Corporate Vision

Contribute to society through stable supply of energy and address social issues towards Sustainable Development Goals.

- Explore, develop, produce and distribute crude oil and natural gas at home and abroad.
- Further strengthen the natural gas supply chain, built on our domestic infrastructures, by combining the electric power supply business.
- Contribute to resolving energy and climate change-related challenges towards a sustainable society through developing and commercializing new technologies, drawing on our expertise.
- Achieve sustainable growth and maximize corporate value, while placing top priority on maintaining trust with all stakeholders.

Contribute to society through stable supply of energy and address social issues towards Sustainable Development Goals.
Oil and Gas E&P Value Chain

Since its foundation, JAPEX has been engaged in the upstream, or E&P (exploration, development and production), sector of the oil and gas industry, as well as their transportation and supply. It also has contributed to the stable supply of energy, drawing on its extensive track record both at home and abroad, as well as the breadth of technologies and expertise it has accumulated over the years.

Oil and Natural Gas

Oil and gas are said to be formed underground, over several to tens of millions of years, from prehistoric organisms decomposed by high subterranean heat and microorganisms. These resources move upward through subterranean cracks and collect in a stratum called source rock. They then accumulate in formations containing a dome-shaped, dense layer called cap rock and reservoir rock underneath.

Origin of Oil and Natural Gas

Oil is a general term for flammable liquid, composed mainly of various hydrocarbons found underground. Crude oil is a liquid extracted from oil fields underground, from which gas and water are removed. By applying heat, it is distilled and separated into fractions such as liquefied petroleum gas (LPG), naphtha (gasoline), kerosene, diesel oil, fuel oil, and asphalt by taking advantage of their different boiling points.

Depending on their properties, they are used as fuel for vehicles and machines, and as raw materials for chemical products such as plastic bottles, plastic products, and fibers.

Natural gas is a flammable gas composed mainly of methane, which is colorless, odorless, and lighter than air. It is considered to be an energy source with a lower environmental impact than other fossil fuels such as oil and coal given its less emissions of carbon dioxide (CO₂), nitrogen oxide (NOx), and sulfur oxide (SOx) when burned.

Natural gas is liquefied into LNG by cooling it to -162˚C or -260˚F. LNG takes up only one six-hundredth the volume of natural gas, allowing for long-distance transportation and mass storage. Most of the natural gas consumed in Japan is imported from overseas as LNG.
Maximizing Value of Overseas Projects

JAPEX has been engaged in the shale gas development and production project in North Montney in the Province of British Columbia, Canada since April 2013, which is a project operated by the subsidiary of PETRONAS, a Malaysia’s state-owned oil company.

A significant volume of shale gas assets has been confirmed in the area. To enhance the asset value, the project currently prioritizes the development of areas with high economic potential, considering the prevailing market conditions in Canada.

JAPEX has been engaged in the crude oil development and production project in Kangean Block offshore East Java of Indonesia since 2007. The project develops and produces natural gas from several gas fields scattered in the block with a view to securing a stable supply over the medium to long term. Current production is mainly from the Sirasun and Batur Gas Fields of the TSB Gas Fields offshore north of Bali island, which began production of natural gas in March 2019.

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, East Java.

JAPEX has been engaged in oil sands development in the Province of Alberta, Canada for more than 40 years since it founded JACOS, a local project company, in 1978. We pioneered the establishment of the Steam-Assisted Gravity Drainage (SAGD) method, a method using steam to extract bitumen (ultra-heavy oil) from the oil sands layer; succeeded in test production using the method at 3.75 Section of the Hangingstone leases in 1999; and launched commercial production in 2003. Currently, JACOS produces bitumen in the area where production commenced in August 2017 and transitioned to stable production at the end of June 2018. Under the basis of stable production rate of 20,000 barrels per day, the production volume is adjusted flexibly in line with market conditions.

JAPEX has been engaged in the tight oil development and production project in Eagle Ford, Texas. JAPEX has been engaged in the project since it acquired part of interests in the block in August 2012.

