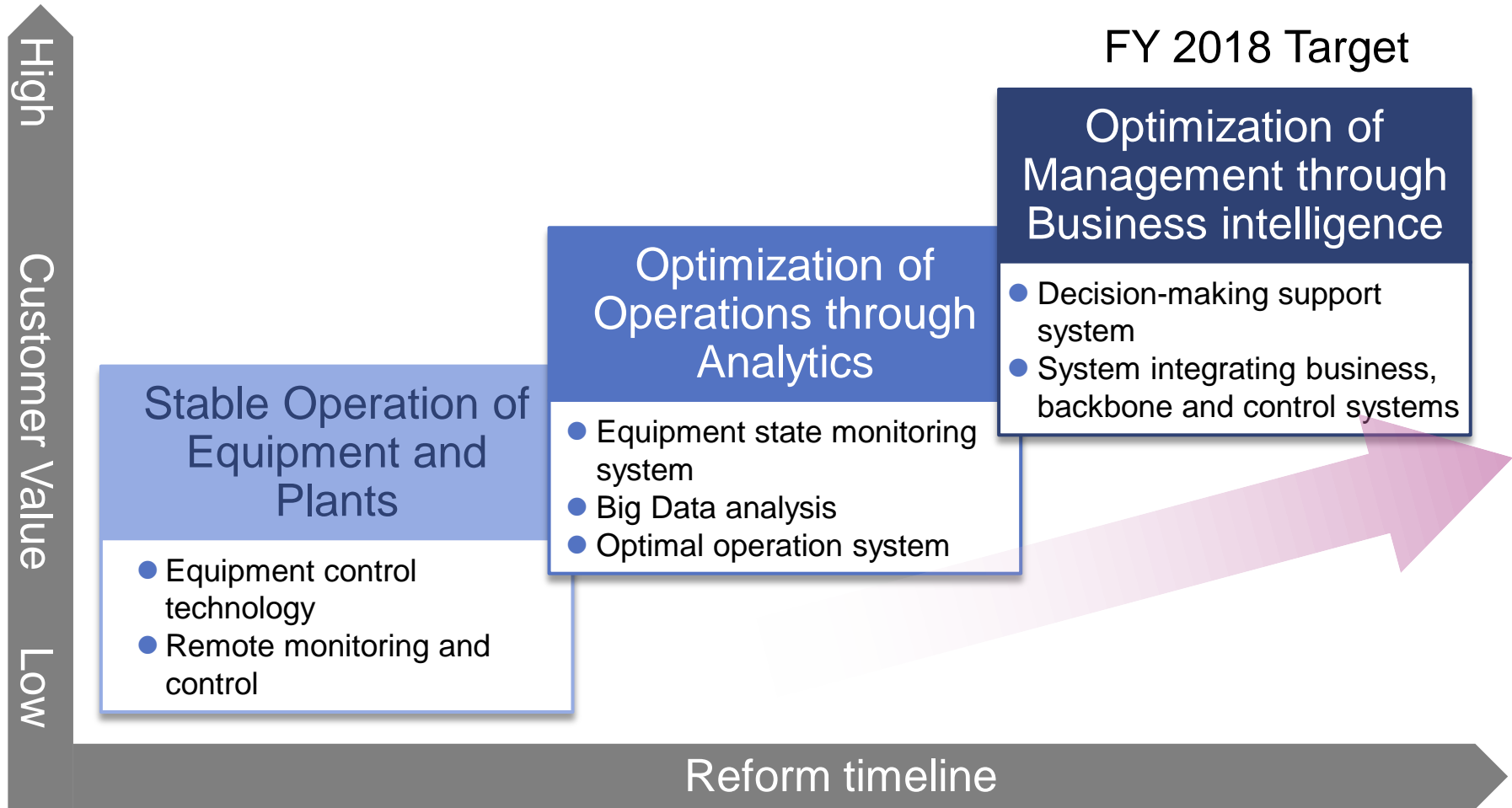
## Comparison with competitors

Company Name	Recent Developments
Company X	Strengthened energy management and automation business through business acquisition and alliance with IT firm.
Company Y	Strengthened analytics business through acquisition of IT operations for smart grid/energy management.
Company Z	Providing common platform in IoT business and sharing own service model.

# 3)-2 Direction aimed at

Maximization of Customer Value

Leverage the knowhow and experience of the Hitachi Group to provide optimal solutions. Maximize customer value through solutions using digital techniques.



Provide solutions using digital techniques which are essential for energy system reforms to a wide range of customers.

Value provided	Experience	Business Focus Area
Use of Cross-regional grid	<p>Backbone system of the Organization for Cross-regional Coordination of Transmission Operators</p> <ul style="list-style-type: none"> <li>Started operations in April 2016</li> <li>Provided highly reliable system</li> </ul>	<p>High Voltage Direct Current Transmission system</p> <ul style="list-style-type: none"> <li>Expand utilizing cross-regional grid by strengthening Interconnection lines</li> </ul>
Responding to Competitive markets	<p>Meter Data Management, Customer Information system</p> <ul style="list-style-type: none"> <li>Gained share of more than 50%*</li> <li>Compliant with international standards (IEC)</li> <li>Added menu for fast and flexible billing</li> </ul>	<p>Big-data Analysis solutions</p> <ul style="list-style-type: none"> <li>Optimizing facility maintenance and customer service by analyzing meter data</li> </ul>
Optimal Use of Energy	<p>Area Energy Management</p> <ul style="list-style-type: none"> <li>Shared experience gained from Kashiwa-no-ha Smart City</li> <li>Promoted project in North America</li> </ul>	<p>VPP/DR systems</p> <ul style="list-style-type: none"> <li>Utilizing IT for customer's resource aggregation</li> </ul>

\* Based on number of consumers

IEC: International Electrotechnical Commission

VPP: Virtual Power Plant

DR: Demand Response

# 3)-4 Approach to Global Market

Ensure “Stable Revenue” in Japanese domestic base business, and achieve growth by focusing priority investment on the North American market

## Europe and Asia

- Examine alliances and collaboration with Hitachi’s regional overseas bases in Europe and Asia.
- Examine synergies and global expansion of joint ventures with electric power companies. ( THE Power Grid Solution Ltd., Hitachi Systems Power Service, Ltd.)

## North America

- Focus on growth areas in the U.S. which are driving the global market.
- Accelerate business establishment.
- Launch of business base (in May) and expansion of the business system in stages.
- Examine effective utilization of alliances and M&A.

## Japan

- Maintain top-level of market share in Japan, and ensure stable revenue in the base business
- Cross-regional coordination of transmission operation and supply / demand side market (Cross-regional grid stabilization, HVDC, EMS, CIS, EAM, MDMS)

# 3)-5 Specific Initiatives

From demonstration project to actual business development

Accelerate early commercialization and generation of high revenues & profitability through strategic initiatives.

UK:  
NEDO Manchester Smart Grid Demonstration Project



Japan:  
Kashiwa-no-ha Smart City



U.S.:  
New Jersey Energy Storage System Demonstration Project



Poland:  
NEDO Grid Stabilization Demonstration Project

U.S.:  
BPA Grid Stabilization Demonstration Project

India:  
Capacity Building Demonstration Project

U.S.:  
New York State Microgrid Feasibility Study(FS)

Japan:  
Yokohama Waterworks Bureau  
Water and Gas Meter Radio Automatic inspection System

Japan:  
NEDO Izu Oshima Large Hybrid Energy Storage System Demonstration Project



U.S.:  
NEDO Hawaii Smart Grid Demonstration Project



Slovenia:  
NEDO Distribution Automation System Demonstration Project



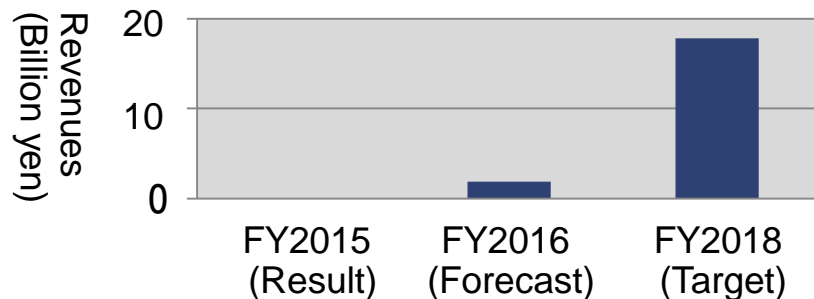
# 3)-6 Overseas Business (North American Business Expansion)

Start expanding business in the U.S. region with a large market size.  
Establish base in New York (in May) and accelerate Solutions Business using digital techniques.

