



### **FUNDAMENTAL BUSINESS POLICIES**

Since its establishment, as a company whose core operations extend from oil and natural gas E&P through transportation to marketing, JAPEX has continued to develop an increasingly robust operating foundation by consistently discovering oil and gas fields, securing reserves and bolstering production to contribute to energy supply to local communities.

In step with an expanding supply volume, JAPEX has come to bear an increasingly significant social responsibility in terms of ensuring reliable energy supplies. At the same time, JAPEX aims for growth as a competitive player in the market by focusing not only on increasing its reserves but also on strengthening and expanding its natural gas supply chain networks and other aspects of its operations. To achieve these goals, JAPEX has formulated its Corporate Vision.

# JAPEXIVIISE

### **CORPORATE VISION**

JAPEX is committed to contributing to local communities through a stable supply of energy. To this end, we will undertake the following activities:

- Explore for, develop, produce and deliver oil and natural gas in Japan and overseas.
- Further enhance the natural gas supply chain, supported by our own domestic infrastructures, through aggressive introduction of LNG business.
- Leverage our existing technology and expertise to develop and commercialize new technology.
- Make stakeholder trust our first priority while striving to achieve sustainable growth and maximize corporate value.
- \* E&P: Exploration and Production

#### Conte

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Fundamental Business Policies / Corporate Vision / Medium- and Long-Term Business Strategies

#### 2 STABLE SUPPLY

Domestic and International Oil and Gas E&P

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#### **MEDIUM-AND LONG-TERM BUSINESS STRATEGIES**

The replacement and expansion of reserves that are depleted by production and sales activities and the formulation of an oil and natural gas supply structure that ensures long-term stability are of paramount importance to JAPEX, a company whose business is centered on the exploration, development and sales of these resources. Furthermore, in order to address major transformations in JAPEX's business environment, exemplified by changes in social conditions such as increased importance of global warming countermeasures and the advancement of deregulation, JAPEX has identified the following three activities as its core businesses, with the objective to further increase its corporate value.

Maintaining and expanding reserves depleted by production and sales
 Securing a stable, long-term supply of oil and natural gas



strengthening its natural gas
supply chain as an integrated
system comprising upstream,
midstream and downstream
operations, including LNG

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natural to busine to be precised to the precise to the

- Promoting R&D and commercialization of methane hydrate, carbon dioxide capture and storage (CCS) and geothermal resources
  - Striving to reduce the environmental impact of our operations

Basic Strategies for JAPEX's Expansion Environment and innovative technology business

P14–17

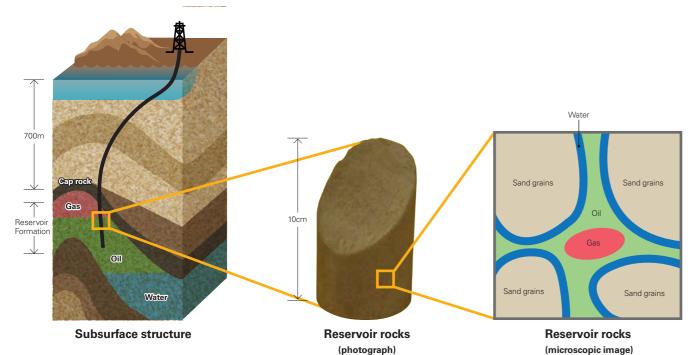
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## **Accumulation of Oil and Gas**

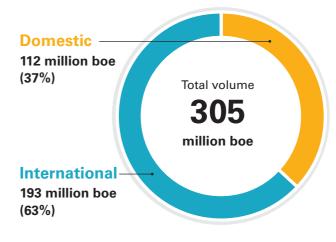
Oil and gas, or hydrocarbons, are generated in sediments with rich organic matters where the rocks are heated underground.

Over the long years in geological scale, hydrocarbons then move upward by buoyancy through porous rocks, and sometimes they are trapped in structures underneath non-permeable cap rocks, which will become an oil and gas field. Oil and gas exist in the pores within the reservoir rocks.

Schematic Image of an Oil and Gas Field: Sarukawa oil field in Oga City, Akita Prefecture



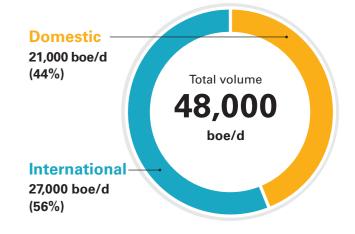
#### JAPEX's Proved Reserves\* of Oil and Gas (boe: barrels of oil equivalent) (As of March 31, 2014)



# JAPEX's Production Volume of Oil and Gas (boe/d: barrels of oil equivalent per day)



(Fiscal Year Ended March 31, 2014)



<sup>\*</sup> Proved reserves represent estimated quantities of crude oil and natural gas that geological and engineering data demonstrate with reasonable certainty to be commercially recoverable from crude oil and natural gas reservoirs that have already been discovered under defined economic and operating conditions. They do not include produced volume to date or undiscovered resources.



Refiners

Others



# **Upstream**

01: Exploration

Geological Survey

Geophysical Survey

Exploration and Appraisal Wells

Evaluation of Reserves

02: Development and Production

FEED

**Drilling of Production Wells** 

Construction of Facilities

Oil and Gas Production

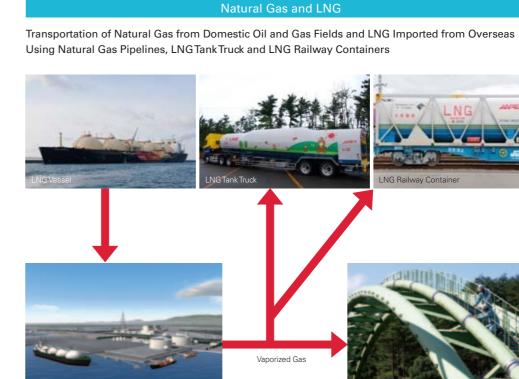
## Crude Oil

Transportation of Crude Oil from Oil and Gas Fields by Crude Oil Lorries and Tankers









Midstream

03: Receiving Terminal / Transportation (Crude Oil / Natural Gas and LNG)

# Customers



Gas-Fired Power Plants

Downstream

04: Sales



Distribution Companies (LDCs)





**"" GLOBAL RESOURCES** 

**Fundamental to Our Growth Strategy** 

### **E&P BUSINESS**

JAPEX is investing in the pursuit and development of new projects in its focus areas: Southeast Asia, Canada, the Middle East, the United Kingdom / Norway, and Russia (Sakhalin). Also, in order to achieve stability in production, reserves and revenue, it aims to build an investment portfolio that combines the acquisition of producing assets, undeveloped discoveries and exploration acreage.

E&P is fundamental to our business expansion, and we aim to significantly increase our proportion of overseas exploration and development investment as part of an overseas shift. We have set quantitative targets\* for three phases of overseas shift.

\* Medium-Term Business Plan, FY 2012 - FY 2016 (announced May 13, 2011)

#### **Three Steps of International Activities**

Shift of investment

overseas (FY 2012 - FY 2016) E&P Investment Portfolio: Pursue new

projects to shift overseas investment ratio from 30% (last 5-year average) to 60%

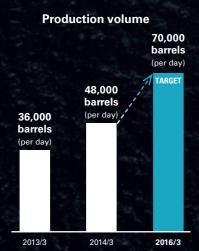
> **Proportion of overseas** investment

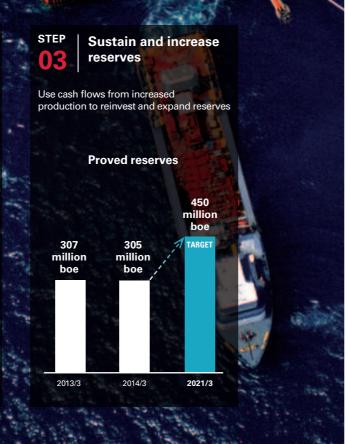
Approx. 60%





Increase production







# Canada

**Pacific NorthWest LNG Project** 

#### **Steady Progress Ensured through Consistent Equity Interest in Upstream, Midstream and LNG Offtake Projects**

In April 2013, JAPEX acquired a 10% interest in the shale gas mineral license currently under production in the North Montney area, British Columbia, Canada. The shale gas production is projected to increase and will be transported by a new pipeline to Prince Rupert on the west coast of the province. There, the gas will be liquefied at a planned LNG plant, with a capacity to produce 12 million tons of LNG per year, before being exported. We intend to supply Japan with our share of the LNG (10% interest: 1.2 million tons per year) through the Soma LNG terminal (for which the final investment decision has been made) and other terminals.

