

# Power Systems Business Presentation

June 18, 2009

Koji Tanaka

Vice President and Executive Officer

President & Chief Executive Officer, Power Systems Group

Hitachi, Ltd.

# Power Systems Business Presentation

June 18, 2009

## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewable Energy Business
6. Conclusion



# Power Systems Business Presentation

June 18, 2009

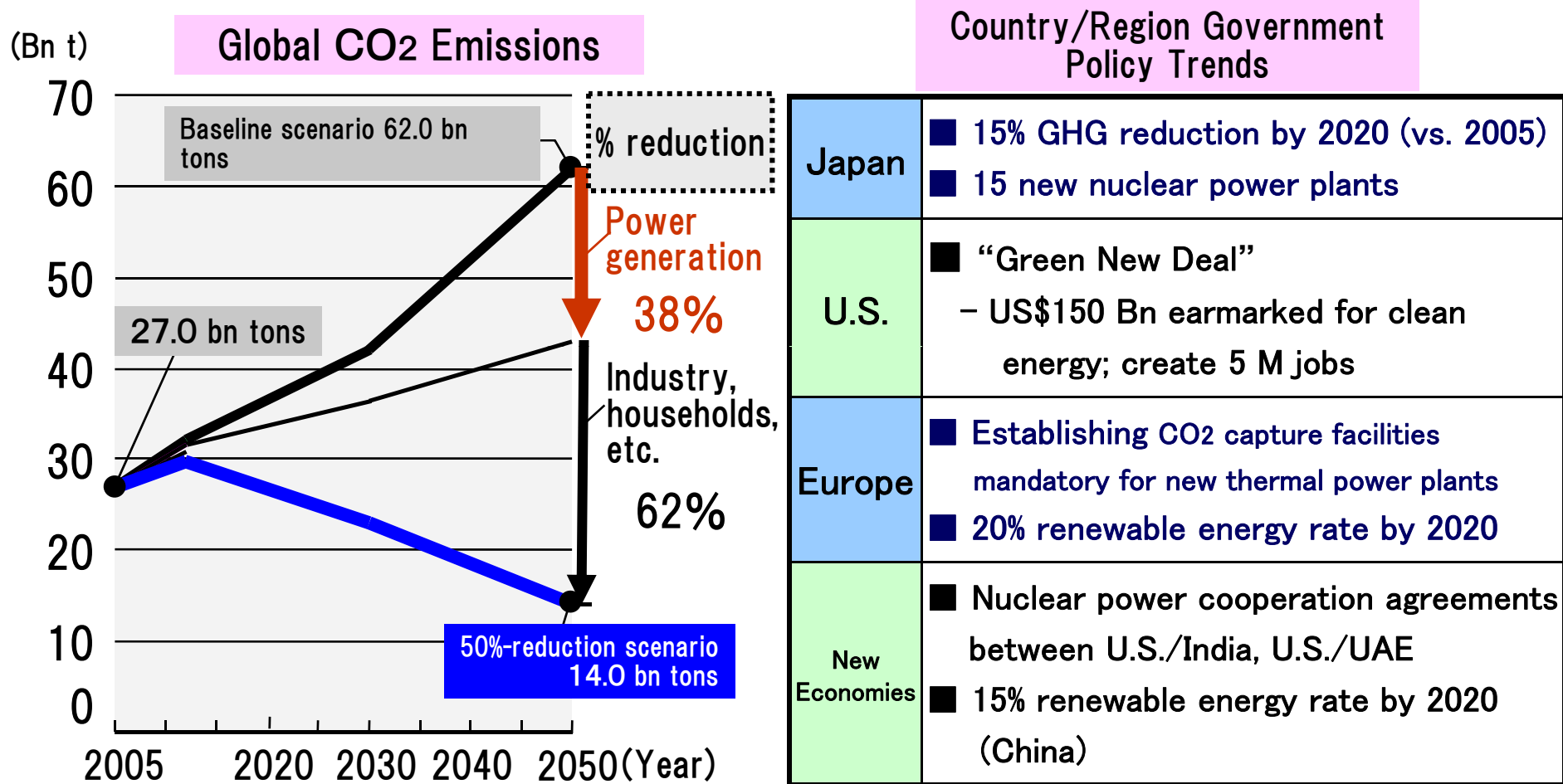
## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewable Energy Business
6. Conclusion

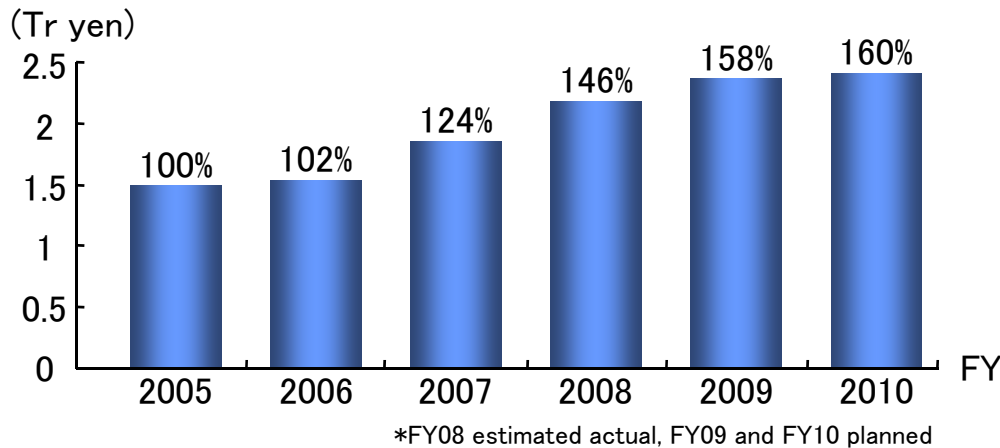


# 1-1 Worldwide Trends for Reducing CO<sub>2</sub>

- Increasing expectations for power generation to play a central role in decreasing global warming.
- Heightened investment in infrastructure for creating a low-carbon society.



## Power Plant Investment



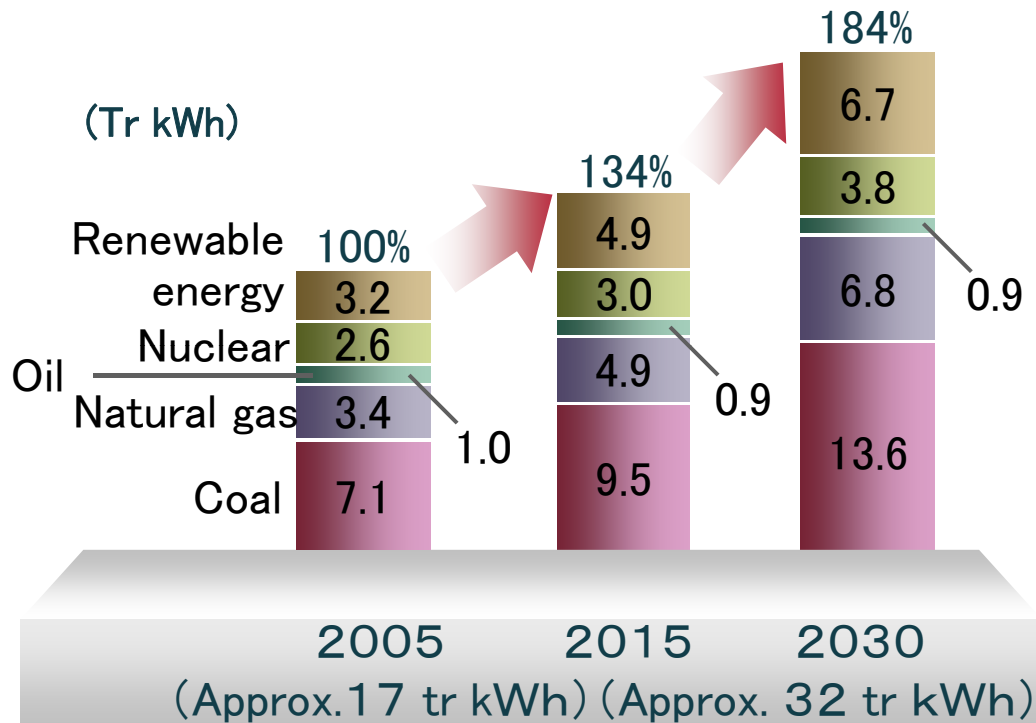
## Power Capacity Development Plans

	Under Construction (MW)	No. of Plants	Planned (MW)	No. of Plants
<b>Nuclear</b>	3,670	3	16,550	12
BWR*	(2,760)	(2)	(11,890)	(9)
<b>Thermal</b>	10,320	20	11,520	34
<b>Total</b>	13,990	23	28,070	46

- Nuclear
  - Ongoing construction, mainly of BWR, as core power source
- Thermal
  - Highly efficient new plants
  - Increasing efficiency of existing plants
- Increasing use of renewable energy (Wind power, solar power)
- Increasingly sophisticated power distribution network

## ■ Electricity Generating Capacity by Type

1.8 times by 2030 (Compared to 2005)

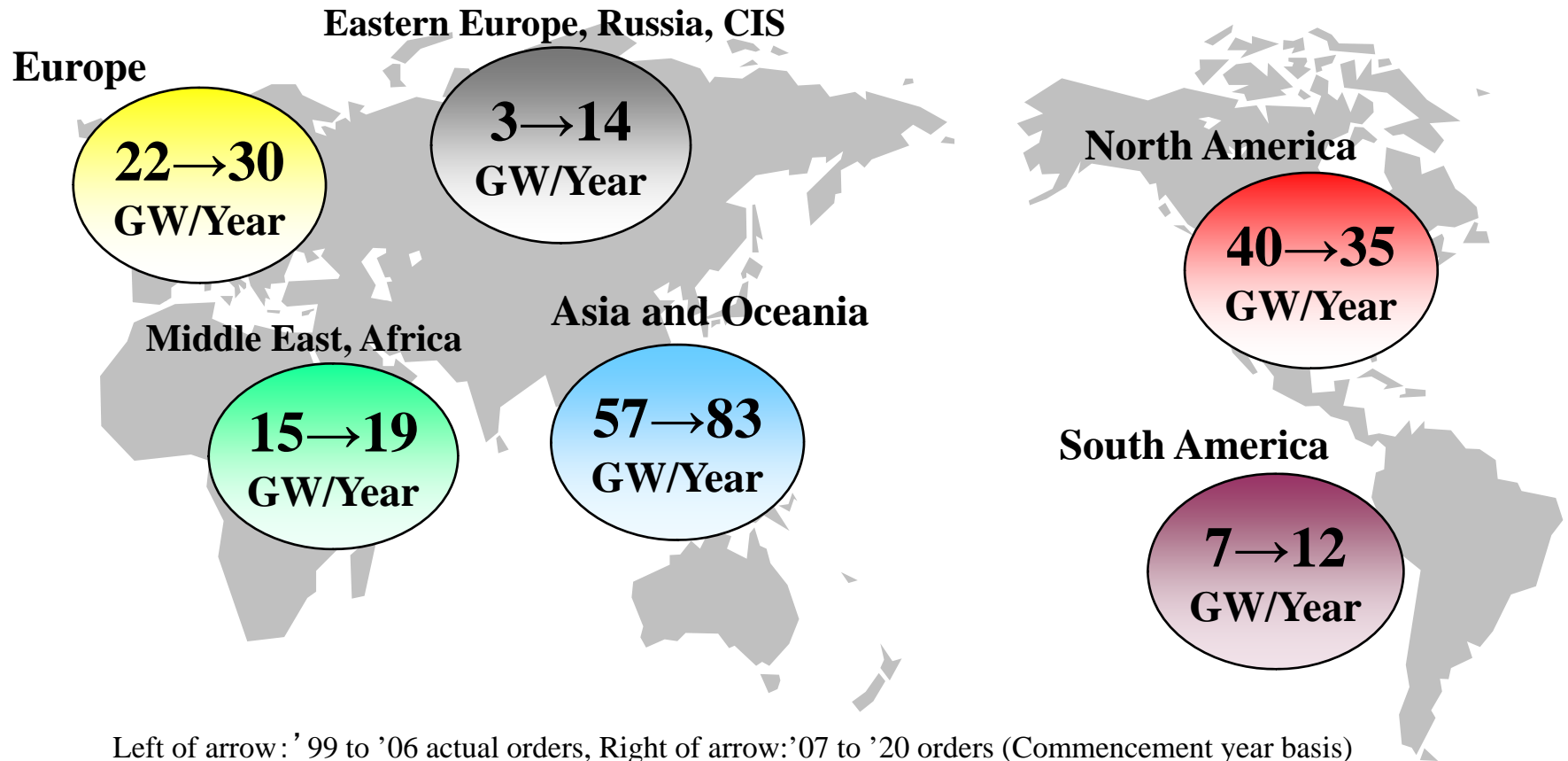


- Increasing electricity demand over medium and long terms (1.8 times)
- Ongoing construction of coal-fired thermal power plants
- Increasing demand for AQCS
- Construction of new nuclear power plants to create a low-carbon society (72 GW by 2020)
- Increasing use of renewable energy (Wind power, solar power)

Source: U.S. Department of Energy  
"International Energy Outlook 2009"

AQCS: Air Quality Control System

■ Power System demand is increasing globally.



# Power Systems Business Presentation

June 18, 2009

## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewal Energy Business
6. Conclusion





### Assisting creating highly reliable, highly efficient social infrastructure as a core for the Social Innovation Business.