## Establishment of North American base

- Provide solutions keeping abreast of latest trend, developments in the U.S. where advanced technology is created.
- Speedy decision-making in the front-line of market and customer.
- Business expansion based on concept of “Symbiotic Autonomous Decentralization”

## North American business projections



## Business Focus Area

**Microgrids**  
Increasing importance of energy security and resiliency  
Received more than 10 FS orders. Progress to RFP phase following completion of FS in New York State

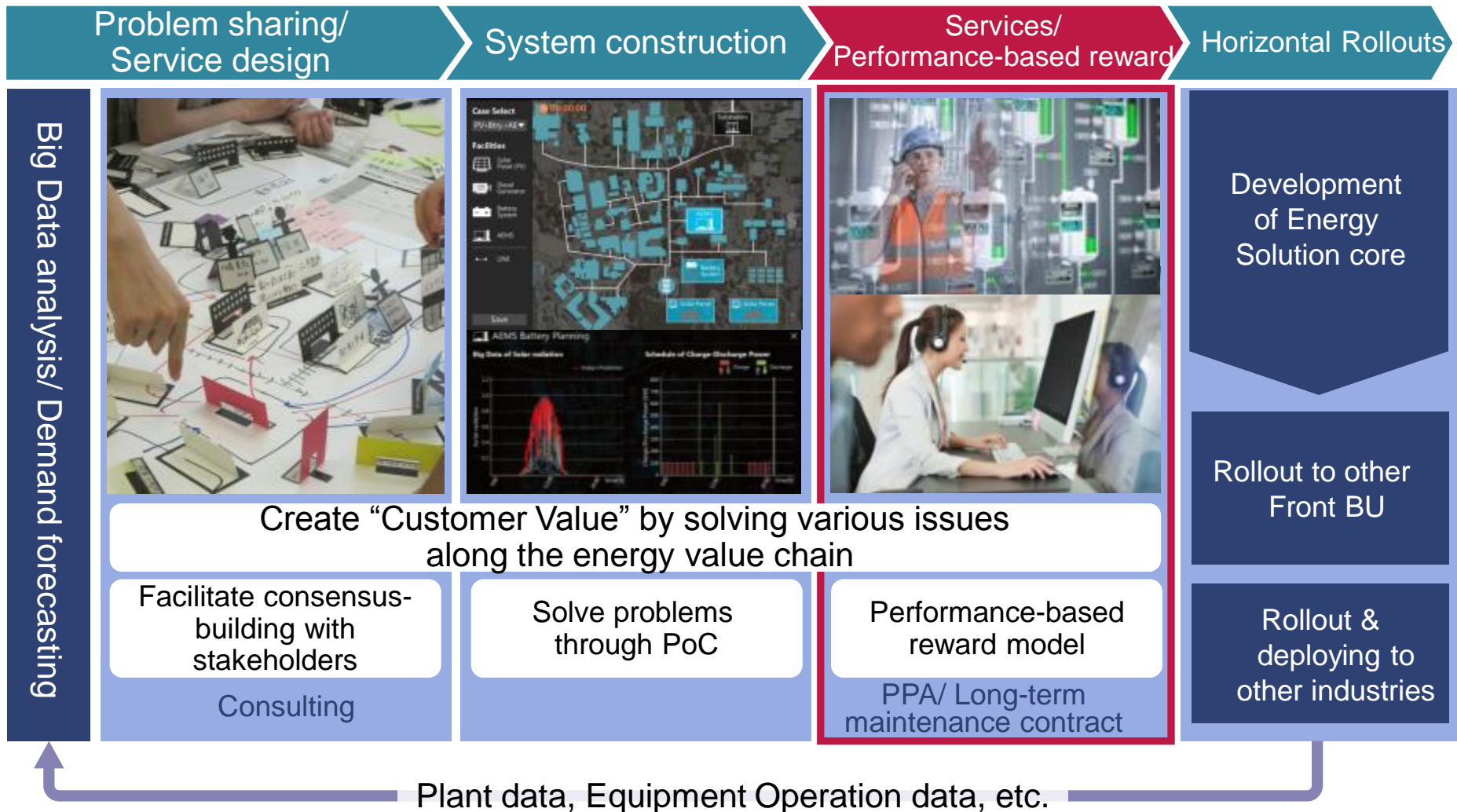
**Energy Storage Systems**  
Enhancing demand for power grid stabilization measures in response to growing adoption of renewable energy  
Expand energy storage systems for power grids to liberalized markets in 3-state of North America \*

**Grid Stabilization Systems**  
Increasing needs for measures in response to decline in power quality & increased risks of large-scale power outages  
Sharing of grid stabilization research & experiment with BPA

\* States of California, Texas and New York  
RFP: Request for Proposal

# 3)-7 Business Model Reform

Expand business by establishing “Revenue Models” through collaborative creation with customers and rolling out to other industries



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## 4) Conclusion

### Priority initiatives for achievement of 2018 Mid-term Management Plan

## Provide solutions using digital techniques which integrate “IT” and “OT”

- Focus on optimal solutions for approaching energy system reforms
  - Provide innovative solutions based on a wealth of experience and expertise as top leading player in Japan.
- Achieve Priority investment on North American market which drives the global market
  - Speed up commercialization and generation of high revenues & profitability through strategic initiatives
- Business model reform
  - Establish “Revenue models” through collaborative creation with customers and horizontal rollouts to other industries



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# 1) Business Overview

Co-creation of innovations with various customers, by harnessing a wealth of knowledge and technical expertise

## Needs of Energy Market


Global warming countermeasures (e.g., COP21 "Paris Agreement")

3E+S (e.g., Electricity system reform)

Smartification by IoT (e.g., Industrial Internet)

## Meeting needs with products, services and solutions

% :FY2016 revenue ratio (Forecast)



Wind turbine generation system




Photovoltaic power generation systems\*




Gas engine

**Power Generation Solutions Business 30%**


Affiliated companies: Mitsubishi Hitachi Power Systems, Ltd., Hitachi Mitsubishi Hydro Corporation



Gas Insulated Switchgear

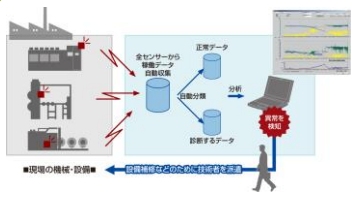


UHV

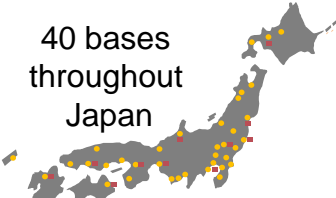


Transformer

**Transmission and Distribution Systems Business 15%**




Predictive diagnosis system



40 bases throughout Japan

Field services network



24-hour remote monitoring and support center

**Service Business 40%**

Others 15%

\* Iwanuma Rinku Mega Solar Power Plant (28.3MW), a project to support the reconstruction of Iwanuma City.

COP21 : The 21st session of the Conference of the Parties

3E+S: Energy Security, Economic Efficiency, Environment +Safety IoT: Internet of Things UHV: Ultra High Voltage

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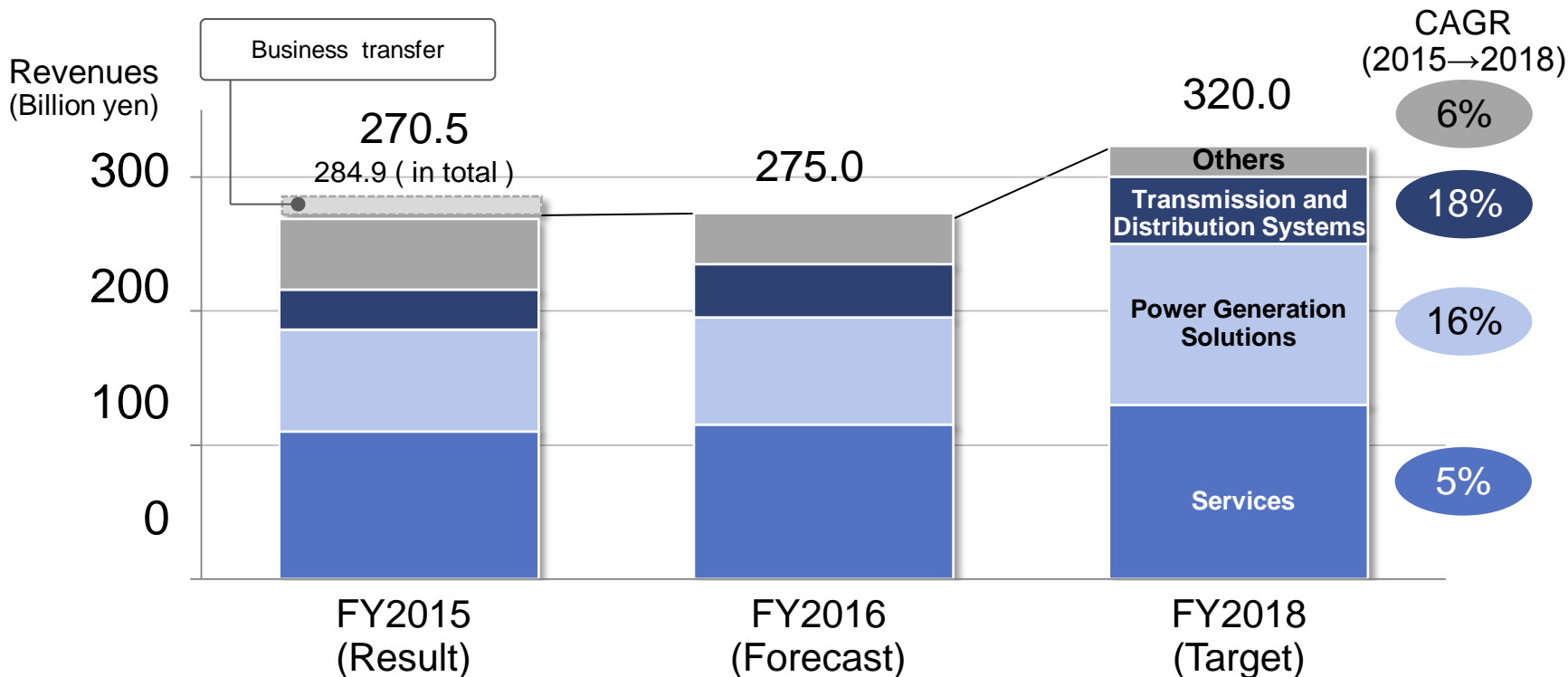
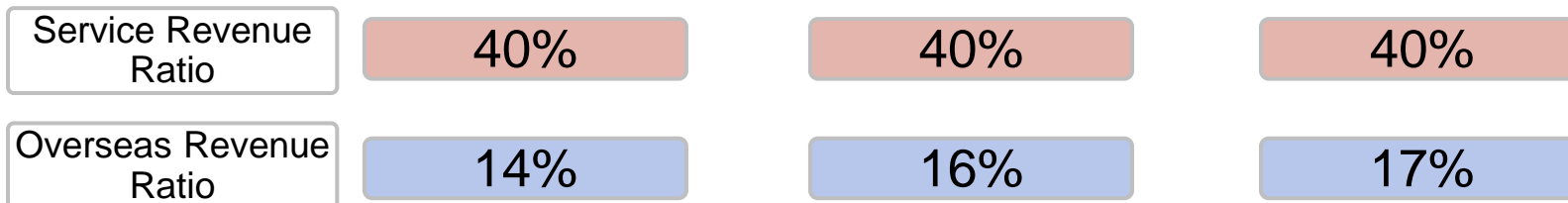
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# 2)-1 Business Performance Trends

