We deliver a reliable supply of natural gas, a source of clean energy, with a strong supply chain that covers all steps from upstream to midstream and downstream operations. We develop gas fields in Japan and overseas, transport gas, operate the LNG terminal, and run a pipeline network to serve end users. This chapter explains the many activities of the Group that underpin this expansive gas supply chain.

Establishing of the expansive gas supply chain that combines upstream, midstream and downstream operations

The significance of building a gas supply chain

In 1962, we completed the construction of Tokyo Line, Japan’s first long-distance natural gas pipeline. The pipeline transports natural gas produced at fields in Niigata prefecture to the Kanto Region. We then discovered one of Japan’s largest natural gas fields, the Minami Nagaoka Gas Field, which is also in Niigata prefecture. Since gas production at this field started in 1984, we have constantly expanded our gas pipeline network. We completed the construction of Naoetsu LNG Terminal (LNG receiving terminal) in Niigata prefecture in December 2013. This realized the diversification and the long-term stability of our sources of supply for natural gas produced in Japan and imported LNG from overseas. Going forward, we will work steadily on the Ichthys LNG Project in Australia and the Abadi LNG Project in Indonesia, which is currently in the Front End Engineering and Design (FEED) stage, and transport natural gas from both sites to the Naoetsu LNG Terminal. We can then provide the natural gas to our domestic end users through our pipeline network.

By establishing this supply chain, it becomes possible to secure natural gas from our independently developed gas fields, and back this up with domestic gas supplies which are unaffected by sudden changes in oversea circumstances including price changes. The gas pipeline is also resistant to natural disasters such as earthquakes, making it a highly stable supply that contributes as an alternative supply to earthquake-affected areas. Furthermore, the natural gas can reduce the environmental burden during combustion compared to oil and coal. As a result, a natural gas business model with high risk mitigating capabilities is realized.
Working with stakeholders to progress two LNG projects

The Ichthys LNG Project and the Abadi LNG Project are both ranked among the most significant oil and gas projects. The Ichthys LNG Project is the first large-scale LNG project operated by a Japanese company outside of Japan. The Abadi LNG Project, which is currently in the FEED stage, has adopted the Floating LNG (FLNG) method. By adopting FLNG, the need for some conventional equipment, such as pipelines, would be unnecessary and therefore it can require less initial investment and minimize environmental impacts.

1. Ichthys LNG Project

We discovered the giant Ichthys gas and condensate field, located about 200 kilometers offshore Western Australia, in 2000. The final investment decision (FID) for the Project was made in 2012 and the first production is scheduled for the end of 2016.

The Project is expected to produce 8.4 million tons of LNG and 1.6 million tons of LPG per annum along with 100,000 barrels of condensate per day at peak, and expected to contribute to providing Japan with a stable, long-term supply of energy.

In Darwin, construction of the onshore LNG processing facilities is progressing well. The first of the large pre-fabricated modules* arrived at the onshore construction site at the end of June 2014. Installation works of the 889-kilometer gas export pipeline (GEP) commenced in June 2014.

Construction and fabrication of various offshore facilities are underway in a number of countries. This includes a floating production, storage and offloading facility (FPSO) and a central processing facility (CPF) which will be the world’s largest semi-submersible platform.

The Ichthys LNG Project’s state-of-the-art accommodation village, “Manigurr-ma Village”, was built near Darwin to accommodate temporary fly-in, fly-out construction workers. It was designed to be a home-away-from-home for hard working personnel and to reduce impacts on the community. The village was named in the local Aboriginal language.

Local Darwin business owner awarded a contract at the village, Ross Hafner, General Manager of Security & Technology Services says “Working with INPEX and its contractor, proves that if you persevere and demonstrate that you meet their criteria you will be given a fair go.”

Working proactively with a variety of contractors and subcontractors, the Ichthys LNG Project ensures that local companies have full, fair and reasonable opportunity to supply goods and services to the Project.

The Project is also creating opportunities for Aboriginal and Torres Strait Islander (ATSI) peoples and as at December 2013, more than 400 ATSI people had been engaged and 37 ATSI businesses had secured work on the Project.
A modarised approach to construction is now common in Australia. For the Ichthys LNG Project, this approach involved having components of its onshore facilities assembled in modules at fabrication yards and tested before transporting them to site.

2. Abadi LNG Project

We acquired a 100% participating interest in the Masela Block of the Arafura Sea in Indonesia in 1998, and started work on the Abadi LNG Project.

In 2011, Shell participated in the Project as a strategic partner. Front End Engineering Design (FEED) work for subsea production facilities and for Floating LNG started in 2012 and 2013 respectively. The FEED works are planned to be completed in 2014 and then we plan to make a Final Investment Decision (FID) after performing several works such as LNG marketing, financing and conducting environmental and social impact assessments.