JAPEX has been engaged in the natural gas development and production project in Seagull, conforming to the prevailing market conditions in Canada, and further development is under way to increase the production volume to 230,000 barrels per day.
Ensuring Stable Supply of Diverse Energies to Clients in Japan

JAPEX currently produces oil and natural gas at 10 locations around Japan, and transports and distributes them to domestic clients through various methods. We also have been widening the range of energies we can access, including LNG (liquefied natural gas) from overseas and electricity.
Unlocking New Energy Resources Through Technological Evolution

JAPEX has consistently sought to establish and enhance development and production technologies for unconventional resources such as oil sands and tight/shale oil and gas. We also aim to establish production technologies for next-generation energy resources such as methane hydrate, which is a potential domestic energy resource for the future.

**FOCUS**

**Oil Sands Development by SAGD Method**

The Steam Assisted Gravity Drainage (SAGD) method is a method to extract bitumen from the oil sands layer, using high-temperature, high-pressure steam to heat the oil sands layer and providing liquidity to the bitumen. JACOS, our local project company, launched efforts to commercialize the method in the Province of Alberta, Canada, in 1992; succeeded in test production at the Hangingstone leases of the same province in 1999; and commenced commercial production in 2003. We have continued to use the SAGD method at the same block.

**Process flow of the SAGD method**

1. Drill a pair of horizontal wells
2. Heat the oil sands layer by injecting steam into upper well
3. Let bitumen in the oil sands layer flow downward
4. Recover the bitumen that flowed down in the lower well

**Schematic of the SAGD Method**

**Tight/Shale Formation Development Technology**

Crude oil and natural gas contained in low-permeability tight/shale formations is called tight/shale oil and gas. The development and production used to be extremely challenging with conventional methods. However, since the first decade of 2000, full-scale commercial production has been enabled by commoditization of the horizontal well drilling technology and the hydraulic fracturing technology, which uses high-pressure water to crack the formations to improve productivity.

JAPEX has been involved in developing and producing tight/shale oil and gas at home and abroad. Specifically, it has participated in a tight oil development project in Texas, US, and a shale gas development project in the Province of British Columbia, Canada. In Japan, JAPEX succeeded in the first commercial production of tight oil in 2014 at the Ayukawa Oil Field in Akita Prefecture, and conducted a verification test for tight oil development using multistage fracturing at the Fukumezawa Oil Field in Akita Prefecture.

**Methane Hydrate**

Methane hydrate is an ice-like mixture of water and methane, the principal component of natural gas. It is typically formed under the seabed over 500 meters deep at low temperature and high pressure. It has been confirmed to exist abundantly in the sea near Japan, raising expectation as one of the potential domestic energy resources going forward.

Currently, the government-led project towards commercialization is under way to develop stable production technology and prepare for the next offshore production test. JAPEX contributes to developing technology for the sand-layer type methane hydrate as one of the shareholders of Japan Methane Hydrate Operating Co., Ltd. (JMH) established jointly by private companies engaged mainly in oil and gas E&P or plant engineering.
JAPEX has built and operated a proprietary gas supply network to ensure stable supply of natural gas, both produced in Japan and procured from abroad, to its clients. The network is made up of high-pressure gas pipelines that connect gas fields in production and LNG terminals. The network, consisting mainly of the Niigata-Sendai Gas Pipeline and extending more than 800 km, combines and supplies the gas produced in the Niigata area and the LNG vaporized gas stored at LNG terminals on the Sea of Japan side and the Pacific Ocean side. As a means to adapt flexibly to seasonable fluctuations in demand, we store natural gas, produced in other gas fields, in the underground gas storage at the Shiunji Gas Field in Niigata Prefecture during summer, and then reproduce and supply it during winter.

LNG terminals, which serves as hubs for ocean-going LNG carriers from overseas and domestic LNG coastal vessels, also are an integral part of our natural gas supply network. The Soma LNG Terminal, with two 230,000 kl LNG tanks, the largest class ground type tanks in Japan, is central to our gas supply network. The terminal receives and stores LNG from abroad, supplies LNG vaporized gas to pipelines, ships LNG in its original liquefied form to clients, and transports LNG to other locations by coastal vessels.

At the Yufutsu LNG Receiving Terminal and the Yufutsu LNG Plant, LNG vaporized gas, produced from LNG received via coastal LNG vessels, and natural gas produced at the Yufutsu Oil and Gas Field, are combined and supplied to the Hokkaido area.

