



#### 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.

#### Corporate Profile

(As of March 31, 2015)

Company Name

Japan Petroleum Exploration Co., Ltd.

(Abbreviation: JAPEX)

Headquarters

SAPIA Tower, 1-7-12,

Marunouchi, Chiyoda-ku, Tokyo

100-0005, Japan

Establishment Paid-in Capital April 1, 1970

14,288,694,000 yen

Number of **Employees** 

886 (JAPEX),1,818 (Consolidated)

Main

Businesses

Exploration, development and sales of oil, natural gas, and other energy resources

Main Offices

Headquarters, Hokkaido, Akita, Nagaoka, JAPEX Research Center, London, Dubai, Houston, Beijing, Jakarta

#### **Highlights: Consolidated Business Performance**

#### **Net Sales**

(Million yen) 400,000

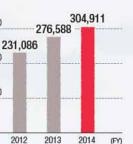
300,000

200,000

100,000

#### Ordinary Income

(FY)



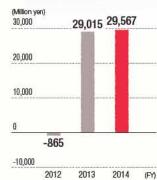


60,000 54,839 43,889 40,000 28,082 20,000

2013

2014

#### Net Income



Net Income Per Share

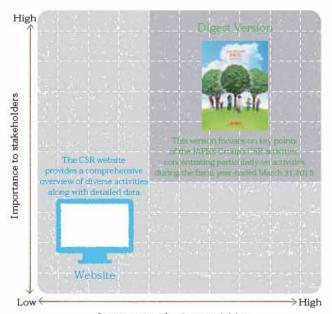




#### **Editorial Policy**

#### Report Media

We have prepared two media to communicate information about JAPEX's CSR activities appropriately to stakeholders.



Importance to business activities

#### For more information please visit our website:

JAPEX CSR

Search

http://www.japex.co.jp/english/csr/index.html

#### Reference guidelines

Ministry of the Environment," Environmental Reporting Guidelines 2012", GRI," Sustainability Reporting Guidelines Ver. 4 (G4)"

#### Organizations covered with this report:

This report covers Japan Petroleum Exploration Co., Ltd. (JAPEX), and its 25 consolidated subsidiaries and other group firms.

Environment performance data are of JAPEX and JAPEX Offshore Ltd.

#### Reporting period

Fiscal 2014 started on April 1, 2014 and ended on March 31, 2015.

Some statements include data before March 31, 2014 or those after April 1, 2015.

#### Issuing date:

October 2015

(Previous issue: October 2014; next issue: October 2016)

#### Disclaimer

This report includes past and current facts about JAPEX and its affiliate firms, their plans and prospects as of the issuing date, as well as forecasts based on their business plans and corporate management policies. These forecasts represent management's assumptions or decisions based on information currently available. Readers should be aware that the actual business performance or event may substantially differ from these forecasts, depending on possible changes in the business conditions.

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JAPEX will advance its transformation to an integrated energy company centered on the oil and gas E&P business, as well as implement CSR management, which forms the foundation of its business.

Osamu Watanabe
President and Chief Executive Officer

Pursuing CSR Management in Tandem with Our Core Business

Since its establishment in 1970, JAPEX has followed the corporate vision of "contributing to society through the stable supply of energy," positioning oil and natural gas E&P\*1 as its core business, expanding its activities and enhancing its corporate value.

In the spring of 2011, we announced a medium-term business plan for the period through the fiscal year ending March 31, 2016 (fiscal 2015). We have worked proactively to expand the three pillars of business established under this plan: the E&P business, the domestic natural gas supply business, and the environment and innovative technology business. As a result, we met our goal of achieving a daily

production of 70,000 barrels of crude oil equivalent (BOE) by fiscal 2015 one year ahead of schedule. We are also on target for the early achievement of our objective to expand our proved reserves to 450 million BOE by the fiscal year ending March 31, 2021.

Orana Watona

Given this situation, we have formulated a new Long-Term Business Vision for the next 10 years and a New Medium-Term Business Plan for the upcoming five years (collectively, "our vision"), which we announced in May 2015. The key message of our vision is the "transformation to an integrated energy company centered on the oil and gas E&P business." We have designated the objective of further expanding our three pillars of business, as well as implementing CSR management as the foundation underpinning these businesses.

#### The Long-Term Business Vision: Making a Leap Toward Fiscal 2025

#### **E&P Business**

The first core of our vision is the E&P business. By moving steadily forward with large-scale overseas projects in Canada, lraq and other areas, pursuing domestic potential and building an efficient operating structure, by the fiscal year ending March 31, 2020 we aim to increase our daily production volume to 100,000 BOE and proved reserves to 550 million BOE. By doing so, we are targeting an RRR\*2 greater than one for the Group as a whole.

#### **Domestic Natural Gas Supply Business**

In our second pillar, the domestic natural gas supply business, we aim to more than double the Group's current LNG-equivalent handling volume of natural gas from 1.2 million tons at present to 2.5 million tons.

In addition to meeting our responsibility of ensuring a stable supply of natural gas to customers following an expected decline in production from our domestic gas fields, we aim to diversify our LNG business on both the supply and procurement fronts, through such initiatives as building the Soma LNG Terminal to link our domestic and overseas operations and working to realize power generation.

#### **Environment and Innovative Technology Business**

In the third area, the environment and innovative technology business, we will leverage the E&P technologies we have accumulated, particularly in the areas of methane hydrate, CCS\*3 and geothermal generation. We are considering ways to commercialize these technologies and turn them into businesses.

Rather than looking at the three fields of business our vision outlines as independent from each other, we liken them to a tree in which the E&P business forms the trunk that supports the development of each of the other businesses as well-balanced branches and leaves. We believe this analogy aptly describes our goal of "transformation to an integrated energy company." (See pages 6 and 7.)

#### "SHINE" Initiatives to Promote CSR

We recognize that trust-based relationships with our stakeholders are essential to sustaining and growing our business. In the tree analogy described above, CSR activities are the roots that support all our businesses. To accurately ascertain our stakeholders' needs and grow in harmony with society, in 2014 we formulated "SHINE" as JAPEX's core CSR issues. (See page 10.)

These issues are ensuring a stable and sustainable energy supply, which is also our core business, establishing firm roots in HSE\*4 as our culture, compliance, being the employer of choice, and building ties and being a good neighbor. We will address these key issues in tandem with our business activities.



#### Recruiting and Developing Various Human Resources

Among the core CSR issues outlined in our vision, "recruiting and developing various human resources" is an area of particular emphasis. Building the personnel foundation to support us in the challenge of moving into new businesses is a pressing issue, and we are undertaking human resource cultivation initiatives to either diversify the capabilities or enhance the specialization of individuals.

Furthermore, increasing human resource diversity is key to our ability to respond swiftly to changes in the business environment. We aim to achieve this diversity by harnessing the abilities of women and recruiting foreign employees.

As part of these efforts, we have set ourselves the target of tripling the percentage of women in management positions by 2020, from 3.4% in 2014.

#### Issues for the Future

In the fiscal year ended March 31, 2015 (fiscal 2014), we formulated our core CSR issues, "SHINE," as well as our CSR action plan and targets. We made a full-scale launch of our HSE management system and introduced a management by objectives system along with other reforms to our human resource system that included the establishment of an office dedicated to diversity promotion. This was a year of introducing a host of systems and measures for systematically promoting CSR. Along with achieving the objectives outlined in our vision, our target is to further implement and establish these activities globally within the JAPEX Group.

This report introduces the JAPEX Group's CSR activity achievements, as well as plans and targets for the future. As we strive to grow in harmony with society, reflecting stakeholder opinions is an extremely important part of the Group's CSR activities. To make our activities more meaningful, frank opinions regarding this report would be greatly appreciated.

<sup>\*1: &</sup>quot;E&P" stands for "Exploration and Production" (exploration, development, production and sales of oil and natural gas)

<sup>\*2: &</sup>quot;RRR" stands for "reserve replacement ratio," defined as the increase in amount of reserves during a certain period divided by the production amount during the same period.

<sup>\*3: &</sup>quot;CCS" stands for "Carbon dioxide Capture and Storage"

<sup>\*4: &</sup>quot;HSE" stands for "Health, Safety, and Environment"

# Long-Term Business Vision and Medium-Term Business Plan

# **Toward the Leap to Fiscal 2025**

In May 2015, JAPEX announced its Long-Term Business Vision with the key message "Transformation to Integrated Energy Company, around Oil and Gas E&P Business" together with its Medium-Term Business Plan from fiscal 2015 to 2019. The new vision calls for the Company's further development by expanding the three areas of business outlined in its previous Medium-Term Business Plan from fiscal 2011 to 2014, and newly positioning CSR management within JAPEX's business policies. By realizing these policies, we aim to further strengthen our business foundation and competitive edge, pursue thorough management efficiency, and thereby achieve sustained corporate development and maximize corporate value.

Power generation business

Improve revenue and profit Shareholder return

Domestic gas business
Completion of Soma LNG Terminal
construction

Environment and innovative technology business

Domestic gas business Environment and innovative technology business

**E&P** business

Production: 100,000 bbl/day
Proved reserves: 550 million bbl
(Both figures are totals for oil and gas at crude oil

(Both figures are totals for oil and gas at crude oil equivalent values.)

**CSR** management

E&P business

Fiscal 2011-2014

CSR management

Fiscal 2015-2019

(Achieved the previous plan's objectives one year early)

# Concept of the Leap Toward fiscal 2025

We will grow our businesses as well-proportioned "branches" around the "trunk" of the E&P business.

Power generation business

LNG power generation at Soma More than 1.2 million kW

> Enhance shareholder return

Domestic natural gas supply business

# Transaction volume of natural gas 2.5 million tons by fiscal 2025

(Actual for fiscal 2014: Approximately 1.2 million tons) (in LNG equivalent)

#### Initiatives

- Diversify and expand the scale of natural gas supply sources and supply methods
- Through the construction of the Soma LNG Terminal and Canadian LNG, configure an integrated natural gas supply system
- Proceed with gas-powered thermal generation plans
- Centering on the expansion of rights to LNG sources, expand our portfolio in combination with purchased LNG

#### Environment and innovative technology business

Methane hydrate

Establish development technologies

CCS

Accumulate and establish CCS technologies

Geothermal

Move into the electricity generation business

# **E&P** business

# RRR\*>1

(Supplement high-profit proved reserves)

#### Initiatives

- Pursue adaptation technologies with an affinity to the E&P business
- Accelerate the renewable energy business Initiatives
- Overseas: Stably execute major ongoing projects (thereby increasing production and proved reserves), recover investment, secure earnings and establish a reinvestment cycle
- Domestic: Pursue additional E&P potential
   Maximize production of existing oil and gas fields, optimize production operation system

#### **CSR** initiatives

CSR management is likened to the root that underpins the expansion of our three businesses in the new vision. We will pursue CSR initiatives in tandem with our businesses to ensure that the businesses we are nurturing contribute to social sustainability.

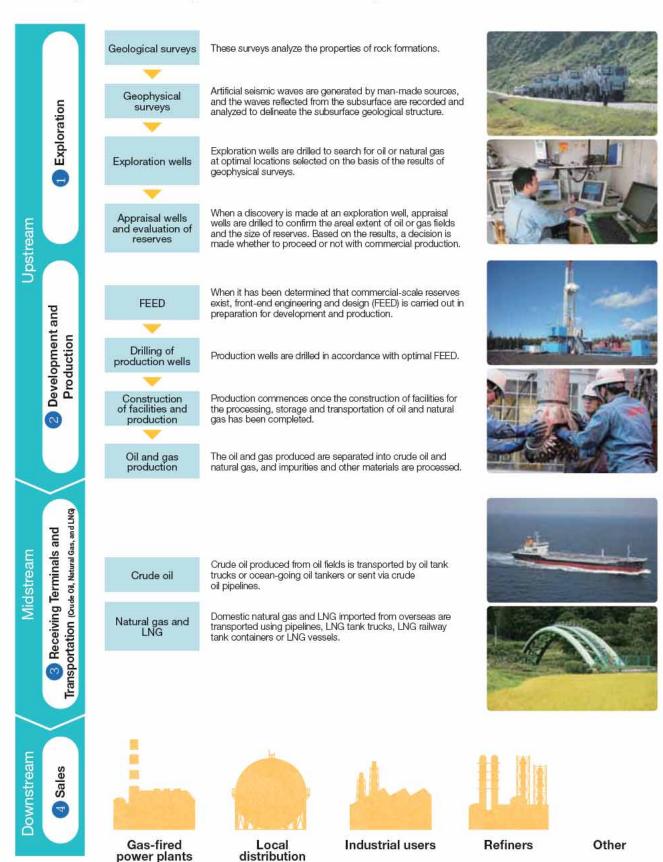
Please refer to "CSR management" on page 9.

CSR management

Fiscal 2025

""RRR" stands for "reserve replacement ratio," defined as the increase in amount of reserves during a certain period divided by the production amount during the same period.

# JAPEX is engaged in projects in Japan and overseas that span the E&P value chain of oil and natural gas resources, from exploration, development, and production to transportation and sales.

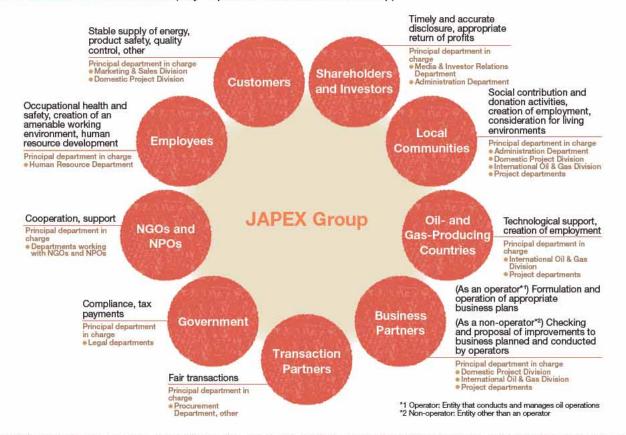


companies

# JAPEX will promote CSR initiatives to engage with its varied stakeholders and to grow together with local communities.

In fiscal 2014, JAPEX formulated its core CSR issues, "SHINE," and established CSR action plans and targets for fiscal 2014 as part of its efforts to build a foundation of trust with its stakeholders. Furthermore, in May 2015 we set out our Long-Term Business Vision, positioning CSR management as one of our business policies, and determined core issues to be implemented in our "SHINE" initiative. By linking our management strategy and CSR initiatives, we intend to undertake more specific and effective activities in line with our corporate vision—the linchpin for CSR, namely "contributing to local communities through a stable supply of energy."

#### Stakeholder Relations (Key Expectations of the JAPEX Group)



#### Opinions in Response to Questionnaire on Core CSR Issues Targeting People Outside the Company

Here, we introduce opinions in response to a questionnaire targeting people outside the Company. We have reflected these opinions in the formulation of our CSR action plan and targets.

Core CSR Issues "SHINE"	Stakeholder Opinions
Stable and sustainable energy supply	<ul> <li>I would like to see JAPEX adopt a long-term corporate strategy of investing in new technologies and new energy, thereby demonstrating its involvement with energy that is ideal for the human society of the future, (Man, 20s)</li> </ul>
HSE as our culture	<ul> <li>The efforts of a single person can have only a limited impact on halting global warming; I have great expectations for JAPEX's advanced technological expertise. (Man, 20s)</li> <li>A stable supply of energy is an issue of topmost importance to society, but we need to ensure against negative consequences such as impacts on the ecosystem and environment and poor evaluations by the international community. (Woman, 40s)</li> </ul>
Integrity and governance	<ul> <li>My greatest expectation from JAPEX is for the company to contribute to society through its main business (the stable supply of energy) and conduct corporate management in a sincere, fair and non-corrupt manner. (Woman, 20s)</li> </ul>
Being a good Neighbor	<ul> <li>For Japan, which has no choice but to rely on overseas resources, it is essential to build and maintain positive relations with local communities abroad. (Man, 40s)</li> </ul>
The Employer of choice	<ul> <li>I don't believe companies can be good for society unless they are good to their employees, so I consider building a company that is fair and ensures meaningful work is of prime importance. (Woman, 40s)</li> </ul>

# Action Plan, Targets and Achievements Related to CSR Activities

JAPEX Core CSR Issues *SHINE*	Individual Issues	CSR Action Plan and Targets in FY 2014
		<ul> <li>Pursue projects aimed at increasing production and reserves and expanding gas supply infrastructure</li> </ul>
	Stable energy supply	Achieve zero interruption to the supply of natural gas
		Introduce and provide training for globally adopted incident command system (ICS) for emergency responses
<b></b> C		Pursue commercialization of geothermal energy
Stable and sustainable energy supply		Conduct demonstration tests of the Onnagawa Formation (tight oil) in the Fukumezawa     oil field
	Development of new	Continue initiatives for commercial development of methane hydrate
	technologies	Continue technology development toward commercialization of CCS
		Conduct studies and submit proposals on marine resource development through participation in technical discussion meetings on the development of a marine mineral resource exploration system
		<ul> <li>Familiarize all employees with HSE activities (zero accidents causing injury or death, zero accidents causing damage to property, zero disasters affecting the public, and zero accidents caused by illegal activities)</li> </ul>
		Efficiently operate and improve HSE management system
	Occupational health and safety	Hold regular training sessions on human factors that cause accidents
		Manage near misses appropriately and make improvements
		<ul> <li>Conduct Safety Awareness Surveys (questionnaires) with the aim of preventing human errors</li> </ul>
		Formulate a Manual of Initial Responses at Earthquakes for corporate headquarters and carry out training
T Hor	Risk management	Progressively implement safety drills for overseas operations
HSE as our culture	Measures to prevent global warming	Set JAPEX targets in accordance with the Japan Petroleum Development Association's     Low-Carbon Society Execution Plan, and monitor greenhouse gases
		<ul> <li>Establish energy conservation measures for production operations (three-year plan from FY 2014)</li> </ul>
		Implement electricity-saving and other energy conservation measures at offices
	Preserving biodiversity and ecosystems	Plan and implement tasks that take account of the impact on biodiversity
	Pollution prevention and resource recycling	<ul> <li>Continue monitoring VOC emissions in accordance with voluntary action plan as a member company of Japan Natural Gas Association</li> </ul>
		Reduce benzene, toluene, and xylene (BTX) emissions from production operations
		Schedule and implement checks on the soundness of aging facilities and pipes
	Governance	<ul> <li>Establish and operate an IT environment that complies with JAPEX's information security policy, and provide education and training on information security</li> </ul>
Integrity and governance		Hold training sessions on insider trading
	Compliance	<ul> <li>Update and disseminate the Compliance Manual and collection of case studies, and provide compliance training</li> </ul>
	Growing together with local communities	Contribute to local communities and engage in social activities in regions where we operate and conduct overseas projects
Being a good Neighbor		• In conjunction with the Soma Project, contribute toward attracting new industries to the region affected by the Great East Japan Earthquake, establishing businesses using the port, and creating jobs for the local community
	Building good relationships with stakeholders	Communicate proactively with stakeholders through information disclosure
	Respecting employee diversity	Pursue activities that promote diversity and increase the recruitment of women and non-Japanese people
The Employer of choice	of choice Creating a fair and rewarding workplace	<ul> <li>Implement the management by objectives (MBO) system emphasizing superior— subordinate communication; promote and provide training in physical and mental well-being</li> </ul>
	Human resources development and training	Develop human resources and provide education in accordance with Career     Development Guideline
		Plan and implement education programs for overseas employees