Create cash from service business and expand Power Generation Solutions and Transmission and Distribution Systems





## 2)-2 Status of Initiatives to Address Issues

Item	Initiatives	Achievements
Thermal power projects	<ul style="list-style-type: none"> <li>■ Promote minimization of costs incurred through collaboration with Mitsubishi Hitachi Power Systems, Ltd.                             <ul style="list-style-type: none"> <li>- Steadily execute remaining tasks and commissioning</li> <li>- Reach early conclusion of customer negotiations concerning compensation for delayed start of operation, etc.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Already put all plants in Europe into operation</li> <li>● Countermeasure construction work at domestic plants progressed on schedule</li> </ul> <div style="border: 2px solid red; border-radius: 20px; padding: 10px; text-align: center; margin-top: 20px;">                     All projects progressed according to plan                 </div>
Transmission and Distribution systems	<ul style="list-style-type: none"> <li>■ Resolutely implement business structure reforms                             <ul style="list-style-type: none"> <li>- Streamline and strengthen overseas bases</li> <li>- Optimize global SCM</li> </ul> </li> <li>■ Relentlessly strengthen product competitiveness                             <ul style="list-style-type: none"> <li>- Narrow down of focus models, reduce costs, etc.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>● Orders received overseas increased 30% year over year</li> <li>● Cost reductions for focus models progressed on schedule</li> </ul> <div style="border: 2px solid red; border-radius: 20px; padding: 10px; text-align: center; margin-top: 20px;">                     Forecast; Significant improvement in profitability in FY2016                 </div>

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# 3) Market Environment

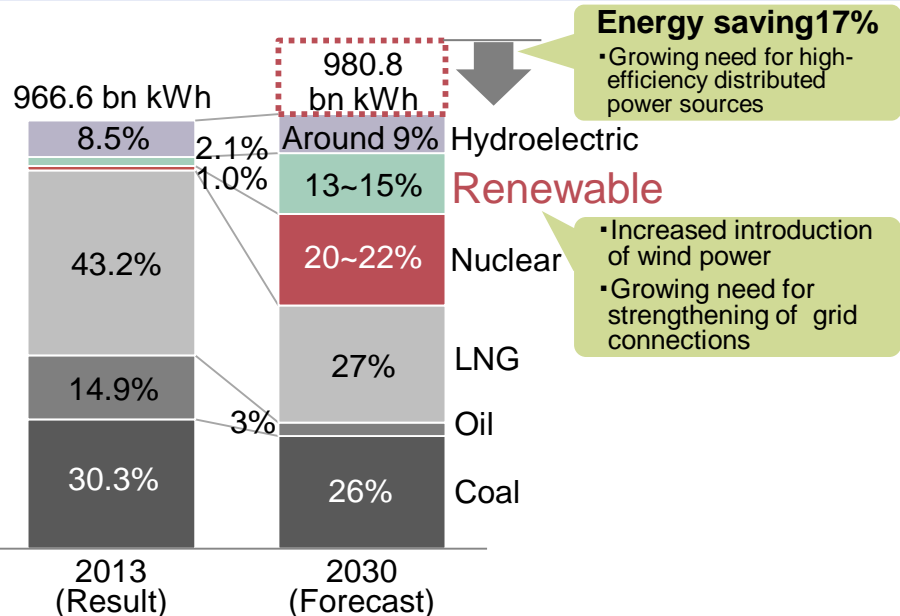
Japan

- Electricity liberalization is creating the need for various solutions and services
- The introduction trend of renewable energy is shifting towards wind power
- Growing need for strengthening of grid connections

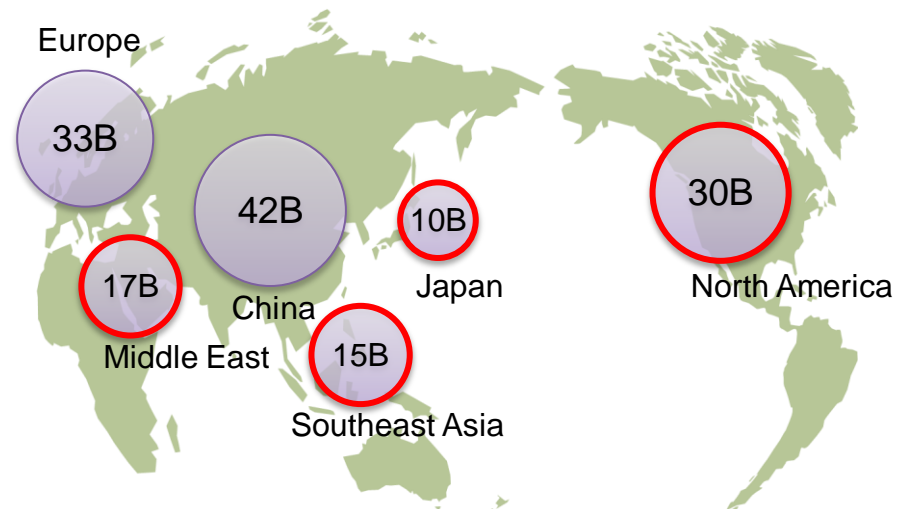
Overseas

- Growing need for global warming countermeasures on a global scale
- Growing need for distributed power sources associated with increased electricity demand
- Growing need for strengthening of grid connections (global supergrid conception)

Japan's Long-term Energy Supply and Demand Outlook



Size of Transmission and Distribution System Market (switchgear, transformer)



\*Forecast of cumulative investment over the coming 5 years to 2020 [US\$]  
(Source: Hitachi's estimates based on Goulden Reports 2014, etc.)

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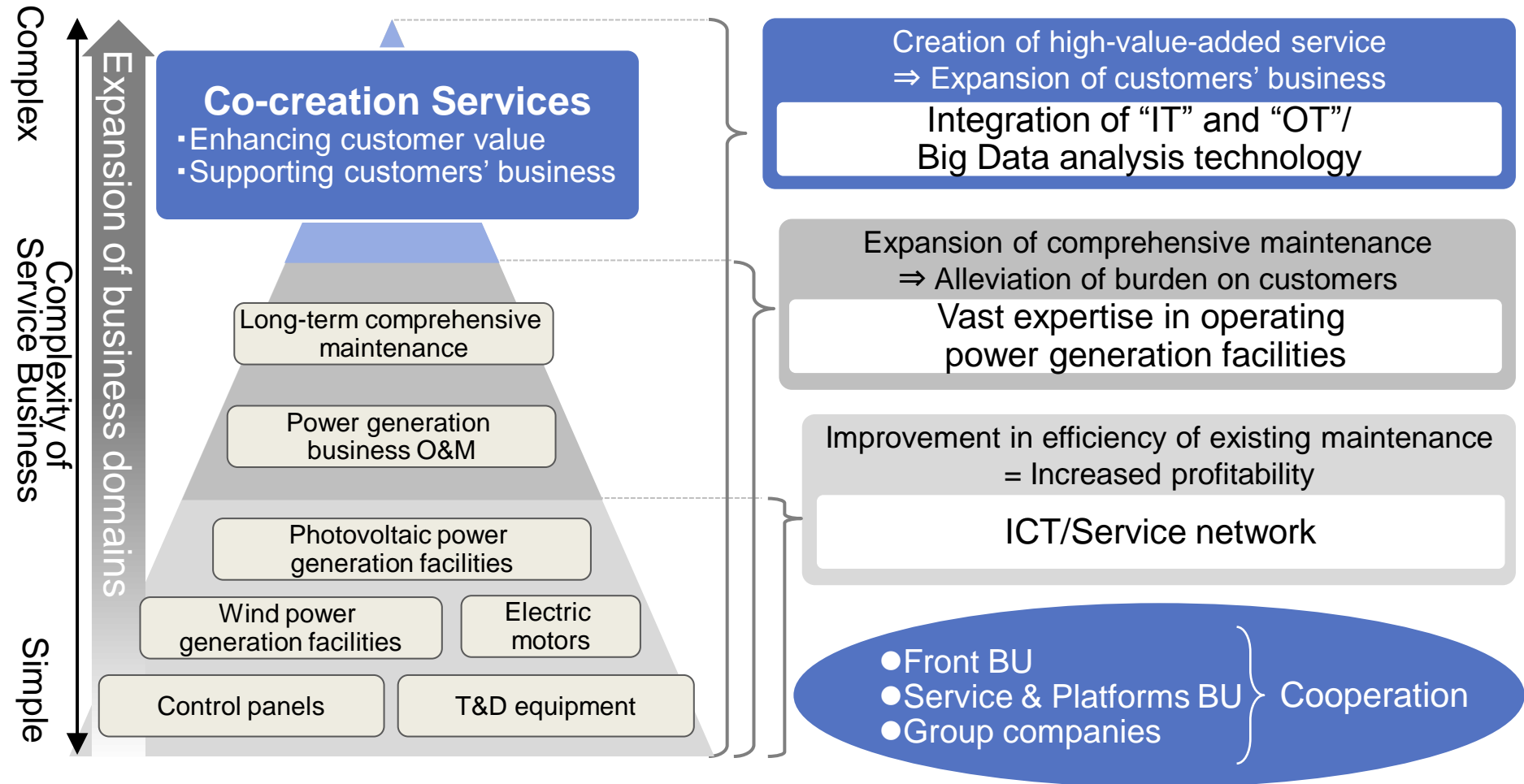
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# 4)-1 Growth Strategies

