



Japan Petroleum Exploration Co., Ltd.



Corporate Report

**2018**

For the Year Ended March 31, 2018

# What JAPEX will do for a better future

What do you imagine the earth will be like 100 years later?

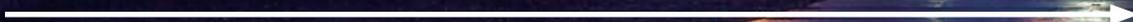
We human beings have consumed the earth resources to develop a world economy.

If we keep consuming the resources as we do, we will apparently be unable to meet the social needs of the future.

In September 2015, the United Nations released the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals\* (SDGs) to achieve a better and more sustainable future and in order to “leave no one behind.” In December of that same year, 196 countries adopted the Paris Agreement addressing the need to limit the rise of global temperature. We decided to transform our world to promote prosperity while protecting the planet.

\* Sustainable development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

2018



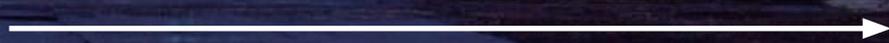
**We at JAPEX contribute to society through the stable supply of energy, and address social issues toward realizing the sustainable development goals.**

JAPEX announced “Long-term Vision 2030” in May 2018.

We had thought about how to meet the foregoing Corporate Vision and set up our own targets and missions to achieve in 2030.

Fossil fuels have been primary energy sources for economic growth in Japan and they still will be. However, conditions are rapidly shifting to a sustainable and decarbonized society. In order to play active role for the resolution of the global scale issues, we will transform our business structure so that the business profit ratio will be “6:4 of E&P to non-E&P” in 2030.

2030



2050

## Corporate Vision

Contribute to society through the stable supply of energy  
and address social issues toward realizing the sustainable development goals.

- Explore, develop, produce and deliver oil and natural gas in Japan and overseas.
- Further enhance the natural gas supply chain, consisting of our domestic infrastructures and electric power supply.
- Contribute to addressing challenges toward realizing a sustainable society associated with energy and climate change through the development and commercialization of new technology, drawing from our expertise.
- Place top priority on maintaining trust with all stakeholders and achieve sustainable growth and maximize corporate value.

## JAPEX Group Code of Conduct

To put Corporate Vision in practice, the JAPEX Group's directors,  
officers and employees shall act based on the following  
“JAPEX Group Code of Conduct” that represents our key values:

1. Comply with applicable laws and regulations of the countries and regions where our business operations are based, respect international norms, and take actions by taking the stakeholders' interests into consideration;
2. Put the top priority on paying due attentions to HSE (health, safety and environment);
3. Respect human rights and do not engage in discriminations or harassments;
4. Engage in fair, transparent and free competition as well as appropriate trading practices;
5. Keep sound and normal relationships with the politicians, political parties and government officials/agencies;
6. Resolutely confront antisocial forces and sever all relations with such individuals and groups;
7. Pay careful attentions to managing and protecting confidential information and personal/customer data;
8. Have a strong will for innovative change from the status quo and energetically engage in tasks with flexible mindset and originality; and
9. Be more responsive to information and engage in tasks in the professional manner.

### Editorial Policy

We issue this Corporate Report for the purpose of introducing our economic, social, and environmental performance in fiscal 2017 and promoting better understanding of our worldwide business activities. We are aiming to integrate our growth strategy and CSR management.

This report is in line with Guidance for Collaborative Value Creation by the Ministry of Economy, Trade and Industry (METI) and Sustainability Reporting Standards by Global Reporting Initiative (GRI). JAPEX considers this report to be a valuable tool to facilitate communication with our stakeholders informing them about our business activities.

#### Information Disclosure Sources

This report presents important information with the aim of gaining understanding of JAPEX. More-detailed information is available on our website.



### Reference Guidelines

METI, "Guidance for Collaborative Value Creation"  
GRI, "Sustainability Reporting Standards"

### Organizations Covered by this Report

This report covers Japan Petroleum Exploration Co., Ltd. (JAPEx), and its 23 consolidated subsidiaries and other Group companies. Environmental performance data (P.36-39, 50-51) are for JAPEx and Japex Offshore Ltd.

### Reporting Period

Fiscal 2017 started on April 1, 2017 and ended March 31, 2018. Some statements include data before March 31, 2017 or after April 1, 2018.

### Issuing Date

November 2018 (Next issue: November 2019)

### Disclaimer

This report includes past and current facts about JAPEx and its affiliate firms, their plans and prospects as of the issuing date, as well as forecasts based on their business plans and corporate management policies. These forecasts represent management's assumptions or decisions based on information currently available. Readers should be aware that actual results may be different from these forecasts due to changes in the business environment.

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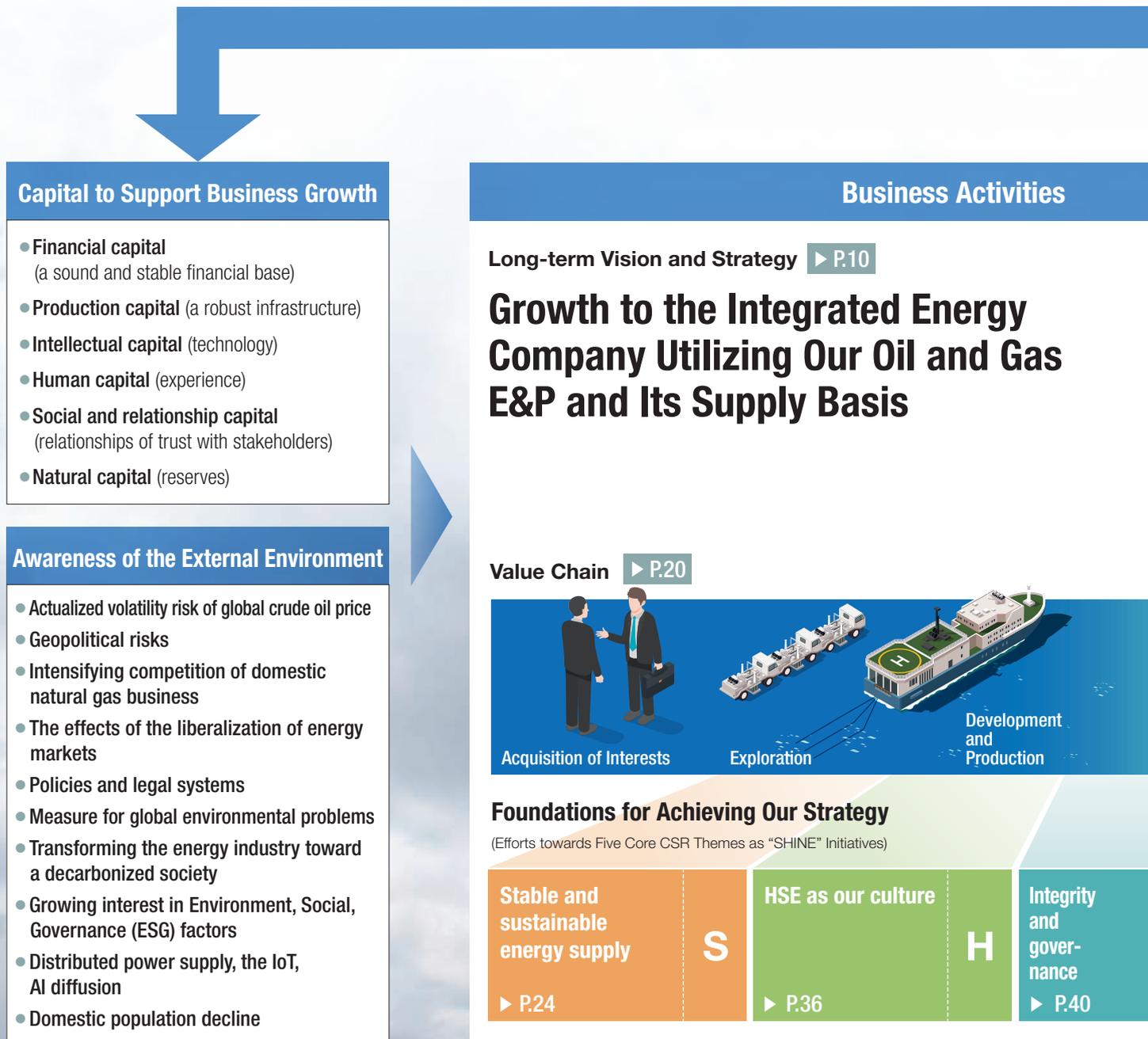
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# The JAPEX Group's Value Creation Process

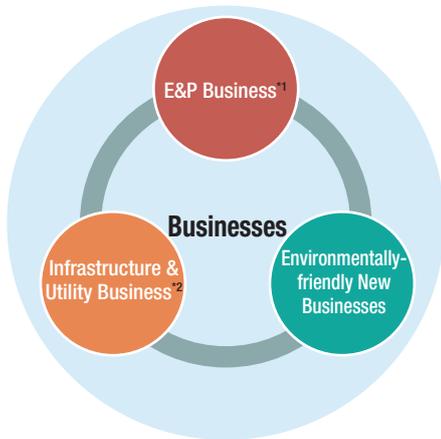
Given changes in the economic and social environments, the JAPEX Group aims to contribute to all its stakeholders, achieving sustained and heightened corporate value through business activities that take advantage of its strengths.



An Accumulation of Credibility / Reinvestment in Business

Increasing the JAPEX Group's Corporate Value

(Business Model)



Transportation

Sales

Value Provided

- A stable supply of energy
- Supplying environmentally friendly energy
- Increased returns to shareholders, higher revenues
- Working together with local communities and contributing to their well-being through job creation
- Creating a rewarding workplace

Contribution to Society

Sustainable Development Goals (SDGs)



I Being a good neighbor

▶ P.46

N

E The employer of choice

▶ P.48

\*1 Businesses engaged in exploring, developing, producing, transporting, and delivering oil and natural gas

\*2 Infrastructure & Utility Business, including business of supplying natural gas and business of power generating/electricity sales



Transporting LNG by rail in tank containers

## *President's Message*

# Transforming into a company with abundant mobility and diversity capable of responding flexibly to changes in business environment

In May 2018, we released our new “Long-term Vision 2030” as the JAPEX group’s growth strategy toward 2030 and our new “Mid-term Business Plan 2018-2022” representing our management direction and business priority for the coming five years from fiscal 2018.

Based on the former Long-term Business Vision and Medium-term Business Plan established in May 2015, the JAPEX group took steps to strengthen its business base by large-scale investments to overseas E&P business, including the development of Canada Oil Sands Project in the Hangingstone leases, and the completion of Soma LNG Terminal in Fukushima Prefecture, and to expand its business into related fields which have affinity to our fundamental business, such as participation to the natural gas-fired power generation project and others. However, facing with significant changes in our business environment, including deterioration of profitability in E&P business due to downturn in crude oil and natural gas prices, and the decision of not proceeding Pacific NorthWest LNG project in British Columbia of Canada, we recognized that our Mid-term Business Plan needs to be revised.

Furthermore, in response to the situation change of the energy sector by international climate protection agreements and carbon emissions, as well as the growing interest for companies’ initiative for ESG (Environment, Social, Governance) from stakeholders, we decided that our business vision need to be revised in light of the long-term view including contributions to sustainable society.



Representative Director and President,  
Chief Executive Officer

### **New Long-term Vision and Mid-term Business Plan**

In the new Long-term Vision, we have added the new perspective of “contribution to sustainable society” to the existing vision of “stable supply of energy”, and set out **our new vision toward 2030** as **“Growth to the Integrated Energy Company Utilizing Our Oil and Gas E&P and Its Supply Basis.”** We aim for realization of the JAPEX group sustainable



growth and contribution to society (i) by continuously promoting **E&P Business** in Japan and overseas as well as **Infrastructure & Utility Business** including domestic natural gas supply infrastructure and newly added electric power supply business; and (ii) by engaging in environmentally-friendly **New Businesses Development** with full utilization of our expertise, such as technology development of Carbon dioxide Capture and Storage (CCS) and development of renewable energy.

In our Mid-term Business Plan 2018-2022, we aim to make an innovative change to a lean and resilient business structure that will enable sustainable growth

even under continuing market circumstances of lower crude oil prices. We have accordingly made it **our target to improve our profitability to achieve ROE 5% or more in fiscal 2022 based on the assumption of crude oil prices at USD60/bbl**. In order to achieve this target, we will implement a portfolio review and take measures for restoring financial soundness and improving profitability of existing business as issues of top priority during the first half of the mid-term plan period; and we will strive for securing the resources to invest in new E&P projects and new business generation during the latter half of the plan period.

We have also set specific business targets in our three main areas of business. In E&P Business, **our long-term target is to continue maintaining RRR\*>1**. In Infrastructure & Utility Business, we have set the target figures of **1.6 million tons of natural gas (LNG equivalent) for annual domestic gas sales amount and 2.8 billion kWh for annual sales amount of electric power in fiscal 2022**. In New Business Development, we will prepare new organization for new business development and accelerate our activities to **generate profitable projects making full use of JAPEX competitive advantages**.

\* RRR (Reserve Replacement Ratio) is a numerical indicator of whether a company can recover a volume equivalent to the oil and gas production from reserves in a single fiscal year (or specified period) so as to assure continued production without problems in the next fiscal year and beyond.

**Social Agendas that JAPEX Addresses: Aiming Toward Social Contribution through Sustainable Growth**

Placing CSR management at the core of our sustainable growth and based on the changes in social needs for the energy industry, we the JAPEX group will strive for solution of social issues.

Under the new Long-term Vision, we particularly focus on the three UN Sustainable Development Goals (SDGs), namely **“Affordable and clean energy,” “Industry, innovation and infrastructure,”**

**and “Climate action.”** In specific terms, JAPEX is engaged in strengthening the stable supply of energy mainly natural gas, the cleanest-burning hydrocarbon, and developing our robust energy supply base starting from the Soma LNG Terminal and Fukushima Natural Gas Power Plant. Furthermore, we will contribute to the reconstruction of Fukushima Prefecture and the local communities through the Soma Project, and by commercialization of CCS and other such activities, we will play an active role in resolving global issues for low carbonization and decarbonization.

In order to fulfill our engagement, we will strive for ESG issues in accordance with the core CSR strategic themes that we addressed as “SHINE” in 2014.

In our core CSR themes, we emphasis first securing occupational safety and health in our operations. In December 2017, we recorded **the third time one year incident-free days at our domestic operations since commencement of operations**. We strive to develop a corporate-wide consensus on HSE and build a strong safety culture through the following approaches. For the first step, we have established a safety management system at our operation sites. In addition, we hold HSE workshops for our employees and are sharing the incident information over our company intranet. At our overseas operations, we focus on minimizing security risks.





Secondary, we have continuously engaged for enhancing a diversity of human resources and Work Style Reform. As these endeavors obtained external recognition, JAPEX was selected for the Nadeshiko Brand for the third year in a row as an enterprise that had made outstanding efforts to encourage women's success in the workplace, and was also certified as the Health and Productivity Management 500 Organizations (White 500) for the second year in a row, as a large company that implements outstanding health management. We are creating a fair and rewarding workplace where all our employees can perform respecting each other. We aim to transform into a company with abundant mobility and diversity with a view to increasing creativity and challenging spirit of each of our employees.

Finally, we emphasize corporate governance as fundamental for transformation of our corporate

culture and sustainable growth of the JAPEX group. The Corporate Governance Code was revised in June 2018. With our corporate business executed under the strict oversight of outside directors, we will build a highly reliable, efficient, and transparent governance system. In the interest of promoting dialogue with our stakeholders, we will also enhance disclosure and provide information relating to the elements of ESG which are outlined in the Code.

JAPEX will endeavor to increase its corporate value through improvement of profit structure competent for sustainable growth even under the market environment of low crude oil prices, and transformation of its business structure capable of responding changes in social needs.

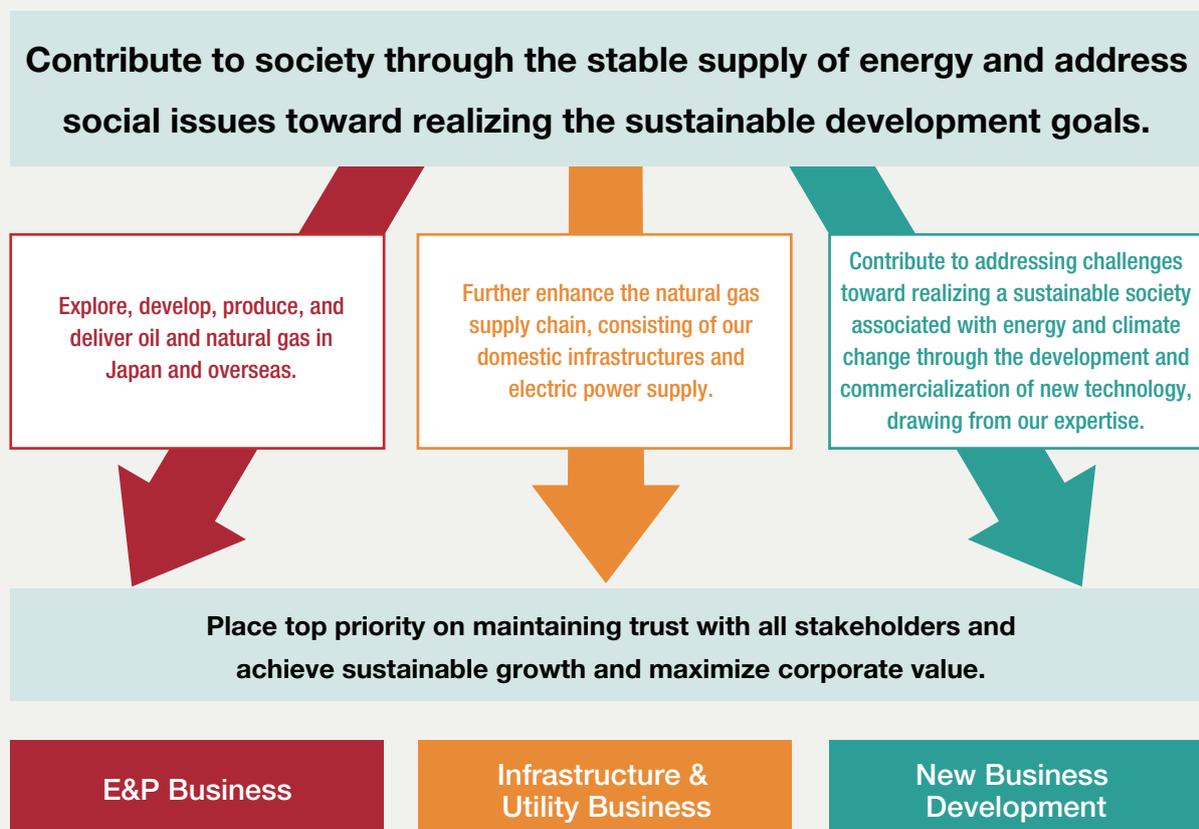
The JAPEX Group Aspiration

# Growth to the Integrated Energy Company Utilizing Our Oil and Gas E&P and Its Supply Basis

The JAPEX group has declared “Growth to the Integrated Energy Company Utilizing Our Oil and Gas E&P and Its Supply Basis” to be the vision we aspire to realize in 2030.

Where our previous Long-term Business Vision called for “Transformation to an Integrated Energy Company with a Focus on Oil and Gas E&P,” we have advanced a step to declare the stable supply of oil and natural gas to meet the needs of local communities and clients as we play an active role in solving global issues for low carbonization and decarbonization.

## Corporate Vision



## The Profit Composition JAPEX Aims for in 2030

Recognizing that oil and gas will play the key role as global primary-energy in the mid- to long term, the JAPEX group will continue undertaking the stable supply of energy as we respond to changing needs in the market and clients.

Meanwhile, it will be necessary to develop our business along multiple lines, both E&P and non-E&P, in order for JAPEX to achieve the sustainable growth in the face of future uncertainty. We will generate environmentally-friendly new businesses that make use of our particular competence with the aim of achieving a profit composition that has E&P Business and non-E&P Business<sup>\*1</sup> in approximately 6:4 proportion in 2030.

