Power Systems Domain
Business Plan

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Senior Executive Vice President,
President and CEO of Power Systems Domain,
and President of Mitsubishi Hitachi Power Systems, Ltd.

June 12, 2017
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4. Summary
1-1. Overview (Domain Reorganization)

The former Energy & Environment domain was renamed as the Power Systems domain. The aero engine and compressor businesses were transferred to the Power Systems domain in order to achieve greater synergies in the turbo machinery business as a whole.

【Until March 2017】

Energy & Environment
- Thermal Power
- Nuclear Power
- Renewable Energy
  - Chemical Plants

Commercial Aviation & Transportation Systems
- Commercial / Cruise Ships
- Land Transportation Systems
- Commercial Aircraft
- MRJ

Aero Engines

Integrated Defense & Space Systems
- Defense Systems
- Space Systems

Machinery, Equipment & Infrastructure
- Compressors
- Metals Machinery
- Turbochargers
- Engines
- Air-conditioning & Refrigeration
- Machinery & Equipment

【From April 2017】

Power Systems
- Thermal Power
- Aero Engines
- Compressors
- Nuclear Power
- Renewable Energy

Industry & Infrastructure
- Metals Machinery
- Material Handling Equipment
- Turbochargers
- Engines
- Machinery & Equipment
- Air-conditioning & Refrigeration
- Commercial / Cruise Ships
- Land Transportation Systems
- Chemical Plants

Aircraft, Defense & Space
- Commercial Aircraft
- MRJ
- Defense Systems
- Space Systems

<table>
<thead>
<tr>
<th>Business</th>
<th>Group company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Power</td>
<td>Mitsubishi Hitachi Power Systems, Ltd.</td>
</tr>
<tr>
<td>Thermal Power (Aero-derivative Gas Turbine)</td>
<td>PW Power Systems, Inc.</td>
</tr>
<tr>
<td>Compressors</td>
<td>Mitsubishi Heavy Industries Compressor Corp.</td>
</tr>
<tr>
<td>Aero Engines</td>
<td>Mitsubishi Heavy Industries Aero Engines, Ltd.</td>
</tr>
<tr>
<td>Offshore Wind Turbines</td>
<td>MHI Vestas Offshore Wind A/S (MVOW)</td>
</tr>
<tr>
<td>Marine Machinery</td>
<td>Mitsubishi Heavy Industries Marine Machinery &amp; Equipment Co., Ltd.</td>
</tr>
<tr>
<td>Organic Rankine Cycle Systems</td>
<td>Turboden S.p.A.</td>
</tr>
</tbody>
</table>
1-1. Overview (Net Sales by Main Businesses)

**Thermal Power**
- GTCC
- Coal-fired Thermal Systems
- IGCC
- Aero-derivative Gas Turbines
  - Environmental Plants
  - Organic Rankine Cycle Systems

**Marine Machinery**

**Renewable Energy**
- Wind Turbines
- Pumps

**Nuclear Power**
- Pressurized Water Reactors (PWR)
- ATMEA1
- Nuclear Fuel Cycle

FY2016 net sales ¥1,448.4 billion

* As an equity-method affiliate, MVOW's sales are not included in the graph.

**Note:**

GTCC : Gas Turbine Combined Cycle, IGCC : Integrated coal Gasification Combined Cycle
1-2. FY2016 Major Projects and Orders Received

**<Europe>**
Offshore wind turbines
Order from Germany for 56 units of V164-8.0MW

**<S.E. Asia>**
Order for GTCC Power Generation Systems in Indonesia

**<CIS>**
Order for natural gas-fired GTCC power plant in Uzbekistan

**<Japan>**
Orders for IGCC power plants for Nakoso and Hirono power stations

**<USA>**
Orders for M-501J-Series gas turbines (GTCC)

**<USA>**
PW4000, V2500 and Trent engine parts (aero engines)

CIS: Commonwealth of Independent States
GTCC: Gas Turbine Combine Cycle
IGCC: Integrated coal Gasification Combined Cycle
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   1-2. FY2016 Major Projects and Orders Received

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4. Summary
2-1. FY2016 Summary & FY2017 Outlook