Moving forward with the Project, we are concentrating on measures to enable the local communities to become self-reliant and continue to grow. After the approval of the Plan of Development (POD) by the Indonesian government in 2010, we established the social investment policy based on a socio-economic study conducted by the Institute for Economic and Social Research of University of Indonesia and discussions held with stakeholders. Under the policy, a number of social investment programs are now under way in line with the needs of stakeholders including local government and communities. These programs are also conducted in collaboration with other organizations such as research institutes and NGOs.

In total, seven social investment programs were carried out in 2013, primarily in Saumlaki, Maluku province. Among them, English language classes in Saumlaki are one of the main programs. In recent years, there has been an increased interest in better education among Indonesian people. However, in Saumlaki, not many people understand the importance of learning English and it is also difficult to find high-quality English education in the region. To help solve this problem, we initiated the INPEX Tanimbar English Training program with the support of Jakarta English Training, a language school in Indonesia. This activity focuses on two main aspects. One is to develop English teachers that can make English lessons fun and interactive. The second aspect is to provide students opportunities to attend classes that prioritize the development of oral communication skills.

Naoetsu LNG Terminal reinforces Japan’s gas supply infrastructure

Naoetsu LNG Terminal, which started operations in December 2013, is a hub that links LNG from overseas with our gas pipeline network, and some construction work on LPG storage tanks will continue until 2016. At this site, based on the “HSE First” approach, all employees involved with construction including contractors are kept informed about Kiken-Yochi (risk forecasting) to prevent accidents. During operations, with the theme of Non Stop Operation, our employees received operational training that used simulators. Moreover, the design of Naoetsu LNG Terminal incorporates creative measures such as installing a central control room with automated control systems for all equipment at the terminal. As a result, a thorough safety management structure was established. Going forward, we will engage in intensive safety management with respect to construction and operation, by steadily implementing PDCA cycles based on HSE management.

Similar with the Naoetsu LNG Terminal, the construction of Toyama Line is another project that will strengthen and enlarge our gas supply chain. Despite challenging conditions with geographic difficulties and uncertain demand, by working closely with Nihonkai Gas, which operates a city gas business in Toyama prefecture, a business plan was created that incorporated a set of measures
that establishes a wide area of gas pipelines and the shift of energy demand to natural gas. In May 2011, the decision to build the pipeline was finally concluded. We will fully reflect environmental and ecosystem considerations onto our construction work. We will also proceed with this project by deepening our understanding of surrounding communities along the pipeline by holding meetings with residents.

### Outlook

We are proud that Tokyo Line has been providing a reliable supply of natural gas without a single interruption since it began its operations 60 years ago. Maintaining a stable supply of gas is and will be our primary mission. We will continue to move ahead with both the Ichthys and Abadi LNG projects with stakeholders. We will establish an unprecedented business model, which involves a complete natural gas supply chain including upstream, midstream and downstream. With this we will realize a higher level of providing a steady and efficient supply of energy.

### Voice

Once commercial operations started, our primary mission shifted from completing construction within schedule with safety first, to achieving non-stop operations by building a system for safe operations. But we continue to execute our HSE management system based on the PDCA cycle, and through this, we will realize safe and secure operations. We are also determined to fulfill our responsibility as a node for the overseas and Japanese natural gas supply chain. Every time I contact people living near this Terminal, their high expectations for Naoetsu Harbor as an energy hub move me. With the unchanging appreciation that we can operate this facility with the understanding of local residents, we continue to engage in CSR activities that includes social contributions, the environment and stable operations. We will strive to earn the deep trust of everyone in our host community.

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**Toshihiro Matsuo**
General Manager, at Naoetsu LNG Terminal, INPEX CORPORATION

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The central control room of the Naoetsu LNG Terminal
Environmental impact assessments on birds of prey
Joetsu Energy Service Co. Ltd., provides local companies in the most efficient way possible electricity generated by renewable hydroelectric power, as well as steam and electricity generated with hydrocarbon resources. Furthermore, we sell electricity to independent power producers and suppliers, as well as to the Japan Electricity Power Exchange markets. Not unlike hydroelectric power, thermoelectric power from natural gas supplied by a pipeline is not affected by changes in the weather. This means that natural gas power is outstanding for its supply stability in response to shifting demand. Moreover, a relatively low environmental impact makes natural gas an indispensable source of energy. We will continue to operate safely and with stability, using highly advanced equipment to convert natural gas into steam and electricity with the greatest possible efficiency.