#### ● Contribute to the Creation of a Low-Carbon Society

- Promote development of innovative energy technologies
- Promote renewable energy businesses

#### ● Promote Globalization

- Nuclear: Collaborative creation, focused on promising overseas markets with GE
- Thermal: Strengthen core Group companies in Europe, North America, Asia and expand business

#### ● Increase Profitability

- Bolster project management
- Strengthen competitiveness in global markets

Contribute to Hitachi Group's Environmental Vision:

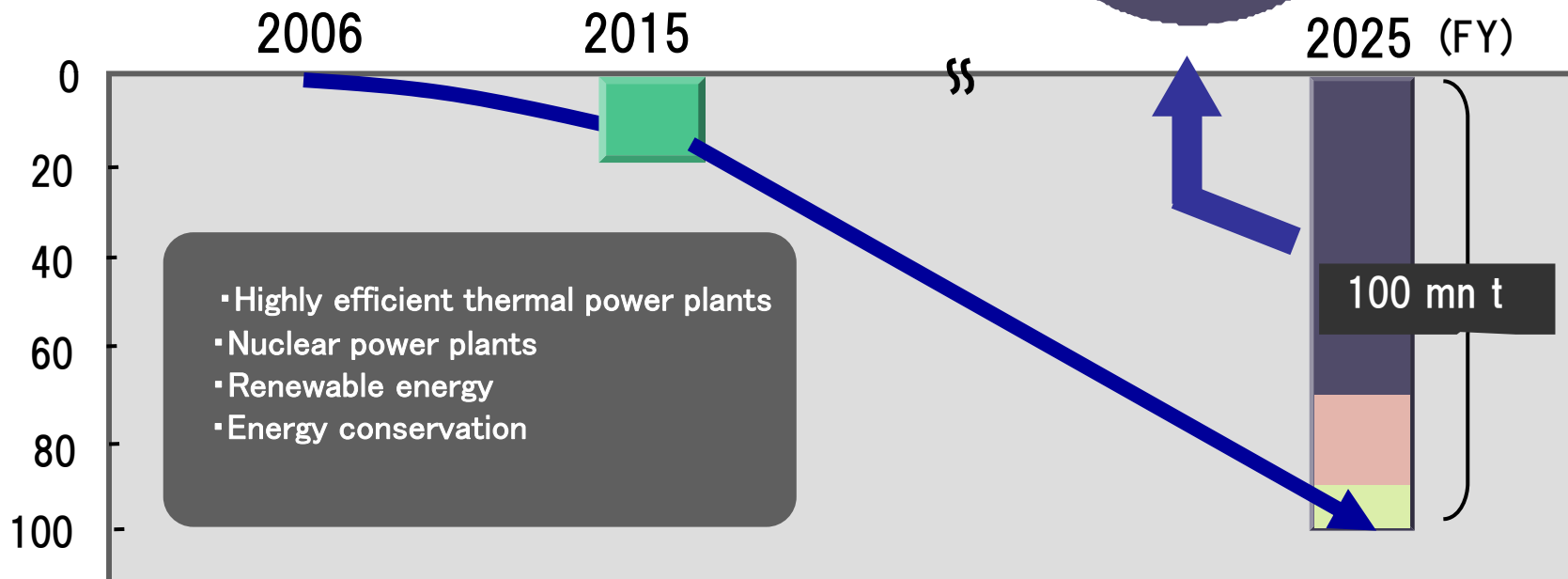
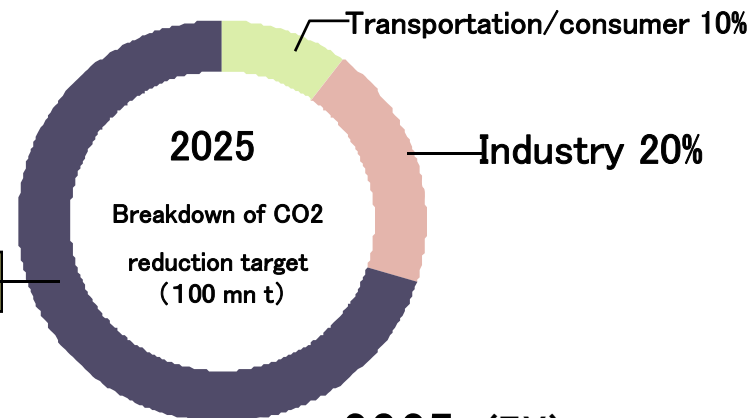
Achieve 70% reduction of CO<sub>2</sub> in power systems business

Hitachi Group Environmental Vision 2025

Reduce 100 million tons of CO<sub>2</sub> emissions  
(FY2025)

CO<sub>2</sub> Reduction Target from Hitachi Products

Power 70%



(Million t-CO<sub>2</sub>/Year)

## Products and Technologies

## Environmental Initiatives

**Nuclear power use**



**ABWR reactor**

### 【Nuclear Power Plants】

- Higher output, larger capacity
- Longer life with advanced maintenance technologies
- Faster development of future reactors

**Clean use of coal**



**Mobile carbon capture equipment**

### 【Thermal Power Plants】

- Higher efficiency (A-USC, IGCC development)
- Carbon capture (Oxygen combustion, chemical absorption)
- Low NOx combustion, high-performance AQCS development

**CO<sub>2</sub> reduction technologies**



**AQCS integrated research facility**

### 【Wind Power, Solar Power】

- Wind power systems, mega solar power systems
- Grid stabilization technologies, storage batteries
- Greater sophistication by coordinating power systems and ICT

**Use and stable supply of renewable energy**



**Downwind turbine**

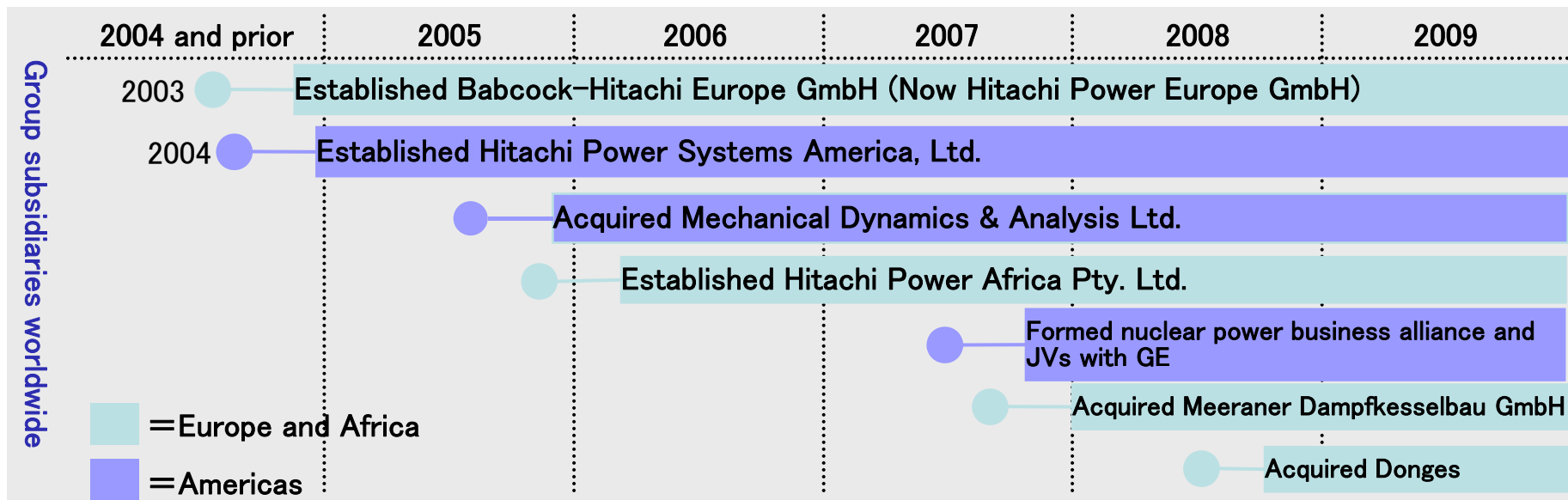
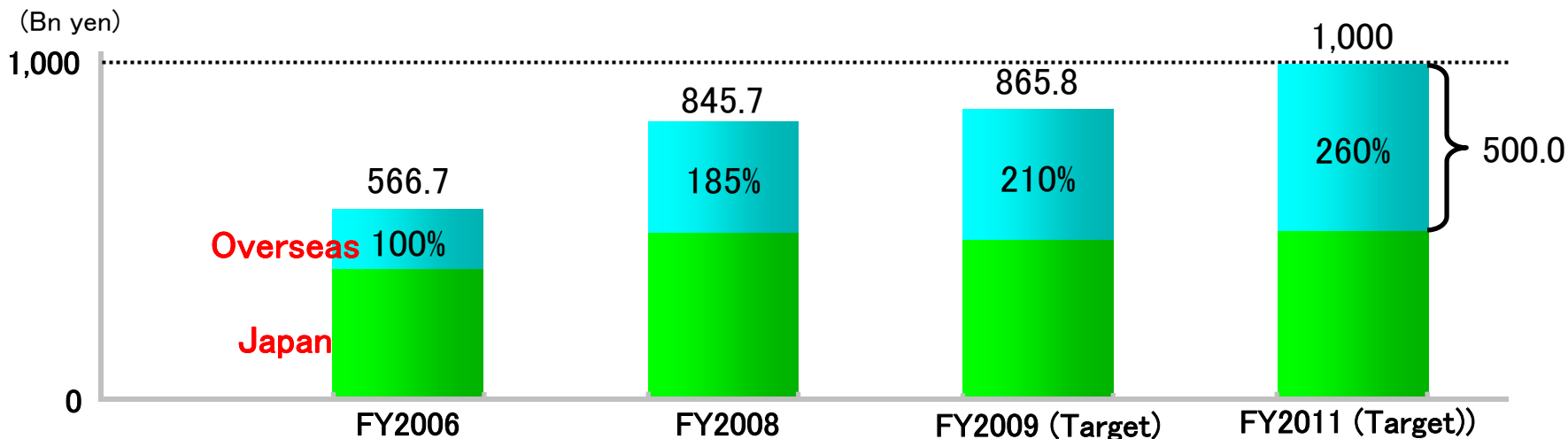


**Power conditioner**

# 2-4 Promoting Globalization

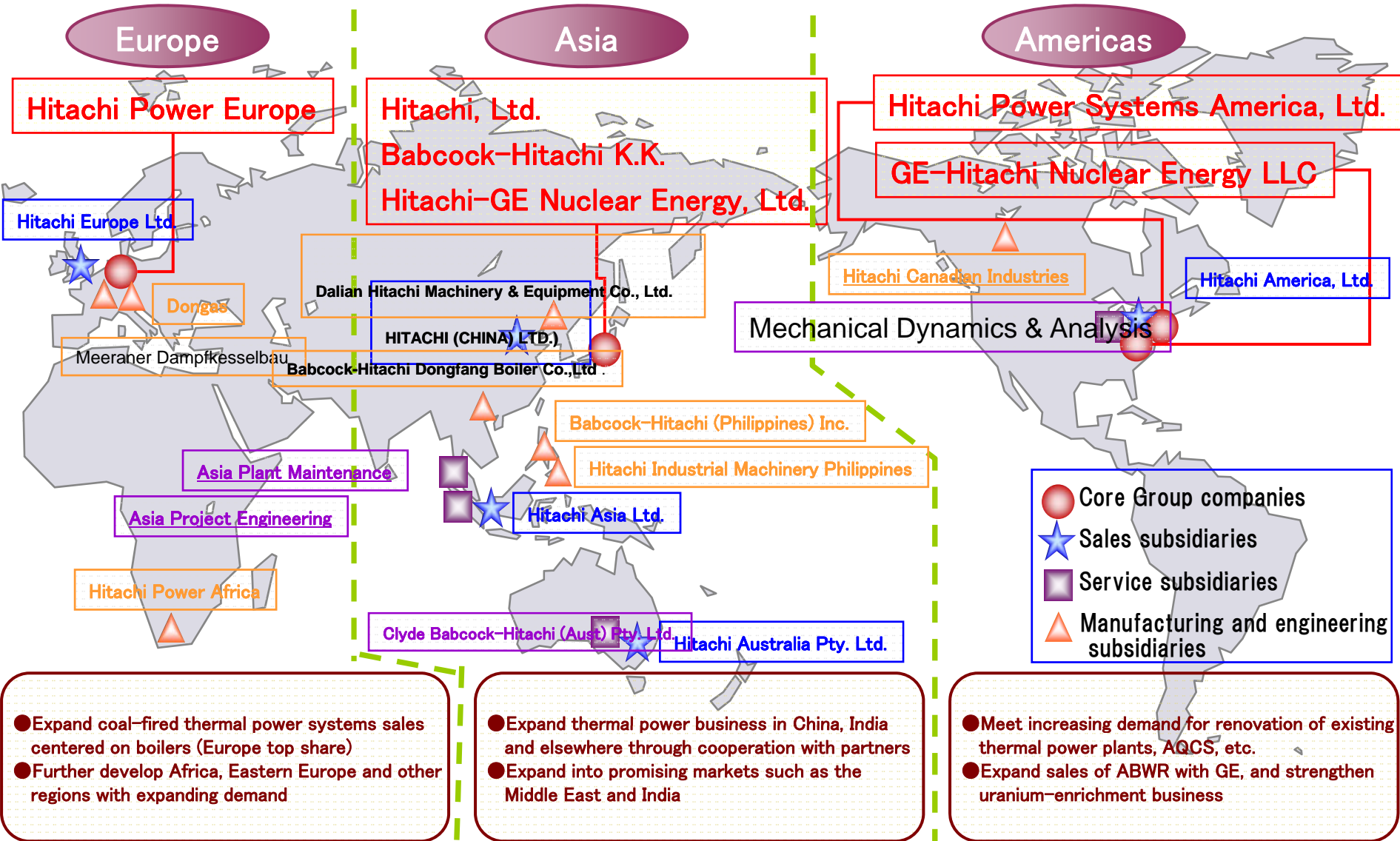
Sharp growth in overseas revenues through globalization.

Grow overseas revenues approx. 2.6 times (FY2006⇒FY2011)



# 2-5 Promoting Globalization (Main Group Companies)

Continuing to localize operations around the world centered on core Group companies  
 [Group Total: 17 companies (Japan), 23 companies (Overseas)]



### Strengthen Project management

- Improve project management capabilities
  - Increase project management, engineering tools, and number of project managers
- Pre-order review and risk-prevention initiatives
- Strengthen reviews through establishment of “Supervisory Office for Overseas Plant Construction Business”

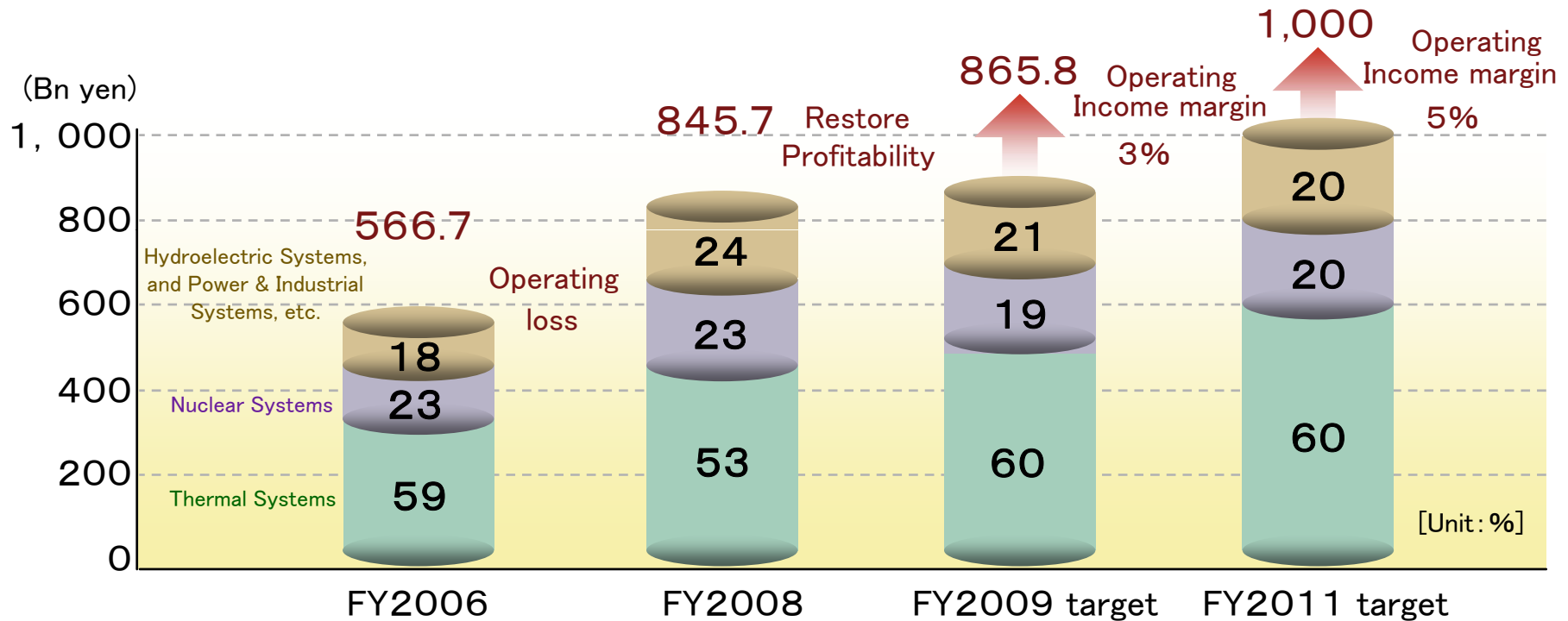
### Strengthen competitiveness in global markets

- Strengthen capabilities of core Group companies worldwide
  - Promote localization
- Increase products with high market shares by expediting development
  - One of the world’s largest coal combustion testing facilities, AQCS integrated research facility
- “Strengthening The Base ’08-’09”-Group Workforce Activity
  - Global procurement and collective purchasing, quality improvement and reduction of loss cost, etc.