Operating income (In billion yen)

<table>
<thead>
<tr>
<th>FY2017 (Forecast)</th>
<th>FY2016 (Actual)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(7.5%)</td>
<td>(7.5%)</td>
</tr>
<tr>
<td>145.0</td>
<td>108.1</td>
</tr>
</tbody>
</table>

Orders received / Net sales

- **Thermal Power (MHPS)**
- **Other business divisions**

<table>
<thead>
<tr>
<th>FY2016 (Actual)</th>
<th>FY2017 (Forecast)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,726.3</td>
<td>1,950.0</td>
</tr>
<tr>
<td>1,448.4</td>
<td>1,650.0</td>
</tr>
</tbody>
</table>

FY2016 Summary and Issues

- **Orders received**
  - Deceleration and deferment of overseas orders for thermal power systems

- **Net sales**
  - Longer delivery periods for domestic coal-fired plants

- **Operating income**
  - Target set above 10% went unachieved due to imbalance between business scale and total assets / fixed costs caused by sales decrease and delayed PMI

FY2017 Outlook

- **Orders received**
  - Expansion in orders for nuclear power, aero engines, compressors, etc.

- **Net sales**
  - Increased progress on coal-fired power plant projects currently underway

- **Operating income**
  - Increase from sales growth and lower fixed costs and expenditures

MHPS : Mitsubishi Hitachi Power Systems, Ltd.
2-2. (1) Business Strategy / Overview

Seek to ensure significant and continuous growth

- **Core businesses**
  - Social/ Customer Change and Business Direction

- **New fields**
  - Business foundation

- **Global Strategies**

- **Individual Business Strategies**
  - Thermal Power
  - Compressors
  - Aero Engines
  - Nuclear Power
  - Renewable Energy

- **Turbomachinery Synergies**
  - IoT / AI Energy Solutions

- **Reorganization, Financial Strategies**

IoT : Internet of Things     AI : Artificial Intelligence

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Global outlook for new power generation facilities

- Medium/long-term growth in renewable energy

Flexible Capacity | Renewable | Nuclear | Combustion Cycle | Gas | Coal

GW/year

- IEA : International Energy Agency (WEO2016)

Global outlook for power generation volume

- Marked increase in renewable energy and gas-fired power plants
- Volume increase from coal to be minimal, but constituting a large percentage of total output

Reference : International Energy Agency (WEO2016)
2-2. (2) Social / Customer Change and Business Direction

Social evolution engendered by MHI products in response to changes sought by society and customers

<table>
<thead>
<tr>
<th>Before</th>
<th>Customer demands</th>
<th>MHI’s offerings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large-scale power utilities</td>
<td>Large-scale power reliable over the long term</td>
<td>Large-scale coal-fired power, GTCC, nuclear plants</td>
</tr>
</tbody>
</table>

Social trends
- Environmental concerns
- Renewable energy, technological progress

Now (and in future)

<table>
<thead>
<tr>
<th>Power utilities</th>
<th>Customer diversification</th>
</tr>
</thead>
<tbody>
<tr>
<td>More efficient power</td>
<td><strong>Core machinery &amp; integration</strong></td>
</tr>
<tr>
<td>Environmentally compatible power (away from coal, to renewable energy and gas)</td>
<td>High-efficiency gas turbines</td>
</tr>
<tr>
<td>Load-adjustment power</td>
<td>Offshore wind turbines, geothermal and biomass</td>
</tr>
<tr>
<td>Operation of power plant facilities</td>
<td>Low-carbon: IGCC, AQCS</td>
</tr>
<tr>
<td>Optimal power usage</td>
<td>Quick-start gas turbines, Aero-derivative gas turbines</td>
</tr>
<tr>
<td>New power producers</td>
<td>LTSA/Operation &amp; Maintenance</td>
</tr>
<tr>
<td>Large energy users</td>
<td>Total energy solutions</td>
</tr>
</tbody>
</table>

MPS-TOMONI™, ENERGY CLOUD®

2-2. (3) Global Strategies

**Europe:**
Expansion in renewable energy

- **Offshore wind turbines:** Market share expansion through launch of large-scale models (8MW and larger)

