HD **Oil and Gas - Asia Pacific**

WC 11,227 words

PD 1 September 2014

SN Mergent Industry Reports

SC MIRAUS

LA English

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Scope of this report

The Scope of This Report

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. The report examines the current environment as well as global and regional affairs that influence the development of the various industry segments using available data. Key financial results of leading public companies and other major players in the industry are also provided.

Research analysts draw on a range of credible industry and **company** data sources as well as news and information services to research and analyze the current trading environment, industry landscape and market trends and outlook for a particular sector. Primary sources are used, unless otherwise indicated, and include **company** data, e.g. annual reports and **company** financial results; macroeconomic and trade data; data and information from global and country regulatory, industry and trade bodies; government data; and reports from industry organizations and private research organizations.

Industries covered by the industry reports are defined by standard industry classification systems and leading companies are identified on this basis. SICs relevant to the industry include: 1311 (Crude Petroleum and Natural Gas); 1321 (Natural Gas Liquids); 1381 (Drilling **Oil** and Gas Wells); 1382 (**Oil** and Gas Exploration Services, Geophysical Mapping and Surveying, Other **Oil** and Gas Field Exploration Services); 1389 (**Oil** and Gas Field Service, NEC); 2911 (Petroleum Refining); 3533 (**Oil** and Gas Field Machinery and Equipment); 4612 (Crude Petroleum Pipelines); 4613 (Refined Petroleum Pipelines); and 4619 (Pipelines, NEC).

Current Environment

Sector Overview

Economic growth throughout the Asia-Pacific over the past six months led to a rise in the consumption of **oil** and liquefied natural gas (LNG) as a result of booming vehicle use and industrial growth, especially in **China**. **Energy** demand continued to rise significantly across developing Asia, driven by shifting economic, environmental and geopolitical factors, coinciding with a very tight global **oil** supply. The global growth of new **oil** supply hardly exceeded declining production from the world's large older **oil** fields, causing a very slight overall net supply increase.

Oil prices peaked at US$115.19 on June 19, 2014, before bottoming at US$99.37 a barrel on August 18 and then fluctuating upwards. **Oil** prices were relatively high in the second quarter of 2014 before hitting a low in the third quarter. This had significant economic implications as **oil** provides 60% of the world's **energy** needs, with the other 40% coming from **coal**, nuclear, hydroelectric, **wind**, **solar**, tidal power and biomass.

Asia-Pacific **oil** consumption growth was the second highest globally, 47%, after the Middle East's 57%, while consumption in the European Union (EU) fell by 5% and in the US by 3%. The decline in EU and US consumption was due to the shift from **oil** to gas and renewable **energy**.

Natural gas consumption continued to rise strongly over the past six months, as it did in the past decade, to fuel booming industrial needs and power generation. Asia accounted for 70% of the world's LNG market, and the strong demand combined with **oil**-linked LNG pricing, drove Asia-Pacific prices higher.

The demand was intensified by a sudden rise in demand from Japan to meet its electricity needs following the shutdown of its nuclear generators.

Natural gas continued to be the key to Asia-Pacific economic growth and environmental progress, with **energy** demand estimated to grow by 59% over the next three decades, after steady increases over the past decade. Natural gas can meet more of the demand for electricity, chemicals and plastics, improving quality of life and reducing environmental impact at the same time. Natural gas will slowly continue to replace **coal** as the region's second biggest **energy** source, with the upstream **oil** and gas market offering new business opportunities for the growing number of independent and expanding state **oil** companies.

Sector Performance

Global **oil** demand rose slowly in the first half of 2014, because of slow economic recovery and tight **oil** supply due to sanctions on Iran.

Key Asia-Pacific **Oil** and Gas Stock Performances

company	Ticker	Closing Stock Prices January 2, 2014	June 30, 2014	Change (%)
China Petroleum & Chemical Corp (Sinopec)	SSE: 600028	RMB4.46	RMB5.27	18.2
PetroChina Co Ltd	SSE: 601857	RMB7.67	RMB7.54	(1.7)
China National Offshore **Oil** Co Ltd (CNOOC)	HKSE: 883	HK$14.38	HK$13.92	(3.2)
Indian **Oil** Corp Ltd (IOCL)	BSE: IOC	Rs205.80	Rs344.60	67.4
Hindustan Petroleum Corp	BSE: HPCL	Rs232.40	Rs416.20	79.1
Oil and Natural Gas Corp Ltd (ONGC)	BSE: ONGC	Rs281.70	Rs424.85	50.8
Caltex AustraliaASX : CTX	A$19.99	A$21.57	7.9	
Woodside Petroleum LtdASX : WPL	A$38.56	A$41.07	6.5	
Santos LtdASX : STO	A$14.67	A$14.26	(2.8)	
Petronas Dagangan Bhd	KLSE: PETD	RM30.98	RM24.04	(22.4)
Average Rise/Fall (%)		19.98		