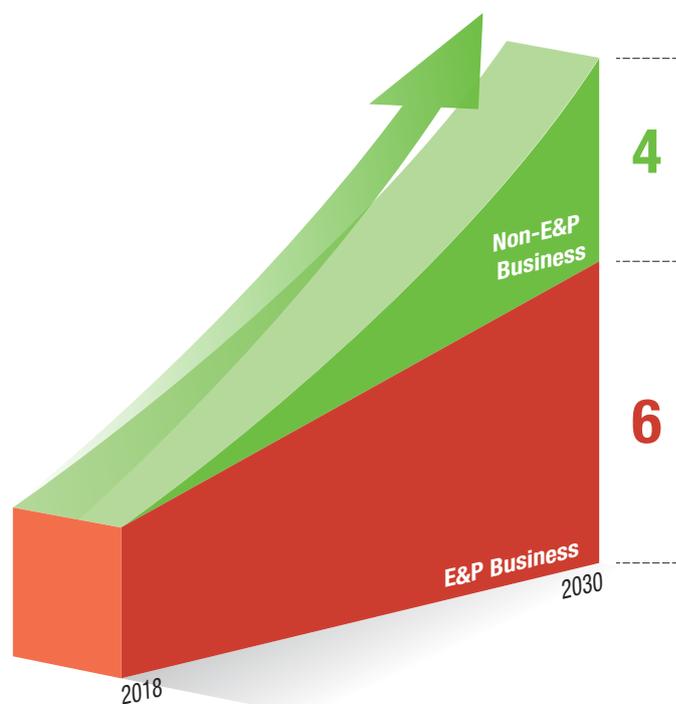
<sup>\*1</sup> Non-E&P Business includes Infrastructure & Utility Business and New Businesses Development

### Our Business Portfolio that Enables Sustainable Growth

#### Corporate profit<sup>\*2</sup> composition

2030 Ratio

**6:4**

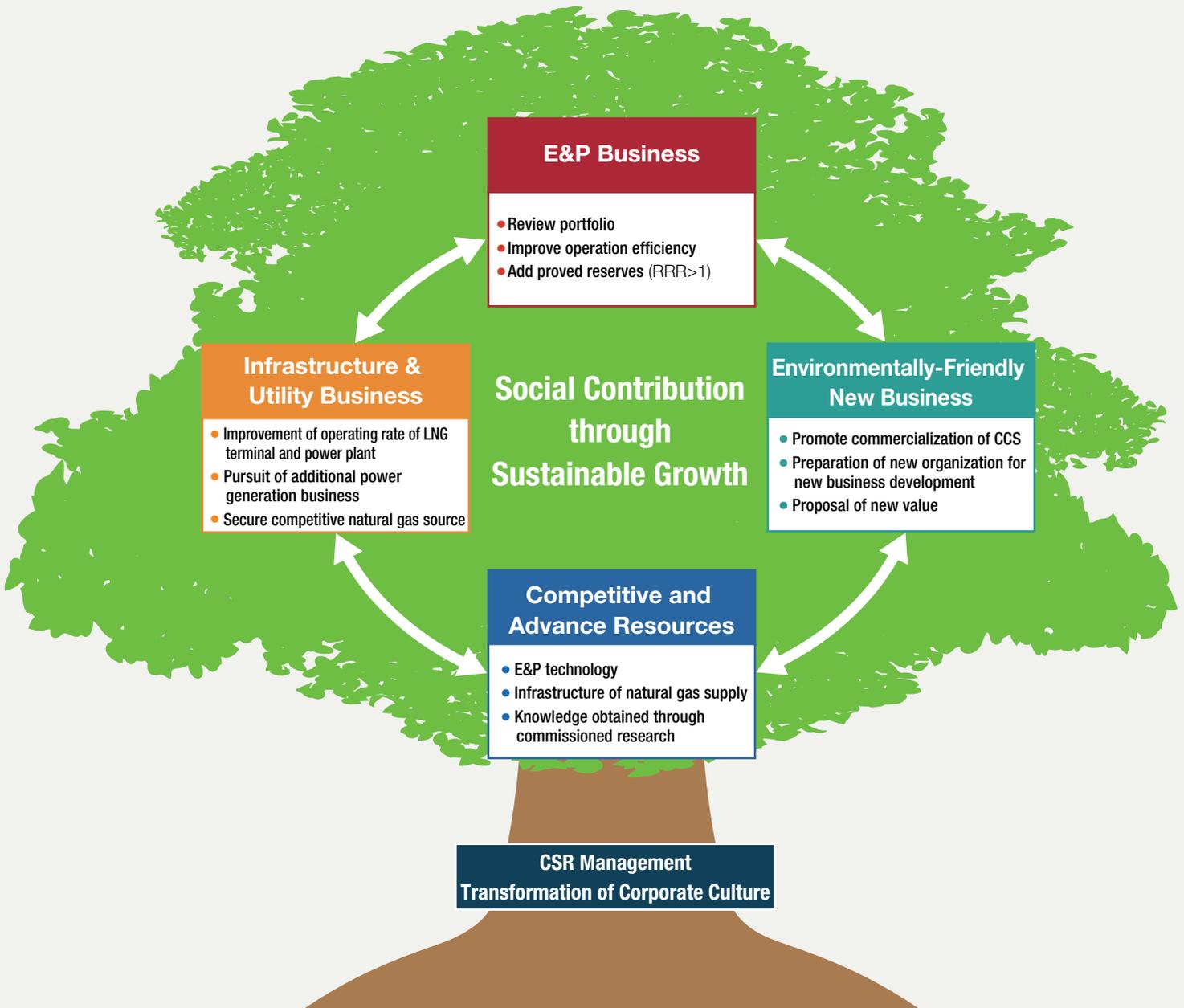


<sup>\*2</sup> Operating profit + Equity method investment income/loss basis

JAPEX's "Integrated Energy Company"

# Developing Business Organically to Leverage the Source of Competitive Advantage

Taking CSR management and the transformation of corporate culture as our core, we will utilize the source of our competitive advantage to develop organically linked businesses that make use of the respective synergistic effects of E&P Business, Infrastructure & Utility Business, and Environmentally-Friendly New Business.



## Toward the Integrated Energy Company

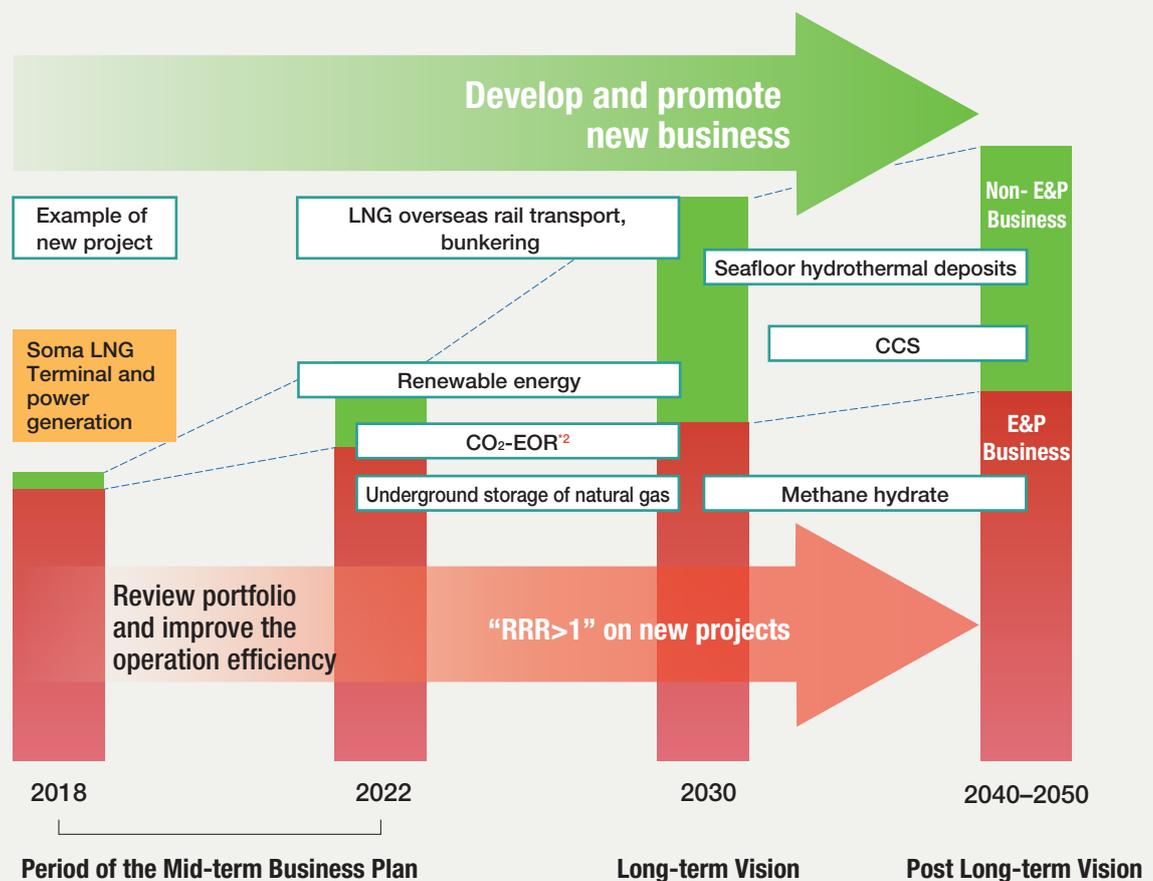
# In the mid- to long term, allocate about one-half of new investment funds to non-E&P Business

Toward realization of the integrated energy company in 2030, we will take steps in the mid- to long term to allocate about one-half of new investment funds to non-E&P Business, acting under financial discipline to keep the EBITDA<sup>\*1</sup> to debt ratio at less than two.

In the E&P Business, however, JAPEX will concentrate on reviewing the portfolio of E&P assets and improving operation efficiency over the next several years. Our aim thereafter will be to develop and promote new projects in order to keep  $RRR > 1$  over the mid- to long term.

<sup>\*1</sup> EBITDA: Earnings before Interest, Taxes, Depreciation and Amortization

### Profit Contribution Image of Business Portfolio



<sup>\*2</sup> Enhanced Oil Recovery: Enhanced method of recovering crude oil

Social Agendas the JAPEX Group Addresses

# Actively Taking Measures Toward Realization of a Low Carbon Society

In order to play an active role for the resolution of global-scale issues, particularly low-carbon and decarbonization issues listed in the SDGs adopted by the United Nations, the JAPEX group is making every effort to reduce CO<sub>2</sub> in our business. We are also aiming to generate and expand environmentally-friendly new businesses in the non-E&P field, including realization of carbon offset technologies and renewable energies.

## Measures to Realize the SDGs

Utilizing our oil and gas E&P and its supply business basis, we will address the SDGs with particular priority on solving three social agendas.

### Social Agendas

### Our Efforts

7 AFFORDABLE AND CLEAN ENERGY



Stable supply to meet primary energy demand by providing a stable supply of its main components of oil and natural gas as a clean energy, for the needs of local communities and clients.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Contribute to the reconstruction of Fukushima prefecture and the development of local communities through a robust supply base starting from the Soma LNG Terminal and the Fukushima Natural Gas Power Plant.

13 CLIMATE ACTION



Play an active role to solve global issues for low carbonization and decarbonization

## ESG Efforts for the Sustainable Growth

We are to engage ESG energetically in accordance with the core CSR management themes of “SHINE<sup>\*1</sup>.”  P.19



<sup>\*1</sup> Five core CSR themes as “SHINE” initiatives

[S] Stable and sustainable energy supply, [H] HSE as our corporate culture, [I] Integrity and governance, [N] Being a good Neighbor, [E] The Employer of choice

### PICK UP 1

#### CCS (Carbon Dioxide Capture and Storage)

According to the International Energy Agency (IEA), CCS is expected to contribute 14% of the total carbon dioxide (CO<sub>2</sub>) reduction by 2060 in order to achieve the “2°C target” of the Paris Agreement. The potential market for CCS is thought to be extremely large. There is also a possibility that, if CCS is commercialized, it will be able to offset not only the CO<sub>2</sub> emitted in the course of our business, but also the amount of CO<sub>2</sub> corresponding to the emissions from combustion of oil and natural gas on the client side.

JAPEX is pursuing commercialization of CCS. We are utilizing the E&P technology we have obtained so far, and working through Japan CCS Co., Ltd. to play a leading role in a pioneering CCS technology development project that is attracting global attention.

 P.23 Recognition of Climate Change and a Response: CCS (Carbon Dioxide Capture and Storage)

### PICK UP 2

#### Transformation of Corporate Culture and Human Resource Development

A crucial element that is essential to our sustained growth is the transformation of corporate culture.

In order to transform itself into a company with abundant mobility and diversity while every individual executive and employee heightens his or her own creativity and challenging spirit, JAPEX will promote diversity and inclusion among its other initiatives. We will also engage in setting KGI<sup>\*2</sup> and KPI<sup>\*3</sup> and implementing the PDCA cycle in a thoroughgoing manner. In this way we will build a corporate culture that frames these activities in figures, executes them in figures, and evaluates them in figures.

<sup>\*2</sup> KGI: Key Goal Indicator

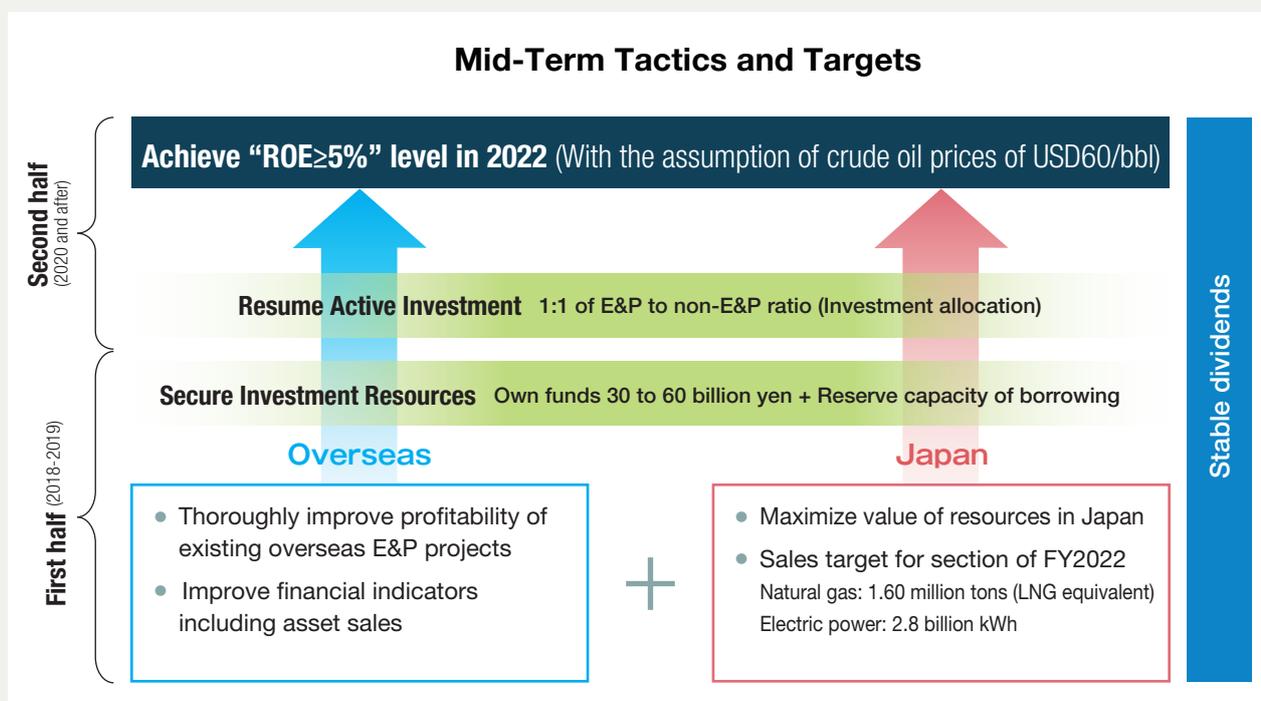
<sup>\*3</sup> KPI: Key Performance Indicator

 P.48 The Employer of Choice

## Mid-Term Tactics and Targets

# Achieve ROE $\geq$ 5% level in fiscal 2022

In order to realize our aspiration for 2030, we will be improving our profitability to achieve an “ROE $\geq$ 5%” level in fiscal 2022 under market circumstances with crude oil prices of USD60 /bbl. During the first half of the mid-term plan period, we focus on the optimization of our business portfolio and measures for financial soundness as the immediate priorities. During the second half, we will use the new investment funds we acquire during the first half to take thoroughgoing initiatives for the sustainable growth including concrete new investment in the E&P field as well as new business generation in the non-E&P field.



## Return to Shareholders

### JAPEX Firmly Maintains the Basic Policy of Stable Dividends

JAPEX makes it a basic policy to continue stable dividends over long term. The specific amount of dividends is determined through a comprehensive consideration of factors such as the orientation toward strengthening of our financial base, seen in light of retained earnings applied to enable the sustainable growth and increase the corporate value, the status of profit in each period, future capital requirements, and so on.

## Mid-Term Targets

### E&P Business

#### Long-Term Targets

Maintain **“RRR>1”**

We will take measures overseas to maximize the value of ongoing projects and to optimize our portfolio. In Japan, we will take measures to maximize our production rate, pursue additional development in surrounding areas, and so on.

At the same time, we will seek to achieve a balance between promotion of E&P Business and realization of a low carbon society by accelerating our CCS initiative while also establishing an investment evaluation standard that takes our response to climate change into account.

### Infrastructure & Utility Business

#### Targets to 2022

Natural gas sales volume  
in Japan

**1.6** million tons  
(LNG equivalent)

Electricity sales volume

**2.8** billion kWh

For the supply of natural gas in Japan, our aim is to promote natural gas use, construct a robust gas supply infrastructure, and secure a stable supply by domestically produced gas together with diversification of LNG procurement sources.

For power generation and electricity sales, we will pursue the establishment of an electric power business structure through the Fukushima Natural Gas Power Plant<sup>\*1</sup>, improvement of operating rates, and development of renewable energy.

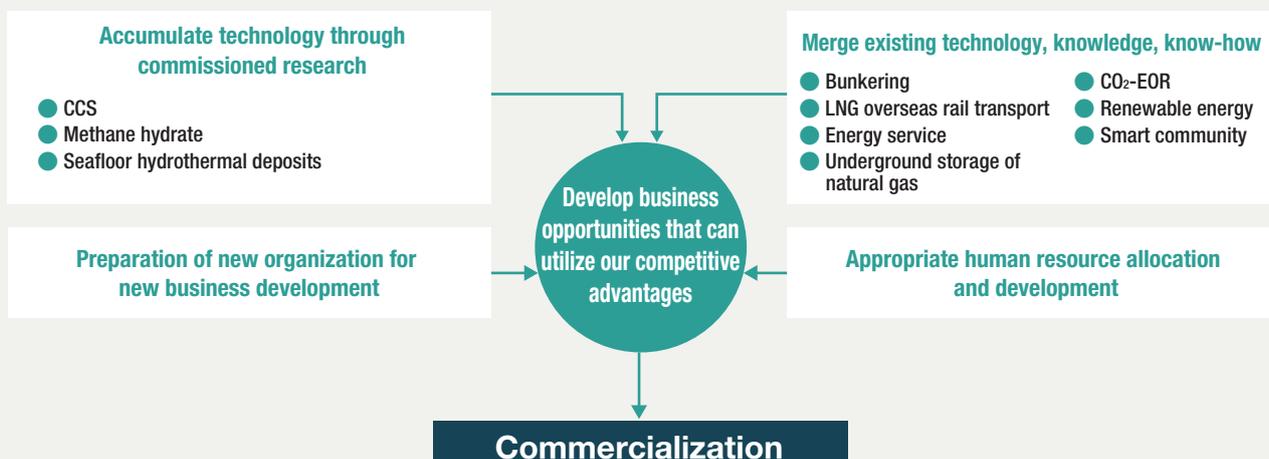
<sup>\*1</sup> Owned by Fukushima Gas Power Co., Ltd. (JAPEX investment ratio 33%)

### New Business Development

#### Target

**Business Generation by the New Business Model Utilizing Our Competitive and Advance Resources**

We aim to establish a department for generating new business, create a business model, and make projects profitable with a view to commercialization of technological strengths by utilizing JAPEX E&P technology together with know-how from the domestic natural gas supply network in Japan.



## CSR Activities of the JAPEX Group

### Message from the Executive in Charge of the Corporate Strategy Dept.

Under the Corporate Vision of JAPEX we advocate “Contribute to society through stable supply of energy, and address social issues toward realizing the sustainable development agendas”, and aim for our business activities themselves to be an important CSR priority.

In realizing this Corporate Vision, we embed the CSR management in our business development as fundamental basis, and accelerate our CSR activities according to “SHINE” initiatives established as our core CSR themes. Each of our departments sets out its own CSR action plans and targets corresponding to the “SHINE” initiatives and has been implementing a process (the PDCA cycle) for continual improvements.

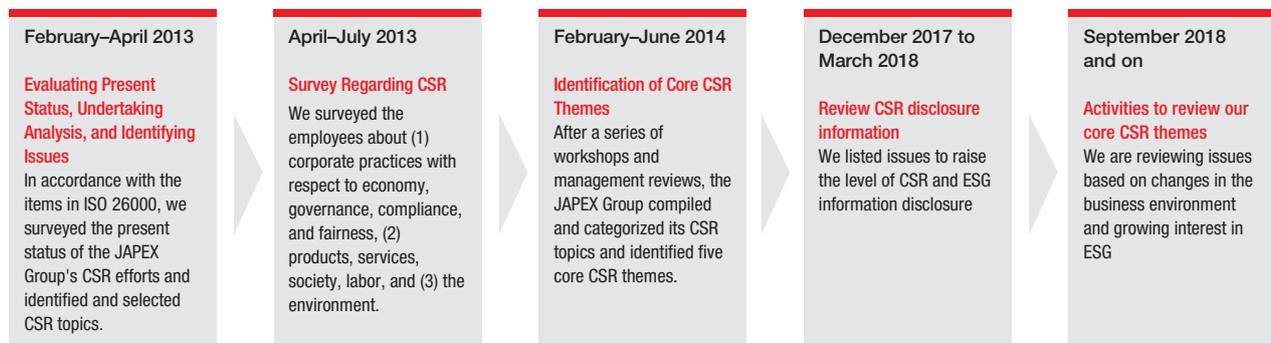
In order to achieve sustainable growth of our company and maximize the corporate value, placing top priority on the trustworthy relationship with all of our stakeholders, our “Long-term Vision 2030” represents our continuous efforts for addressing ESG issues and for solving social issues focusing on three agendas of the SDGs, in accordance with our CSR “SHINE” initiative.

For the next step, we will revisit our top-priority CSR issues by thoroughly reviewing relevance of social issues, our business and the core CSR themes, in order to keep up with global trends and change of our business environment and to respond to the expectations and requests from all of our stakeholders.



**Kazuhiko Ozeki**  
Director  
Managing Executive Officer  
Corporate Strategy Dept.

### Process of Identifying and Reviewing Core CSR Themes



### The JAPEX Group Efforts to Achieve the Sustainable Development Goals

In September 2015, the United Nations released the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) to achieve a better and more sustainable future. The 17 goals and their 169 targets were adopted by countries around the world.

We aim to contribute to achieving these goals, so we settled on a relevance between our core CSR themes and the SDGs according to the SDG Compass which is a guidance for companies on how they can align their strategies as well as measure and manage their contribution to realization of the SDGs.

We will review our core CSR themes in light of the SDGs, and will address our own targets to make a proactive contribution.



