Business Plan That Reflects Integration of the Existing Thermal Power Generation Businesses

JERA Co., Inc.
April 2, 2019
(1) New JERA Profile
(2) Change of Business Environment Foreseen
(3) Re-building of Business Models Based on Changed Environment and the Way Forward for Each Function
(4) Business Strategies
(5) Targeted Income/Expenditure Level
(6) Environmental Policy
(1) New JERA Profile
### New JERA Profile (Upon Step3 Completion)

- Existing Domestic Thermal Power Generation business integrated with the Step2 businesses (Fuel Transportation/Trading, Upstream/Procurement, Overseas Power Generation/Energy Infrastructure)
- This concludes the entire integration process and completes JERA’s energy value chain

<table>
<thead>
<tr>
<th>Step2 (End of December 2018)</th>
<th>Step3 *1 (Fiscal 2019)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales (FY forecast)</td>
<td></td>
</tr>
<tr>
<td>JPY 2.8 trillion</td>
<td>JPY 3.6 trillion</td>
</tr>
<tr>
<td>Approx. 1.3 times times</td>
<td></td>
</tr>
<tr>
<td>Total Assets</td>
<td></td>
</tr>
<tr>
<td>JPY 1.2 trillion</td>
<td>JPY 3.8 trillion</td>
</tr>
<tr>
<td>Approx. 3 times times</td>
<td></td>
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<tr>
<td>Number of Employees</td>
<td></td>
</tr>
<tr>
<td>800</td>
<td>4,500</td>
</tr>
<tr>
<td>Approx. 6 times times</td>
<td>*2</td>
</tr>
<tr>
<td>Domestic Thermal Power Generation (Includes sites under construction)</td>
<td></td>
</tr>
<tr>
<td>1 site 0.65 GW</td>
<td>26 sites 67 GW</td>
</tr>
<tr>
<td>Approx. 100 times times</td>
<td></td>
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</tbody>
</table>

*2: For the companies inherited in April 2019, only the secondees from JERA are indicated.
Aiming to be a global energy company with roots in Japan, JERA has integrated businesses in steps, starting off from the domains with value creation potential and less difficulties.

<table>
<thead>
<tr>
<th>Step 1</th>
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<tbody>
<tr>
<td>(April 2015 -)</td>
</tr>
<tr>
<td>• Founded JERA, and integrated new business development, fuel transportation, and fuel trading businesses</td>
</tr>
<tr>
<td>New Upstream Development / Procurement</td>
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<tr>
<td>Cargo Ships</td>
</tr>
<tr>
<td>Trading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 2</th>
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<tbody>
<tr>
<td>(July 2016 -)</td>
</tr>
<tr>
<td>• Integrated the existing fuel business (upstream, procurement) and the existing overseas power generation / energy infrastructure business (including renewable energy)</td>
</tr>
<tr>
<td>Upstream Development / Procurement (Including the existing projects)</td>
</tr>
<tr>
<td>Cargo Ships</td>
</tr>
<tr>
<td>Trading</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Step 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(April 2019 -)</td>
</tr>
<tr>
<td>• Integrated fuel receiving / storage / gas transmission and the existing thermal power generation businesses</td>
</tr>
<tr>
<td>Upstream Development / Procurement</td>
</tr>
<tr>
<td>Cargo Ships</td>
</tr>
<tr>
<td>Trading</td>
</tr>
<tr>
<td>Receiving Terminals / Storage</td>
</tr>
<tr>
<td>Power Generation (Domestic / Overseas)</td>
</tr>
</tbody>
</table>

- LNG Transaction Volume: 35 MTPA
- Upstream Investment: 5 Projects
- LNG Cargo Fleet: 18 Ships
- Domestic Output Capacity: 67GW
- Overseas Output Capacity: 9GW (Developed Output)
(2) Change of Business Environment Foreseen
The World Is Undergoing an Energy Transition

- Change of supply structure due to global shift to renewable energy/gas (This goes in parallel with depression in demand for electricity in Japan)
- Management of spread between fuel/electricity markets becoming a new source of profits due to marketization progress
- Change of power plant O&M methodology thanks to progress in digital technologies including AI, IoT etc. Advanced O&M services are required to support the connection of distributed power sources and batteries to the grid

Energy demand growth in Asia
Exit from coal / Shift to gas

Renewable energy innovation
Digitization accelerates

Deregulation
Market competition escalates

Grid destabilizes
Fuel consumption variance widens
Japan-specific Factors Are Also Relevant