## FY2011 Targets

Revenue: 1 trillion yen

Operating margin: 5%



# Power Systems Business Presentation

June 18, 2009



## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewable Energy Business
6. Conclusion



Revenue

FY15: 300 bn yen

FY08: 200 bn yen

- Steadily construct ABWRs in Japan
- Develop business overseas

## ● Steadily promote business in Japan

- Continue participating in construction of ABWR plants in Japan
- Promote continuous maintenance business using advanced technologies

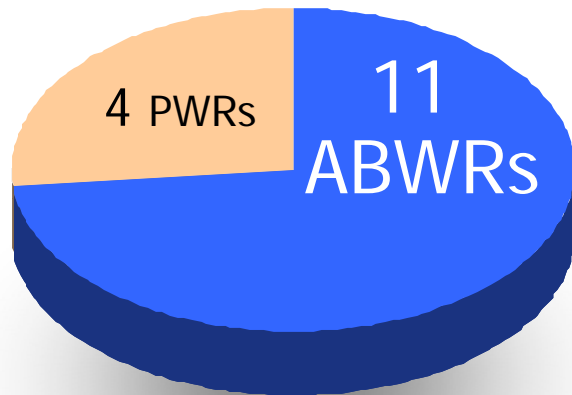
## ● Strengthen overseas business

- Accelerate sales expansion in promising markets such as the U.S. and the Middle East
- Target countries that may introduce nuclear power plants in the future

## ● Develop advanced technologies

- Apply advanced construction technologies and highly efficient turbines
- Increase output of existing plants, develop and promote advanced maintenance technologies
- Develop ABWRs (increase output), ESBWRs, next-generation BWRs

- Nuclear Power Plant Construction Plans in Japan
  - Predominantly ABWR plants
  - Steady progress with plans and construction



Nuclear Power Plant Construction Plans\*

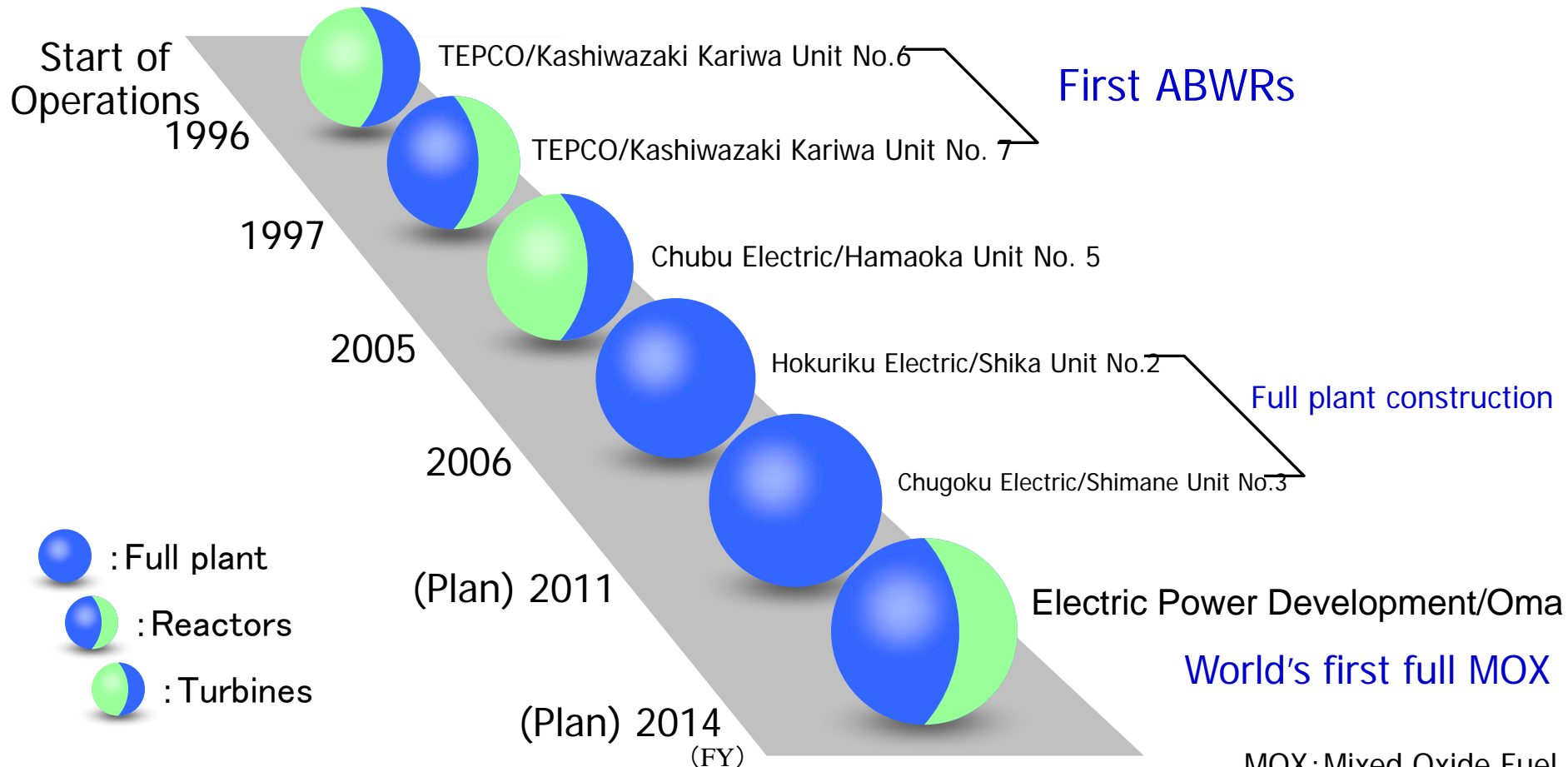


Shimane Nuclear Power Station Unit No. 3 (under construction)  
The Chugoku Electric Power Co., Inc.

\*Source: Agency for Natural Resources and Energy, Ministry of Economy, Trade and Industry, *Summary of Electricity Supply Plan, FY2009*

# 3-3 Promoting Business in Japan (ABWR Construction)

- Leading Player in ABWR Plant Construction in Japan
  - No. 1 market share in ABWRs (67%\*)
  - Participating in construction of all ABWR plants



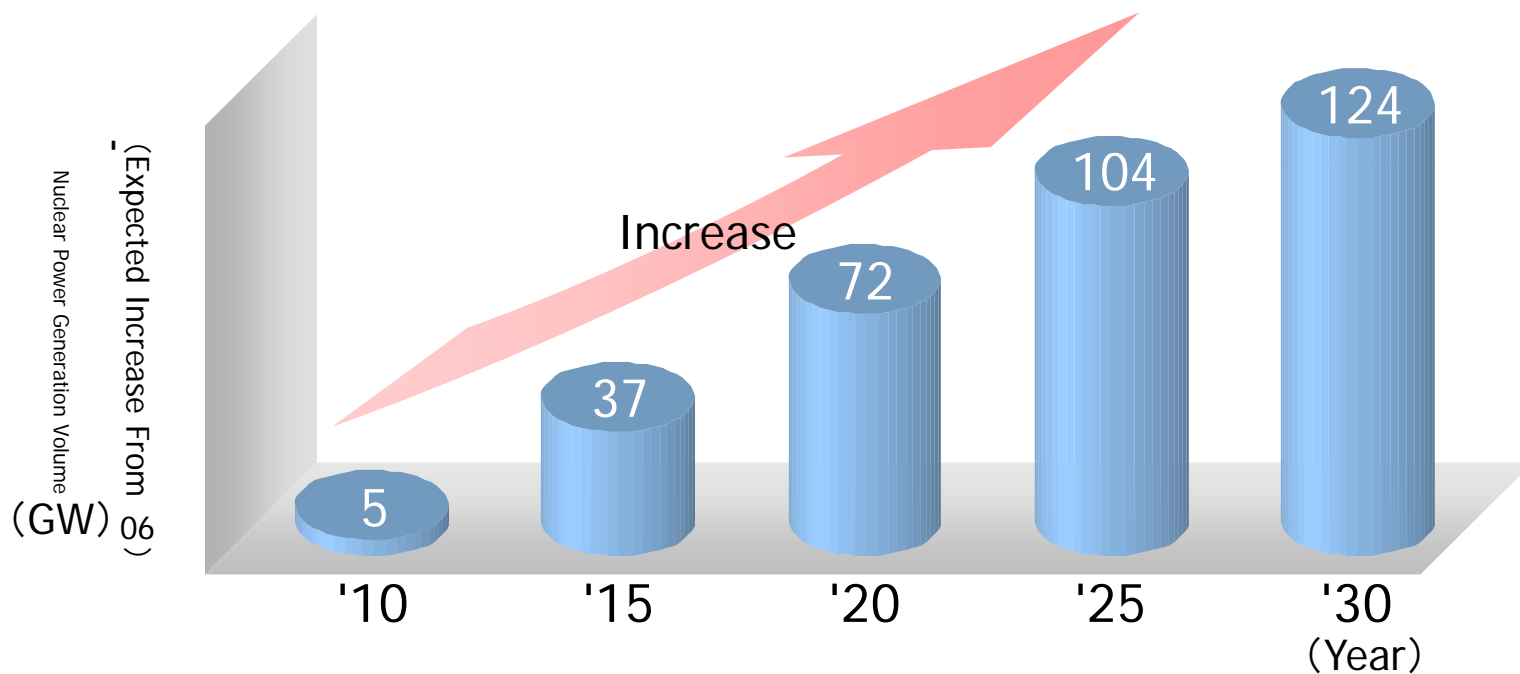
\* Includes plants under construction. Reactors and turbines counted as 0.5 of a plant each

## Worldwide Nuclear Renaissance

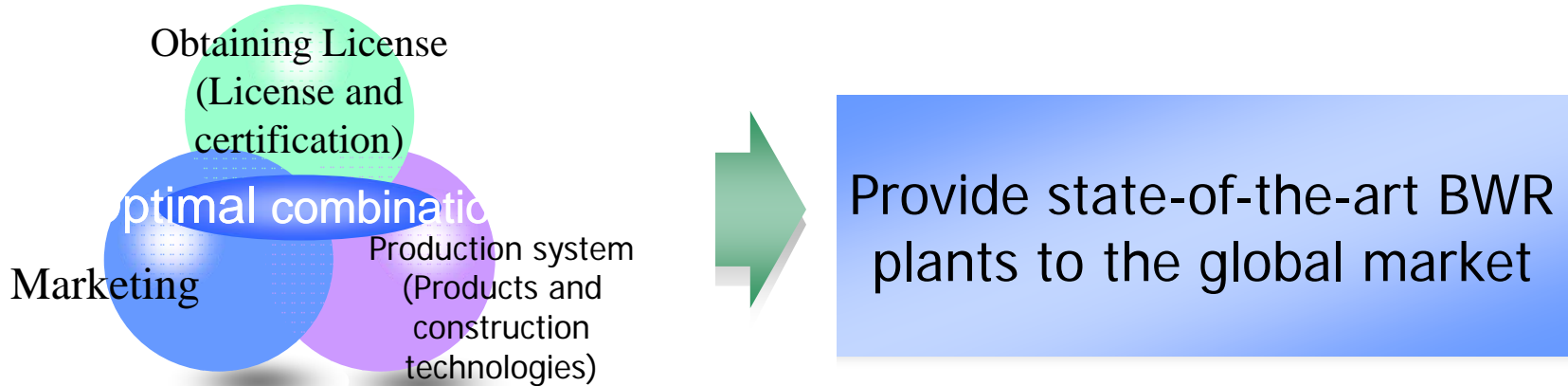
- Ensure stable energy supply
- Global warming prevention



Increasing overseas demand for nuclear power plants  
72 GW by 2020 (Equivalent to 72 plants)



## ● Alliance Goals



## ● Optimal Framework

- GEH : License (U.S. design certification already obtained)
- Hitachi : Proven abundant construction track record, equipment supply
- GNF : Supply and development of reactor cores and fuel

## ● Develop Fuel Enrichment Business

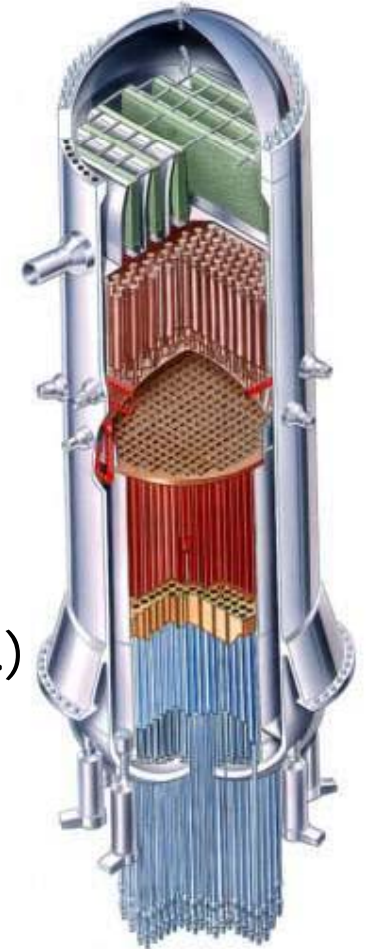
- GLE is developing a uranium-enrichment business (Laser-based)
- Alliance with Cameco Corp., world's largest uranium producer

