A part of the cost of the printing paper will be donated to environmental protection activities.
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.
Oil is a general term for a flammable liquid substance that exists underground mainly composed of various hydrocarbons. Crude oil is the liquid extracted from underground, and gas and water are removed. By applying heat based on their distinct boiling points, it is distilled and decomposed into oil products such as liquefied petroleum gas (LPG), naphtha (gasoline), kerosene, diesel oil, heavy fuel oil, and asphalt.

According to their properties, these products are used as fuels for powering automobiles and machines, and as raw material for PET bottles, plastic products, textiles, and chemical products.

Natural gas is a flammable gas mainly composed of methane, which is colorless, odorless and lighter than air. Regarded as an energy source with a lower environmental impact than other fossil fuels such as oil or coal due to its smaller emissions of carbon dioxide (CO₂), nitrogen oxide (NOₓ) and sulfur oxide (SOₓ) when burned. LNG is liquefied natural gas produced by cooling natural gas to minus 162°C, where it exists in liquid form. When liquefied, its volume is reduced by one six-hundredth, allowing for long-distance transport and mass storage. Most of the natural gas consumed in Japan is imported from overseas as LNG.
Maximizing the Value of E&P Projects

JAPEX is engaged in oil and natural gas E&P (exploration and production) projects around the world, leveraging its technology and expertise to maximize project value. We are also pursuing new opportunities.

JAPEX has been participating in development and production of crude oil based on the development and production right jointly acquired with Malaysia’s state-owned oil company PETRONAS, the operator, in 2009. Commercial production commenced in August 2013, with the project currently producing between 90,000 and 100,000 barrels of crude oil per day. Development is now underway to gradually increase this volume toward achieving the target of 230,000 barrels per day by the end of 2020.

Production of natural gas is being conducted in several offshore gas fields in East Java, and JAPEX has been participating in the project since 2007. Current production is mainly from the TSB Gas Fields, including the Sirasing and Batur gas fields, which commenced production in March 2019. The production will be increased to 5.0 or 5.1 million cubic meters of natural gas per day. The natural gas is processed at a floating production unit (FPU) and supplied through the East Java Gas Pipeline to a state-owned electric power company and fertilizer factories in the suburbs of Surabaya City.

JAPEX has been participating in the project since 2014, and after a flow test acquiring the interests for the Eagle Ford region of southern Texas. Since April 2013, JAPEX has been developing and producing shale gas with partners including a subsidiary of PETRONAS, the Malaysian state-owned oil company, the operator. Average daily shale gas production was approximately 13 million cubic meters in 2018.

A significant volume of shale gas assets has been confirmed in the area. To maximize the asset value, we ensure to prioritize the investments by focusing on high economic potential area considering the prevailing market conditions and natural gas demand in Canada.
Domestic Projects

Ensuring Stable Supply by Combining Domestic Production with Overseas Procurement

JAPEX is currently conducting oil and natural gas E&P (exploration and production) at oil and gas fields in 10 locations around Japan. We transport and supply crude oil and natural gas through pipelines and by tank trucks and tankers. Also, we are expanding the scope of our energy business, which includes receiving imported LNG and electric power generation.
Energy Development
Including Unconventional and Renewable Resources

JAPEX engages in the development and production of oil and natural gas with both conventional and unconventional resources such as oil sands and shale gas, as well as the development of renewable energy including geothermal power generation.

Oil Sands Development by SAGD Method

JAPEX pioneered the SAGD method for extracting bitumen (extra heavy oil) from the oil sands layer. We began our approach to commercialization of the method from 1992 in Alberta, Canada, and then succeeded in test production in 1999, and commenced its commercial production in 2003. Today we conduct the production operation of bitumen at the Hangingstone leases in Canada (see page 5).

The SAGD method uses high-temperature, high-pressure steam to heat the oil sands layer and provide liquidity to the bitumen. A pair of horizontal wells are drilled, and as heat is applied to the oil sands layer by injecting steam into the upper well, the bitumen contained in the layer begins to flow downward to be recovered in the lower well.

Renewable Energy

JAPEX is promoting renewable energy as a new business field of environmentally-conscious type that contributes to low-carbon and decarbonization of the society by leveraging the technology and expertise we acquired through oil and natural gas development as well as our experience in operating the natural gas-fired power plant and procuring its fuel.

Geothermal power generation provides electricity by extracting high-temperature steam and water from the subsurface. JAPEX has been exploring the potential of geothermal energy in Japan and overseas by applying technologies such as those used in surveying the subsurface structure and drilling wells.