## Five Core CSR Themes as “SHINE” Initiatives

	JAPEX Core CSR Themes	CSR Goals	Individual Issues	SDGs
S	<b>S</b> table and sustainable energy supply	<ul style="list-style-type: none"> <li>• Achieve a stable supply of energy by maintaining stable supply sources and infrastructure for crude oil and natural gas, efficient and safe operations, and ensuring the quality and safety of its products.</li> <li>• Secure diverse sources of supply by actively participating in the development of geothermal, solar, and other renewable energy sources, as well as unconventional energy sources such as shale oil gas and methane hydrate, while contributing to the development of related technologies such as carbon dioxide capture and storage (CCS).</li> </ul>	<ol style="list-style-type: none"> <li>① Stable energy supply</li> <li>② Development of new technologies</li> </ol>	  
H	<b>H</b> SE as our culture	<ul style="list-style-type: none"> <li>• Secure occupational health and safety, develop various risk management policies and systems, including security risks, and firmly establish a corporate culture that places top priority on health, safety, and the environment (HSE).</li> <li>• In conducting its business, strive for energy conservation and the efficient use of natural resources to prevent global warming and ensure the sustainability of resources.</li> <li>• Reduce the environmental impact of its activities by preventing water, air, and soil pollution and taking care of our ecosystem.</li> </ul>	<ol style="list-style-type: none"> <li>③ Occupational health and safety</li> <li>④ Crisis management</li> <li>⑤ Measures to prevent global warming</li> <li>⑥ Preserving biodiversity and ecosystems</li> <li>⑦ Pollution prevention and resource recycling</li> </ol>	   
I	<b>I</b> ntegrity and governance	<ul style="list-style-type: none"> <li>• Practice highly efficient and transparent management under its governance structure.</li> <li>• Establish a compliance system that prevents the occurrence of improper activities and legal violations.</li> <li>• Foster employee awareness to promote steadfast work practices that are aligned with our Corporate Vision.</li> </ul>	<ol style="list-style-type: none"> <li>⑧ Governance</li> <li>⑨ Compliance</li> </ol>	 
N	<b>N</b> eighbor Being a good Neighbor	<ul style="list-style-type: none"> <li>• Through open and sound communication with stakeholders, gain an accurate understanding of the requirements society places on the JAPEX Group.</li> <li>• By creating employment in regions where the Group operates and pursuing fair business practices, achieve co-existence and growth with its business partners, clients, and oil- and gas-producing countries.</li> <li>• Respect local cultures and maintain good relationships with local communities through social contribution and funding initiatives outside our business activities.</li> </ul>	<ol style="list-style-type: none"> <li>⑩ Growing together with local communities</li> <li>⑪ Building good relationships with stakeholders</li> </ol>	  
E	<b>E</b> mployer of choice The Employer of choice	<ul style="list-style-type: none"> <li>• Establish a friendly workplace where all its employees—encompassing a wide range of nationalities, academic qualifications, and careers—recognize the diversity of each other's attributes, fulfill their individual potential, receive appropriate evaluation and remuneration, improve their technical skills and knowledge, and are able to grow.</li> <li>• As a global company, provide an attractive work environment where talented people choose to work.</li> </ul>	<ol style="list-style-type: none"> <li>⑫ Respecting employee diversity</li> <li>⑬ Creating a fair and rewarding workplace</li> <li>⑭ Human resources development and training</li> </ol>	 

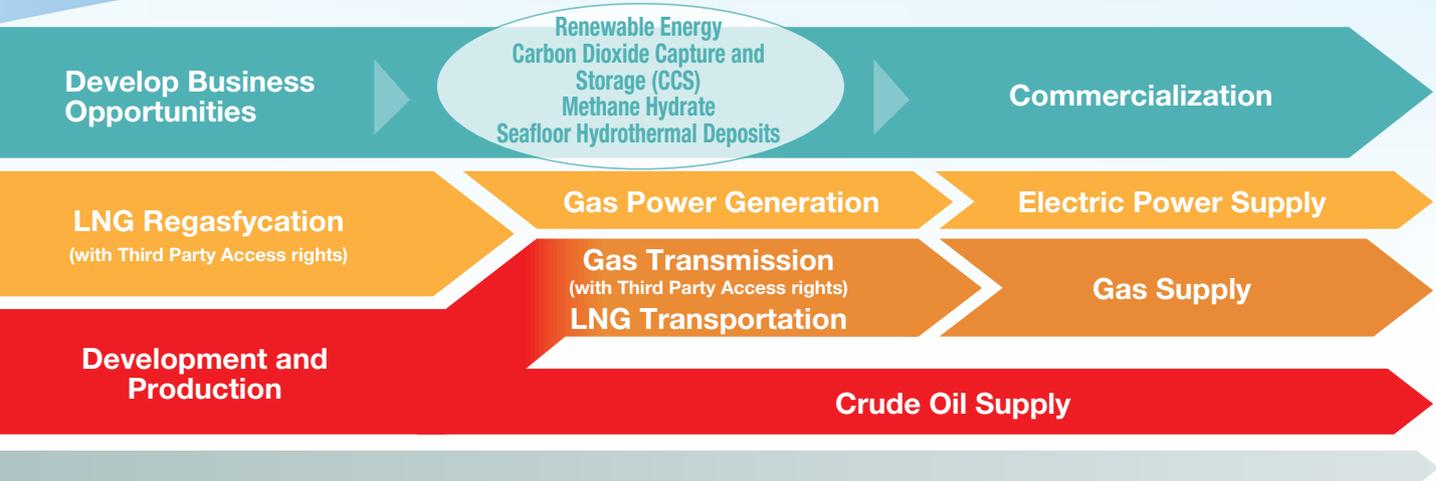
# Issues to Consider in the JAPEX Group's Value Chain



		Common to Every Business	E&P Business
Issues to Consider	Main Stakeholders		<ul style="list-style-type: none"> <li>Clients</li> <li>Shareholders and Investors</li> <li>Local communities</li> <li>Oil- and gas-producing countries</li> <li>Business partners</li> <li>Transaction partners</li> <li>Employees</li> </ul>
	Details	<ul style="list-style-type: none"> <li>Increasing social requirements for low-carbonization and decarbonization</li> <li>Ensuring occupational health and safety, and preserving environment (HSE)</li> <li>Establishing an efficient and transparent governance structure</li> <li>Preventing unfair competition based on bribes and other corruption</li> <li>Compliance with laws and regulations in countries and regions where we operate</li> <li>Growing together with local communities where we operate</li> <li>Quality control and product safety</li> <li>Respecting employee diversity</li> <li>Improving fair workplace environments and respect for human rights</li> </ul>	<ul style="list-style-type: none"> <li>Intensified competition for resource acquisition</li> <li>Geopolitical factors in countries and regions where we operate</li> <li>High technical difficulty on the exploration frontier</li> <li>Decreasing production and declining reserves</li> <li>Fluctuations in selling prices due to volatile commodity prices and exchange rates</li> <li>Increasing social requirements for low carbon and decarbonization</li> <li>Incidents and mining pollution</li> </ul>
	Countermeasures	<ul style="list-style-type: none"> <li>Establish investment evaluation standards taking into account our climate change response</li> <li>Develop security systems and emergency response, strengthen environmental management and enhance HSE culture</li> <li>Accelerate decision-making procedures and strengthen supervisory functions of operations</li> <li>Ensure compliance with guidelines for preventing corruption</li> <li>Mutual understanding through dialogue with stakeholders and appropriate information disclosure</li> <li>Quality control, product safety, and appropriate information disclosure</li> <li>Develop an energy system locally produced and consumed and plan a disaster-resistant community</li> <li>Industrial integration through energy supply and creation of employment</li> <li>Assure work-life balance</li> <li>Create workplace environments where employees can fulfill their individual potential</li> </ul>	<ul style="list-style-type: none"> <li>Develop strategies and establish a department for creating new business</li> <li>Formulate business plans and conclude contracts taking into account of geopolitical factors</li> <li>Enhance oil and gas technologies to pursue exploration potential</li> <li>Keep increasing production and reserve volumes</li> <li>Reduce carbon emissions at development and production stages and create environmentally friendly new businesses</li> <li>Carry out safe and responsible decommissioning</li> </ul>

Core CSR Themes: ● [S] Stable and sustainable energy supply ● [H] HSE as our culture ● [I] Integrity and governance

Developing Business Organically to Leverage Competitive Advantages



Infrastructure & Utility Business (Gas Business, Electric Power Business)	New Business Development
<p>Clients Shareholders and Investors Local communities Gas-producing countries Business partners Transaction partners Employees</p>	<p>Clients Shareholders and Investors Local communities Business partners Transaction partners Industry groups Employees</p>
<ul style="list-style-type: none"> <li>● Ensuring stable procurement of energy resources from overseas and a stable supply</li> <li>● Increase of maintenance and management costs for gas supply networks</li> <li>● Increasingly fierce competition for sales due to liberalization of the energy markets</li> <li>● Reduction of sales volume due to decline of gas demand</li> <li>● Fluctuation in procurement prices due to volatile gas prices and exchange rates</li> <li>● ● Interruption of supply due to accident and disaster</li> </ul>	<ul style="list-style-type: none"> <li>● ● Commercialization by new business model</li> </ul>
<ul style="list-style-type: none"> <li>● Ensure stable supply and cost competitiveness by diversification of energy resource suppliers from overseas and expansion of supply infrastructure</li> <li>● Increase volume by expanding sales to new users</li> <li>● Create business schemes that are less affected by commodity prices, and diversify our business</li> <li>● ● Improve technical capacities for storing and transporting natural gas</li> <li>● ● Improve capacity to manage and carry out projects and technical capabilities. Train human resources</li> </ul>	<ul style="list-style-type: none"> <li>● ● Develop renewable energy business, establish and commercialize advanced technologies in new energy fields</li> </ul>

● [N] Being a good neighbor ● [E] The Employer of choice

## Recognition of Climate Change and a Response

### Our Recognition

The SDGs and the Paris Agreement accelerated a worldwide movement toward a decarbonized society, such as creating regulations relating to the environment and its resources. The energy industry is also transforming, and the global community has a higher interest in the development of sustainable societies. In addition, what institutional investors and other stakeholders require for enterprises is shifting to positive and active approaches to raise the corporate values in a sustainable manner.

In 2017, Task Force on Climate-related Financial Disclosures (TCFD)<sup>\*1</sup> which was established by Financial Stability Board (FSB)<sup>\*2</sup> announced recommendations for information disclosure regarding financial impacts by climate change.

The JAPEX group recognizes risks and opportunities which climate change brings on our business as a critical management issue. In our “Long-term Vision 2030,” we state that JAPEX plays an active role to solve social agendas in order to realize a sustainable energy supply and the sustainable development goals.

<sup>\*1</sup> Task-oriented group engaged in disclosure of financial information related to the climate

<sup>\*2</sup> International body that monitors and makes recommendations about the global financial system

### Risks and Opportunities

We consider the progressive movement of low-carbonization and decarbonization to be a risk which threatens our E&P business. Our countermeasures are to reduce CO<sub>2</sub> emissions in our operations and to generate environmentally-friendly new businesses. We will commercialize renewable energy and CO<sub>2</sub> emission offset technology by utilizing the technology and know-how acquired through our E&P Business. We also implement processes to manage climate-related risks.

Particularly, we are promoting energy saving operations and switching fuel to natural gas, the cleanest-burning hydrocarbon. At the same time, we are pursuing renewable energy businesses such as geothermal and solar power. We engage in development of technologies, including CCS, which can contribute to limit global warming. Through these activities, we are transforming to a corporate group capable of contributing to development of sustainable societies. In addition to risk management systems for current businesses, we are implementing internal carbon pricing as an investment evaluation standard to take climate change into account. We endeavor to meet dual challenges of maximizing the value of our E&P projects and realizing a low-carbon society.

Close Up

Toward the Value Creation of the Future

### Renewable Energy

Among the renewable energy initiatives seeking to resolve issues involved in the move toward low carbon and decarbonization, JAPEX focuses particularly on promoting commercialization in the areas of solar power, geothermal power, and biogas.

The solar power business includes our mega-solar power plant (1,800 kW) at the JAPEX Hokkaido District Office site and Solar Power Tomakomai Co., Ltd. (13,000 kW; JAPEX owns 20%), established by JAPEX with the Sumitomo Corporation Group. We have had these two mega-solar power plants in commercial operation since 2014.



Solar panels (Solar Power Tomakomai Co., Ltd.)

In the geothermal power business, we have been conducting commercialization surveys in the Mt. Musa area of Shibetsu Town in Hokkaido and in the Bandai region of Fukushima Prefecture. Now we have completed both surveys, and are pursuing the possibility of geothermal development in other, new areas around Japan.

In our biogas activities, JAPEX incorporated the Shandong Bio-energy Corporation with the Chinese Shandong Shifang Environmental Protection & Bio-Energy Co., Ltd., in 2007. The Shandong Bio-energy Corporation has been refining and compressing biogas generated in landfill. We then sell the biogas as fuel for natural gas-powered automobiles and as a raw material for city gas.

## CCS (Carbon Dioxide Capture and Storage)

CCS is a technology to inject CO<sub>2</sub> directly into depleted oil and gas reservoirs, coal reservoirs deep in the ground, deep inside saline aquifers, and so on, for storage. It is attracting worldwide attention as an innovative technology for significantly reducing the discharge into the atmosphere of CO<sub>2</sub>, which is a causal factor in climate change. Nationwide storage potential quantity surveys have shown that up to 146 billion tons of CO<sub>2</sub> could be stored in Japan. Detailed surveys commenced in 2014.

With the aim of commercializing CCS technology, JAPEX established Japan CCS Co., Ltd. (JCCS) with other private-sector companies in May 2008. The Japanese government's Basic Energy Plan of 2018, taking into consideration the likelihood that CCS technology will be commercialized around 2020, stated that it would steadily promote measures to demonstrate the CCS process and to survey suitable storage sites. JCCS has been commissioned since FY2012 by the Ministry of Economy, Trade and Industry (METI), and since April 2018 by the New Energy and Industrial Technology Development Organization (NEDO) to implement a CCS demonstration project in the Tomakomai area of Hokkaido. The injection of CO<sub>2</sub> was

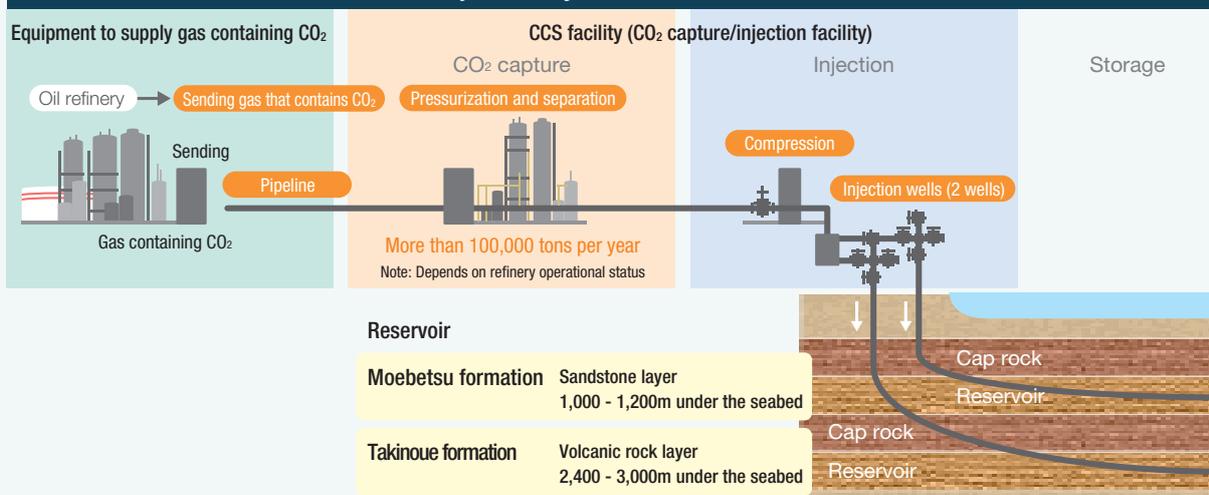
begun in April 2016, and as of the end of August 2018, a cumulative total of 200,000 tons has been injected.

In April 2016, JAPEX also established the Geological Carbon Dioxide Storage Technology Research Association jointly with the Research Institute of Innovative Technology for the Earth (RITE), the National Institute of Advanced Industrial Science and Technology (AIST) and three private-sector companies. Commissioned by METI, this association has engaged in development of safety management technology for large-scale CO<sub>2</sub> injection and storage as well as development of effective injection technology utilizing micro-bubble techniques.

### E&P Technologies Applicable to CCS

- Technologies for identifying subsurface structures and estimating petrophysical properties
- Technologies for drilling extended reach wells at depths and horizontal distances of several thousand meters
- Geophysical logging technologies
- Technologies for producing crude oil and natural gas safely
- Fluid movement simulation technologies
- Underground monitoring technologies

### Overview of Tomakomai Demonstration Project Facility



Based on materials from Japan CCS Co., Ltd.

Stable and sustainable energy supply

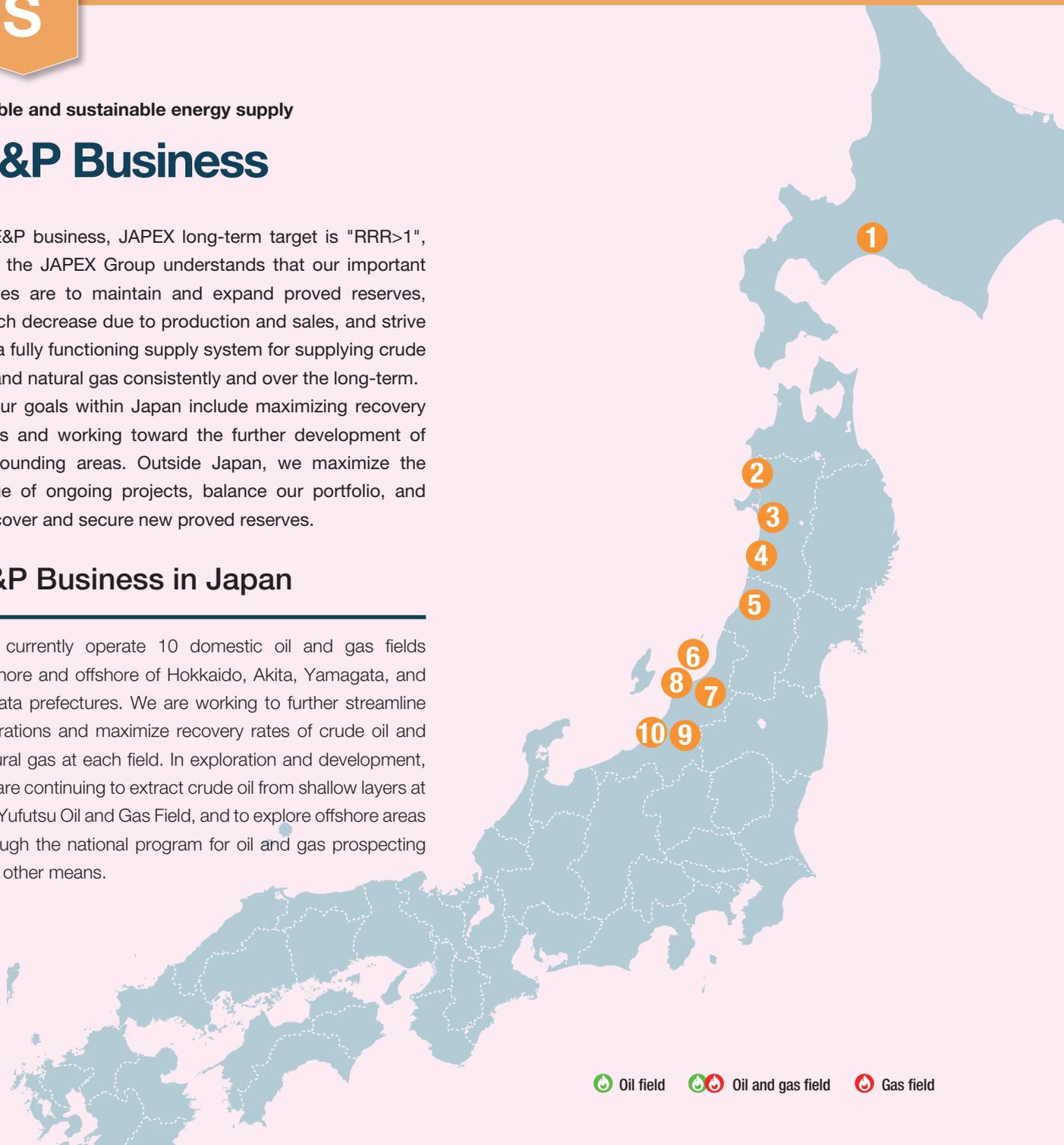
## E&P Business

In E&P business, JAPEX long-term target is "RRR>1", and the JAPEX Group understands that our important issues are to maintain and expand proved reserves, which decrease due to production and sales, and strive for a fully functioning supply system for supplying crude oil and natural gas consistently and over the long-term.

Our goals within Japan include maximizing recovery rates and working toward the further development of surrounding areas. Outside Japan, we maximize the value of ongoing projects, balance our portfolio, and discover and secure new proved reserves.

### E&P Business in Japan

We currently operate 10 domestic oil and gas fields onshore and offshore of Hokkaido, Akita, Yamagata, and Niigata prefectures. We are working to further streamline operations and maximize recovery rates of crude oil and natural gas at each field. In exploration and development, we are continuing to extract crude oil from shallow layers at the Yufutsu Oil and Gas Field, and to explore offshore areas through the national program for oil and gas prospecting and other means.



 Oil field  Oil and gas field  Gas field

#### 1 Yufutsu Oil and Gas Field



Tomakomai City, Hokkaido

Discovered in 1989

In production from 1996

The Yufutsu Oil and Gas Field is one of the few oil and gas fields in the world with oil and gas contained in naturally fractured reservoirs. The field is formed by the Minami-Yufutsu, Numanohata, and Akebono structures. Currently we are in the process of developing crude oil from the undeveloped shallow layers of this field, aiming to start oil production in 2020.

