The President Discusses the J-POWER Group’s Business Strategies

The Medium-Term Management Plan and Initiatives in Fiscal 2019

Since formulating the Medium-Term Management Plan in 2015, the J-POWER Group has steadily begun operations at new development projects, achieving gradual growth. Such projects include four wind power facilities, including the Ohma Wind Farm, the Wasabizawa Geothermal Power Plant, Takehara Thermal Power Plant New Unit No. 1, and Kashima Power in Japan, as well as U-Thai IPP in Thailand and the Westmoreland Power Plant in the United States. Furthermore, we have advanced initiatives aimed at further growth going forward, such as surveys for new development and demonstration trials of oxygen-blown integrated coal gasification combined cycle (IGCC) with CO₂ separation and capture.

Medium-Term Management Plan (Formulated in 2015)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growth</strong></td>
<td>J-POWER EBITDA* Increase to around 1.5x the level of FY2014 in FY2025 (FY2014 result: ¥181.8 billion)</td>
</tr>
<tr>
<td><strong>Soundness</strong></td>
<td>Interest-bearing debt J-POWER EBITDA Improve from level at end of FY2014 by end of FY2025 (End of FY2014 result: 9.5x)</td>
</tr>
</tbody>
</table>

* J-POWER EBITDA= Operating income + Depreciation and amortization + Equity in earnings of affiliates

Main Projects That Have Begun Operations and Other Initiatives since the Launch of the Medium-Term Management Plan:

<table>
<thead>
<tr>
<th>Date</th>
<th>Initiative</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 2019</td>
<td>Began construction on the Kaminokuni No. 2 Wind Farm</td>
<td>Generation capacity: 42 MW Began operation in September 2021</td>
</tr>
<tr>
<td>January 2020</td>
<td>Began operation of the Setana-Osato Wind Farm</td>
<td>Generation capacity: 50 MW Began operation in October 2020</td>
</tr>
<tr>
<td>January 2020</td>
<td>Began operation of the Nikaho No. 2 Wind Farm</td>
<td>Generation capacity: 41 MW Began operation in October 2020</td>
</tr>
<tr>
<td>July 2019</td>
<td>Began development survey of Sakai offshore wind power generation project</td>
<td>Generation capacity: 40 MW Began development survey of Sakai offshore wind power generation project</td>
</tr>
<tr>
<td>August 2019</td>
<td>Began development survey of Fukui Prefecture Awara offshore wind power generation project</td>
<td>Generation capacity: 40 MW Began development survey of Fukui Prefecture Awara offshore wind power generation project</td>
</tr>
<tr>
<td>November 2019</td>
<td>Began operation of the Nihonkai No. 2 Wind Farm</td>
<td>Generation capacity: 40 MW Began operation in November 2019</td>
</tr>
<tr>
<td>April 2019</td>
<td>Began construction on the Ashoro Repowering project</td>
<td>Generation capacity: 40 MW Began construction on the Ashoro Repowering project</td>
</tr>
<tr>
<td>April 2019</td>
<td>Began construction on the Shinkatsurazawa hydroelectric plant</td>
<td>Generation capacity: 40 MW Began construction on the Shinkatsurazawa hydroelectric plant</td>
</tr>
<tr>
<td>May 2019</td>
<td>Began operation of the Wasabizawa Geothermal Power Plant</td>
<td>Generation capacity: 46 MW Began operation of the Wasabizawa Geothermal Power Plant</td>
</tr>
<tr>
<td>July 2019</td>
<td>Began resource surveys at Takahatayama site in Miyagi Prefecture</td>
<td>Generation capacity: 14.9 MW Began resource surveys at Takahatayama site in Miyagi Prefecture</td>
</tr>
<tr>
<td>August 2019</td>
<td>Began construction on the Appi Geothermal Power Plant</td>
<td>Generation capacity: 14.9 MW Began construction on the Appi Geothermal Power Plant</td>
</tr>
<tr>
<td>June 2019</td>
<td>Began construction on the Jackson Power Plant in the United States</td>
<td>Generation capacity: 200 MW Began construction on the Jackson Power Plant in the United States</td>
</tr>
<tr>
<td>September 2019</td>
<td>Signed memorandum of understanding regarding a strategic alliance with Malakoff Corporation Berhad in Malaysia</td>
<td>Generation capacity: 350 MW (AC) Signed memorandum of understanding regarding a strategic alliance with Malakoff Corporation Berhad in Malaysia</td>
</tr>
</tbody>
</table>
| March 2020 | Began large-scale solar photovoltaic project in Texas in partnership with AP Solar | Generation capacity: 350 MW (AC) Began large-scale solar photovoltaic project in Texas in partnership with AP Solar 