Growth Strategies	Target	Initiatives
<b>■ Service Business</b> <ul style="list-style-type: none"> <li>● Promote utilization of IoT and creation of high-value-added services</li> <li>● Provide one-stop solutions to meet diverse customer needs</li> </ul>	<ul style="list-style-type: none"> <li>● Increase revenues by 20%</li> <li>● Double High-value-added services</li> </ul>	<ul style="list-style-type: none"> <li>● Promote utilization of IoT in renewable power generation systems</li> <li>● Expand comprehensive maintenance services</li> </ul>
<b>■ Power Generation Solutions Business</b> <ul style="list-style-type: none"> <li>● Strengthen competitiveness of components and increase share of domestic market</li> <li>● Expand distributed power source solutions</li> </ul>	<ul style="list-style-type: none"> <li>● Increase revenues by 50%</li> <li>● Maintain top share of domestic wind power generation market</li> </ul>	<ul style="list-style-type: none"> <li>● Strengthen power source line-up               <ul style="list-style-type: none"> <li>▪ Wind power generation systems</li> <li>▪ Biogas power generation systems</li> </ul> </li> <li>● Expand total solution business through cooperation between BU</li> </ul>
<b>■ Transmission and Distribution Systems Business</b> <ul style="list-style-type: none"> <li>● Expand business by strengthening partnering</li> <li>● Strengthen competitiveness of components, and increase market share in focus regions</li> </ul>	<ul style="list-style-type: none"> <li>● Gain presence in focus regions</li> </ul>	<ul style="list-style-type: none"> <li>● Further tap into demand related to electricity system reform in Japan</li> <li>● Strengthen sales channels in core regions</li> <li>● Utilize UHV (Ultra High Voltage)</li> </ul>

# 4)-2 Service Business (1)

Contribute to expansion of customers' business scale and profitability through co-creation services.  
Provide solution services combining IT with field services knowhow.

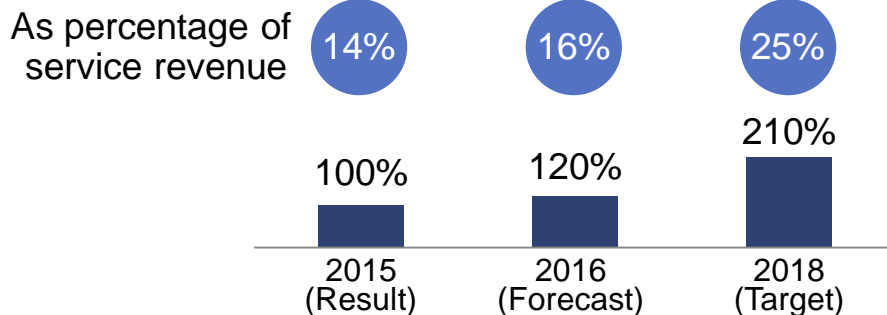


# 4)-3 Service Business (2)

## Expansion of high-value-added services

- Profit share-type O&M services
  - Broaden application to renewable energy solutions business
- Operation support systems utilizing IoT
  - Utilize IoT in power generation facilities
  - Utilize 24-hour remote monitoring and support centers
- Solution services using digital techniques
  - Expand scope of application of predictive diagnosis system “HiPAMPS”

### High added value services growth projection (Taking FY2015 as 100)

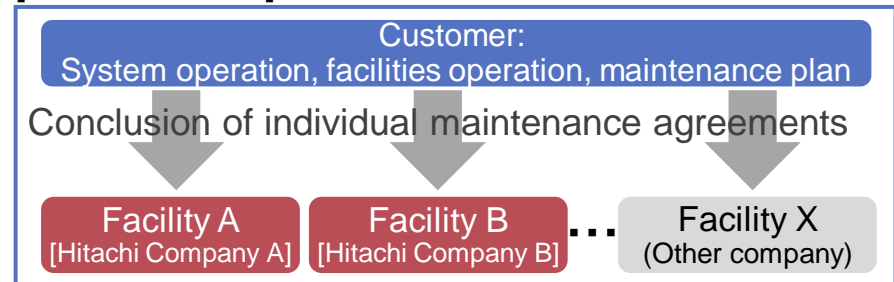


HiPAMPS: Hitachi Power Anomaly Pick-up System  
BPO: Business Process Outsourcing

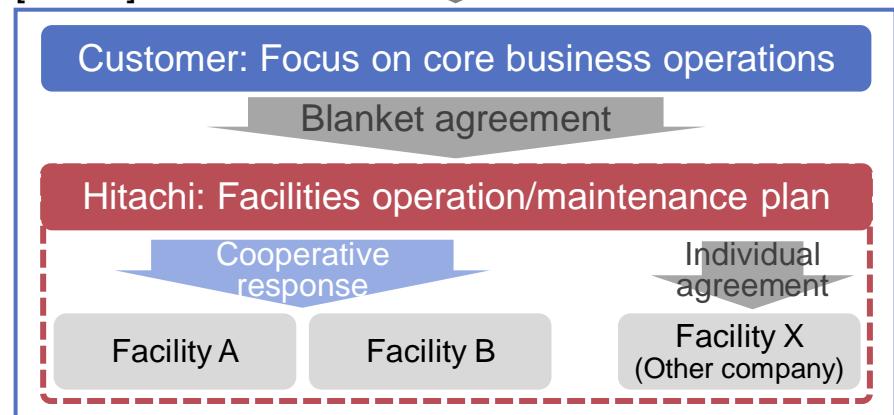
## Expansion of comprehensive maintenance services

- BPO-type maintenance services through cooperation between Group companies
  - Alleviating burden on customers by undertaking maintenance-related operations
  - Meeting the needs of customers that enter different industries

[Current Status]



[Vision]



# 4)-4 Renewable Energy Solutions Business

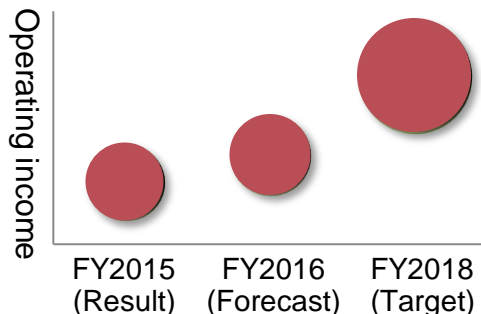
Contribute to more widespread adoption of renewable energy in Japan through total solutions.

Ensure top share of domestic market for wind power generation systems in Japan, and expand into Asia region (region with natural conditions similar to those in Japan).

## Wind power generation systems

- Participate from business development stage, including cooperating with assessment of environmental impact.
- Double production capacity by augmenting manufacturing lines.
- Add 2.5MW to line-up (plan to introduce in FY2017).

Cumulative orders received; Approx. 250 units  
(118 units already in operation)



Note: The size of the above circles indicates revenue size.



Downwind-type 5MW wind power generation system

## Photovoltaic power generation systems

- Steadily provide EPC services, spanning the process from design to the start of operation.
- Achieve differentiation through O&M.
  - Enhance service menu through cooperation between Group companies.
  - Achieve differentiation through superior technology (sensorless diagnosis, etc.)