Source: Mergent analysis

The share prices of the top ten Asia-Pacific **oil** and natural gas companies by revenue rose by an average 19.98% over the six months to June 30, 2014, when crude **oil** closed at US$111.03 per barrel. Six companies' share prices finished higher, while those of four ended weaker. The best performer was Hindustan Petroleum Corp (BSE: HPCL), whose shares started at Rs232.40 (US$3.83) on January 2 and rose steadily to a high of Rs455.80 (US$7.52) on June 6, before ending the period at Rs416.20 (US$6.87) on June 30. Another **company** whose shares did well was Indian **Oil** Corp Ltd (IOCL) (BSE: IOC), starting at Rs205.80 (US$3.40), rising steadily to a high of Rs366.50 (US$6.05) on June 6, ending the period at Rs344.60 (US$5.69).

e worst performing stock was that of Petronas Dagangan Bhd (KLSE: PETD), whose share price was stable in the first four months before fluctuated downward. Starting at RM30.98 (US$9.70) on January 2, it plunged to a period low of RM23.30 (US$7.30) on May 26, ending slightly higher at RM24.04 (US$7.53) on June 30. Another **company** that did badly was **China** National Offshore **Oil** Co Ltd (CNOOC) (HKSE: 883), whose share price started at HK$14.38 (US$1.86) on January 2, fell to a period low of HK$11.54 (US$1.49) on February 4, peaked at HK$14.12 (US$1.82) on June 19, and ended at HK$13.92 (US$1.80) on June 30.

Leading Companies

All major **oil** companies in the region continued to climb back from recession, and benefited from a recovering global economy that spurred rises in crude prices, although the regional production and domestic refining margins of many leading companies declined.

China National Offshore **Oil** Co Ltd (CNOOC) (HKSE: 883)

China's biggest offshore oil producer CNOOC reported revenue of RMB138,800 million (US$22,555 million) for the first half of 2014, a decrease of 0.2% from a year earlier, and net profit by 2.3% to RMB33,593 million (US$5,458.86 million). Its realized oil price increased by 2% to US$106.30 per barrel and realized gas price by 13.5% to US$6.44 per 1,000 cubic feet. Production levels were up by 6.8% from a year earlier to 211.6 million barrels of oil equivalent (boe), with crude and liquids increased by 6.3% to 171.3 million barrels per day (bbl/d) and natural gas by 9.1% to 233.9 billion cubic feet (Bcf). The company's exploration program was a success with nine new discoveries and 23 successful appraisal wells.

Indian Oil Corp Ltd (IOCL) (BSE: 530965)

State-owned IOCL reported a net profit of Rs7,019.09 crore (US$1,158.15 million) for the fiscal year ended March 31, 2014, an increase of 40.2% from a year earlier. Revenue rose by 5.8% from a year earlier to Rs473,210.09 crore (US$78,079.66 million) and earnings per share by 40.3% to Rs28.91 (US$0.48). The company has increased its presence in the upstream sector and enhanced its capability in exploration and production (E&P).

It has participating interests in 13 domestic and nine overseas blocks and made discoveries in some of them, while many others are undergoing geological and geophysical studies. IOCL had an excellent operational performance in the just concluded fiscal year, surpassing all previous records. Its pipeline throughput was 73.069 million tonnes of crude oil and petroleum products, a decrease of 3.2% from the previous year.

Petronas Dagangan Bhd (Petronas) (KLSE: PETD)

Petronas is Malaysia's most profitable firm and the country's only company in the Fortune 500. Its first half 2014 profit before tax of RM55,267million (US$17,309.62 million) was 8.8% up from a year earlier. Revenue rose 12.1% from a year earlier to RM169,408 million (US$53,058.59 million) mainly due to higher oil and gas production volume from Iraq and South Sudan, higher petroleum products and LNG trading volume and higher processed gas sales volume, coupled with the effect of favorable US dollar exchange rate movement against the ringgit.

