# 5 Project Overview



## **Segment Overview**

## Asia & Oceania

INPEX's core region. INPEX has its largest number of projects and owns its largest reserves in this region. INPEX is proceeding with large-scale LNG projects, including lchthys and Abadi.

Number of countries		Y	7	1,551	1,296	1,245
In production		1			13	
Under exploration —	-	$-\bigcirc$				
Number of projects	_	21	-4	2		
Under development —————					$\langle \nabla_3 \rangle$	7
Discovered/Preparation for development					5	
	530	166				
Production/Reserves		1.42	<b>4</b> 367	100		
(million boe)	185	195	21	201	179	[9]
Net production (thousand boed)	The second second					
	2009	2010	2011	2012	2013	2014



## Eurasia

INPEX owns the large-scale ACG and Kashagan oil projects and has acquired a number of exploration projects in recent years.







## Middle East & Africa ▶ p. 56

A substantial contribution is from the ADMA Block in the United Arab Emirates. Oil projects are the mainstay.



318,691 303,819

2009

243,113

2011

2012

2013

2014

205,572

2010

#### as ▶p. 58 1

INPEX focuses on the potential of shale gas in Canada. The Lucius project in the U.S. Gulf of Mexico is planned to start production in the latter half of 2014.

#### 65 38 80 20 2014 2009 2010 2011 2012 2013

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## Japan p. 62

**INPEX** engages in natural gas production and sales via, for example, the Minami-Nagaoka Gas Field in Niigata Prefecture, its pipeline network, and the Naoetsu LNG Terminal. INPEX also focuses on unconventional types of energy, such as geothermal development.



pipeline network (Approx. 1,400 km) etc.

138

2012

662

<u>m</u>

24,607

11.0

2012

INPEX CORPORATION Annual Report 2014

525

64

25,959

2011

8.937

568

28,

2013

30

2013

137

2009

93.423

33,883

2009

93,959

32,555

2010

26

2010

2011



174

2014

20,268

22,77

2014

## **Project Overview by Region**

## Asia & Oceania

INPEX is engaged in activities in the Offshore Mahakam Block in Indonesia, which is contributing significantly to earnings, and the large-scale Ichthys and Abadi LNG projects, where development and preparation for development are ongoing. In the Asia and Oceania region, the Company is also actively advancing more than 20 exploration projects with growth potential.



### 1 Offshore Mahakam Block and Attaka Unit

INPEX entered into a production sharing contract (PSC) with the Indonesian Government in October 1966, at that time acquiring a 100% interest in the Offshore Mahakam Block. The Attaka Unit was established in April 1970 through the unitization of part of the adjacent blocks owned by INPEX and Unocal (now Chevron), with each company taking a 50% interest. Production of crude oil and natural gas has continued since 1972. INPEX farmed out 50% of its interest in the Offshore Mahakam Block to CFP (now TOTAL) in July 1970. This venture subsequently made a series of discoveries in the Bekapai (oil), Handil (oil), Tambora (oil

and gas), Tunu (gas), Peciko (gas), Sisi and Nubi (gas), as well as the South Mahakam (gas), fields, each of which has continued to produce crude oil and natural gas. The crude oil and condensate produced from these fields are shipped mainly to oil refineries and power companies in Japan by tanker from the Santan and Senipah terminals. Most of the natural gas is supplied to the Bontang LNG Plant, and then shipped as LNG to customers in Japan and elsewhere.

The Offshore Mahakam Block has begun to see output decline after more than 40 years of production. In 2012, impediments at production wells led to a large drop in output, in addition to natural attrition. Thereafter, successful steps were taken to control the decline in production. In addition to measures aimed at counteracting sand problems, INPEX accelerated the pace at which it undertook development well drilling. Production volumes have remained stable since 2013.

The PSC for the Offshore Mahakam Block expires at the end of 2017. Together with TOTAL (the operator), we have been engaged in negotiations with the Indonesian authorities to secure a contract extension beyond 2018.