**Middle East & Africa:**
Next growing markets

- **Thermal power:** Project formulation through yen loans and use of ECA finance
- **Compressors:** Shared factory with MHPS in Saudi Arabia

**Asia:**
Actively use loans/finance for coal-fired thermal plants

- **Thermal power:** Project formulation through yen loans and use of ECA finance
- **Offshore wind turbines:** Seeking opportunities in Taiwan

**Japan:**
Our main market, seeking all opportunities

- **Thermal power:** Gas-fired replacement / biomass project enhancement
- **Nuclear power:** Support plant restarts
- **Offshore wind turbines**

**North America:**
Expansion of turbo machinery business

- **Thermal power:** Proactive participation in IPP development
- **Compressors:** Full-scale entry into Oil & Gas market

**Latin America:**
Next growing market

- **Thermal power:** Expand sales of next-generation gas turbines
- **Compressors:** Deepen collaboration with local partners

IPP: Independent Power Producer, ECA: Export Credit Agency
## 2-2. (4) Turbomachinery Synergies

### Turbomachinery Synergies

<table>
<thead>
<tr>
<th>Market</th>
<th>MCO</th>
<th>MHPS</th>
<th>Oil &amp; gas market</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Technology</th>
<th>MHIAEL</th>
<th>MHPS</th>
<th>Next-generation flexible gas turbines</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Manufacturing, Supply chain</th>
<th>MCO-I</th>
<th>MHPS-AMER</th>
<th>Shared factories</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Customer value</th>
<th>TOMONI</th>
<th>ENERGY CLOUD®</th>
<th>Integrated energy value chain services</th>
</tr>
</thead>
</table>

MCO : Mitsubishi Heavy Industries Compressor Corp.
MHPS : Mitsubishi Hitachi Power Systems, Ltd.
MHIAEL : Mitsubishi Heavy Industries Aero Engines, Ltd.
MCO-I : Mitsubishi Heavy Industries Compressor International Corp. (USA)
MHPS-AMER : Mitsubishi Hitachi Power Systems Americas, Inc.
TOMONI : MHPS-TOMONITM
2-2. (4) Turbomachinery Synergies

Turbomachinery Synergies: Market

Aims
- “One stop solution” service for the oil & gas market
- Creation of appealing products through integration

Action
- Expand sales of compressor trains for LNG combining MCO’s compressors and MHPS’s gas turbines for the oil & gas market

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MCO : Mitsubishi Heavy Industries Compressor Corp.  MHPS : Mitsubishi Hitachi Power Systems, Ltd.

Oil & Gas market
LNG compressor train driven by high-performance gas turbine
2-2. (4) Turbomachinery Synergies

### Turbomachinery Synergies: Technology

**Aims**

- Sharing of technologies and resources
- Development of next-generation turbomachinery products

**Action**

- Integrate gas turbine and aero engine technologies
- Improve technological competitiveness and products

### Industrial gas turbines (MHPS)

- **Induction gas turbine technologies**
- **Aero engine technologies**
- **Demonstration technologies**
- **3D printers**
- **CMC**

### Aero-derivative gas turbines (PWPS)

- **MHIAEL**
  - Quick drive and lightweight technologies

### Aero engines (MHIAEL)

- **MHPS**
  - High-efficiency gas turbine technologies

---

**Next-generation flexible gas turbines**

PWPS: PW Power Systems, Inc.  MHIAEL: Mitsubishi Heavy Industries Aero Engines, Ltd.