In order to ensure the stability and efficiency of project execution, all partners have a consistent equity interest in the integrated steering framework, from the development of gas, through production and liquefaction, to the offtake of LNG.

#### **Shale Gas Development and Production Project**

**LNG Project** 

**LNG Offtake** 

**Japanese Gas Market** 



#### **Shale Gas Development and Production Project (upstream)**

Mineral License	North Montney Area, British Columbia, Canada		
Operator	PETRONAS (including subsidiaries)		
Interest	10%		
Project Company	JAPEX Montney Ltd. (based in Alberta, Canada)		
Current Status	Gas production and sale to AECO market*		

<sup>\*</sup> AECO market: Important gas market in western Canada

#### LNG Project (midstream)

Proposed Plant Location	Lelu Island, Port of Prince Rupert, British Columbia, Canada		
Operator	PETRONAS (including subsidiaries)		
Equity Interest	10%		
FID (planned)	End of 2014*		
First LNG Production (planned)	End of 2018*		
LNG Production Volume (planned)	12 million tons annually*		
Current Status	Working on basic design of facilities		

#### Location of Pacific NorthWest LNG Project





# Canada Oil Sands Project

#### **Pioneers in the SAGD Process**

JACOS, a consolidated subsidiary of JAPEX, has been engaged in developing oil sands in Alberta, Canada, for more than 30 years since its foundation in 1978, when open-pit mining was the only available method to extract bitumen\*. After much trial and error, JACOS became one of the first companies to adopt the economic and efficient steam-assisted gravity drainage (SAGD) method in its operations, and it has been producing bitumen in the so-called 3.75 section area of the Hangingstone Lease, since 1999 (current production rate around 6,000 barrels per day).

\* Bitumen: Heavy and viscous hydrocarbons extracted from oil sands

#### **Start of Expansion and Development**

In December 2012, JAPEX made the final investment decision to develop a new area adjacent to the current production area. Development works are ongoing, aiming for the start-up of bitumen production in 2016. This project is a joint venture between JACOS, the operator with a 75% participating interest, and Nexen Energy ULC, which holds the remaining 25% interest. Completion of the initial phase will result in bitumen production capacity of about 20,000 barrels per day. With the addition of certain facilities, bitumen production may be expanded to 30,000 barrels per day.

As a pioneer in oil sands development using the SAGD method, JAPEX plans to enhance its expertise in related development and production technology.

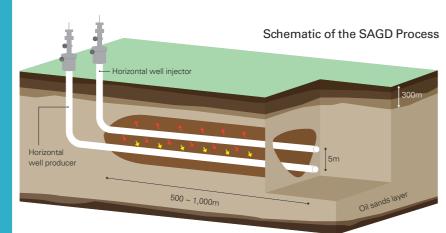


Block	Project Company	Interest Current Stat		Current Status
Hangingstone (commonly known as the 3.75 section area)	Canada Oil Sands Co., Ltd. (local subsidiary: Japan Canada Oil Sands Limited (JACOS))	JACOS	100%	Producing bitumen
Hangingstone (expansion area)	Canada Oil Sands Co., Ltd. (local subsidiary: Japan Canada Oil Sands Limited)	JACOS Nexen Energy	75% 25%	Development started in

Note: JAPEX has partnered with Suncor, Nexen Energy and Imperial Oil with respect to parts of the yet to be developed areas, Chard, Corner and Thornbury. Participating interests differ for each respective block.

#### **Oil Sands Development Utilizing the SAGD Process**

JACOS has made a significant contribution to realize the commercial application of the steam-assisted gravity drainage (SAGD) process and to utilize this method for its own oil sands development and production. In SAGD, two wells with horizontal sections of between 500m and 1,000m are drilled at an exact distance of 5m between the upper and lower wells. Extracting process involves heating the oil sands layer by continuously injecting high-temperature, high-pressure steam into the upper well to provide liquidity to the bitumen, which in turn flows down to the lower well and is recovered along with hot water. JACOS has been achieving operational efficiencies that minimize freshwater consumption by recycling at least 90% of the hot water produced.



#### Location of Hangingstone





PROJECT 3

# Indonesia Kangean Project

# Terang Gas Field Production at 47 Thousand Barrels of Oil Equivalent per Day

In the Kangean Block (in which JAPEX has a 25% interest) off the east coast of Java, Indonesia, the Terang gas field began commercial production in May 2012. This gas field, which is located 90km north of Bali Island, at a water depth of 90m, is a part of the Terang, Sirasun and Batur gas field complex. From the commencement of production at four horizontal production wells to the cumulative total of 30 million barrels of oil equivalent as of April 20, 2014, gas production has progressed steadily to reach a daily average of 260 million cubic feet, or approximately 47 thousand barrels of oil equivalent per day.

Natural gas produced in the Terang gas field is gathered at a subsea production system, processed at a Floating Production Unit (FPU) and transported through the East Java Gas Pipeline for sale to the state-owned power company and fertilizer factory on the outskirts of Surabaya, East Java. There is strong demand for gas in the region, and the operation of the region's gas fields will contribute toward providing a stable supply of energy as well as the growth of the local economy.

# Targeting Development of Sirasun, Batur and Other Fields

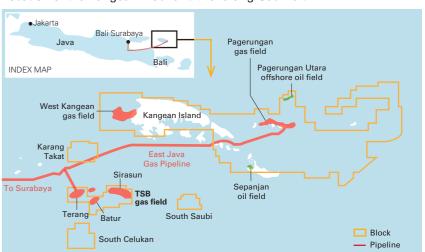
In addition to starting up development work at each of the Sirasun and Batur gas fields, we will endeavor earnestly to promote increased exploration and development of other fields in the block going forward.



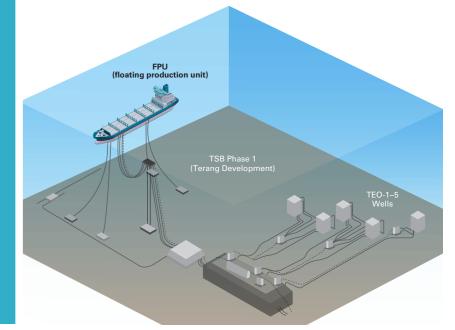
Block Project Company		Interest		Current Status	
Kangean Block	Energi Mega	Kangean Energy Indonesia Ltd. (Operator)	60%	Producing gas	
(offshore East Java)	Pratama Inc.	EMP Exploration (Kangean) Ltd.	40%	and oil	

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

#### Location of the Kangean Block and the Terang Gas Field



#### Schematic of the Terang Gas Field Subsea Production System





# Iraq **Garraf Project**

#### **Oil Production Commenced in 2013**

The second international petroleum licensing round was held by the Iraqi Ministry of Oil in December 2009. JAPEX, along with Malaysian state-owned oil company Petroliam Nasional Berhad (PETRONAS), jointly secured the winning bid and acquired the development and production service contract to the Garraf oil field, located in Southern Iraq, In March 2010, JAPEX established Japex Garraf Ltd. as the project company to conduct the development of the Garraf oil field. Along with the operator, PETRONAS, we are pushing forward with the Garraf field development.

These efforts enabled us to commence production, at around 35,000 barrels per day, in August 2013. The following November, the Iraqi Ministry of Oil approved the commercial production of the Garraf oil field, which triggered the cost recovery and remuneration fee payment. In February 2014, successful steps were taken to complete the inaugural shipment of approximately 1.56 million barrels of crude oil, which is Japex Garraf's entitlement under the contract. As of April 2014, average daily production at the Garraf oil field remains steady at between 80,000 and 90,000 barrels. Plans are in place to ensure one shipment of crude oil each quarter. The funds recovered through crude oil shipments will be re-invested toward further development of the Garraf oil field, and a surplus will be distributed to the shareholders of Japex Garraf Ltd., including JAPEX.

#### Targeting 230,000 Barrels per Day by 2017

Preparations are under way at the Garraf oil field to commence further development work, with a view to full-fledged production of 230,000 barrels per day by 2017. Every effort will be channeled toward expanding production volume, engaging in stable operations and undertaking the regular shipment and sale of crude oil in order to contribute to the financial status of JAPEX.

Field	Participating Interest		Current Status
	Petronas Carigali Iraq Holding B.V. (Operator)	45%	
Garraf	Japex Garraf Ltd.	30%	Producing crude oil
	North Oil Company	25%	3.240 0.1

#### Location of the Garraf Oil Field





# GLOBAL RESOURCES: PROJECTS AROUND THE WORLD

#### Russia

#### Sakhalin-1 Project



Block: Sakhalin-1 (development of Chayvo, Odoptu and Arkutun-Dagi fields; offshore Sakhalin Island)

Project Company: Sakhalin Oil and Gas Development Co., Ltd.