Contract area (block)	Project status (production on the basis of all field	ds and average rate of FY20	Venture company13)(established)	Interest owned (*Operator)
Offshore Mahakam	(Crude oil: 72 Mbbl/d		INPEX CORPORATION	INPEX 50% TOTAL* 50%
Attaka Unit	In production Natural gas: 1,391 LPG: 12 Mbbl/d	MMct/d	(February 21, 1966)	INPEX 50% Chevron* 50%
	A. Le			4
PAP	UA	Bontang LNG Plant		
NEV	V GUINEA	Santan Terminal —	Attaka Field	
2	mi)	Badak Field	Tunu Field	-
	PDL3 & PDL4	Nilam Field		
	Unitization		Sisi Field	
V	PRL14	Handil Field	Nubi Field	
	and a state of the	Senipah Terminal 📥	Bekapai Field	
and the second	and the los	Balikpapan—•	Peciko Field	A LPE TAX
A	X		Offshore Mahakam Black	
1			South Mahakam Field	
		Gas field Oi	I field Oil and gas field	acces of
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Project Overviev

## 2 South Natuna Sea Block B

In July 1977, INPEX acquired a 17.5% interest in the South Natuna Sea Block B in Indonesia. Later, in January 1994, INPEX increased its total interest in the block to 35% with the purchase of an additional interest. Crude oil production began in 1979, and supplies of natural gas to Singapore via Indonesia's first international pipeline commenced in 2001. Additional deliveries of natural gas from this pipeline to Malaysia started in 2002. These supply milestones contributed to the extension of the PSC covering the block until 2028.

Production operations in the Belanak oil and gas field, which is part of South

Natuna, utilize a world-class floating production, storage and offloading (FPSO) system. Production of crude oil and condensate began in December 2004, with LPG production commencing in April 2007. After 2006 at this same block, production began at the Hiu Gas Kerisi Oil and Gas, North Belut Gas and Bawal Gas fields. Most recently, production commenced at the South Belut Gas Field in April 2014.



<b>Contract area</b> (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
South Natuna Sea B	In production (Crude oil: 31 Mbbl/d Natural gas: 333 MMcf/d LPG: 12 Mbbl/d	INPEX Natuna, Ltd. (September 1, 1978)	INPEX Natuna 35% ConocoPhillips* 40% Chevron 25%



FPSO vesse

## 3 Sebuku Block Ruby Gas Field

In September 2010, INPEX obtained a 15% interest in the Sebuku Block off the shore of South Makassar, Indonesia. Thereafter, work began to develop the Ruby Gas Field in the block, and production of natural gas followed in October 2013. The natural gas produced here is transported from offshore production facilities via undersea pipeline to onshore storage facilities that receive products from the Offshore Mahakam Block. The natural gas is then mainly sent via inland pipeline to a fertilizer plant in East Kalimantan.



Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
Sebuku	In production (Natural gas: 35 MMcf/d)	INPEX South Makassar, Ltd.	INPEX South Makassar 15% PEARL OIL (Sebuku) Ltd.* 70% TOTAL 15%



Offshore production facility in the Ruby Gas Field

## 4 Abadi LNG Project

INPEX acquired a 100% interest in the Masela Block in November 1998 through an open bid conducted by the Indonesian Government. INPEX proceeded with exploratory activity as the operator, and the first exploratory well drilled in 2000 discovered the Abadi Gas Field. Subsequently, six appraisal wells were drilled (two in 2002 and four in 2007–2008), all of which confirmed the presence of gas and condensate reservoirs.

The Indonesian Government granted its approval to the plan of development for Stage-I (POD-1) for a "floating LNG" with a capacity of 2.5 million tons per year of LNG in December 2010. Thereafter, INPEX undertook FEED works for subsea production facilities from November 2012 to January 2014. In addition, INPEX continues to engage in FLNG FEED work, which began from January 2013. After FEED work is completed, we will turn our attention to contractor selection and LNG marketing in preparation for making a final investment decision.

We continue to study the feasibility of developing the entire field based on proven reserves of gas. Aiming to increase the amount of exploitable reserves, INPEX undertook the drilling of three additional appraisal wells and one exploratory well from June 2013 to June 2014.



Contract area (block)	Project status	Venture company (established)	Interest owned (*Operator)
Masela	Preparation for development	INPEX Masela, Ltd. (December 2, 1998)	INPEX Masela* 65% Shell 35%



1, 3: Drillship for Abadi LNG Project 2: Production test 4: Floating LNG (rendering)

### 5 Prelude FLNG Project (WA-44-L Block)

In June 2012, we acquired from Shell a 17.5% interest in the Prelude FLNG Project, which is located in WA-44-L, approximately 475 km north-northeast of Broome, off the coast of Western Australia. A production, liquefaction and shipment project using FLNG, the Prelude FLNG Project

consists of the Prelude and Concerto gas fields and will produce approximately 3.6 million tons per year of LNG, 400 thousand tons per year of LPG at peak and approximately 36 thousand barrels per day of condensate at peak.