CMC: Ceramic Matrix Composites
### 2-2. (4) Turbomachinery Synergies

<table>
<thead>
<tr>
<th>Turbomachinery Synergies: Manufacturing, Supply chain</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aims</strong></td>
</tr>
<tr>
<td>- Higher productivity through optimal use of factories</td>
</tr>
<tr>
<td>- Formation of appropriate supply chains for procurement</td>
</tr>
<tr>
<td><strong>Action</strong></td>
</tr>
<tr>
<td>- Shared factories (USA)</td>
</tr>
<tr>
<td>- Formation of appropriate supply chain</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MCO-I (USA)</th>
<th>MHPS-AMER (USA)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Houston Works" /></td>
<td><img src="image" alt="Savannah / St. Louis Works" /></td>
</tr>
</tbody>
</table>

Higher productivity through factory sharing  
Formation of optimal supply chain

MCO-I : Mitsubishi Heavy Industries Compressor International Corp. (USA)  
MHPS-AMER : Mitsubishi Hitachi Power Systems Americas, Inc.
2-2. (4) Turbomachinery Synergies

Turbomachinery Synergies: Customer value

- Flexible operation
- Performance improvement
- O&M optimization

Energy Supply Chain

For power plants

MHPS-TOMONI™

For large energy users

Mitsubishi Heavy Industries

ENERGY CLOUD®

- Administration support, O&M support
- Energy management, Optimization
- Failure detection, Improved reliability

(O&M: operation and maintenance, EMS: Energy Management System)

*MHPS-TOMONI™ is a trademark of Mitsubishi Hitachi Power Systems Ltd.
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2-2. (5) Energy Solutions

ENERGY CLOUD® Service

Developed based on factory operation expertise cultivated through diversified product operations, technological strength, and experience in power generation facilities and related businesses.

ENERGY CLOUD® Service launched on April 1, 2017

- One-stop services ranging from AI-based data analysis to solutions
- Technology and service demonstrations underway at MHI Group’s domestic factories

Aiming for ¥100 billion business scale

- Assess how to successfully launch business operations overseas
- Consider how to optimize services to meet local needs

Visualization through use of IoT

AI-based data analysis

Analysis

O&M

Introduction of facilities

Asset management

Energy supply

Supply necessary energy when needed

Visualization

AI-based O&M

Provide equipment/facilities (depending on the age of facilities and supply/demand fluctuations)
2-2. (6) Reorganization

- Reduced domestic production (result of increased overseas production)
- Widely dispersed and superannuated domestic production facilities

**Core domestic bases**

**Improvement measures**

- Consolidation and reorganization of bases
  ⇒ Reduce fixed and variable costs
- Invest in facilities utilizing IoT / AI
- Develop (more advanced, multi-skilled) human resources
- Enhance land and facilities value through asset management

Productivity enhancement target: ≥30%

* The Kobe district employs a companywide shared factory arrangement
2-2. (7) Financial Strategies

Issue

Securing “resources for growth”
⇒ Seek expansion in new businesses and business areas

Mission

Formation of robust financial structure
⇒ Strengthen ability to generate cash flow and earning capacity

Measures

- Curb unnecessary cash outlays
  - Reduce and optimize fixed costs
  - Reduce inventory
- Enhance production efficiency
  - Consolidate and reorganize production bases
  - Reduce lead time (improve CCC)
- Strengthen project cash flow management

Immediate action

Reap benefits in FY2017

![Graph showing Ordinary free cash flow*](image)

+40%

![Graph showing Working capital](image)

Improve efficiency by reducing working capital by 30% even amid sales expansion

**Ordinary free cash flow***

<table>
<thead>
<tr>
<th>FY2016</th>
<th>FY2017</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Working capital**

<table>
<thead>
<tr>
<th>FY2016</th>
<th>FY2017</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

**CCC: Cash Conversion Cycle**

*Excludes extraordinary factors (South Africa project, AREVA investment)

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4. Summary
3-1. Thermal Power (1/7)

MHPS business environment and overview of FY2016

- Sluggish growth in business scale due to market saturation and intensified competition
- Earning capacity eroded from delayed reduction of fixed costs in line with business scale

Issues

- Stagnation of new thermal plant market
- Increasing demand for environmental load reduction
- Intensified competition
- Eroded earning capacity

Measures

1. Strengthen service business using IoT and AI
2. Strengthen information gathering for overseas markets and ability to formulate projects
3. Bring forward the launch of high-performance gas turbine models
4. Initiatives toward low-carbon society (IGCC/AQCS)
5. Reduce costs of ongoing projects
6. Reduce fixed costs in line with business scale

Scale of market for new thermal power plants

Market level unchanged

MHPS sales and operating income


IGCC: Integrated coal Gasification Combined Cycle Power Plants, AQCS: Air Quality Control System
3-1. Thermal Power (2/7)

Measure 1: Strengthen service business for thermal power plants through use of IoT / AI. Form win-win relationships with customers through improved performance and flexible operations.