We also operate two mega-solar power plants capable of generating over 1,000 kW in Tomakomai City, where our Hokkaido District Office is located.
Ensuring a Stable Supply of Energy by Reinforcing Domestic Infrastructure

To meet natural gas and LNG (liquefied natural gas) demand in Japan, which has less environmental impact compared to other fossil fuels, JAPEX has been expanding its natural gas supply chain by reinforcing a stable supply system that combines natural gas produced in Japan and LNG procured overseas, and supplying electricity generated by natural-gas-fired power plants.

**Soma LNG Terminal**

The Soma LNG Terminal commenced its commercial operations in March 2018 as a key base of our natural gas supply network in Japan.

**FGP Fukushima Natural Gas Power Plant**

FGP Fukushima Natural Gas Power Co., Ltd. (FGP), a joint venture involving five private companies including JAPEX, is proceeding with the construction of a gas-fired power plant with maximum output of 1.18 million kWh at a site adjacent to the Soma LNG Terminal toward its commencement of commercial operations in the spring of 2020. Once commercial production commenced, the Soma LNG Terminal will supply LNG vaporized gas as fuel and JAPEX will sell its share of electricity generated by the plant.

**Yufutsu LNG Receiving Terminal**

The terminal receives, stores, and vaporizes LNG procured overseas and supplies LNG vaporized gas through our natural gas pipeline network to clients along the way. It is also responsible for supplying LNG by tank trucks to clients in the Tohoku region and transporting LNG by coastal vessels to the Yufutsu LNG Receiving Terminal. The terminal consists of one of the largest ground-type LNG storage tanks in Japan with a capacity of 230,000 kl, a receiving jetty for large ocean-going LNG carriers from overseas, a jetty for coastal vessels for receiving LPG (liquid petroleum gas) and dispatching LNG, LNG vaporization equipment, and an LNG shipping facility for tank trucks. In addition, construction of a second LNG tank and additional LNG vaporization equipment is in progress at the terminal to start its commercial operation coinciding with the commencement of commercial operations of the Fukushima Natural Gas Power Plant, now being built on adjacent land.

**Utilizing the Underground Storage of Natural Gas**

The underground storage of natural gas has been operated at the Shiunji gas field to take advantage of subsurface geological properties and connectivity to our natural gas pipeline network, in order to respond effectively to seasonal fluctuations in demand.

**Transportation of LNG Tank Container on Rail**

To meet demand from clients in regions not served by gas pipelines, JAPEX operates the LNG Satellite System to ensure supply by transporting LNG to clients. Imported LNG is stored at domestic LNG receiving terminals, and it is transported by tank trucks to the surrounding areas, and by LNG railway tank containers to more distant locations from the terminals. In addition, a coastal vessel transports it from the terminals while closely monitoring natural gas demands in our supply network.

**LNG Bunkering (LNG direct supply to vessels)**

The spread of LNG-fueled vessels is expected to accelerate due to the trends in environmental regulations for ocean-going vessels after 2020, and consideration for implementing LNG bunkering to directly supply LNG to ships as marine fuel has been underway. JAPEX is aiming for early realization of LNG bunkering in Japan and abroad by leveraging our infrastructure and experience acquired from LNG transfer operations between ships off Tomakomai port, Hokkaido in 2011 and 2012.
Rising to the Challenge of Advanced Technologies to Address Future Energy Needs

Leveraging our strengths in technology and experience acquired through oil and gas E&P, we actively participate in projects for establishing and commercializing technologies toward realizing a low-carbonization/decarbonization society and developing new energy sources.

Carbon Dioxide Capture and Storage (CCS)

CCS is a method to capture CO₂ from industrial facilities and power plants without emitting it to the atmosphere, and to transport and store it stably for a long time deep underground, which is suitable for geological sequestration. Correspondence related to global warming is needed in a global scale, and CCS is regarded as the practical, secure, and safe method for large-scale reduction of CO₂. A demonstration project of CCS is being conducted in Tomakomai City, Hokkaido.

JAPEX will contribute to the commercialization of CCS by providing the advanced technologies it has acquired through the exploration and development of oil and gas, such as investigating subsurface structures and estimating petrophysical properties, drilling injection wells, production, fluid migration simulation, and subsurface monitoring based on seismic surveys.

Carbon Dioxide Capture, Utilization and Storage (CCUS)

CCUS is a method to capture CO₂ from industrial facilities and utilize it before storing it in a sustainable site. CO₂-EOR (Enhanced Oil Recovery) is an example of the method whereby CO₂ is injected into an oil field in which production has declined, to push out its remaining crude oil and store the CO₂ underground. It is considered ideal for adoption in Japan and elsewhere, as we expect to reduce CO₂ emissions while also increasing crude oil production.

The presence of rich mineral deposits within Japan’s vast exclusive economic zone has been confirmed. The government set up the Cross-ministerial Strategic Innovation Promotion Program (SIP) to develop science and technology by transcending conventional bureaucratic and academic boundaries, and to select the social issues that need to be addressed. For the second consecutive term, the SIP included an initiative for leading the world in establishing a survey technology for deep-sea mineral resources and sharing it with the private sector.