Cumulative orders received: Approx. 670MW\*  
(268MW already in operation)



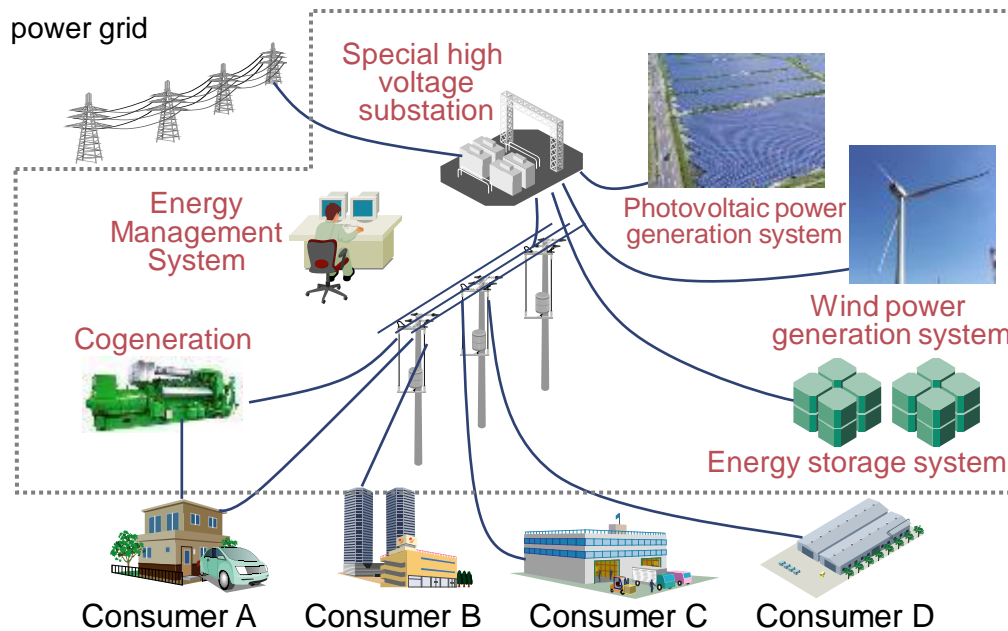
Iwanuma Rinku Mega Solar Power Plant (28.3MW), a project to support the reconstruction of Iwanuma City

\* Based on photovoltaic cell capacity



# 4)5 Distributed Power Source Solutions

Meet diverse power source needs, spanning from equipment to solutions. Expand social innovation business through cogeneration (combined heat and power) systems based on local production for local consumption.



## Strengths of Power Business Unit

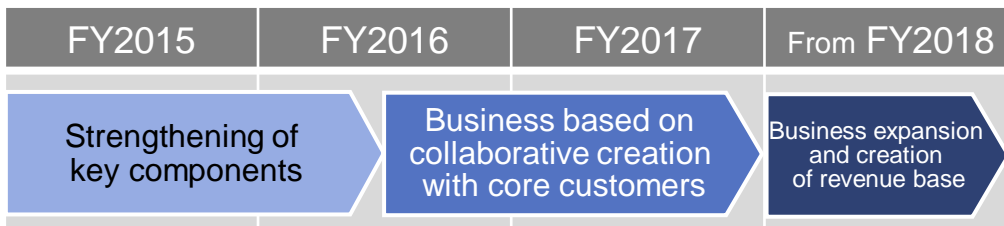
- Extensive power source line-up
  - Wind power/Photovoltaic power generation systems
  - Gas engine power generation systems, etc.
- Build-up of energy management systems including heat supply
- Provision of comprehensive O&M services



Cooperation with Energy Solutions Business Unit and other Front BUs

**Social innovation that meets the needs of customers**

## Business Roadmap



# 4)-6 Transmission and Distribution Systems Business

Contribute to needs to strengthen grid connection by leverage high level of technical expertise

## Target position

- Earn steady revenues in focus regions
  - Japan, North America, Asia, Middle East
- Gain global position in UHV (Ultra High Voltage) technology

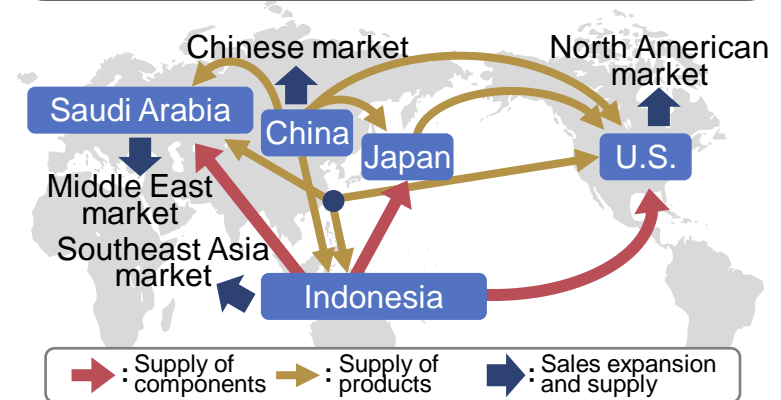
## Japan

- Strengthen response to electricity system reform
  - Market high quality overseas products in Japan

## Overseas

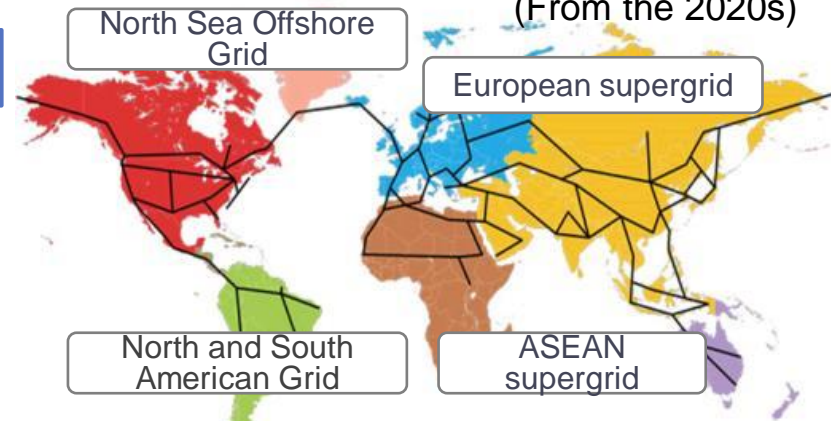
- Strengthen sales channels in focus regions
- Business based on global supergrid conception
  - Expand UHV business globally, based on track record in the Chinese market
  - Demonstrate strengths of global SCM

## Global SCM



## Global supergrid concept

(From the 2020s)



Source: produced by Hitachi based on IEEE data

# 4)-7 Hitachi Smart Transformation Project

## Initiatives to Reform the Cost Structure

### Production Cost

- Achieve high quality at low cost with global SCM
- Strengthen core production technology at mother factories

### Direct Materials Cost

- Powerfully promote value chain innovation activities
  - Incorporate cost before receiving order through development of front procurement function

### Project Management

- Prevent and control costs through sophistication of the project management system
- Prevent the cost of losses through risk reviews by experts

### Indirect Cost

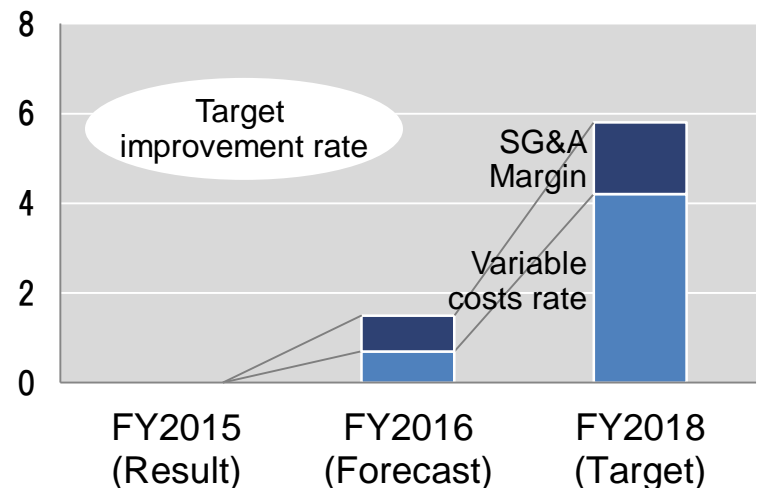
- Improve business efficiency through business process reforms
- Review fixed costs in Japan and reduce SG&A expenses

### Manufacturing reform from ECM/SCM perspective

- Promote utilization of modular designs
- Expand engineering outsourcing
- Provide global bases with procurement coaching
- Conduct production reform activities at bases

Cost Reductions

### Improvement of variable costs rate and SG&A Margin



ECM: Engineering Chain Management  
SG&A: Selling, General and Administrative expenses

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## 5) Conclusion

### Priority initiatives for achievement of 2018 Mid-term Management Plan

#### Generate high revenues in both the Service Business and the Solutions Business.

- Promote use of the IoT and creation of high added value in the Service Business.
  - Provide one-stop solutions to meet the diverse needs of customers, including power generation company.
- Strengthen competitiveness and expand business through collaborative creation in the Power Generation Solutions Business.
  - Contribute to the widespread adoption of renewable energy through total solutions.
  - Strengthen the competitiveness of components and expand distributed power source solutions.
- Expand transmission and distribution business.
  - Further tap into demand related to electricity system reform in Japan.
  - Gain global position in UHV (Ultra High Voltage) technology.