## ● The Latest Proven Nuclear Power Plants

- One of the world's largest generation capacities (1,350 MW)
- Proven operating results in Japan
- U.S. design certification already obtained (GHE)
- Uses modular technique, latest construction technologies

## ● Focus on Promising ABWR Markets (U.S., Middle East, etc.)

- Apply proven systems and designs
- Leverage abundant construction track record



Reactor  
pressure vessel



## ● Target New Markets and Countries Adopting Nuclear Power

- India: Alliance with engineering and construction major (GEH)
- China: Highlight ABWRs merits for energy diversification
- Southeast Asia, etc.: Support plans to introduce nuclear power from 2020  
⇒ Appeal site planning, personnel training, etc., participate in new plans

1<sup>st</sup> ABWR Seminar for Thai Gov't and Power Industry Representatives



March 2009  
(Approx. 400 people/ongoing program)

Beijing, China  
China International Exhibition on Nuclear Power Industry



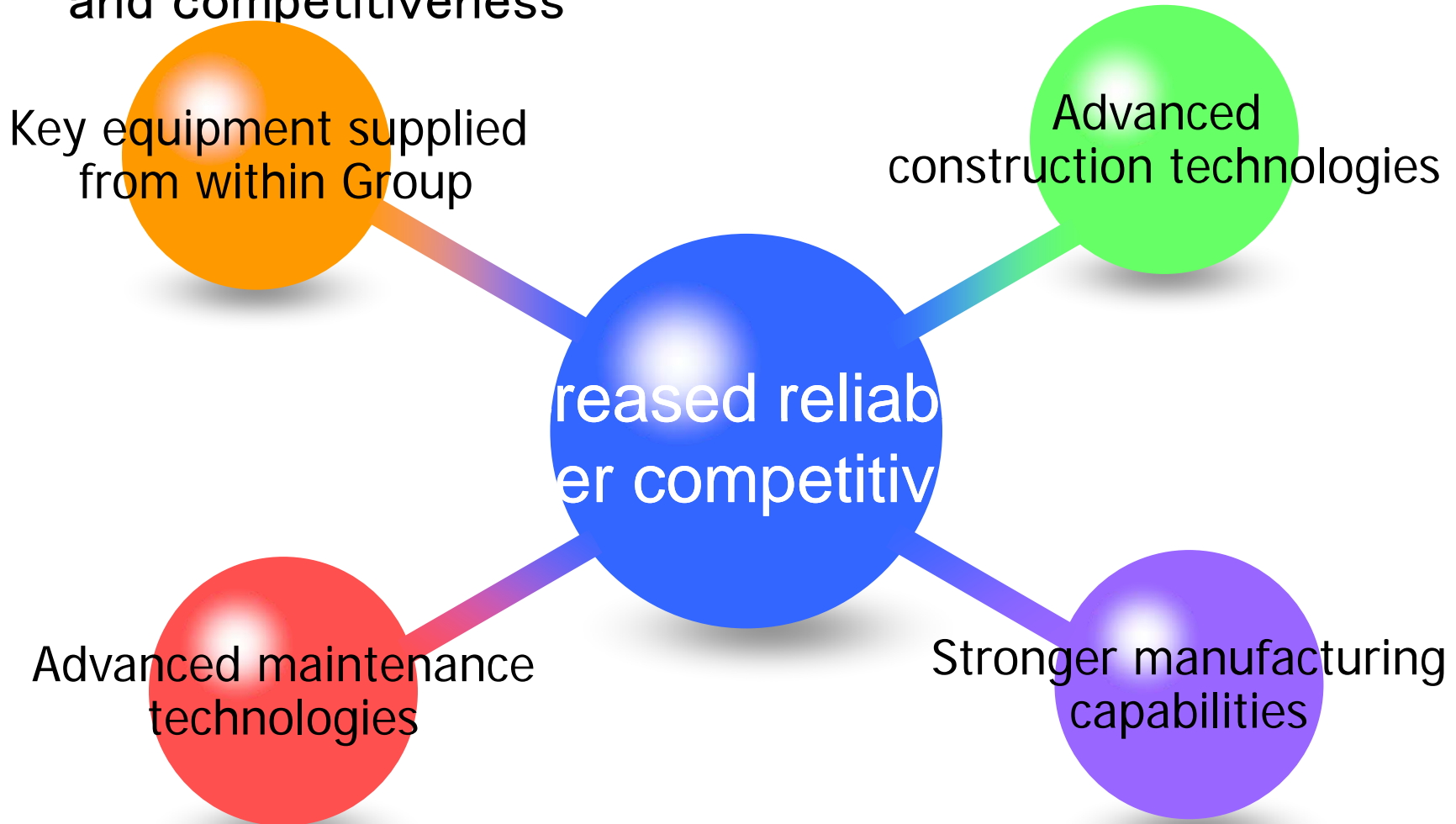
April 2009  
(Attracted approx. 3,000 visitors)

Shimane Unit No. 3 ABWR Construction Site Visit by Overseas Parties



Held 18 times for 80 people  
from 6 countries  
(Hitachi guests received FY2008)

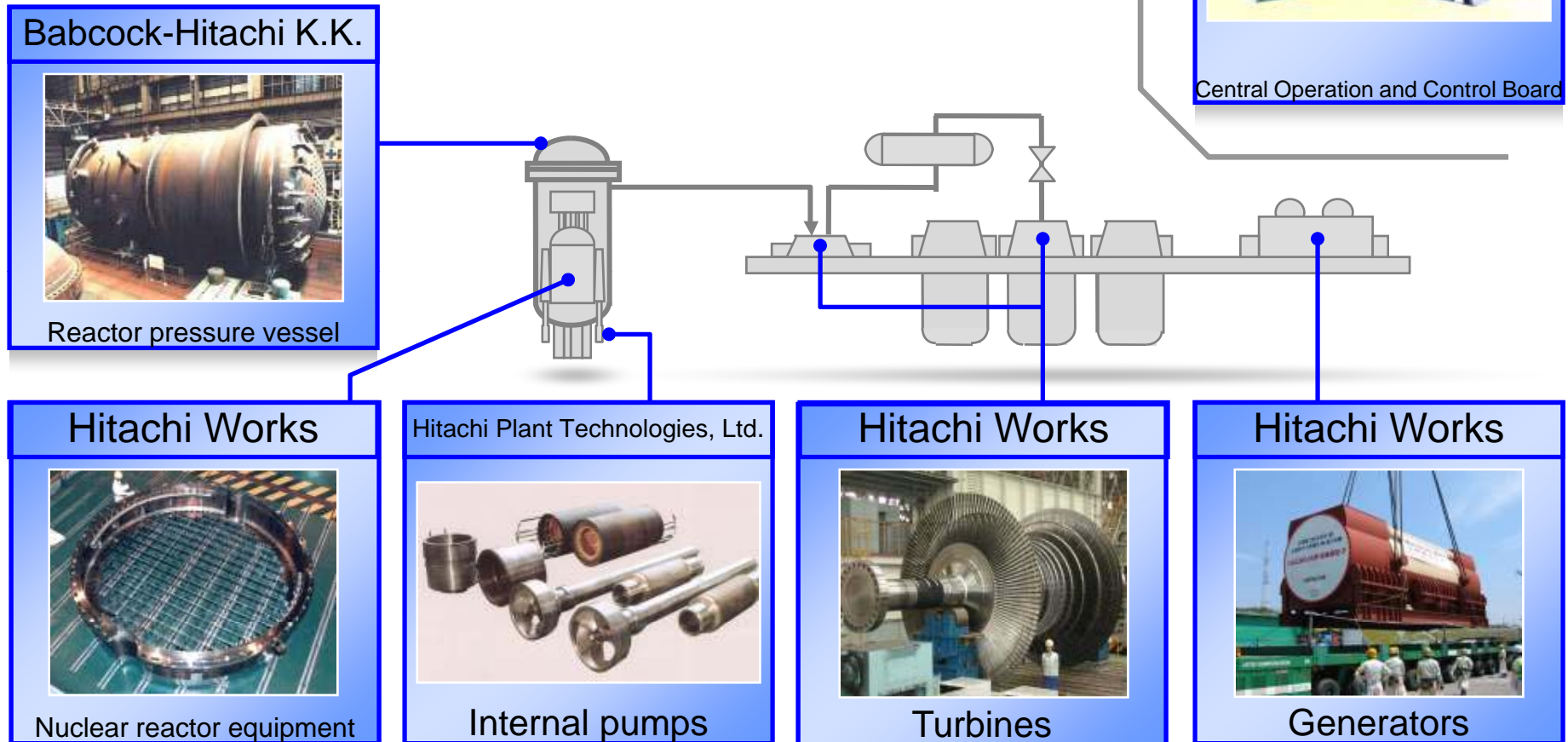
## ● Hitachi's advanced technologies for increasing reliability and competitiveness





## ● Equipment Design and Manufacturing

- Supply key equipment from Hitachi Group
- Continuous supply of reactor equipment

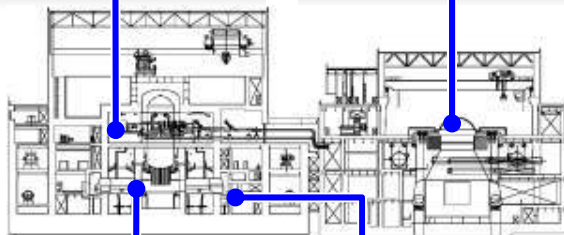


● Increasing Sophistication and Efficiency featuring the Latest Technologies

● Modular construction

Upper Drywell  
(Approx. 650 tons)

Generator Stator  
(Approx. 400 tons)

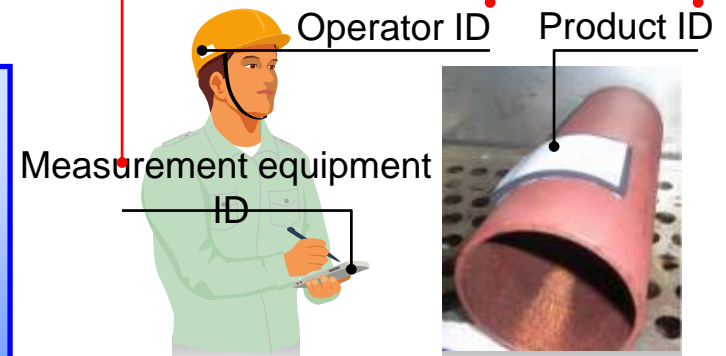
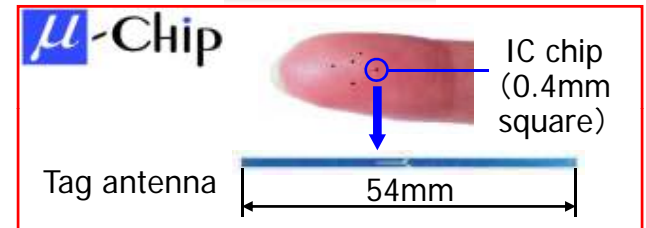


RPV Pedestal  
(Approx. 400 tons)

Hydraulic Control Units Room Module  
(Approx. 300 tons)

● Automated and high-quality construction management using RFID

- Access management
- Installation register management, etc.



RFID: Radio Frequency Identification

## Development of Advanced Maintenance Technologies

### Advanced Maintenance Market

- Extend life: Life 40 years ⇒ 60 years
- Increase output: 100% ⇒ 120%

### Advanced Stress Improvement Technologies

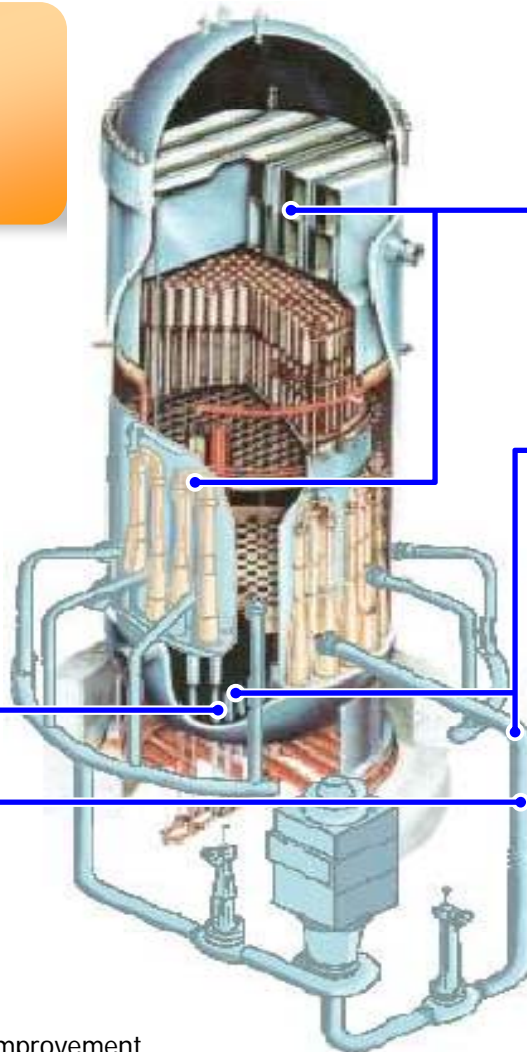
- Narrow passage WJP
- IHSI technique



Multi-joint-type WJP



WJP for CRD stub tubes/ICM.H



### Technology synergies with GEH

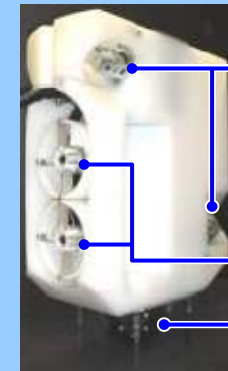
- Noble Metal Chemical Addition (NMCA)
- Stress improvement (ReNew)

### Developing Output-Raising Technologies

- Highly reliable dryer
- Highly efficient jet pump

### More Advanced Inspection Technologies

- Inspection robots (Remotely operated vehicles (ROV))
- Ultra-sound damage analysis/Eddy current analysis



Thrusters for proceeding left/right, rotating and going up/down

Larger thrusters

Camera

Reactor bottom ROV



## ● Systematic Strengthening of Manufacturing Capabilities

- Expanded design wing (2006), extended reactor building production (2006, 2008)
- Introduced large turn-mill machine (2006)
- Hitachi Utility Steam Test Leading facility (2009)
- Installed laser welding machine, control rod earthquake-resistance testing facility (2009)