The Research and Development Partnership for Next-Generation Technology of Marine Resources Survey (J-MARES) was established by private companies including JAPEX. J-MARES has been consigned to undertake technical development and verification tests for the first phase of the Next-Generation Technology for Ocean Resources Exploration program from fiscal 2014 to 2018, as well as the second phase of the Development of Innovative Technologies for Exploration on Deep Sea Resources program, which began in fiscal 2018.

In the second phase, J-MARES is developing survey and production technologies while also verifying the presence of deposits of rare-earth minerals having high concentration of rare earth elements located at a depth of 2,000 meters under the sea.

JAPEX intends to play a leading role in J-MARES by applying our technology and expertise related to petroleum exploration, establishing the survey technology for deep-sea mineral resources, and generating new private sector businesses based on that technology.

Methane hydrate is a mixture of methane and water in solid form. It has been confirmed to exist abundantly under the seabed at depths of more than 500 meters near Japan. It is attracting significant attention in Japan for its potential of becoming a new domestic energy resource, and the government has launched a project to develop technology for its commercial production in a joint effort with private companies.

JAPEX will continue to pursue its commercialization by participating in the government verification test through Japan Methane Hydrate Operating Co., Ltd. (JMH), a joint venture established by 11 private companies including JAPEX in 2014.

JAPEX has conducted verification tests and surveys in Akita Prefecture as well as in Indonesia and will continue pursuing initiatives for the commercialization of CCUS in Japan and overseas.
Sustainable Growth and Higher Corporate Value Together with Stakeholders

Considering that our business of ensuring a stable energy supply is itself a corporate social responsibility (CSR), JAPEX seeks to grow as a company and increase our corporate value through forging relationships of trust and promoting mutual understanding with various stakeholders while ensuring safety and also the environment.

HSE Policy and HSE-MS

JAPEX regards HSE (Health, Safety, and Environment) as the top priority for its business operations and has declared its commitment to occupational HSE and environment preservation under the JAPEX-HSE Policy. To implement the policy, we have set up a unique HSE Management System (HSE-MS) that is being deployed at all business operators of the Group in Japan and overseas.

Under the HSE-MS, we strive to effectively manage and reduce risk, foster and improve our HSE culture, and promote employee health, while applying PDCA cycles to continuously promote and improve our HSE.

Initiatives on Occupational Safety and Health

To ensure health and safety for employees, we conduct company-wide HSE education systematically while also working to cultivate and secure staff with the legally mandated and voluntary qualifications so they can meet key roles and positions in HSE management. And we develop company-wide activities to let the HSE-first mentality penetrate, so to speak, and raise HSE awareness, through measures such as starting meetings with an "HSE Moment" to share personal experiences and observations related to HSE.

Wide-ranging HSE-MS audits are conducted at each worksite to confirm the status of legal compliance and implementation of HSE-MS as well as risk assessment and HSE education.

Protecting the Environment

JAPEX has set Group targets for limiting greenhouse gas (CO₂) emissions and promotes energy conservation and emission reduction at all business sites. We are also developing technologies such as CCS (see page 10), which is expected to help offset future CO₂ emissions, as well as clean sources of power, including renewable energy (see page 9).

Furthermore, we take part in forest conservation activities. In addition to tree planting activities in the prefectures of Hokkaido, Akita, and Niigata, where we maintain operations, we participate in local activities such as planting trees at the Tsurushi Disaster Prevention Forest at Shinchi Town in Fukushima Prefecture, the location of our Soma District Office.

In regions where we do business, we strive to be a trusted company that contributes to the local community by engaging with various stakeholders and responding to their expectations. In our overseas operations, we develop social infrastructure rooted in local needs, engage with local communities, and meet up with other stakeholders in cooperative and exchange activities.

In Japan, we participate in and otherwise support events and lectures hosted by local governments and offer facility tours and work experience programs. We also take part in local activities such as seasonal festivals as a member of the community in order to deepen local relationships.

Contribution to Local Communities

The JAPEX Diversity Policy was formulated in January 2016 to help employees with diverse backgrounds better demonstrate their abilities and achieve personal growth as self-directed professionals, regardless of gender, nationality, age, career path, or workstyle.

To this end, we have sought to establish an environment and program framework that incorporates career development for various workstyles, personnel system reforms to establish appropriate work hours and maintain a healthy work-life balance, and seminars and campaigns to raise awareness.