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# 1) Business Overview

Creating a bright future for the Earth by using advanced nuclear power technologies to address energy and global warming issues

## Domestic Business

### Decommissioning of Fukushima Daiichi Nuclear Power Station



Submersible Crawling Swimming Robot\*1



Fuel removal\*2

### Restarts



Venting filter

### Fuel cycle



Fuel transport and storage metal cask

## Overseas Business

### UK: Horizon Nuclear Power Project



Wylfa Newydd



\*1 Developed as part of the operations of the International Research Institute for Nuclear Decommissioning (IRID) with subsidies from the Agency for Natural Resources and Energy for expenses related to developing decommissioning and safety technologies for nuclear reactors for power generation, etc. \*2 Source from Tokyo Electric Power Company Holdings, Inc. Homepage

# Power and Energy Business Strategy

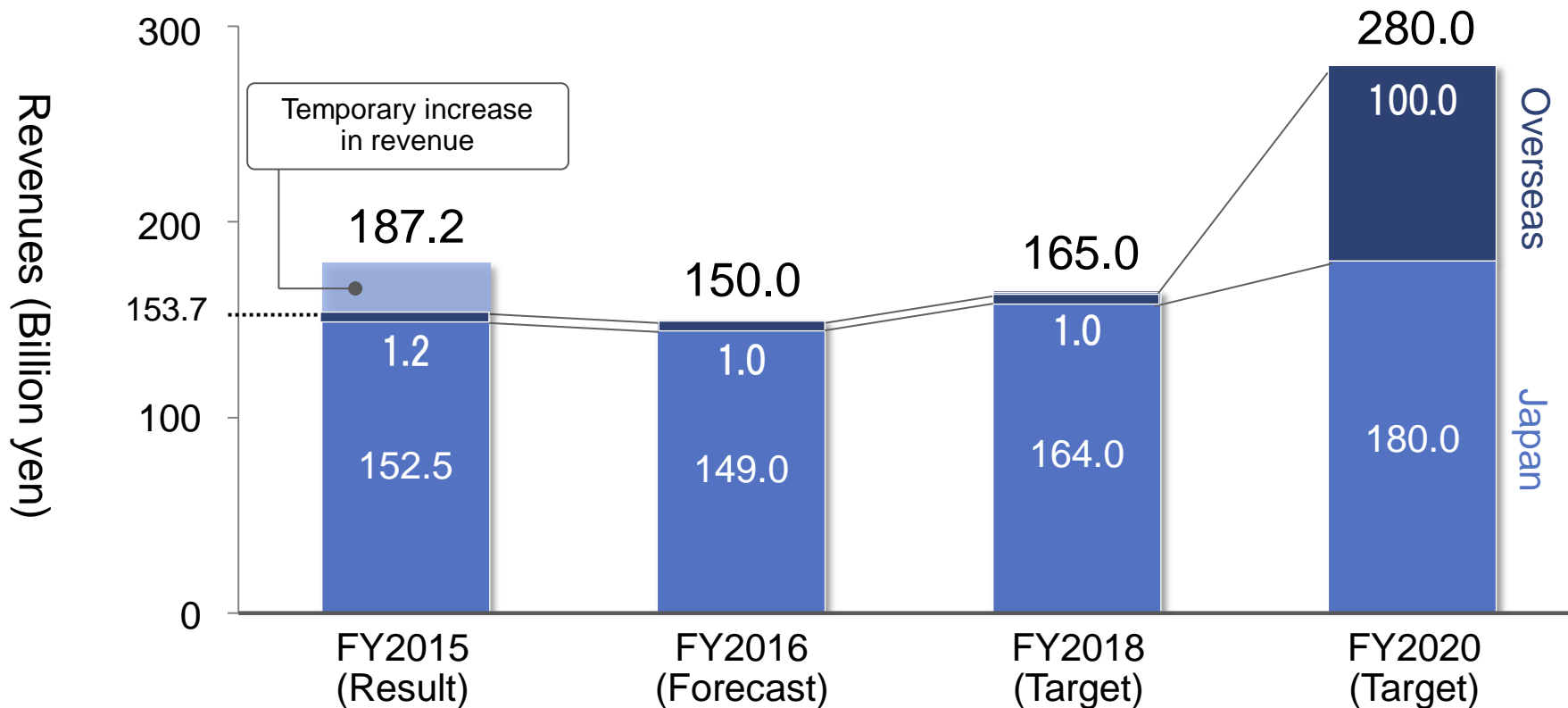
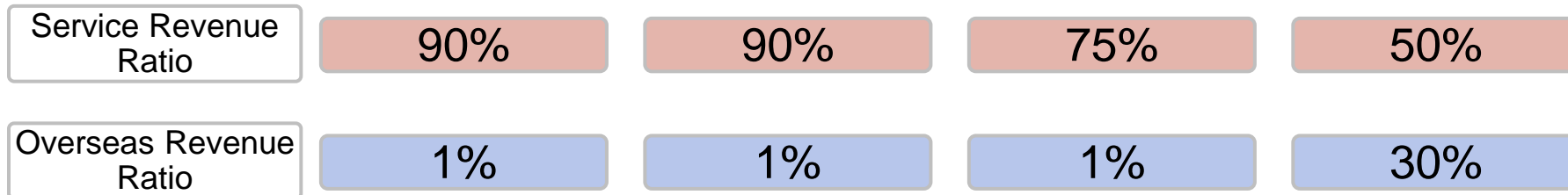
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## 2) Business Performance Trends



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# 3) Market Environment

## Market Macrotrends

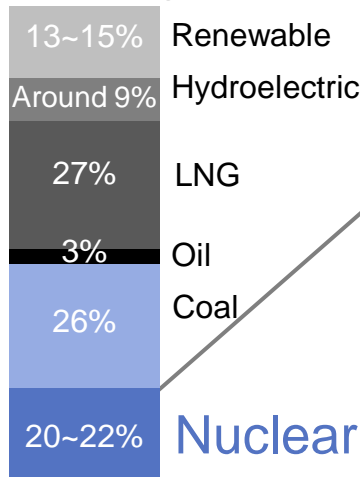
Overseas

- Capacity of world electricity generation is expected to expand.
- Nuclear power generation is expected to be around 1.6 times\*1 higher in 2040 than in 2013.
- Strong need for safety and proven experience.
- There are many plans for the construction of new nuclear power plants around the world.

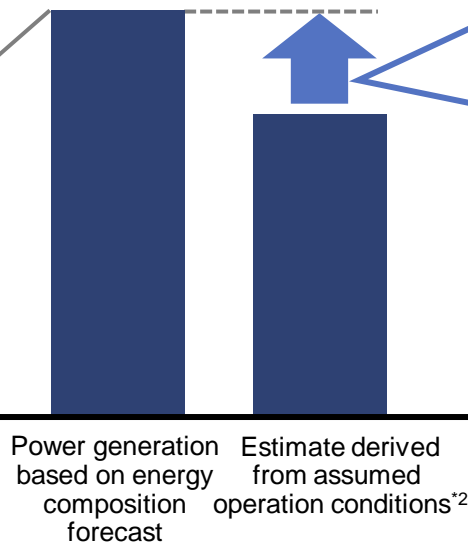
Japan

- Nuclear power is positioned as an important baseload power source in Japan's energy mix.
- Following the signing of the Paris Agreement at COP21, responsibility for global warming countermeasures is clearer (a combined target of more than 44% share by nuclear and renewable energy).
- Japan restarted first nuclear power plant in August 2015 after new regulatory standard was introduced.

Japan's energy composition forecast(Energy mix)



Nuclear power generation prediction in 2030



### Opportunity for business expansion

- Nuclear share set to reach 20-22%
- Extended operation (40 years→ 60 years)
  - Improvement in plant operation rate

\*1 Source: World Energy Outlook 2015, New Policies Scenario

\*2 Source: METI

\*2 Assumed operation conditions

- All reactors will be restarted except those to be decommissioned
- Operation period will be for 40 years
- Plant operation rate will be at 70%

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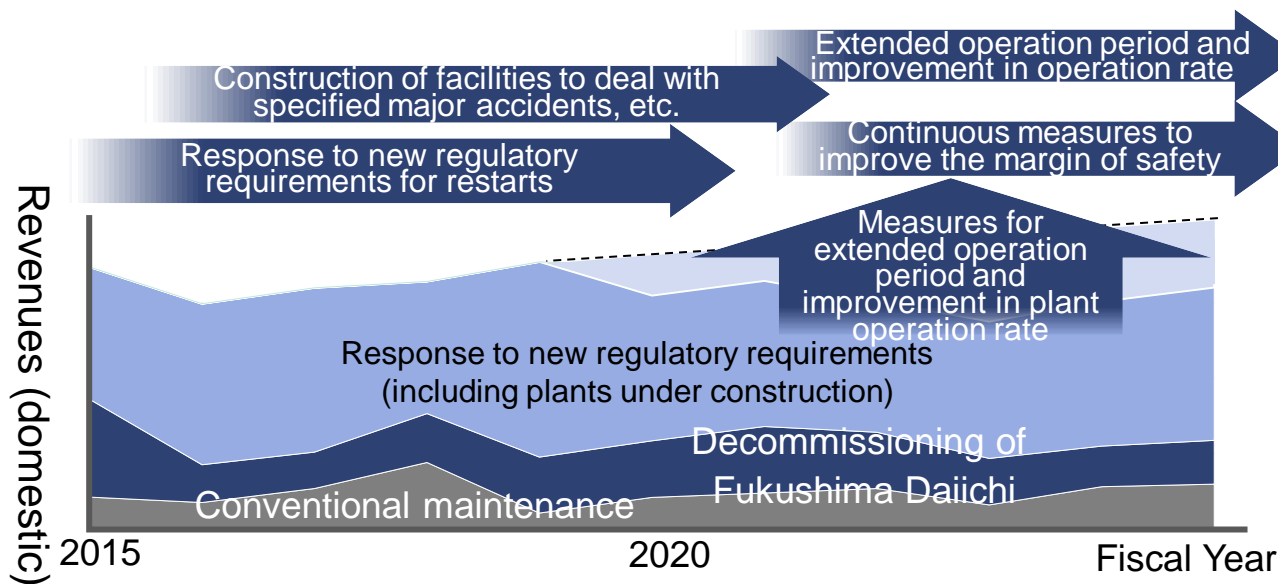
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# 4)-1 Business Strategies

Leverage domestic business to achieve growth and increased revenues in overseas business

## Domestic business (core business)

- Continue decommissioning work at the Fukushima Daiichi Nuclear Power Station.
- Continue supporting reviews and utilizing overseas technologies to accelerate restart process.
- Improve safety and plant operation rate by utilizing IoT technology.



