Power and New Energy Business Strategies

May 25, 2017
Fuji Electric Co., Ltd.
Power and New Energy Business Group
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■ FY2017 Management Plan
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Business Overview
Contribute to the realization of a sustainable society by stably creating safe and secure energy

*Develop businesses with maximized environmental performance, efficiency, economic benefits, value, and innovation*

- **Renewable and new energies**
  - **Solar power**
  - **Wind power**
  - **Geothermal Power**
    - Cover wide range of output from small- to large-capacity (flash / binary)
  - **Hydro power**
    - Cooperate with Voith Hydro of Germany.
    - Strength in low-head hydropower generation technologies
  - **Thermal power**
    - Cover wide range of output from small- to large-capacity
  - **Fuel Cells**
    - Provide high-performance, highly reliable industrial phosphoric acid fuel cells
  - **Fuel handling equipment and waste treatment**

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Review of FY2016
Review of FY2016

Initiative Results in FY2016
- Expanded after sales businesses through acquisition of RTS
- Finished construction of first binary geothermal power plant
- Continued receiving orders and sales for hydroelectric power generation facilities
- Completed delivery of large-scale order for solar power generation facilities

Challenges to Be Tackled in FY2017
- Expansion of orders for thermal, geothermal, and solar power generation facilities

Amount of Orders Received (Billion yen)

<table>
<thead>
<tr>
<th></th>
<th>FY2015 Results</th>
<th>FY2016 Results</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Power</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>113.9</td>
<td>83.7</td>
<td>-30.2</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
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</table>

Net Sales (Billion yen)

<table>
<thead>
<tr>
<th></th>
<th>FY2015 Results</th>
<th>FY2016 Results</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Power</td>
<td>88.9</td>
<td>93.8</td>
<td>+4.9</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Operating Income / Operating Margin (Billion yen)

<table>
<thead>
<tr>
<th></th>
<th>FY2015 Results</th>
<th>FY2016 Results</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Power</td>
<td>7.3</td>
<td>7.5</td>
<td>+0.2</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>8.2%</td>
<td>8.0%</td>
<td></td>
</tr>
</tbody>
</table>
FY2017 Management Plan
Business Policies

Pursue stable and continuous business growth by accurately addressing increase in power demand (particularly for renewable energy) with integrated operation structure specializing in power plants and consolidating related sales divisions

- Expand orders (thermal, geothermal, and solar power generation facilities)
- Secure stable earnings by expanding after sales businesses
- Enhance project management capabilities
Business Plan

Amount of Orders Received (Billion yen)

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<thead>
<tr>
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<th>FY2016 Results</th>
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<tbody>
<tr>
<td>Renewable Energy, Others</td>
<td>83.7</td>
<td>112.7</td>
</tr>
<tr>
<td>Thermal Power</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Net Sales (Billion yen)

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<tr>
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<th>FY2016 Results</th>
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<tbody>
<tr>
<td></td>
<td>93.8</td>
<td>100.5</td>
</tr>
</tbody>
</table>

Net Sales in Japan / Overseas (Billion yen)

<table>
<thead>
<tr>
<th></th>
<th>FY2016 Results</th>
<th>FY2017 Management Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio of Overseas Sales</td>
<td>22%</td>
<td>22%</td>
</tr>
<tr>
<td>Overseas</td>
<td>93.8</td>
<td>100.5</td>
</tr>
<tr>
<td>Japan</td>
<td>73.1</td>
<td>78.2</td>
</tr>
</tbody>
</table>

Operating Income / Operating Margin (Billion yen)

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<tr>
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<th>FY2016 Results</th>
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<tbody>
<tr>
<td></td>
<td>7.5</td>
<td>6.5</td>
</tr>
<tr>
<td>Ratio of Overseas Sales</td>
<td>8.0%</td>
<td>6.5%</td>
</tr>
<tr>
<td>Overseas</td>
<td>20.7</td>
<td>22.3</td>
</tr>
<tr>
<td>Japan</td>
<td>73.1</td>
<td>78.2</td>
</tr>
</tbody>
</table>
Continuing global growth in electricity demand and increasing installation of generation facilities