1. Population Shrinkage and Sluggish Demand
   - Constant growth of domestic demand for electricity can’t be expected

   **Population (Million)**
   - 2010: 128
   - 2060: 93

   **Demand for Electricity (TWh)**
   - 2000: 982
   - 2010: 1,056
   - 2015: 955

2. Full Liberalization of Electricity/Gas Markets
   - Ratio of trading on the market is increasing

   **Electricity Market**
   - April 2016 Retailing Liberalized
   - April 2020 Transmission & Distribution Legally Separated

   **Gas Market**
   - April 2017 Retailing Liberalized
   - April 2022 Gas Pipe Legally Separated

3. Future Power Mix Is Dim
   - Direction uncertain for power mix
   - Mass spread of solar power giving heavy stress to the grid

   **Energy Source Distribution (%)**
   - **2020 -**
     - Nuclear: 25%
     - Renew.: 9%
     - LNG: 41%
     - Coal: 28%
     - Oil: 9%
   - **2030 -**
     - Nuclear: 22~20%
     - Renew.: 24~22%
     - LNG: 27%
     - Coal: 26%
     - Oil: 3%
(3) Rebuilding of Business Models Based on Changed Environment and the Way Forward for Each Function
Reorganizing Our Business Model to Respond Properly to the Changing Circumstances in Japan and Abroad

Reorganized into Business Development, Optimization and O&M, with each department aiming to be a profit center, respectively from investment, market trading and O&M services.

**Role of Optimization Dept.**
Grow returns through operational excellence in power plants and fuel terminals, as well as market trading of fuel/electricity and gas, based on the existing agreements.

**Role of Business Development Dept.**
Grow returns by achieving the optimal asset portfolio through new installation, replacement and restructuring of power plants.

**Role of O&M Dept.**
Grow returns by achieving high value-added O&M services through agile operation and cost reduction for infrastructure O&M.

Fuel Market

Fuel Procurement

Power Plants

Domestic Electricity Market

Electricity Sales
### 3 Functions (Profit Centers): Current Status and the Way Forward

The newly-formed 3 functions should each secure and strengthen excellent skills that enable them to meet the changing circumstances, turn the changes into business opportunities and grow profits.

<table>
<thead>
<tr>
<th>Current Status</th>
<th>Business Development</th>
<th>Optimization</th>
<th>O&amp;M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Own 76GW power generation assets globally Know-how in LNG vessel and upstream projects</td>
<td>One of the world’s largest fuel buyers and coal traders</td>
<td>Providing 67GW O&amp;M services in Japan</td>
</tr>
<tr>
<td>Change of Business Environment</td>
<td>Energy demand growth in Asia Exit from Coal / Shift to Gas Renewable Energy Innovation</td>
<td>Deregulation Market competition escalates Fuel consumption variance widens</td>
<td>Digitization accelerates Grid destabilizes</td>
</tr>
<tr>
<td>Handling of Changes</td>
<td>Develop large-scale renewables Build/install LNG receiving facilities (including FSRU) Build highly-efficient gas-fired thermal power</td>
<td>Expand resource trading Develop electricity trading Gain advanced competence to manage market risks</td>
<td>Remote monitoring and predictive management Improve agility to respond to changes Distributed supply Introduce batteries</td>
</tr>
<tr>
<td>Competence to Secure</td>
<td>Various large-scale developments (E.g. Gas to Power/Renewables) Asset portfolio management</td>
<td>Market intelligence Trading business management</td>
<td>Big data management Advanced user technology</td>
</tr>
</tbody>
</table>
Mission & Vision

<table>
<thead>
<tr>
<th>Mission</th>
<th>To Provide Cutting-edge Solutions to the World’s Energy Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vision 2025</td>
<td>Global Leader in LNG and Renewables Sparking the Transition to a Clean Energy Economy</td>
</tr>
</tbody>
</table>

Through enhancing the LNG value chain and undertaking large-scale renewable energy development, construct a complementary relationship between LNG-fired power and renewables. Provide stable, economic and clean energy.

- Flexible LNG-fired power supply complementing intermittent renewable energy
- Flexible fuel procurement backed by resource trading
- Balanced development of portfolio of renewable resources promoting diversification from solar only into offshore wind and others
- Stable supply of renewable energy with storage battery technologies
(4) Business Strategies
Implement “6 Measures” to Achieve Our Mission & Vision

- For LNG, maintain and expand our fuel procurement scale through replacement of domestic power plants with more efficient facilities and expansion of global power generation. Leverage that scale for trading expansion and upstream project participation and improve profitability of the entire value chain.

- For renewable energy, leverage our large-scale project development competence that we gained from the existing projects, promote the development focusing on offshore wind power in particular, and grow it as one of the main pillars of business in our future portfolio.