## Common measures

**Establish robust and efficient business structure**

- Increase business efficiency to generate cash and ensure profit.
- Maintain and improve the technologies and human resource required for the construction and maintenance of nuclear power plants.

## Overseas business (growth business)

- Pursue UK's Horizon Project.
- Expand ABWR/ESBWR to global market.

## 4)-2 Domestic Business (1)

Facilitate the decommissioning of the Fukushima Daiichi Nuclear Power Station, while prioritizing safety

### ■ Continued support for reconstruction of Fukushima

- Improve the stability of measures to treat contaminated water
  - Stabilize facilities by putting two systems in place for the treatment of subdrain water (groundwater).
  - Improve reliability by replacing permanent facilities.



Subdrain and other cleaning facilities \*1

### ■ Initiatives to achieve removal of spent fuel and fuel debris

- Removal of fuel inside the Unit 1 spent fuel pool
  - Formulate plan for removing the rubble surrounding the pool, and removing and transferring the fuel.
- Development of technology for removing fuel debris
  - Promote the development of a highly reliable remotely operated robot using the most advanced technologies.



Shape-Changing Robot\*2

- Received the Robots and Society Award (The Robotics Society of Japan)
- Letter of thanks from the Minister of Economy, Trade and Industry

\*1 Source from Tokyo Electric Power Company Holdings, Inc. Homepage

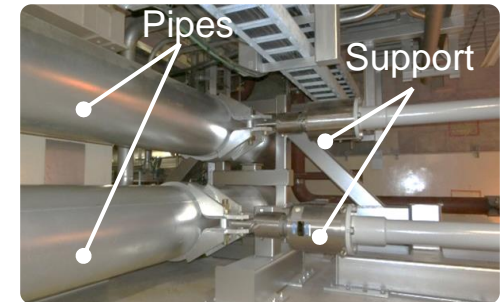
\*2 Developed as part of the operations of the International Research Institute for Nuclear Decommissioning (IRID) with subsidies from the Agency for Natural Resources and Energy for expenses related to contaminated water treatment, etc.

## 4)-3 Domestic Business (2)

Step up initiatives to accelerate restarts and achieve long-term stable operation

### ■ Concentrate on BWR restarts and reflect knowledge gained in successor plants.

- Promote fire prevention measures and seismic reinforcement work.
- Adopt overseas technology (AREVA, etc.) for filtered containment venting systems.



Seismic support

### ■ Improve safety and plant operation rate with IoT technology.

- Early discovery and analysis of equipment aging through status monitoring and predictive maintenance.
- Shortening of duration of regular inspections through application of online maintenance.

### ■ Expand orders received for fuel transport and storage metal casks **Top share of domestic BWR market**

- Meet increasing need for interim storage facilities and dry storage facilities.
- Hitachi is the only supplier of fuel transport and storage metal casks licensed in Japan.



Fuel transport and storage metal cask

# 4)-4 Overseas Business (1)

## UK's Horizon Project

Increase business value by making steady progress on project and strengthening framework

### Steadily push ahead with Generic Design Assessment (GDA)

- Complete GDA by the end of 2017 (Ongoing process of Step 4).
- UK's ONR commended good progress made on ABWR GDA\*1

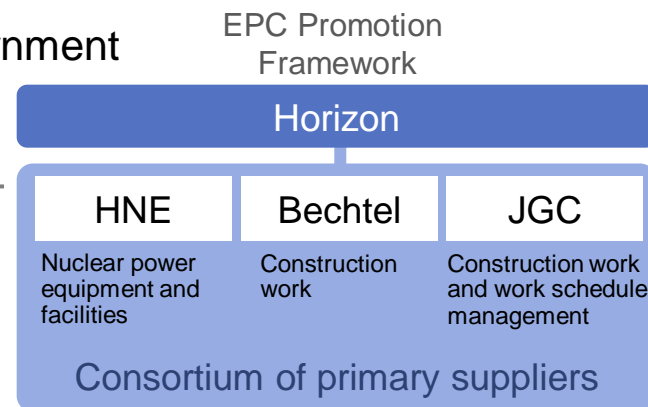
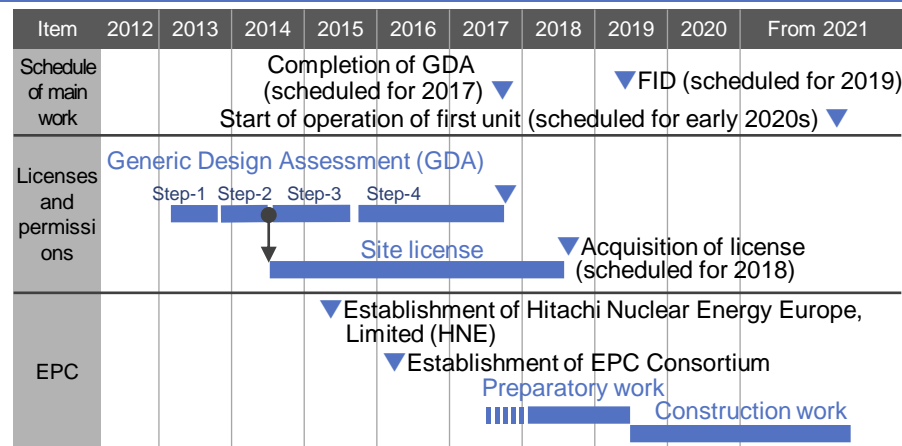
### Promote consultation with UK

#### Government and Increase investment attractiveness

- Ongoing consultations between Horizon and the UK Government
- Appointment of Duncan Hawthorne as CEO of Horizon (previously President of nuclear power company Bruce Power)

### Establish EPC promotion framework.

- Establish framework for consortium between HNE, which has proven experience of construction in Japan, and two companies with global EPC experience.