Global Power Generation Capacity

- Nuclear: 6,117 GW, CAGR 2.9% (CY2014–CY2025)
- Thermal: 8,371 GW
- Renewable energy: 1,722 GW, CAGR 5.6% (CY2014–CY2025)
- Solar: Primarily China, Europe, and Americas
- Wind: Primarily China, Americas, and Asian region
- Hydro: CAGR 2.9% (CY2014–CY2025)
- Other Geothermal: 3,147 GW

Of Which, Renewable Energy

- Renewable energy: 1,722 GW, CAGR 5.6% (CY2014–CY2025)
- Solar: Primarily China, Europe, and Americas
- Wind: Primarily China, Americas, and Asian region
- Hydro: CAGR 2.9% (CY2014–CY2025)
- Other Geothermal: 3,147 GW

- Annual growth rate (CY2014–CY2025) of 2.1% for global energy demand*
  - Developed nations: 0.7% annual growth
  - Emerging nations: 3.1% annual growth
- Improvement of economic performance through higher efficiencies and reduction of environmental impact
- Promotion of geothermal power generation plant introduction by government measures and subsidies
  - Rising demand in Africa following trend in Indonesia

* Source: IEA World Energy Outlook 2016

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Continually acquire orders for thermal power generation (IPP, PPS)* in Japan (acquire additional orders from existing customers and approach new customers)

- Advance ongoing initiatives related to combined-cycle and ultra-supercritical coal-fired thermal power generation plants

Expand orders in Asia and the Near and Middle East through acquisition of new customers (utilize bases and collaborate with local partners)

Promote development ventures for bolstering product lineup and increasing efficiency

- Expand range of application of reheat turbine model series (FATR)
- Achieve compatibility with high-temperature and high-pressure plants to realize increased cycle efficiency

Promote extensive risk management and secure income by enhancing project management capabilities

<Reheat Turbine Product Lineup>

<table>
<thead>
<tr>
<th>Model</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>KN</td>
<td>High performance at sub-critical levels (Compatible with high temperatures)</td>
</tr>
<tr>
<td>FATR</td>
<td>Various medium-capacity reheat turbines compatible with different capacities and usage conditions</td>
</tr>
<tr>
<td>HMN</td>
<td>Compatible range spanning from sub-critical to ultra-supercritical (~300bar / ~630°C)</td>
</tr>
</tbody>
</table>

* IPP: Independent power producer, PPS: Power producer and supplier
Geothermal Power—Priority Measures

- Continue acquiring orders in Asia and expand orders in the African and Central and South American markets
  - Coordinate with existing partners (Asia) and new partners (Africa and Central and South America)
  - Improve plant efficiency

- Expand orders for flash and binary geothermal power generation facilities and hot spring power generation facilities in Japan
  - Leverage existing track record to promote sales of binary geothermal power generation facilities

<Binary Geothermal Power Generation>
Robust product lineup covering capacities up to and exceeding 10 MW

Takigami Binary Geothermal Power Plant of Idemitsu Oita Geothermal Co., Ltd.

- Start of commercial operation: March 1, 2017
- Location: Kokonoe Town, Kusu-gun, Oita Prefecture
- Generation capacity: 5,050 kW
  Annual generation capacity: 31 million kWh
- Generation conducted utilizing hot water exhaust from Takigami Power Station of Kyushu Electric Power Co., Inc.
Expansion of After Sales Businesses  
(Thermal and Geothermal Power)

- Complete global service network and enhance capabilities of each base
- Convert to proposal-based approach for maintenance and repair projects
  - Expand lineup of offerings for optimizing plant lifecycles
  - Bolster service lineup and broaden scope (local repair, construction)
- Establish dedicated sales divisions for after sales services and dedicated technological proposal divisions
- Cultivate local engineers