Global Leader in LNG and Renewables
Sparking the Transition to a Clean Energy Economy

Business Development
LNG value chain and large-scale renewable energy development excellence

Optimization
Resource & electricity trading and market creation

O&M
World’s top-class agility and operational efficiency

1. Strengthen domestic power source portfolio through replacement (LNG thermal power generation)

2. Gas-to-Power (LNG sales channel expansion)

3. Flexible Supply Source (LNG assurance)

4. Trading business scope/opportunity expansion

5. Introduce JERA-way O&M to all own thermal power plants and achieve enhanced agility and operational efficiency

6. Large-scale renewable energy (Offshore wind power)
Goals in 2025

- **Operation/maintenance of power plants:** equivalent to 80GW globally
- **LNG transaction volume:** Around 35 MTPA
- **Optimization taking advantage of LNG vessels**
- **Develop domestic replacement:** 7~9GW (5 to 7 sites)
- **Win Gas to Power project**
- **LNG fleet:** Around 25 vessels
- **Equity output of renewable energy:** 5GW
- **Profit through trading**
- **Reduce O&M cost by 20%** (vs. current TEPCO/Chubu)
- **Shorten the time needed for regular inspection:** ▲50%
- **Operation/maintenance of power plants:**
- **Profit through trading**

Organization and Management to Realize One Global JERA

Consolidated Net Profit JPY200B
Credit Rating of A-grade or higher
Segregation of functions – Supervision, Audit, Execution – to build a structure that enables autonomous business operations

4 external persons with expertise in global power generation, trading, M&A etc. appointed as Director

(Reference) Governance Structure

- Enhancement of the Board’s Supervisory Functions
- Enhancement of Audit Functions
- Operational Enhancement

Shareholders → General Shareholders’ Meeting → Board Meeting → Directors’ Discussion Appointment & Remuneration Committee

Corporate Strategy Department
Finance and Accounting Department
Human Resources and General Affairs Department
Business Development Department
Optimization Department
O&M Department
East Japan Branch / West Japan Branch
Organizational Structure (1)

- Reorganized per function based on the business model, and introduced a responsibility accounting on a business division level.

Chairman / President

Audit

Chief Global Strategist

Corporate

Corporate Strategy (IT)

Finance & Accounting

Human Resources & General Affairs

Business Development

Business Development Strategy

Existing Asset Management

Domestic Power/Gas Development

Overseas Power/Energy Infrastructure Development

Renewable Energy Development

Value Chain Business Development

USA / Asia / Australia

Optimization

Optimization Strategy

Power/Gas Sales

Resource/Fuel Optimization

LNG Contract Management

O&M

O&M Strategy

O&M Engineering

O&M Sales

Purchasing

Business Division (Responsibility Accounting)
Organizational Structure (2)

- Expand the corporate functions, and establish a robust corporate infrastructure to support our business plans

**Chairman / President**

**Audit**

**Chief Global Strategist**

**Corporate**

**Business Development**

**Optimization**

**O&M**

**HR**: Build a personnel/recruitment system unique to JERA that allows diverse human resources to perform well in their work regardless of nationality/gender etc. Recruit local staff to work at our overseas locations, empower female employees, promote employment of people with disabilities etc.

**ICT**: Build global ICT infrastructure that’s independent of the parent companies. Promote digitization in JERA’s existing business

**General Affairs**: Build a disaster prevention/response structure that encompasses both East and West areas for improved anti-disaster organization/readiness enhancement. Take disaster-handling measures in collaboration with both parent companies during emergencies.

**Finance/IR**: Provide appropriate and timely information to maintain/upgrade external credit ratings and boost mutual communications with investors/analysts
(5) Target Income/Expenditure Level
Income/Expenditure Level (P/L Status) 【excluding fuel cost timing impact】

Consolidated Net Profit Amount
(billion JPY)

(Note 1) Timing-shift impact of the fuel cost adjustment system is excluded.
(Note 2) Assumptions of our calculation:
- Foreign exchange rate: 110JPY/USD for each year
- Crude oil price (nominal figure): Average 65USD/bbl for 2019~2021, 100USD/bbl for 2025
B/S Status

Total Assets / Net Assets / Interest-bearing Debt

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Assets (JPY)</th>
<th>Net Assets (JPY)</th>
<th>Interest-bearing Debt (JPY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018</td>
<td>1,300</td>
<td>600</td>
<td>300</td>
</tr>
<tr>
<td>2019</td>
<td>3,800</td>
<td>1,400</td>
<td>1,700</td>
</tr>
<tr>
<td>2020</td>
<td>4,000</td>
<td>1,500</td>
<td>1,900</td>
</tr>
<tr>
<td>2021</td>
<td>4,300</td>
<td>1,600</td>
<td>2,200</td>
</tr>
<tr>
<td>2025</td>
<td>4,400</td>
<td>1,800</td>
<td>2,000</td>
</tr>
</tbody>
</table>

(End of Fiscal Year)
C/F Status

Prospects of Consolidated Cash Flow

(billion JPY)

2018 (Assumed Results) 2019 2020 2021 2025 (Fiscal Year)

- Operation Cash Flow
- Investment Cash Flow
- Free Cash Flow

△ 190  △ 150  △ 200  △ 250  △ 150

△ 40  △ 450  △ 450  △ 550  △ 250

△ 150  △ 400  △ 200  △ 450  △ 450

△ 600  △ 400  △ 200  △ 450  △ 450

Business Integration

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Proportion of Domestic Power Generation Falls from 60% to 40%
Revenues are assured thanks to long-term contract etc. for more than 90% of the invested amount.