Legend A: Achieved B: Generally achieved C: Insufficiently or not achieved

	Implementation Status in FY 2014	Evaluation	CSR Action Plan and Targets in FY 2015
	Conducted various exploration, development and production activities according to plan	А	
······································	Conducted construction of the Soma LNG Terminal according to plan		Pursue projects aimed at increasing production and reserves and expanding gas supply infrastructure
	Achieved zero supply interruptions	Α	Achieve zero interruption to the supply of natural gas
	After considering ICS introduction, decided to hold off on introduction	Α	
	Compiled fumarolic test results of second exploratory well in Mt. Musadake area  Continued execution and evaluation of tight oil verification tests at the Fukumezawa		
	Continued execution and evaluation of light oil verification tests at the Fukurnezawa Oil Field	В	Pursue commercialization of geothermal energy
	Conducted commissioned operations for JOGMEC (formulated basic policy and plan for long-term production test)	Α	Continue initiatives toward commercial development of Akita tight oil Continue initiatives for commercial development of methane hydrate
	Conducted commissioned operations for JCCS (drilled an injection well for verification testing in Tomakomai)	Α	Continue technology development toward commercialization of CCS Continue to develop marine mineral resource survey system through J-MARES
	With other companies, jointly applied for JAMSTEC public research project.  Research and Development Partnership for Next Generation Technology of Marine Resources Survey (J-MARES) was established and research commenced.	А	
	Achieved 100% lateral deployment of verification results on accidents or disasters that occurred	А	
	Finished updating the Japanese HSE-MS manual	А	Conduct awareness activities for related departments of HSE activities (zero accidents causing injury or death, zero accidents causing damage to property, zero accidents affecting
	Held safety seminars (human factor seminars) four times at head office and four times at worksites	Α	the public and zero accidents caused by illegal activities) Hold regular seminars and workshops related to HSE activities Promote use of near-miss system and achieve a 100% countermeasure completion rate
	Introduced countermeasures based on system for addressing near misses	Α	Conduct HSE training for Group companies
	Conducted Safety Awareness Surveys (questionnaires) at all worksites	Α	
	Formulated a Manual of Initial Responses at Earthquakes and familiarized employees with the manual (drills rescheduled to next fiscal year)	В	Formulate drill plans and conduct drills based on the Manual of Initial Responses at Earthquakes
•••••••••••••••••••••••••••••••••••••••	Held discussions on the drill plans with the Overseas Security Measures Working Group (drills rescheduled to next fiscal year)	В	Ensure against inadequate communications and directions and prevent discrepancies in the event of emergency situations
	Experienced no safety threats in the Garraf Project in Iraq, and participated proactively in HSSE activities	А	Gradually conduct drills on overseas security measures Contribute to maintenance and strengthening the Garraf Project HSSE system
	Summarized greenhouse gas emissions for the previous fiscal year and reported results to the Japan Petroleum Development Association (put on hold the establishment of our own targets)	А	Monitor greenhouse gas emissions based on the Japan Petroleum Development Association's Low-Carbon Society Execution Plan
•	Analyzed operational data and held exergy workshops (within the Nagaoka District Office's jurisdiction)	Α	Analyze operational data, hold exergy workshops (within the jurisdiction of the Akita District Office and the JPO Niigata District Office), verify energy conservation measures Implement electricity-saving and other energy conservation measures at offices
•	Set environmental targets for some offices and fields, and generally achieved year-on-year decreases	Α	Create proposal for introducing cogeneration
	Conducted wild animal and natural environment monitoring at JACOS Performed survey of birdlife in the region surrounding Mt. Musadake Conducted biodiversity study in relation to the Soma LNG Terminal construction	А	Plan and implement tasks that take account of the impact on biodiversity
	Summarized VOC emissions during previous fiscal year and reported results to the Japan Natural Gas Association	А	Dadus VOC series in 45% assessed with the base of 0,0000
•	Set environmental targets at some fields and generally achieved reduction targets	А	Reduce VOC emissions by 45% compared with the base year (FY 2000)  Reduce benzene, toluene, and xylene (BTX) emissions from production operations
	Set environmental targets at some fields, confirmed piping specifications and repair histories, and performed inspections	Α	Schedule and implement checks on the soundness of aging facilities and pipes
	Formulated and enacted the Information Security Master Plan (five-year plan)	В	Prepare rules and systems in line with the Information Security Master Plan, and conduct information acquirity bringing and drilling
•••••••••••••••••••••••••••••••••••••••	Held training sessions on insider trading (eight times, for 123 people)	Α	information security training and drills Hold training sessions on insider trading (such as an overall seminar)
	Updating of manual and collection of case studies not yet complete Conducted compliance training (eight times, for 123 people)	В	Formulate internal regulations addressing risk of bribery overseas and construct operating system  Update the Compliance Manual and collection of case studies  Conduct compliance training
	Conducted activities at each district office and overseas project company	А	Contribute to local communities and engage in social activities in regions where we operate and conduct overseas projects
			In conjunction with the Soma Project, contribute toward attracting new industries and
	Participated in deliberations toward the establishment of the Shinchi Reconstruction Institution Committee for a project aiming to build the town in harmony with new eco-friendly industries	А	creating jobs Contribute to community revitalization through the Shinchi Reconstruction Institution Committee project aiming to build the town in harmony with new eco-friendly industries Create operating procedural document for environmental impact assessment of the Soma gas-fired generation business
	Institution Committee for a project aiming to build the town in harmony with new	A	creating jobs  Contribute to community revitalization through the Shinchi Reconstruction Institution  Committee project aiming to build the town in harmony with new eco-friendly industries  Create operating procedural document for environmental impact assessment of the Soma
	Institution Committee for a project aiming to build the town in harmony with new eco-friendly industries  Disclosed corporate information based on Tokyo Stock Exchange disclosure rules		creating jobs Contribute to community revitalization through the Shinchi Reconstruction Institution Committee project aiming to build the town in harmony with new eco-friendly industries Create operating procedural document for environmental impact assessment of the Soma gas-fired generation business  Promote proactive external communications in line with information disclosure Formulate policies related to the establishment of systems and initiatives for promoting
	Institution Committee for a project aiming to build the town in harmony with new eco-friendly industries  Disclosed corporate information based on Tokyo Stock Exchange disclosure rules Met with institutional investors and analysts and conducted mass media briefings	А	creating jobs Contribute to community revitalization through the Shinchi Reconstruction Institution Committee project aiming to build the town in harmony with new eco-friendly industries Create operating procedural document for environmental impact assessment of the Soma gas-fired generation business  Promote proactive external communications in line with information disclosure Formulate policies related to the establishment of systems and initiatives for promoting constructive dialogue with shareholders  Formulate diversity policy Achieve diversity among managers and career track employees (boost percentage of women, foreigners and people with disabilities to 9.0% or higher (FY 2016 target: 10%))
	Institution Committee for a project aiming to build the town in harmony with new eco-friendly industries  Disclosed corporate information based on Tokyo Stock Exchange disclosure rules Met with institutional investors and analysts and conducted mass media briefings  Established dedicated department for diversity promotion  Began operating MBO system To prevent new instances of long-term leave, conducted mental health training and	АВ	creating jobs Contribute to community revitalization through the Shinchi Reconstruction Institution Committee project aiming to build the town in harmony with new eco-friendly industries Create operating procedural document for environmental impact assessment of the Soma gas-fired generation business  Promote proactive external communications in line with information disclosure Formulate policies related to the establishment of systems and initiatives for promoting constructive dialogue with shareholders  Formulate diversity policy Achieve diversity among managers and career track employees (boost percentage of women, foreigners and people with disabilities to 9.0% or higher (FY 2016 target: 10%)) Increase ratio of female managers to 4.5% or higher (2020 year-end target: 10%)  Reduce number of people on long-term leave compared with previous fiscal year Conduct awareness activities related to preventing or reducing long working hours, raise



# Development and Production in Canada's Oil Sands

# CSR Activities in Oil Sands Business in Canada—Working with Local Aboriginal Communities



Demonstration plant



A moose in the Hangingstone monitoring camera

The Athabasca region of Northeastern Alberta is home to some of the largest deposits of heavy crude oil in the world. The oil deposits are mixed with sand and are referred to as oil sands. Extraction of the oil deposits is done by two methods. In some areas the oil sands exist at the surface and are mined by using large-scale equipment. In other areas, where the deposits exist at a depth too great for surface mining, the oil is recovered by heating the deposits with steam to decrease the viscosity. This method of extraction is called Steam Assisted Gravity Drainage or SAGD. Compared with mining, SAGD development requires less disturbance to the ground and the environment. Japan Canada Oil Sands (JACOS) is a leader in the use of SAGD technology.

JACOS is required to conduct wildlife and other environmental monitoring and carry on its business in consultation with local aboriginal communities. JACOS's CSR initiatives include its commitment to local communities and environmental monitoring and reclamation.

#### **JACOS** history

- 1978 Japan Canada Oil Sands Limited was established and "farmed in" on leases held by Suncor, Nexen and Imperial Oil.
- 1999 JACOS started an SAGD Demonstration project in the Hangingstone area on its own (currently produces 5,000 to 6,000 barrels of oil per day).
- 2013 Started construction of the new 20,000 to 30,000 barrel-of-oil-per-day plant (Hangingstone Expansion) just south of the demonstration project in joint venture with Nexen Energy ULC.
- 2016 First production is anticipated for late 2016.







### JACOS CSR Activities under JAPEX "SHINE" CSR Initiatives

We are developing activities based on various JAPEX Core CSR issues as we strive to exist and develop in harmony with the local community.



# Stable & Sustainable Energy Supply

Provide a long-term and stable hydrocarbon supply to world-wide markets as a leading *in-situ* oil sands producer (Mission Statements).







Demonstration plant



JACOS directors and officers at No Lost Time Injury Celebration

# HSE as Our Culture

Put safety first (A Core Value).

Commit to workplace safety and environmental protection, Effectively implement the HSE management system.

Environmental Monitoring Programs include, among other things, wetlands monitoring, soil monitoring, groundwater monitoring, caribou mitigation and monitoring, wildlife mitigation and monitoring, surface water monitoring.



# ntegrity & Governance

Canadian laws and J-SOX compliance, Governance framework with JAPEX, Treating each other with respect and trust



# Being a Good Neighbor

Work together with aboriginal communities (as reported in pages 14 and 15). Actively engage in social contribution.

Contribute through various sponsorship, donation and bursary opportunities. Examples of commitments include:

- 1. Support for Martin Aboriginal Education Initiatives
- 2. Support for employees' fundraising activities



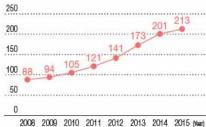
Donation to Inn from the Cold



# The Employer of Choice

Have over 200 employees (as of June 2015) with diversified backgrounds. Carry out leadership development initiatives for future leaders.

#### Number of employees



2008 2009 2010 2011 2012 2013 2014 2015 (vea Note: 2015 figure is as of June 2015



JACOS Calgary staff

# Collaborative Efforts with Aboriginal Communities

In the JACOS operational area in Canada, aboriginal peoples are defined as First Nations or Metis. First Nations are those groups of people who have land set aside where they can live a traditional lifestyle. Metis are people of mixed heritage, typically the descendants of fur traders who came to Canada early in our history and local aboriginal women.

The Province of Alberta has strict guidelines for consultation with local communities to ensure that all views of the potential environmental and socio-economic impacts are heard and accommodations can be made before granting project approval. In order to receive project approval, the Provincial Government must be satisfied that plans are in place to protect the environment and that the indigenous peoples have had input into these plans in the form of Traditional Environmental Knowledge (TEK).





CAPP commemorative shield (First Nations gloves, Metis woven cloth, Japanese folding fan)

### Involvement of Local Indigenous Peoples through the Aboriginal Review Group

The Aboriginal Review Group (ARG) was initially formed in order to solicit input into the development of the Environmental Impact Assessment (EIA) for the Hangingstone Expansion Project (HEP). Since that time, the ARG has become involved in the ongoing environmental monitoring plans required under our project approval.

The ARG consists of representatives of local aboriginal groups and people who are given the right to trap fur-bearing animals within our project area. These people are of First Nation or Metis heritage. JACOS meets with the ARG on a quarterly basis to review our environmental monitoring plans and results and to gain their input.

Our meetings are facilitated by an independent third party in order to ensure fair and impartial conduct. Additionally, JACOS funds an independent environmental consulting company that specializes in review of our environmental monitoring plans and reports directly to the ARG. Involvement of these two companies ensures that the TEK of the ARG is incorporated into our plans. The ARG has selected a liaison from among its members to accompany JACOS personnel into the field and report directly to the group on the results of our work. The current liaison is well familiar with the local environment and has been an invaluable asset to both JACOS and the ARG.



Joint field study with the ARG on the development site

#### Groundbreaking Ceremony



Groundbreaking ceremony

On December 6, 2012, JACOS and the ARG held a groundbreaking event at the HEP site which consisted of a traditional Japanese ceremony and a traditional aboriginal sweet grass ceremony. While JACOS and the local aboriginal people represent widely diverse cultures, the aim of both ceremonies was to bless the lands and to ask the spirits in the living environment for permission to disturb the area.

#### Community Youth Participation

JACOS and the ARG publish a quarterly newsletter with information and articles of particular interest to the members of the ARG. As a new initiative, we are currently planning to involve the youth of our local communities in assisting the ARG liaison in his monitoring and reclamation work. This will provide young people who are interested in a career in environmental science with direct experience and the potential for future employment with JACOS or other companies. This initiative will also help the local communities build capacity in this field of work.



ARG newsletter

#### Responsible Energy Award



With ARG representatives at the award ceremony

As a result of JACOS' work in the area of consultation with and accommodation of the local aboriginal communities, we were selected as the recipient of the Canadian Association of Petroleum Producers' (CAPP) Responsible Energy Award for corporate social responsibility in 2014. This award recognized the uniqueness of the ARG process and our demonstrated commitment to ongoing dialogue with those affected by our activities.

#### JACOS Commitment to Aboriginal Business Development—NAABA Best Practices Award

JACOS has made a commitment to assist our local aboriginal communities by providing opportunities for aboriginal-owned businesses to benefit from our operations. One method by which this is accomplished is through the Northeast Alberta Aboriginal Business Association (NAABA), JACOS is an industry member of NAABA, and our Supply Chain Management division utilizes its services to help us select and pre-qualify aboriginal businesses so that they are able to bid on our service contracts. In 2014, JACOS received the Industry Best Practices Award for our work in encouraging aboriginal business by providing these opportunities.

In addition to our NAABA initiative, JACOS Community Relations and Supply Chain Management divisions hold bi-annual meetings with the members of the ARG to highlight our current opportunities, review our past performance in the utilization of aboriginal contractors and provide information on areas where we believe there is insufficient capacity to fulfill our future requirements. By doing this, JACOS helps the aboriginal communities to design programs to train individuals and grow businesses that can take advantage of a lower level of competition such as environmental monitoring and reclamation, where we see growth opportunities. This will help aboriginal communities to develop a long-term and stable source of employment.



NAABA commendation shield



Oga, Akita Prefecture

# Japan's First Tight Oil Production

# Ensuring Harmony with the Natural Environment and Local Communities in the Development of Tight Oil in Akita

Akita Prefecture is one of Japan's best-known rice-growing regions and home to the Akita cedars that make up what is considered to be one of the country's most beautiful forests. In this region, JAPEX is moving forward with the first domestic project for developing unconventional tight oil (shale oil) resources. This crude oil is found in layers of shale that are firmly embedded between hard rock layers. In Akita Prefecture, we are developing this shale in the Onnagawa formation. Similar to the Monterey shale formation in the United States, the formation is broadly dispersed. We see the extraction of heretofore untouched Japanese tight oil as important, both for the sustainable development of our business and for securing new energy resources for Japan.

Obtaining tight oil from hard rock strata involves using artificial methods to create fractures in shale. In achieving this, we recognize protecting Akita's bountiful natural

Obtaining tight oil from hard rock strata involves using artificial methods to create fractures in shale. In achieving this, we recognize protecting Akita's bountiful natural environment and pursuing the project harmoniously through dialogue with the local community to be of topmost importance. We are pursuing this project cautiously to ensure against damaging the bonds of trust we have built up with local communities over more than half a century.



### Taking on the Challenge of Multi-Stage Fracturing for the First Time in Japan

In 2012, we enjoyed the first success in Japan at extracting tight oil, employing "acid treatment\*" at the Ayukawa Oil and Gas Field. In April 2014, we commenced full-fledged commercial production at this field at a rate 220 bbl per day.

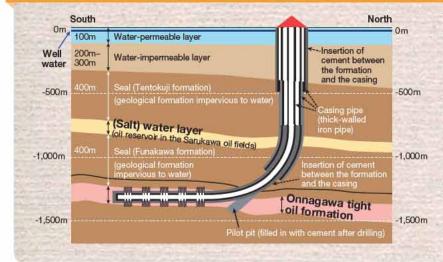
To extract tight oil even more efficiently, in 2014 we conducted Japan's first demonstration experiment in multi-stage fracturing (hydraulic fracturing) of a horizontal well at the Fukumezawa Oil field.