Shell (the operator) made the FID on the Prelude FLNG Project, which will be the world's first FLNG project, in May 2011. Development of the Prelude FLNG Project is currently under way, with the start of production targeted at around 10 years from when the Prelude Gas Field was first discovered in early 2007.

Through its participation as a project partner in the Prelude FLNG Project, INPEX is gaining experience and knowledge about FLNG, which it expects to leverage in the Abadi LNG Project in Indonesia.



Contract area (block)	Project status	Venture company (established)	Interest owned (*Operator)
WA-44-L	Under development	INPEX Oil & Gas Australia Pty Ltd (February 28, 2012)	INPEX Oil & Gas Australia 17.5% Shell* 67.5% KOGAS 10.0% CPC 5.0%

### 6 Berau Block Tangguh LNG Project

MI Berau B.V., jointly established by INPEX and Mitsubishi Corporation, acquired an interest in the Berau Block in October 2001. In October 2007, MI Berau Japan Ltd., a joint venture with Mitsubishi Corporation, acquired a stake in KG Berau Petroleum Ltd., effectively increasing the Company's interest to around 7.79% in the Tangguh LNG Project.

In March 2005, the Indonesian Government approved an extension of the production sharing contract (PSC) and project development plans for the Tangguh LNG Project through 2035. Development work commenced thereafter, and the first shipments of LNG began in July 2009.





Shipping facility

Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
Berau			Ml Berau 22.856% BP* 48.0% Nippon Oil Exploration (Berau) 17.144% KG Berau 12.0%
Tangguh Unit	In production (Crude oil: 6 Mbbi/d Natural gas: 986 MMcf/d)	MI Berau B.V. (August 14, 2001)	MI Berau 16.3% BP* 37.16% CNOOC 13.9% Nippon Oil Exploration (Berau) 12.23% KG Berau, KG Wiriagar 10.0% LNG Japan 7.35% Talisman 3.06%

## Van Gogh Oil Field, Ravensworth Oil Field and Others



INPEX acquired interests in offshore Western Australia WA-155-P (Part I) in July 1999, after which the Van Gogh and Ravensworth oil fields were discovered. The Australian Government granted production licenses for the WA-35-L and WA-43-L blocks, at which oil production commenced in February and August of 2010, respectively. The development of the Coniston Unit, which saddles WA-35-L and WA-55-L, was started in December 2011, and work targeting the commencement of crude oil production in early 2015 is under way.



Van Gogh FPSO

Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
WA-35-L (Van Gogh Oil Field)	In production (Crude oil: 9 Mbbl/d)		INPEX Alpha 47.499% Apache* 52.501%
WA-43-L (Ravensworth Oil Field)	In production (Crude oil: 10 Mbbl/d)	INPEX Alpha, Ltd.	INPEX Alpha 28.5% BHPBP* 39.999% Apache 31.501%
WA-35-L & WA-55-L Unitization area (Coniston Unit)	Under development		INPEX Alpha 47.499% Apache* 52.501%
WA-35-L (excluding Van Gogh Oil Field)		(February 17, 1989)	INPEX Alpha 47.499% Apache* 52.501%
WA-155-P (Part II)	Under exploration		INPEX Alpha 18.670% Apache* 40.665% OMV 27.110% JX 7.000% Tap 6.555%
WA-155-P (Part 1)			INPEX Alpha 28.5% Apache 71.5%

## 8 Bayu-Undan Project (JPDA03-12 Block) and Kitan Oil Field (JPDA06-105 Block)

In April 1993, INPEX acquired an interest in JPDA03-12, a contract area located in the Timor Sea JPDA, which is jointly managed by Australia and East Timor. Exploration within this contract area resulted in the discovery of oil and gas fields. Of these, studies revealed that the Undan structure and the Bayu structure in the adjacent JPDA03-13 contract area were a single structure. The interest holders unitized both contract areas in 1999, allowing joint development of the Bayu-Undan Gas-Condensate Field to proceed. The commercial production and shipment of condensate and LPG started in 2004, and LNG in February 2006.