Around 70% of the invested amount is related to LNG and renewable energy.

**FY2019～2025 Breakdown of Accumulated Investment Amount**

- **55%** Fuel Business
- **30%** Overseas Power Generation Business
- **15%** Domestic Power Generation Business
Integration Synergy Effect

- The integration synergy target is JPY100 billion/Year within 5 years from Step 3 integration
- Studies are under way for cost reduction initiatives through O&M efficiency improvement and consolidated procurement of materials and equipment, and prospects are good for already achieving reduction of half the cost originally planned
- We will continue looking for further cost cuts, and accelerate studies for new profit expansion measures (such as O&M business on the global scene etc.) to make them come true as early as possible
- The benefits of integration synergy effect shall be leveraged to provide competitive electricity/gas in the market and for internal reserves/reinvestment so that our enterprise value can be maximized

Integration Synergy Effect

**Domestic Power Generation Businesses**
- Streamlining through an O&M model that is competitive in the global markets
- Streamlining through consolidated procurement of materials and equipment
- Optimization of power source portfolio

**New Businesses / Existing JERA Businesses**
- Electricity/gas market trading, third-party sales
- Global-level O&M business
- Expansion of gas/LNG wholesaling
- Optimization through integrated management of the entire value chain
- Apply global trading expertise to domestic thermal power generation business

**JPY60 billion/Year**

**JPY40 billion/Year**

**JPY100 billion or more/Year within 5 years of integration**

- Grow into a global energy company
- Engage in fair competition including proactive leveraging of the market

- Provide customers with a stable supply of globally competitive energy
- Improve the enterprise value of both the TEPCO and CEPCO groups
(6) Environmental Policy
Environmental Policy

Energy is a foundation of society and economy, and the composition of power generation requires multifaceted considerations, including environment, security of supply, and cost. Given the current circumstances of global energy demand and supply, coal-fired thermal technology plays an indispensable role to underpin the economic growth and lives of billions around the world as a stable and economical source of energy. At the same time, JERA acknowledges that more choices are becoming available for power generation, as innovation in renewables advances.

JERA, as a responsible leader of the Japanese power industry, will take on the challenge of reducing CO₂ emissions in order to realize sustainable environment, society and economy, including through the proactive development of renewable energy. This approach is in accord with energy and environmental policies of the Japanese government, notably the ‘5th Strategic Energy Plan’.
### Environmental Goals

<table>
<thead>
<tr>
<th>Benchmark</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Benchmarks</strong></td>
<td>Achieve the Benchmarks stipulated in the Act on the Rational Use of Energy at the earliest possible time by replacing aging plants with state-of-the-art thermal power.</td>
</tr>
<tr>
<td><strong>Inefficient coal-fired power plants</strong></td>
<td>Further deepen our deliberations on phase-out of inefficient coal-fired power plants (SC and below) stipulated in the ‘5th Strategic Energy Plan’.</td>
</tr>
<tr>
<td><strong>Renewable energy</strong></td>
<td>Develop and hold renewable energy both at home and abroad. Furthermore, support its integration into the energy system by accelerating our efforts to enhance operational agility of the gas-fired plants, and introducing new technologies such as battery storage.</td>
</tr>
<tr>
<td><strong>CO₂ emissions and carbon intensity</strong></td>
<td>Reduce total CO₂ emissions and carbon intensity from domestic and overseas power business by 2030 (relative to FY2017).</td>
</tr>
</tbody>
</table>
Forward-Looking Statements

The information in this presentation may contain forward-looking statements. Forward-looking statements include statements relating to: (i) plans; (ii) business and management strategies; and (iii) performance forecasts, and are based on then-current data by the time of issuance of this document. Forward-looking statements involve risks and uncertainties including but not limited to economic conditions, competitive landscape, government laws and regulations, exchange rate and so on that could significantly affect the expected results, and are based on certain key assumptions. Many factors could cause actual results to differ materially from those projected or implied herein. Due to such uncertainties and risks, readers are cautioned not to place undue reliance on such forward-looking statements.