<Plan>

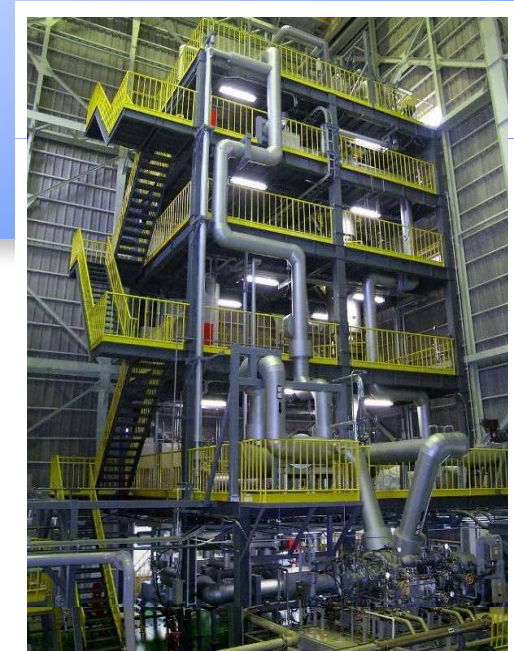
- Control rod and control rod drive testing facility
- Strengthen machine processing facilities, extend reactor building production



Control rods

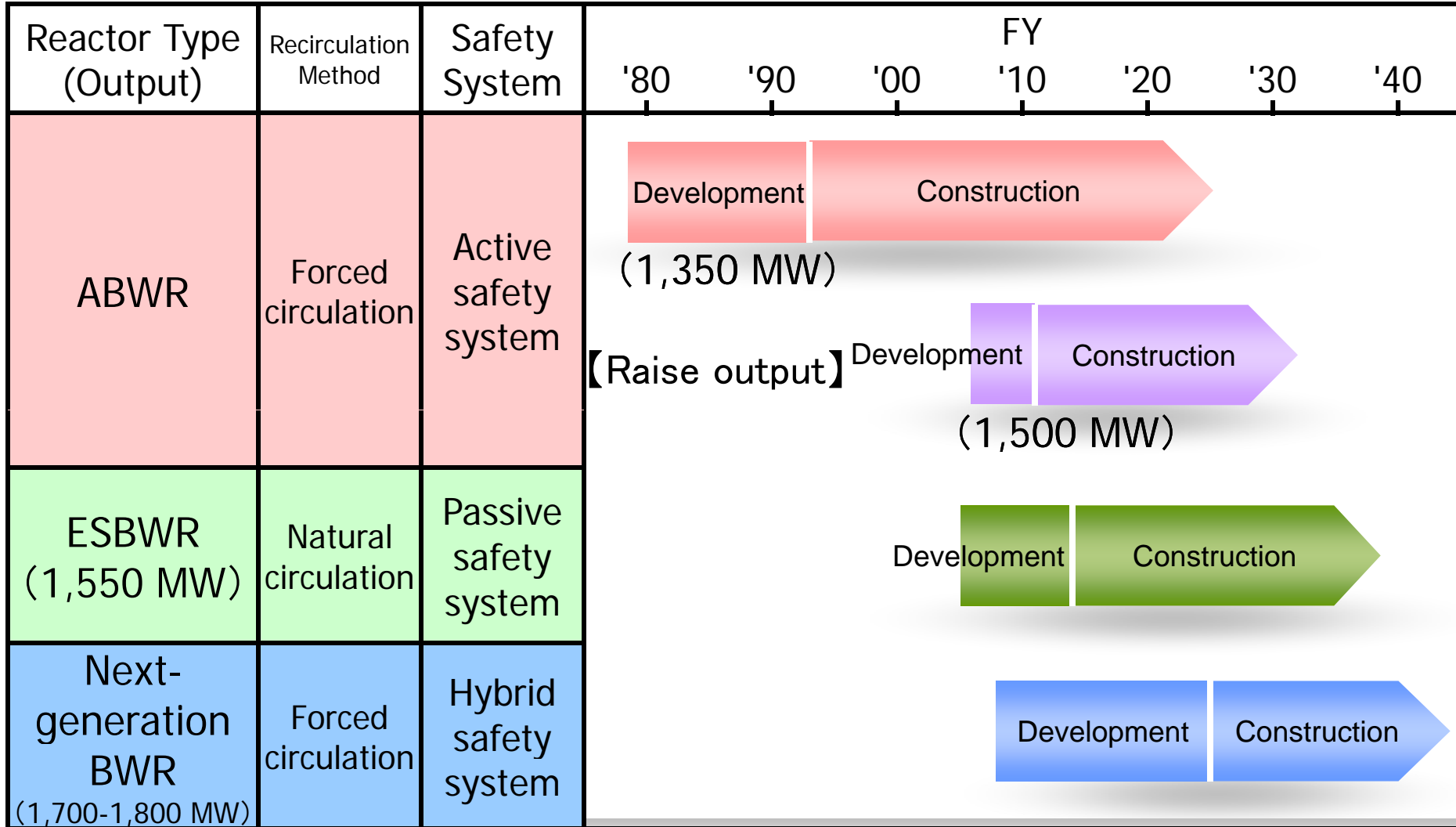


Nuclear Reactor Equipment (Top Guide)



Hitachi Utility Steam Test Leading facility

# ● Accelerate Development Using Core Technologies

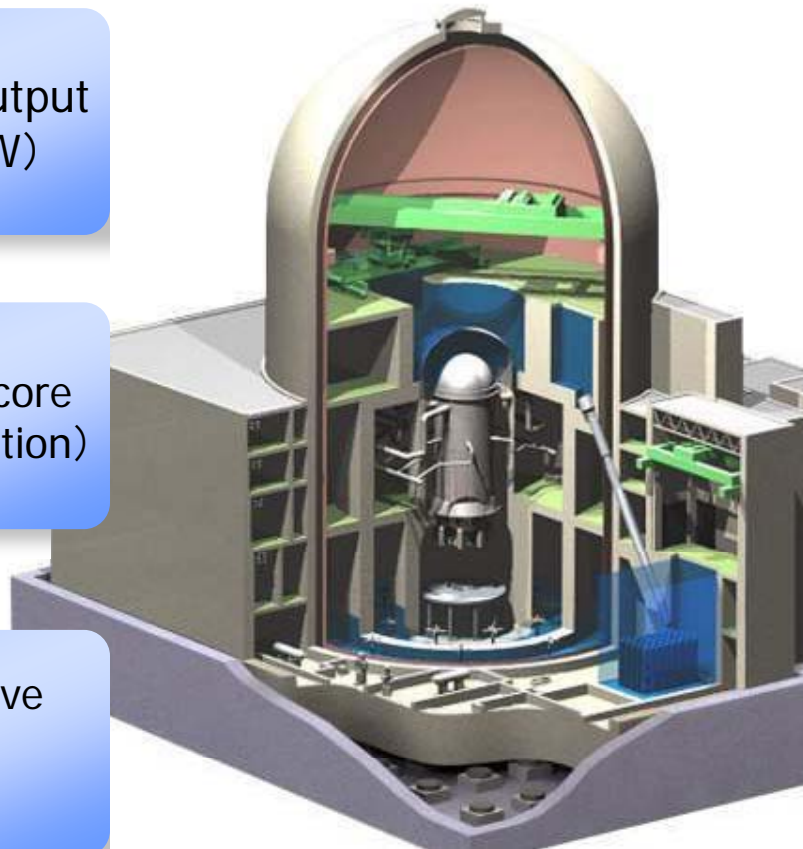


- Promote development as national project
- Standardize specifications for basic performance and common requests from all countries, aiming to develop global-standard reactors
- Meet replacement demand in Japan from 2030

Increase electricity output  
(1,700 to 1,800 MW)

Low-uranium reactor core  
(10%: 24-month operation)

Optimal mix of passive  
and active safety  
systems



Separation of reactor  
building and  
containment vessel

SC structure  
first containment  
vessel (30-month  
construction time)

Seismic-isolated  
reactor building

# Power Systems Business Presentation

June 18, 2009

## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewable Energy Business
6. Conclusion



Revenue

FY11 : 600 bn yen



FY08 : 450 bn yen

- Strengthen competitiveness of core coal-fired thermal power plants
- Expand products with No. 1 market shares and growing products
- Decrease CO<sub>2</sub> emissions and atmospheric pollutants

## ● Strengthen coal-fired power plant business

- Maximize global performance
- Strengthen BTG integration capabilities
- Manage projects rigorously and reduce costs

## ● Expand medium-capacity gas turbine business

- Accelerate business development on highly efficient Hitachi gas turbines

## ● Promote development of environmental technologies

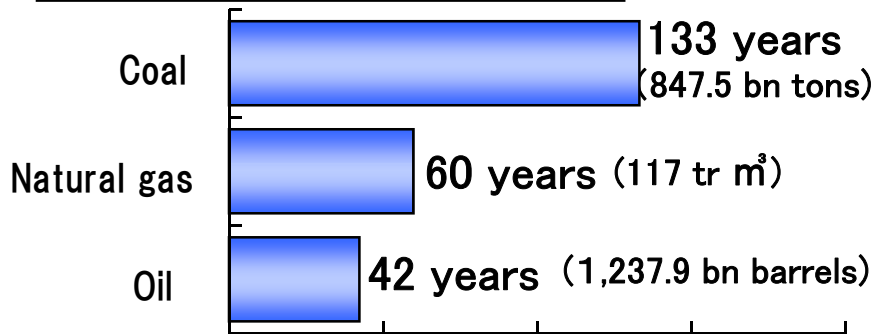
- Increase generation efficiency
- Clean flue gases, capture CO<sub>2</sub>



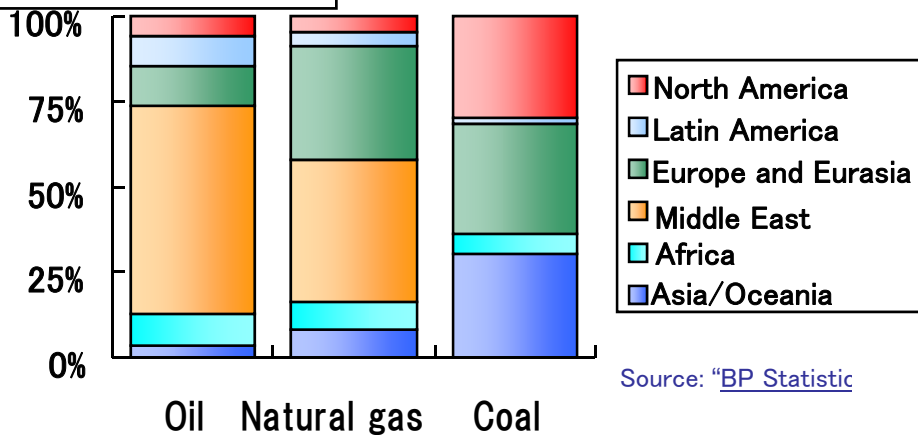
# 4-2 Market Trends

- Coal: Abundant reserves, little geographical dependence → core power source for the world
- Natural gas: Relatively few CO<sub>2</sub> emissions → major power source after coal

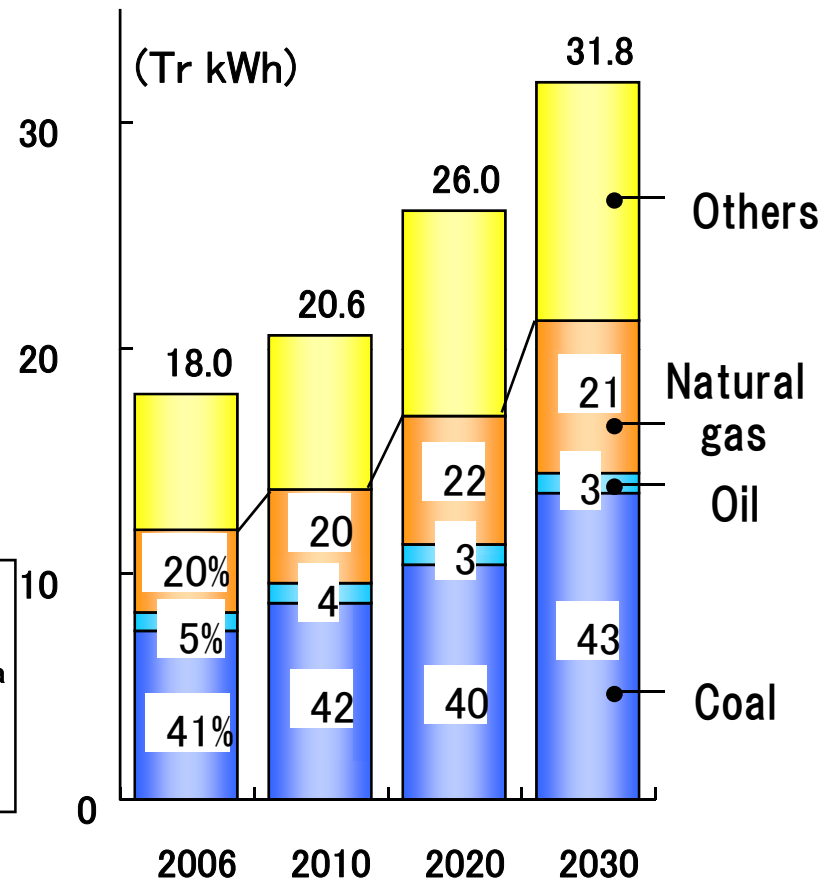
Proven Resource Reserves



Reserve Distribution by Region



Global Electricity Generating Capacity



# 4-3 Strengthening Coal-Fired Thermal Power Plant Business (Maximize Global Performance)



Hitachi Power Europe GmbH  
[HPE] (Established Apr. 2006)



Hitachi, Ltd. (Hitachi Works)



Hitachi Power Systems America  
[HPSA] (Established Feb. 2005)



Hitachi Power Africa  
[HPA] (Established Dec. 2005)



Babcock-Hitachi K.K. [BHK]



Mechanical Dynamics & Analysis Ltd.  
[MD&A] (Acquired Sept. 2005)

- Collaborative creation with overseas Group companies and partners

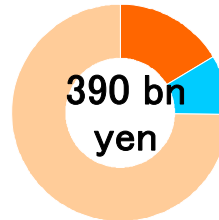


- Expand scale, increase profitability
- Promote development of environmental technologies

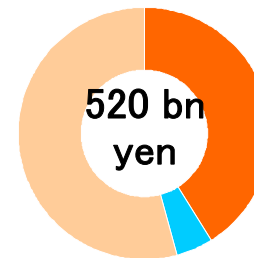
■ :HPE,HPA  
Revenue

■ :HPSA,MD&A

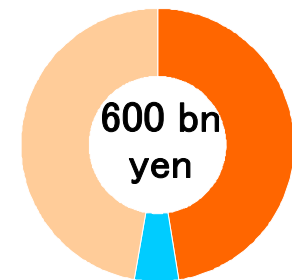
■ :Hitachi, Ltd., BHK, etc.