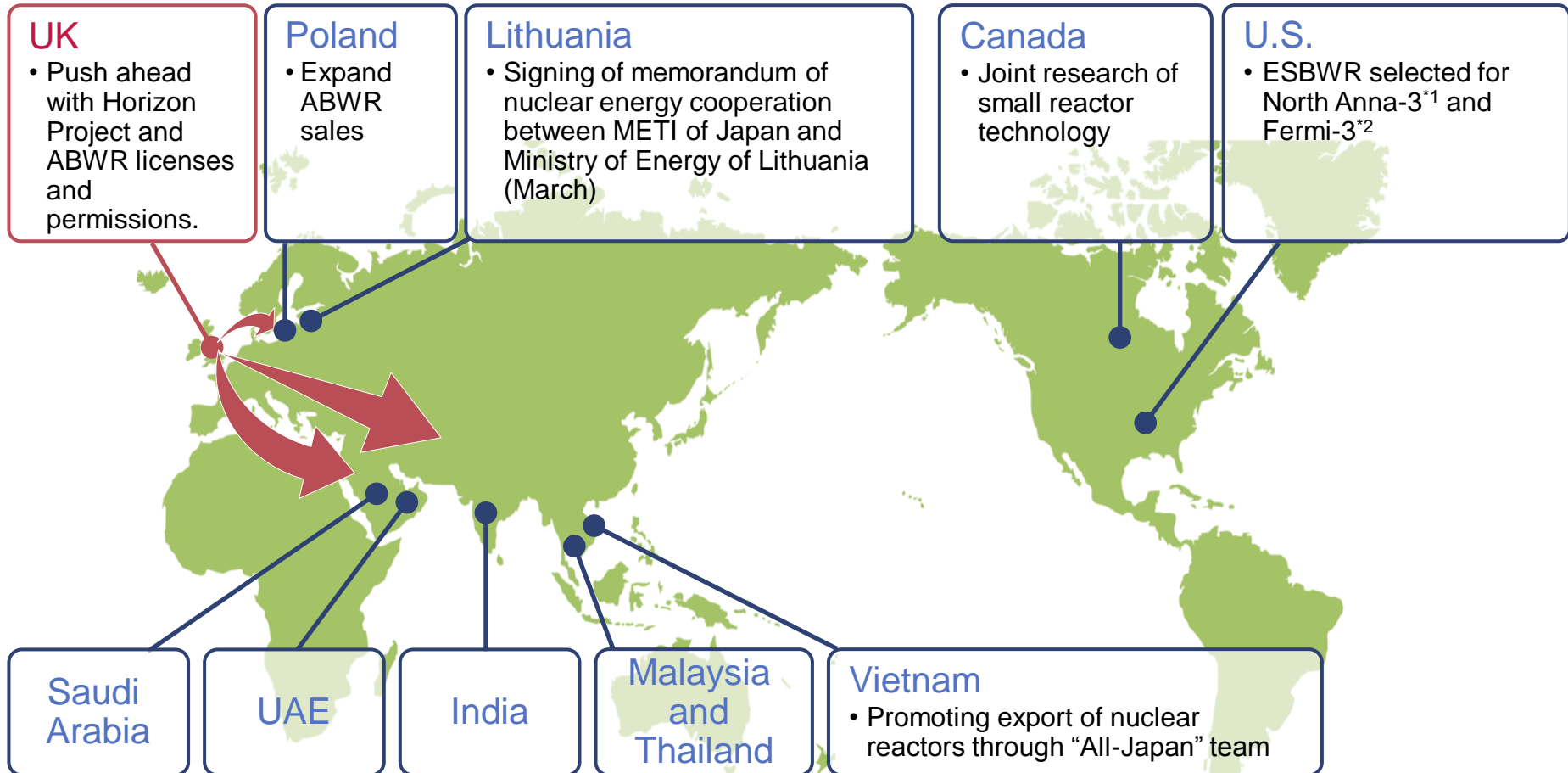


\* Assessing new nuclear reactor designs Generic Design Assessment Quarterly Report (November 2015 – January 2016)  
 GDA: Generic Design Assessment ONR: Office of Nuclear Regulation FID: Final Investment Decision  
 EPC: Engineering, Procurement and Construction



# 4)-5 Overseas Business (2)

Expand business by sharing experience gained in UK project globally.  
Approach countries promoting the construction of nuclear power plants as a priority  
(cooperation with GEH).



\*1: North Anna unit 3, Dominion Virginia Power  
\*2: Fermi unit 3, Detroit Edison Company  
GEH: GE-Hitachi Nuclear Energy

# 4)-6 Common Measures

## Establishment of robust and efficient business structure (Promotion of Hitachi Smart Transformation Project)

### Strengthening of Project Management

- Apply construction project management techniques to Fukushima and reactor restart business.
- Develop and foster UK project EPC project managers.

### Improve Business Efficiency to Strengthen Operating Base

- Redefine core business and outsource noncore business.
- Hire outside consulting firm to analyse and optimize core business processes.
- Utilize IT to rationalize design and local administrative tasks.

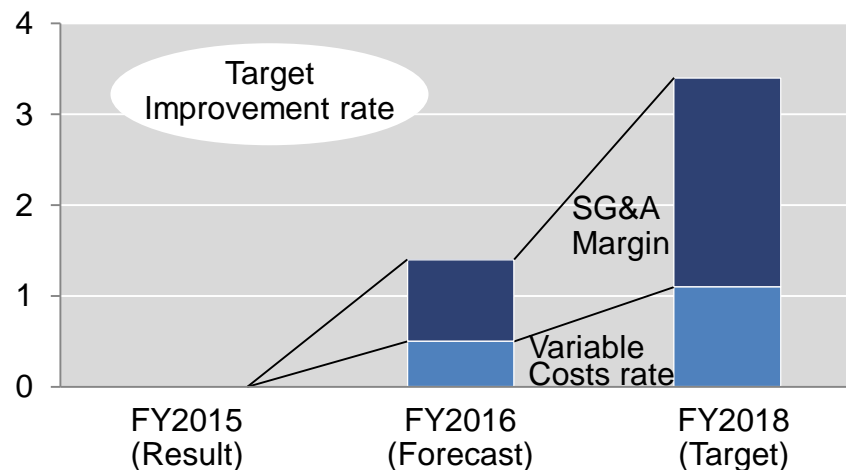
### Production, Direct Materials and Indirect Costs

- Establish UK procurement and supply chain.
- Reduce procurement costs by eliminating special specifications and promoting competition.
- Reduce SG&A expenses and fixed costs.

### Strategies for Maintaining and Improving Technologies and Human Resources

- Utilize IT to transfer technology.
  - Expand application of Biz-Navi system.
- Hire high quality global human resources.
  - Hire local human resources.
  - Expand and improve examination and training facilities and introduce business qualifications/certification.

### Improvement of variable costs rate and SG&A Margin



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## 5) Conclusion

### 2018 Mid-Term Management Plan

## Leverage domestic business to achieve growth and increased revenues in overseas business.

- Continue decommissioning work at the Fukushima Daiichi Nuclear Power Station.
- Step up initiatives to accelerate restart process and achieve long-term stable operation.
  - Continue supporting reviews and utilize overseas technologies.
  - Improve safety and plant operation rate by utilizing IoT technology.
- Securely promote Horizon Project.
  - Make steady progress and improve business value.
- Establish robust and efficient business structure.
  - Improve business efficiency to generate cash and ensure profit.



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## FY2018 Target

### Provide solutions based on collaborative creation to all customers in the energy value chain

- Provide solutions using digital techniques to the new markets
- Provide highly reliable systems and services to the electricity infrastructure market

	FY2018	Vs. FY2015
Revenue	550.0 billion yen	5.9% increase
Adjusted operating income ratio [EBIT ratio]	7.1%[12.7%]	4.9%[11.6%] improvement

Certain statements found in this document may constitute “forward-looking statements” as defined in the U.S. Private Securities Litigation Reform Act of 1995. Such “forward-looking statements” reflect management’s current views with respect to certain future events and financial performance and include any statement that does not directly relate to any historical or current fact. Words such as “anticipate,” “believe,” “expect,” “estimate,” “forecast,” “intend,” “plan,” “project” and similar expressions which indicate future events and trends may identify “forward-looking statements.” Such statements are based on currently available information and are subject to various risks and uncertainties that could cause actual results to differ materially from those projected or implied in the “forward-looking statements” and from historical trends. Certain “forward-looking statements” are based upon current assumptions of future events which may not prove to be accurate. Undue reliance should not be placed on “forward-looking statements,” as such statements speak only as of the date of this document.

Factors that could cause actual results to differ materially from those projected or implied in any “forward-looking statement” and from historical trends include, but are not limited to:

- economic conditions, including consumer spending and plant and equipment investment in Hitachi’s major markets, particularly Japan, Asia, the United States and Europe, as well as levels of demand in the major industrial sectors Hitachi serves, including, without limitation, the information, electronics, automotive, construction and financial sectors;
- exchange rate fluctuations of the yen against other currencies in which Hitachi makes significant sales or in which Hitachi’s assets and liabilities are denominated, particularly against the U.S. dollar and the euro;
- uncertainty as to Hitachi’s ability to access, or access on favorable terms, liquidity or long-term financing;
- uncertainty as to general market price levels for equity securities, declines in which may require Hitachi to write down equity securities that it holds;
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- credit conditions of Hitachi’s customers and suppliers;
- fluctuations in the price of raw materials including, without limitation, petroleum and other materials, such as copper, steel, aluminum, synthetic resins, rare metals and rare-earth minerals, or shortages of materials, parts and components;
- fluctuations in product demand and industry capacity;
- uncertainty as to Hitachi’s ability to implement measures to reduce the potential negative impact of fluctuations in product demand, exchange rates and/or price of raw materials or shortages of materials, parts and components;
- increased commoditization of and intensifying price competition for products;
- uncertainty as to Hitachi’s ability to achieve the anticipated benefits of its strategy to strengthen its Social Innovation Business;
- uncertainty as to the success of acquisitions of other companies, joint ventures and strategic alliances and the possibility of incurring related expenses;
- uncertainty as to the success of restructuring efforts to improve management efficiency by divesting or otherwise exiting underperforming businesses and to strengthen competitiveness;
- uncertainty as to the success of cost reduction measures;
- general socioeconomic and political conditions and the regulatory and trade environment of countries where Hitachi conducts business, particularly Japan, Asia, the United States and Europe, including, without limitation, direct or indirect restrictions by other nations on imports and differences in commercial and business customs including, without limitation, contract terms and conditions and labor relations;
- uncertainty as to the success of alliances upon which Hitachi depends, some of which Hitachi may not control, with other corporations in the design and development of certain key products;
- uncertainty as to Hitachi’s access to, or ability to protect, certain intellectual property rights, particularly those related to electronics and data processing technologies;
- uncertainty as to the outcome of litigation, regulatory investigations and other legal proceedings of which the Company, its subsidiaries or its equity-method associates and joint ventures have become or may become parties;
- the possibility of incurring expenses resulting from any defects in products or services of Hitachi;
- the potential for significant losses on Hitachi’s investments in equity-method associates and joint ventures;
- the possibility of disruption of Hitachi’s operations by natural disasters such as earthquakes and tsunamis, the spread of infectious diseases, and geopolitical and social instability such as terrorism and conflict;
- uncertainty as to Hitachi’s ability to maintain the integrity of its information systems, as well as Hitachi’s ability to protect its confidential information or that of its customers;
- uncertainty as to the accuracy of key assumptions Hitachi uses to evaluate its significant employee benefit-related costs; and
- uncertainty as to Hitachi’s ability to attract and retain skilled personnel.

The factors listed above are not all-inclusive and are in addition to other factors contained in other materials published by Hitachi.

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