Fracturing technology involves using water pressure to form artificial cracks in geological layers to increase oil and gas production volumes. This is a reliable technology that has a history dating back more than 50 years. Combining this approach with a horizontal well allows for the direct expansion of the wellbore extraction area in the tight oil layer, thereby maximizing the oil and gas recovery rate. This approach allows for the development of shale resources.

North American frontrunners in shale development have accumulated their own expertise and technologies at working with the characteristics of different shale formations, but naturally these processes need to go through trial and error within Japan, as well. Our test at the Fukumezawa Oil Field marks the first step toward future full-scale development.

\*Acid treatment: In this method, acid is injected into the oil formation, where it comes into contact with and removes formation damage, thereby restoring the oil formation to previous or even higher levels of productivity.

#### Overview of Fracturing (Hydraulic Fracturing)—Fukumezawa Demonstration Experiment



This working hole is 1,330m deep and runs a horizontal distance of 650m. Some 160kl of working fluid (per location), mainly water, is injected at high pressure at five locations along the horizontal section, creating fractures 60m high by 90m wide that are up to 12mm thick. Ceramic sand is then injected into the fractures and the shale oil is drawn into the well.

# comment

#### The Potential for Tight Oil Development

Going forward, we are aiming for full-scale development of tight oil at the Ayukawa and Yurihara oil and gas fields, which have already shifted to commercial production. In addition to the low economic threshold to development due to the existence of production facilities, we believe the potential reserves there are large compared with other areas. Also, because the Onnagawa formation is similar to the Monterey shale formation that is being targeted for development in the United States, we can draw references from the activities of companies operating in California, and are aiming for development skillfully balancing fracturing and acid treatment.

As data on estimated reserves is still sparse, we will need to conduct more surveys, but for Akita Prefecture as a whole we anticipate potential resources on a par with that of conventional resources.



Satoru Yokoi Technical Fellow Japan Petroleum Exploration Co., Ltd.

### Enacting Detailed Environmental Countermeasures Based on Risk Assessment of the Surrounding Environment

While fracturing presents the possibility of efficiently extracting tight oil from the Onnagawa formation in the Fukumezawa Oil Field, measures must be taken to avoid the chemicals added to the working fluid contaminating underground water and soil, and countermeasures are needed to lower the potential for high water pressures to trigger earthquakes. Furthermore, as residential areas and a junior high school are located nearby the Fukumezawa Oil Field, measures need to be taken to prevent vibration and noise. To address these issues, JAPEX has established the Investigative Commission on Environmental Measures at Fukumezawa, comprising academic experts, members of the government and other third parties. Considering that the geologic strata in Akita Prefecture are more structurally complex than in the United States, we are making every effort to minimize environmental risks.



Investigative Commission on Environmental Measures

Topics Deliberated by the Investigative Commission on Environmental Measures

#### Risk Assessment (Environmental Risk Analysis and Countermeasures)

Analysis and formulation of countermeasures on such topics as contamination of underground water (water for domestic use), soil contamination, noise generation, air pollution and triggering earthquakes

- Environmental Monitoring of Operations Surveys of underground aquifers and water for daily use, surveys on underground water potential, micro-seismic monitoring, monitoring for the triggering of earthquakes, measuring diesel engine exhaust gases
- 3 Thresholds for the Suspension of Operations Establishment of thresholds requiring the suspension of operations when danger of accidents, disaster or environmental impact are detected

# comment

# I expect JAPEX to continue its sincere efforts to implement environmental risk countermeasures.

Tight oil drilling generally takes place in locations where geological formations have formed oil fields, so from the standpoint of natural science, it is believed that fracturing in these areas would present little concern from the perspective of environmental preservation. In addition, we members of the Investigative Commission on Environmental Measures expressed our opinion that 24-hour environmental monitoring should be prioritized to detect any signs of a problem, and that thresholds for the suspension of operations should be established. JAPEX has responded by putting in place specific and elaborate measures, demonstrating extreme sincerity in pursuing environmental risk countermeasures that are close to 100% complete. As long as these good-faith efforts are undertaken with regard to the natural environment, I anticipate no major problems going forward.



Tokiyuki Sato
Dean of the Faculty of International
Resource Sciences
Akita University

# comment



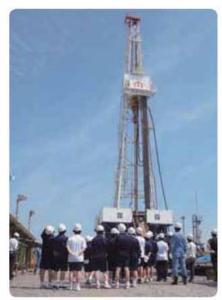
Hiroyuki Yamagishi General Manager of Technical Dept. Akita District Office, Domestic Project Division Japan Petroleum Exploration Co., Ltd.

#### We are ensuring that our pursuit of results is matched by the securing of safety and environmental risk countermeasures.

In conducting our demonstration experiment on fracturing, our main point of emphasis is on ensuring minimal damage to the natural environment. With regard to measures to mitigate the risk of water pollution or induced earthquakes, which are of particular concern to the local community, finding the correct answer is not simple, as visual confirmation of the underground is difficult. Through the Investigative Commission on Environmental Measures and meetings to provide explanations to local residents, we are eliciting the knowledge of experts and listening carefully to residents' opinions as experienced JAPEX engineers embark on this operation—the first of its kind in Japan—while making cautious judgments following extensive deliberation on environmental countermeasures.

### Achieving Harmony with the Natural Environment and Seeking to Invigorate the Region via Trust-Based Relationships Cultivated through Dialogue

The Fukumezawa region, where we conducted our demonstration experiment on horizontal well drilling and fracturing, is a verdant pastoral region where some settlements rely on underground aquifers for their drinking water and other water for domestic use. Given that fracturing in the United States has on occasion seen accidents resulting in water contamination, three times we held meetings with residents of the Fukumezawa and Tsuchibana regions to discuss the content of the demonstration experiment, as well as potential environmental risks and their countermeasures, and specialists' viewpoints on geological conditions and other matters. While listening attentively to residents' views, we formulated elaborate countermeasures. During work at the Fukumezawa Oil Field, none of the potential risks that had been considered materialized. We will continue monitoring water for domestic use as we strive to build trust-based relationships with local communities.



Students from a local junior high school tour the Fukumezawa site

# comment

#### I have high hopes that the development of new energy will stimulate the local economy and energize our region.

In the more than half a century since JAPEX discovered an oil field in the city of Oga in 1958, JAPEX has continued its operations in this region, contributing in terms of employment and tax revenues. The recent development of tight oil has focused publicity on the city of Oga from within and outside the prefecture, as well as providing educational opportunities to our children. For example, Oga Peninsula-Ogata, recognized as a Japanese geopark, is widely promoting the Onnagata tight formation, where abundant oil reserves are found and which also serves as a learning tool. At the same time, JAPEX discloses up-to-date information about environmental countermeasures related to development through direct dialogue with residents and government officials. As the company has pursued its operations while remaining conscientious and thoroughly considerate, I hope JAPEX will uphold the trust-based relations it has built and continue its business here for many years to come.



Yukio Watanabe Mayor of Oga City

# comment



Shigeo Ishiguro
Representative, Residents of Fukumezawa

# The Company has alleviated residents' concerns with its conscientious explanations and rapid preventive measures.

JAPEX is an important company for the Fukumezawa region. Around the time the company was just beginning its operations in this area, it cooperated in the pumping of underground water to secure water for domestic use. Throughout the long period since then, through employment and participation in festivities, we have maintained very good relations. At meetings with local residents to provide information on tight oil, JAPEX brought in many of its staff and provided detailed explanations. Addressing one area of particular concern, preventing the contamination of underground water, they responded on the spot that they would conduct tests regularly. Their swift responses, as well as the fact that no problems have arisen, have alleviated residents' concerns. We will keep a close eye on JAPEX's tight oil development, as many residents of the region are looking forward with anticipation to the development of this sustainable new energy.

# Stable and sustainable energy supply

JAPEX's business activities themselves embody key issues in the promotion of CSR. We develop new technologies and work in various other ways to ensure the stable supply of energy.

# Undertaking the Soma Project

JAPEX is moving ahead with plans to build an LNG terminal at Soma Port (in the town of Shinchi, Fukushima Prefecture), on the Pacific coast of Tohoku, as well as a connecting pipeline for delivering vaporized LNG received at the terminal to the Company's main pipeline. Construction on the LNG terminal commenced in November 2014.

When the Great East Japan Earthquake and tsunami occurred in 2011, the delivery of natural gas via the gas pipeline between Niigata and Sendai enabled city gas providers to resume natural gas supplies in a short time. JAPEX's pipeline network proved excellent performance in the face of the earthquake at the time of the disaster.

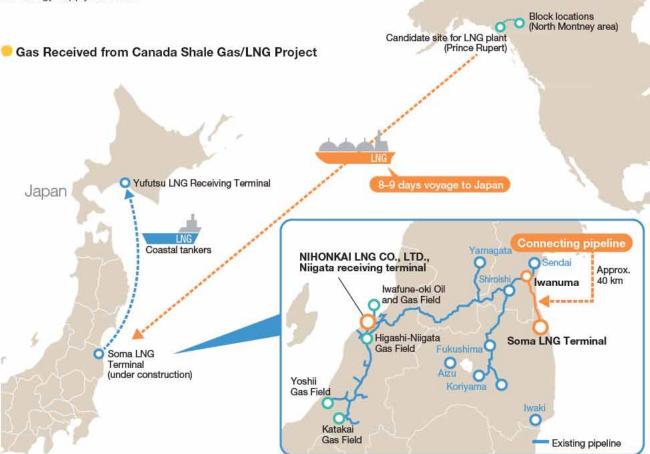
Our target for mechanical completion of the LNG terminal is the end of November 2017. Once operations commence, the pipeline will connect both LNG terminals on the Pacific coast and the Japan Sea coast. The expanded pipeline network will enable the Company to provide a stable supply of natural gas to the Tohoku (northeast) Pacific coastal region to meet demand generated by revitalization activities in the region.

We are simultaneously moving forward with Canadian shale gas development. By transporting LNG from this project to the Soma LNG Terminal, we are constructing a system that we believe will further reinforce our energy supply structure.



Conceptual rendering of the completed Soma LNG Terminal (Including natural gas-fired thermal power plant concept)

Canada



#### State of Progress on LNG Terminal Construction

We placed three separate orders related to the Soma LNG Terminal: for tanks, the plant and the berths. Construction began on the LNG tanks—the part of the project requiring the most time—in January 2015, and is currently underway. The 444 foundation piles needed to support construction of the prestressed concrete tanks, which at 230,000 kl are some of the largest in Japan, have been driven into place, and the concrete base layer is complete.

We are moving forward with detailed plant designs and procurement of various equipment, and site construction is slated to commence in May 2016.

We have also begun procuring materials for the berths, and the sequential construction of their jackets began in summer of 2015. Site construction is scheduled to begin in January 2016.

On-site construction of the pipeline, which will stretch 40km from Soma to Iwanuma, is expected to begin in the autumn of 2015.



Laying the concrete for the tank's deck slab



Planning meeting for the establishment of the Shinchi Reconstruction Institution Committee



Preparations for a district surrounding Shinchi Station

#### Contributions to the Local Community

The Soma Project is expected to attract new industry to the region affected by the Great East Japan Earthquake and make a major contribution to creating local employment. Accordingly, JAPEX has received generous support from Fukushima Prefecture, the town of Shinchi and other local authorities, as well as from national government agencies. In addition, the Reconstruction Agency has recognized the project as a reconstruction promotion plan under the Great East Japan Earthquake Reconstruction Special Zone Act.

The project is also being incorporated into the national government's vision for the local economy, the Fukushima International Research Industry City (Innovation Coast) Scheme. Including the concept of a thermal power plant business, this is a key project toward reconstruction of the affected region.

As part of the Innovation Coast concept, the Shinchi Reconstruction Institution Committee for a project aiming to build the town in harmony with new eco-friendly industries, the town of Shinchi, Fukushima Prefecture, the National Institute for Environmental Studies, local commerce and industry associations and other related parties are collaborating in efforts to realize a pioneering low-carbon society through the use of natural gas.

#### Initiatives in the Power Generation Business

JAPEX is planning a natural gas-fired thermal power generation business using vaporized gas from the Soma LNG Terminal. This project involves the construction of a high-efficiency 1.2 million kilowatt gas turbine combined cycle power plant on a site adjoining the Soma LNG Terminal, where construction is currently in progress.

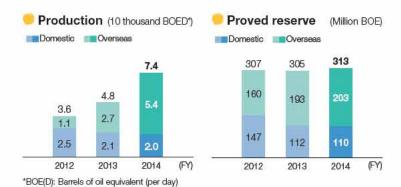
This power generation business making use of the Soma LNG Terminal will create employment, attract businesses to the area and contribute to the region's reconstruction following the Great East Japan Earthquake. The plant is also aimed at providing stable electricity to meet an expected rise in demand from summer of 2020 in line with the opening of the Tokyo Olympic Games. This project is currently at the environmental impact assessment stage.



# table and sustainable energy supply

# Aiming for the Stable Supply of Oil and Natural Gas

As a leading Japanese exploration and production company, JAPEX is involved in oil and natural gas E&P in Japan and overseas. We are currently exploring and moving ahead with projects in focus areas including Southeast Asia, Canada, the Middle East, the United Kingdom, Norway and Russia (Sakhalin).



Overseas focus areas

#### Canada/Shale Gas and LNG Project

Production of natural gas and LNG plant development

Blocks owned by our consolidated subsidiaries or equity-method affiliates

Gas Field

Gas Field

and Gas Field

2015

2013 Conclusion of contract Canada/Oil Sands 2015- LNG plant construction to Production and development commence

2019- LNG production to commence (Annual production of 12 million tons)

Start of production at Chayvo Oil and Start of production at Odoptu Oil and

# Production scale:

Around 5,000-6,000 bbl/day 1999 Hangingstone 3.75 section

Start of production 2013 Start of construction on expansion

project 2016 Production to commence (Gradually increase production

volume from 20,000 bbl/day)

United Kingdom/U.K. North Sea Block Exploration

Russia/Sakhalin 1 Project

Production and development

Start of production at Arkutun-Dagi Oil







Yufutsu

Oil and Gas Field

United Kingdom/ Norway

Middle East

#### Irag/Garraf Oil Field Production and development

#### Production scale: Around 80,000-100,000 bbl/day

2017-

Start of production 2014-2016 Plan to increase production gradually

Plan to achieve plateau production target of 230,000 bbl/day



Southeast Asia

### Indonesia/Kangean Block

Production and development

#### Production scale: Around 50,000 bbl/day (crude oil equivalent)

2012 Start of production at TSB Gas Field (Phase 1, Terang)

Exploration well scheduled for the South Saubi 2016

Structure TSB Gas Field

(Phase 2, Sirasun, Batur) Scheduled start of production



Japex (U.S.) Corp. Under production

Sarukawa Oil Field Ayukawa Oil and Amarume Oil Field Yurihara Oil and Gas Field lwafune-oki Oil and Gas Field Higashi-Niigata Shiunji Gas Field Gas Field Mitsuke Oil Field

Yoshii Katakai Gas Field

### Methane Hydrate Development Initiatives

#### Methane Hydrate as an Energy Resource

Methane hydrate (MH) is an ice-like solid formed by methane gas that captures water inside under low-temperature and high-pressure conditions. In Japan, this substance is known to exist as two types, sand-layer pore-filling type (sand-layer type) and shallow-type.

The sand-layer type of MH in the eastern part of the Nankai Trough area was estimated to have original volume in place of approximately 1.1 trillion m<sup>3+1</sup> of methane equivalent. At 2011 levels\*2, this volume corresponds to the total amount of imported LNG for 11 years in Japan.

Shallow-type MH is known to exist in the Sea of Japan, and in the fiscal year ended March 31, 2014 we commenced a three-year survey to determine the resource volume.

- \*1 From an MH21 Research Consortium pamphlet (published in March 2010)
- \*2 LNG imports of Japan (2011): 105.5 billion m<sup>3</sup> (Trade Statistics, the Ministry of Finance)

#### Methane Hydrate Development Technology Research

Since MH is a stable solid at low temperature and high pressure, it is not easy to extract as gas above ground as is. Thus, the commercialization of MH is difficult. Theoretically, there are several methods to extract methane gas from MH layers, such as by heating the formation or decreasing the formation pressure and using chemicals to promote disassociation, but the depressurization method is expected to be the most efficient method of extracting methane gas from the MH layer.

In March 2013, the first offshore production test of MH, in which JAPEX also engaged in operator work, was conducted using the *CHIKYU*, a deep-sea drilling vessel, targeting sand-layer type MH at the Daini Atsumi knoll, located between Atsumi Peninsula and Shima Peninsula off the coast of Japan. As a result, we were the first in the world to succeed at the continuous production of methane gas from an undersea MH layer (production continuing for six days; average volume: approx. 20,000 m³/per day; cumulative total volume: approx. 120,000 m³\*³).

Based on these results, the national government is monitoring the international situation and promoting technological development so commercial production of sand-layer type MH led by the private sector can begin in the mid-2020s\*4.

- \*3 JOGMEC news release, March 19, 2013
- \*4 Offshore Energy and Mineral Resource Development Plan announced on December 25, 2013, by the Ministry of Economy, Trade and Industry.

#### JAPEX's Involvement

JAPEX was quick to recognize the potential of MH and provide technology, experience and knowhow cultivated in oil and gas development to Japan's MH development and R&D.

We contributed to the project mentioned at left as commissioned operator for the first offshore production tests.

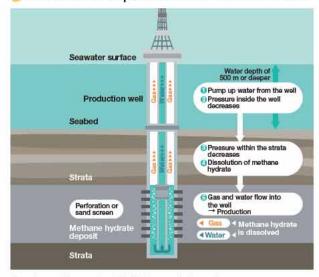
In October 2014, we were one of the 11 companies, including E&P and engineering firms, to jointly establish Japan Methane Hydrate Operating Co., Ltd. (JMH). This company aims to conduct offshore production tests of MH, operating efficiently, effectively and smoothly as an organization of entirely Japanese companies and sharing the expertise of numerous private-sector companies.