The presence of oil was confirmed through exploration drilling of the Kitan-1 and Kitan-2 wells in March 2008 in the JPDA06-105 contract area, which INPEX acquired in January 1992. Thereafter, we obtained approval for the final development plan from the Timor Sea JPDA authorities in April 2010. After development work, production at the Kitan Oil Field commenced in October 2011.

<b>Contract area</b> (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
JPDA03-12	In production ( Crude oil: 36 Mbbl/d Natural gas: 572 MMcf/d ( LPG: 21 Mbbl/d		INPEX Sahul 19.2458049% ConocoPhillips* 61.3114766% Santos 19.4427185%
Bayu-Undan Unit		INPEX Sahul, Ltd. (March 30, 1993)	INPEX Sahul 11.378120% ConocoPhillips* 56.943372% Eni 10.985973% Santos 11.494535% Tokyo Timor Sea Resources (TEPCO/Tokyo Gas) 9.198000%
JPDA06-105 (Kitan Oil Field)	In production (Crude oil: 12 Mbbl/d)	INPEX Timor Sea, Ltd. (November 25, 1991)	INPEX Timor Sea 35% Eni* 40% Talisman 25%



Darwin LNG

Barents Sea

## Eurasia

The Company's activities in this region revolve mainly around the ACG projects in Azerbaijan and the Kashagan project in Kazakhstan, large-scale oil projects. The Company has been aggressively exploring for resources with the acquisition of exploration projects near Shetland Island in the United Kingdom, Greenland and the Far East region of Russia.



### 1 Offshore North Caspian Sea Contract Area (Kashagan Oil Field and Others)

In September 1998, INPEX acquired an interest in the Offshore North Caspian Sea Contract Area in Kazakhstan's territorial waters. The Offshore North Caspian Sea Contract Area consists of two blocks: the East Block is about 4,300 km<sup>2</sup> and the West Block is about 1,275 km<sup>2</sup> in area (for a total of about 5,575 km<sup>2</sup>). The Kashagan Oil Field, which is in the East Block, is located in the Caspian Sea at depths of 3–5 m and is approximately 75 km southeast of Atyrau, Kazakhstan.

Since the first exploratory well was drilled in September 1999, the Kashagan Oil Field was confirmed in 2000 and commercial discoveries were announced in 2002. After development work, the Kashagan Oil Field began producing crude oil in September 2013, but production was suspended due to gas leaks from the pipeline.

Besides the Kashagan field, hydrocarbon reserves were also confirmed in four other structures: Kalamkas, Aktote, Kairan and Kashagan Southwest. Appraisal of these structures is continuing in parallel with the development of the main Kashagan field with a view to expanding the total production of the contract area.



Contract area (block)	Project status	Venture company (established)	Interest owned
Offshore	Production under suspension	INPEX North Caspian Sea, Ltd.	INPEX North Caspian Sea 7.56% Eni 16.81% ExxonMobil 16.81%
North Caspian Sea		(August 6, 1998)	KMG 16.87% Shell 16.81% TOTAL 16.81% CNPC 8.33%



INPEX acquired an interest of the Azeri-Chirag-Gunashli (ACG) Oil Fields in a region of the south Caspian Sea in Azerbaijan in April 2003. At the ACG Oil Fields, oil is being produced at the Chirag Field, the Central Azeri Field,

the West Azeri Field, the East Azeri Field and the Deepwater Gunashli Field. Additional development work on the Chirag Oil Project since 2010 led to the start of production of crude oil in January 2014.

Sakhalin I Project

East Siberian Sea

Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)	
ACG (Azeri, Chirag, Gunashli)	In production (Crude oil: 651 Mbbl/d)	INPEX Southwest Caspian Sea, Ltd. (January 29, 1999)	INPEX Southwest Caspian Sea 10.96% BP* 35.78% Chevron 11.27% SOCAR 11.65% Statoil 8.56% ExxonMobil 8.00% TPAO 6.75% Itochu 4.30% ONGC 2.72%	Nelling -

RUSSIA

Marine production facilities Zapadno-Yaraktinsky Block Bolshetirsky Block

## **3** BTC Pipeline Project

The 1,770-km BTC pipeline stretches from Baku in Azerbaijan on the coast of the Caspian Sea to Ceyhan in Turkey. Full-scale operation commenced in June 2006. Total transportation capacity stands at 1.2 million barrels per day, mainly for crude oil produced in the ACG Oil Fields in Azerbaijan.