#### 2 Sarukawa Oil Field



Oga City, Akita Prefecture

Discovered in 1958

In production from 1959

The Sarukawa Oil Field extends offshore from the northern coast of the Oga Peninsula in Akita Prefecture. More than 50 years have passed since the start-up of production and JAPEX has drilled more than 100 wells. Here, we are employing the gas lift recovery method, which is a type of artificial lift, and water flooding (hydraulic injection), which is IOR (Improved Oil Recovery).

## 3 Ayukawa Oil and Gas Field



Yurihonjo City, Akita Prefecture

Discovered in 1989

In production from 1995

JAPEX was the first to succeed in the commercial production of tight oil in 2014, at the Ayukawa Oil Field in Akita Prefecture, after the first tight oil demonstration tests in Japan in 2012 in existing well Kurosawa AK-1 in the Onnagawa formation of the field. Oil and gas produced in the Ayukawa area is transported through the flow line to the Yurihara central facility.

## 7 Shiunji Gas Field



Shibata City, Niigata Prefecture

Discovered in 1962

In production from 1963

Natural gas is stored underground at the Shiunji Gas Field. The underground reservoir that stores natural gas contributes to stable supply of gas by functioning as an ideal gas tank that requires no modification as well as a reserve for demand adjustments and emergencies.

## 4 Yurihara Oil and Gas Field



Yurihonjo City, Akita Prefecture

Discovered in 1976

In production from 1984

The Yurihara Oil and Gas Field extends across the Yuri highlands on the northern slopes of Mt. Chokai, in the city of Yurihonjo, Akita Prefecture. The Yurihara SK-1 exploration well successfully discovered shallow oil and gas deposits. IOR by gas injection has been implemented since 2014 in an effort to improve the oil recovery rate.

## 8 Higashi-Niigata Gas Field



Niigata City, Niigata Prefecture

Discovered in 1959

In production from 1959

The Higashi-Niigata Gas Field is located in a wide area under the sand dunes and offshore area east of the mouth of the Agano River. In 1959, gas shows were recognized from the shallow layers in the exploration well Higashi-Niigata SK-1. Later, many gas layers were discovered there. The large size of the formation and the number of gas layers make the Higashi-Niigata Gas Field one of the leading gas fields in Japan.

## 5 Amarume Oil Field



Shonai Town, Yamagata Prefecture

Discovered in 1960

In production from 1960

The Amarume Oil Field is a typical plain oil field located in the middle of the Shonai plain. Full-scale production began in 1960, and despite the gradual decline of the production volume, continued efforts to streamline, such as centralizing management and reducing well pads, have garnered praise for this field as a model case of the successful use of a declining oil field.

## 9 Katakai Gas Field



Ojiya City, Niigata Prefecture

Discovered in 1960

In production from 1960

The Katakai Gas Field is located in a hilly area with elevation 150 m to 200 m that straddles the cities of Nagaoka and Ojiya. The field dates back to the success of Katakai SK-1 and Ojiya SK-2 in 1960, and in 1978, the exploration well Katakai SK-8 discovered deep gas in a deep layer of green tuff.

## 6 Iwafune-oki Oil and Gas Field



Approx. 4 km offshore from the mouth of the Tainai River, Tainai City, Niigata Prefecture

Discovered in 1983

In production from 1990

The Iwafune-oki Oil and Gas Field is located on the continental shelf in the Sea of Japan roughly 30 km northeast of Niigata City, and the middle of the field is the location of the only offshore oil platform in Japan. The crude oil and natural gas produced there are transported to the onshore facility through a roughly 21 km submarine pipeline.

## 10 Yoshii Gas Field



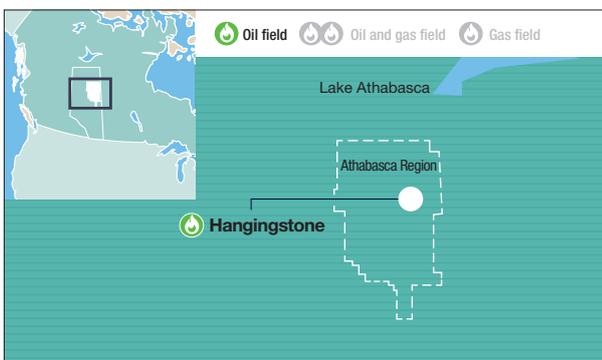
Kashiwazaki City, Niigata Prefecture

Discovered in 1968

In production from 1968

The Yoshii Gas Field is located in the Chuo oil belt (Chuoyutai anticline) that stretches from the Nagaoka Okozu Waterway to the Yasuda area in the city of Kashiwazaki. The gas field had its origins in the success of the Yoshii SK-1D exploration well in producing gas from green tuff in 1968. Later, many extension wells were drilled in the Yoshii, Myohoji and Yasuda areas.

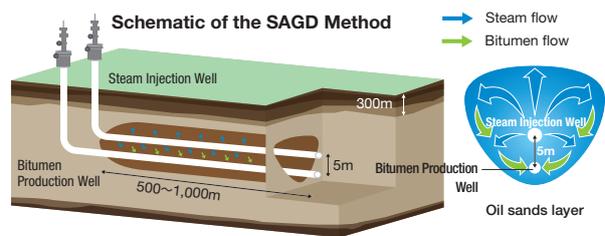
Stable and sustainable energy supply  
Overseas E&P Business



JAPEX, through its subsidiary, Japan Canada Oil Sands Limited (JACOS) succeeded to produce a bitumen utilizing SAGD (steam-assisted gravity drainage) process at the 3.75 Section Area of Hangingstone in 1999 as a pioneer and continued production operations until the decision not to restart them in 2017. The cumulative bitumen production volume reached 35 million barrels.

Following the construction of an expansion project in areas adjacent to the 3.75 Section Area that commenced in 2013, the bitumen production operations started in August 2017 and transitioned to stable bitumen production operations of 20,000 barrels per day scale in June 2018.

Block	Hangingstone Leases	
<b>Project Company (Founded)</b>	Canada Oil Sands, Ltd. (December 1978) JACOS, a local subsidiary	
<b>Percent of Interest</b>	JACOS (Operator)	75%
	Nexen Energy	25%

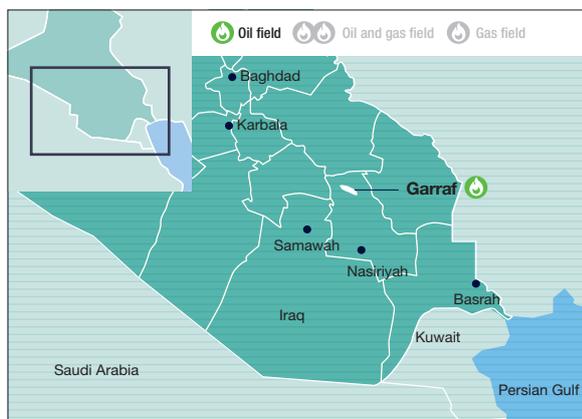


We have been producing shale gas from North Montney area in BC, Canada since 2013 through our consolidated subsidiary JAPEX Montney Ltd.(JML).

We produce 500 million cubic feet per day (90,000 boe/d) of shale gas, which are being sold in Western Canada. We have confirmed abundant shale gas resources, pursue investment by prioritizing the area based on economics and keep efficiently develop and produce the resources.

Area	North Montney Area	
<b>Project Company (Founded)</b>	JAPEX Montney Ltd. (March 2013)	
<b>Percent of Interest</b>	PETRONAS Group (Operator)	62%
	Sinopec Group	15%
	JAPEX Group	10%
	Indian Oil Group	10%
	Petroleum Brunei Group	3%

\* Decided not to proceed PNWL project at Lelu Island near the Prince Rupert, British Columbia in July 2017.



Through our consolidated subsidiary Japex Garraf Ltd., we are developing the Garraf Oil Field. We have produced a total of roughly 160 million barrels since commencing commercial production of crude oil in the field in 2013.

In April, 2018, the operator and partners reached an agreement to embark on further development to increase production in accordance with the Final Development Plan approved by the Iraqi authority.

The production volume will be gradually ramped up to the plateau production target of 230,000 bbl/d by the end of 2020.

Field	Garraf Oil Field	
<b>Project Company (Founded)</b>	Japex Garraf Ltd. (March 2010)	
<b>Contract Type</b>	Development and Production Service Contract (DPSC)	
<b>Contract Term</b>	20 years (with an optional 5-year extension)	
<b>Remuneration</b>	USD1.49 per barrel of crude oil production	
<b>Contracting Party</b>	Basra Oil Company (under the Iraqi Ministry of Oil)	
Development Contractors	Project Share	Cost Share
<b>PETRONAS (Operator)</b>	45%	60%
<b>Japex Garraf Ltd.</b>	30%	40%
<b>North Oil Company</b> (under the Iraqi Ministry of Oil)	25%	-*

\* JAPEX and PETRONAS are to provide the North Oil Company's share of costs, which will be recovered from the produced oil.



In the Kangean block, where JAPEX has a 25% interest, we are producing natural gas and condensate from the Terang Gas Field, which is a part of the TSB (Terang, Sirasun, Batur) Gas Field Complex, and the Pagerungan Gas Field.

The Terang Gas Field went into commercial production in 2012, and now it is producing 190 million cubic feet of natural gas per day (33,000 boe/d), and the cumulative production volume reached 80 million boe in November 2017. After being processed at the floating production unit (FPU), natural gas produced from the Terang Gas Field is delivered through the East Java Gas Pipeline to a state-owned power company, a fertilizer factory and so on. Development at the Sirasun and Batur Gas Fields is underway toward their production commencement in 2019.

Block	Kangean Block	
<b>Project Company (Date of share acquisition)</b>	Energi Mega Pratama Inc. (May 2007)	
<b>Percentage of Interest</b>	Kangean Energy Indonesia Ltd. (Operator)	60%
	EMP Exploration (Kangean) Ltd.	40%

Note: Kangean Energy Indonesia Ltd. and EMP Exploration (Kangean) Ltd. are subsidiaries of Energi Mega Pratama Inc. JAPEX holds 25% of the shares of Energi Mega Pratama Inc.

## Stable and sustainable energy supply



Japex (U.S.) Corp. participates in tight oil project in the Eagle Ford play, located in the southern part of Texas. Tight oil is a type of crude oil contained in low-permeability shale and the like, extracted using a technology known as hydraulic fracturing. In conjunction with Marathon Oil EF LLC, we are acquiring the latest technology, and we will employ the knowledge gained in this project to improve productivity and economics in other existing and future projects.

Oil and Gas Lease	Middle McCowen Lease	
<b>Project Company (Founded)</b>	Japex (U.S.) Corp. (October 1980)	
<b>Percent of Interest</b>	Marathon Oil EF LLC (Operator)	95%
	Japex (U.S.) Corp.	5%



JAPEX participates in the Sakhalin-1 Project through its investment in the Sakhalin Oil and Gas Development Co., Ltd. Crude oil and natural gas have been produced in the Chayvo Oil and Gas Field since 2005, and in 2015, the project set the world record for a measured depth of 13,500 meters using extended reach drilling. In addition, crude oil production commenced in 2010 at the Odoptu Oil and Gas Field, and in 2015 at the Arkutun-Dagi Oil and Gas Field.

Block	Chayvo, Odoptu and Arkutun-Dagi	
<b>Project Company (Founded)</b>	Sakhalin Oil and Gas Development Co., Ltd. (March 1995)	
<b>Percentage of Interest</b>	Exxon Neftegas, Ltd. (Operator)	30%
	Sakhalin Oil and Gas Development Co., Ltd.	30%
	ONGC Videsh Ltd.	20%
	Sakhalinmorneftegas-Shelf	11.5%
	RN-Astra	8.5%



JAPEX UK E&P Ltd. is engaged in exploration and evaluation activities in the Seagull Field, about 300 km offshore from Aberdeen. In 2015, we succeeded in producing crude oil and natural gas in an appraisal well, and we are conducting further evaluation activities based on those results.

Block	Seagull Field	
<b>Project Company (Founded)</b>	JAPEX UK E&P Ltd. (March 2014)	
<b>Percentage of Interest</b>	Neptune Energy*	35%
	BP	50%
	JAPEX UK E&P Ltd.	15%

\* Neptune acquired an interest from Apache North Sea Ltd. in August 2018. The timing of the transfer of operatorship is under discussion.

## Proved Reserves

Proved reserves owned by JAPEX and its consolidated subsidiaries as of March 31, 2018, along with our investment equivalent in proved reserves of equity-method affiliates are presented in the following table.

### Proved Reserves of the JAPEX Group

Proved Reserves	JAPEX and Consolidated Subsidiaries								Equity-Method Affiliates		Total		
	Japan		Overseas			Subtotal							
	Crude oil	Natural gas	Crude oil	Bitumen	Natural gas	Crude oil	Bitumen	Natural gas	Crude oil	Natural gas	Crude oil	Bitumen	Natural gas
	Thousand kL	Million m <sup>3</sup>	Thousand kL	Thousand kL	Million m <sup>3</sup>	Thousand kL	Thousand kL	Million m <sup>3</sup>	Thousand kL	Million m <sup>3</sup>	Thousand kL	Thousand kL	Million m <sup>3</sup>
<b>As of March 31, 2017</b>	2,374	9,753	2,717	22,076	15,811	5,091	22,076	25,564	1,904	2,173	6,995	22,076	27,737
Increase due to expansion or discovery	-	-	464	-	-	464	-	-	-	-	464	-	-
Change due to revision of evaluation standard	720	167	△ 734	△ 992	△ 7,959	△ 14	△ 992	△ 7,793	2,902	886	2,888	△ 992	△ 6,907
Change due to acquisition and/or divestiture	-	-	-	-	-	-	-	-	-	-	-	-	-
Decrease due to production	△ 291	△ 815	△ 835	△ 132	△ 495	△ 1,126	△ 132	△ 1,309	△ 456	△ 561	△ 1,583	△ 132	△ 1,871
<b>As of March 31, 2018</b>	<b>2,802</b>	<b>9,105</b>	<b>1,612</b>	<b>20,952</b>	<b>7,357</b>	<b>4,415</b>	<b>20,952</b>	<b>16,462</b>	<b>4,350</b>	<b>2,498</b>	<b>8,764</b>	<b>20,952</b>	<b>18,960</b>

Notes: 1. Proved reserves of the following consolidated companies include reserves held by non-controlling interests. (Figures in parentheses are non-controlling interests' percentage.)

Japan: Japex Offshore Ltd. (29.39%)

Overseas: Canada Oil Sands Co., Ltd. (5.42%), JAPEX Montney Ltd. (55.00%), Japex Garraf Ltd. (45.00%)

- Reserves of consolidated subsidiaries and equity-method affiliates whose fiscal year-ends differ from that of the Company are accounted for on the basis of the entity's respective fiscal year-end.
- Based on the Preliminary Development Plan approved on January 19, 2011, our consolidated subsidiary, Japex Garraf Ltd. initiated development operations and began initial production on August 31, 2013. Meanwhile, we continued discussions with the Iraqi government regarding the Final Development Plan (FDP) looking to gradually increase production to the final goal of 230,000 bbl/d. Since the FDP has not yet been approved as of December 31, 2017, Japex Garraf's fiscal year-end, we posted the company's planned production for fiscal 2018 as its reserves at the end of the current fiscal year. With the FDP having gained approval from the Iraqi government in February 2018, we subsequently intend to post additional reserves based on the FDP next fiscal year (as of March 31, 2018, we estimate the company's planned production of crude oil at 13,837,000 kL in fiscal 2019 and subsequent fiscal years).
- The above proved reserves are figures based on our own evaluation using the definition of proved reserves in PRMS (Petroleum Resource Management System 2007).

### Proved Reserves of the JAPEX Group: Crude Oil Equivalent (For Reference)

Proved Reserves	JAPEX and Consolidated Subsidiaries								Equity-Method Affiliates		Total		
	Japan		Overseas			Subtotal							
	Crude oil	Natural gas	Crude oil	Bitumen	Natural gas	Crude oil	Bitumen	Natural gas	Crude oil	Natural gas	Crude oil	Bitumen	Natural gas
	Million bbl	Million boe	Million bbl	Million bbl	Million boe	Million bbl	Million bbl	Million boe	Million bbl	Million boe	Million bbl	Million bbl	Million boe
<b>As of March 31, 2017</b>	15	59	17	139	96	32	139	156	12	13	44	139	169
											Total 352		
Increase due to expansion or discovery	-	-	3	-	-	3	-	-	-	-	3	-	-
Change due to revision of evaluation standard	5	1	△ 5	△ 6	△ 48	△ 0	△ 6	△ 47	18	5	18	△ 6	△ 42
Change due to acquisition and/or divestiture	-	-	-	-	-	-	-	-	-	-	-	-	-
Decrease due to production	△ 2	△ 5	△ 5	△ 1	△ 3	△ 7	△ 1	△ 8	△ 3	△ 3	△ 10	△ 1	△ 11
<b>As of March 31, 2018</b>	<b>18</b>	<b>55</b>	<b>10</b>	<b>132</b>	<b>45</b>	<b>28</b>	<b>132</b>	<b>100</b>	<b>27</b>	<b>15</b>	<b>55</b>	<b>132</b>	<b>115</b>
											Total 302		

Stable and sustainable energy supply

# Infrastructure & Utility Business

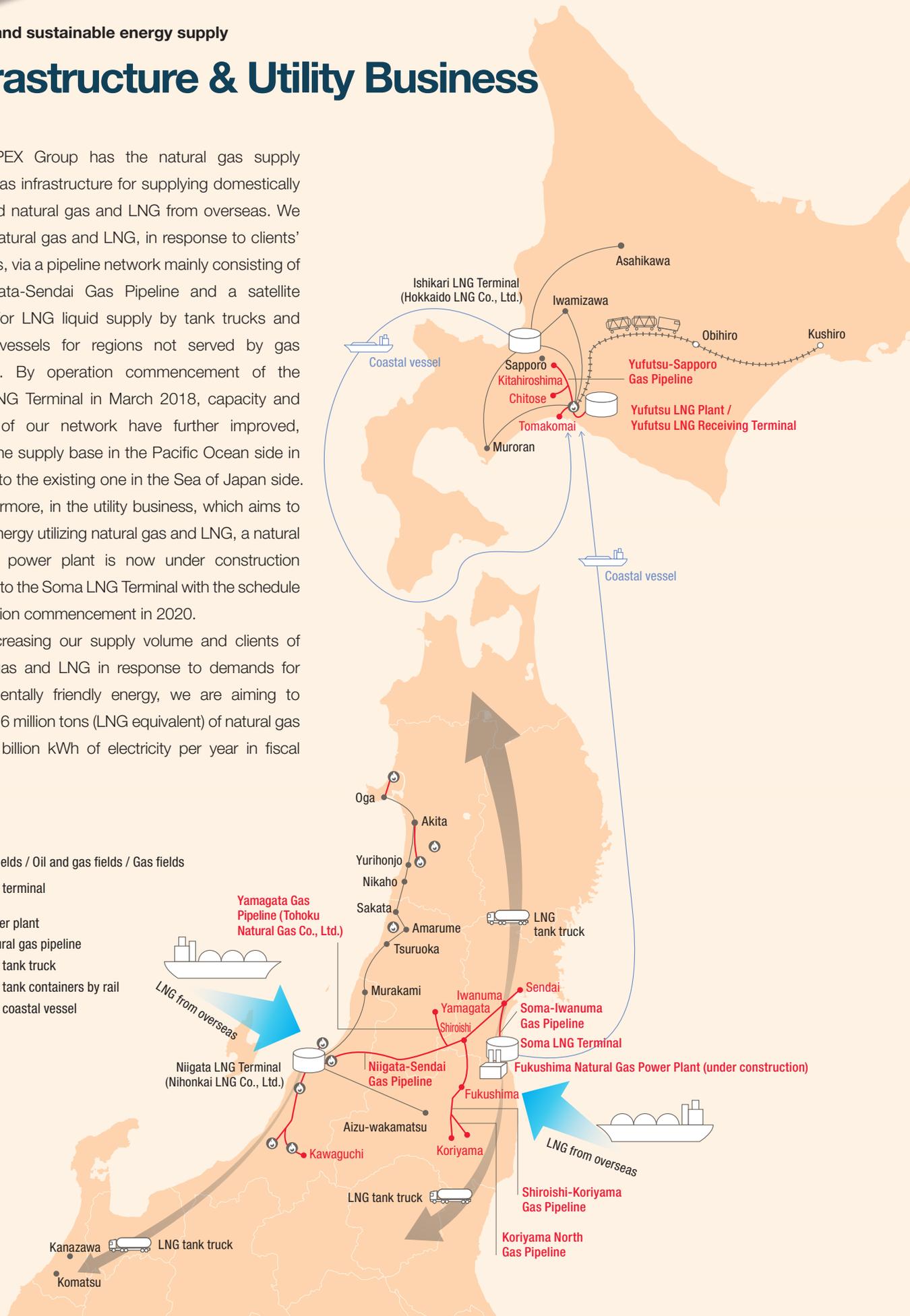
The JAPEX Group has the natural gas supply network as infrastructure for supplying domestically produced natural gas and LNG from overseas. We supply natural gas and LNG, in response to clients' demands, via a pipeline network mainly consisting of the Niigata-Sendai Gas Pipeline and a satellite system for LNG liquid supply by tank trucks and coastal vessels for regions not served by gas pipelines.

By operation commencement of the Soma LNG Terminal in March 2018, capacity and stability of our network have further improved, adding the supply base in the Pacific Ocean side in addition to the existing one in the Sea of Japan side.

Furthermore, in the utility business, which aims to supply energy utilizing natural gas and LNG, a natural gas-fired power plant is now under construction adjacent to the Soma LNG Terminal with the schedule of operation commencement in 2020.

By increasing our supply volume and clients of natural gas and LNG in response to demands for environmentally friendly energy, we are aiming to handle 1.6 million tons (LNG equivalent) of natural gas and 2.8 billion kWh of electricity per year in fiscal 2022.