2007



2009



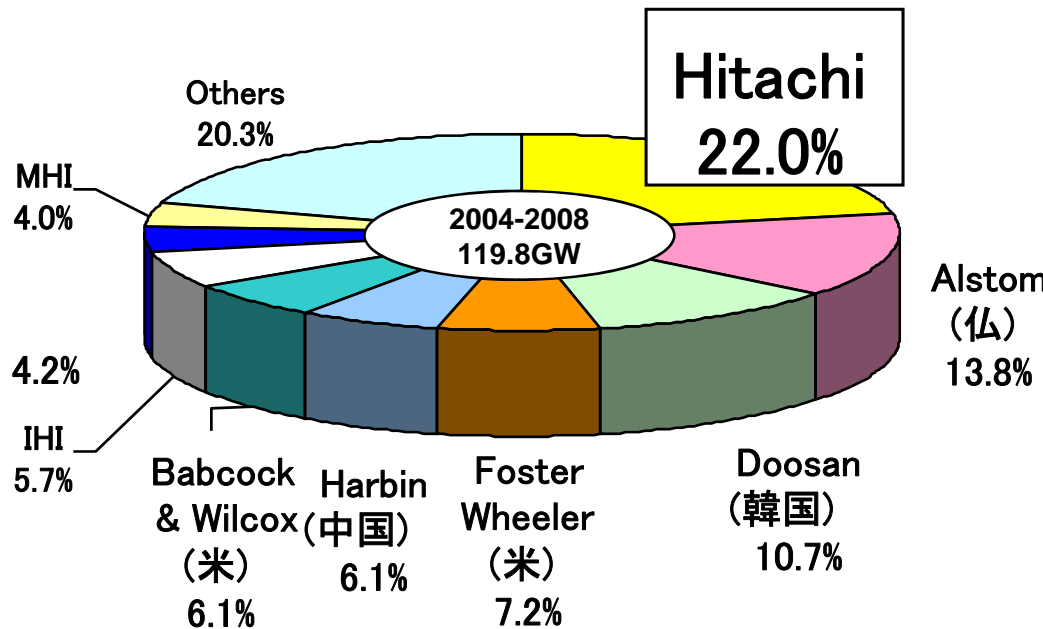
2011

# Boiler Market Share (5 MW and Above): 2004 to 2008 Orders

## Global Boiler Share

## Share in Region

No. 1 share



Market	Hitachi share
Europe	Share: 35% (Rank: 1st) Market size: Approx. 35 GW
North America	Share: 12% (Rank: 4 <sup>th</sup> ) Market size: Approx. 22 GW

Source: McCoy Reports 2008  
 (Excluding Chinese and Indian markets)

● No. 1 Global Share in DeNOx for Denitrification

■ Help prevent atmospheric pollution globally

▪ Decomposition of NOx

→ Prevent acid rain, photochemical smog

■ First Commercialization to Worldwide market

▪ 1963: Developed titanium oxide-based catalysts with ammonia

▪ 1973: Commercialized DeNOx system

■ Develop and manufacture in-house

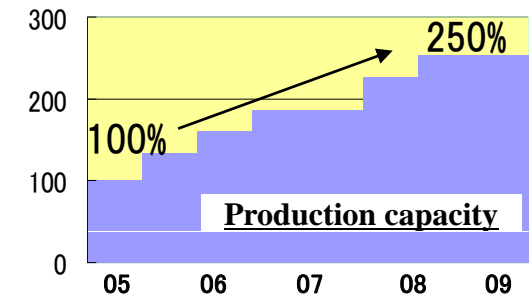
▪ Only Hitachi can do as a boiler manufacturer

■ Global No.1 share

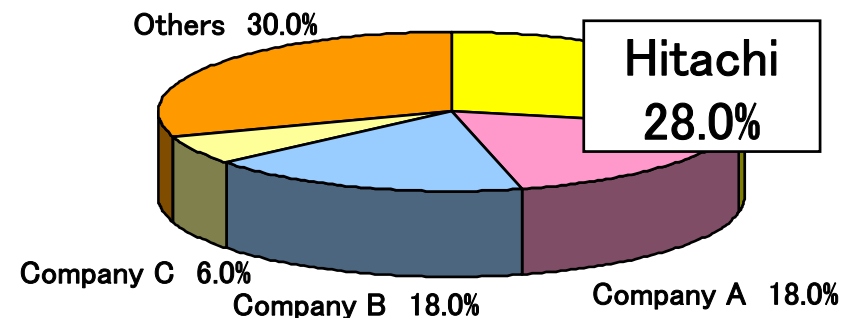
▪ Global No. 1 in cumulative deliveries

▪ Expand production facility

→ keep top share



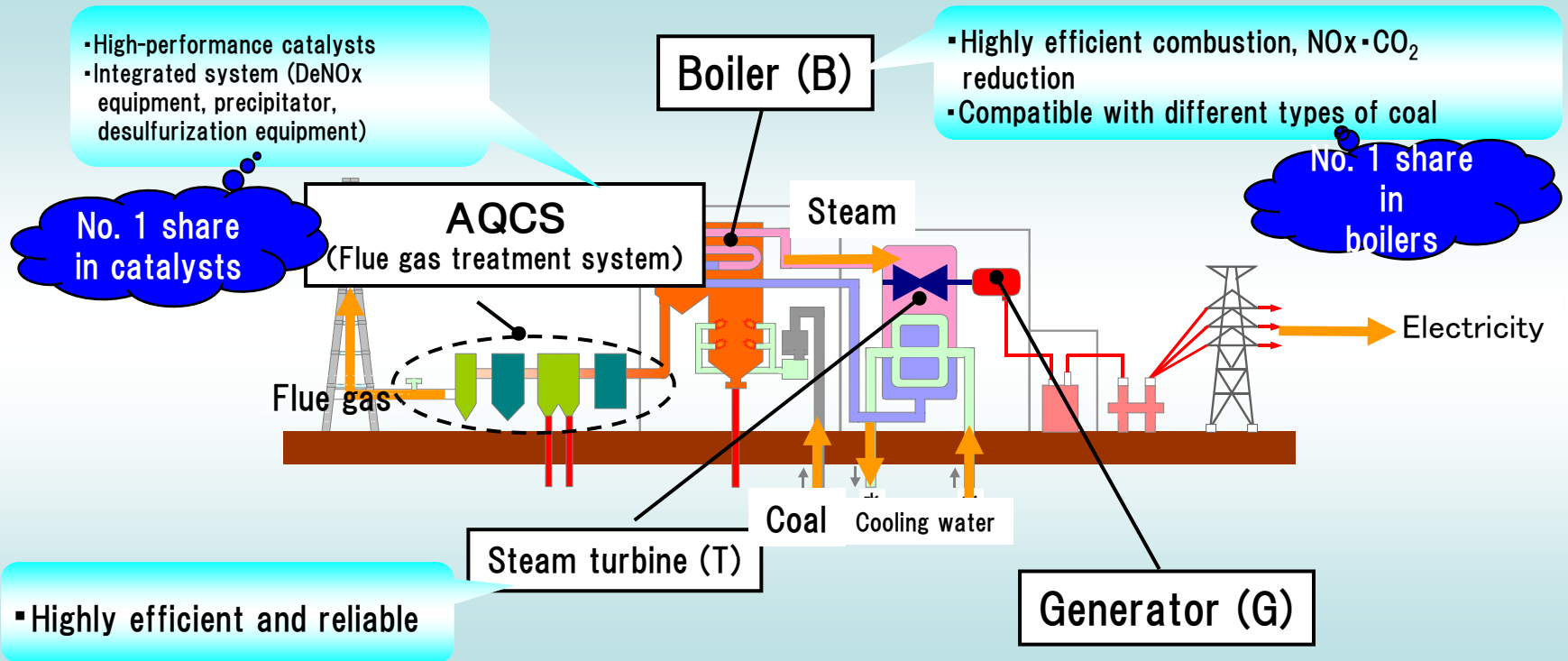
2008 Order Share



Source: Hitachi estimate

- No. 1 share in boilers and AQCS
- Able to supply “BTG + AQCS” by Hitachi based on top-share products

## Optimize Boilers, AQCS, Steam Turbines and Generators



## ● Rigorous Project Management

- Strengthen control of operation, profit/loss, risk management
- Increase and improve project management tools
- Increase and improve high-speed, high-accuracy engineering tools
- Train and increase number of project managers

## ● Strengthen Cost Reduction Activities

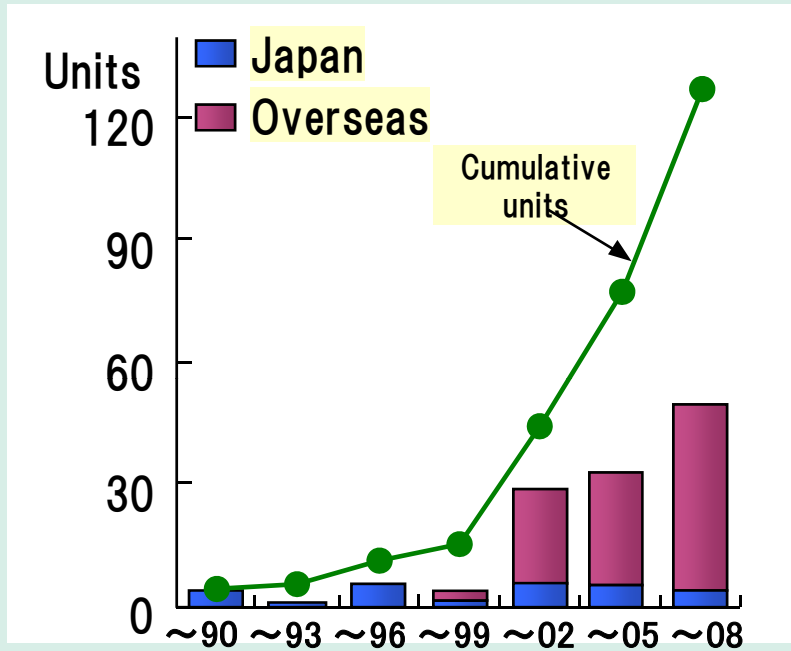
- Standardization, procurement with optimized engineering



## Accelerate Business Development Centered on Own Highly Efficient Equipment

### H-25 Series

- Orders (Cumulative 127 units)



- Top-class performance in heavy-duty gas turbines\*1
- Low-NOx combustors, compatible with different fuels

\*1: Thermal efficiency of 34.8% (when burning natural gas)

### 80 MW

- Up-scaled model of H-25 series turbine
- Greater efficiency as replaces existing oil- and gas-fired turbines.
- Plan to deliver first replacement unit to Kyushu Electric Power Co., Inc. (by Dec. 2009)



### AHAT\*2 Gas Turbine

METI Assisted project

- Higher efficiency and lower cost than Combined cycle



- 4 MW pilot plant achieved 43%\* efficiency (\*World first, figure with correction)

\*2: Advanced Humid Air Turbine

Atmospheric Pollutants				Emission-Reduction Technology Development				
CO <sub>2</sub>	NO <sub>x</sub>	SO <sub>x</sub>	PM	2000	2005	2010	2015	2020
○				<p>● <b>More efficient power generation</b> Highly efficient steam turbines (Increased efficiency and reliability)</p> <p>700°C-class (46%)A-USC → 750°C-class (48%)</p> <p>Coal gasification pilot test → Large-scale verification machine → Commercial plant</p>				
	○	○	○	<p>● <b>Flue gas cleaning</b> Low-NO<sub>x</sub> combustion, high-performance AQCS (Higher performance)</p>				
○				<p>● <b>CO<sub>2</sub> capture</b> CO<sub>2</sub> capture and storage technology (demonstration)</p>				



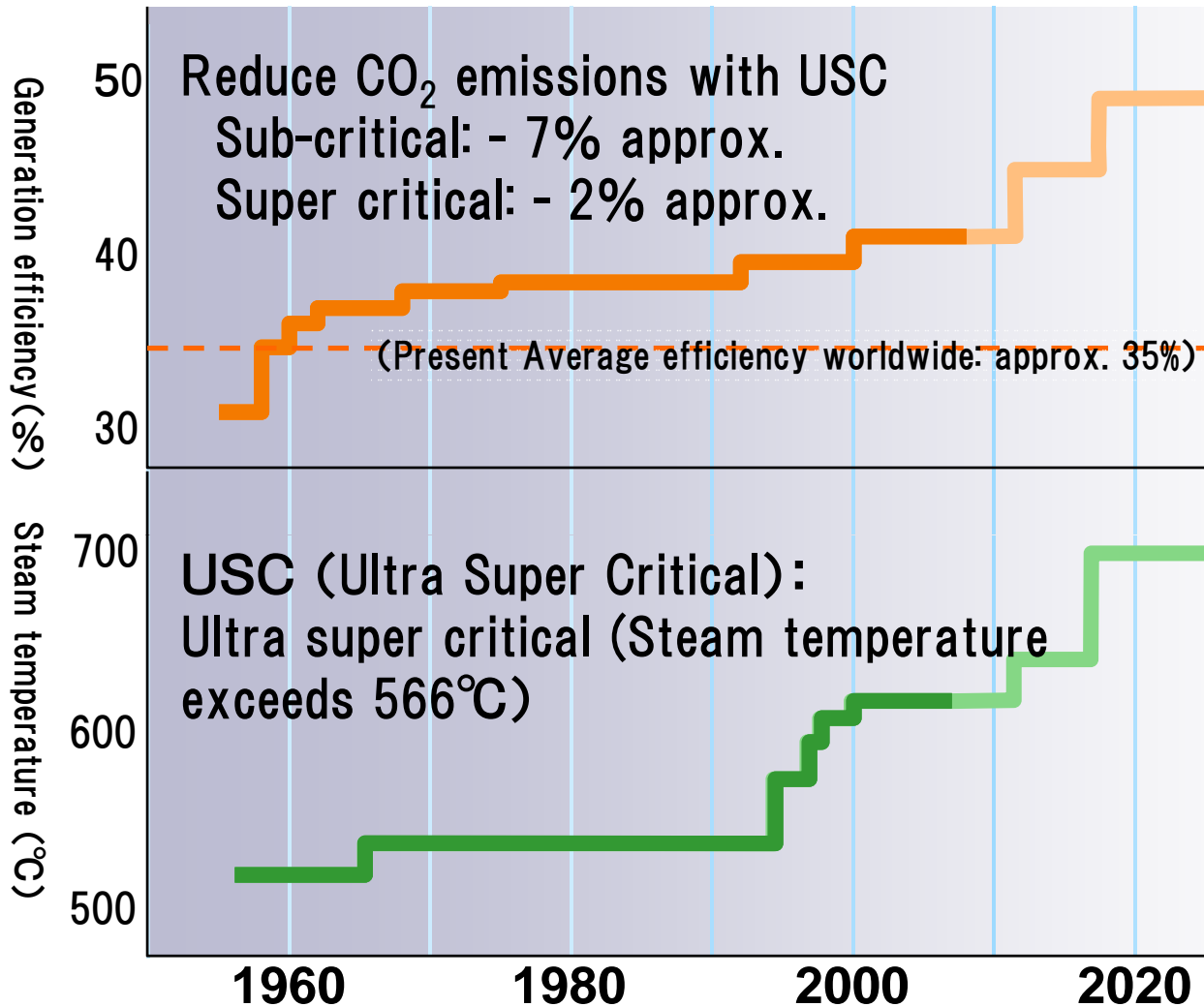
One of the world's largest coal combustion testing facilities