The LNG Satellite System, which supplies LNG to remote places beyond the reach of our gas pipelines, also is an integral part of our natural gas supply network. We ship LNG by tank trucks to areas around our LNG receiving terminals, and by LNG tank containers on rail to more distant locations. Shipment using the LNG tank containers on rail is a break-through LNG transportation method which has attracted attention from around the world.

Recently, new initiatives to satisfy environmental regulations have gained momentum both at home and abroad. Such initiatives include the deployment of LNG trucks which use LNG as fuel, and LNG bunkering which enables direct supply of LNG fuel to vessels. To facilitate these initiatives, JAPEX has also worked on efforts to create a new supply model leveraging its LNG facilities and expertise in LNG.
**Creation of New Businesses**

**Creating New Energy Businesses and Developing Environmentally Friendly Technologies**

JAPEX is developing renewable energy and new technologies utilizing its E&P experience to contribute to the goal of zero emissions and carbon-neutral society by 2050. We are also working on creating new environmentally friendly businesses in areas around the existing business domains.

**CCS and CCUS**

Carbon dioxide Capture and Storage (CCS) and Carbon dioxide Capture, Utilization and Storage (CCUS) have grabbed attention as technologies for “carbon neutrality,” which refers to achieving net zero carbon dioxide (CO₂) emission.

We aim at early practical application of CCS and CCUS by using our technologies and know-how to develop and produce crude oil and natural gas that we have accumulated.

**CCS (Carbon dioxide Capture and Storage)**

CCS is a technology to capture CO₂ emitted from plants, power plants and other facilities and inject it deep underground. Practical use of this technology requires survey for geological formations suitable for injecting CO₂, drilling of injection wells, and establishment of technologies to store CO₂ stably for a long term.

JAPEX has joined a large-scale CCS demonstration project at Tomakomai, Hokkaido as one of the members of Japan CCS Co., Ltd. established by private companies.

**CCUS (Carbon dioxide Capture, Utilization and Storage)**

CCUS is a technology to capture and utilize CO₂ before storing it underground.

We are implementing research and verification test of the Enhanced Oil Recovery (CO₂-EOR) technology at home and abroad, which is a method to inject CO₂ into a production-declined well to push out its remaining crude oil or natural gas before storing CO₂ underground.

We also aim to establish and commercialize a technology for blue hydrogen derived from natural gas, including capturing of CO₂ generated in a blue hydrogen production process.

JAPEX is promoting renewable energy business as one of the key contributors to its growth as an integrated energy company, bringing the 2050 carbon neutral goal into view.

We are exploring and specifically examining projects that will contribute to increasing worldwide output of a broad range of renewable energies, including biomass and wind power, geothermal energy we have already developed and operated, and solar energy we are generating at two mega-solar power plants in Hokkaido.

We leverage in new projects our oil and gas E&P technologies such as surveying subsurface structure and drilling, experience in building good relations with local communities, expertise in constructing and operating natural gas power plants, and know-how to manage mega-solar facilities.

JAPEX aims to establish new business models in areas around the existing business domains, explore and commercialize new business seeds not bound by the existing business domains, and among others create “environmentally friendly” businesses. Such endeavors include building a supply chain in Japan for sustainable aviation fuel (SAF) derived from used cooking oil, establishing an LNG supply model for LNG-fueled vessels and vehicles through the LNG bunkering system and deployment of LNG-fueled trucks, and providing various energy services utilizing geothermal energy.

We are also working with venture companies and our group companies for new business seeds. So far we have expanded the scope of solutions we provide by getting into full swing of distribution of an oil absorption fiber “Abura Kuraudo” (which literally means “oil eating cloud”) developed by a venture company OLX LTD. and by expanding distribution channels for a hot spring monitoring system “Oyureco” developed with our subsidiary Geophysical Surveying Co., Ltd.
Achieving Sustainable Growth and Enhancing Corporate Value through Trusted Relationships with Stakeholders

For JAPEX to achieve sustainable growth and enhance its corporate value through its mission of “supplying stable energy,” it is essential to build trusted relationships with local communities where JAPEX operates, related parties and employees. We are working to manage environment and human resources with a view to contributing towards a sustainable society as well as ensuring safety and security and involving in community activities to be a company trusted by stakeholders.