-  Oil fields / Oil and gas fields / Gas fields
-  LNG terminal
-  Power plant
-  Natural gas pipeline
-  LNG tank truck
-  LNG tank containers by rail
-  LNG coastal vessel





Rendering of the Soma LNG Terminal (Soma Port, Fukushima Prefecture)

## Soma LNG Terminal

JAPEX commenced operations of the Soma LNG Terminal in March 2018, as the first large-scale LNG terminal in Fukushima Prefecture with a ground-type LNG tank with a capacity of 230,000 kiloliters, which is one of the largest LNG tanks in Japan. This terminal is one of the important bases in our domestic natural gas supply network. This terminal plays the critical roles, from receiving and storing LNG from overseas, to vaporizing LNG and sending vaporized gases into our pipeline network, and finally to shipping LNG by our satellite system. LNG vaporized gas is supplied to clients by our gas pipeline network via the Soma-Iwanuma Gas Pipeline, which was constructed at the same time of the terminal construction. Also, the terminal can deliver LNG by tank trucks and coastal vessel to our clients around the terminal and our receiving terminals in Hokkaido.

In October 2016, Fukushima Gas Power Co., Ltd. (FGP), which is funded by private companies including JAPEX, decided on the commercialization of natural gas-fired power plant at Soma Port. Following the decision, JAPEX has outsourced the management of construction (“Phase II construction”) and operation for the additional 230,000 kiloliters ground-type LNG tank and LNG vaporizer. These additional facilities are scheduled to commence its operations in 2020 to coincide with the commencement of commercial operation of the FGP power plant.

## Fukushima Natural Gas Power Plant

Fukushima Natural Gas Power Plant is made of natural gas-fueled power plants using LNG vaporized gas with a low environmental burden. This plant has two 590,000 kW Gas Turbine Combined-Cycle (GTCC) power generation units to generate electric power with higher efficiency and lower CO<sub>2</sub> emissions.

This project adopts the tolling model to enable each partner to sell electricity individually. FGP will generate

electricity using the LNG brought by each partner and then deliver electricity to each partner. Then, every partner can bring LNG to Soma LNG terminal and receive electricity in the equivalent to the volume of LNG they brought.

JAPEX places this project as an important step toward realizing our Long-term Vision: “Growth to the Integrated Energy Company.” Aiming to provide a stable supply of affordable, environmentally friendly electricity to the Greater Tokyo area, we will continue to support FGP for safety-first construction and stable plant operation. Also, JAPEX will work towards the Phase II construction at Soma LNG Terminal, which has a role to supply LNG vaporized gas to power plant.

### Facility Overview

Soma LNG Terminal	
<b>Storage Tank</b>	LNG tank with a capacity of 230,000 kiloliters *Currently constructing an additional tank as Phase II
<b>Receiving Facilities</b>	Jetty for LNG carrier (maximum 210,000-m <sup>3</sup> class) Jetty for coastal LNG vessel (2,500-m <sup>3</sup> class) *Also using for coastal LNG vessel shipping
<b>Vaporizer</b>	75 t/h x 2 units (1 unit as a backup) *Currently constructing an additional vaporization facilities for shipping from FGP power plant as Phase II
<b>Shipping Facilities</b>	LNG coastal vessel (maximum 4,800-m <sup>3</sup> class) LNG tank truck (30 t/h x 5 lanes)
Soma-Iwanuma Gas Pipeline	
<b>Gauge</b>	20 inches
<b>Design Pressure</b>	6.86 MPa
<b>Distance</b>	Approx. 39 km (between Shinchi Town, Soma District, Fukushima Prefecture and Iwanuma City, Miyagi Prefecture)
Fukushima Natural Gas Power Plant (Project Entity: FGP)	
<b>Generation Power and Methods</b>	Gas turbine and steam power (gas turbine combined-cycle)
<b>Fuel</b>	Natural gas (vaporized LNG)
<b>Plant Capacity</b>	Maximum 1.18 million kWh (590,000 kWh x 2 units)

Stable and sustainable energy supply

## New Business Development

The JAPEX Group aims to commercialize new environmentally-friendly businesses as a revenue base for contribution to our sustainable growth while maintaining organic connections to our E&P business and Infrastructure and Utility business. In addition, we believe that the new businesses play major roles in resolving issues to realize a sustainable society.

As for New Business Development opportunities, we plant the seeds by merging the existing technology, knowledge, and know-how accumulated through our existing projects, including the E&P projects and entrusted research projects. Also, we utilize competitive advantages to explore such opportunities.

In addition, we intend to respond to our stakeholders' expectations. We will develop technologies that can

contribute to global warming countermeasures, such as CCS [P.23](#) solar power generation and other forms of renewable energy [P.22](#). We will also establish and commercialize leading technologies in energy industry, for example development of methane hydrate and survey technologies for deep sea mineral resources. In addition, we will pursue energy transportation projects that can contribute to reducing CO<sub>2</sub> emissions, including bunkering and LNG rail transportation overseas.

Furthermore, in order to make new businesses profitable, we are preparing a new organization for new business development, optimizing allocation and development of human resources.



Provided by Japan CCS Co., Ltd.

## Survey Technologies for Deep Sea Mineral Resources

The existence of useful mineral resources vital to modern life has been confirmed under the seabed in the extensive Japanese exclusive economic zone, which is the sixth-largest in the world. Therefore, we are working to develop survey technologies for deep sea mineral resources as a “next-generation technology for ocean resource exploration,” one of the issues raised in the Cross-Ministerial Strategic Innovation Promotion Program (SIP),\* which was established based on the national science and technology strategy.



A smoke-emitting seabed that could contain hydrothermal deposits

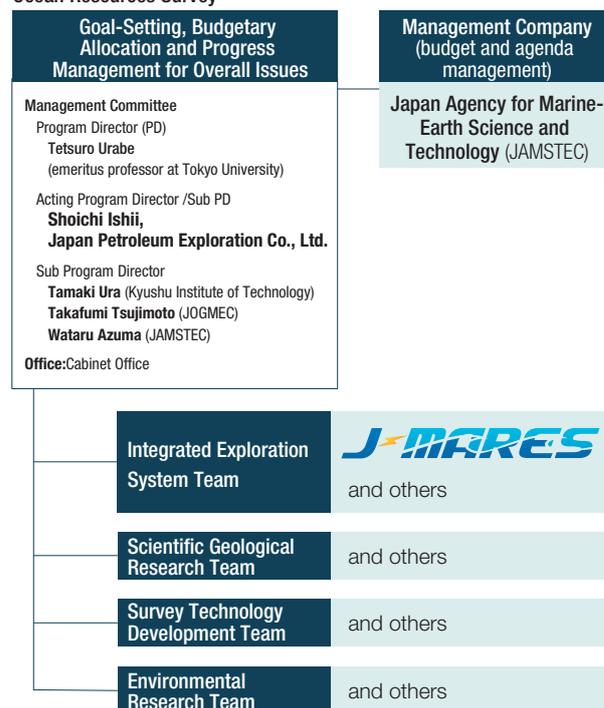
As a member of the Research and Development Partnership for Next-Generation Technology of Marine Resources Survey (J-MARES)—which was established in fiscal 2014 as a corporation authorized by the Ministry of Education, Culture, Sports, Science and Technology in conjunction with our consolidated subsidiary JGI, Inc. and others—we were active members of a technology developing team that comprised numerous research institutes from the commencement of this issue. Presently, we are leading a team that is verifying an integrated survey technology system for deep sea mineral resources to achieve the creation of a private industry as an exit strategy for this issue.

In fiscal 2017, we performed an integrated interpretation and evaluation of various geophysical survey data obtained through a new method developed by J-MARES. The data was obtained for marine areas in which existing data suggested the existence of hydrothermal deposits. We used the results of our integrated interpretation and evaluation to excavate samples that confirmed the existence of hydrothermal deposits. We are also proceeding with the development of technology to establish a three-dimensional visualization system that uses the latest virtual reality (VR) technology, which should be useful in interpretation work. In fiscal 2018, we have explored multiple marine areas for which little data exists to narrow our focus on promising ocean areas, and we plan to conduct further sampling excavation, which we expect will lead to the discovery of new deep sea mineral resources.

Through these initiatives, the JAPEX Group is pursuing the possibility of participation in the exploration market for deep sea mineral resources, etc. which is expected to be established in the future.

In fiscal 2018, we have tackled ocean issues from Phase II of SIP—which has already begun and overlaps with current Phase I of the project—and have begun developing technology to contribute to the exploration and development of deep sea mineral resources that involve the extra challenge of operating in deeper sea areas over 2,000 m below the surface.

### SIP Phase I Implementation System for “Next-Generation Technology of Ocean Resources Survey”



\* A cross-organizational program that extends beyond the bounds of individual ministries and sectors. The program was established to achieve scientific and technological innovation, based on the Strategy on Science, Technology and Innovation” and the “Japan Revitalization Strategy”, which are major government policies, and it has recognized eleven issues, which include “Next-generation Technology for Ocean Resource Exploration.” In addition, in March 2018, 12 issues were determined for Phase II. These issues include “Innovative Technology for Exploration of Deep Sea Resources” and we are proceeding with work to prepare for the implementation of these items.



A three-dimensional image as seen by the operators



Yokosuka City



Bunkyo Ward, Tokyo

The VR visualization system enables operators at different locations to discuss the same three-dimensional data as they perform interpretation and evaluation work

## Stable and sustainable energy supply

### Methane Hydrate

Methane hydrate is an ice-like crystalline solid formed by methane and water that exists in highly pressurized and low-temperature environments, such as below the seabed in deep waters or permafrost layers in the polar regions. Due to this reason, advanced technical capabilities are required to produce methane hydrate. In order to extract methane gas from the methane hydrate layer, depressurization method is confirmed to be the most efficient method. In Japan, it is known that there are two types of methane hydrate to be deposited: “sand-layer type” and “shallow type”.\*1

1,742 gas chimney structures which are expected to exist methane hydrate were confirmed to exist at the sea of Japan side, where shallow type methane hydrate exists, by a national survey in 3 years from 2013.\*2

#### R&D Activities for Methane Hydrate

In March 2013, the world’s first offshore production test of methane hydrate was conducted by the government using a deep-sea drilling vessel, “CHIKYU”, targeting sand-layer type methane hydrate at the Daini Atsumi Knoll, located between Atsumi Peninsula and Shima Peninsula off the coast of Japan. It was confirmed that methane gas continuously produced from an undersea methane hydrate layer by applying the depressurization method (period of six days with an average production volume of 20,000 m<sup>3</sup> per day, and cumulative production of approximately 120,000 m<sup>3</sup>).\*3

Based on these results, the government is proceeding with R&D activities related to methane hydrate while looking at the international situation, to have the private sector-led commercialization project be initiated after 2023 as for sand-layer type.\*4

#### JAPEX’s Contributions

JAPEX recognized the potential of methane hydrate earlier and has been taking the initiative on research and development by providing our technologies, experiences and knowledge which were acquired through oil and gas development. JAPEX also made a contribution by engaging in the operator work for the first offshore production test.

In October 2014, Japan Methane Hydrate Operating Co., Ltd. (JMH) comprised of 11 private companies with capabilities of oil and gas E&P and plant engineering including JAPEX as the largest shareholder was established, aiming to conduct offshore production tests of sand-layer

type methane hydrate efficiently, effectively, and smoothly under the nation-wide organizations in Japan and share the knowledge obtained through the tests with the wide range private companies.

JMH engaged in the operator work concerning the second offshore methane hydrate production test of methane hydrate on commission from Japan Oil, Gas and Metals National Corporation (JOGMEC) in April 2015. From May 2016, up-front works to drill five wells for evaluation, observation, and production were carried out at the Daini Atsumi Knoll, located between Atsumi Peninsula and Shima Peninsula. After that, production tests were undertaken from April to June in 2017.

Also, JAPEX will pursue the possibility for joining future research and development activities of the shallow type methane hydrate which is under the resources evaluation phase.

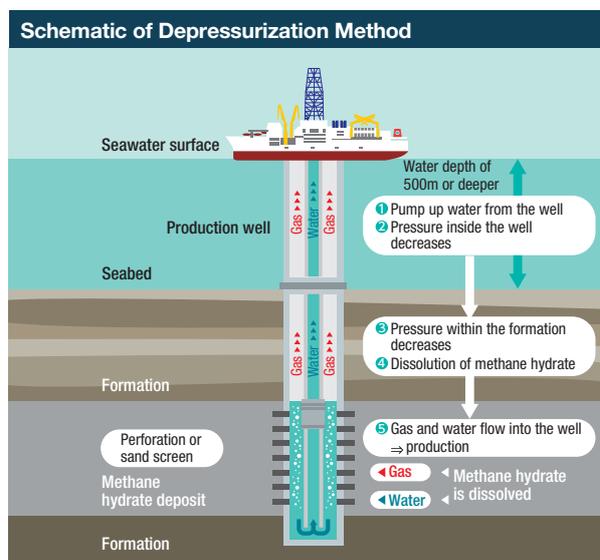
We have also continuously worked on investigating, researching and developing technology for resource recovery, exploration and other areas related to shallow-type methane hydrate from 2016 to 2018, work that was outsourced to us by the National Institute of Advanced Industrial Science and Technology.

\*1 Referred to the flyer of MH21 Research Consortium pamphlet published in March 2014

\*2 Referred to the news release by Ministry of Economy, Trade and Industry on December 25, 2014 and January 22, 2016

\*3 Referred to the news release by JOGMEC on March 19, 2013

\*4 Referred to the Offshore Energy and Mineral Resource Development Plan formulated by the Ministry of Economy, Trade and Industry (METI) on December 24, 2013.



Based on a diagram from MH21 Research Consortium

## Close Up

## JAPEX Research Center Initiatives

## From the laboratory to the field — JAPEX is commercializing technology

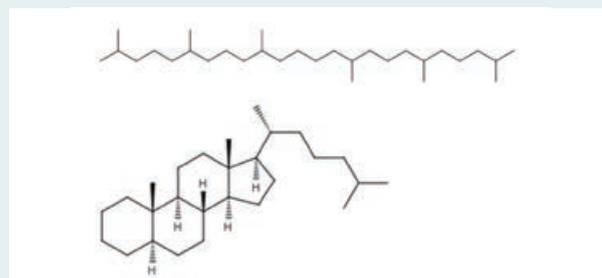
In order to reduce exploration risks and improve the efficiency of reservoir development, JAPEX analyzes and evaluates molecular fossils (biomarkers) in petroleum hydrocarbons at our research center. Biomarkers are diverse chemical components that result from the degeneration of lipids and other substances of biological origin over long geological eras. They can show us that those petroleum hydrocarbons originated from rocks (source rocks) which were deposited and buried with once-living things in ancient times.

Petroleum hydrocarbons have various characteristics depending on the deposited organisms in the source rocks and the maturity even if the sources are the same. We use analytical data of biomarkers to figure out paleoenvironment, age and maturity of hydrocarbons at exploration stages. Based on such kinds of information, we investigate which formation the hydrocarbons came from and explore other potential prospects.

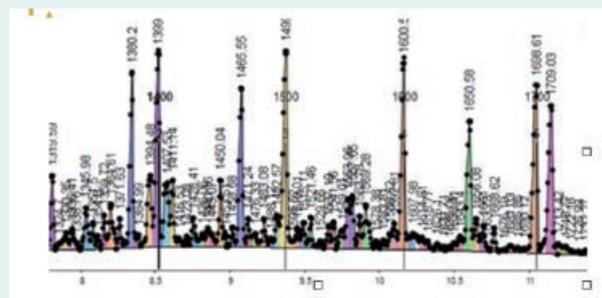
At development and production stages, differences in biomarkers enable us to determine whether multiple reservoirs are connected and to estimate production ratios on layers when a single well produces hydrocarbon from multiple reservoirs. Recently, fingerprint technology, which enables us to distinguish subtle differences of oil reservoirs literally like “fingerprint,” was introduced. The

innovative technology can analyze more diverse classes and trace amount of chemicals. In steps with enhancing the corporate value, we aim to optimize reservoir development with fingerprint technology.

We strive to commercialize these technologies by implementing them in E&P projects, investigating marine oil spills and to identify origins of crude oil.



Structural formula of a biomarker



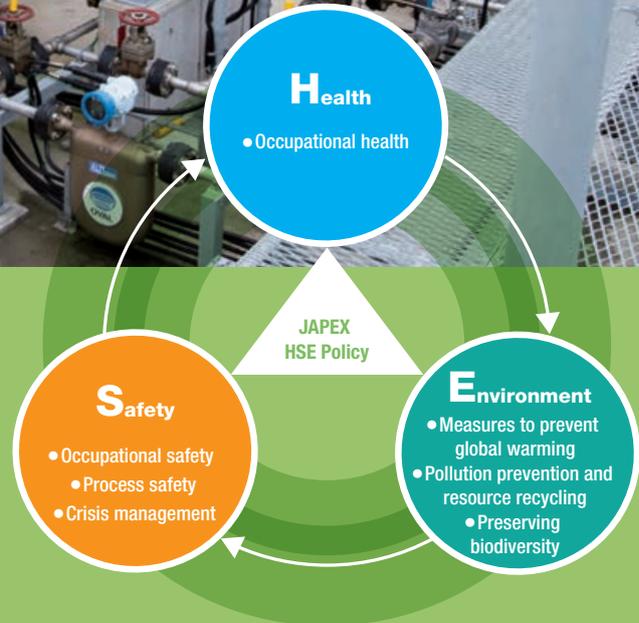
Chromatogram that reveals a fingerprint





Safety check using point-and-confirm technique at K Terminal at Niigata Field Office

## HSE as Our Culture



### Our Approach

#### Social Background and Issue Recognition

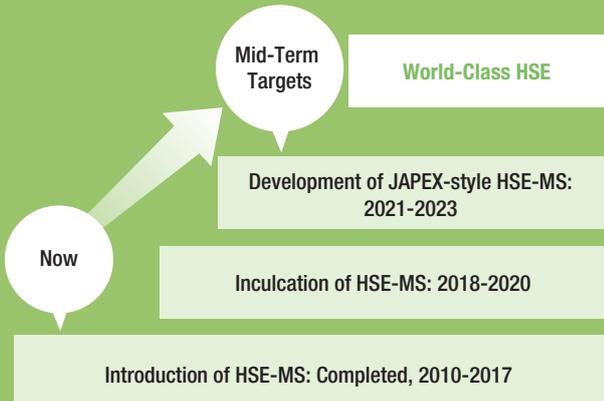
- Since the United Nations released the SDGs and the Paris Agreement was adopted, taking responsibilities for global-scale issues has become a primary agenda for enterprises. Furthermore, we are required to proactively contribute to climate changes.
- Due to the nature of our business, any incident in our facilities could have a huge impact on the environment and society. For that reason, we prioritize safe and stable operations, and place great importance on risk management for controlling major accidents or disasters.

#### Main Measures

- We will proactively play a key role as an integrated energy company in order to realize a low-carbon society, recognizing how our business and operations affect natural capital. We strive to reduce CO<sub>2</sub> emissions, minimize our effects on the environment, and so on.
- In the regions where we operate, we will conduct self-assessment and other activities in addition to the environmental impact assessments required by law in an effort toward conservation of biodiversity.
- Health and safety of our employees is one of our top priorities. We use the PDCA cycle to continuously improve our HSE<sup>\*1</sup> Management System (“HSE-MS”) and minimize risks. Also, we undertake efforts to improve and develop an HSE culture, and promote healthy lifestyle to our employees.

\*1 Health, Safety, and Environment

#### Present Focus and Goal Achievement



#### Incident-Free Days at Domestic Operations

**429** days

In fiscal 2017, we recorded 429 incident-free days at our domestic operations. This is the second-longest streak in our history, and it was the third time since inception that we have achieved one year of incident-free days.

## Occupational Health and Safety Initiatives

The JAPEX Group declared to secure occupational health and safety and conserve the natural environment in our business activities and formulated JAPEX HSE Policy. In order to put the policy into action, we have implemented the HSE Management System at our domestic operations and JACOS since 2014. We strive for the continuous improvement of the System through PDCA cycles.

### ● Development of Mid-Term HSE Plan

It is important to develop a corporate-wide consensus on mid-term HSE strategy for the entire company to move towards a same direction. Therefore, in fiscal 2017, we developed the JAPEX Mid-Term HSE Plan, and it was

approved by the Management HSSE<sup>\*2</sup> Committee. In line with the Plan, each district office set particular goals and are striving to achieve them since April 2018.

<sup>\*2</sup> Health, Safety, Security and Environment

#### Mid-Term HSE Plan (2018-2020)

1. To achieve continuous reduction of the LTIF<sup>\*3</sup> and TRIR<sup>\*4</sup>. The incident classification used in the domestic operations will be aligned with the international standards.
2. To maintain necessary HSE resources and organization to implement HSE-MS and other HSE activities.
3. To enhance HSE awareness among employees and improve the company's HSE culture.
4. To develop new HSE training programs to increase HSE competency.
5. To introduce process safety<sup>\*5</sup> approaches to prevent major accidents. The concepts and methodology will be inculcated throughout the company.
6. To fully operationalize the contractor HSE management element to reduce contractors' incidents.
7. To improve HSE governance in the JAPEX subsidiary companies by providing support to introduce HSE-MS or equivalent systems.
8. Regarding GHG<sup>\*6</sup> emissions, implement more detailed monitoring and intensify reduction measures.

<sup>\*3</sup> Lost Time Injury Frequency: The number of lost time injuries (fatalities + lost work day cases) per 1,000,000 work hours.

<sup>\*4</sup> Total Recordable Injury Rate: The number of recordable injuries (fatalities + lost work day cases + restricted work day cases + medical treatment cases) per 1,000,000 hours worked.

<sup>\*5</sup> Process safety is comprehensive, systematic and reasonable methods and means of preventing fires and explosions caused by loss of primary containment of flammable materials (petroleum, natural gas, etc.), and minimizing the impact when they do occur. While the objective of occupational safety is preventing injuries, process safety aims to prevent major fires and explosions in facilities.