Going forward, JAPEX will contribute to offshore production tests via JMH. Thus, we will continue to participate in the development of MH as a clean energy resource in Japan.



The CHIKYU, the scientific drilling ship used in the first production tests

#### Schematic of Depressurized Production Method



Based on a diagram from MH21 Research Consortium

# Stable and sustainable energy supply

# Challenges for Geothermal Development

#### Geothermal Power Generation

Geothermal power is one of the most reliable renewable energy sources. Geothermal power plants use high-temperature steam and hot water extracted from deep in the ground to generate electricity. Currently, there are geothermal power stations operating in 27 areas in Japan, including small-scale ones.

Geothermal power generation is an environmentally friendly power generation method with extremely low CO<sub>2</sub> emission. In addition, this generation method is stable. It can generate electricity continuously day and night regardless of weather conditions and further development is therefore expected.

Since the Great East Japan Earthquake, there is much expectation for further geothermal development. In order to promote such development, the Japanese government has introduced various measures, such as 1) deregulation for development in national parks; and 2) establishment of FIT (feed-in tariff) a fixed-price trading system which offers long-term contracts to renewable energy producers.

#### Survey Project Initiatives

JAPEX has been conducting geothermal surveys in eastern Hokkaido since 1977 and identified the Musadake field, located in Shibetsu Town, as one of the most prospective areas. Subsequently, the New Energy and Industrial Technology Development Organization (NEDO), a government-related organization, has conducted geothermal

development promotion surveys in various areas, including the Musadake field, in stages since the fiscal year ended March 31, 1994. This survey reconfirmed the existence of promising resources (formation temperature of over 280°C) in the Musadake area.

By utilizing the accumulated data, JAPEX has promoted geothermal surveys in this area, aiming for the development of geothermal power generation. JAPEX drilled the first exploratory well (total depth of 2,383m) in 2013, followed by the second exploratory well (total depth of 2,000m) in 2014, and confirmed steam production.

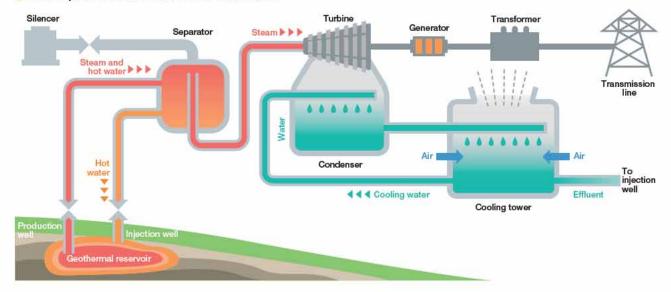
Moreover, JAPEX has been engaged in geothermal

surveys in the Bandai-Azuma-Adatara field (Fukushima Prefecture), operated by a joint venture organization composed of 10 geothermal-related companies. At the same time, JAPEX is pursuing new geothermal potential in various areas, including in the Furebetsu-Dake-Minami area (Kushiro City).



Short-term production test

#### Concept of Geothermal Power Generation



# Commercialization of CCS Technology

#### What is Carbon Dioxide Capture and Storage?

Carbon dioxide Capture and Storage (CCS) is a technology that separates and recovers carbon dioxide (CO2) and stores it underground. It is drawing a lot of attention today, since the technology offers a chance for reducing a large amount of CO2 that is produced from burning fossil fuel safely with immediate effects. An initial study put storage potential at approximately 146.0 billion tons, and a more detailed study commenced in 2014.

#### Applying E&P Technologies

JAPEX has advanced and integrated technologies accumulated over half a century through oil and gas exploration and development in Japan and overseas. The integration of these advanced technologies is the key to the development of CCS.

#### E&P Technologies Required for CCS

- Technologies for investigating subsurface structures and estimating petrophysical properties
- Technologies for drilling in a range of several thousand meters vertically and horizontally
- Technology to evaluate formation properties by well logging
- Technologies for producing oil and natural gas safely
- Fluid behavior simulation technologies
- Underground monitoring technologies

#### Moving toward Demonstration Tests

JAPEX established Japan CCS Co., Ltd. (JCCS) jointly with private companies in May 2008. Japan's Ministry of Economy, Trade and Industry (METI) commissioned JCCS to conduct CCS tests in the city of Tomakomai, Hokkaido, from April 2012.

METI plans to commence CO2 injection for subsurface storage from April 2016, and construction of required facilities and the drilling of two CO2 injection wells by JCCS has moved into high gear in 2014 and 2015. JCCS has contracted JAPEX to drill the two injection wells. JAPEX is also contracted to conduct a CO2 reservoir simulation study, with the purpose of confirming that the injected CO2 can be stored under stable conditions for a long period of time in the reservoir. JAPEX also conducted analyses of rock and fluid samples from the wells, and the findings from such analyses are being utilized to improve the accuracy of the simulations.



Ground facilities for CCS demonstration test in Tomakomai Source: Japan CCS Co., Ltd.

### **Solar Power Generation**

Solar power generation is an environmentally friendly power generation method with extremely low CO<sub>2</sub> emissions. Solar-power plants with a scale of more than 1,000 kW are called "mega-solar power plants."

JAPEX is operating two mega-solar plants: one on unused land around our Hokkaido District Office, and another on a neighboring site. Tomakomai, where the sites are located, is a suitable location for solar power generation, with good sunlight conditions and minimal snowfall, leading to expectations of stable solar power generation.

#### 🤭 Mega-Solar Power Generation Project

	Hokkaido District Office	Solar Power Tomakomai Co., Ltd.*	
Generating capacity	1,800kW	13,000kW	
Output	2,500,000 kW/annum	16,000,000 kW/annum	
Operation commencement	August 2014	November 2014	

Note: This is a joint project with the Sumitomo Corporation Group and another company.



Solar panels



Hokkaido District Office's megasolar power plant site

# HSE as our culture

By using its HSE Management System (HSE-MS), JAPEX fosters a corporate culture that places top priority on occupational health and safety and environmental protection.

### Occupational Health and Safety

# Health, Safety and Environment (HSE) Management System

In January 1, 2014, JAPEX began operating an integrated domestic HSE management system, combining health activities into safety and environmental protection activities. Through continuous application of the PDCA cycle, we aim to achieve ongoing improvements in our organizational HSE level.

#### A: Management review

Top management reviews the overall system and confirms that our HSE-MS activities are appropriate and effective.



#### HSSE Committee

This committee, comprising the executive officer in charge of the HSE Department and executives of related committees, reviewed activities conducted in the fiscal year ended March 31, 2015 and set HSE targets and objectives for the fiscal year ending March 31, 2016.

#### C: Check (and corrective measures)

This process involves monitoring and assessing performance and the status of legal and other compliance, Internal audits are conducted and in the event of any non-conformance, corrective and preventive measures are introduced.



#### HSE-MS Audits

We conducted HSE-MS audits at each location. Internal audit personnel trained inhouse also confirmed that HSE-MS was being operated appropriately.



Continuous system improvements by operating the system



Continuous improvements in performance

#### **Policy**

We have established a Corporate HSE Policy to define the framework of our HSE activities.



HSE Policy

#### P: Plan

We identify and evaluate risk related to health, safety and the environment, formulate HSE targets and objectives and formulate action plans (HSE-MP) to achieve them.

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#### HSE Targets and Objectives at Corporate Headquarters

We set targets and objectives for each of our offices and other business locations in each health, safety and environment category, taking into account specific operating conditions at individual sites.

# D: Execution and operation

These activities include program progress management, education and training, communications, document control, operational management and emergency response.



#### HSE Seminar

In February 2015, we held an in-house seminar on the topic of global warming countermeasures and their impact on our business to raise employee awareness of HSE.

### **HSE-MS Documentation**

In April 2015, we revised our corporate HSE-MS manual, enhancing its content to enable the manual to serve as a global standard for the Company. Going forward, we will continue to conduct appropriate reviews of our HSE-MS operations and improve the manual's content on an ongoing basis.

At the same time, we revised our domestic HSE-MS manual and integrated this with our environmental management system (EMS) documents, making our domestic HSE-MS manual consistent with our corporate HSE-MS, such international standards as ISO 14001\*1 and OHSAS 18001\*2, and the Guidelines for Occupational Health and Safety Management Systems published by Japan's Ministry of Health, Labour and Welfare.

- \*1 ISO 14001: An international standard for environmental management systems. In addition to legal compliance and reduction of environmental risks, it outlines important environmental management items that must be continuously undertaken to protect the environment through efforts to achieve environmental targets and objectives.
- \*2 OHSAS 18001: An internationally recognized standard for building occupational health and safety (OHS) management systems. Its objectives are to prevent OHS-related risks, enhance the welfare of workers, and improve the efficiency of the organization.

### **HSE-MS** for Overseas Projects

Each overseas operator project company establishes and implements its own HSE-MS to meet its national and regional requirements.

JAPEX headquarters conducts HSE audits to make sure that the HSE-MS of each project company conforms to the corporate HSE-MS, as well as its own HSE-MS.

In parallel, an Overseas HSE Managers' Meeting is held annually at JAPEX headquarters. Each member in charge of HSE, including overseas projects, joins the meeting, and can share information and issues under consideration.

#### Basic Format of the Corporate HSE-MS Manual

- Senior Management Commitment
- Personnel Recruitment and Training
- Contractors and Joint Venture Companies
- Communication

# (2) Planning and Operations

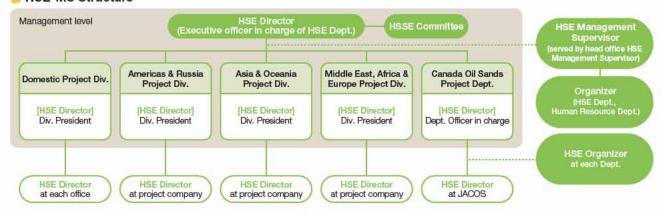
- Hazard Identification and Risk Assessment
- Engineering and Construction
- Operating and HSE Documents
- Project / Subsidiary HSE Management Systems
- Maintenance, Inspection and Testing
- Management of Change

- Incident Reporting and Investigation
- Emergency and Crisis Management

(4) Monitoring (Monitoring of HSE activities throughout the year and planning HSE activities for the following year)

- Measurement and Assessment of HSE Performance
- Non-Conformance Reporting, Assessment and Correction
- HSE Performance Review

#### **HSE-MS Structure**



# HSE as our culture

# Labor-Management Discussions Concerning HSE

As one aspect of our safety activities, based on labor union agreements, between 1970 and 2013 we held safety meetings twice each year as a labor–management forum for discussing safety-related matters.

Due to the 2014 transition of our safety activities to HSE activities, the meeting covers a broader range of HSE topics, including health and environmental issues.

Agenda items at the 2014 HSE discussion with the labor union were as follows.

Accidents involving physical injury Significant near misses Domestic HSE-MS operational status Safety training for field operators

#### **HSE-MS Audits**

#### Japan

Conducting HSE-ME audits at offices and fields in Japan is not mandatory by law, but JAPEX performs these audits voluntarily as one of its routine business practices.

The basic concept behind HSE-MS audits is to prevent accidents by requiring each operator to make ongoing improvements in the areas of health, safety and the environment in accordance with on-site conditions.

JAPEX recognizes the importance of HSE activities. We strive to reinforce HSE activities while making continuous improvements. Holding HSE-MS audits is an effective way to realize continuous improvements. These audits are carried out once a year to check compliance with a variety of items. The audits examine the HSE management system as described in the Japanese HSE-MS manual, the HSE Committee, HSE promotion activities based on HSE policy, risk assessments, HSE education, and emergency response measures. They check

measures in place by operators, assess and review these measures, and check the HSE records.



HSE-MS audit in progress (Sarukawa field)

#### Canada Oil Sands Project

In September 2014, we conducted an HSE audit at the Hangingstone expansion project site operated by JACOS, headquartered in Calgary, Alberta, Canada.

In addition to JACOS's HSE-related documentation, this audit covered HSE-related documentation of the two prime contractors involved in facility construction for the project.

Several items requiring correction were identified, requests

for improvement were submitted and JACOS responded to these requests. We plan to confirm these actions when we conduct an HSE audit in October 2015.



HSE audit (JACOS)

#### Kangean Project

In August 2014, we conducted a HSE audit of Kangean Energy Indonesia Ltd. (KEI), headquartered in Jakarta, Indonesia. This audit focused on HSE activities at the Pagerungan gas field in the Kangean block of Eastern Java.

Based on the paper-based audit, we confirmed that KEI was performing a safety operation in accordance with HSE manuals the company issued.

In 2015, we plan to actually visit the Pagerungan gas field to ascertain that the operation is ongoing under an appropriate safety control system in compliance with its HSE policy.



HSE audit (KEI)

### **HSE Training**

JAPEX provides employees with HSE education based on a list of competency requirements. They include statutory and voluntary qualifications for HSE managers and operation supervisors, voluntary qualifications for mining field workers and gas operation safety assurance personnel, and guidelines

covering planned participation in various seminars and workshops. In order to secure qualified employees, we have an incentive scheme that rewards employees who have obtained specific qualifications.



LNG fire-fighting drill

### **Health Maintenance Initiatives**

At JAPEX, health checkups include statutory regular health checkups, comprehensive medical examinations for employees aged 35 or 40 and above, as well as checkups when entering the Company or being dispatched for specified operations or overseas. To encourage awareness of lifestyle-related diseases among young employees, we perform abdominal measurements on employees aged less than 40 as well.

Recognizing the importance of emphasizing follow-ups after health checkups, we have systems in place to support employees whose results have indicated potential issues through consultations with industrial physicians and appointment scheduling.

To prevent influenza, we conduct thorough training on prevention, subsidize vaccinations and conduct mass vaccinations at our offices.

We also hold health classes led by industrial physicians and conduct walking and anti-smoking campaigns in our efforts to raise the level of health throughout the Company.

#### Mental Health Care

#### 1. Line care seminar (for managerial staff)

The seminar was held for the purpose of the early recognition and response to problems with subordinates.

#### 2. Stress check (for all employees)

Individual employees underwent a stress check. For employees with unfavorable results, necessary measures were taken by specialized institutions.

#### 3. Self-care seminar (for all employees)

The seminar was held to properly understand depression, and learn its prevention and how to cope with depression.

#### Online mental healthcare checks (for employees posted overseas and their dependents)

We have established a convenient system that enables employees posted overseas and their dependents to check their stress levels and mental health online. Where necessary, we provide follow-up services that include counseling.

An increase in the number of employees who are taking care of their families but have mental health problems that could seriously affect them and their families has been recognized as a critical social problem in recent years. We expect each employee to learn and actually control their own stress through these seminars, and actively work for themselves.

#### Frequency of Accidents

			2012	2013	2014
Cases of P Injury (Case		Mining field workers	0	1	1
Accident	Frequency rate*1	Mining field workers	0.00	0.84	1.02
Frequency	Severity rate*2	Mining field workers	0.00	0.10	0.03
	***************************************	Employees	0	0	0
Fatalities (People)		Contractors	0	0	0
		Total	0	0	0
		Employees	0	0	1
Accidents I	AT A STATE OF THE	Contractors	1	2	0
Time Off Work (Cases)		Total	1	2	1
Accidents Not		Employees	0	1	1
Requiring 1		Contractors	0	5	2
Work (Cases)		Total	0	6	3
Medical Procedures (Cases)		Employees	0	1	2
		Contractors	1	7	2
		Total	1	8	4

<sup>\*1</sup> Frequency rate = (deaths or injuries due to occupational accidents/total hours worked)×1,000,000

<sup>\*2</sup> Severity rate = (work days lost/total hours worked)×1,000



# **Crisis Management**

# **Initiatives for Safe Work Practices Overseas**

In operation of overseas businesses, it is most important to ensure employees' safety. At JAPEX, the HSSE Committee is tasked with formulating basic policies on overseas safety and security and deliberating important matters. The Overseas Security Measures Working Group, consisting of managers from relevant departments, gathers information, makes decisions on the advisability of sending employees overseas, and engages in other overseas security-related activities on a daily basis.

In the fiscal year ended March 31, 2015 (fiscal 2014), the Garraf project in Iraq presented the most serious risk to security among all of the Group's overseas project sites. To ensure safety in the face of June 2014 attacks by Islamic militant group ISIL\* on northern Mosul, we ordered employees to temporarily leave the country. After ensuring the safety status of the southeastern part of the country, following prudent considerations and deliberations, employees were sent back to the site in August.

JAPEX has also participated in intensive seminars organized by Japan's Ministry of Foreign Affairs. We have also held discussions with other companies on the subject of overseas security.

\*ISIL: Islamic State in Iraq and the Levant

#### Main Overseas Security Measures in Fiscal 2014

Activity	Frequency	Remarks
HSSE Committee (on overseas security- related issues)	1	Iraq crisis and the Company's response report
Discussions by the Overseas Security Measures Working Group (discussions concerning sending employees overseas)	64	Includes discussion papers
Same as the above (other issues)	4	Situation in Iraq, others
Outside seminars, opinion exchanges	6	•

# Countermeasures against New Influenza

As a business operator involved in maintenance of gas supply, which is essential to social functioning, JAPEX is required to continue supplying gas to a certain extent, even at time of a

highly virulent influenza pandemic. Therefore, by formulating the Business Continuity Plan with Countermeasures against New Influenza including infection-control measures for employees, we have prepared for ensuring safety of employees and continuing business activities.

# Measures against Large Scale Disasters

In preparation for occurrence of large-scale disasters, JAPEX has established the Disaster Prevention Measures Guideline for the headquarters, and the Contingency Plan Guideline for each district office. When the Great East Japan Earthquake occurred in March 2011, measures were taken in accordance with those guidelines.

Using experiences in the disaster, we expanded communication tools for emergency, replenished emergency stockpiles and other stores and enhanced other measures in order to maintain headquarters' functions. District offices located in coastal areas have reviewed countermeasures, for example, conducting evacuation drills in case of issue of great tsunami warnings.

On the assumption of large-scale disasters, such as earthquakes occurring directly beneath the Tokyo metropolitan area, we will take measures in response to the Ordinance for Comprehensively Promoting Measures for Stranded Persons that came into force on April 1, 2013, and identified problems in measures at the time of the Great East Japan Earthquake. We will formulate a Manual of Initial Responses at Earthquake to enhance systems to deal with risks.