JAPEX is participating in the Sakhalin-1 Project, operated by ExxonMobil, through investment in Sakhalin Oil and Gas Development Co., Ltd. The Chayvo field has been producing oil and gas since 2005, and the Odoptu field has been producing oil since 2010. The Arkutun-Dagi field is being developed with the goal of commencing oil production in 2014.

In 2013, the Sakhalin-1 Project achieved the world record for the longest extended-reach well, at a total of 12,700m, at the Chayvo field. Also, since beginning operations in 2006, the De-Kastri Oil Terminal has transported 370 million barrels of oil to Japan and many other countries safely and efficiently for more than six years.

#### **United States**

#### **Shale Oil Development Project**



Middle McCowen (Southern Texas)

Project Company: Japex (U.S.) Corp.

Through its consolidated subsidiary Japex (U.S.) Corp., JAPEX is participating in a shale oil development project in Eagle Ford, Southern Texas, United States, operated

Shale oil is petroleum that is found in shale, a kind of mudrock. It was difficult to extract with older technology; however, nowadays, it is recovered using a technology called hydraulic fracturing. JAPEX is gaining knowledge of the latest technology and expertise through its involvement in the Texas shale oil development project.

# **United Kingdom**

#### **U.K. North Sea Offshore Blocks**



22 / 24e, 22 / 28c, 22 / 29c (Seagull); 22 / 6e (Les Arcs);

#### Block : Sanga Sanga CBM Block (onshore East Kalimantan)

Pilot tests being carried out in numerous locations to evaluate the productivity of coal bed methane.

21 / 10b, 21 / 9b (Val D'Isere) Project Company:

JAPEX UK E&P LIMITED

One well was drilled on the Seagull prospect in 2014. At each of the Les Arcs and Val D'Isere prospects, a 3D seismic survey is being reprocessed and one well is planned in the future

### Aceh A Block

Indonesia



Block: Aceh A Block (onshore North Sumatra)

Project Company: Japex Block A Ltd.

Preparation of Alur Siwah, Alur Rambong and Julu Rayeu gas field development, which will supply the state-owned fertilizer plant and the state-owned electricity company.

#### Sanga Sanga Block



Block: Sanga Sanga Block (onshore East Kalimantan Project Company: Universe Gas & Oil Company, Inc.

Gas production from Badak, Nilam, Mutiara and Semberah fields, most of which is supplied to the Bontang LNG terminal.

Project Company: Japan CBM Limited

# 01 Yufutsu oil and gas field (Tomakomai City, Hokkaido)



The Yufutsu oil and gas field is in the eastern part of the city of Tomakomai in Hokkaido and stretches from the Tomakomai West Port to the Ishikari Plain to the west of Lake Utonai. It began with the success of the Minami Yufutsu SK-1 exploration well in 1988. Further exploratory drilling of wells in the Minami Yufutsu, Numanohata and Akehono areas was successful, leading to the opening of the Yufutsu oil and gas field. The Yufutsu field is one of the few oil and gas fields in the world with oil and gas reservoirs contained in natural fractures

Discovered: 1989 Commenced production: 1996

# 02 | Sarukawa oil field (Oga City, Akita Prefecture)



The Sarukawa oil field extends offshore from the northern coast of the Oga Peninsula in Akita Prefecture. This oil field resulted from the success of the 1958 Sarukawa SK-2 exploration well. More than 50 years have passed since the start-up of production and JAPEX has drilled more than 100 wells including waterflood injection wells The Sarukawa oil field was a significant find, strongly linked to the later discovery of oil and gas in the Kosei area, such as in Fukuyonezawa, Fukukawa and Nishi-Ogata.

Discovered: 1958 Commenced production: 1959

#### 02 | Sarukawa oil field

01 | Yufutsu oil and gas field

- 03 Ayukawa oil and gas field
- 04 | Yurihara oil and gas field
- 09 | Amarume oil field
- 10 | Shiunji gas field
- 11 | Mitsuke oil field
- 07 │ Katakai gas field

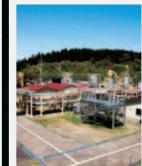
#### 03 Ayukawa oil and gas field (Yurihonjo City, Akita Prefecture)



Located north of the Yurihara oil and gas field, the Ayukawa oil and gas field covers an area extending from the northern edge of the Yuri highlands to the Kovoshi River hasin further north. The field began with the success of the Higashi Avukawa AK-1 exploration well in 1989. Oil and gas produced in the Ayukawa area is transported by flow line to th Yurihara central base.

Discovered: 1989 Commenced production: 1995

#### 04 Yurihara oil and gas field (Yurihonjo City, Akita Prefecture)



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 in 1976. Continued exploration in the deep-lying green tuff layer was also successful and led to the opening of the Yurihara oil and gas field.

Discovered: 1976 Commenced production: 1984

#### 05 | Iwafune-oki oil and gas field

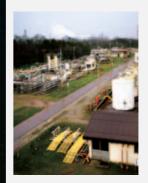
nately 4km offshore from the mouth of the Tainai River, Tainai City, Niigata Prefecture)



The Iwafune-oki oil and gas field extends offshore near the mouth of the Tainai River in Tainai City, Niigata Prefecture. After the success of the Iwafune-oki SIM-1 exploration well in 1983, three further wells were drilled the following year to con firm the extent of the oil and gas deposits, also yielding positive results. In 1989, we decided to develop the area, and in 1990 we built the lwafune-oki platform, at a depth of 36m, and a 21km seabed pipeline while drilling development wells. The Iwafune-oki field is Japan's sole offshore oil and gas field, and cumulative oil production eached 5 million kiloliters in 2012.

Discovered: 1983 Commenced production: 1990

#### 06 Higashi-Niigata gas field (Niigata City, Niigata Prefecture)



The Higashi-Niigata gas field extends across and offshore from the sand dunes to the east side of the Agano River mouth in Niigata City. The gas field originated after the 1959 Higashi-Niigata SK-1 exploration well discovered strong indications of gas in a shallow part of the Nishiyama Formation. As a result of further active exploration, we succeeded in producing large amounts of gas from new deposits, including those in the lower parts of the Nishiyama Formation, upper and lower parts of the Shiiva Formation, and the Teradomari Formation. The Higashi-Niigata gas field is one of Japan's largest gas fields in terms of structural size and the number of gas deposits.

Discovered: 1959 Commenced production: 1959

# 09 | Amarume oil field



Discovered: 1960 Commenced production: 1960

# 10 Shiunji gas field

05 | Iwafune-oki oil and gas field -

06 | Higashi-Niigata gas field

08 | Yoshii gas field <

/// JAPANESE RESOURCES

**Foundation of Stable Supply** 

**GAS BUSINESS** 

in the vicinity of existing oil and gas fields.

Oil and gas field

Oil field

Gas field

**DOMESTIC OIL and** 

JAPEX presently operates 11 oil and gas fields located in Hokkaido, Akita, Yamagata and Niigata prefectures.

JAPEX is aggressively and strategically conducting E&P

by efficiently combining exploration for the addition of new large-scale gas reserves with that targeting reserves growth

With a view to maintain and expand our domestic reserves,

activities, centered on the prefectures of Hokkaido, Akita and Niigata,



Discovered: 1962 Commenced production: 1963

## 11 | Mitsuke oil field



Discovered: 1958 Commenced production: 1959

### 07 Katakai gas field (Ojiya City, Niigata Prefecture)



One of JAPEX's main gas fields, the Katakai gas field is located in a range of hills, between 150m. and 200m high, stretching from Koshiji-machi in the city of Nagaoka to the city of Ojiya. The gas field traces back to the success of the Ojiya SK-1 and Katakai SK-1 exploration wells in 1960. The first development was in shallow deposits at a depth of 1.000m, but the Katakai SK-8 exploration well in 1978 discovered deep-lying gas deposits in the green tuff layer. Since then, several exploration wells have been drilled to confirm the extent of the reen tuff formation

Discovered: 1960 Commenced production: 1960

## **08** Yoshii gas field (Kashiwazaki City, Niigata Prefecture)



The Yoshii gas field is located in the Chuo oil belt 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 exploration wells were drilled to confirm the extent of green tuff in the Yoshii, Myohoji and Yasuda areas.