<sup>\*6</sup> Greenhouse Gas

### ● Introduction of Process Safety Approach

For the purpose of preventing major accidents, in fiscal 2017, we started to adopt the process safety approaches that have been practiced among International Oil Companies. Although major process safety events will occur less frequently than occupational injuries, they can result in massive loss of life, destruction of facilities, and severe pollution. Therefore, process safety approaches are employed thoroughly to make sure that the facilities are designed, operated, and maintained in accordance with the industries' safety recommendations and practices. We expect that this initiative will not only improve the safety of our facilities, but also foster productivity among employees.

In fiscal 2017, in order to inculcate process safety approaches throughout the company, we organized awareness sessions at each of our business sites in Japan, and developed guidelines and manuals.

### ● HSE Training and Inculcation of HSE Culture

We provide planned and structured HSE training programs for all the employees with an aim to create healthy and safe working environment. The competency requirements are identified by laws or company rules for HSE critical positions such as HSE administrators, supervisors, and workers in oil and gas fields. Hence, we have established an incentive system to encourage employees to participate in internal and external training and get certifications required for the positions.

Also, we share incident information over our company intranet, invite distinctive HSE lectures from outside of the company, and promote HSE Moments<sup>\*7</sup> at major meetings.

These activities are essential to inculcate the corporate culture that put highest priority on HSE.

<sup>\*7</sup> Short talks on the topic of HSE given to increase awareness of HSE among meeting attendees

## Measures to Prevent Global Warming

### ● Reduction of Greenhouse Gas Emissions Graph 1

Since 2013, JAPEX has been participating in the Japan Business Federation's Commitment to a Low Carbon Society initiative. We are striving to achieve the Japan Petroleum Development Association's target for reducing greenhouse gas emissions by 2020 and its target for 2030. In specific terms, we set annual goals for reducing greenhouse gas emissions into our CSR execution plans, that are based on our medium- and long-term goals, and are undertaking a wide range of initiatives in our daily activities, such as saving energy, using abandoned low-pressure gas effectively, and reviewing how we handle flare gas.

We are developing environmental technologies such as CCS and geothermal power generation to decrease emissions of GHG, and cogeneration to realize highly efficient use of energy. Also, we develop energy solution business such as conversion of fuels from crude oil or coal to natural gas.

### ● Promotion of Energy-Saving Activities Graph 2

As an integral part of our efforts to reduce greenhouse gas emissions, we are proactively undertaking energy-saving activities. At the business and production sites with high energy consumption, we are employing "exergy" analysis (an index that measures the value of energy), which clearly points out waste and inefficient usage in order to make a more rational use of energy and reduce our overall usage.

At our Yoshii Gas Field in Niigata Prefecture, we optimized the operation of our compressors and reduced

the electric power consumption roughly 18% compared to the previous year utilizing monthly analytical data. In addition, we keep adjusting illuminance and turning off lights during lunch hours in all the offices.

### ● Afforestation Programs

As part of our efforts in combating global warming and reducing CO<sub>2</sub> emissions, we have been carrying out afforestation and forest management programs since Fiscal 2005. In fiscal 2017, we planted trees in Minamisoma City and Shinchi Town in Fukushima Prefecture. In Hokkaido, Akita and Niigata Prefectures, where we have business operations, we are putting our efforts into growing the trees and managing their development to restore the forests. These programs inspire each employee to consider climate change and relationship between societies and us.

## Preserving Biodiversity and Ecosystems

In the course of implementing all E&P business and other projects inside and outside Japan, the JAPEX Group conducts voluntary environmental impact assessments as well as legally required investigations. We utilize the results of those investigations and assessments to formulate our development plans. Also, we regularly review and test to minimize our impact on biodiversity.

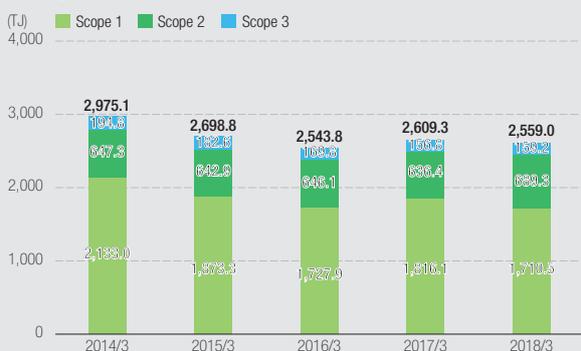
In fiscal 2017, in cooperation with the Indigenous Advisory Group and sub-committees consisting of JACOS

### Greenhouse Gas Emissions<sup>\*1</sup> Graph 1



In fiscal 2017, our greenhouse gas emissions (excluding Scope 3) were equivalent to 371 kilotons-CO<sub>2</sub>, an increase of 140 kilotons-CO<sub>2</sub> (60.7%) over the previous year. The main contributor to this increase was the 150 kilotons-CO<sub>2</sub> emissions from vents and flare gas diffusion from the commissioning of Soma LNG Terminal.

### Energy Consumption Trends<sup>\*1</sup> Graph 2



In fiscal 2017, our energy consumption (excluding Scope 3) was 2,400 TJ, which is a decrease of 53 TJ (2.1%) compared to the previous year.

<sup>\*1</sup> The calculation and reporting of greenhouse gas emissions and energy consumption are made for each scope of the Greenhouse Gas Protocol Standards. Internationally, the Greenhouse Gas Protocol is standard used to calculate and report greenhouse gas emissions.

Scope 1: Direct emissions of greenhouse gas from a company from the use of fuel and processes  
 Scope 2: Indirect emissions of greenhouse gas from the use of electricity or heating supplied by another company  
 Scope 3: Other indirect emissions from a company's contracting of transportation services for the company's product

employees and local indigenous stakeholders, JACOS continued working on wildlife monitoring activities and marshland rehabilitation projects, in addition to conducting inspection/assessment of the reclamation activities occurring on the current operated site.

In the Musadake area in Shibetsu Town, Hokkaido, we conducted conservation work for Ezo salamanders<sup>\*2</sup> which inhabit areas around the well sites, during our work to decommission geothermal exploratory wells. That is, we captured Ezo salamanders that had invaded the sites and their eggs being laid in watery places (e.g., water pits and waste pits), and transferred them to a safe location in May and June.

We are also conducting the restoration programs considering local ecosystems.

<sup>\*2</sup> Categorized as "Note species" in Hokkaido's Red List.

## Pollution Prevention and Resource Recycling

### ● Preservation of Water Resources and

#### Pit-Wastewater Treatment Graph 3

The SAGD bitumen recovery process requires less large scale civil engineering work in comparison with open-pit mining, and is therefore said to have less environmental burdens. The steam injected underground exchanges heat with the oil sands reservoir and turns into condensed water. Along with the bitumen that has become liquid upon heat exchange, the condensed water is recovered along with the bitumen and is sent to the central processing facility.

More than 90% of the overall recovered water is recycled

into fresh water for the steam, and is injected underground again.

At our domestic production field offices and plants, we are promoting the recycling and reuse of water used as a coolant in processing facilities and natural gas cleaning, and also as boiler water in order to preserve water resources by reducing the volume of water we use.

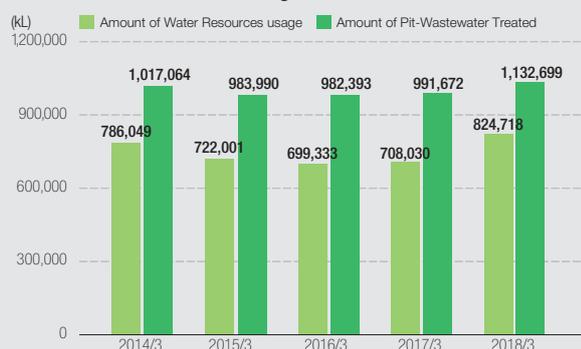
For example, we have adopted recycling systems for the water used to cool equipment during drilling operations and to make use of rain water for drilling mud.

### ● Reduction of VOC Emissions Graph 4

Volatile organic compounds (VOCs) are said to be the causative agent of suspended particulate matter (SPM) and photochemical oxidants in the atmosphere. Most VOCs are volatile hydrocarbons, excluding methane, which is released from crude oil storage tanks and in the course of gas processing, such as removing water contained in the gas, and they include Pollutant Release and Transfer Register (PRTR) substances such as benzene, toluene, and xylene (BTX). Measures to limit VOC emissions generally consist of sealing crude oil storage tanks and the incineration and recovery and disposal of VOCs discharged from gas processing facilities.

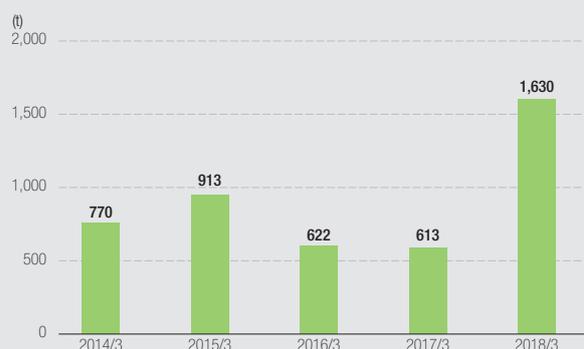
As part of our ongoing drive to reduce VOC emissions, we have been participating in a voluntary action plan as a member of the Japan Natural Gas Association since fiscal 2005.

#### Amount of Water Resources Usage and Pit-Wastewater Treated Graph 3



Our domestic water usage in fiscal 2017 was 825,000 kL, a 117,000 kL (16.5%) increase over the previous year. The main contributors to this increase were the 92,000 kL of water used for the commissioning of Soma LNG Terminal, and the temporary 29,000 kL increase when switching of snow melting equipment at production locations. At Soma LNG Terminal, we use seawater and the heat from warm water in the process of vaporizing LNG.

#### Emissions of VOC Graph 4



In fiscal 2017, we made efforts to improve worksite VOC incineration treatment facilities and raising operation rates as well as continued efforts to reduce the environmental impact of our operations sites. However, the effects of events such as flare gas diffusion caused by the commissioning of the Soma LNG Terminal resulted in emissions of 1,630 tons of VOC, an increase of 1,017 tons (166%) compared to the previous year. VOC emissions at Soma LNG Terminal were 1,112 tons; the overall increase is due to emissions from the Soma LNG Terminal.

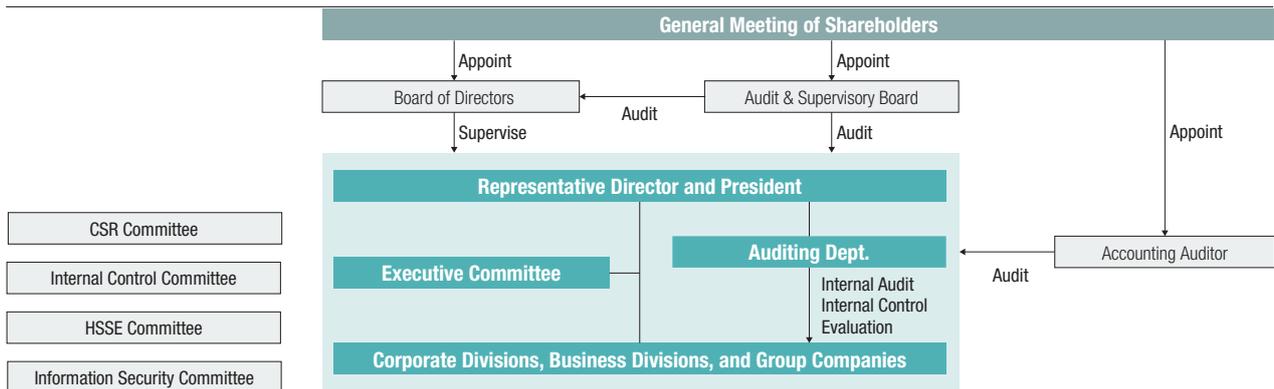
# Integrity and Governance

## Basic Policy

JAPEX is committed to contributing to the local communities through the stable supply of energy. In order to achieve this commitment, we have to maximize corporate value from the standpoint of medium to long term while considering the characteristics and historical background of our company, which is mainly in charge of high risk and long lead time oil and gas E&P business, and the energy policy of the Japanese government. Based on the above policy, we perceive that our path to sustainable growth over the long term lies in efficient and transparent corporate management and building relationships of mutual trust with our stakeholders, including shareholders, through ensuring our accountability, and we recognize that corporate governance is the base as well as one of our important challenges. We will enhance our corporate governance by respecting the purpose and mind of the Japan's Corporate Governance Code.

Corporate Governance Overview		As of June 28, 2018
Organizational Structure	Company with Audit & Supervisory Board	
Executive Officer System	Yes	
Number of Directors Provided for Under Articles of Incorporation	18	
Number of Directors	13 (includes 2 outside directors)	
Chairman of the Board of Directors	President	
Number of Audit & Supervisory Board Members Provided for Under the Articles of Incorporation	4	
Number of Audit & Supervisory Board Members	4 (includes 2 outside Audit & Supervisory Board members)	

## Corporate Governance and Internal Control Structure



## Corporate Governance Structure

JAPEX holds meetings of the Board of Directors monthly and retains decision-making authority over important decisions. It also serves in a supervisory role by receiving reports on the status of executions submitted by directors and executive officers. To strengthen the supervisory functions of the Board of Directors, two outside directors have been appointed. These outside directors, being independent from the management team, actively provide opinions and advice regarding proposals and deliberations, supporting lively debate in the Board of Directors.

JAPEX revised the Executive Officer System in June 2018 to enhance governance. The new system provides an environment in which the Board of Directors and individual directors can more easily make decisions on important company management matters and supervise business executions. It also clearly separates management from business executions.

From the standpoint of accelerating the speed of decision-making, we composed the Executive Committee of the directors and other executives based at the headquarters to make decisions on the matters not involved by the decision-making standard of the Board of Directors, and to have a discussion to assist the decision-making in the Board of Directors. The Executive Committee is held basically two times each month, and extraordinary meeting is also held as needed.

We believe that promoting CSR activities in accordance with ESG initiatives for sustainable growth is fundamental to enhance our corporate value. Therefore, we have established the CSR Committee headed by the President as well as other committees; the Internal Control Committee, the HSSE Committee, and the Information Security Committee. These committees provide basic principles which we follow to promote CSR activities in a structured way.

## Evaluation of the Overall Effectiveness of the Board of Directors

With the aims of maximizing our medium-to-long term corporate value, we evaluate the effectiveness of the Board of Directors regularly, especially in how it supervises the management and makes improvements.

In fiscal 2017, we dealt with issues which had been recognized through the evaluation process in fiscal 2016, such as the attendance rate, revitalization of the board, smooth progress of the meetings and discussions about the management strategy and the business plans. We also conducted a survey on the progress of the improvements to the Directors and Audit & Supervisory Board Members.

According to the results of the survey, we could say that each issue was being resolved gradually and the effectiveness of the Board of Directors had improved.

We keep making efforts to enhance the functionality of the Board of Directors.

## Audits Performed by Audit & Supervisory Board Members

### ● Internal Audits

Our internal auditing team audits a wide coverage of our business activities. The team, which is a part of the Auditing Department, is responsible solely to the President. It reports to the President its findings of each internal audit done with regard to accordance of laws and regulations internal and public, as well as feeds back its opinions to the audit departments, including recommendations and advice thought necessary to be given during the audit works.

### ● Audit Performed by Audit & Supervisory Board Members

Audit & Supervisory Board Members, based on the audit policies determined by the Audit & Supervisory Board and their designated duties, attend and collect information for the meetings of the Board of Directors, the Executive Committee, and other important committees. They review requests for management approval documents and undertake audits to ensure that directors comply with the relevant laws and the Articles of Incorporation in the execution of their duties. Audit & Supervisory Board Members also hold regular meetings to exchange information and views with Audit & Supervisory Board Members of major subsidiaries.

Audit & Supervisory Board Members also seek to raise the efficiency of audits based on reports on internal audits undertaken by the Auditing Dept. and information provided periodically by Accounting Auditors and the Auditing Dept. They also coordinate closely with outside directors through a special committee established for the purpose

of providing information to, and exchanging information with, outside directors and outside Audit & Supervisory Board Members, and explaining proposals submitted to the Board of Directors ahead of the meetings.

## Risk Management Structure

As a part of decision-making process, the Director or the Executive Officer responsible for each department verifies not only business investment risks, but also ESG risks such as compliance and occupational health and safety. If necessary, the Executive Committee and the Board of Directors assess those risks. In the case of particularly important investment projects, the risks and appropriateness of the investment are assessed by the Investment Evaluation Committee and a submission is made to the Executive Committee determining whether or not to proceed with the project, as well as conditions and other matters.

After it has been decided to move ahead with a particular project, the Project Total Management Committee, especially with a major of projects, monitors the progress of the project regularly and, when necessary, considers comprehensive and companywide response measures. Based on this phased process, projects are undertaken based on a process of consensual decision making, various manuals are prepared for business execution across the different implementation stages, and structures are put in place to manage business risks.

## IR and SR Activities

In order to achieve the sustainable growth over the medium to long term and to increase the corporate value, we regard it as important to establish relationships of trust with shareholders and investors. We actively arrange opportunities for dialogue to facilitate a deeper understanding of our business and strive to disclose corporate information fairly, appropriately, and timely. Opinions and information received through IR and SR activities are fed back appropriately to senior management.



A briefing for individual investors

## Integrity and governance

### Compliance

The JAPEX Group complies with all applicable laws and regulations, conventional wisdom and social norms. To ensure that compliance is firmly entrenched in its corporate culture, all directors, officers, and employees are expected and directed to act ethically and with integrity.

#### ● Systems for Promoting Compliance and Education

JAPEX has established an Internal Control Committee to deliberate policies for systems to ensure the appropriate conduct of business and to investigate the facts related to compliance violations. Additionally, the JAPEX Group strives to heighten awareness of compliance among its directors, officers, and employees. To that end, the Group appropriately revises its guidelines, which summarize key matters and standards to be observed, as well as its explanatory supplement containing case studies, with the aim of ensuring that business duties are carried out in accordance with the JAPEX Group Code of Conduct.

“CSR,” “Compliance,” and “Prevention of Insider Trading” are considered as primary matters which JAPEX’s employees must think of in the course of their daily business operations. Accordingly, JAPEX’s new employees and employees who are at certain stages in their careers are required to take compliance training programs.

#### ● Respect for Human Rights

The JAPEX Group Code of Conduct sets out respect for international rules, models, or norms, and rules for behavior, including respect for human rights as well as the prevention of discrimination and harassment. Based on this code of conduct, a compliance manual gives concrete instructions, particularly with respect to the Universal Declaration of Human Rights and the International Bill on Human Rights, and raises awareness among employees.

In our overseas businesses, we regard the rights of indigenous peoples, respect for their cultures and customs, and concern for human rights as extremely important. JACOS has put in place a system that incorporates

the views of indigenous people and pursues business in cooperation with them. In addition, in dealing with companies we aim to identify and eradicate any and all instances of slave labor and human trafficking across our supply chain based on the UK Modern Slavery Act 2015, JAPEX Group’s policies and initiatives in are available on our website.



For the details on how we comply with the UK Modern Slavery Act., refer to the following URL

<https://www.japex.co.jp/english/csr/slaveryactstatement.html>

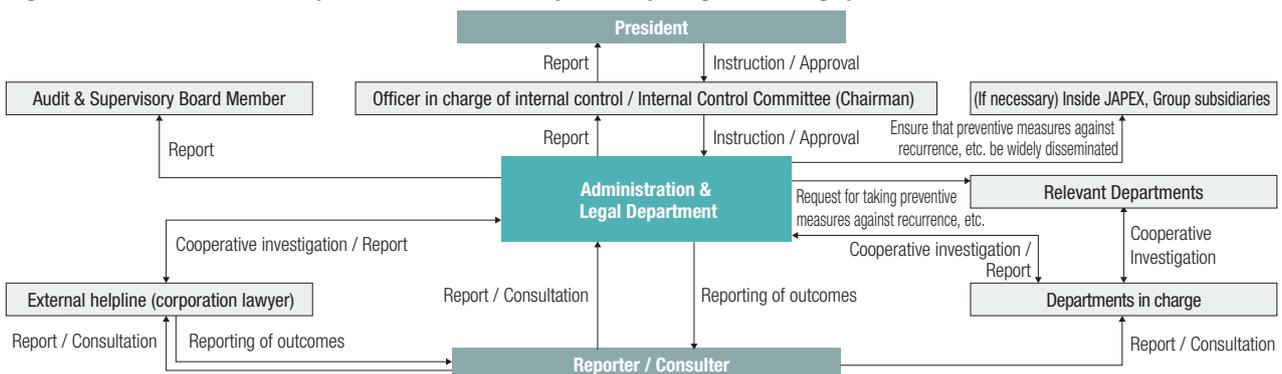
#### ● Prevention of Bribery and Corruption

In recent years, countries in North America and Europe have been taking an increasingly strict approach to prevent bribery. In tandem with economic growth, newly developing countries also have been introducing and tightening related laws and regulations.

The JAPEX Group Code of Conduct calls for its directors, officers, and employees to keep sound and normal relationships with politicians, political parties, and government officials/agencies. Based on this code of conduct, a compliance manual gives concrete instructions and each of its directors, officers, and employees are required to comply.

In line with growing awareness in recent years of the need to prevent bribery in Japan and overseas, we established and introduced “Anti-Bribery Guidelines” in April 2016 which sets out management and approval procedures in order to ensure strict compliance with all applicable laws and regulations. In fiscal 2017 we held training sessions on bribery prevention for our directors and officers. Moreover, we also carried out awareness-building activities for our

Organization Chart to Address Compliance Matters under Compliance Reporting & Consulting System



employees assigned to overseas operations who are highly susceptible to risks to involve in corruption. Additionally, annual compliance surveys on an ongoing basis have been conducted to ensure our adherence to the Prevention of Bribery Guidelines.