AQCS integrated research facility



## ● Raise Steam Temperature and Pressure to Increase Efficiency



USC construction track record

- Japan: 8 units
- Overseas: 23 units  
(Incl. under construction)



Walter Scott, Jr. Energy Center Unit 4

(*Power Magazine* “2007 Plant of the Year”)

\*SC (Super Critical) : Steam pressure at least 22.1MPa and steam temperature up to 566°C

\*USC (Ultra Super Critical) : Steam temperature exceeds 566 °C

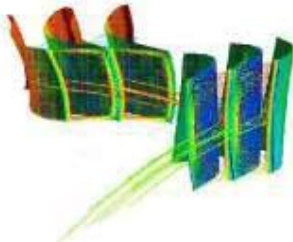
\*Sub-Critical: Steam pressure less than 22.1MPa (Drum-type boiler)

# High-efficiency Steam Turbines

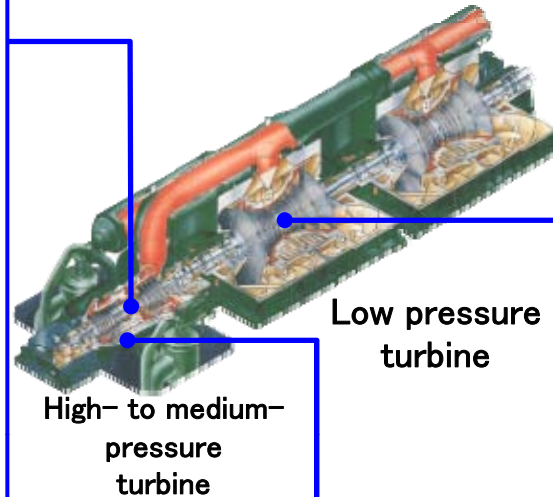
- Optimized degree of reaction  
(Increase efficiency by optimizing output in stages)



- High-performance nozzle blade/rotor blade  
(Reduced loss via 3D rendering)

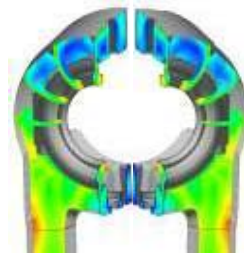


- Convert rotor blades to CCBs  
(Reduced steam leaks enhances efficiency)

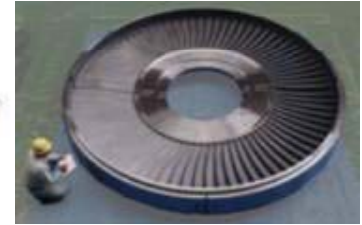


## 【Steam Cascade】

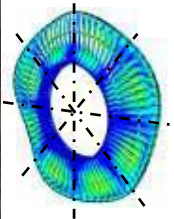
- Low pressure-loss cascade



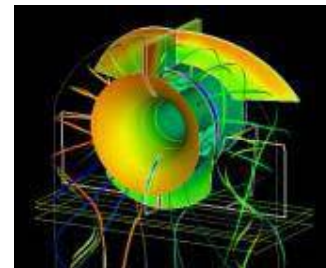
- High-performance nozzle blade  
(Reduced loss through 3D rendering)



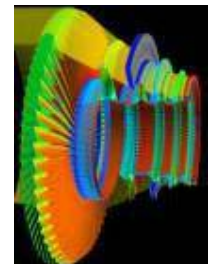
- Extended length of last-stage blade  
(Increased annulus area to reduce loss)



- High-performance exhaust room



- Wet steam flow analysis



## 700°C-class A-USC Power Generation

Increased steam temperature and pressure

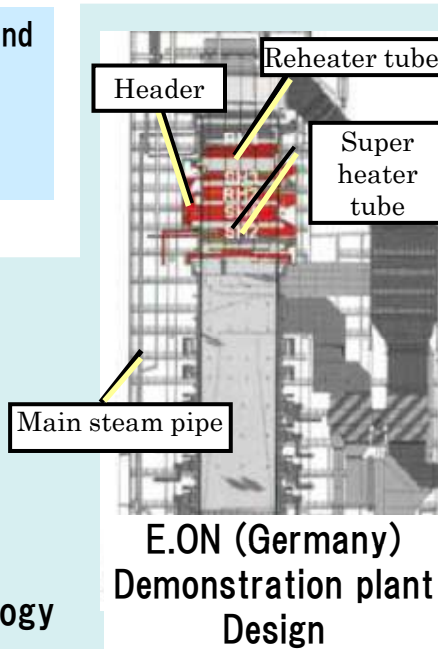
Increased efficiency of energy-utilization

### Developed 700°C-class Boiler

- Designed pipes using new boiler materials

(nickel-based Alloy 617)

- Developed welding technology



### Developed Alloy for 700°C

Low-cost Ni-Fe-based super alloy (FENIX-700) for turbine rotors

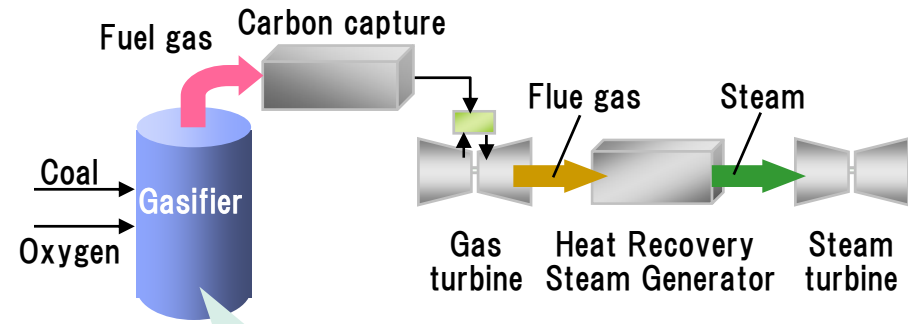
METI Assisted Project



## Integrated Coal Gasification Combined Cycle (IGCC)

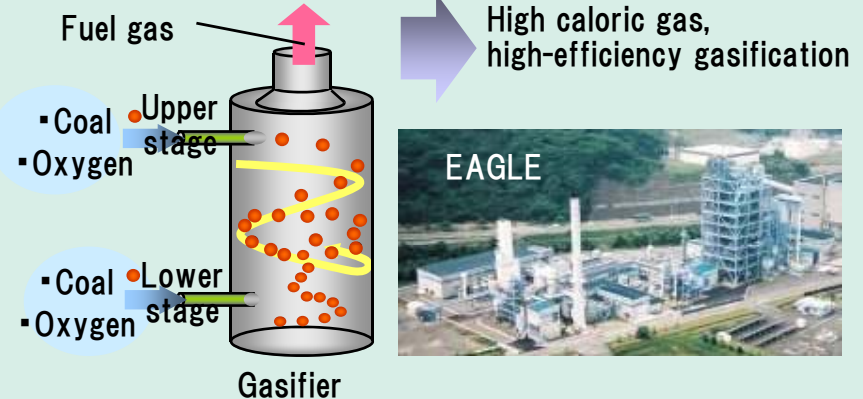
Conversion of coal into fuel gas

Higher efficiency by gas turbines and steam turbines



Developed With Electric Power Development Co., Ltd.

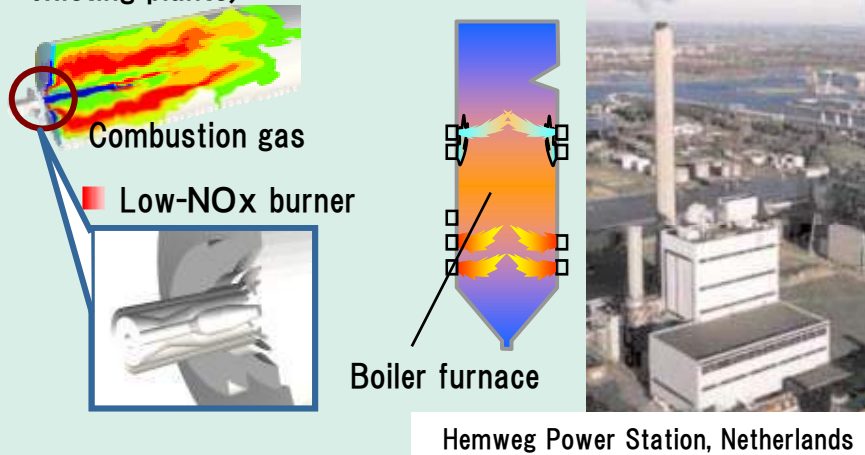
### Oxygen-blown, single-chamber, two-stage swirling flow gasifier



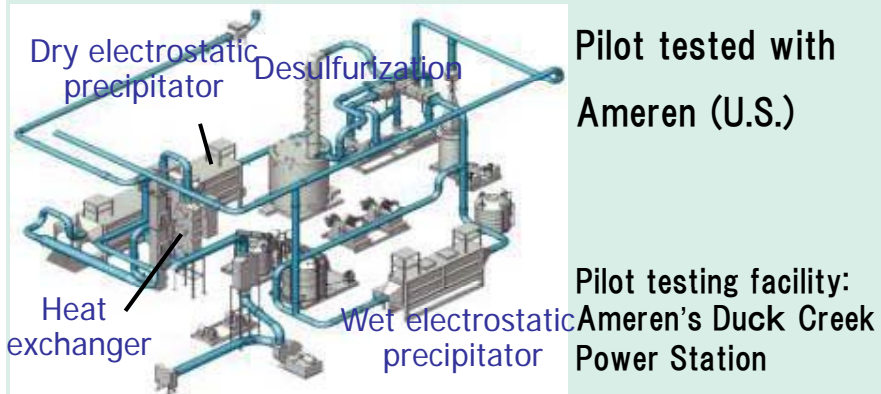


## Flue Gas Cleaning

- Developed low-NO<sub>x</sub> combustion technology (New-type burners/new multi-stage air-injection method verified at existing plants)



- Developed AQCS for U.S. environmental regulations



AQCS: Air Quality Control System

## CO<sub>2</sub> Capture

- Joint development and field testing with European and U.S. universities and power utilities  
Oxy-combustion technology: Fortum (Finland), Aachen University (Germany)  
Chemical absorption technology: E.ON, Electrabel (Germany), University of North Dakota (U.S.)



Mobile chemical-absorption system (German Power station)

# Power Systems Business Presentation

June 18, 2009

## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewable Energy Business
6. Conclusion



Revenue

FY15: 200 bn yen

FY08: 25 bn yen



- Provide solutions to support the uptake of renewable energy
- Renewable Energy & Smart Grid Division to lead cross-organizational efforts

- Expand sales of wind power systems
  - Expand downwind turbine sales
- Promote solar power systems
  - Provide large-scale solar power systems
  - Control technologies to harmonize with power grids
- Develop storage battery systems
  - Step up development in conjunction with Battery Systems Division
- Advance development of Smart Grid-related systems
  - Develop and expand sales of power system stabilization equipment and systems
  - Increase sophistication by coordinating electricity infrastructure technology and ICT



Wind power, solar power and other renewable energies will contribute to the creation of a low-carbon society, but...

- Such power output is so unstable due to the weather, etc.
- Further prevalence could destabilize the grid (transmission and distribution network)



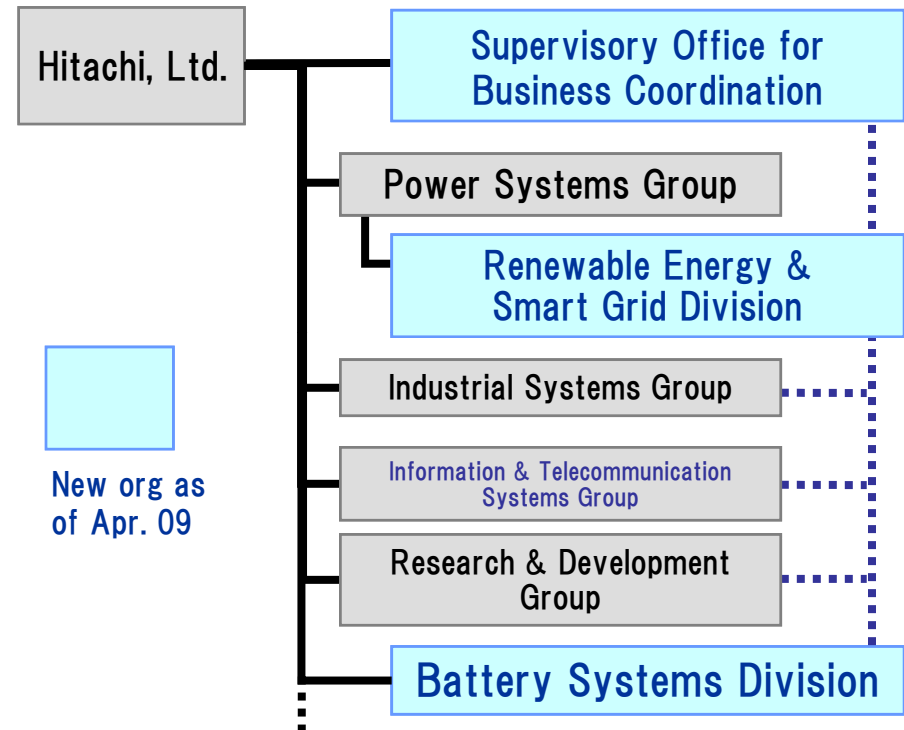
Grid-related issues associated with the spread of renewable energy

- Grid stability
- Reverse power flow, etc.