# **Emergency Response**

We have prepared a Disaster Prevention Measure Guideline and manual that account for the possibilities of an emergency affecting employees at district and other offices, as well as our facilities, operations and sales activities. In the event an emergency situation occurs, we respond by collecting information, communicating and providing instructions in accordance with the Disaster Prevention Measure Guideline and manual. If necessary, we establish an Emergency Response Headquarters, Emergency Response Team, as well as a Local Emergency Response Headquarters at each district office to respond to the situation. In addition, at least once a year we conduct drills at headquarters and our district offices on the presumption of an emergency situation, and prepare and improve the Disaster Prevention Measure Guideline and manual.

#### **Environmental Protection Initiatives**

As an organization involved in the oil and natural gas drilling and exploration business, the JAPEX Group recognizes the importance of its response to environmental issues. Accordingly, we have identified "HSE as our culture" as a CSR core issue and established as individual issues "measures to prevent global warming," "preserving biodiversity and

ecosystems" and "pollution prevention and resource recycling."
With regard to these issues, each fiscal year we establish a
CSR action plan and targets. Through our HSE management
system, we incorporate these focuses into our daily activities at
each district office and site.

#### **Environmental Data (Fiscal 2014)** Energy resources: Total 2,698.8 TJ Input Water resources: Total 722,001 kl Energy resources Energy resources Energy resources Energy resources Energy resources 47.6 TJ\* 1.0 TJ 118.4 TJ 2.135.4 TJ 396.4 TJ Water resources Water resources Water resources Water resources Water resources 0 kl 21,264 kl 13,608 kℓ 686,307 kl 822 kℓ Exploration Drilling Production Transportation Major environmental Major environmental Major environmental Major environmental Major environmental impacts from offices: impacts at exploration impacts at drilling stage: impacts at production impacts at transportation stage: stage: Electricity used by office machines, air Fuels used when Fuels used for drilling Electricity and fuels Emission of natural gas conditioners, lighting, geophysical survey machine operations used in processing oil/ from the relocation of data are collected in natural gas pipelines due to road Water used to make the field Water used in works, etc. Paper use mud for drilling Generation of waste, Fuels used for Industrial waste processing oil/natural gas transporting oil and generated in drilling LNG by road/rail operations Emission of carbon Water used dioxide contained in natural gas Emission of volatile organic compounds (VOCs) contained in oil/natural gas Generation of waste, Greenhouse gases Greenhouse gases Greenhouse gases Greenhouse gases Greenhouse gases 2,419 t-CO2 8,192 t-co2 189,182 t-co2 44,632 t-co2 66 t-CO2 Waste Waste Waste Waste Waste 200 t 0 t 13,652 t 2,683 t 0 t Waste water Waste water Waste water Waste water 21,264 kl 21,559 kl 686,307 kl 822 kl 0 kl Greenhouse gases: Total 244,491 t-CO2 Output Waste: Total 16,535 t

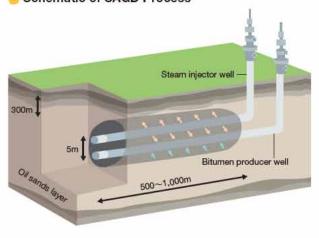
Waste water: Total 729,952 kl

<sup>\*</sup> TJ: Terajoule (1012J)

# Oil Sands Development by Environmentally Friendly SAGD Method

JACOS has oil sands leases in the Athabasca region of Alberta, Canada. While open-pit mining was the predominant method in that region, JACOS engaged deeply in developing technology based on the Steam Assisted Gravity Drainage (SAGD) method and has been producing bitumen using that method since 1999. SAGD is an *in-situ* extraction method to produce bitumen through wells, as crude oil is produced in conventional oil fields. In contrast to open-pit mining, which excavates wide areas of land, the SAGD process has less impact on the environment. Since 2000, production volume using SAGD has been increasing rapidly in Alberta, and production using *in-situ* bitumen recovery methods, including SAGD, surpassed that of the open-pit mining method in 2012.

#### Schematic of SAGD Process



# HSE Activities in the Kangean Project

In the Kangean Block in the Republic of Indonesia, KEI has production operations at the Pagerungan gas field and the Terang gas field, which is part of the TSB gas fields currently under development. A floating production unit (FPU) is located offshore to produce natural gas from the Terang gas field.

Under the supervision of a regulatory agency (SKKMIGAS: Special Task Force for Upstream Oil and Gas Business Activities of the Republic of Indonesia) and in accordance with advance environmental impact assessments, we ensure that our operations place as minimal a load as possible on the environment. We have been given a "BLUE" rating from the Indonesia's Ministry of Environment, indicating that the project is in compliance with the relevant laws and regulations.

Through the preparation of HSE manuals, as well as frequent meetings and training sessions, we have made sure that employees understand the importance of HSE. Thanks to these efforts, our employees pay the utmost attention to the environment and safety. As a result, in the 24-year period since January 1990, we have not had a single accident at the Pagerungan gas field. Our safety initiatives have earned high praise from the Ministry of Manpower and Transmigration and the East Java state government.

Furthermore, in June 2014 KEI received a "Journey to Zero Incident Award 2014" from SKKMIGAS, based on a positive assessment of the fact that in the gas fields the company operates, no lost-work injuries or oil pollution occurred during 2013.



Oil sands plant



Award ceremony (Journey to Zero Incident Award 2014)

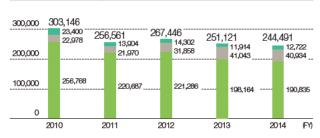
### Initiatives to Tackle Global Warming

#### **JAPEX's Greenhouse Gas Emissions**

With respect to greenhouse gas emissions\*1 (excluding Scope 3), the Company emitted 232 kilotons of CO<sub>2</sub> in the fiscal year ended March 31, 2015, down 7 kilotons (3%) from the fiscal year ended March 31, 2014 (fiscal 2013). Within this total, we emitted 142 kilotons of CO<sub>2</sub> from energy-related sources, down 16 kilotons (11%), and 90 kilotons\*2 from non-energy sources, up 9 kilotons (10%).

# Transitions in Greenhouse Gas Emissions





- \*1 The calculation and reporting of greenhouse gas emissions and energy consumption are made for each scope of the Greenhouse Gas Protocol Standards. Internationally, the Greenhouse Gas Protocol is the most common set of standards used to calculate and report greenhouse gas emissions.
- Scope 1: Direct emissions of greenhouse gases from a company from the use of fuel and processes
- Scope 2: Indirect emissions of greenhouse gases from the use of electricity or heating supplied by another company
- •Scope 3: Other indirect emissions from company's contracting of transportation services for the company's products
- \*2 Breakdown of non-energy generated greenhouse gas emissions (90 kilotons of OO2):

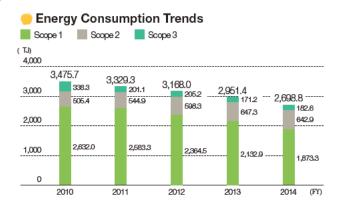
Combustion: 25 kilotons of CO2; release: 21 kilotons of CO2; separation and removal: 44 kilotons of CO2

# Promotion of Energy-Saving Activities

With assistance from consultants related to energy-saving since 2011, we have been working in various ways to comply with the revised Act Concerning the Rational Use of Energy (Energy Conservation Act).

While readjusting our systems for the medium to long terms in conformity with the revised Energy Conservation Act, we are now committed to reducing the energy consumption primary unit by 1% or higher on an annual average.

As an approach to energy-saving in our offices, we turn office machines off when not in use, lower room lighting intensity, and switch off room lighting and PCs during lunch hours.



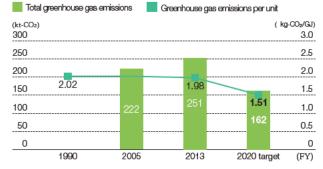
# Measures to Prevent Global Warming (Initiatives Based on KEIDANREN's Voluntary Action Plan)

In fiscal 2013, we began participating in the Low-Carbon Society Execution Plan, a new voluntary action plan formulated by KEIDANREN in December 2009. Under this plan, we will strive to reduce greenhouse gas emissions by the fiscal year ending March 31, 2021 (fiscal 2020), achieving the reduction targets\* set by the Japan Petroleum Development Association. We will continue implementing measures to prevent global warming, such as the promotion of CCS, energy conservation, and reduction of abandoned low-pressure gas.

#### \*Reduction targets

- By fiscal 2020, reduce emissions by 60,000 tons of CO<sub>2</sub> compared with levels in the fiscal year ended March 31, 2006 (fiscal 2005).
- (2) By fiscal 2020, reduce emissions per unit by 25% compared with levels in the fiscal year ended March 31, 1991 (fiscal 1990).

#### Japan Petroleum Development Association





### **Afforestation Programs**

As part of our effort in combating global warming and reducing CO<sub>2</sub> emissions, JAPEX has been carrying out afforestation and forest management programs since 2005. These programs are currently being carried out in Hokkaido, Akita, and Niigata prefectures, where we have business operations.

After the completion of planting, we are putting our efforts into growing them well, managing their development to restore the forests.

#### **JAPEX Morappu Forest**

Location: approx. 7.6 ha around Shikotsu Lake, Tomakomai, Hokkaido

Planting period: three years from 2006

Number and type of trees: approx. 11,000 saplings of needle-leaf trees.

**JAPEX Yuri Forest** 

Location: approx. 4.5 ha at the northern foot of Mt. Chokai,

Yurihonjo, Akita

Planting period: three years from 2005

Number and type of trees: approx. 8,000 saplings of broad-

leaf and needle-leaf trees

#### **JAPEX Jomon Forest**

Location: 11.9 ha on the east side of the western hill area of Nagaoka, Niigata (of which 4.9 ha is for afforestation and 7.0 ha is an existing forest)

Planting period: 2007, 2010, and 2014

Number and type of trees: approx. 10,000 saplings of broad-leaf trees

#### **JAPEX Sennenmatsu Forest**

Location: approx. 6.4 ha around Seiro, Kitakanbara, Niigata Planting period: three years from 2007

Number and type of trees: approx. 14,800 saplings of needle-leaf and broad-leaf trees



Third Afforestation Festival at Jomon Forest (Sekihara-machi, Nagaoka, Niigata Prefecture)

### **Preserving Biodiversity and Ecosystems**

When JAPEX conducts any oil and natural gas exploration, development and production, as well as other projects in Japan and overseas, in addition to statutory surveys the Company formulates plans for voluntary environmental assessments. We also conduct regular reviews and monitoring to minimize our impact on biodiversity and ecosystems.

#### **Principal Activities in Fiscal 2014**

#### Wild Animal and Other Monitoring Activities by JACOS

In addition to monitoring the natural environment, including plants, we conducted monitoring surveys for endangered species such as the woodland caribou, as well as other wild animals, as part of our efforts to minimize our impact on their living environment, as well as to restore habitat lost due to human activities and forest fires.



American black bear appearing in a monitoring camera

#### Birdlife Survey in and around the Musadake Area

JAPEX conducts birdlife monitoring survey on the habitats of the Blakiston's fish owl—a national natural treasure—as well as birds of prey and other birds to ensure minimum impact on their environment.

# Performing an Ecosystem Impact Survey in Relation to Soma LNG Terminal Construction

We are surveying the habitats of land and aquatic animals and their ecosystem to confirm that our impact is essentially zero.

# Reduction of Environmental Impact (Pollution Prevention, Resource Recycling)

# Preservation of Water Resources and Treatment of Pit-Wastewater

#### Japan

At our production sites and plants, water for industrial use, tap water and underground water are being used mainly as coolants at the processing facilities, as boiler water, industrial water used for the process of cleaning natural gas and melting snow and ice during winter. We are making efforts to reduce the use of water by recycling and reusing it as much as possible.

To avoid affecting the local environment, we return pitwastewater (production water attendant to oil and gas and wastewater emitted by treatment facilities) underground, and we release treated pit-wastewater using microorganisms and release the treated water into the sea. We conduct appropriate sampling of water released into the sea to test water quality and ensure compliance with the national government's water quality standards.

To reduce the environmental impact of pit-wastewater (sludge and wastewater produced by drilling), we have installed a pit-wastewater processing system, using a reduced-pressure distillation mechanism. The resultant distilled water is recycled and used for boilers and concentrated sludge is treated as industrial waste.

In the fiscal year ended March 31, 2015 (fiscal 2014), 7,951 kℓ of recovered water was used for boilers.

#### Water Consumption by Operations in FY 2014 (Unit: kl)

	Tap water	Industrial water	Underground/ river	Total
Office	20,334	0	930	21,264
Exploration Div.	0	0	0	0
Drilling Div.	902	9,759	2,947	13,608
Production Div.	52,192	377,868	256,247	686,307
Transportation Div.	822	0	0	822
Total	74,250	387,627	260,124	722,001

#### Effluent by Operations in FY 2014

(Unit: kl)

	Sewage	Pit-water reuse injection	Release/ evaporation	Total
Office	20,334	0	930	21,264
Exploration Div.	0	0	0	0
Drilling Div.	688	0	20,871	21,559
Production Div.	38,441	451,669	196,197	686,307
Transportation Div.	822	0	0	822
Total	60,285	451,669	217,998	729,952

#### JACOS

In our oil sands project in Canada, water, as much as two to four times in volume to the bitumen produced, is necessary to extract bitumen from the oil sands. In order to minimize water consumption, we are carrying out initiatives to recycle the used water.

In our Hangingstone block, high-temperature and highpressure steam is injected into the reservoir to reduce the viscosity of the bitumen, which in turn flows down, collects and emerges aboveground with water in the processing facility. More than 90% of the water collected aboveground will be recycled and reused as the steam to be injected again.

#### Canada Shale Gas/LNG Project

The major feature of shale development is the process of hydraulic fracturing, in which primarily water injected under high pressure fractures the rock and makes it possible to extract gas or oil contained in a shale layer. We are working to minimize our use of surface water.

Generally, between 20% and 40% of the water injected into a well is flowback that returns to the surface with the production of gas. We reuse nearly all of this water after putting it through filters.

We also prevent pollution of underground water by ensuring that the surface casings that protect wellbores are set at a depth lower than the aquifer. Also, we take measures to avoid water leaks at ground level to prevent the water we use in fracturing, which includes flowback water, from seeping underground.

# HSE as our culture

### **Prevention of Air Pollution**

Natural gas is a clean energy source that not only produces less greenhouse gas compared with coal or oil, but also releases very little nitrogen oxides, which produce photochemical oxidants, and sulfur oxides, which cause acid rain. This is because it does not contain sulfur or nitrogen compounds. We actively promote the use of natural gas, and 69% of the energy used (mainly from production fields) comes from gaseous fuel, such as natural gas. On the other hand, 5% of the energy used (mainly from the drilling activities) comes from liquid fuels, such as light and heavy oils. All the emissions from the boilers, gas engines and other combustion equipment used in the production sites are below the regulation standard limits for dust and nitrous oxide concentrations.

#### Reduction of VOC Emissions

Volatile organic compounds (VOCs) are said to be the causative agent of suspended particulate matter (SPM) and photochemical oxidants in the atmosphere. VOC emissions are being controlled by employing a best-mix approach with respect to which synergistic effect is expected, appropriately combining regulations based on laws such as the Revised Air Pollution Control Act (2004), and the industry's voluntary initiatives.

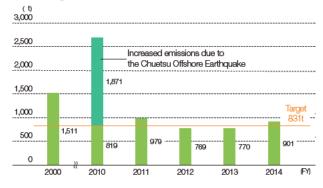
Most VOCs are volatile hydrocarbons, except methane, which is released from crude oil storage tanks and in the course of gas processing, such as removing water contained in the gas, and they include Pollutant Release and Transfer Register (PRTR) substances such as benzene, toluene and xylene (BTX). Common emission control measures include hermetic sealing of crude oil storage tanks and incineration, recovery and removal of VOCs produced in gas processing facilities.

Since the fiscal year ended March 31, 2006, JAPEX, as a member of the Japan Natural Gas Association, has been participating in a voluntary action plan and making efforts as an industry to control VOC emissions with the goal of 45% reduction in the fiscal year ended March 31, 2011 compared with the fiscal year ended March 31, 2001. However, due to the Chuetsu Offshore Earthquake that occurred in July 2007, our crude oil pipelines were damaged, forcing us to switch the means of transportation from such pipelines to tank trucks. This caused the generation of surplus low pressurized gas and significantly increased the VOC emissions after the earthquake. However, by conducting construction to counter the increase due to the Chuetsu Offshore Earthquake we achieved a significant reduction and met our goals under

the voluntary action plan in the fiscal year ended March 31, 2013. In the fiscal year ended March 31, 2015, emissions rose temporarily due to malfunctions at some of our facilities for incinerating surplus low pressurized gas. We have already completed countermeasure construction to address this issue.

Since the fiscal year ended March 31, 2012, we have been continuously executing a voluntary action plan that mainly focuses on monitoring, and we will continue to make efforts in controlling the emission of VOCs.

#### Changes in VOC Emissions



#### **Green Procurement**

We are committed to our Green Procurement Basic Policy stated below, and procure as much as possible "green" products and services, which have lower environmental impacts.

We have set a target of 100% use of green printing/copying paper and stationery in the headquarters and site admin offices, and achieved 100% and 99.8%, respectively, in fiscal 2014.

#### **Green Procurement Basic Policy**

- Consider thoroughly the necessity of products, services and construction before purchasing or starting them.
- Give priority to environmentally friendly products and services as much as practicably possible. In construction work, make every effort to reduce environmental impact.
- Actively cooperate and engage with suppliers and contractors to preserve local and global environment.

## Waste Reduction

We dispose of industrial waste resulting from our business activities appropriately and in accordance with the law.

We are also working to reduce waste and cooperating with waste disposal companies to collect, separate and recycle our waste. As for some of the oil waste generated by our production sites and metal scraps being disposed of by our steel workshop, we outsource the disposal to specialists for recycling.

In addition to having each office separate its waste, we participate in the Zero Emission System ZERO21\* operated by Midori Anzen Co., Ltd. by collecting used hard hats, work clothes, safety shoes and the like.