Portion of total sales attributable to after sales businesses (thermal and geothermal power):  
30% on average over past 3 years → 40% in FY2018
Hydro Power—Priority Measures

■ Steadily advance initiatives in relation to after sales services for existing power plants (including output increases)
  ▪ Promote output increases at existing power plants by upgrading runners and generators while also performing periodic maintenance

■ Expand orders for S&B projects and new power plants taking advantage of FIT scheme
  ▪ Proactively seek to acquire projects from power companies, enterprise bureaus, and private-sector companies

■ Differentiate operations by utilizing new, eco-friendly technologies
  ▪ Minimize sizes of hydro servos, water lubricated bearings, hydraulic equipment, etc.

【Turbine and Generator Upgrades】
Akiha No. 1 Power Station of Electric Power Development Co., Ltd.
  • Turbine type: Vertical Francis turbine (2 units, 22.6 MW capacity)
  • Start of operation: May 2017 for No. 2
    May 2018 for No. 1 (tentative)

【Turbine Runner Blade Upgrade】
Nishi-Kadohara Power Station No. 3 of Hokuriku Electric Power Company
  • Turbine type: Vertical diagonal flow water turbine (1 unit, 49.5 MW capacity)
  • Start of operation: March 2017
Only 27% of approved generation facilities operational (as of December 31, 2016)

Ongoing demand for construction expected to last through 2018, but number of projects to decline gradually following abolition of approval system
Solar Power—Priority Measures

- Step up initiatives targeting large-scale EPC projects
  - Acquire orders for large-scale mega solar projects
  - Advance order acquisition activities for projects that entail attached electricity storage facilities
  - Thoroughly manage progress of large-scale mega solar projects and reduce costs

- Increase sales volumes through the introduction of new products
  - Expand sales volumes of system equipment by launching new power conditioning subsystems (PVI1000BJ-3P/1000)

- Prepare for overseas expansion of solar power operations (target Asian market as first step)
  - Coordinate with overseas sales companies and develop products for global market

Mega solar plant in Hikari City, Yamaguchi Prefecture owned by Hikari Energy LLC
EPC project with annual generation capacity of 14 MW completed in January 2017

Kamikita Rokkasho Solar Power Plant of Mirai Power (Kamikita Rokkasho) Corporation (subsidiary of Sojitz Corporation)
EPC project with annual generation capacity of 51 MW completed in March 2017
Wind Power, Fuel Cells, Nuclear Power-Related Equipment—Priority Measures

■ Wind Power
  • Promote sales targeting EPC projects for small-scale plants that are exempt from environmental assessments

■ Fuel Cells
  • Utilize patents of Fuji N2telligence to promote sales in German fire prevention market through collaboration with fire prevention equipment manufacturers
  • Quickly launch SOFCs* that will serve as high-efficiency distributed power sources (FY2018)

■ Nuclear Power-Related Equipment
  • Enter into plant decommissioning field with Europe’s cutting-edge solidification technology (SIAL®)*
  • Steadily produce MOX fuel manufacturing equipment compatible with new standards

* SOFCs: Solid oxide fuel cells
* SIAL® is a registered trademark of AMEC Foster Wheeler plc of the United Kingdom.

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Capital Investment / Research and Development

Invest in strengthening manufacturing capabilities and developing competitive, high-value-added products to continually and stably expand business.

**Capital Investment (Billion yen)**

- FY2016 Results: 1.2
- FY2017 Management Plan: 1.5 (Change +0.3)

**Research and Development (Billion yen)**

- FY2016 Results: 1.6
- FY2017 Management Plan: 2.0 (Change +0.4)

- Manufacturing equipment at Kawasaki Factory (rationalization, etc.)
- Enhancement of equipment at RTS

- Efficiency increases for thermal turbines
- Development of new power conditioning sub-systems for solar power
- Next-generation fuel cell (SOFC) development

*R&D expenditure figures above represent expenditures that have been allocated to segments based on theme and may therefore differ from figures contained in consolidated financial reports.*

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