1. Figures for generation capacity are those for the respective facilities, not on an owned capacity basis.
2. Forecast based on the consolidated earnings forecasts for the year ending March 31, 2021 provided in “Financial Results (Unaudited) (for the Year Ended March 31, 2020)” (published April 30, 2020)
The J-POWER Group’s Long-Term Direction and Key Initiatives

For the energy industry, the period leading up to 2050 represents a time of major transition driven by efforts to respond to climate change, growing energy demand in emerging countries, and technological innovation, including the advance of digital transformation. Within J-POWER, we have had deep discussions regarding our corporate direction over the long term and key initiatives to focus on in this period of transition in light of scenarios for 2050 created by the IEA1 and other research institutions in and outside Japan.

As for the domestic business environment in 2050, final energy consumption is expected to have decreased due to population decline and efforts to address climate change, but electricity demand is expected to have remained flat or even increased slightly. This is because the direct use of fossil fuels in homes, transportation, and industry is expected to be replaced by the use of CO2-free electricity. Japan will not be able to fully meet electricity demand with renewables and nuclear power, so it will need to utilize a good balance of diverse power sources that includes fossil fuel power, such as coal-fired and gas-fired thermal power. Given this, to contribute to the achievement of Japan’s greenhouse gas reduction targets, achieving zero emissions of CO2 from all power sources will be essential.

The J-POWER Group is contributing to the stable supply of power in Japan and addressing climate change not only by promoting renewable energy and nuclear power, but by working to achieve a CO2-free power supply using a wide range of approaches, such as commercializing combinations of renewables with batteries and of thermal power sources with CCUS2 technology, as well as pursuing the possibilities of hydrogen power and other new resources.

Just as in Japan, there are growing needs for CO2-free power supply overseas. At the same time, in emerging countries, electricity consumption is expected to see major expansion due to population and economic growth. Aiming to both contribute to economic development and the fight against climate change, the J-POWER Group is exploring the potential of diverse power sources in line with specific conditions in the countries in which it operates.

Based on this long-term direction, we have designated six key initiatives to focus on going forward.

---

1. International Energy Agency
2. CCUS: CO2 capture, utilization and storage
The President Discusses the J-POWER Group’s Business Strategies

Current business environment
- Needs for action that addresses climate change challenges
- Japan: Deregulation of power market and intensifying competition, needs for stable power supply and resilience
- Overseas: Needs for measures that simultaneously address increasing energy demand and climate change
- Developing the business environment to support distributed power system dissemination

Direction of initiatives
- Realize zero-emission power supply
- Further expand globally
- Develop new businesses taking advantage of business environment changes
- Strengthen the business foundation to support the above initiatives

Further Expansion of Renewable Energy
As a leader in renewable energy boasting the second-highest generation capacity in Japan in terms of both hydroelectric and wind power, the J-POWER Group is reinforcing and accelerating initiatives to achieve its target for fiscal 2025 of approximately 1 GW in new renewable energy development.

In onshore wind power generation, our track record of development, maintenance, and operation extends more than 20 years. As of March 31, 2020, we have two projects under construction and 11 in preparation for construction or for development. Going forward, we will continue to work toward scale expansion through the development of new sites and replace facilities at existing sites with larger turbines.

In domestic offshore wind power generation, we are preparing for development in port areas specified by the city of Kita-Kyushu and advancing development surveys of three general sea areas. Overseas, we are taking part in a development project in the United Kingdom, where many offshore wind farms have already been developed, accumulating expertise related to construction, maintenance, and operations. Using the expertise gained from this project, we aim to secure large-scale development projects in general sea areas of Japan, which are expected to expand going forward.

We are also steadily advancing construction and development of geothermal and hydroelectric projects, working to further expand our business scale and reinforce our foundations in renewable energy.

Note: For details about the further expansion of renewable energy, please refer to pp. 22–25.

Zero Emissions from Fossil Fuel Power Generation
Since the start of 2020, the Japanese government has begun discussions about shutting down inefficient coal-fired thermal power facilities. Because Japan has few energy resources, from an energy security perspective, a certain amount of coal-fired thermal power is necessary. As such, technological development aimed at achieving zero emissions from fossil fuel power will only grow in importance going forward.

To achieve zero emissions from fossil fuel power, the J-POWER Group is currently implementing demonstration tests of oxygen-blown integrated coal gasification combined cycle (IGCC) with CO₂ separation and capture at Osaki CoolGen. We are also advancing other diverse initiatives to this end, for example, putting CO₂ to effective use (carbon recycling) and leveraging gasification technologies to utilize hydrogen.

Of note, we aim to commercialize oxygen-blown IGCC in the latter half of the 2020s.