Discovered: 1968 Commenced production: 1968

# **GAS INTEGRATION**

#### **Targeting Stable Supply**

# **GLOBAL INTEGRATION of NATURAL GAS BUSINESS**

With its domestic gas business as its revenue base, JAPEX has worked to expand its gas supply chain, from gas field development (upstream) through various supply channels, including pipelines (midstream), to wholesale to electric power companies and local distribution companies (LDCs) as well as supply to industrial users (downstream). We are presently moving ahead with the promotion of a Canada Pacific Northwest LNG project (commercialization under consideration) and the construction of an LNG terminal in Soma, Fukushima Prefecture (operations scheduled to

In addition to reinforcing its stable, long-term gas supply capabilities, JAPEX will work to deliver more competitive prices while increasing its ability to respond to emergencies.

# LNG receiving terminal Prince Rupert (LNG plant) (Hokkaido LNG) (commercialization under consideration) Yufutsu LNG plant / Kushiro /ufutsu LNG receiving terminal Domestic shipping route **Natural Gas Pipeline Network** JAPEX owns and operates a domestic natural gas pipe-

line network with a total length of more than 800km, a key strategic asset to expand its natural gas sales. The pipelines have been constructed starting from our gas fields and LNG receiving terminals and supply gas to our customers: LDCs, industrial customers and gasfired power plants.



#### **LNG Satellite Supply**

#### Transportation via Tank Trucks and Railways

JAPEX has developed its LNG Satellite System, which uses tank trucks and rail transportation, to meet demand for natural gas in regions not served by its gas pipeline network. Since 1984, JAPEX has been using tank trucks to supply imported LNG to LDCs on the main island of Honshu from an LNG receiving terminal JAPEX further improved this system by introducing rail transportation using LNG tank containers for the first



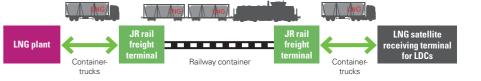
time in Japan in 2000. This system allows JAPEX to supply LNG to LDCs in distant areas. Rail transportation using LNG tank containers is an environmentally friendly mode of transportation

with lower CO2 emissions than tank trucks.

#### Transportation via Tank Trucks

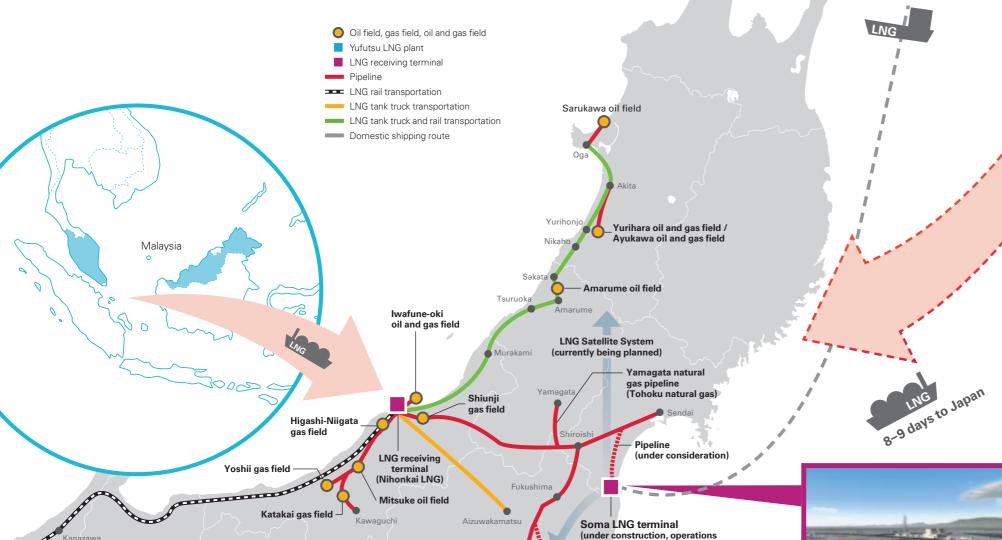


#### Transportation via Railways



#### **Utilizing Underground Natural Gas Storage**

JAPEX stores natural gas underground at the Shiunji gas field, Niigata Prefecture, which is connected to its natural gas pipeline network. This arrangement allows us to respond flexibly to seasonal fluctuations and other factors in demand for natural gas. Looking ahead, JAPEX plans to consider underground storage that utilizes vaporized LNG. 
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**Bolstering Our Natural Gas Supply System** 

# **LNG Receiving Terminals and Underground Natural Gas Storage**

JAPEX is strengthening its natural gas supply system through the use of LNG receiving terminals and underground storage in order to provide a stable supply of natural gas all over Japan.

#### Soma LNG Terminal

#### (Operations Scheduled to Commence in March 2018)

In conjunction with ongoing reconstruction efforts following the Great East Japan Earthquake and tsunami, demand for natural gas is expected to increase in areas along the Pacific coast of the Tohoku region, including Fukushima, Miyagi and Iwate prefectures, that were devastated by the disaster. In response, we are moving ahead with the construction of an oceangoing LNG vessel terminal at Soma Port in Fukushima Prefecture and a system of connecting pipeline in order to import LNG directly from overseas and to ensure stable transportation and supply to the Tohoku region. At this point, the principal source of LNG is Canada shale gas. This project has a stable business structure that is built on the comprehensive participating interests held by PETRONAS, which extend from upstream through midstream to downstream operations. In addition, efforts to connect the Soma LNG terminal to the existing pipeline that runs between Niigata and Sendai cities will consolidate operations at LNG terminals along the Sea of Japan and the Pacific coast. Through these means, we will put in place a network to provide a stable supply of natural gas and enable a high level of response in case of emergencies.

#### Construction Schedule

	FY2014	FY2015	FY2016	FY2017
Soma LNG Terminal				
Onshore Plant				
LNG Tanks				
Berths				
Connecting Pipeline				
Trial Operations				



Planned construction of the Soma LNG terminal (Shinchi Town, Fukushima Prefecture



Rendering of the Soma LNG terminal (front-end engineering design)

#### **Yufutsu LNG Receiving Terminal**

The construction of the Yufutsu LNG receiving terminal was completed in autumn 2011. Externally procured LNG is transported by coastal vessel and optimally mixed with natural gas produced by the Yufutsu oil and gas field. This system will allow JAPEX to bolster its natural gas supply structure within the Hokkaido area.



JAPEX domestic vessel Akebono Maru

#### **Yufutsu LNG Plant**

JAPEX has constructed a natural gas liquefaction plant at the Yufutsu oil and gas field to supply natural gas to customers in Hokkaido in geographic areas outside the reach of its pipeline network. Shipments of LNG by road and rail to LDCs in Hokkaido began in October 2003 using a container system we call the LNG Satellite System. The Yufutsu LNG plant is a groundbreaking project that has paved the way for the supply of LNG in Hokkaido

#### **Utilizing Underground Natural Gas Storage**

Depleted natural gas reservoirs can serve as ideal gas "storage tanks" that require very little maintenance. JAPEX stores natural gas underground at the Shiunji gas field in Shibata City, Niigata Prefecture, which is connected to the Company's natural gas pipeline network. This allows us to respond flexibly to seasonal fluctuations and other factors in demand

There are many gas fields within Niigata Prefecture that can store natural gas. JAPEX's gas fields alone are estimated to have considerable underground storage capacity. Through effective use, these underground storage sites allow us to adjust supply to meet demand and function as emergency reserves. In these and other ways, JAPEX will effectively use underground natural gas storage to help ensure reliable supplies of natural das



Gas compressor used in underground natural gas storage at the Shiunii gas field

#### **Securing Energy Supply**

# **Natural Gas Pipeline Maintenance and Management**

As an environmentally friendly energy source, natural gas is used extensively as a feedstock and fuel by our customers: LDCs, electric power companies and industrial users. Through the use of pipelines, JAPEX can effectively assure a safe and stable supply over the long term. In addition to routine patrols, our pipelines are maintained through a variety of methods, including SCADA, which is a 24-hour remote monitoring system.

#### **Steel Pipes Offering High-Tensile Strength**

Offering endurance under both internal and external pressure as well as resilience against distortion and shock, high-tensile-strength steel pipes are used in the construction of our natural gas pipelines. Designed to withstand major earthquakes, steel pipes exhibited their reliability most recently during the Miyagi Prefecture offshore and Niigata Prefecture Chuetsu earthquakes.

During the Great East Japan Earthquake and tsunami that struck Japan in March 2011, JAPEX incurred some damage to a portion of its ancillary ground facilities along its natural gas pipeline between the cities of Niigata and Sendai. JAPEX completed provisional repairs within 12 days of the earthquake and recommenced the delivery of natural gas, a feedstock for town gas, to Sendai City and surrounding areas.