There were no incidents or reports involving bribery in fiscal 2017. Besides, we do not make any political contributions.

### ● Compliance Reporting and Consulting System

We have established the Compliance Reporting and

Consultation System which provides helplines that people can turn to particularly with compliance matters related to respect for human rights, engaging in fair procurement together with other business transactions as well as ensuring sound and normal relationships with politicians, political parties and government officials/agencies. In addition to assigning a corporate lawyer of JAPEX to act as an external helpline, the system also enables individuals to report and seek for consultation anonymously, simultaneously safeguarding them to ensure their confidentiality and prevent unfair mistreatment by others. In fiscal 2017, there were approximately 15 instances of individuals seeking for consultation.

## TOPIC

### Training on Workplace Harassment

Since fiscal 2016, we have been continuously conducting corporate wide educational programs designed to foster better understanding with regard to workplace harassment. We have been developing the programs in-house, rather than outsourcing such initiatives to external entities.

In fiscal 2016, we held more than 20 training sessions targeting our entire workforce in headquarters and the domestic district offices.



Training for employees in fiscal 2016

In fiscal 2017, additional training sessions for employees were held as a means of follow-up sessions for those who were not able to attend previously. Furthermore, training sessions specifically concerning management were carried out for directors, officers, and other managers in headquarters five times in total, with content specifically geared to management. This training will be extended to domestic district offices in fiscal 2018.

We have been drawing on feedback from training encompassing our entire employee workforce to provide training for our directors, officers and other managers focused particularly on issues that explore business-related loss incurred as a result of harassment and realities of JAPEX in that regard. Moreover, we also distribute a monthly e-mail magazine as a means of building awareness on a daily basis, and take quick action in cases where an individual reaches out to our points of contact with regard to workplace harassment.

#### Overview of Training

##### Fiscal 2016 (training for all employees)

1. Company policies on workplace harassment
2. What kinds of workplace environments give rise to harassment?
3. Types of harassment that tend to occur in the workplace (definitions and criteria for identifying forms of harassment)
4. Exchange of opinions in groups while viewing video footage
5. Approaches to preventing workplace harassment

##### Fiscal 2017 (training for directors, officers and other managers)

Introduction: Reflecting on training in fiscal 2016

1. Recent developments in society and results of JAPEX's workplace survey
2. Business-related loss incurred due to harassment
3. Criteria for identifying power harassment
4. Taking action when an employee seeks consultation
5. Responsibilities of management



Training for directors, officers and other managers in fiscal 2017

## Integrity and governance

### Directors and Audit & Supervisory Board Members (As of June 28, 2018)

\* Years in office stated in square brackets “[ ]”

Position, Name and Duties	Brief History	Reasons for Appointment	Attendance at the Board of Directors Meetings
<b>Directors</b>			
 <p><b>Representative Director and Chairman</b> <b>Osamu Watanabe</b></p>	<p>He joined the Ministry of International Trade and Industry (MITI) in 1964, and later became Vice Minister of International Trade and Industry. He has also served as Chairman of Japan External Trade Organization (JETRO). Since joining JAPEX in 2007, he has served as Executive Vice President and President. He has been in his current position since June 2016.</p>	<p>He has distinguished insights through his extensive administrative experience encompassing energy administration in government agencies and other bodies, and served as Executive Vice President and President at JAPEX in the period between 2007 and 2016. Accordingly, he has been appointed on the basis of having greatly contributed to the JAPEX Group's business development, and as a result of having appropriately provided managerial guidance from a broad perspective since assuming the position of Chairman.</p>	<p><b>13 out of 13 meetings</b> <b>[11 years]*</b></p>
 <p><b>Representative Director and Chief Executive Officer</b> <b>Hideichi Okada</b></p>	<p>He joined the Ministry of International Trade and Industry (MITI) in 1976, and has served as its Vice-Minister for International Affairs. He has also served as Senior Executive Vice President at NEC Corporation. Since joining JAPEX in 2016, he has served as President. He has been in his current position since June 2018. He concurrently serves as President at JAPEX Offshore, Ltd., President at JAPEX Garraf Ltd., and Chairman at JAPEX Montney Ltd.</p>	<p>He has distinguished insights through his extensive administrative experience encompassing energy administration in government agencies and managerial experience otherwise in private sector companies. Accordingly, he has been appointed on the basis of having played a central role in contributing to the JAPEX Group's business development amid a tough business environment since assuming the position of President in 2016.</p>	<p><b>13 out of 13 meetings</b> <b>[2 years]</b></p>
 <p><b>Director</b> <b>Senior Managing Executive Officer</b> <b>Hikaru Fukasawa</b> Advisor to President (technical), HSE Dept., Special Mission for Hidaka Offshore Exploration</p>	<p>Since joining JAPEX in 1979, he has served as General Manager of Domestic Exploration Dept., Exploration Division, General Manager of Nagacka District Office, Domestic Project Division, President of Domestic Project Division, Vice President of Soma Project Division, and President of Inter-regional Gas Supply Division. He has been in his current position since June 2018.</p>	<p>He specializes in the exploration of oil and natural gas, and has extensive experience in and knowledge of our domestic and overseas project divisions, and assists the President in the technical realm overall, currently serving as Director and Senior Managing Executive Officer. Accordingly, he has been appointed on the basis of having significantly contributed to the JAPEX Group's business development by undertaking duties that involve being in charge of the HSE Dept. and the Special Mission for Hidaka Offshore Exploration.</p>	<p><b>13 out of 13 meetings</b> <b>[6 years]</b></p>
 <p><b>Director</b> <b>Senior Managing Executive Officer</b> <b>Yosuke Higai</b> Advisor to President (corporate), President of Marketing &amp; Sales Division, Secretary Office, Procurement Dept.</p>	<p>Since joining JAPEX in 1978, he has served as General Manager of Procurement Dept., General Manager of Administration Dept., President of Marketing &amp; Sales Division, Vice President of Soma Project Division, Executive in charge of Secretary Office, and Executive in charge of Procurement Dept. He has been in his current position since June 2018.</p>	<p>He has extensive experience in and knowledge of operations in the areas of our procurement, administration, and marketing &amp; sales divisions, and currently assists the President in the corporate realm overall, currently serving as Director and Senior Managing Executive Officer. Accordingly, he has been appointed on the basis of having significantly contributed to the appropriate operations and management of JAPEX and the JAPEX Group's business development by undertaking duties that involve serving as President of the Marketing &amp; Sales Division and being in charge of the Secretary Office and the Procurement Dept.</p>	<p><b>13 out of 13 meetings</b> <b>[6 years]</b></p>
 <p><b>Director</b> <b>Senior Managing Executive Officer</b> <b>Takahisa Inoue</b> President of Domestic Project Division</p>	<p>Since joining JAPEX in 1980, he has served as General Manager of Operations Dept., Development Division, Vice President of Development Division, General Manager of Hokkaido District Office, Domestic Project Division, President of Domestic Project Division, and Vice President of Soma Project Division. He has been in his current position since June 2018.</p>	<p>He specializes in oil and gas field development and production and operations management in Japan and overseas, and has extensive experience in and knowledge of our domestic project divisions. Accordingly, he has been appointed on the basis of having greatly contributed to the JAPEX Group's business development by undertaking duties as President of Domestic Project Division, currently serving as Director and Senior Managing Executive Officer.</p>	<p><b>13 out of 13 meetings</b> <b>[2 years]</b></p>
 <p><b>Director</b> <b>Managing Executive Officer</b> <b>Kazuhiko Ozeki</b> Responsible for Overseas Projects, Commercial Office for Overseas Projects, Corporate Strategy Dept., Media &amp; Investor Relations Dept.</p>	<p>Since joining JAPEX in 1980, he has served as General Manager of Iraq Project Dept., International Oil &amp; Gas Division, Vice President of Iraq Project Division, Vice President of Middle East, Africa &amp; Europe Project Division, President of Environment and Innovative Technology Projects Division, Executive in charge of Commercial Office for Overseas Projects, Executive in charge of Corporate Strategy Dept., and Executive in charge of Media &amp; Investor Relations Dept. He has been in his current position since June 2018.</p>	<p>He has extensive experience in and knowledge of operations in the areas of our overseas project, and environment and innovative technology projects divisions. Accordingly, he has been appointed on the basis of having greatly contributed to the appropriate operations and management of JAPEX by undertaking duties that involve being responsible for overseas projects, being in charge of Commercial Office for Overseas Projects, being in charge of Corporate Strategy Dept., and being in charge of Media &amp; Investor Relations Dept., currently serving as Director and Managing Executive Officer.</p>	<p><b>13 out of 13 meetings</b> <b>[3 years]</b></p>
 <p><b>Director</b> <b>Managing Executive Officer</b> <b>Hajime Ito</b> President of Americas &amp; Russia Project Division</p>	<p>He joined the Ministry of International Trade and Industry (MITI) in 1980, and later became Deputy Director-General of the Ministry of Economy, Trade and Industry (METI). Since joining JAPEX in 2012, he has served as President of Americas &amp; Russia Project Division. He has been serving in his current position since June 2018. He concurrently serves as President of JAPEX Montney Ltd.</p>	<p>He has international experience in government positions, as well as extensive experience in and knowledge of energy administration in government offices and our overseas project divisions. Accordingly, he has been appointed on the basis of having greatly contributed to the JAPEX Group's business development by undertaking duties of the President of Americas &amp; Russia Project Division, currently serving as Director and Managing Executive Officer.</p>	<p><b>11 out of 13 meetings</b> <b>[2 years]</b></p>
 <p><b>Director</b> <b>Managing Executive Officer</b> <b>Hirotaka Tanaka</b> President of Kangean Energy Indonesia Ltd.</p>	<p>Since joining JAPEX in 1978, he has served as General Manager of Kangean Project Dept., President of Asia &amp; Oceania Project Division, and Local President of Kangean Project. He has been in his current position since June 2018. He concurrently serves as President of Kangean Energy Indonesia Ltd.</p>	<p>He specializes in drilling technology in the oil and mining industries, and has extensive experience in and knowledge of our overseas project divisions. Accordingly, he has been appointed on the basis of having greatly contributed to the JAPEX Group's business development by undertaking duties as President of Kangean Energy Indonesia Ltd., currently serving as Director and Managing Executive Officer.</p>	<p><b>13 out of 13 meetings</b> <b>[2 years]</b></p>
 <p><b>Director</b> <b>Managing Executive Officer</b> <b>Toshiyuki Hirata</b> Canada Oil Sands Project Dept.</p>	<p>Since joining JAPEX in 1981, he has served as President of Canada Oil Sands Co., Ltd., Executive in charge of the Canada Oil Sands Project. He has been in his current position since June 2018. He concurrently serves as President of Canada Oil Sands Co., Ltd. and Chairman of Japan Canada Oil Sands Limited.</p>	<p>He specializes in oil and gas field development and production and operations management in Japan and overseas, and has extensive experience in and knowledge of the oil sand business. Accordingly, he has been appointed because we expect JAPEX management will benefit from his knowledge and experience, on the basis of having greatly contributed to the JAPEX Group's business development by undertaking duties that include being in charge of the Canada Oil Sands Project Dept., serving as President of Canada Oil Sands Co., Ltd., and Chairman of Japan Canada Oil Sands Limited, currently serving as Director and Managing Executive Officer.</p>	<p><b>10 out of 10 meetings</b> <b>[1 year]</b></p>

\* Years in office stated in square brackets "[ ]"

Position, Name and Duties	Brief History	Reasons for Appointment	Attendance at the Board of Directors Meetings
<b>Directors</b>			
 <p><b>Director Managing Executive Officer Michiro Yamashita</b> Finance &amp; Accounting Dept.</p>	<p>Since joining JAPEx in 1982, he has served as General Manager of Corporate Planning Dept., Vice President of Environment and Innovative Technology Projects Division, and Executive in charge of Finance &amp; Accounting Dept. He has been in his current position since June 2018.</p>	<p>He has extensive experience in and knowledge of operations in our finance and accounting divisions. Accordingly, he has been newly appointed because we expect JAPEx management will benefit from his knowledge and experience, on the basis of having greatly contributed to the appropriate operations and management of JAPEx by undertaking duties that involve being in charge of the Finance &amp; Accounting Dept., currently serving as Director and Managing Executive Officer.</p>	<p><b>Newly appointed</b> [-]</p>
 <p><b>Director Managing Executive Officer Yoshitaka Ishii</b> Gas Pipeline Transportation Dept., President of Inter-regional Gas Supply Division, President of Soma Project Division</p>	<p>Since joining JAPEx in 1981, he has served as General Manager of Technical Dept., Nagaoka District Office, General Manager of Nagaoka District Office, Domestic Project Division, Vice President of Inter-regional Gas Supply Division, and Vice President of Soma Project Division. He has been in his current position since June 2018.</p>	<p>He specializes in drilling technology in the oil and mining industries, and has extensive experience in and knowledge of our domestic project divisions. Accordingly, he has been newly appointed because we expect JAPEx management will benefit from his knowledge and experience, on the basis of having greatly contributed to the JAPEx Group's business development by undertaking duties that include being in charge of Gas Pipeline Transportation Dept., and serving as President of Inter-regional Gas Supply Division and President of Soma Project Division, currently serving as Director and Managing Executive Officer.</p>	<p><b>Newly appointed</b> [-]</p>
 <p><b>Outside Director Akira Kojima</b></p>	<p>He joined Nikkei Inc. in 1965, and served as its Director, Chief Editor and Senior Managing Director. He later served as Chairman at Japan Center for Economic Research, and Adjunct Professor at National Graduate Institute for Policy Studies. He has been in his current position at JAPEx since June 2015. He concurrently serves as a member of the Board of Trustees and Adjunct Professor at National Graduate Institute for Policy Studies.</p>	<p>He has extensive experience and distinguished insights gained through his career in a newspaper company and other entities. Accordingly, he has been appointed because he supervises and provides wide-ranging proposals for JAPEx management, currently serving as Outside Director.</p>	<p><b>11 out of 13 meetings</b> <b>[3 years]</b></p>
 <p><b>Outside Director Tetsuo Ito</b></p>	<p>Having been appointed as a prosecutor in 1975, he served as Head of Special Investigation Force, Tokyo District Public Prosecutors Office, and as Deputy Prosecutor-General, Supreme Public Prosecutors Office. He has been in his current position at JAPEx since June 2016. He concurrently serves as a Recorded Attorney (Daichi Tokyo Bar Association), and as Of Counsel at Nishimura &amp; Asahi.</p>	<p>He has extensive knowledge and experience as a legal specialist. Accordingly, he has been appointed because he supervises and provides wide-ranging proposals for JAPEx management, currently serving as Outside Director.</p>	<p><b>11 out of 13 meetings</b> <b>[2 years]</b></p>

Position and Name	Brief History	Reasons for Appointment	Attendance at the Meetings
<b>Audit &amp; Supervisory Board Members</b>			
 <p><b>Audit &amp; Supervisory Board Member Kenji Uchida</b></p>	<p>Since joining JAPEx in 1979, he has served as General Manager of Technical Dept., Iraq Project Division, General Manager of Iraq Project Dept., Middle East, Africa &amp; Europe Project Division, Advisor to President of Middle East, Africa &amp; Europe Project Division, and Chief of Dubai Representative Office, Middle East, Africa &amp; Europe Project Division. He has been in his current position since June 2017.</p>	<p>He specializes in oil and gas field development and production and operations management in Japan and overseas, and has extensive experience in and knowledge of our overseas project divisions. Accordingly, he has been appointed because we expect JAPEx management will benefit from his knowledge and experience, on the basis of having greatly contributed to the JAPEx Group's business development, currently serving as an Audit &amp; Supervisory Board Member.</p>	<p><b>(Board of Directors meetings)</b> <b>10 out of 10 meetings</b> <b>(Board of Corporate Auditors meetings)</b> <b>10 out of 10 meetings</b></p>
 <p><b>Audit &amp; Supervisory Board Member Koichi Shimomura</b></p>	<p>Since joining JAPEx in 1982, he has served as General Manager of the Media &amp; Investor Relations Dept., General Manager of International Planning Dept., International Oil &amp; Gas Division, General Manager of First Project Dept., International Oil &amp; Gas Division, General Manager of Canada Oil Sands Project Dept., Americas &amp; Russia Project Division, Advisor to President of America &amp; Russia Project Division, Advisor to President of Middle East, Africa &amp; Europe Project Division. He has been in his current position since June 2018.</p>	<p>He has extensive experience in and knowledge of project management in our overseas project divisions. Accordingly, he has been newly appointed because we expect JAPEx audit will benefit from his experience and knowledge, currently serving as Audit &amp; Supervisory Board Member.</p>	<p><b>Newly appointed</b></p>
 <p><b>Outside Audit &amp; Supervisory Board Member Hiroyasu Watanabe</b></p>	<p>He joined the Ministry of Finance in 1969 where he served as Director-General of the National Tax Agency, and also served as Professor of Graduate School of Finance, Accounting and Law, Waseda University. He has been in his current position at JAPEx since June 2015. He concurrently serves as Advisor of Hibiya Park Law Offices.</p>	<p>He has been appointed upon our having deemed that he will appropriately conduct audits from an objective standpoint independent of the management team that carries out JAPEx's business operations, based on his extensive experience and distinguished insights developed through involvement in government administration of the Ministry of Finance and other such entities.</p>	<p><b>(Board of Directors meetings)</b> <b>13 out of 13 meetings</b> <b>(Board of Corporate Auditors meetings)</b> <b>13 out of 13 meetings</b></p>
 <p><b>Outside Audit &amp; Supervisory Board Member Norio Nakajima</b></p>	<p>He joined the Industrial Bank of Japan, Limited in 1970, and served as its Managing Director. He also served as Managing Executive Officer of Mizuho Corporate Bank, Ltd., and President &amp; CEO of DIAM Co., Ltd. He has been in his current position at JAPEx since June 2014.</p>	<p>He has been appointed upon our having deemed that he will appropriately conduct audits from an objective standpoint independent of the management team that carries out JAPEx's business operations, based on his extensive managerial experience and distinguished insights developed through involvement with financial institutions.</p>	<p><b>(Board of Directors meetings)</b> <b>13 out of 13 meetings</b> <b>(Board of Corporate Auditors meetings)</b> <b>13 out of 13 meetings</b></p>



Promotional event of male participation in childcare planned by senior high school students



# Being a Good Neighbor

## Our Approach

### Social Background and Issue Recognition

- To continuously engage in business that has a big social mission to provide a stable supply of energy, and that has a huge impact on the economy and society, it is essential to build relationships of understanding and trust with stakeholders.
- We are expected to contribute to the creation of employment and development of local industries, in regions where we operate.
- Problems in product quality could do tremendous damage to many stakeholders. We recognize that quality control and product safety are extremely important.
- As Japan deregulates electric power and gas services, competition between energy businesses is growing.

### Main Measures

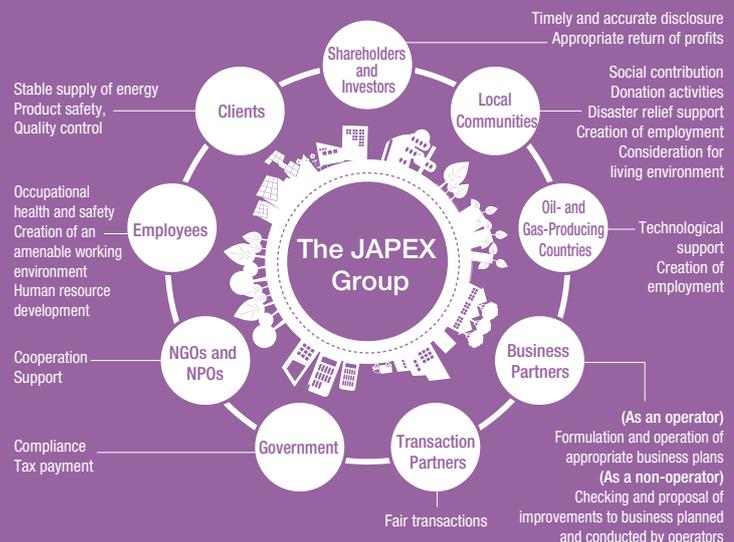
- We are making efforts to grasp diverse needs through dialogues with various stakeholders, and to be a company that earns the trust of society.
- In regions where we operate, we are working on such issues as infrastructure support, job creation, environmental protection, and social engagement, donation activities.
- We are committed to safety, quality control, and the appropriate provision of information, aiming to build good relationships with stakeholders so that clients can use our oil and natural gas products with peace of mind.
- We develop energy systems locally produced and consumed and plan for a disaster-resistant community.

### Expenditures on Social Contributions (FY2017, non-consolidated)

**57** million yen

We support relief efforts for disasters like earthquakes in Iraq and Iran and implement social contributions.

### Expectations and Requests from Stakeholders



## Hand-in-Hand with Local Communities



In July 2017, heavy rains caused a series of disasters such as flooding and landslides around Akita Prefecture. Our employees at the Akita District Office worked on restoration projects twice as volunteers.

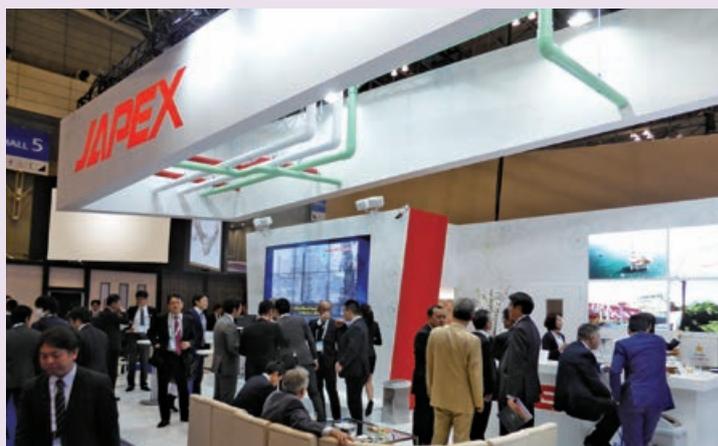


In September 2017, as a social contribution related to the Sakhalin-1 Project, we held tours of our Nagaoka District Office and JPO Niigata District Office for students of oil and gas engineering at Sakhalin State University.