Provide unprecedented value together with the customer.

MHPS’s core businesses
- Services tailored to customers, prioritizing the customer’s interests first
- High-quality products
- Partnership with customers
- Innovative technologies
- In-house O&M knowhow
- Total plant knowledge

MHPS’s core businesses

Flexible Operation
- O&M monitoring
- O&M Optimization

Advanced O&M
- O&M support
- Performance Improvement
- Efficiency optimization (equipment and plant levels)
- Remote operation
- Longer intervals between inspections
- Shorter schedule for regular inspections
- Higher operating ratios

Promote preventive maintenance, Short-term peak operation, Eco operation, recommend replacement parts during regular maintenance.

Data gathering & evaluation (digitalization)

- Early detection, automated warnings for malfunctions/anomalies and recovery measures
- Operating life extension measures, placing orders for spare parts
Measure 2: Strengthen information gathering for overseas markets and ability to formulate new projects
Expand project formulation capability overseas through opening bases in new markets through active
use of yen loans and ECA finance

- Warsaw Office (May 2017)
- Moscow Office (Aug 2016)
- Hanoi Office (Nov 2016)
- Global Service Center (Sep 2016)
- Costa Rica Geothermal plant ICE Las Paila II (Oct 2016)
- Bangladesh GTCC Bibiyana (Apr 2016)
- Kenya Geothermal plant Kengen Olkaria V (Feb 2017)
- Indonesia GTCC JAVA-2 (Dec 2015)
- Indonesia Coal-fired plants Tanjung Jati (Mar 2017)
- Indonesia GTCC Muara Karang (Sep 2016)
- Bosnia Herzegovina Desulfurization equipment Ugljevik (Jul 2016)
- Dubai Branch (May 2016)
- Uzbekistan GTCC Navoi-2/Turakurgan (Oct/Nov 2016)
- MHPS Latin America (Apr 2016)

- Existing MHPS bases
- MHPS bases opened since 2016
- Projects utilizing ECA (Export Credit Agency) finance
- Projects utilizing yen loans

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3-1. Thermal Power (4/7)

Measure 3: Bring forward the launch of high-performance gas turbine models
Compared to competitors, secure superiority in performance in main market
(above 300MW)

Business environment

Amid overall stagnant market, market for gas turbines above-300MW is expanding. Becoming main market.

Issue

In the above-300MW market (first developed by MHI), competitors have launched their latest models.

【Gas turbine market scale】

【Combined thermal efficiency (LHV)】

Compared to competitors, secure superiority in performance in main market (above 300MW)

- Bring forward the launch of 1650°C-class next-generation gas turbines outperforming others’ systems to 2019, i.e. 1.5 years ahead of initial schedule.
- Commence business discussion with customers immediately.
- Get top share of the above-300MW market

【Launch timetable】

Measure 4: Initiatives toward a low-carbon society / IGCC, AQCS

Active promotion of IGCC:
Market penetration overseas, applying world’s leading technologies, cultivated in Japan

Joban Joint Power Co., Ltd.
Nakoso

- Demonstrator operation: 2007-
- Commercial operation: 2013-

- Accumulate operation and maintenance expertise through long-term operations (current record holder for longest operation of IGCC)

Nakoso / Hirono IGCC projects
(2020 and beyond)

- Strengthen cost competitiveness based on repeat and high-volume merit of domestic large-scale systems

Market penetration overseas

- Target markets in coal-producing countries, where needs for coal-fired plants are robust, stress contribution to environmental footprint reduction

Global expansion of AQCS

One Stop Solution

- Reduce environmental footprints of coal-fired plants through completion of full AQCS lineup
- Provide coal-fired power plants incorporating state-of-the-art environmental equipment
  - Promote environmental plants in China to deal with PM2.5 (high-performance soot removal systems and electrostatic precipitators)
  - Promote coal-fired thermal power plants in Southeast Asia and India with environmental systems suited to those regions