#### **Technologies That Protect Pipes against Corrosion**

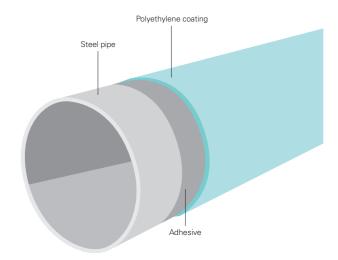
The portions of our pipelines that are laid underground are protected by an external surface coating. In addition, cathodic protection achieved by the impressed current protection method is applied in response to such issues as galvanic corrosion. Recognized for its easy maintenance and operation, the impressed current protection method has proven extremely reliable in the control of corrosion of metal surfaces. This is particularly true for long-distance, large-scale pipelines. Under this method, external power passes through buried electrodes, creating a protective current. Protected from the plight of natural corrosion, our underground pipelines have a virtually permanent life span.

#### Monitoring System

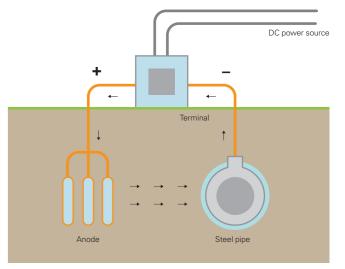
The flow rate and pressure of natural gas channeled to LDCs and other customers is monitored on a 24-hour basis, utilizing communication satellite and other service lines. A monitoring center and individual supply stations are equipped with remote display units through which natural gas flows and pressure are centrally monitored and controlled. In the event of an emergency, flows are shut off through remote operations.

Emergency shutdown valves (ESDVs) are installed at major valve stations, LDCs and other user transfer points to enable gas to be shut off in the event of an emergency by monitoring centers through remote operation. Other safety structures and systems in place to accommodate extraordinary circumstances include vent stacks installed at key valve stations for the safe release of gas into the atmosphere as and when required.

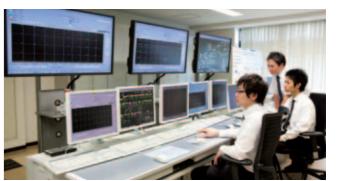
In order to ensure the stable supply of natural gas to LDCs and other customers, patrols regularly maintain and inspect the entire length of the pipeline. Every precaution is taken to secure safety. Pipelines are placed on an alert status in the event of such natural disasters as earthquakes and heavy rain. Security tags and sign posts are also employed as appropriate



Structure of Steel Pipe



Schematic of the Impressed Current Protection Method



Nagaoka Pipeline Monitoring Center

"" TECHNICAL CHALLENGES **Co-existence with the Earth ENVIRONMENT** and **INNOVATIVE TECHNOLOGY BUSINESS** In 2010, JAPEX newly formed the Environment & Innovative Technology Projects Division to develop new technology using the expertise and know-how gained from its E&P business and to further activity related to renewable energy as a measure against global warming. The division has designated the commercialization of methane hydrate and carbon dioxide capture and storage (CCS) as its key medium-to-long-term objective and is focusing on the accumulation of new technology and knowledge. JAPEX is also involved in projects investigating geothermal and solar power as renewable energy sources. Looking ahead, we aim to establish these technologies and knowledge as part of our business model and develop them into new profit centers.

### A New Energy Resource

# **Methane Hydrate**

Methane hydrate is a ice-like solid formed by methane gas (the main component of natural gas) captured inside water molecules. It is known to exist in highly pressurized, low-temperature natural environments, embedded in a shallow layer below the seabed at water depths of over 500m or in permafrost layers near the North and South poles. By some estimates, the volume of the original methane gas in the eastern Nankai Trough area located off the coast of Wakayama to Shizuoka prefecture, is

JAPEX was guick to recognize the potential of methane hydrate and undertook research into uncovering development technologies. From FY 1996 to 2000, we played a leading role in joint research with the former Japan National Oil Corporation (JNOC) and companies from the private sector. We drilled an exploratory test well on the Nankai Trough offshore Shizuoka Prefecture within our block in 2000 and became the first company in the world to successfully collect methane hydrate.

Building on these achievements, Phase 1 of the Methane Hydrate Development Plan in Japan, an initiative under the Research Consortium for Methane Hydrate Resources in Japan (MH21) that involves members from the government, industry and academia, commenced in 2001. This plan comprises: Phase 1, FY 2001 to 2008; Phase 2, FY 2009 to 2015 and Phase 3, FY 2016 to 2018. Details of the major activities of each phase are presented in the table at the top of page 19.

JAPEX engaged in operator work in field tests of methane hydrate production on commission from Japan Oil, Gas and Metals National Corporation (JOGMEC) in February 2012 and advanced drilling on one production well and two monitoring wells that were completed in February through March 2012.

The world's first offshore production test of methane hydrate using the depressurization method was conducted in January through March 2013, confirming continuous offshore production of methane gas from a methane hydrate layer. (Production continued for six days; average gas

production volume: approx. 20,000m³ per day; cumulative gas production volume: approx. 120,000 m3.) These efforts enabled us to gather a lot of valu-

Turning to the Medium-to-Long-Term Offshore Production Test, plans call for activities between FY2016 and FY2018. In this endeavor, JAPEX was contracted by JOGMEC to provide support. JAPEX concluded a contract concerning commissioned work with JOGMEC as "Support Work Related to Studies on the Basic Policy and Plan for the Medium-to-Long-Term Offshore Production Test of Methane Hydrate" in May 2014.

Recognizing that the abundant presence of methane hydrate under the Sea of Japan in the surface layer of the seabed is a significant source of energy, relevant authorities are taking aggressive measures to collect pertinent information. At the same time, JAPEX will consider opportunities to assess the volume of the original methane gas in the Sea of Japan to participate in various activities, including surveys as well as research and development in recovery technologies.

Moving forward, JAPEX will continue to play a central role as a member of the Steering Committee of MH21 while actively engaging in Japan's research and development concerning methane hydrate.

#### Phase 1 (FY 2001 to 2008)

FY 2001	First onshore production test in Canada
FY 2002	3D seismic survey in the eastern section of Tokai-oki to Kumano-nada
FY 2003	Exploratory test well in the eastern section of Tokai-oki to Kumano-nada
FY 2006	Detailed assessment of reserve volume in the eastern section of Tokai-oki to Kumano-nada
FY 2006 – 2007	Second onshore production test in Canada
FY 2008	Final assessment of Phase 1

#### Phase 2 (FY 2009 to 2015)

FY 2012	First offshore methane hydrate production test at the Daini Atsumi Knoll off the coasts of Atsumi and Shima peninsulas
FY 2015	Final assessment of Phase 2 (planned)

#### Phase 3 (FY 2016 to 2018)

	· · · · · · · · · · · · · · · · · · ·
FY2016 -2018	Medium-to-Long-Term Offshore Production (planned)
FY 2018	Final assessment of Phase 3 (planned)

#### Commercial Production Achieved for the First Time in Japan

# **Onnagawa Formation Tight Oil Initiative**

As tight oil (shale oil) is seen in an increasingly positive light as an unconventional resource worldwide. JAPEX has uncovered the potential of the Onnagawa tight oil formation, which is widely distributed throughout Akita Prefecture and has much in common with the Monterey Formation in North America. Based on this discovery, the Company initiated a research project for the development of tight oil with support from JOGMEC in 2012. After achieving a certain level of success with acid treatment tests and demonstration experiments at the Avukawa oil and gas field in October 2012, JAPEX took steps to begin commercial production (approximately 35kl of oil production per day) in April 2014. Looking ahead, efforts will be channeled toward

conducting demonstration experiments at the Fukumezawa oil field, using horizontal wells as a standard technology for the development of tight oil, along with multistage fracturing operations. Moreover, JAPEX will conduct redevelopment work at the Ayukawa oil and gas field, which offers significant potential.



through demonstration experiments at the Ayukawa oil and

#### Safe and Reliable

# Carbon dioxide Capture and Storage (CCS)

CCS is one method that has been proposed for reducing CO<sub>2</sub> emissions. It involves storing CO<sub>2</sub> by directly injecting it into depleted oil and gas reservoirs, coal reservoirs or aquifers and is considered to be highly practical, reliable and safe.

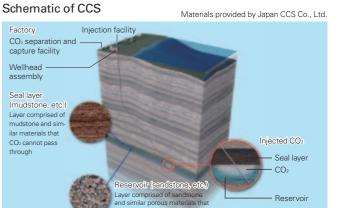
It is estimated that up to approximately 150 billion tons of CO<sub>2</sub> could be stored in underground geological formations in Japan. This is equivalent to approximately 100 years of annual CO<sub>2</sub> emissions in Japan.