\* A system under which collected hard hats and metal parts are recycled as raw materials for plastics and metals. Other collected items are dissolved in a high-temperature furnace and reused as industrial gas, raw materials, construction materials and the like after being separated into gas, sulfur, mixed salt, metallic hydroxides, metals and/or slag.

## Waste Generation by Operations in FY 2014

waste Generation by Operations in FY 2014			(Unit: t)
	General waste	Industrial waste	Total
Office	63	137	200
Exploration Div.	0	0	0
Drilling Div.	0	13,652	13,652
Production Div.	28	2,655	2,683
Transportation Div.	0	0	0
Total	91	16,444	16,535

## Preventing Leaks of Pit-Wastewater and Crude Oil

To prevent pollution due to pit-wastewater and crude oil leaks from our production sites and plants, we design and install our facilities and have in place operating manuals based on our risk assessment (hazard registration). In addition, the hazard registration is reviewed periodically to provide for appropriate operation management, and we have in place a check system to address deterioration of facilities over time and changes in operations and other environmental factors.

We have in place an operating structure under which we monitor facility operations using 24-hour remote systems and patrols, so that even in the event of an accident any leakage can be minimized.

## Regulatory Leak Reports (Pit-Wastewater and Crude Oil)

		The second secon	
	2012	2013	2014
Cases	3	2	1
Leakage amount (kl)	Approx. 9.9	Minute amount	Minute amount

## Natural Gas Pipeline Maintenance and Management

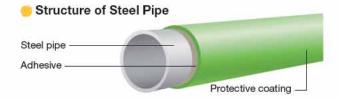
### Steel Pipes with High Tensile Strength

JAPEX uses high-tensile-strength steel pipes, which can withstand distortions and impacts and have a high safety record, in the construction of our natural gas pipelines. Designed to withstand major earthquakes, these pipes have demonstrated their reliability during the Miyagi Prefecture Offshore Earthquake and the Niigata Prefecture Chuetsu Earthquake.

As a result of the Great East Japan Earthquake, damage was found in part of the ancillary ground facilities that manage the natural gas pipeline between the cities of Niigata and Sendai. However, the pipeline itself maintained its integrity and within 12 days following the earthquake, provisional repair was completed, which contributed toward a quick recovery in terms of supplying natural gas to Sendai City and recommencing the operation of the thermo-electric power plant.

### **Anticorrosion Technologies**

Our underground pipes are doubly protected by an anticorrosion coating and an electrolytic anticorrosion system. By these measures, they are protected from the risk of natural corrosion and have a virtually permanent lifespan.



## Monitoring System

The flow rate and pressure of natural gas channeled to local distribution companies (LDCs) and other customers are monitored on a 24-hour basis using remote monitoring and control systems. Other measures include patrols by the staff along the entire length of the pipeline, regular maintenance



and inspection, as well as placing security tags and sign posts where appropriate.

Nagaoka Pipeline Monitoring Center

# **Integrity and governance**

JAPEX practices highly efficient and transparent management under its governance structure. In addition to complying with domestic and overseas laws and regulations and international standards, we respect human rights and meet the highest ethical standards.

## Corporate Governance

### Basic Concept

The Company recognizes the importance of corporate governance to earning profits through efficient management and remaining a company that is beneficial to society. We have in place and are enhancing our systems in this regard. For example, we employ an executive officer system, have appointed two outside directors, have in place an Internal Audit Division and conduct effective audits.

At JAPEX, with respect to management by the representative directors and executive officers who are familiar with and responsible for their duties, we have, as a company that employs an auditor system, secured a supervisory function that audits the execution of important duties. Also through the system in which outside directors have an advisory and supervisory role, decision-making is done in an appropriate manner.

### Corporate Governance Structure

## Board of Directors and Executive Committee

JAPEX's Board of Directors holds regular meetings once a month to make decisions on execution of important duties and supervise the execution thereof based on the reports from directors and executive officers.

In order to speed up the decision-making, an Executive Committee comprising directors based at the headquarters and the like makes decisions on matters other than those to be resolved by the Board of Directors, and holds discussions to assist in the decision-making by the Board of Directors. The meeting of the Executive Committee is held twice a month generally and otherwise as necessary.

## Board of Corporate Auditors and Corporate Auditors

JAPEX is a company that employs an auditor system. The corporate auditors attend the Board of Directors meetings.

Full-time corporate auditors attend meetings of the Executive Committee and other important meetings, as well as exchange opinions as necessary with various directors and executive officers that are responsible for business execution.

The Board of Corporate Auditors receives reports on the status of accounting audit from accounting auditors as needed. Also, the corporate auditors receive internal audit reports from the Auditing Department, and full-time corporate auditors receive reports regarding the status of auditing on a regular basis.

#### Internal Control System

JAPEX has an Internal Control Committee that deliberates on policies regarding the internal control system and formulates basic internal control plans. The Auditing Department is in charge of assessing improvements and operations based on such plans and periodically reports progress thereof to the committee. Through the above, systems to ensure appropriate duties are inspected and improved, and their results are disclosed through internal control reports.

### Remuneration for Directors and Corporate Auditors

Compensations for JAPEX's directors and corporate auditors are decided as stated below:

- Monthly salary: up to the maximum amount as decided at the General Meeting of Shareholders;
- Bonus: based on the total payment amount for each business year as decided by the General Meeting of Shareholders;
- Monthly salary and bonus for directors: decided by the president in accordance with the resolution at a Board of Directors meeting; and
- Monthly salary and bonus for corporate auditors: decided through consultation among corporate auditors.

At a General Meeting of Shareholders on June 24, 2015, the decision was reached to discontinue retirement benefit systems for directors and corporate auditors as of the conclusion of that meeting.

## Corporate Governance Structure



## Information Security

JAPEX is aware that it is important to manage information appropriately and safely, and use it efficiently.

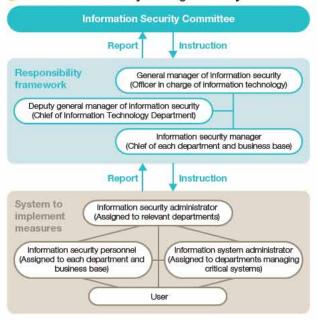
To this end, considering it important to establish the organization-wide system, we set up the Information Security Committee.

The committee established the information security management system by formulating the Information Security Basic Policy in December 2012, and the Information Security Measures Standards in May 2013.

JAPEX is working to review and improve technical countermeasures against constantly advancing cyberattacks on a continuous basis.

With implementation of periodical education and awareness campaigns, we are striving to increase awareness of information security.

### Information Security Management System



## Fair Trade with Suppliers and Contractors

With the basic policy of procurement established, JAPEX conducts procurement activities in accordance with the following principles.

## **Providing Fair Opportunities**

We, in principle, conduct procurement activities through fair and impartial competition, providing opportunities to not only suppliers and contractors who have worked with us but also those who have a good reputation and a potential to become a partner. For selection of suppliers and contractors, we fairly and comprehensively compare and evaluate qualities, prices, delivery times, technical abilities, reliabilities, financial conditions and other factors to make economically rational decisions.

## Balancing between Competition and Cooperation

We aim at mutually beneficial win-win relationships with suppliers and contractors through fair and impartial procurement activities. In actual transactions, we evaluate suppliers and contractors in view of punctuality and quality of their products and services and seek to maintain favorable and long-term relationships with business partners who have established time, quality and safety management systems.

## Compliance

In procurement activities, we comply with relevant laws and regulations, their spirit, and social ethics and norms, and ask suppliers and contractors to comply with the same. We do not make any business deal which is contrary and harmful to our social confidence. We will maintain a stable and safe business environment in corporation with our business partners.

# ntegrity and governance

## Compliance

## **Basic Policy**

In addition to laws and regulations relating to its business, the JAPEX Group complies with conventional wisdom and social norms. To ensure that compliance is firmly entrenched in our corporate culture, we also call upon all our executives and employees to act ethically and with integrity in both their personal and professional lives.

### Compliance Systems

We have established an Internal Control Committee to deliberate policies on systems for ensuring the Group conducts its operations in an appropriate manner and verify facts related to compliance infractions.

Furthermore, we have produced a Compliance Manual and a collection of cases, disseminated them to officers and employees of JAPEX and its subsidiaries, and implemented training as needed, in an effort to increase awareness of compliance. In addition, systems of reporting and consultation on compliance have been established. When a violation related to compliance occurs, the Internal Control Committee verifies it, and formulates preventive measures against reoccurrence. Internal audits confirm whether the measures continue to be operated or not.

## Compliance and Other Education

The Company considers CSR, compliance and prevention of insider trading to be three items that employees must remain aware of in their everyday operations, and provides regular training opportunities in these areas.

In the fiscal year ended March 31, 2015 (fiscal 2014), we held lectures on these three topics during new employee training and career training stratified according to rank.

#### **Prevention of Bribery and Corruption**

The JAPEX Group Code of Conduct calls for us to maintain sound and normal relationships with politicians, political parties and government agencies/officials. Based on this policy, our Compliance Manual stipulates compliance with the National Public Service Ethics Act and the Unfair Competition Prevention Act. Accordingly, the code prohibits the provision of unfair economic advantage to civil servants and calls for thorough compliance by all executives and employees.

For the fiscal year ending March 31, 2016 (fiscal 2015), we have also set ourselves the task of ascertaining bribery risks overseas and, to prevent this risk from materializing, of formulating and considering the formation of operating systems.

The Company does not make political contributions.

#### Respect for Human Rights

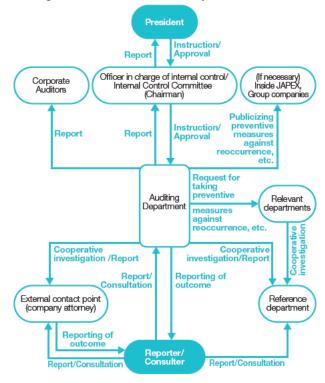
The JAPEX Group Code of Conduct provides for actions on which stakeholder awareness is particularly high, including respect for human rights and prevention of discrimination and harassment. Based on this code, the Compliance Manual provides for specific compliance with the Universal Declaration of Human Rights and International Covenants on Human Rights, and we perform ongoing awareness activities in this regard at training.

The rights of indigenous peoples and the respect for their cultures and customs is extremely important. JACOS has put in place a system that incorporates the views of aboriginal people and pursues business in cooperation with them. In recognition of these efforts, in 2014 the Canadian Association of Petroleum Producers presented JACOS with the Responsible Energy Award. During fiscal 2014, the Company was subject to no consultations and received no notifications with regard to human rights.

#### Reporting and Consultation Systems

The Auditing Department receives reports and consultations on all compliance-related items in the Compliance Manual, and departments in charge of products receive reports and consultation on compliance-related items, depending on the project. We have also established the JAPEX company attorney as an external contact point. In fiscal 2014, we received no reports or consultations.

## Diagram of Contact Points for Report and Consultation



As a corporate citizen, JAPEX endeavors to be a company that earns the trust of society through various contribution activities and continuous dialog with local communities.

## **Developing in Partnership with Local Communities**

## Garraf Vocational Training Center

JAPEX, together with PETRONAS, the operator of the Garraf Contract Area, has been providing residents of the Garraf Contract Area with free-of-charge training programs conducted by the Garraf Vocational Training Center (GVTC). The GVTC was constructed using Grant Assistance for Grass-Roots Human Security Projects provided to the operating NGO by Japan's Ministry of Foreign Affairs and started operations in July 2012. Securing employment is a major concern in the Garraf community, where the unemployment rate is reported to be high due to lack of opportunity and education. In the recruitment phase, the GVTC mainly targeted unemployed youths, and has been providing them with training courses in respect of 11 different skills, including English, electrical wiring, maintenance of refrigerators and air conditioners, carpentry, welding, masonry, scaffolding, sewing, hair styling and first aid. To date, there are more than 1000 GVTC graduates, and a survey conducted in mid-2014 revealed that around 20% of them were successfully employed within six months from their graduation. As such, the Garraf community has great expectations for the GVTC.

# Kangean Project Contributing to the Local Community

Kangean Energy Indonesia Ltd. (KEI) has been conducting production activities in the Kangean Block in the Republic of Indonesia. KEI also engages in a variety of contribution activities for the sake of local communities on Pagerungan Island, where the oil and gas production facilities are located. This island has a population of around 6,000 people, and it is located 200 km north of the island of Bali. KEI has supplied free electricity to islanders from the production facility's power generation plant. In addition, the company provides monetary donations each year. Physicians on the production site are sent to offer free medical care at a local clinic. KEI subsidizes the construction and maintenance of local schools. Furthermore, the company has donated ice-making machines to stimulate local fisheries and built a soccer court for the recreation of local residents.

As part of its continuing efforts to ensure that there are no power supply problems in the future even after oil and gas production ends on the island, KEI invested approximately 2.6 billion Indonesian rupiah (equivalent to around ¥24 million) in 2014 to install a power generator and electricity supply facilities. In addition, in 2014 KEI engaged in the construction of roads, repaired a local mosque, supported the education of students and instructors, provided sporting equipment, supplies infant nutritional supplements, conducted afforestation activities and provided livestock.



Training in electrical wiring



A sewing class



Installing the power generator



Repairing the mosque

## Volunteer Activities Related to the Great East Japan Earthquake

In an effort to support the emotional well-being of children in the disaster-affected region, each year since 2012 the Akita District Office has invited junior high school students from that area to visit and mingle with local children. For the third such event, in 2014 we invited 12 junior high school students from the town of Minamisanriku in Miyagi Prefecture and 17 from the town of Shinchi in Fukushima Prefecture to Akita during their summer holidays. These children and local junior high school students from Akita, a total of 60 children, attended a two-day softball training camp, staying over one night. Training took place at Akita Skydome, located within the city. Children in the training camp formed six teams and took part in a round-robin competition, thereby strengthening relations.



Softball training camp participants

## **Traffic Safety Volunteer Activities**

Three days a week, volunteers from the Nagaoka District Office act as guides at crossroads without traffic lights to help ensure the safety of local elementary and junior high school students as they travel to school.

Through this activity, we are contributing to the community as a company and helping to protect children, who are vulnerable in traffic situations. Some 2,000 employees have taken part since 2011, when we began protecting children as a way to boost employee awareness of traffic safety.

The children's cheerful morning greetings are a major motivator for continuing with the activity. Hearing a child's hearty "Good morning!" provides a positive start to the day.

Interacting with this youthful energy helps raise awareness of the need for protecting the safety of children on their way to school and instills a deeper awareness of making people a traffic safety priority.



Letters of appreciation from elementary school students

## comment

The children's cheerful greetings bring a smile to my face.

Tazuru Nishiyama Drilling Operations Group, Technical Dept. Nagaoka District Office

I started volunteering as a traffic guide through the encouragement of colleagues within my department. The more times I stand at the crossroads, the better I can remember the children's faces and begin to recognize their personalities: the boy who always stands at the front of the line and pulls other children across as he crosses, the child who always walks as though she's still half asleep, and so on. I do this volunteer activity early in the morning, before work, but the cheerful greetings children return to me brings a smile to my face and gives me a lift as I make my way to work.

# **Local Community Safety Patrol**

Since 2006, Japex Pipeline Ltd. Natori Maintenance Office has been offering a community patrol service, under which its four patrol vehicles with crime prevention stickers conduct routine patrols on the Niigata-Sendai gas pipeline routes.

Crimes against socially vulnerable people including children are increasing, and as a company that is closely knit with the local community, we are happy to play a part in keeping a safe environment in cooperation with the police, the local authorities and the schools, by keeping an eye on the children's safety and looking out for anything

unusual on the streets.

We believe this activity provides a sense of security to the local residents as well as effectively prevent crimes. We will continue to do our best to contribute to the local communities.



Local community safety patrol

## As a Member of Local Communities

We are actively involved in local events wherever we operate, in an effort to ensure local communities obtain a deeper understanding of the Company's activities. In addition to hosting oil and gas field tours for local government bodies, businesses, and other organizations, 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.

We also actively participate in local festivals. For example, Shirone Gas Co., Ltd., a Group company, enters the Shirone Giant Kite Battle every year in the city of Niigata (formerly Shirone) with a huge kite bearing the company's name. Geophysical Surveying Co., Ltd. also participates in the Mitsuke Imamachi & Nagaoka Nakanoshima Giant Kite Battle.

## Principal Festivals in Which We Participate

### Tomakomai Port Festival in the city of Tomakomai, Hokkaido

Dancing in the local parade

#### Akita Kanto Festival in the city of Akita, Akita Prefecture

Bearing bamboo poles festooned with lanterns, some with the Company's logo

## In Niigata Prefecture, Nagaoka Festival in Nagaoka, and Katakai Festival in Katakai-machi, Ojiya

Providing large fireworks and participating in the Nagaoka Festival folk dance



Tomakomai Port Festival



Kanto Festival



Nagaoka Festival



Mitsuke Imamachi & Nagaoka Nakanoshima Giant Kite Battle

## **Building Good Relationships with Stakeholders**

## Tours of the JAPEX Research Center for Shareholders

In January 2015, we invited shareholders to a tour of the JAPEX Research Center situated in the city of Chiba, Chiba Prefecture. We have held similar tours annually since 2007. Several hundred people applied to take part in this tour, which was held over a two-day period, exceeding our quota of 60 shareholders.

Participants received a brief overview of JAPEX's main activities, while our frontline engineers explained cutting-edge technology. JGI, Inc. treated shareholders to a demonstration of geophysical exploration. Tour members also had the chance to experience artificial vibration caused by a vibrator truck.

# Shirone Gas Holds Gas Exhibition in 2014

Shirone Gas Co., Ltd. held a gas exhibition on the weekend of October 18–19, 2014. One thousand and several hundred people attended the two-day exhibition.

Gas equipment was on display at the exhibition, themed on "recent development, safety and peace of mind." In addition to selling products at discounted prices, the exhibition featured a variety of events to entertain participants.

Part of the venue, Tsubame area, was divided into "shooting gallery," "diecutting" and "fire extinguisher experience" corners, while the Shirone hall had a "whack-a-mole" corner, making the event enjoyable for parents and children alike.

Tsubame area also had stalls offering inexpensive local foods such as *Ajisai Champon* and *manju* confections.