In December 2017, we invited local residents of Soma City and Shinchi Town to a ceremony for the arrival of the first LNG ship to the Soma Port. A performance by the Soma Senior High School taiko club added excitement to the ceremony.

## TOPIC



## Gastech Japan 2017

In April 2017, JAPEX exhibited at Gastech Japan 2017. We had direct dialogues with various stakeholders and gave out information about our business. The total number of interviews with our stakeholders such as foreign governments, LNG suppliers and engineering-related firms was 103 (237 individuals). Our executives, officers and employees exchanged opinions with them. About 1,700 people visited our booth that was far exceeding our target. Through the exhibition, we built trust with our stakeholders and were visible.

## Commitment to Customers



In October 2017, Shirone Gas Co., Ltd. held a gas exhibition, drawing more than 1,400 visitors, to set a new record.

Responding to a major changes in the liberalization of the gas market, we made efforts to respond to the various needs of our customers, which eventually led to opportunities for further business development.

## Hand-in-Hand with Partners



About 6,500 people live on the island of Pagerungan, Indonesia, where Kangean Energy Indonesia Ltd. (KEI) operates gas fields. KEI voluntarily provides the local community with electric power, water, and various infrastructures, including 16 water tanks of roughly 2m<sup>3</sup>. KEI contributes to improve the quality of life for local residents.

## Commitment to Shareholders



In January 2018, we held a Research Center Tour for our shareholders to promote a deeper understanding of the oil and natural gas E&P business, and encouraged understanding in our operation.

Participants received a brief overview of JAPEX's main activities, while our frontline engineers explained cutting-edge technology.



Employees of Soma District Office

# The Employer of Choice

## Our Approach

### Social Background and Issue Recognition

- With a declining birthrate and aging population, Japan is facing a labor shortage. Therefore, it is important to empower women to take more active roles as well as respect the needs of different generations and work styles. Furthermore, securing diverse personnel who can globalize our business and ensure sustainable business activities is essential.
- Honoring and making full use of the different personalities of our employees is not only a key to meet social demands but also indispensable for creating new corporate value.
- We believe that a fair working environment where human rights are respected is essential to ensure every employee is able to work with confidence and passion.

### Main Measures

- We acknowledge that each employee is unique in some tangible (gender, nationality, career track, work style) as well as invisible ways. Thus, we have mechanisms in place that enable each employee to work as an autonomous professional.
- We have been reforming work styles and establishing personnel systems to diversify work and honor each person's roles, responsibilities, and capabilities more efficiently. In addition, we have been putting in efforts to enhance employee training and strengthen communication between management and employees.
- In addition, we strive to boost labor productivity by reducing long working hours along with maintaining and promoting employee health.

Percentage of Male employees  
who Take Paternal Leaves  
(FY2017, non-consolidated)

18.6 %



Average Monthly overtime  
Hours  
(FY2017, non-consolidated)

9.5 hours



The childcare leave system has gained more recognition among employees. One out of five male employees eligible for paternity leave took it in fiscal 2017.

In fiscal 2017, all departments set a target to reduce monthly overtime hours (as compared to the same month of last fiscal year).

As a result, the company wide average overtime work hours decreased to 3.8 hours compared to previous fiscal year.



Listed in Nadeshiko Brand in FY2017  
(3 consecutive years)



In 2018, Excellent Enterprise of Health and  
Productivity Management (2 consecutive years)

### Strengthen Corporate Competitiveness

#### Reform Corporate Culture

Human resources and organizations that can cope instantly with a globalizing and diversifying business environment

### Provide an Attractive Work Environment where Talented People Choose to Work

#### Human Resources Development and Training

Establish workplaces and conditions that enable improvement of technical skills, knowledge, and also growth

### Create Workplace Environments where People can Fulfill Their Individual Potential Respect Employee Diversity / Create a Fair and Rewarding Workplace

Human resources—encompassing different genders, nationalities, academic backgrounds, and careers—recognize the diversity of each other's attributes

## Diversity Promotion & Human Resources Development

Based on the JAPEX Diversity Policy, we carry out a variety of initiatives to promote the success of all employees.

### ● Expand Career Support System

In fiscal 2017, we established new career development systems in addition to the existing career support systems. The new systems include “job return,” “reduced working hours for schooling,” and “nursery cost support.” These systems seek to help employees continue and build their careers without worrying about life changes (child rearing, caregiving) or a spouse’s career change (job transfer).

### ● Efforts to Recruit Women to Management Positions

In October 2014, we set a goal to triple the percentage of women in management positions from 3.4% as of October 2014, to 10.2% by 2020. As of April 1, 2018, the percentage of female managers has reached 5.4%. Besides, as another voluntary action, we have also been promoting human resources development towards the goal to appoint female general managers by 2020.

In fiscal 2017, we held an in-house seminar inviting an external female executive to present for our female employees who could be manager candidates. In addition, on-the-job training and other training programs were provided to assist employees in identifying and solving problems, and build their communication skills.

### ● Initiatives to Change the Mentality of Male Managers

For our male managers, we held enlightenment seminars designed to eliminate unconscious opinions of “gender based roles”. Also, Corporate-wide “Iku-boss Seminars” were held. These seminars enable male managers to train their own subordinates and increase management skills. We actively offered instructional sessions on JAPEX’s various childcare support programs available to men, including childcare leave and monetary benefits. As a result, the rate of male employees taking childcare leave has increased: while only 2.4% did so in fiscal 2015, the rates were 21.1% and 18.6% in fiscal 2016 and fiscal 2017, respectively.

### ● Work-Life Balance

We officially implemented a flex-time system in April 2017. Other efforts to ensure appropriate working hours and work-life balance include setting specific days to leave

work early and eliminating core time on Premium Fridays.

In fiscal 2017, we set a KPI of reducing overtime in all departments, seeking year-on-year reductions. Each department approached the task in ways suited to its business processes and implemented a control system to lower overtime each month compared to the previous year. Additionally, a system to report monthly results during the meetings of the Board of Directors and department managers was implemented. Consequently, the Group-wide target for reducing overtime year on year was achieved.



The President’s Award was presented to the winner of the work style reform campaign

### ● Personnel Development and Training Programs

In fiscal 2017, we organized more than 20 new training programs designed to enhance employees’ skills of project management, leadership and commercial evaluation. The training programs covered a wide range of themes; business laws, finance, accounting, taxes, HSE, insurance, strategic theory, problem-solving, intercultural understanding, overseas travel safety and lessons-learned from projects in the past.

Furthermore, guest lecturers provided sessions on global financial systems and practical programs on project management.

### ● Town Hall Meetings

We held our second Town Hall Meeting in November 2017 (the first was in 2016) as an opportunity of direct dialogue between the executives and the employees. They discussed the corporate strategies. The video was delivered to expatriate employees. Feedbacks from all employees were shared with all executives and officers to improve the management system.

## Financial and Non-financial Highlights

			2009/3	2010/3	2011/3
<b>For Fiscal Year</b> (Millions of yen)					
Net sales			202,127	179,752	199,651
Cost of sales			134,447	125,467	144,919
Exploration expenses			15,352	10,396	9,798
Selling, general and administrative expenses			32,237	30,769	31,084
Operating income			20,090	13,119	13,849
Profit (loss) attributable to owners of parent			12,560	17,939	10,010
Cash flows from operating activities			36,381	38,948	34,284
Cash flows from investing activities			(23,342)	(29,300)	(24,282)
Cash flows from financing activities			(477)	(4,054)	(521)
Cash and cash equivalents at end of period			51,975	57,645	66,826
<b>At Fiscal Year-End</b> (Millions of yen)					
Total assets			500,444	521,009	516,098
Net assets			378,227	398,747	393,689
Long-term loans payable			25,325	24,471	26,898
<b>Per Share Data</b> (Yen)					
Net assets per share			6,486.85	6,839.05	6,743.83
Basic earnings (loss) per share			219.77	313.88	175.16
Cash dividends per share (full-year)			40.00	40.00	40.00
<b>Production Volume in the Fiscal Year (daily)<sup>*1</sup></b> (Thousand boe/d)					
Production volume		Natural gas	22.1	21.5	25.5
		Crude oil	22.0	17.6	15.0
		Total	44.1	39.1	40.6
<b>Proved Reserve Volume at Fiscal Year-End</b> (Million boe)					
Proved reserves		Overseas	59	49	49
		Japan	213	205	208
		Total	272	254	257
<b>Non-financial Data</b>					
HSE <sup>2</sup>	Occupational safety	Frequency rate <sup>*3</sup>	0.73	1.41	1.59
		Severity rate <sup>*4</sup>	0.00	0.00	0.00
	Greenhouse gas emissions (t-CO <sub>2</sub> )		292,384	324,714	303,146
	Energy consumption (TJ)		3,458.7	3,566.5	3,475.7
Human resources	Number of employees	Consolidated	1,678	1,735	1,728
		Non-consolidated	833	869	867
	Ratio of female managers (%) <sup>*5</sup>		1.4	1.4	2.1
	Employees with disabilities (%) <sup>*6</sup>		1.70	1.65	1.53

<sup>\*1</sup> Figures for crude oil include bitumen (an extra-heavy crude oil extracted from oil sands). These figures included production volumes of equity-method affiliates.

<sup>\*2</sup> Applies to JAPEX and Japex Offshore Ltd.

<sup>\*3</sup> Frequency rate = (Number of deaths and injuries caused by occupational accidents/Number of hours worked) x 1,000,000

<sup>\*4</sup> Severity rate = (Number of days of work lost/Number of hours worked) x 1,000

<sup>\*5</sup> Figures based on non-consolidated operations. Figures for the fiscal year ended March 31, 2014 and the subsequent years are stated as of April 1 of the respective subsequent fiscal year.

<sup>\*6</sup> Figures based on non-consolidated operations. With respect to the fiscal year ended March 31, 2018, employees with disabilities account for 2.42% of the workforce as of June 1, 2018.

Conversion Factors and Units:

Crude oil 1 kL = 6.29 bbl

Crude oil 1 kL = Natural gas 1,033 m<sup>3</sup>

boe: barrels of oil equivalent

boe/d: barrels of oil equivalent per day

(Fiscal years ended March 31)

2012/3	2013/3	2014/3	2015/3	2016/3	2017/3	2018/3
230,638	231,086	276,588	304,911	240,302	207,130	<b>230,629</b>
174,359	172,075	210,460	234,649	193,022	174,957	<b>191,366</b>
7,805	13,086	9,800	4,489	6,516	1,512	<b>1,324</b>
33,426	32,017	31,692	33,625	32,426	29,975	<b>29,173</b>
15,045	13,906	24,634	32,146	8,336	685	<b>8,764</b>
17,027	(865)	29,015	29,567	2,090	3,443	<b>(30,958)</b>
37,172	34,254	45,226	78,666	57,659	43,672	<b>52,881</b>
(13,950)	(14,836)	(131,600)	(63,031)	(125,771)	(84,686)	<b>(54,218)</b>
9,856	(7,177)	71,680	18,475	54,816	18,360	<b>(1,196)</b>
99,803	112,639	102,830	142,657	126,570	103,630	<b>99,892</b>
532,890	525,172	663,038	736,862	707,601	746,739	<b>699,539</b>
406,773	403,625	496,915	540,647	495,317	510,609	<b>457,207</b>
26,198	24,197	21,636	20,726	130,030	141,903	<b>135,959</b>
6,869.27	6,691.58	7,389.62	8,055.59	7,366.40	7,655.26	<b>7,402.41</b>
297.92	(15.14)	507.68	517.35	36.58	60.24	<b>(541.69)</b>
40.00	40.00	50.00	50.00	50.00	15.00	<b>20.00</b>
22.8	23.3	26.4	32.3	34.0	33.7	<b>31.2</b>
15.8	13.3	21.8	42.1	39.7	38.3	<b>29.5</b>
38.6	36.6	48.3	74.4	73.7	72.0	<b>60.7</b>
38	160	193	203	255	277	<b>229</b>
185	147	112	110	94	74	<b>73</b>
223	307	305	313	349	352	<b>302</b>
0.80	0.00	0.84	1.02	1.15	3.53	<b>0.00</b>
0.00	0.00	0.10	0.03	0.02	0.18	<b>0.00</b>
256,561	267,446	251,121	244,491	230,636	241,360	<b>382,311</b>
3,329.3	3,168.0	2,975.1	2,698.8	2,543.8	2,609.3	<b>2,559.0</b>
1,743	1,747	1,782	1,818	1,847	1,825	<b>1,788</b>
880	882	874	886	902	897	<b>920</b>
2.0	3.3	2.9	4.1	4.5	4.5	<b>5.4</b>
1.89	1.75	1.57	2.03	2.21	2.01	<b>1.97</b>

## Corporate Data

### Status of Important Subsidiaries (as of March 31, 2018)

Important Subsidiaries	Paid-In Capital (Millions of yen)	JAPEX's Stake (%)	Principal Business Activities (Target Region)
Shirone Gas Co., Ltd.	3,000	100.0	Manufacturing, supply, and sale of gas in Tsubame City and Niigata City
JGI, Inc.	2,100	100.0	Contract geophysical surveys and development of geophysical exploration technologies
Geophysical Surveying Co., Ltd.	446	100.0	Geophysical surveys and contract mud logging operations
SK Engineering Co., Ltd.	300	100.0	Contract engineering and well drilling
Akita Natural Gas Pipeline Co., Ltd.	250	100.0	Pipeline transport of natural gas in Akita Prefecture
JAPEX SKS Corporation	90	100.0	Manufacture and sales of petroleum products, real estate management, and insurance agent services
Japex Pipeline Ltd.	80	100.0	Pipeline management and maintenance
North Japan Oil Co., Ltd.	80	100.0	Sale of crude oil, reprocessing of waste oil, contracted transportation of LNG and crude oil
Japan Canada Oil Sands Limited	773,593 (Thousands of U.S. dollars)	100.0 (100.0)	Oil sands exploration, development, and production based on area lease agreement in Canada
Japex (U.S.) Corp.	33,000 (Thousands of U.S. dollars)	100.0	Exploration, development, and production of oil resources in U.S.; capital participation in LNG project in Malaysia
JAPEX UK E&P Ltd.	33,449 (Thousands of British pounds)	100.0	Exploration, development, and production of oil resources in U.K.'s North Sea
Canada Oil Sands Co., Ltd.	34,863	94.6 (1.0)	Exploration, development, and investment of oil sands through Japan Canada Oil Sands Limited
Japex Energy Co., Ltd.	90	90.0	Purchasing and sale of LNG, oil products, etc.
North Japan Security Service Co., Ltd.	30	87.3	Disaster protection for industrial facilities and security services
Japex Offshore Ltd.	5,963	70.6	Exploration, development, and production of petroleum resources from the continental shelf in the Sea of Japan
Japex Garraf Ltd.	20,930	55.0	Exploration, development, and production of oil resources in Garraf oil field, Republic of Iraq
JAPEX Montney Ltd.	918,583 (Thousands of Canadian dollars)	45.0	Exploration, development, and production of shale gas in Canada

- (Notes) 1. Parentheses appearing in the JAPEX's Stake column indicate the indirect stake that is included in the total.  
2. Capital in Japan Canada Oil Sands Ltd. was increased by 60,143,000 U.S. dollars between May 31, 2017 and October 6, 2017.  
3. JAPEX UK E&P CENTRAL Ltd. conducted joint exploration and development with Apache and another company per a licensing agreement in U.K. North Sea, but withdrew when the agreement was canceled in April 2018  
4. JAPEX UK E&P Ltd. increased its capital by 1,749,000 British pounds on February 20, 2018

### Status of Important Affiliates (as of March 31, 2018)

Affiliates	Paid-In Capital (Millions of yen)	JAPEX's Stake (%)	Principal Business Activities (Target Region)
TELNITE CO., LTD.	98	47.0	Manufacture and sales of drilling mud for well drilling and the provision of mud technical services
TOHOKU NATURAL GAS Co., Inc.	300	45.0	Purchasing and sales of natural gas in the Tohoku region of Japan
JJI S&N B.V.	27,883 (Thousands of euros)	41.7 (62.5)	Development and production of oil resources in Persian Gulf, Islamic Republic of Iran
Universe Gas & Oil Company, Inc.	5,080	33.4 (40.1)	Exploration, development, and production of oil resources in eastern part of Kalimantan Island, Republic of Indonesia
Fukushima Gas Power Co., Ltd.	537	33.3	Conduct of a natural gas-fired power generation project in Soma Port, Fukushima Prefecture
Kitakyushu LNG Sales and Lorry Transport Corp.	30	33.0	Transportation and sales of LNG in the Kyushu region
Japan Drilling Co., Ltd.	7,572	31.0	Contract drilling of petroleum resources offshore
Energi Mega Pratama Inc.	52,000 (Thousands of U.S. dollars)	25.0	Exploration, development, and production of oil resources off the coast of the eastern part of Java Island, Republic of Indonesia
Sakhalin Oil and Gas Development Co., Ltd.	22,592	15.3 (30.6)	Exploration, development, and production of oil resources on Sakhalin Island and its continental shelf, Russian Federation

- (Notes) 1. Parentheses appearing in the JAPEX's Stake column indicate JAPEX's stake included in private shareholders' investment, excluding investment by the Japanese government (Minister of Economy, Trade and Industry)

## Corporate Profile (As of March 31, 2018)

<b>Company Name</b>	Japan Petroleum Exploration Co., Ltd. (JAPEX)	<b>Main Businesses</b>	Exploration, development, production, and sales of oil, natural gas, and other energy resources, and contract service-related operations such as drilling
<b>Established</b>	April 1, 1970	<b>Main Offices</b>	Headquarters (see below), Hokkaido, Akita, Nagaoka, Soma, JAPEX Research Center (Chiba), Aberdeen, Dubai, Houston, Jakarta (as of September 2018)
<b>Paid-in Capital</b>	JPY14,288,694,000	<b>Headquarters</b>	SAPIA Tower, 1-7-12 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan TEL: +81-3-6268-7000 FAX: +81-3-6268-7300
<b>Fiscal Year</b>	April 1 to March 31 of the following year		
<b>Number of Employees</b>	1,788 (Consolidated basis)		

## Executives (As of June 28, 2018)

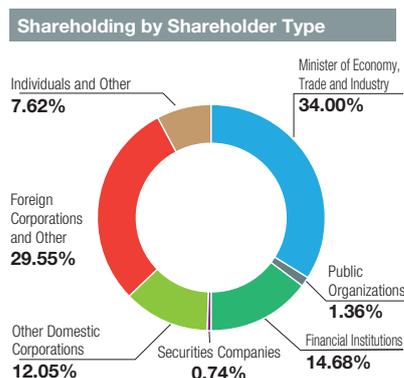
<b>Representative Director and Chairman</b>	Osamu Watanabe	<b>Outside Audit &amp; Supervisory Board Members</b>	Hiroyasu Watanabe Norio Nakajima	<b>Fellows</b>	Satoru Yokoi Amane Waseda
<b>Representative Director and President Chief Executive Officer</b>	Hideichi Okada	<b>Special Advisor to President</b>	Ajay Singh	(Notes) 1. Akira Kojima and Tetsuo Ito are outside directors as stipulated under Article 2-15 of the Companies Act of Japan. 2. Hiroyasu Watanabe and Norio Nakajima are outside audit & supervisory board members as stipulated under Article 2-16 of the Companies Act of Japan. 3. The Special Advisor to the President assists with strategy and commercials. 4. Fellows support executives through their high degree of expertise in specialized fields.	
<b>Directors Senior Managing Executive Officers</b>	Hikaru Fukasawa Yosuke Higai Takahisa Inoue	<b>Managing Executive Officers</b>	Kunio Suga Yasushi Hamada Tsuyoshi Suga		
<b>Directors Managing Executive Officers</b>	Kazuhiko Ozeki Hajime Ito Hirotaka Tanaka Toshiyuki Hirata Michiro Yamashita Yoshitaka Ishii	<b>Executive Officers</b>	Akihisa Takahashi Ryuhei Murayama Senichiro Kaku Minoru Kuniyasu Junichiro Ando Tadashi Matsunaga Ryohei Wakishima Tsuneta Nakamura Masanori Amano Takamasa Miyadai		
<b>Outside Directors</b>	Akira Kojima Tetsuo Ito				
<b>Audit &amp; Supervisory Board Members</b>	Kenji Uchida Koichi Shimomura				

## Stock Information (As of March 31, 2018)

<b>Exchange Listing</b>	Tokyo Stock Exchange, First Section (Securities Code Number: 1662)	<b>Number of Shareholders</b>	13,197
<b>Common Stock (Authorized)</b>	120,000,000 shares	<b>Transfer Agent and Registrar</b>	Mizuho Trust & Banking Co., Ltd.
<b>Common Stock (Issued)</b>	57,154,776 shares	<b>Inquiries</b>	Mizuho Trust & Banking Co., Ltd., Stock Transfer Agency Division 8-4 Izumi 2-chome, Suginami-ku, Tokyo 168-8507, Japan TEL: 0120-288-324 (Toll-free in Japan)

## Major Shareholders

Shareholder Name	Number of Shares	Voting Rights (%)
Minister of Economy, Trade and Industry	19,432,724	34.00
INPEX CORPORATION	2,852,212	4.99
JFE Engineering Corporation	1,848,012	3.23
STATE STREET BANK AND TRUST COMPANY	1,440,020	2.52
The Master Trust Bank of Japan, Ltd. (Trust)	1,244,200	2.18
THE BANK OF NEW YORK 133524	1,179,600	2.06
Japan Trustee Services Bank, Ltd. (Trust 4)	1,066,500	1.87
ORBIS SICAV	1,061,100	1.86
Japan Trustee Services Bank, Ltd. (Trust)	937,000	1.64
Mizuho Bank, Ltd.	720,152	1.26



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