#### **Applying Core E&PTechnologies**

JAPEX possesses cutting-edge technologies cultivated over half a century of experience in petroleum development, such as those used for investigating underground structures, estimating petrophysical properties and conducting drilling, production and fluid migration simulation, as well as underground monitoring centered on seismic surveys. Our E&P technologies constitute an indispensable core technology for CCS.

#### **Commercializing CCS Technology**

In its Action Plan for Building a Low-Carbon Society, the Japanese government has stated its policy to commercialize CCS by 2020. In response to this policy, JAPEX jointly established Japan CCS Co., Ltd. (Japan CCS) with other private-sector companies in May 2008. At the request of Japan's Ministry of Economy, Trade and Industry, Japan CCS commenced CCS demonstration tests in April 2012. JAPEX was commissioned to undertake research relating to these demonstration tests and by establishing technologies that support efforts to commercialize CCS, will contribute to the prevention of global warming.



#### Three Technologies Involved in CCS

#### **Separation and Capture**

Separation and capture of CO<sub>2</sub>

#### Injection and Storage Injection of CO<sub>2</sub> under

ground for storage (at a depth of 1.000m to 3.000m)

#### Renewable Energy

# **Geothermal and Solar Power**

Renewable energy sources come in a number of forms, from hydraulic through geothermal to solar light, solar heat, wind and biomass power. JAPEX focuses mainly on the development of geothermal and solar power.

#### **Geothermal Power**

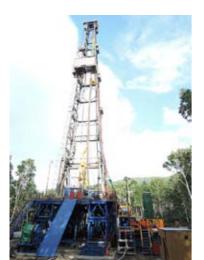
Geothermal resources extract steam and hot water from deep underground for power generation. Currently, there are geothermal power stations operating in 17 areas in Japan. Japan, a land of volcanoes, has abundant geothermal resources and is the third richest country in terms of geothermal energy.

Geothermal energy is a clean energy with less greenhouse gas emission. Also, geothermal energy is stable, which can generate continuously day and night.

There is so much expectation for geothermal development, and in order to promote it, the Japanese government has introduced 1) Deregulation for development in national parks, 2) Foundation of FIT (Feed-in Tariff, fixed price trading system), which offers long-term contracts to renewable energy producers, and so on.

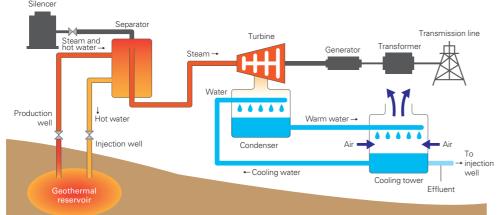
#### **New Geothermal Development**

By utilizing the technologies and experiences accumulated in this field, JAPEX has been conducting drilling surveys in Musadake area (Shibetsu Town), and ground surveys in Fukushima Prefecture, since 2013. At the same time, JAPEX is pursuing new geothermal potentials in various areas, including Furebetsu-dake-minami area (City of Kushiro).



Drilling operation of the Musadake SMMG-1D

#### Structure of Geothermal Power Generation



#### **Solar Power**

Facilities that can generate more than 1,000kW of power are called "mega solar power plants." JAPEX is constructing two such power facilities in Tomakomai City, Hokkaido. Commercial operations are scheduled to begin during 2014.

Blessed with long daylight hours, fewer snowfalls and low temperatures compared with other locations, Tomakomai is considered an ideal location in Japan and is expected to produce stable supplies of solar power.

	Installed Capacity	Site Area
Within the Hokkaido District Office site	1,800kW	62,000m <sup>2</sup>
Solar Power Tomakomai Co., Ltd.*	13,000kW	300,000m <sup>2</sup>

<sup>\*</sup> Joint undertaking with the Sumitomo Corporation Group

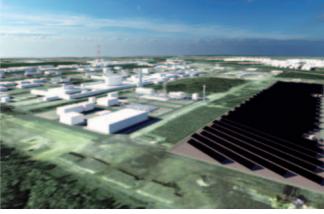


Image of the mega solar power plant located within the Hokkaido District Office site



Aiming for Sustainable Growth

### **Value Creation Activities**

To be involved with various stakeholders through our businesses and to work with local communities, JAPEX will make an effort to fulfill its corporate social responsibility (CSR).

For Health, Safety and the Ideal Working Environment

# Health, Safety and the Environment (HSE) Activities (1)

JAPEX reaffirmed its commitment to HSE on January 1, 2014. Moving forward, we are engaging in the implementation of an HSE management system and other HSE activities that combine health initiatives with our longstanding focus on safety and environmental protection. In addition to revising its HSE policies and objectives on January 1, 2014, the Group as a whole is working on HSE activity items set independently by each office every year.

**HSE POLICY** 





For Health, Safety and the Ideal Working Environment

# Health, Safety and the Environment (HSE) Activities (2)

JAPEX evaluates its HSE activities as a whole at the end of each fiscal year. The results of this review are then reflected in HSE activities for the following year.

In this manner, the Company works diligently to raise the level of its HSE activities. These efforts for continuous improvement help us prevent occupational accidents, develop a safe, ideal working environment and protect the environment.

#### **Environmental Protection Activities**

JAPEX recognizes that its mission is to ensure the stable, long-term supply of energy essential to the livelihood of society while at the same time taking into consideration the irreplaceable nature of the global environment. We will endeavor to protect the global environment by focusing particularly on expanding the use of environmentally friendly natural gas. In addition, we will strive on a daily basis to minimize the footprint that our business activities leave on the environment.

#### **Environmental Management System (EMS)**

To effectively carry out our environmental protection initiatives, JAPEX has adopted ISO 14001\*, the international standard for EMS. After the Sapporo District Office (currently the Hokkaido District Office) was certified to ISO 14001 in 2002, all offices, including the Company's Headquarters and the Niigata District Office of subsidiary Japex Offshore Ltd., individually adopted EMS by 2005.

In 2009, the systems for each office were consolidated and, instead of individual ISO 14001 certifications, JAPEX received Companywide certification

\* ISO 14001: International standard specifications for EMS to implement continuous improvements in environmental performance, such as reductions in environmental loads of products and services.



Safety check



#### **Regional Environmental Conservation**

# Health, Safety and the Environment (HSE) Activities Overseas

In the late 1950s, JAPEX commenced overseas exploration and development activities in various countries, including Indonesia, Canada and Australia. A very high level of attention to HSE is expected from E&P companies when carrying out oil and gas operations, and on October 27, 2009, JAPEX made the decision to introduce a corporate HSE management system and started implementing it from January 1, 2010. Subsequently, JAPEX has conducted regular HSE audits of the projects that it operates, such as the Canada oil sands project and exploration/production projects in Indonesia.

JAPEX is steadily shifting the operating base of our business activities overseas and will be engaged in joint ventures with various companies in an increasing number of countries. Against this backdrop, JAPEX will continue to improve its HSE standards through the efficient use of the PDCA (Plan, Do, Check, Act) cycle.

#### **Environmental Activities in Canada**

#### ( P8 Oil Sands Project)

JACOS is eager to conserve water resources by recovering and reusing approximately 90% of the steam injected underground in the bitumen production process. Moreover, JACOS is endeavoring to reduce green house gas emissions by optimizing the volume of natural gas consumption necessary for steam generation. JACOS is also active in social contribution areas, such as participating in environmental protection activities, providing scholarship support and accepting trainees. In project expansion, JACOS has obtained approval from the Alberta government after conducting in-depth environmental impact assessments. JACOS is conducting site development works paying close attention to the preservation of local biodiversity by, for example, managing the cutting of trees in the civil work to be completed before the nesting and breeding season of wild birds.

#### **Environmental Activities in Indonesia**

#### ( P9 Kangean Project)

With regard to operations in the Kangean Block, under the supervision of the relevant authority, operations are continuing based on a prior environmental impact assessment to minimize the environmental footprint, and we have been given a rating that indicates compliance with relevant laws set by Indonesia's Ministry of Environment.

Specifically, we are working to preserve the local environment through such activities as mangrove afforestation, regular observation of the coral reefs and detoxification of drill cuttings by bioremediation\*.