- The key is to provide solutions for these problems

- Promote initiatives across the Hitachi Group
- Strengthen collaboration in power systems and ICT fields



## Solar Power



Solar power systems

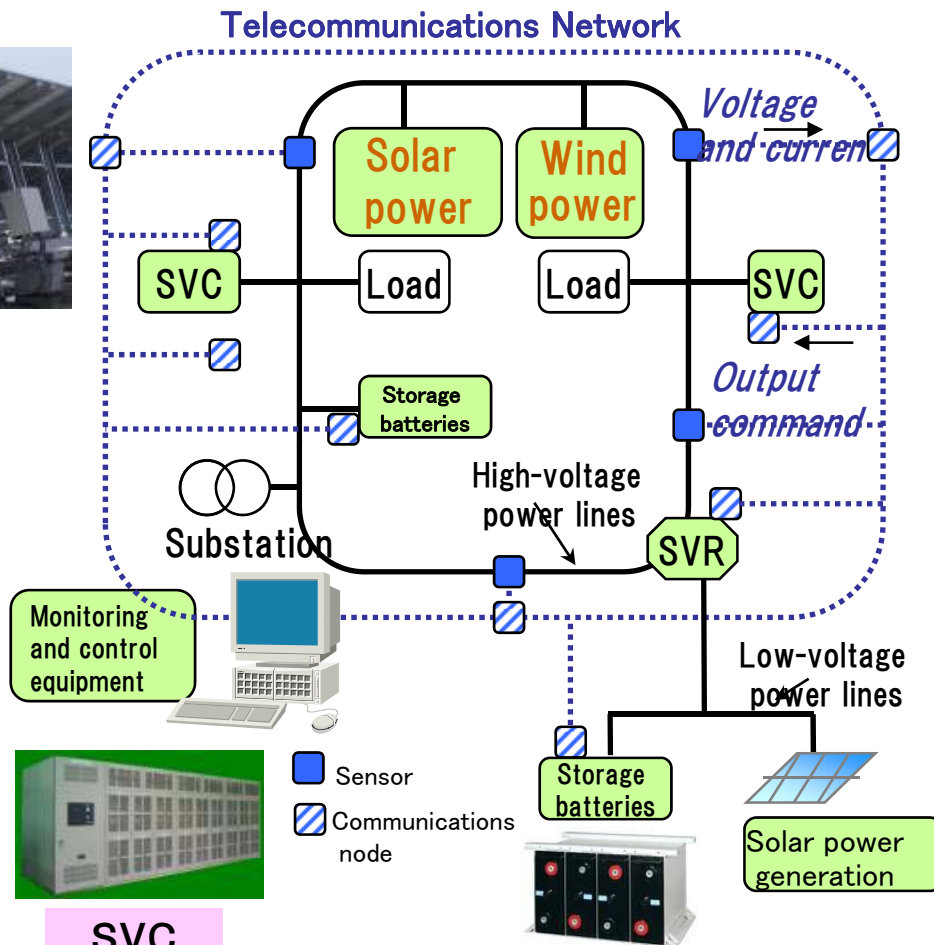


Power conditioners for mega-solar systems



SVC

- Power Grid Systems
- Telecommunications networks/monitoring and control systems/SVC/storage batteries



## Wind Power



Wind turbines



Converters



Generators

SVC: Static Var Compensator, SVR: Step Voltage Regulator

## World's Largest Downwind Turbines (Output 2MW)

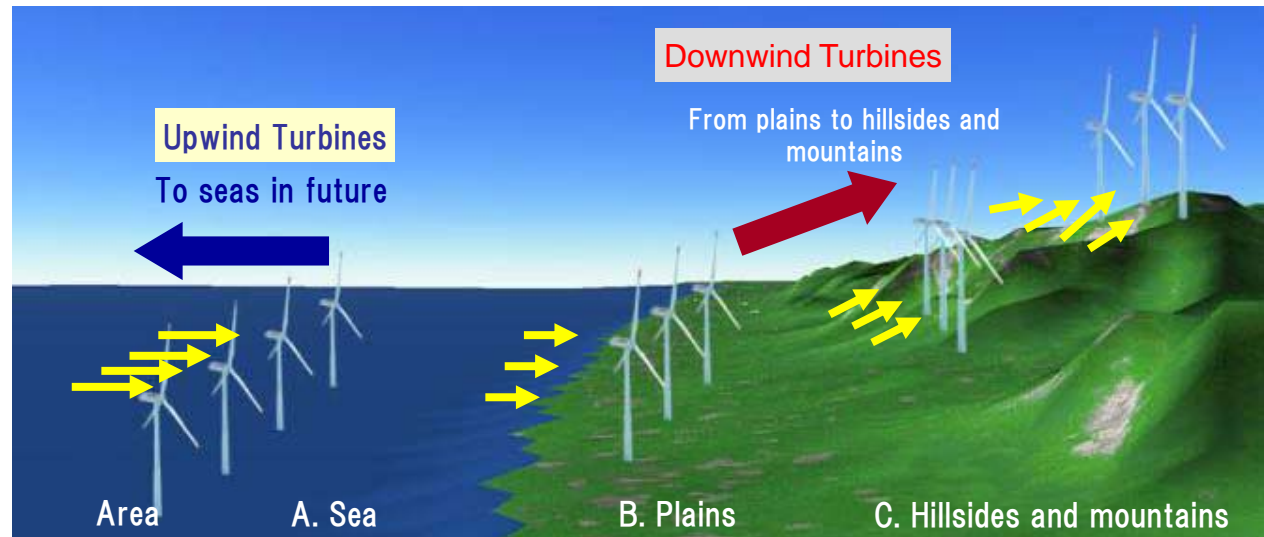
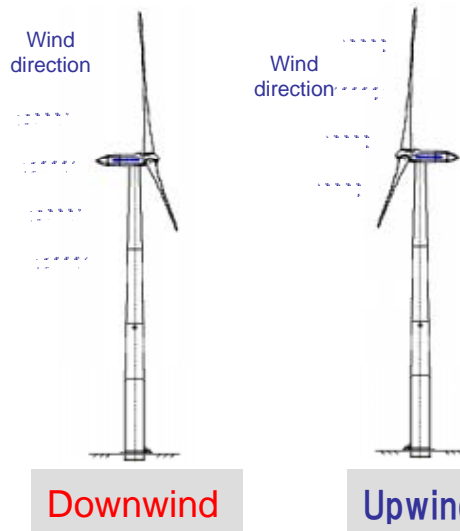
Provide system with Fuji Heavy Industries Ltd.

- Increase output on mountains, hillsides and other areas where wind blows upward using downwind turbines
- Designed to withstand typhoons and strong thunder
- Outstanding power control for grids
- Provided by Japanese manufacturers

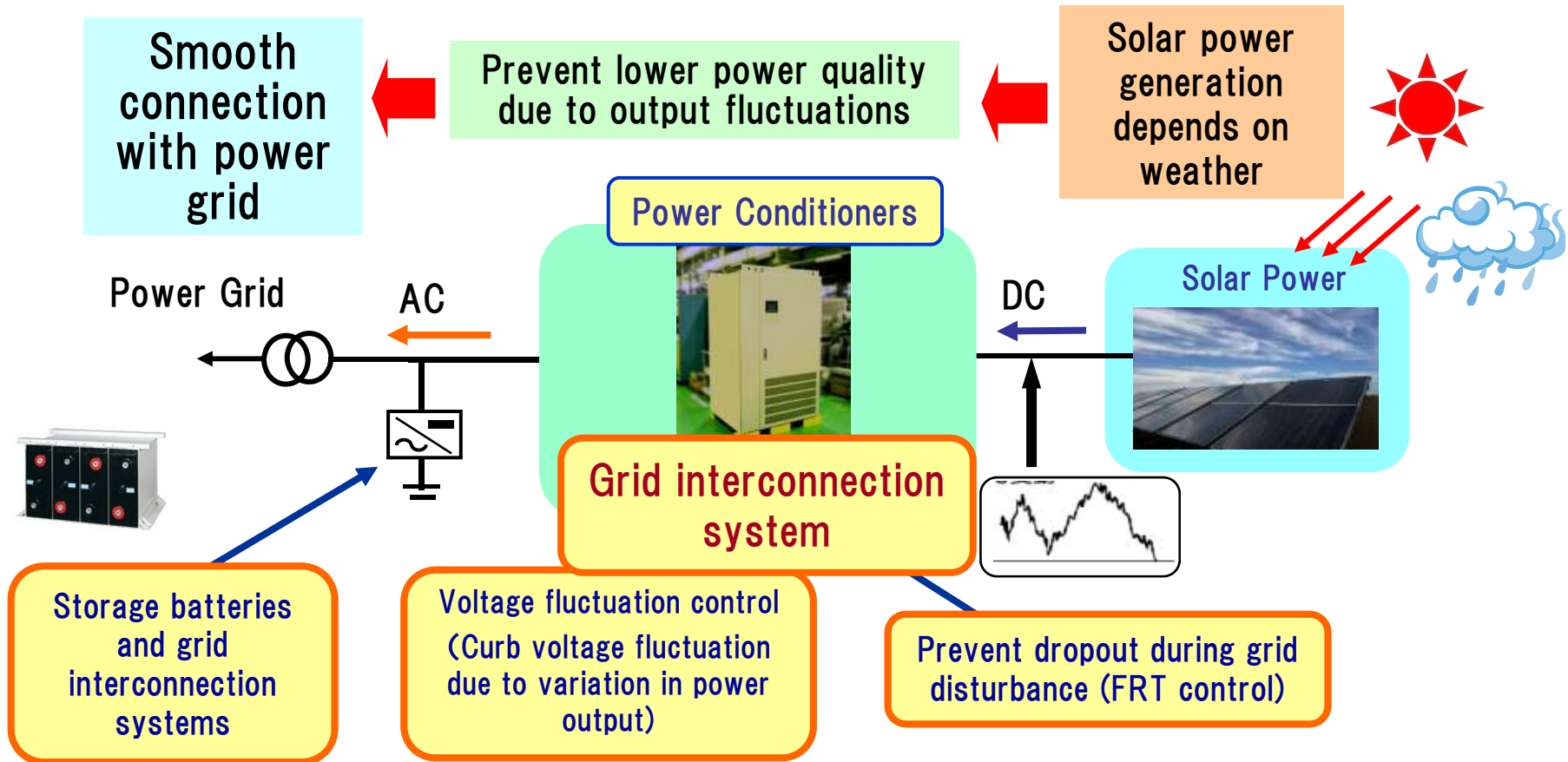


1<sup>st</sup> Commercial Unit  
(Completed Feb. 2008)  
(Kashima Works, Hitachi Chemical)

### Downwind Turbine Features



## Use Accumulated Control Technologies to Harmonize With Power Grids



 :Hitachi Group technologies

FRT: Fault Ride-Through is a function the ensures continuous operation and grid stability in the event of a voltage or frequency fluctuation due to a grid accident.

# 5-6 Development of Storage Battery Systems

- Focus on the battery business with efforts spearheaded by Battery Systems Division
- Promote development to advance Social Innovation Business

## Social Innovation Business

Wind power generation, solar power generation

● Lead storage batteries for wind and solar power generation



(Shin-Kobe Electric Machinery Co., Ltd.)

Features

- Long life
- Easy Maintenance

Industrial machinery

Construction machinery

Railway cars



Motors

Batteries

Inverters (Control)

Consumer

Mobile phones

Game consoles

Home appliances

Power tools



Hybrid vehicles

Plug-in hybrids

Electric vehicles

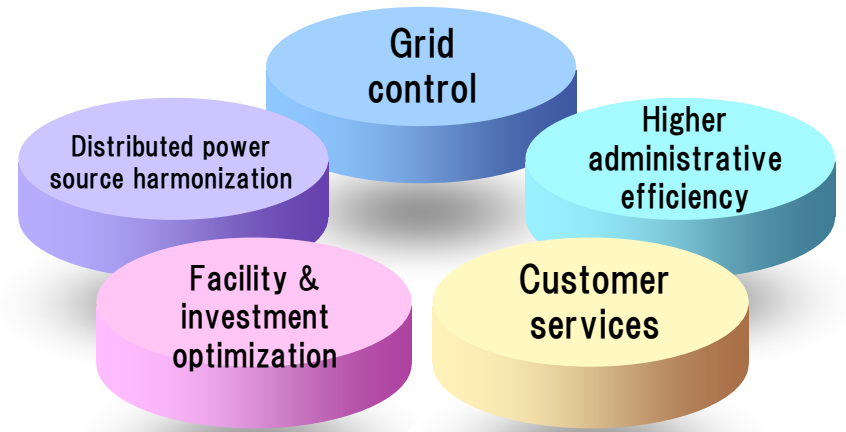


Automobiles

Trucks



## Develop and Provide Products/Solutions in 5 Fields



**EMS  
DMS**

**SVC**

**Facility management systems**

**AMI solutions**

### Coordinate Power Systems and ICT

<b>Power System Infrastructure Technology</b>	<b>ICT Infrastructure Technology</b>
<ul style="list-style-type: none"> <li>Power facility and monitoring/control systems</li> <li>Development, manufacturing and maintenance technologies</li> </ul>	<ul style="list-style-type: none"> <li>Information system technology</li> <li>Telecommunications network integration technology</li> </ul>

SVC :Static Var Compensator  
 AMI: Advanced Metering Infrastructure  
 EMS :Energy Management System  
 DMS : Distribution Management System



# Power Systems Business Presentation

June 18, 2009

## Contents

1. Market Trends
2. Management Policy
3. Nuclear Power Business
4. Thermal Power Business
5. Renewable Energy Business
6. Conclusion



**Contribute to Creation of  
a Low-Carbon Society**

**FY2011 Targets**  
**Revenue: 1 trillion yen**  
**Operating margin: 5%**

**Promote Globalization**

**Increase Profitability**

# Cautionary Statement

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 investments in Hitachi's major markets, particularly Japan, Asia, the United States and Europe, as well as levels of demand in the major industrial sectors which Hitachi serves, including, without limitation, the information, electronics, automotive, construction and financial sectors;
  - fluctuations in product demand and industry capacity, particularly in the Information & Telecommunication Systems segment, Electronic Devices segment and Digital Media & Consumer Products segment;
  - increased commoditization of information technology products and digital media related products and intensifying price competition for such products, particularly in the Information & Telecommunication Systems segment, Electronic Devices segment and Digital Media & Consumer Products segment;
  - uncertainty as to Hitachi's ability to continue to develop and market products that incorporate new technology on a timely and cost-effective basis and to achieve market acceptance for such products;
  - rapid technological innovation, particularly in the Information & Telecommunication Systems segment, Electronic Devices segment and Digital Media & Consumer Products segment;
  - exchange rate fluctuation for the yen and 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;
  - fluctuations in the price of raw materials including, without limitation, petroleum and other materials, such as copper, steel, aluminum and synthetic resins;
  - uncertainty as to Hitachi's ability to implement measures to reduce the potential negative impact of fluctuations in product demand, exchange rate and/or the price of raw materials;
  - general socio-economic and political conditions and the regulatory and trade environment of Hitachi's major markets, particularly Japan, Asia, the United States and Europe, including, without limitation, direct or indirect restrictions by other nations on imports, or differences in commercial and business customs including, without limitation, contract terms and conditions and labor relations;
  - 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 affiliates have become or may become parties;
  - the possibility of incurring expenses resulting from any defects in products or services of Hitachi;
  - uncertainty as to the success of restructuring efforts to improve management efficiency and to strengthen competitiveness;
  - 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 ability to access, or access on favorable terms, liquidity or long-term financing; and
  - uncertainty as to general market price levels for equity securities in Japan, declines in which may require Hitachi to write down equity securities it holds.
- The factors listed above are not all-inclusive and are in addition to other factors contained in Hitachi's periodic filings with the U.S. Securities and Exchange Commission and in other materials published by Hitachi.

**HITACHI**  
Inspire the Next<sup>!</sup>