Note: For more details about IGCC, CCUS, and hydrogen, please refer to pp. 26–29.

Renewable Energy Expansion Target
We are also steadily advancing construction and development of geothermal and hydroelectric projects, working to further expand our business scale and reinforce our foundations in renewable energy.

Note: For details about the further expansion of renewable energy, please refer to pp. 22–25.

Key initiatives
1. Further expansion of renewable energy
2. Zero emissions from fossil fuel power generation
3. Promotion of the Ohma Nuclear Power Plant Project, with safety as a major prerequisite
4. Exploring new fields in overseas business
5. Initiatives for distributed energy service
6. Strengthening the profit base, financial discipline, and human resource strategy

Further Expansion of Renewable Energy
As a leader in renewable energy boasting the second-highest generation capacity in Japan in terms of both hydroelectric and wind power, the J-POWER Group is reinforcing and accelerating initiatives to achieve its target for fiscal 2025 of approximately 1 GW in new renewable energy development.

In onshore wind power generation, our track record of development, maintenance, and operation extends more than 20 years. As of March 31, 2020, we have two projects under construction and 11 in preparation for construction or for development. Going forward, we will continue to work toward scale expansion through the development of new sites and replace facilities at existing sites with larger turbines.

In domestic offshore wind power generation, we are preparing for development in port areas specified by the city of Kita-Kyushu and advancing development surveys of three general sea areas. Overseas, we are taking part in a development project in the United Kingdom, where many offshore wind farms have already been developed, accumulating expertise related to construction, maintenance, and operations. Using the expertise gained from this project, we aim to secure large-scale development projects in general sea areas of Japan, which are expected to expand going forward.

Zero Emissions from Fossil Fuel Power Generation
Since the start of 2020, the Japanese government has begun discussions about shutting down inefficient coal-fired thermal power facilities. Because Japan has few energy resources, from an energy security perspective, a certain amount of coal-fired thermal power is necessary. As such, technological development aimed at achieving zero emissions from fossil fuel power will only grow in importance going forward.

To achieve zero emissions from fossil fuel power, the J-POWER Group is currently implementing demonstration tests of oxygen-blown integrated coal gasification combined cycle (IGCC) with CO₂ separation and capture at Osaki CoolGen. We are also advancing other diverse initiatives to this end, for example, putting CO₂ to effective use (carbon recycling) and leveraging gasification technologies to utilize hydrogen.

Of note, we aim to commercialize oxygen-blown IGCC in the latter half of the 2020s.

Note: For more details about IGCC, CCUS, and hydrogen, please refer to pp. 26–29.
Promotion of the Ohma Nuclear Power Plant Project, with Safety as a Major Prerequisite

For Japan, with its few energy resources, nuclear power generation is an essential baseload power source from the perspective of ensuring a stable energy supply. At the same time, it is also a CO₂-free power source.

Because the Ohma Nuclear Power Plant will use entirely uranium-plutonium mixed oxide (MOX) for fuel, it will play a central role in the nuclear fuel cycle, thereby contributing to Japan’s energy security.

The Ohma Nuclear Power Plant is currently under construction and undergoing a review of compliance with the New Safety Standard for Nuclear Power Stations by the Nuclear Regulation Authority. We are appropriately responding to this review and constantly working to further improve safety as we steadily advance the Ohma Nuclear Power Plant Project toward the start of operations.

Exploring New Fields in Overseas Business

The J-POWER Group entered the overseas power generation business in earnest in 2000. Since then, we have expanded business scale and revenue through the new development of thermal power based on long-term PPAs, mainly in Southeast Asia and the United States. Currently, we are advancing construction of the Central Java Project in Indonesia, the Triton Knoll Offshore Wind Farm in the United Kingdom, and the Jackson Power Plant in the United States. In addition, in March 2020, we began development of our first solar photovoltaic project in the United States.

Going forward, in addition to steadily advancing these projects, we aim for new business development that leverages changes in business environments overseas.

In addition to Southeast Asia and the United States, where we already have established business platforms, we are aiming to expand into countries and regions where future population and economic growth is expected. In terms of business fields, until now we have focused mainly on thermal power development. However, we aim to reinforce initiatives related to zero-emission power sources, participating and taking on risk from the early stages of new development of wind, solar, and other renewables to secure revenue. In the business of power generation based on conventional large-scale power plants as well, we will expand business opportunities in line with each country’s circumstances and business environment.

As we work to expand our fields of activity, we will aim for revenue expansion and further growth in the overseas power generation business.