- Starting		
Contract area (block)	Venture company (established)	Interest owned (*Operator)
BTC Pipeline	INPEX BTC Pipeline, Ltd. (October 16, 2002)	INPEX BTC Pipeline 2.5% BP* 30.1% Azerbaijan (BTC) Limited 25% Chevron 8.9% Statoil 8.71% TPAO 6.53% Eni 5% TOTAL 5% Itochu 3.4% ConocoPhillips 2.5% ONGC 2.36%



## Focus in 2014

## Participation in Offshore Exploration in Greenland Sea

INPEX won exploration licenses for the exploration blocks located in the northeastern part of offshore Greenland, jointly with Chevron and Shell. These blocks are a frontier region where little exploratory drilling for crude oil and natural gas has taken place yet, drawing the attention of the worldwide oil development industry here in recent years. We will survey the area through exploratory work to discover oil and natural gas fields.



## Middle East & Africa

In the Middle East, the mainstay ADMA Block in Abu Dhabi in the United Arab Emirates contributes substantially, accounting for more than half of net production volume. In Africa, production volumes from Offshore Angola Block 14, acquired during the year ended March 31, 2013, are also contributing to net production volume.



## Focus in 2014

#### Contract Extension for Upper Zakum Oil Field and Improved Financial Conditions

The concession contract for the Upper Zakum Oil Field in the Abu Dhabi Sea Block of the United Arab Emirates, in which INPEX is a participant, has been extended by 15 years or more to the end of 2041. In addition, financial conditions were improved.



The ADMA Block (Upper Zakum Oil Field)

## 1 ADMA Block



In May 2004, INPEX made Japan Oil Development Co., Ltd. (JODCO), a wholly owned subsidiary by acquiring all of the JODCO shares held by Japan National Oil Corporation (at that time) through a share exchange. JODCO owns an interest in the ADMA Block located offshore Abu Dhabi in the United Arab Emirates. Oil production currently spans five fields in the block.

In addition, a number of development projects are under way to maintain and expand oil output, such as redevelopment of the Upper Zakum Oil Field involving the use of artificial islands, as well as Phase 1 development and other work, with the aim of engaging in early production at the Umm Lulu and Nasr oil fields.



the second se			
Contract area (block)	Project status	Venture company (established)	Interest owned
Umm Shaif, Lower Zakum Field		Japan Oil Development Co., Ltd. (JODCO) (February 22, 1973)	JODCO 12% ADNOC 60% BP 14.67% TOTAL 13.33%
Upper Zakum Field	In production		JODCO 12% ADNOC 60% ExxonMobil 28%
Umm Al-Dalkh Field	in production		JODCO 12% ADNOC 88%
Satah Field			JODCO 40% ADNOC 60%
Nasr Field, Umm Lulu Field	Under development	_	JODCO 12% ADNOC 60% BP 14.67% TOTAL 13.33%

## 2 Offshore Angola Block 14



Participating through a joint venture company with TOTAL S.A., INPEX acquired a 9.99% indirect interest in the oil producing Angola Block 14 in February 2013. Block 14 is located approximately 100 km offshore from Cabinda, Angola. It is an oil-producing block that includes discovered undeveloped fields. Crude oil is currently being produced from three development areas. At the same time, energies are being channeled toward the development of certain discovered undeveloped fields. In this manner, steps are being taken to pursue exploration potential within the block.



Production facility

Contract area	Project status	Venture company	Interest owned
(block)	(production on the basis of all fields and average rate of FY2013)	(established)	(*Operator)
Offshore Angola Block 14	In production (Crude oil: 131 Mbbl/d)	Angola Block 14 B.V. (April 19, 2012)	Angola Block 14 B.V. 20% (including 9.99% of INPEX's interest) Chevron* 31% Sonangol 20% Eni 20% Galp 9%

## 3 Offshore D.R. Congo Block

INPEX has participated in oil exploration and development projects offshore the Democratic Republic of the Congo (DRC) since July 1970. Oil production commenced in 1975. The contract covering this block was extended until 2023 in May 1995.

Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
Offshore D.R.	In production	Teikoku Oil (D.R. Congo)	Teikoku Oil (D.R. Congo) 32.28%
Congo Block	(Crude oil: 13 Mbbl/d)	Co. Ltd. (August 1, 1970)	Perenco* 50% Chevron 17 72%



## Americas

In Canada, INPEX participates in shale gas projects and oil sand projects. The Company is also engaged in a major deepwater exploration project in the Gulf of Mexico (Lucius) that is slated to commence production in the latter half of 2014. The Company has a track record that spans more than 20 years as a development and production operator in Venezuela. Moreover, INPEX has been advancing offshore oil field projects in Brazil.