\* Bioremediation: Removal of harmful substances from the natural environment through the use of microorganisms, fungi, plants or enzymes

#### Environmental Protection in Iraq

#### ( P10 Garraf Project)

The Garraf oil field is surrounded by extensive plains where sheep and cattle graze. Although the region is basically arid, there are rivers and lakes within the block as well as wildlife, and we are taking particular care to protect the natural environment. Several base camps have been set up within the block with around 2,000 staff engaging in operations and construction work on a daily basis. The operator, PETRONAS, is adopting a variety of initiatives to minimize the burden of its activities on local communities and the environment. These initiatives include the introduction of concentrated wastewater treatment equipment and waste collection vehicles. Furthermore, we regularly monitor emissions, such as flare gas, and report appropriately on the impact of our operations on the natural environment to the Iraqi government.



Oil sands production plant



Kangean Block production plant



Garraf crude oil treatment facility

# CSR: SUSTAINED GROWTH

#### As a Responsible Corporate Citizen

### **Social Commitment**

We are actively involved in contributing to local communities, helping our employees to fulfill their social responsibilities as good corporate citizens. Mainly through such activities as volunteer work in reconstruction assistance following the Great East Japan Earthquake, contributions to local communities overseas, human resource development and afforestation programs, JAPEX is striving to fulfill its social responsibilities.

#### As an Integral Member of the Local Community

At each of its division and field offices, JAPEX strives to promote the exchange of ideas, opinions and information in an effort to ensure that local communities obtain a deeper understanding of the Company's activities. In addition to welcoming oil and gas field tours by local government authorities and the corporate sector, JAPEX allows elementary school students to visit its facilities and conducts tours, lectures and seminars to support senior high school and university students in their search for employment

Furthermore, we actively take part in local festivals, entering a kanto (bamboo pole) carrying lanterns with the Company's logo in the Kanto Festival in Akita City, Akita Prefecture. In Niigata Prefecture, we sponsor fireworks displays every year at the Nagaoka Fireworks Festival in Nagaoka City and at the Katakai Festival in Katakai, Ojiya City.

#### **Great East Japan Earthquake Volunteer Activities**

In August 2013, we invited 11 junior high school students from Minami Sanriku Town, Miyagi Prefecture, to participate with students from Akita Prefecture in a softball training camp. The goal of this initiative was to provide psychological support for children from areas devastated by the Great East Japan Earthquake. This second event, which followed a similar initiative in the previous year, was an opportunity for children to come together not only to train but also to cook rice and prepare curries in large camping pots at the camp's accommodation facility. Later, at night, around 40 junior high school students lined their futons in the large hall, with teams entertaining their opponents and enjoying lighthearted banter.

#### Contributions to the Local Community in Garraf (Iraq)

JAPEX and PETRONAS engage in a variety of activities as part of efforts to contribute to local communities in the Garraf contract in Iraq. These activities include repair of elementary schools, the distribution of stationery and goods to school children, establishment of mobile clinics and the supply of drinking water to neighboring villages.

The companies also provide funds for the maintenance and running of the Garraf Vocational Training Center (GVTC) within the Garraf contract area. The center provides training opportunities for local residents with a view to stimulating employment in the area. The center accepts about 600 people each year and offers a wide and varied curriculum with courses such as electrical wiring, English, IT and sewing.

JAPEX constructed a football field adjacent to the GVTC. Football is regarded as a national sport in Iraq and attracts an enthusiastic following. In cooperation with local authorities, NGOs and subcontractors, JAPEX and PETRONAS inaugurated the inter-village football league with the participation of 12 teams from surrounding villages, from January to March 2013. A second football league was then held from March to May 2014, with the number of participating teams increased to 18. Looking ahead, we hope to make these kinds of events an established feature of the area by holding junior league and other competitions in the future.

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Kanto Festival in Akita City, Akita Prefecture The Nagaoka Matsuri Fireworks Display



organized by Nagaoka City, Niigata Prefecture Photo: The Nagaoka Matsuri Council



Preparing curry during a softball training camp



Class at the training center at Garraf



Soccer field adjacent to the training

#### **Efforts Promoting Diversity**

JAPEX is working diligently to put in place a working environment that allows employees of different genders and nationalities and personnel who hold diverse values to go about their duties in an increasingly vital and dynamic manner. From 2014, we have been taking steps to periodically hold seminars that cover a variety of related topics. In addition to initiatives undertaken by companies that adopt an advanced approach toward diversity, seminar topics include communication between male and female employees, work-life balance and child and nursing care. Moving forward, we will actively promote workplace diversity by supporting working women, hiring foreign nationals and undertaking a variety of necessary initiatives.



In-house study workshop

#### **Endowed Graduate School Programs**

By endowing educational and research programs at graduate schools, JAPEX supports the development of people who can contribute to the securing of stable, long-term energy supplies for Japan.

#### Overview of the Endowed Research Division of Hokkaido University

Name of Program: Endowed Research Division of JAPEX "Earth Energy Frontier Research"

Department: Creative Research Institution of Hokkaido University

Period: April 1, 2009 to March 31, 2016

Research: Research into the behavior of deep underground coal-bed methane and shale gas and into Cenozoic era petroleum systems

#### **Afforestation Business**

As part of efforts to help protect the global environment and contribute to local communities, JAPEX has been carrying out afforestation programs since 2005. Our efforts so far have focused on helping to reduce CO2 emissions through tree-planting activities in the prefectures of Akita, Hokkaido and Niigata. JAPEX is also involved in social environmental protection activities through its investment in the World Bank BioCarbon Fund.

#### **JAPEX Yuri Forest**

### Location

Yurihonjo City, Akita Prefecture

Area

4.50 hectares

Afforestation period 3 years, from 2005 to 2007



### JAPEX Sennenmatsu Forest

#### Location

Seiro Town, Kitakanbara County, Niigata Prefecture

Area

6.41 hectares

Afforestation period

3 years, from 2007 to 2009



#### **JAPEX Morappu Forest**

#### Location

Tomakomai City, Hokkaido

#### Area

7.60 hectares

Afforestation period 3 years, from 2006 to 2008



#### **JAPEX Jomon Forest**

#### Location

Nagaoka City, Niigata Prefectur

#### Area

11.93 hectares (area for new planting, 4.87 hectares; adjacent forest, 7.06 hectares)



#### Afforestation period

First implementation: 2007 Second implementation: 2010 Planned third implementation: 2014



1958 July Sarukawa oil field (Akita) was discovered

June Higashi-Niigata gas field (Niigata) was discovered 1959

> Mar. Amarume oil field (Yamagata) was discovered Dec. Katakai gas field (Niigata) was discovered

Mar. Kumoide gas field (Niigata) was discovered June Subsidiary JAPEX SKS Corporation was established

Aug. Shiunji gas field (Niigata) was discovered

1964 Nov. Fujikawa gas field (Niigata) was discovered

May Operation range expanded to overseas by 1965 revision of the articles of association

Feb. Subsidiary North Sumatra Offshore Petroleum Exploration Co., Ltd. 1966 (NOSOPEX), the company presently known as INPEX, was established

Oct. With the establishment of the governmental Japan Petroleum Development Corporation (JPDC), JAPEX was incorporated 1967 into JPDC as the E&P operating body

1968 Apr. Yoshii gas field (Niigata) was discovered

Apr. Reorganized as a private E&P company, Japan Petroleum Exploration Co., Ltd. was separated from JPDC

1971 May Subsidiary Japex Offshore Ltd. was established Oct. Subsidiary SK Engineering Co., Ltd. was established

June Yurihara oil and gas field (Akita) was discovered

Dec. Subsidiary Canada Oil Sands Co., Ltd. (CANOS) was established

1985 Jan. Beijing Representative Office was opened

1980 Oct. Subsidiary Japex (U.S.)

June Iwafune-oki oil and gas field

(Niigata) was discovered

Apr. Subsidiary JGI, Inc was established

Corp. was established

Mar. Yufutsu oil and gas field (Hokkaido) was discovered Nov. Ayukawa oil and gas field (Akita) was discovered

1990 May London Representative Office was opened

1991 Mar. Jakarta Representative Office was opened

1995 Mar. Subsidiary Japex Pipeline Ltd. was established

1997 Feb. Houston Representative Office was opened

Oct. Subsidiary Shirone Gas Co., Ltd. was established Dec. JAPEX was listed on the First Section of the Tokyo Stock Exchange

Mar. Dubai Representative Office was opened

2007 May JAPEX acquired stock in Energi Mega Pratama Inc.

2009 Nov. JAPEX acquired stock in Japex Energy Co., Ltd. Subsidiary Japan CBM Limited was established

Mar. Subsidiary JAPEX UK E&P LIMITED was established

Executive Committee Board of President Directors Board of **Corporate Auditors** 

Human Resources Dept. Finance & Accounting Dept. Procurement Dept. Information Technology Dept. Media & Investor Relations Dept. HSE Dept. Technical Division Technical Planning & Coordination Dept. Exploration Technology Dept. Geophysical Dept. Well Engineering Dept. Reservoir Engineering Dept. Facility Engineering Dept. Research Center Marketing & Sales Division Marketing & Sales Planning Dept. Marketing & Sales Dept. I Marketing & Sales Dept. II Marketing & Sales Dept. III Domestic Project Division Project Planning & Coordination Dept. General Affairs Dept Exploration Dept. Hokkaido District Office Operations Dept. Akita District Office Nagaoka District Office **Production Operator Training Center** Americas & Russia Project Division Canada LNG Project Dept. North America Shale Project Dept. Business Development Dept. Houston Representative Office Asia & Oceania Project Division Kangean Project Dept Business Development Dept. Beijing Representative Office Jakarta Representative Office Middle East, Africa & Europe Project Division

> London Representative Office Dubai Representative Office

Secretary Office

Auditing Dept.