Coal-fired boilers
Denitrification equipment
GGH
Electrostatic precipitators
Desulfurization equipment
GGH

IGCC: Integrated coal Gasification Combined Cycle Power Plants
AQCS: Air Quality Control System
GGH: Gas-Gas Heater
Measure 5: Reduce costs of ongoing projects
Improve profitability through swift and orderly implementation

World’s foremost capability in power plant EPC

Building on the numerous coal-fired power plant projects currently underway, make use of proven EPC expertise

EPC execution capability, project management experience

Abundant work volume, optimal lead time to work commencement

Pursue optimal QCD, improve profitability

Execute 5 consecutive projects in Indonesia (example)

- Using the same platform, perform efficient project management of 5 projects being simultaneously executed in FY2017-FY2019
- For the 5 projects together, undertake bulk transport and loading, procurement, horizontal VE development, and common parts utilization

Ratios of Coal-fired Power Plant orders already received

<table>
<thead>
<tr>
<th>Year</th>
<th>Orders already received</th>
<th>Orders due to be received</th>
<th>Ratio of already received orders to total plant project sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>FY2015</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY2016</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY2017</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY2018</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

EPC: Engineering Procurement and Construction  QCD: Quality, Cost, Delivery  VE: Value Engineering
Measure 6: Reduce fix costs in line with business scale

Improve productivity, strengthen competitiveness and enhance earning capacity through consolidation of production bases for each product

**Gas Turbines**
- Consolidate at Takasago Works*1

**Large-scale Steam Turbines, Nuclear Turbines and Hydraulic Turbines**
- Consolidate at Hitachi Works*2

**Industrial Steam Turbines and Boilers**
- Consolidate at Nagasaki Works

Achieve the following through consolidation of production lines and factors for each product
1. Higher productivity
2. Promotion of effective use of assets
3. Streamlining of supply chain

Consolidation of Gas Turbines

Consolidation of Large-scale Steam Turbines

Consolidation of Industrial Thermal Power products

*1 For the time being, production of small/medium gas turbine rotors and high-temperature components will remain at the Hitachi Works until a final evaluation is made of market conditions and cost effectiveness.

*2 In future, nuclear turbines will be consolidated at the Hitachi Works when market conditions and other factors warrant this.
3-2. Compressors

Business environment
As oil prices stabilize, demand for new plants will show signs of gentle recovery starting in late 2017

Strategies
- Strengthen both domestic and overseas business foundations and raise profitability in order to successfully compete globally
- Strengthen service business offerings

Issue
- Intensifying competition between companies in a oligopolistic market

Measures
- Expand sales of compressor trains in the oil & gas field through combined offerings with MHPS gas turbines
- Increase market share in petrochemicals, a market in which we have several strengths.
- Expand service business
  - Strengthen alliances with system-oriented companies
  - Improve local response capabilities at overseas service facilities (USA, Saudi Arabia, Brazil, Russia)
  - Share resources with gas turbine facilities

Market scale of compressor business
- Services
- New Units

Declining oil prices
Recovery trajectory

Business scale (by orders received)
- Services
- New Units

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## 3-3. Aero Engines

### Business Environment
- Growing market sustained by robust aircraft demand
- Business will expand sharply when delivery of new aircraft ramps up

### Strategies
- Increased involvement in engine design and expansion of assembly/overhaul businesses
- Improve competitiveness by boosting production tie-ups with operational partners

### Issues
- Long-term business model requiring long time period in which to reap investment returns
- Responding to sharp production increases

### Measures
- Optimize program mix (recovery period / investment period)
- Enhance SCM through use of IoT / AI and transform into smart factory (promote as model factory for entire company)
- Strengthen business portfolio through expansion of engine assembly and overhaul businesses (V2500 overhaul, assembly and test of MRJ engines)
- Enhance collaboration with engine OEMs (Pratt & Whitney, Rolls-Royce)

### Business scale

**Expansion to ¥100 billion within several years**
- Full-scale increases in production and earnings starting in FY2017

**V2500 engine repair business**

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SCM: Supply Chain Management  MRJ: Mitsubishi Regional Jet  MRO: Maintenance, Repair and Overhaul
### 3-4. Nuclear Power (1/2)