With health, safety and environment (HSE) as a top priority agenda in business activities, JAPEX has established the JAPEX HSE Policy. We have also established the HSE management system (HSE-MS) deployed widely at our business, including projects overseas in which we serve as an operator.

Under the HSE-MS, we are working on to properly control and reduce HSE-related risks, comply with relevant laws and regulations, and manage employee health. The operational status of HSE-MS is appropriately audited and improved as necessary.

JAPEX provides all employees with educational programs and lectures by outside lecturers to make them fully understand HSE and improve its HSE culture. We are also working on to ensure the safety of business sites and employees and to manage crisis under a policy for health, safety, security and environment (HSSE). The basic policy and key issues on HSSE are deliberated and determined by the HSSE Committee consisting of the officer in charge of the HSE Dept. as chairperson and other relevant officers.

We pays particular attention to HSSE for our overseas operations. Specifically, we are working on to raise awareness of crisis management even in normal times by conducting emergency contact drills and overseas emergency response drills with overseas bases, as well as providing overseas safety information to all employees and overseas safety seminars to those to be dispatched or assigned as an expatriate abroad.

We have also formulated a business continuity plan (BCP) against emergencies such as a large earthquake and a pandemic. Moreover, we regularly develop and put in place initial response procedures; and conduct emergency drills at business sites, employee safety confirmations and walk-home (from work) drills for emergencies. We have applied the BCP during the spread of COVID-19 to continue business activities at the same level as usual while ensuring the safety of employees by taking thorough infection prevention measures and having employees work from home.

JAPEX strives to remain a trusted company in the regions around the world where we operate through dialogue and communication with various stakeholders and contribution to local communities.

In Japan, we join or otherwise support events and lectures hosted by local governments and offer facility tours and work experience programs to local school students. We also join local events and volunteer activities in the regions where we operate.

Overseas, we help develop social infrastructure for, provide donations and support to, and cooperate and interact with, local communities where we participate.

JAPEX has improved systems and environment for its employees with diverse backgrounds in terms of gender, nationality, age, career and workstyle to continue working vigorously and growing as self-directed professionals.

Our career development program offers educational programs to facilitate employees’ proactive career development as well as to develop their competency and skill set. We also provide a career support program for employees to manage their life events such as child-rearing, nursing care and career advancement and to keep a good work-life balance. On top of these supports, we have introduced flexible and remote working systems that allow for flexible handling of operations even at the time of emergencies.
Corporate Profile

Company Name: Japan Petroleum Exploration Co., Ltd.
Established: April 1, 1970
Paid-in Capital: JPY14,288,694,000
Representative: Representative Director and President
Chief Executive Officer: Masahiro Fujita

Number of Employees: 2,239 (consolidated basis) (as of September 30, 2020)

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

Main Group Companies

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

Corporate History

1950s to 1960s
- July 1956: Discovered the Biratori oil field in Hokkaido, the first oil field discovered by JAPEX (in production from 1956 to 1961)
- May 1965: Expanded the business regions to overseas by revision to the Law of Japan Petroleum Exploration Co., Ltd.
- October 1967: Integrated into a newly established Japan Petroleum Development Corporation (JPDC)

1970s to 1980s
- April 1970: Put its business on track by successively discovering oil fields in Japan
- May 1971: Established Japex Offshore Ltd.
- March 1972: Discovered the Aga-oki oil and gas field in Niigata, the first ever offshore oil field discovered since the establishment of Japex Offshore Ltd. (in production from 1976 to 1998)

1990s to 2000s
- March 1996: Participated in the Kangean project in Indonesia
- March 1998: Participated in the Kangean project in Indonesia
- March 2000: Participated in the Kangean project in Indonesia
- March 2011: Participated in the Kangean project in Indonesia
- March 2013: Confirmed a new offshore oil field discovered in the Philippines
- March 2018: Participated in the Kangean project in Indonesia

2010s and thereafter
- November 2011: Expanded business regions and promoted business diversification
- March 2013: Participated in the Kangean project in Indonesia
- August 2014: Participated in the Kangean project in Indonesia
- March 2018: Participated in the Kangean project in Indonesia
- April 2020: Participated in the Kangean project in Indonesia

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For detailed and updated information, please visit our website:
https://www.japex.co.jp/english/