## 1 Shale Gas Project in Canada

In August 2012, INPEX acquired a 40% interest in the shale gas projects in the Horn River, Cordova and Liard basins in British Columbia, Canada, from Nexen Inc.

The shale gas projects in the Horn River, Cordova and Liard basins contain discovered and undeveloped shale gas. We will proceed with full-scale development and are aiming for combined production at the Horn River and Cordova projects of a maximum of 1,250 million cubic feet per day (approximately 200 thousand boed).

The shale gas that is produced will be converted into LNG with studies under way to consider commercialization through exports from the Canadian west coast. In November 2013, INPEX and its project partners, Nexen Energy

BM-ES-23

Janeiro Office

ULC and JGC Corporation, were jointly awarded the sole proponent right at Grassy Point, British Columbia, Canada, by the Government of British Columbia for the purpose of examining the viability of constructing an LNG plant. INPEX

and its project partners will continue to explore the feasibility of a shale gas LNG business fully aligned with the Government of British Columbia, local communities and other stakeholders.



Contract area	Project status	Venture company	Interest owned
(block)		(established)	(*Operator)
Horn River,	In production (partly)	INPEX Gas British Columbia Ltd.	INPEX Gas British Columbia 40%
Cordova and Liard areas		(November 28, 2011)	NEXEN* 60%



1: Completion 2: Drilling site 3: Hydraulic fracturing site

## 2 Joslyn Oil Sands Project

In November 2007, INPEX acquired a 10% interest in the Joslyn Oil Sands Upstream Project in Alberta, Canada. Stage 1 development plans call for daily production of 157 thousand barrels of bitumen using open-cut mining. Currently, we are taking preliminary steps to consider a development plan.

Contract area (block)	Project status	Venture company (established)	Interest owned (*Operator)
OSL 7280060T24	Discovered/ Preparation for	INPEX Canada, Ltd. (November 28, 2006)	INPEX Canada 10%
OSL 7405070799			TOTAL* 38.25%
OSL 7404110452	development		Suncor 36.75% Occidental 15%



## **3** U.S. Gulf of Mexico Projects

INPEX has participated in oil and gas development projects in the shallow waters of the U.S. Gulf of Mexico since April 2006, producing crude oil from various blocks.

We participated in deepwater exploration blocks of Walker Ridge 95/96/139 in the Gulf of Mexico in February 2011. In exploratory work since then, the Yucatan North-1 exploratory well was drilled and encountered an oil bearing zone with approximately 36 m net pay. We are analyzing data obtained thus far and are working with our partners on more exploration and appraisal activities.

In August 2012, INPEX acquired a 7.2% interest from Anadarko Petroleum Corporation in the Lucius Oil Field in the deepwater of the Gulf of Mexico. Development of the Lucius Oil Field has been under way with the aim of commencing production of crude oil and natural gas in the latter half of 2014.



Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
Ship Shoal Block 72		Teikoku Oil (North America) Co., Ltd. (May 30, 2003)	Teikoku Oil (North America) 25% PetroQuest* 42.5% Other 32.5%
West Cameron Blocks 401/402	In production (Crude oil: 0.5 Mbbl/d Natural gas: 7 MMcf/d		Teikoku Oil (North America) 25% PetroQuest* 38% Other 37%
Main Pass Block 118			Teikoku Oil (North America) 16.66667% Fieldwood* 83.33333%
Louisiana Block SL20183			Teikoku Oil (North America) 25% PetroQuest* 55% Other 20%
Blocks 874/875/918/919 (Lucius Oil Field)	Under development		Teikoku Oil (North America) 7.2% Anadarko* 27.8% Other 65%
Walker Ridge Blocks 95/96/139	Under exploration	INPEX Gulf of Mexico Co., Ltd. (April 28, 2010)	INPEX Gulf of Mexico 15% Shell* 70% Other 15%



Towing the building frame of a production facility to the development site

## **4** Copa Macoya and Guarico Oriental Blocks

INPEX was awarded a 100% interest in a central onshore area, the East Guarico Block in Venezuela, in July 1992. INPEX participated in oil and natural gas field rehabilitation, exploration and development activities as an operator. Thereafter, the existing operational service agreements were changed to joint venture agreements in 2006. Around the same time, the East Guarico Block was newly reconfigured into a gas business in the Copa Macoya Block and a crude oil business in the Guarico Oriental Block. In addition, the agreement period of both agreements was extended to 2026 as a result of the change to joint venture agreements.