Tour underway



Vibrator trucks at work



Shooting gallery

# comment

I was gratified by the extent of shareholders' expectations of us.

Sayaka Kishida Corporate Legal Group, Administration Dept.

The shareholder tour is an important opportunity for us to interact with shareholders in a forum outside the General Meeting of Shareholders. We thought up a program designed to enhance shareholders' understanding of our operations, as well retain their interest. Participants rewarded us with such warm comments as "The explanation was easy to understand, and your sincerity came through clearly," "I thought the plan was extremely well laid out in helping us understand an overview of the Company, its businesses and future potential," and "Please do your best—for the sake of energy development in Japan!" The tour gave me a sense of how great their expectations for JAPEX are, and this gave me added motivation for my work.

## Policy on Product Responsibility

In selling oil and natural gas to customers, JAPEX is committed to a safe and stable supply of products that comply with laws, regulations, government decrees, ordinances, and voluntary standards related to products, which customers can use with peace of mind. With a good understanding of our products, we conduct safety and quality control and provide necessary information to customers and people in local communities. Should an emergency arise, we will deal efficiently with the situation in close cooperation with inside and outside concerned parties, while quickly providing pertinent information to our customers.

## **Product Quality Control**

JAPEX produces oil and natural gas from fields in Japan. Our crude oil is provided as a feedstock to refineries and used to fuel factories, while the natural gas we provide is used in industry and supplied to households via city gas providers. Crude oil deliveries and natural gas supply via pipelines are subject to checks under related regulations, sales agreements and our own voluntary standards.

For example, water and other impurities are removed from crude oil and natural gas by processing plants at production sites. We regularly analyze samples to ensure appropriate levels of safety and quality are maintained. We also issue safety data sheets (SDSs), which disclose to customers information regarding hazardous materials, constituents and handling.

We have built a safety management system to prevent leakage at every stage, including production, storage and transport. We regularly conduct drills involving the tanker trucks and ships used to transport oil and LNG, as well as natural gas pipelines. We also prepare manuals on accident prevention, provide outsourced transportation companies with information on transport safety and work with other companies to supplement our products and ensure supply stability in the event of an emergency.

## Working Together to Understand Customers' Needs

Representatives from JAPEX's headquarters and district offices work together to find optimal solutions that meet the various needs of customers. To give customers peace of mind when using our products, we not only strive to provide stable supplies and safety management, but we also focus on explaining the Group's products and business activities to customers. Such efforts include providing information and on-site tours of oil/gas fields and facilities.

Striving to supply products that satisfy customers, we respond to customer feedback by making prompt and appropriate improvements, as well as sharing information among the relevant offices and representatives.

### Working Together on Crude Oil Sales

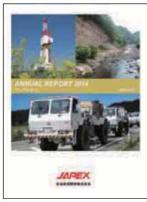




# Timely and Appropriate Information Disclosure

We disclose corporate information appropriately and promptly in accordance with Tokyo Stock Exchange's disclosure rules. We also hold meetings with institutional investors and analysts and briefings for the mass media.

For shareholders and investors, Annual Report and Business Report (semiannual for shareholders) are issued, and various documents are disclosed on our website to provide information. Like this, we strive to make opportunities to receive frank opinions about JAPEX.





Annual Report

Business Report

## Involvement in National Policies

Development of oil and natural gas is considered to be one of the highest priority issues in national policies. We intend to contribute to society by achieving our mission, which is the stable supply of oil and natural gas. Based on the above, we have been proactively involved in the formulation of national policies through participation in study groups and discussion groups of industry groups, such as of the Japan Petroleum Development Association and Japan Natural Gas Association, and the government.

In fiscal 2014, JAPEX, through industry groups, submitted a number of documents to the Agency for Natural Resources and Energy, such as a "Policy and Budget Request Submission" and "Tax System Submission." Other activities directed at realizing the stable and inexpensive supply of energy included submitting a proposal on making the gas business more effective and efficient to the government committee charged with reforming Japan's gas system.

We will continue making efforts to contribute toward realizing national policies, while maintaining sound and highly transparent relationships with governmental and administrative agencies.

## Internship/Support for Foreign Engineers

To support students' efforts to increase their level of specialization and support them in their choices, we accept student interns at our business offices in Japan and overseas, JAPEX Research Center, oil and gas fields, and sites of geophysical survey by JGI, Inc. In fiscal 2014, we provided practical training at domestic production fields and on-the-job training for legal affairs and other corporate businesses at the head office for a week to a month to a total of 32 students—10 more than in fiscal 2013—including 27 university (undergraduate and graduate) students, one college of technology student, one high school student, and three foreign adult students. Some of training programs can be certified as a credit in university.

Furthermore, as outside educational activities, we send lecturers to foreign engineer support programs, special technology courses, project seminars, and programs to learn

fundamental knowledge on petroleum mining, which are held by JOGMEC, as well as petroleum seminars conducted by the Japan Petroleum Development Association.



Student interns

# Partnership between Industry and Academics

Today, world energy demand has been increasing more and more and the development of new hydrocarbon resources such as shale gas has been advancing.

JAPEX established four courses at universities at its own cost in fiscal 2007, in order to contribute to the development of energy resources by supporting the universities. Among such courses, a course named "JAPEX Earth Energy Frontier Research" continues to this day at Hokkaido University and research on coalbed methane and shale gas is progressing.

Through joint research and dispatching of instructors to universities, we will continue to support research related to advanced technologies for resource development and aim to foster human resources who will carry the future of our industry.

## **Major Commendations**

The JAPEX Group and its employees have received commendations in recognition of mine security activities, studies of new technologies, social and other activities in various fields.



National Award for Mine Safety



METI Minister's Award for Explosives Safety Ceremony

# **Investment with Consideration to the Environment and the Society**

With respect to major investment cases, JAPEX identifies not only profitability and technical issues but also actual and potential environmental and social issues as subject to assessment.

The investment evaluation process is carried out step by step starting from consideration by the responsible division, and the decision-making procedures are performed after going through the Investment Evaluation Committee. After evaluating risks and methods for solving such risks, if it is determined that such risks cannot be eliminated, the consideration of an investment will be suspended halfway.

When it is finally decided that the project should move forward, we then strive to minimize the environmental impacts through initiating environment impact studies and the like.

## Major Commendations in FY 2014

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National Award for Mine Safety	Mining Division Nagaoka District Office Katakai Mine
Mine Safety Promotion Council	Mining and Site Division Akita District Office Sarukawa Mine, Nagaoka District Office Mitsuke Mine
Chairman's Award	Individual Division 2 employees of JAPEX
METI Minister's Award for Explosives Safety	Outstanding office Geophysical Surveying Co., Ltd. Nagaoka Branch
Engineering Advancement Association of Japan	Engineering Commendation Award Jointly received by JOGMEC, JAPEX and five other companies for the JAPAN-GTL Demonstration Test Project
The Japanese Association for Petroleum Technology	Editorial Prize Received by a team of three JAPEX employees for " Tight Oil Potential in Japan "
Award from the Japan Gas Association	Shirone Gas Co., Ltd. "Improvement of Branch Piping to Individual Households"
Niigata Prefecture Governor's Award for Traffic Safety	Excellent Traffic Safety Business Office Nagaoka District Office
Special Task Force for Upstream Oil and Gas Business Activities of the Republic of Indonesia	Journey to Zero Incident Award 2014 Kangean Energy Indonesia Ltd( KEI)
Canada Association of Petroleum Producers	Responsible Canadian Energy, Social Award Japan Canada Oil Sands Limited (JACOS)

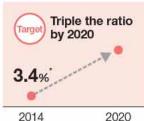
# The Employer of choice

To create a base of an organization with diverse human resources that generates value through global business activities, we aim to create a workplace where a variety of people can work energetically.

## **Diversity Promotion**

Since the fiscal year ended March 31, 2014 (fiscal 2013), we have been holding courses offered by companies that are successful in promoting diversity and continued to provide training related to childcare and nursing care. In addition, in March 2015 we established a new group in the HR department, the Diversity Promotion Group, which is dedicated to promoting activities related to corporate diversification. In addition to ongoing efforts to recruit and promote women, foreigners and other diverse

## Women in Management Positions



Note: As of October 2014

human resources, we are working to foster skills among all employees. To this end, we have proactively revised our human resource systems. We also conduct training on diversity, work-life balance and career development, hold awareness events and conduct activities aimed at promoting a corporate culture that respects diversity.



Career session by female managers

## Initiatives for Training Global Human Resources

We are undertaking a number of initiatives aimed at building a foundation of global human resources to accommodate the overseas shift of our operations. We have created a number of programs to achieve this, such as overseas assignments, which include study at graduate schools and training at overseas offices or educational institutions. We also provide training covering topics such as contracts and negotiation skills, as well as English language education and various other programs.

District offices are taking part in English language training efforts, which should help to raise English skills throughout the Company.

## Overseas Training Courses in Fiscal 2014

	Participants
Overseas graduate schools	2
OJT at offices	10
Specialized training at educational institutions	8
English language training	4
Training to build a foundation of global human resources	615
English language training	353
TOEIC, SW, Bridge test takers	305

## comment

We are working to create an environment in which everyone can fully leverage their abilities.

Sachiko Oba Manager, Diversity Promotion Group, Human Resource Dept.

The words "diversity promotion" may initially conjure up the idea of "women's activities" or "promoting women." Women are clearly one of our most important targets for diversity promotion activities. However, such activities are not limited to promoting women. Our efforts also focus on senior employees, employees who are foreign nationals and ongoing initiatives aimed at creating an environment where everyone can work actively, regardless of gender, age or nationality.

As the Company becomes more diverse, we encounter many situations where sudden personal and business needs must be balanced. As a result, personnel and organizational management are likely to become much more difficult. To achieve these goals, all our employees, including executives and managers, need to respond to changes in everyday business processes and management as they arise in order to meet the needs of both the Company and individuals. Throughout the Company, I believe we need to think hard and come up with good ideas for bringing about true diversity, and I believe that creating an organization that is highly flexible is necessary for dealing with fluctuations in our business environment. Personally, I was a mid-career hire, and I am working while raising children, so my working time is limited. With this perspective, I aim to do my best to promote diversity at JAPEX.

## **Personnel Policy**

In order to establish a workforce capable of supporting the expansion of overseas businesses and the enhancement of technological ability while steadily conducting domestic businesses, we improve HR policies and human resource development systems. We also work to create the working environment in which employees can work energetically with high motivation and spirit of challenge.

- Core Issues 1. Respecting employee diversity
  - 2. Creating a fair and rewarding workplace
  - 3. Human resources development and training

## 1. Respecting Employee Diversity

JAPEX works actively to be an organization that accepts and harnesses differences in attitudes, values, and behavior patterns based on gender, nationality, age and other attributes. We seek to create a framework that brings out the full potential of each individual employee. At the same time, we strive for diverse human resources through the recruitment of women and foreigners, with the aim of enhancing the organization's strength.

### Targets for Women in Management Positions

In October 2014, we established a voluntary action plan with the objective of tripling the percentage of women in management positions by 2020 from 3.4% as of October 2014. In April 2015, we hired five new female graduates to career track positions, and we plan to continuously recruit highly skilled women, including new graduates and midcareer personnel, as we strive to promote qualified people to management positions regardless of gender.

### Recruitment

In recent years, we have been recruiting approximately 30 new graduates annually. We endeavor to recruit outstanding graduates irrespective of gender or nationality. With the expansion of our businesses, we are also hiring mid-career employees throughout the year.

In fiscal 2013, our employment of people with disabilities fell below the statutory employment rate. However, due to proactive recruiting efforts in fiscal 2014, this figure rose to 2.03% as of March 31, 2015.

In fiscal 2014, JAPEX's job turnover rate (resigning for personal reasons/the total number of employees) was 0.72%.

### Breakdown of Work Force (JAPEX)

As of March 31, 2015

	Male (people)	Female (people)	Total (people)	Average age (years old)	Average length of service (years)
Employee	756	130	886	39.83	17.59
Temporary staff		_	183		

## (Consolidated)

Unit: people

Employees	Temporary staff
1,818	494

## Management Position Ratios

(JAPEX)

As of the end of each fiscal year

	2012	2013	2014
Male (people)	327	317	317
Female (people)	11	10	12
Total (people)	338	327	329
Percentage of women (%)	3.3	3.1	3.6

### Number of Employees Hired from April 2014 to March 2015 (JAPEX)

		New graduates		Mid-career staff			Total	
		Male	Female	Subtotal	Male	Female	Subtotal	iotai
	Office	8	1	9	7	5	12	21
Business staff	Div.	4	1	5	0	0	0	5
	Development Div.	16	0	16	4	1	5	21
Associate	staff positions	0	2	2	0	0	0	2
Total		28	4	32	11	6	17	49

## Changes in the Employment Rate of People with Disabilities

(JAPEX) As of the end of each fiscal year

	2012	2013	2014
Employment rate (%)	1.75	1.57	2.03

# The Employer of choice

## Re-employment Rate (Includes Re-employment of JAPEX Retirees in Group Companies)

	2012	2013	2014
At mandatory retirement age (people)	15	19	25
Re-employed (people)	14	17	24
Re-employment rate (%)	93.3	89.5	96.0

### Number of Employees Hired over the Last Three Years and Employees Taking Resigning for Personal Reasons (JAPEX) As of March 31, 2015

Fi	Fiscal Year Hired		2013	2014
University	Business staff positions	20	22	23
& Graduate Schools Associate staff positions		0	0	0
Vocational	Business staff positions	7	3	6
Schools	Associate staff positions	3	2	2
Hired during the year		30	27	31
Retirees for	personal reasons	0	0	0

## 2. Creating a Fair and Rewarding Workplace

JAPEX is aiming to create a work environment in which each and every employee can work comfortably while striking a work-life balance. We are revising our current systems and proactively undertaking new initiatives to this end.

#### Work-Life Balance

During the three months from July through September 2015, we ran a "summer workstyle campaign," in which we sought to raise corporate awareness of work-life balance by improving overtime working hours and the Company's efforts to create corporate culture in which employees whose spouses are also working can continue working while providing nursing care or raising children.

## **Campaign Content**

- (1) Allowing voluntary choice of early morning work hours
- (2) In principle, prohibiting work after 9 p.m.
- (3) Encouraging communication and concentration times
- (4) Encouraging people to take paid vacation days by establishing recommended Company holidays
- (5) Holding time management seminars
- (6) Setting up an in-house blog related to working styles

# Revising Our Human Resource Systems Related to Working Style and Career Continuation

We have begun revising our human resource systems to foster an environment that is more accommodating to employees, both men and women, whose spouses are also working, and an increasing number of people who are working while raising children or providing nursing care. We plan to continue making improvements to our systems based on the results of our initiatives even after our "summer workstyle campaign" concludes.

## Use of Supportive Measures for Childcare and Nursing Care

(JAPEX)						
			2012	2013	2014	
Childcare lea	ve	(people per year)	5	10	15	
Percentage r to work	eturning	(%)	100	100	100	
Retention rat	е	(%)	100	100	100	
Reduced wo hours for chil		(people per year)	16	16	22	
Nursing care	leave for	(people per year)	40	37	55	
children		(days per year)	97.0	104.5	196.5	
Staggered of hours for chil		(people per year)	••••••	*************	1	
Nursing care	leave	(people per year)	0	0	0	
Reduced wo hours for nur		(people per year)	0	0	0	
Days off for r	nursing	(people per year)	1	5	6	
care		(days per year)	3.0	19.0	26.0	
Staggered of hours for nur		(people per year)	•••••	•••••	0	
Percentage ta		r of employees returning to work after care leave during a fiscal year			–× 100	
		e number of people expecting to return to work				

Percentage returning to work after taking childcare leave during a fiscal year

The number of people expecting to return to work during a fiscal year after taking childcare leave

Out of the employees returning to work in the previous fiscal year after taking childcare leave, the number who remained employed as of March 31 of the current fiscal year

The number of employees returning to work after taking childcare leave.

\*\*The number of employees returning to work after taking childcare leave.\*\*

The number of employees returning to work after taking childcare leave.

\*\*The number of employees returning to work after taking childcare leave.\*\*

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The number of employees returning to work after taking childcare leave.

The number of employees returning to work after taking childcare leave.

## Number of Days of Paid Leave Taken (Includes Special Leave) (JAPEX)

	2012	2013	2014
Paid leave per year (days/person)	13.4	12.6	12.9
Uptake (%)	67.0	63.0	66.5

## **Management by Objectives System**

JAPEX is reforming its human resources system to create a fair and rewarding workplace, and we have revised our personnel systems to this end.

As part of this effort, in fiscal 2014 we introduced a management by objectives system. This system invigorates communication between superior and subordinate and encourages an autonomous and proactive approach to achieving goals, with employees making a strong commitment to attaining their own challenging objectives.

We are working to provide systems that foster individual skills and contribute to career development through activation of the PDCA cycle. The PDCA cycle confirms whether objectives have been realized, and where necessary provides support for improvements and early intervention.

### Welfare Program

To provide lifestyle support for its employees by offering housing for employees who are relocating and those with families, JAPEX owns residential buildings for employees with family and dormitories for single employees (11 buildings, including three residential buildings for married employees and eight apartment buildings for single employees).

In addition, one of our residential buildings in the Tokyo area has guest rooms. These multipurpose facilities, which are equipped with home appliances, cooking utensils, dishes and other items are available to all employees, with priority given to people leaving Japan or returning from overseas assignments or employees on home leave back in Japan.

JAPEX is also enrolled in welfare membership services that employees can select and make use of according to their needs.

## JAPEX's Residences and Dormitories

As of March 31, 2015

	General residence	Bachelor dormitory
Tokyo	100 households (Musashino city)	84 rooms (Chofu city)
Hokkaido		84 rooms (Tomakomai city)
Akita	•••••	63 rooms (Akita city, Oga city)
Niigata	29 households (Nagaoka city)	105 rooms (Nagaoka city, Niigata city, others)

Note: In addition to the above, we provide rental Company housing close to each business facility.

#### **Communication with Labor Union**

JAPEX has established a sound labor–management relationship based on mutual understanding and trust through ongoing, proactive communication between employees and management.

We discuss management-related issues, matters related to employees' safety, accidents and disasters, and verification of personnel systems with the labor union on a regular basis.