#### Business environment
- Important base-load power supply source within the domestic energy mix
- Global expansion of nuclear power generation

#### Strategies
- Contribute to nuclear plant restarts in Japan, and nuclear fuel cycle process
- Promote plant projects overseas with reinforced risk management

#### Issues
- Strengthening of product competitiveness (collaboration with AREVA, etc.)
- Transfer of technology/skills over the long-term, optimization of resources

#### Measures
- Support nuclear plant restarts in Japan
- Promote Sinop project (ATMEA1) in Turkey (strengthen overseas business risk management)
- Encourage nuclear fuel cycle process (support of safety enhancement measures, etc.)
- Support stabilization of Fukushima Daiichi Nuclear Plant (development of remote-controlled robots, etc.)
- Strengthen collaboration through investment in AREVA

#### Business scale (by net sales)

<table>
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<tr>
<th>Year</th>
<th>2016</th>
<th>2017</th>
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3-4. Nuclear Power (2/2) Investments relating to AREVA

- Investment into stable earnings businesses after separation from existing risks
- Creation and expansion of business opportunities through strengthening of strategic relationships with EDF and New AREVA

**Purpose of investment into NewCo**
- Reinforce collaboration with global leader (AREVA) in field of nuclear fuel cycle
- Strengthen MHI’s response capability to reactor decommissioning and fuel cycle

**Purposes of investment into New ANP**
- Increase business opportunities, including ATMEA, through expanded collaboration with EDF
- Achieve stable profitability at New ANP
  - After-sale services and fuel cycle
  - Reactor-related engineering business (no EPC risk)

**Carve-out (isolation)**

- French government: ~100%
- AREVA SA: ~40%
- AREVA NP: 100%
- NewCo: ~50%
- JNFL: 5%(Approx. 250M€)
- MHI: 5%(Approx. 250M€)

**Third party**
- Carve-out
- Transfer

**EDF**
- New ANP: 51%
- After-sale services
- Nuclear fuel cycle
- New installations (Engineering, NSSS, safety-related I&C)

**MHI**
- New ANP: 50%
- Transfer

**ATMEA**
- New ANP: 50%

**Under discussion**

**EDF**: Électricité de France, **JNFL**: Japan Nuclear Fuel Limited, **NSSS**: Nuclear Steam Supply System, **I&C**: Instrumentation & Control

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3-5. Renewable Energy (Offshore Wind Power)

- Significant increase of renewable energy in Europe
- Remarkable downward trend of wind energy costs

**Strategies**
Expand and stabilize the business by establishing mass production as planned

**Issues**
Boosting technological and economic strength, achieving a dominant position in the market

**Measures**
- Launching improved high-rated 9.0MW/9.5MW model, to meet needs for large-scale turbines (above 8MW)
- Keeping high availability of existing fleets through preventive maintenance
- Penetration into new markets (U.S, Taiwan and Japan)

European offshore wind power market

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Business scale (by net sales)

(MVOW only)
1. Business Overview
   1-1. Overview
   1-2. FY2016 Major Projects and Orders Received

2. FY2017 Business Strategy
   2-1. FY2016 Summary & FY2017 Outlook
   2-2. Business Strategy

3. Individual Business Strategies
   3-1. Thermal Power
   3-2. Compressors
   3-3. Aero Engines
   3-4. Nuclear Power
   3-5. Renewable Energy

4. Summary
4. Summary

Goal of Power Systems Domain

We aim to MOVE THE WORLD FORWARD by becoming the top company globally for energy solutions and turbomachinery.

Create new value for customers through core machinery and integration.

Core Machinery

High-temperature, high-precision, high-quality machinery products

Gas Turbines

Steam Turbines

Nuclear Reactors

Gasifier

Offshore Wind Turbines

Compressors

Aero Engines

Integration

Total engineering solutions with complex systems

AQCS: Air Quality Control System

We focus on making a positive impact on people’s lives around the world to deliver environmentally friendly and safe products.
MOVE THE WORLD FORWARD