Contract area (block)	Project status (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
Сора Масоуа	In production	Teikoku Oil	Teikoku Oil and Gas Venezuela* 70% PDVSA Gas 30%
Guarico Oriental	(Crude oil: 1 Mbbl/d Natural gas: 58 MMcf/d )	and Gas Venezuela, C.A. (June 7, 2006)	Teikoku Oil and Gas Venezuela 30% PDVSA CVP* 70%



1, 2: Gas plant

## 5 Frade Block

Frade Japão Petróleo Limitada (FJPL), a joint venture established by INPEX and Sojitz Corporation, acquired an interest in the Frade Block in Brazil's offshore Northern Campos basin in July 1999.

After its initial discovery in 1986, a final investment decision was made for the development of the Frade Oil Field in June 2006. Following development work, commercial production started in June 2009, marking the first crude oil to be produced in Brazil by an enterprise with a significant Japanese equity interest. Production was temporarily suspended in March 2012 due to the presence of a small oil sheen but safely resumed at the end of April 2013.

Contract area (block)	<b>Project status</b> (production on the basis of all fields and average rate of FY2013)	Venture company (established)	Interest owned (*Operator)
Frade Project	In production (Crude oil: 16 Mbbl/d Natural gas: 0.1 MMcf/d)	Frade Japão Petróleo Limitada (FJPL) (July 5, 1999)	Frade Japão Petróleo 18.2609% Chevron* 51.7391% Petrobras 30%
BM-ES-23	Under exploration	INPEX Petróleo Santos Ltda. (January 19, 2007)	INPEX Petróleo Santos 15% Petrobras* 65% Shell 20%





FPSO vessel

## Japan

INPEX is active in the Minami-Nagaoka Gas Field in Niigata Prefecture, one of the largest of its kind in Japan, and participates in other oil and natural gas projects. In addition, the Company operates a domestic trunk pipeline of approximately 1,400 km. INPEX was also involved in the construction of the Naoetsu LNG Terminal, which began operations in December 2013.

Yabase Oil Field Akita District Office



## Focus in 2014

#### Methane Hydrate Resource Development in Japan

A type of unconventional natural gas, methane hydrate is a solid crystal structure with methane trapped inside. Deposits of methane hydrate have been confirmed along the coastline of Japan, but extracting it from low-temperature, high-pressure geological formations is technologically challenging. Experts have said that more time is needed to develop economically viable technologies.

INPEX participates in research and survey activities led by the national government and is a member on the exploratory committee. Leveraging its technologies accumulated in upstream operations, INPEX has been contributing to solving the technological challenges for extracting methane hydrate, especially in the field of subsea production equipment.



Methane hydrate (combustible ice)

### Natural Gas Business in Japan

Discovered in 1979 and in production since 1984, the Minami-Nagaoka Gas Field is one of the largest in Japan. After processing, the natural gas is transported through an about 1,400-km trunk pipeline network stretching across the Kanto and Koshinetsu regions that surround the greater Tokyo metropolitan area and delivered to city gas companies and industrial customers along this network. Most users of the natural gas are in Niigata Prefecture, due to its proximity to the Minami-Nagaoka Gas Field, followed by customers in Gunma, Saitama and Nagano prefectures.

INPEX has experienced steady growth in sales of natural gas volume due to sharp rises in the prices of competing fuels, as well as the highly environmentally friendly attributes of natural gas. In addition to its role as a fuel for thermal energy, natural gas is expected to be used for a wide variety of applications, such as a fuel for onsite power generation and co-generation, as well as a raw material for chemical products. INPEX targets annual sales of 2.5 billion m<sup>3</sup> by the early 2020s and as much as 3.0 billion m<sup>3</sup> over the long term, reflecting further capacity increases for our Shin Tokyo Line and development of the Toyama Line (extending from Itoigawa City, Niigata Prefecture, to Toyama City, Toyama Prefecture), construction of which began in April 2012.

At the Naruto Gas Field in Chiba Prefecture, natural gas is being produced from water-soluble gas fields. After extracting natural gas from underground water (brine water), the brine water is used to produce iodine, which is exported to Europe, the United States and elsewhere.