Each district office holds the production council and security meetings to proactively exchange opinions in each region. In March 2012, the "labor–management joint declaration on proper management of working hours" was made with the goal of the proper management of working hours and higher efficiency.

In fiscal 2014, we introduced a management by objectives system. To make effective use of the system, we are encouraging employees to exchange opinions without hesitation and cooperate so the system will be embraced by all employees.

Many of our employees are also members of the Japanese Federation of Energy and Chemistry Workers Unions and the Japan Confederation of Petroleum Industry Workers Unions. As of March 31, 2015, union members numbered 694 (JAPEX employees, including those dispatched to affiliated companies), accounting for 62.1% of employees.

# The Employer of choice

## 3. Human Resources Development and Training

### **Policy and Career Development System**

JAPEX introduced a career development system in fiscal 2014 to support individual employees' efforts toward personal skill development and fulfilling a work-life balance. To reinforce our operations in Japan and overseas, this system targets personnel development in three main categories: global leaders, who formulate strategy and promote business; business leaders, who manage function-specific organizations; and advanced specialists, who contribute to business through high levels of specialization. Based on career development guidelines, these personnel meet periodically with their superiors for career development consultations and select career development courses designed to help them achieve their human resource goals. This system is designed as an employee-driven educational effort, with supervisor support, to gain experience and education.

By encouraging highly skilled human resources through initiatives of this nature, we are working to leverage their strengths, which we believe will serve as a driving force for operational expansion.

## **Educational Programs**

We support individual career development by conducting specialist training within each department, as well as through training programs for all employees. Our programs include career design training, in which employees set their own future career goals; career stage training to enhance the

awareness of employee roles at each level of employment; e-learning focused on enhancing basic business skills; and English language education and overseas study opportunities to strengthen our personnel capable of conducting business overseas. We also provide elective training to foster overall employee capabilities in such areas as leadership and negotiation.

#### Career Stage Training Participants in Fiscal 2014

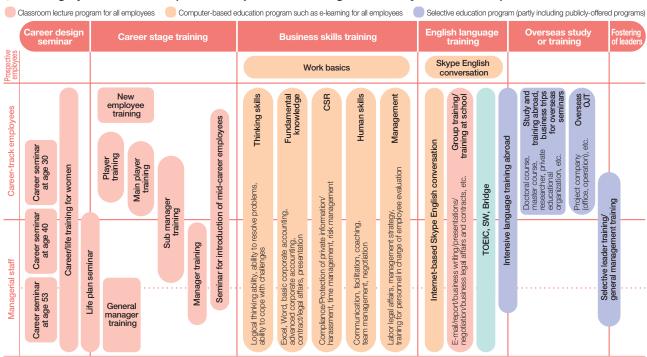
	Times	participants
New employee training	1	31
Player training (Young employees)	4	36
Main player training (Mid-career employees)	2	35
Manager training (Managers)	1	21
Total	8	123

## Average TOEIC Scores

As of the end of each fiscal year

	20	013 2014		14
	People retaining scores	Average score	People retaining scores	Average score
University backgrounds	467	691	482	701
Vocational school or high school backgrounds	320	274	333	279

#### Training System Overview (Excludes Specialist Training Provided by Each Division)



# **GRI Guidelines Reference Table (G4)**

## General Standard Disclosures (Index in accordance—Core)

Indicator	Disclosure	Pages
	and Analysis	. agos
G4-1	A statement from the most senior decision-maker about the strategy for addressing sustainability	P. 4–5
	tional Profile	
G4-3	Name of the organization	
G4-4	Primary brands, products, and services	
G4-5	Location of the organization's headquarters	
	Number of countries where the organization operates, and countries where either the organization has significant	P 2
G4-6	operations or that are specifically relevant to the sustainability topics covered in the report	P. 22
G4-7	Nature of ownership and legal form	
G4-8	Markets served (geographic breakdown, sectors served, and types of customers and beneficiaries)	
G4-9	Scale of the organization, including number of employees, number of operations and net sales	
G4-10	Total number of amplesces by amplescent contract and goods, the number of neumanent amplesces	P. 49–50
G4-11	Percentage of total employees covered by collective bargaining agreements	P. 51
G4-12	The organization's supply chain	P. 8
	Any significant changes during the reporting period regarding the organization's size, structure, ownership or its	
G4-13	supply chain	N/A
G4-14	Whether and how the precautionary approach or principle is addressed by the organization	P. 30, 33-37
G4-15	List of externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses	P. 27, 33, 36, 40
G4-16	Memberships of associations and national or international advocacy organizations	P. 46
	Material Aspects and Boundaries	
G4-17	All entities included in the organization's consolidated financial statements or equivalent documents	P. 3 Securities report
G4-18	Process for defining the report content and the Aspect Boundaries (Reporting Principles for Defining Report Content)	P. 9
G4-19	All the material Aspects identified in the process for defining report content	P. 10–11
G4-20	For each material Aspect, Aspect Boundary within the organization (scope of reporting)	_
G4-21	For each material Aspect, Aspect Boundary outside the organization (scope of reporting)	_
G4-22	The effect of any restatements of information provided in previous reports, and the reasons for such restatements	N/A
G4-23	Significant changes from previous reporting periods in the Scope and Aspect Boundaries	N/A
	der Engagement	
G4-24	Stakeholder groups engaged by the organization	P. 9
G4-25		P. 9
G4-26	The organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group	
G4-27	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has	P. 9 P. 12–19
Report P	rofile	
G4-28	Reporting period (such as fiscal or calendar year) for information provided	
G4-29	Date of most recent previous report	P. 3
G4-30	Reporting cycle (such as annual, biennial)	†
G4-31	Contact point for questions regarding the report or its contents	Back cover
G4-32	The "in accordance" option the organization has chosen (GRI Content Index)	_
G4-33	Organization's policy and current practice with regard to seeking external assurance for the report, including the scope and basis of external assurance and the relationship with the assurance providers	P. 53
Governar		
G4-34	Governance structure of the organization, including committees of the highest governance body	P. 38
	d Integrity	
G4-56	The organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	P. 2
Specific	Standard Disclosures	
Disclosu	res on Management Approach	
G4-DMA	Why the Aspect is material (impacts that make this Aspect material), evaluation of management methods and procedures	P. 6–7
Economi	I'	
	c Performance	
G4-EC1	Direct economic value generated and distributed	_
	9-11-11-1	1

Indicator	Disclosure	Pages	
G4-EC2	Financial implications and other risks and opportunities for the organization's activities due to climate change	_	
G4-EC3	Coverage of the organization's defined benefit plan obligations	N/A	
G4-EC4	Financial assistance received from government	N/A	
Market Presence			
G4-EC5	Ratios of standard entry level wage by gender compared to local minimum wage at significant locations of operation	_	
G4-EC6	Proportion of senior management hired from the local community at significant locations of operation	_	
Indirect E	conomic Impacts		
G4-EC7	Development and impact of infrastructure investments and services supported	P. 41	
G4-EC8	Significant indirect economic impacts, including the extent of impacts	P. 20–21	
Procurem	ent Practices		
G4-EC9	Proportion of spending on local suppliers at significant locations of operation	-	
Environm	ental ental		
Materials			
G4-EN1	Materials used by weight or volume	N/A	
G4-EN2	Percentage of materials used that are recycled input materials	N/A	
Energy			
G4-EN3	Energy consumption within the organization	P. 33	
G4-EN4	Energy consumption outside of the organization	P. 33	
G4-EN5	Energy intensity	_	
G4-EN6	Reduction of energy consumption	P. 33	
G4-EN7	Reductions in energy requirements of products and services	P. 33	
Water			
G4-EN8	Total water withdrawal by source	P. 31, 35	
G4-EN9	Water sources significantly affected by withdrawal of water	N/A	
G4-EN10	Total volume and percentage of water recycled and reused	P. 35	
Biodivers			
G4-EN11	Operational sites owned, leased or managed in areas of high biodiversity value (in, adjacent to or outside owned sites)	P. 34	
G4-EN12	In the above sites, significant impacts of activities, products, and services on biodiversity	P. 34	
G4-EN13	Habitats protected or restored	P. 14	
G4-EN14	Total number of IUCN Red List species and national conservation list species with habitats in areas affected by operations		
Emissions	'		
	Direct greenhouse gas (GHG) emissions (Scope 1)	P. 31, 33	
	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	P. 31, 33	
	Other indirect greenhouse gas (GHG) emissions (Scope 3)	P. 31, 33	
	Greenhouse gas (GHG) emissions intensity	_	
	Reduction of greenhouse gas (GHG) emissions	P. 33	
	Emissions of ozone-depleting substances (ODS)	_	
	NOx, SOx, and other significant air emissions	P. 36	
	and Waste		
G4-EN22	Total water discharge by quality and destination	P. 31, 35	
G4-EN23	Total weight of waste by type and disposal method	P. 31, 35	
G4-EN24	Total number and volume of significant spills	P. 37	
G4-EN25	Weight of transported, imported, exported, or treated waste deemed hazardous and percentage of transported waste shipped internationally (under the terms of the Basel Convention 2 Annex I, II, III, and VIII,)		
G4-EN26	Identity, size, protected status, and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	N/A	
Products	and Services		
G4-EN27	Extent of impact mitigation of environmental impacts of products and services	P. 20–25	
G4-EN28	Percentage of products sold and their packaging materials that are reclaimed by category	N/A	
	, , , , , , , , , , , , , , , , , , , ,	17/7	
Complian	Monetony value of significant fines and total number of non-manatary constinue for non-security		
G4-EN29	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	N/A	
Transport			
G4-EN30	Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	P. 31	

Indicator	Disclosure	Pages
Overall		, agos
	Total environmental protection expenditures and investments by type	_
	invironmental Assessment	
	Percentage of new suppliers that were screened using environmental criteria	_
G4-EN33	Significant actual and potential negative environmental impacts in the supply chain and actions taken	_
Environme	ental Grievance Mechanisms	
G4-EN34	Number of grievances about environmental impacts filed, addressed, and resolved through formal grievance mechanisms	P. 40
Social		
Labor Pra	ctice and Decent Work	
Employme		
G4-LA1	Total number and rates of new employee hires and employee turnover by age group, gender, and region	P. 49–50
G4-LA2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	P. 51
G4-LA3	Return to work and retention rates after parental leave, by gender	P. 50
Labor/Mai	nagement Relations	
G4-LA4	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	_
Occupation	nal Health and Safety	
G4-LA5	Percentage of total workforce represented in formal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	P. 51
G4-LA6	Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of work- related fatalities, by region and by gender	P. 29
G4-LA7	Workers with high incidence or high risk of diseases related to their occupation	_
	Health and safety topics covered in formal agreements with trade unions	P. 28
	nd Education	
G4-LA9	Average hours of training per year per employee by gender, and by employee category	_
G4-LA10	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	r. 52
	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	P. 52
Diversity a	and Equal Opportunity	
G4-LA12	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and others	P. 49
Equal Ren	nuneration for Women and Men	
G4-LA13	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operation	_
	ssessment for Labor Practices	l .
	Percentage of new suppliers that were screened using labor practices criteria	_
	Significant negative impacts for labor practices in the supply chain and actions taken	N/A
	ctices Grievance Mechanisms	D 40
Human Ri	Number of grievances about labor practices filed, addressed, and resolved through formal grievance mechanisms	1 . 40
Investmen		
G4-HR1	Total number and percentage of significant investment agreements and contracts that include human rights clauses or that underwent human rights screening	P. 40
G4-HR2	Total hours of employee training on human rights policies or procedures concerning aspects of human rights that are relevant to operations (percentage)	_
Non-discr		<u> </u>
G4-HR3	Total number of incidents of discrimination and corrective actions taken	P. 40
	of Association and Collective Bargaining	
G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated, and measures taken to support these rights	_
Child Labo		
G4-HR5	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	_
Forced or	Compulsory Labor	
G4-HR6	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures to contribute to the elimination of all forms of forced or compulsory labor	_

Indicator	Disclosure	Pages	
Security F		r agos	
G4-HR7	Percentage of security personnel trained in the organization's human rights policies or procedures that are relevant to operations	_	
Indigenou	,		
G4-HR8	Total number of incidents of violations involving rights of indigenous peoples and actions taken	N/A	
Assessme			
G4-HR9	Total number and percentage of operations that have been subject to human rights reviews or impact assessments	_	
Supplier I	Human Rights Assessment		
G4-HR10	Percentage of new suppliers that were screened using human rights criteria	_	
G4-HR11	Significant actual and potential negative human rights impacts in the supply chain and actions taken	_	
Human Ri	ghts Grievance Mechanisms		
G4-HR12	Number of grievances about human rights impacts filed, addressed, and resolved through formal grievance mechanisms	P. 40	
Society			
Local Cor	nmunities		
G4-SO1	Percentage of operations with implemented local community engagement, impact assessments, and development programs	P. 12–19, P. 41	
G4-SO2	Operations with significant actual or potential negative impacts on local communities	P. 16–19	
Anti-corru			
G4-SO3	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	_	
G4-SO4	Communication and training on anti-corruption policies and procedures	P. 40	
G4-SO5	Confirmed incidents of corruption and actions taken	N/A	
Public Po	, ,		
G4-SO6	Total value of political contributions by country and recipient/beneficiary	P. 40	
	petitive Behavior		
G4-S07	Total number of legal actions for anti-competitive behavior, anti-trust, and monopoly practices and their outcomes	N/A	
Complian			
G4-SO8	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations	N/A	
	Assessment for Impacts on Society		
G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society	N/A	
	Significant actual and potential negative impacts on society in the supply chain and actions taken	N/A	
Grievance	Mechanisms for Impacts on Society		
G4-SO11	Number of grievances about impacts on society filed, addressed, and resolved through formal grievance mechanisms	P. 40	
Product F	Pesponsibility		
Customer	Health and Safety		
G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement		
G4-PR2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcomes	N/A	
Product a	nd Service Labeling		
G4-PR3	Information required by the organization's procedures for product and service information and labeling, and percentage of service categories subject to such information requirements	N/A	
G4-PR4	service information and labeling	N/A	
G4-PR5	Results of surveys measuring customer satisfaction	_	
	Communications		
G4-PR6	Sale of banned or disputed products	N/A	
G4-PR7	Total number of incidents of non-compliance with regulations and voluntary codes concerning marketing communications, including advertising, promotion, and sponsorship	N/A	
Customer Privacy			
G4-PR8	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	N/A	
Complian			
G4-PR9	Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services	N/A	

## Third-party opinion about JAPEX's CSR Report 2015

## Points to Be Praised

This is the third time I have provided my third-party opinion on the JAPEX Group CSR Report. Compared with last year's report, JAPEX's path to the systematic implementation of CSR has been clarified, and the contents including establishment of numerical targets have been further enhanced. The report also features comments from diverse stakeholders: domestic, overseas, age group, sex; as well as site photos, and is easy to read.

In May 2015, JAPEX unveiled its new Long-Term Business Vision, with the key message "transformation to an integrated energy company centered on the oil and gas E&P business," and its Medium-Term Business Plan (fiscal 2015 to 2019), adding CSR management to its business development policy. As the Message from the President states, trust-based relationships with stakeholders are essential to sustain and grow its business. Positioning CSR as the "root" supporting the "trunk and branches" of its three business pillars—E&P business, domestic natural gas supply business, and the environment and innovative technology business—reflects the sincere stance the Group takes toward CSR. This point merits high praise.

The special feature describes how JACOS, a consolidated subsidiary, is advancing its oil sands project in Canada in cooperation with the indigenous people. A council comprised of indigenous people who may be affected was organized, and an environmental impact study incorporating advice from the council was conducted, indicative of a respect for traditional knowledge. In recognition, in May 2014 JACOS received the Responsible Canadian Energy Award from the Canada Association of Petroleum Producers. Viewing the CSR initiatives of JACOS in the context of "SHINE," the JAPEX Group's CSR core issues, it is clear that the Group is a global leader in CSR promotion. Going forward, I look forward to seeing JAPEX continue activities in order to coexist and develop with local communities worldwide.

I feel that "diversity promotion" is a keyword of this report. In March 2015, JAPEX set up an office dedicated to diversity promotion, and by 2020 aims to triple the percentage of women in management positions from the 2014 level of 3.4%. This is illustrative of the proactive stance of management in response to the



Mika Takaoka Professor, College of Business Rikkyo University

rapidly changing business environment; by securing and developing women, foreign nationals, people with disabilities and senior employees, thereby introducing innovative initiatives from varied viewpoints into the organization. At 0.72%, the turnover rate is extremely low, reflecting its recognition as an employer of choice, but JAPEX deserves high praise for continuing to push forward rather than being satisfied with the present.

## Suggestions

The current report discloses the results of the CSR action plan and targets of fiscal 2014 alongside those for fiscal 2015, completing one round of the PDCA cycle, but what is noteworthy is that numerical targets have been set for such individual categories as "occupational health and safety," "pollution prevention," "respecting employee diversity" and "creating a fair and rewarding workplace." This is an indication of steady progress. Next fiscal year, I would like to see a further move in that direction. The JAPEX Group's CSR report has already made a major leap forward in a short period of time. May I suggest the Company consider incorporating the fourth edition of the GRI Sustainability Reporting Guidelines (G4) from next fiscal year.



Moto Hyodo Managing Director Executive Officer

## JAPEX's Response to Third-Party Review

Thank you very much for sharing your valuable opinions regarding our CSR report again this year. In May 2015, we announced our Long-Term Business Vision and New Medium-Term Management Plan, which positions CSR management as the root supporting the expansion of our business and emphasizes the promotion of CSR along with our businesses. "Recruiting and developing diverse human resources" is one area of CSR of particular focus for us, and we have set specific targets for increasing the percentage of women in management positions. By clarifying the positioning of CSR within our management and establishing numerical targets, I believe the Group has made a positive step in its CSR initiatives.

As Professor Takaoka has suggested, it is important for us to take additional moves in this direction. After meeting the numerical targets we have set for individual initiatives, which Professor Takaoka praised, the JAPEX Group will strive in unison to establish and fulfill further targets in line with the PDCA cycle.

We will also consider positively reporting in line with the fourth edition of the GRI Sustainability Reporting Guidelines (G4).

## Contact

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