Moreover, we encourage every employee to exercise personal initiative in developing their careers as well as acquiring and enhancing their abilities and skills through our Career Development Program.
Corporate Profile

Company Name: Japan Petroleum Exploration Co., Ltd.
Established: April 1, 1970
Paid-in Capital: JPY14,288,694,000
Number of Employees: 1,741 (consolidated basis)

Main Business:
Exploration, development, production and sales of oil, natural gas, and other resources and contract service-related operations, such as LNG.

Main Offices

Headquarters:
SAPIA Tower, 1-7-12 Marunouchi, Chiyoda-ku, Tokyo 100-0005, Japan
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JAPEX Research Center:
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TEL: +81-43-275-9311

EXECUTIVES

Representative Director and Chairman
Osamu Watanabe

Representative Director and President
Chie Executive Officer
Masahiro Fujita

Representative Director
Yosuke Higai

Executive Vice President
Takahisa Inoue

Director
Kazuhiko Ozeki

Hajime Ito

Toshiyuki Hira

Outside Director
Akira Kojima

Tetsuo Ito

Yukari Yamashita

Audit & Supervisory Board Member
Kenji Uchida

Koichi Shimomura

Outside Audit & Supervisory Board Member
Hiroyasu Watanabe

Noriro Nakajima

Special Advisor to President
Ayag Singh

Senior Managing Executive Officer
Tasuyoshi Suga

Yasuhi Hamada

Ryuhei Murayama

Sanichiro Kaku

Minoru Kuniyasu

Junichiro Ando

Tadashi Matsunaga

Ryutaka Hikeshima

Tsuna Nakamura

Masanori Amano

Takamasa Miyada

Yoshitaka Mototsukuri

Shinichi Takahata

Toshiaki Nakajima

Fellow
Fellow

Satoru Yokoi

Amane Waseda

*1: Akira Kojima, Tetsuo Ito, and Yukari Yamashita are outside directors as stipulated under Article 2-16 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: Fellows support executives through their high degree of expertise in specialized fields.

Corporate History

Founded as a government-owned company by the Law of Japan Petroleum Exploration Co., Ltd.

Dec. 1955
Discovered Mitsuke oil field
(established in 1956)

Mar. 1958
Discovered Surakawa oil field
(established in 1959)

Jul. 1958
Discovered Higashi-Nagita gas field
(established in 1959)

Jun. 1959
Discovered Amarnia oil field
(established in 1960)

Mar. 1960
Discovered Katakai gas field
(established in 1960)

Dec. 1960
Discovered Shunjū gas field
(established in 1963)

Aug. 1962
Expanded the operation range overseas by the law article revision

May 1965
Discovered Yōshū gas field
(established in 1968)

Apr. 1968
Separated from the Japan Petroleum Development Corporation (JPDC) and reorganized as a private company

Apr. 1970
Discovered Yurahara oil and gas field
(established in 1976)

Jun. 1976
Participated in the oilsands project in Canada

Dec. 1978
Discovered Kangean oil and gas field
(established in 1979)

Jun. 1983
Discovered Yutsubo oil and gas field
(established in 1984)

Mar. 1989
Discovered Ayakawa oil and gas field
(established in 1995)

Nov. 1989
Operation commencement of Niigata-Sendai Gas Pipeline

Mar. 1996
Began test production in the oilsands project in Canada (in commercial production from 2003)

Dec. 2003
Listed on the First Section of the Tokyo Stock Exchange

May 2007
Participated in the Kangan project in Indonesia (in development and production)

May 2007
Participated in the Garrat project in Iraq (in production from 2013)

Mar. 2010
Participated in the shale gas project in Canada (in development and production)

Apr. 2013
Participated in the Natural Gas-fired Power Generation Project in Soma Port, Fukushima Prefecture

Mar. 2018
Commenced operation of Soma LNG Terminal

Subsidiaries and Affiliates

Akita Natural Gas Pipeline Co., Ltd.
JAPEX SKS Corporation
SK Engineering Co., Ltd.
North Japan Oil Co., Ltd.
Shirone Gas Co., Ltd.
Japex Pipeline Ltd.
JGI, Inc.
Geophysical Surveying Co., Ltd.
Japex (U.S.) Corp.
Japan Canada Oil Sands Limited

North Japan Security Service Co., Ltd.
Canada Oil Sands Co., Ltd.
Japex Offshore Ltd.
GEOYS, Inc.
Japex Energy Co., Ltd.
Japex Garral Ltd.
JAPEX Monrey Ltd.
JAPEX UK E&P Ltd.
TOKUGU NATURAL GAS CO., INC.

TELNITE CO., LTD.
Kokyo Kogyo LMS Sales and Lorry Transport Corp.
Energy Mega Pratama Inc.
Kangei Energy Indonesia Ltd.
EMP Exploration (Kangei) Ltd.
Diamond Gas Netherlands B.V.
Sakakin Oil and Gas Development Co., Ltd.
Fukushima Gas Power Co., Ltd.

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