Breakdown of Natural Gas Sales by End Purchasing Prefecture



VEchigo Line Sekihara Gas Field (underground storage) Sea of Japan Higashi-Kashiwazaki Gas Field Minami-Nagaoka Gas Field Ojiya Cityo Joetsu Line





 Natural gas pipeline that crosses a river (Shibumi River, Niigata Prefecture)
 Drilling work at the Minami-Nagaoka Gas Field (Nagaoka City, Niigata Prefecture)

## 2 Construction of the Naoetsu LNG Terminal

We expect domestic demand for natural gas to rise steadily and continue to be firm due to factors such as the shift to natural gas from oil as consciousness about the environment and energy conservation increases, as well as rising oil prices. To ensure stable supply to the domestic natural gas market over the long term, INPEX began constructing an LNG terminal in Joetsu City in Niigata Prefecture in July 2009. Construction was completed on schedule, and the terminal received its first LNG carrier in August 2013. Key facilities finished their trial runs faster than planned, leading to the commencement of operations ahead of schedule in December 2013.

With the commencement of Naoetsu supply operations, we will be able to enhance the domestic capacity and stability of our supply structure by receiving LNG from our overseas projects, and by combining that supply with existing domestic supplies from Minami-Nagaoka and other fields.



Full view of the Naoetsu LNG Terminal



## 3 Natural Gas Pipeline in Japan

INPEX owns a natural gas pipeline in Japan that stretches approximately 1,400 km, connecting seven prefectures and one metropolitan area in the Kanto and Koshinetsu regions.

INPEX has been updating its pipeline network for transporting natural gas since the 1960s. The Company started constructing this pipeline network in 1959, when it discovered the Kubiki Oil and Gas Field in the Joetsu area of Niigata Prefecture, to supply natural gas from the Kubiki Oil and Gas Field to city gas companies. In 1962, we completed the pipeline (the Tokyo Line), a long-distance, high-pressure pipeline that is the first of this kind in Japan. The pipeline runs from the Sea

of Japan to the Pacific Ocean, connecting Joetsu City, Niigata Prefecture, to Adachi Ward, Tokyo. With the discovery of the Minami-Nagaoka Gas Field and subsequent start of production, together with efforts to address the resulting increase in natural gas demand, INPEX commenced construction of the Shin Tokyo Line, which runs parallel to the Tokyo Line, from the mid-1990s. As of the end of June 2014, the total high-pressure pipeline network stretched over a length of approximately 1,400 km, roughly equivalent to the direct distance from Sapporo to Fukuoka. Looking ahead, plans are in place for the completion of construction on the Toyama Line (about 102 km in length from Itoigawa

City in Niigata Prefecture to Toyama City in Toyama Prefecture) in mid-2016. INPEX will continue to expand its network in order to reliably and efficiently deliver natural gas to customers who reside along the pipeline. The Company will also work diligently to increase its supply capabilities.



Amemasudake

region,

Hokkaido

Prefecture

Power plant

▲ Geothermal development

Solar power generation (mega solar)

1: The Tokyo Line at the time of construction 2: Construction of the Toyama Line

## 4 Renewable Energy and Other Initiatives

#### **Power Generation Business** in Japan

#### 1. Koshijihara Electric Power Plant

INPEX constructed a high-efficiency gas turbine combined cycle thermal power plant with an output of about 55,000 kw next to its Koshijihara plant in Niigata Prefecture, and began supplying electricity on a wholesale basis to power producers and suppliers (PPS) in May 2007. This power plant uses natural gas and condensate produced from the Minami-Nagaoka Gas Field as fuel to generate electricity. Our strengths in this business are the ability to reliably procure fuel and the ability/ to flexibly choose fuels based on energy market conditions. By switching fuels in response to seasonal fluctuations in gas demand, we are able to increase the operating rate of the gas plant.

#### 2. Solar Power Plant

In March 2013, the Company began generating electricity at INPEX Mega Solar Joetsu, a solar power plant with a maximum output of 2 MW, located on the former site of an oil refinery that it shut down in Joetsu City, Niigata Prefecture. In March 2014, INPEX decided to construct a new solar power plant with an output of 2 MW next to this site. We estimate that these two solar power plants will generate around 5,330,000 kWh annually, enough electricity to power 1,600 homes.





#### Fumarolic testing at a geothermal well (Teiseki Drilling Co., Ltd.)