Iraq Project Dept.

Soma Project Division

Business Development Dept.

Canada Oil Sands Project Dept.

Environment & Innovative Technology Projects Division

Project Implementation Strategies Dept. Technology Research & Development Dept.

Project Planning & Coordination Dept.

LNG Terminal Construction Dept. Pipeline Construction Dept. Pre-Operation Dept.

Power Generation Business Promotion Dept. LNG Associated Business Promotion Dept

Gas Pipeline Transportation Dept.

Corporate Strategy Dept.

**Business Solution Office** Administration Dept.

2006 Apr. Subsidiary Japex Block A Ltd. was established

2010 Mar. Subsidiary Japex Garraf Ltd. was established

2013 Mar. Subsidiary JAPEX Montney Ltd. was established

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# FACTS & DATA: CORPORATE DATA

#### Corporate Profile (As of March 31, 2014)

Company Name Japan Petroleum Exploration Co., Ltd.

Established April 1, 1970
Paid-in Capital ¥14,288,694,000

Number of Employees 1,782 (Consolidated basis)

Main Businesses Exploration, development and sales of oil, natural gas and other resources

and contract service-related operations, such as drilling

#### Main Offices

Headquarters: SAPIA Tower, 1-7-12 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan TEL: +81-3-6268-7000



Headquarters

Hokkaido District Office: 134-648, Numanohata, Tomakomai, Hokkaido 059-1364, Japan TEL: +81-144-51-2205

Akita District Office: 85-2, Hirune, Terauchi, Akita City,

Akita 011-0901, Japan TEL: +81-18-866-9511

Nagaoka District Office: 2-2-83 Higashi-Zao, Nagaoka, Niigata 940-8555, Japan TEL: +81-258-31-1401 JAPEX Research Center: 1-2-1, Hamada, Mihama-ku, Chiba City, Chiba 261-0025, Japan TEL: +81-43-275-9311

London Representative Office: 2nd Floor, Cheapside House, 138 Cheapside,

London EC2V 6BJ, U.K. TEL: +44-20-7796-0418

Dubai Representative Office: 203 Spectrum Building, Al Qutaeyat Road, Oud Metha, P.O. Box 121620, Dubai, U.A.E. TEL: +971-4-334-4248 Houston Representative Office: 5051, Westheimer, Suite 425, Houston, TX 77056, U.S.A. TEL: +1-713-334-9800

Beijing Representative Office: Room 2311, Tengda Plaza, No.168 Xizhimenwai Street, Haidian District, 100044 Beijing, China TEL: +86-10-8857-6023

Jakarta Representative Office: Menara Cakrawala, 9th Floor, JL.M.H. Thamrin, No.9, Jakarta 10340, Indonesia TEL: +62-21-3901507

#### Directors, Auditors and Officers (As of June 25, 2014)

Chairman Yuji Tanahashi	President Chief Executive Officer Osamu Watanabe	Executive Vice President Executive Officer Shoichi Ishii	Executive Vice President Executive Officer Junichi Matsumoto	
Senior Managing Director Executive Officer Mitsuru Saito	Senior Managing Director Executive Officer Nobuyuki Ogura	Senior Managing Director Executive Officer Kazuo Nakayama	Senior Managing Director Executive Officer Kiyoshi Ogino	Managing Director Executive Officer HitoshiYamatoya
Managing Director Executive Officer Hikaru Fukasawa	Managing Director Executive Officer Yosuke Higai	Managing Director Executive Officer Shigeru Mitsuya	Managing Director Executive Officer Motofumi Hyodo	Director Kazuo Kawakami
Corporate Auditor Nobuaki Moritani	Corporate Auditor Morio Ishizeki	Outside Corporate Auditor Masahiko Kadotani	Outside Corporate Auditor Norio Nakajima	

Special Advisor **Ajay Singh** 

Manag	ging Executive
Office	r
Yasuh	iro Masui
Execu	tive Officer
Toshiy	yuki Hirata

ecutive Managing Executive
Officer
Sui Kazuhiko Ozeki

Executive Officer Yoya Murahashi Managing Executive
Officer

Takahisa Inoue

Executive Officer

Yasushi Hamada

Managing Executive
Officer
Hajime Ito

**Executive Officer** 

Michiro Yamashita

Executive Officer Hirotaka Tanaka

Executive Officer HideakiTakahashi

Executive Officer Yoshitaka Ishii

#### Stock Information (As of March 31, 2014)

#### **Exchange Listing**

Tokyo Stock Exchange, First Section (Securities Code Number: 1662)

### Common Stock (Authorized)

120,000,000 shares

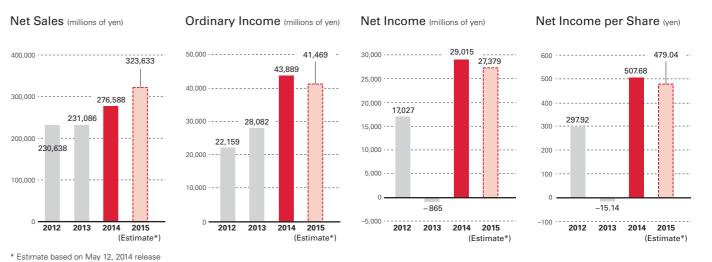
#### Common Stock (Issued) 57.154.776 shares

Number of Shareholders

17,646

Major Shareholders	Number of Shares	Voting Rights (%)
The Minister of Economy, Trade and Industry	19,432,724	34.00
INPEX CORPORATION	2,852,212	4.99
Japan Trustee Services Bank, Ltd. (Trust)	2,231,700	3.90
The Master Trust Bank of Japan, Ltd. (Trust)	2,218,700	3.88
JFE Engineering Corporation	1,848,012	3.23
JX Holdings, Inc.	1,149,984	2.01
Mizuho Bank, Ltd.	720,152	1.26
NIPPON STEEL & SUMITOMO METAL CORPORATION	610,316	1.07
The Bank of Tokyo-Mitsubishi UFJ, Ltd.	600,000	1.05
State Street Bank and Trust Company 505103	499,167	0.87

#### Financial Highlights



#### Major Subsidiaries and Equity-Method Affiliates (As of March 31, 2014)

Shirone Gas Co., Ltd.

JGI, Inc

Geophysical Surveying Co., Ltd.

SK Engineering Co., Ltd.

Akita Natural Gas Pipeline Co., Ltd.

JAPEX SKS Corporation

Japex Pipeline Ltd.

North Japan Oil Co., Ltd.

Japex Energy Co., Ltd.

North Japan Security Service Co., Ltd.

Japex Offshore Ltd.

GEOSYS, Inc.
TELNITE CO., LTD.

TOHOKU NATURAL GAS CO., INC. Kitakyushu LNG Sales and Lorry

Transport Corp.

Japan Drilling Co., Ltd. Iwaki Gas Ltd.

Japan Canada Oil Sands Limited

Canada Oil Sands Co., Ltd.

Japex (U.S.) Corp.

Japex Block A Ltd.

JAPEX Canada LNG Ltd.

Energi Mega Pratama Inc.
EMP Exploration (Kangean) Ltd.

Pacific NorthWest LNG LP

Diamond Gas Netherlands B.V.

JAPEX UK E&P LIMITED

Japex Garraf Ltd.

JAPEX Montney Ltd.

Japan CBM Limited

Kangean Energy Indonesia Ltd.

Universe Gas & Oil Company, Inc.

Sakhalin Oil and Gas Development Co., Ltd.