Initiatives for Distributed Energy Service

Since fiscal 2018, J-POWER has taken part in the electric power retailing business in partnership with ENERES Co., Ltd., Suzuyo Shoji Co., Ltd., and other companies. Building on these efforts, we are pursuing business opportunities aimed at the popularization and expansion of distributed energy services focused mainly on solar and other renewables. As part of such efforts, we are already taking part in the VPP construction business. In addition, by combining our technologies with those of startups, we are approaching distributed services from business areas outside of energy services.

Business Environment Changes

- Thermal power development projects with long-term PPAs are decreasing
- Development needs are diversifying by country and region
- Electric power business structures are changing in countries where deregulation and the introduction of renewables are advancing

Future Business

- New development of renewables
- Take on risk to participate from early development stages
- Aim to expand chances to acquire projects and secure profitability commensurate with risks
- Expand business opportunities in line with each country’s circumstances and business environment

Current Efforts

- Entering power retailing business in cooperation with partners
- Creating new value (in cooperation with partners)
  - Supply green power that meets the RE100 Project requirements
  - Virtual power plant (VPP) business
  - Utilize adjustment abilities of customer’s resources (batteries, pumps, etc.)
  - Construct distributed energy integrated control platform

Long-Term Direction

Reducing CO₂ emissions

J-POWER’s core business

CO₂-free power supply from large-scale power plants

Key initiatives 1.–4.

Pursue new business opportunities by developing current efforts and collaborating with partners

Key initiative 5.

Initiatives for distributed energy service

* An environmental initiative aimed at covering 100% of energy business operation energy needs with renewable energy.

Power storage systems
Electric vehicles
Private generation
Renewables

Platform

Adjustment ability
Supply volume
Load control
Demand creation

Key initiatives 1.–4.
The President Discusses the J-POWER Group’s Business Strategies

Strengthening the Profit Base, Financial Discipline, and Human Resource Strategy

From fiscal 2020, we have begun to build a new maintenance system for thermal power plants. Until now, J-POWER and a maintenance subsidiary cooperatively operated and maintained these power plants. By comprehensively consigning these operations to the maintenance subsidiary, we are eliminating redundant management structures. Furthermore, we aim to reduce costs and save labor by using digital technologies and other improvements. We plan to reduce operation and maintenance staff by approximately 30% by fiscal 2024, reassigning redundant employees to renewables and overseas businesses, areas of focus going forward.

Looking at electricity sales, until now, our approach has mainly centered on long-term PPAs. Going forward, we will use these in combination with short-term PPAs and electric power retailing in cooperation with partners to diversify our sales methods and thereby maximize and stabilize revenue.

In terms of human resource strategy, we are working to realize diverse work styles in line with employees’ life plans and are promoting health and productivity management. Furthermore, we are implementing initiatives supporting the professional participation of diverse human resources, including issuing open calls for work experience participants at startups.

New Thermal Power Plant Operation and Maintenance System

Diversifying Electricity Sales
J-POWER’s Support for the Paris Agreement and Initiatives to Address Climate Change

The importance of addressing climate change is growing every year. As such, we believe that it is necessary to disclose the risks and opportunities we see related to climate change and the ways we are responding to them.

J-POWER supports the Paris Agreement adopted in 2015. To contribute to the achievement of Japan’s greenhouse gas emission reduction targets and the Japanese electric power industry’s carbon intensity target, which are based on the Paris Agreement, J-POWER is advancing initiatives to achieve zero-emission power supply.

In addition, in 2019, we announced our support for the TCFD’s recommendations.* To fulfill our duty of accountability to stakeholders regarding climate change-related information, we are working to further enhance the content of our disclosure.

* TCFD recommendations: Recommendations compiled by the Task Force on Climate-related Financial Disclosures (TCFD) regarding the disclosure by companies and other organizations of climate-related financial information

In light of the global COVID-19 pandemic, J-POWER has established the COVID-19 Response Headquarters headed by the President. The entire Group is working to prevent infection in and outside the Company while making every effort to maintain business continuity in order to ensure stable power supply. We are implementing thoroughgoing measures to prevent the infection, including group infections, of those involved in the construction and inspections necessary to maintain power generation facilities. We are also taking measures in preparation for the event that an employee should be infected, including securing backup facility operators.

Due to COVID-19, the global economic outlook is extremely unclear. Nevertheless, as an important infrastructure company, we will continue working to ensure stable power supply and the safety and confidence of our stakeholders.

Shareholder Returns

In 2017, we established a shareholder return policy specifying that, taking into account such factors as the level of profit, earnings forecasts, and our financial condition, we strive to enhance stable, ongoing returns to shareholders in line with a consolidated payout ratio of around 30%, excluding factors causing short-term profit fluctuations. Based on this policy, for fiscal 2019, we once again paid an annual dividend of ¥75 per share.

Going forward, we will continue working to achieve sustained improvement in corporate value and to enhance shareholder returns based on growth.