Its cash flow from operating activities increased by 6.1% to RM49,397 million (US$15,471.14 million) and total production rose by 5.6% from 2,115 thousand boe per day to 2,234 thousand boe per day. Crude oil and condensate production volume was higher mainly due to production resumption in South Sudan, production enhancement efforts and new production stream from Iraq and Malaysia. Natural gas production was higher due to additional production from Canada, higher demand in Turkmenistan and production optimization efforts for Sarawak operations.

Mergers and Acquisitions

The rate of Asia-Pacific oil and gas mergers and acquisitions (M&A) picked up slowly over the six months under review, amid a slowdown in the global economy and sanctions on Iranian oil. The motivation for deals varied in different countries and companies. China and India's national oil companies (NOCs) continued their quest to acquire as much technology and knowledge as possible from their western partners to exploit their own huge unconventional assets, while Malaysia and South Korea focused on diversifying their reserves and production bases to boost national energy self-sufficiency.

High growth in emerging markets, over-capacity in developed regions and the need to develop new and efficient technology solutions for company development also drove M&As. Japan actively acquired overseas gas assets to replace lost nuclear power capacity after the Fukushima nuclear plant crisis, and to secure supplies of LNG before long-term contracts expire.

Regional companies also focused on portfolio management and concentrated on core business, given high oil prices and gradual economic recovery, and made M&As to gain market share. In August 2014, Medco Tunisia Petroleum Ltd, the subsidiary of PT Medco Energi Internasional Tbk has completed the acquisition of 100% of the shares of storm Ventures International (Barbados) Ltd with the base purchase price of US$114 million. Total value of the transaction is US$127.7 million, including an amount payable for working capital, US$13.7 million.

With the effective economic date of January 1, 2014, MedcoEnergi has working interest in eight areas which comprise of four exploration areas, two development areas and two production areas in the Pelagian Basin off the northeast coast of Tunisia. Total estimated net recoverable resources are approximately 33.8 million boe as of December 31, 2013. With this transaction, it expands the company's E&P asset portfolio in overseas and supports the company's growth agenda. Those assets have lots of potential to grow and will contribute significantly in Tunisia's oil and gas production, and MedcoEnergi will be one of the leading E&P players in Tunisia in the future.

While M&As might not offer much immediate return, they should boost reserves and production of NOCs in the long term and help companies diversify from declining domestic reserves. They are important for energy security and supplement domestic crude oil and natural gas production.

Industry Profile

Industry Size and Value

The Asia-Pacific has less than 4% of the world's proven oil reserves, and the industry has few options to expand or maintain its current levels of production. The region has large coal reserves, the primary energy source in China and India, while the rest of the region relies on crude oil. The developing countries will consume 94% of the oil consumed by industrialized countries by 2025, and oil is likely to remain the world's foremost source of primary energy over the next two decades.

Australia remains a significant player in the global LNG market, due to the development of its offshore gas resources and onshore unconventional gas reserves. Australia, ranked 11th in global natural gas reserves and fourth in LNG exports, has the potential to become the leading LNG exporting country, overtaking Qatar. Currently, Australian LNG is expensive, costing 20% more to deliver to Japan than LNG from Canada and the US. Floating liquefied natural gas (FLNG) will be the solution to reduce the cost and unlock stranded gas. FLNG is a water-based LNG operation that enables the development of offshore natural gas resources by floating above an offshore natural gas field. FLNG facilities can produce, liquefy, store and transfer LNG at sea before carriers ship it directly to markets.

Australia will be among the first countries to use FLNG technology, with several projects under development, such as Royal Dutch Shell 's (LSE: RDSA) Prelude project, off Western Australia, and GDF Suez 's Bonaparte FLNG project, off Northern Australia. FLNG requires revolutionary technology to solve technical and execution challenges. It offers environmental benefits over conventional offshore LNG that involves transport pipelines to shore, which could be several hundred kilometers away, and to an onshore processing facility, all of which involve construction materials and seabed and land disturbance. FLNG also reduces the impact on sensitive coastal habitats as it excludes the need for shoreline pipe crossing, dredging and jetty works.

FLNG facilities allow economic access to large reserves from offshore fields previously considered stranded gas, and are cheaper per tonne to build with a lighter environmental footprint than conventional LNG and other fossil fuel energy sources. The technology is not limited to offshore Western Australia or the previously considered stranded gas, but can also be used in regions where security issues prevent onshore processing.

Oil and Gas Production and Consumption

The level of overall oil and gas production and consumption in the region increased slightly over the past six months despite a weak global economy. Asia-Pacific crude oil proved reserves grew by 1.1% from a year earlier to 45.875 billion barrels in 2014. Production fell by 1% to 8,935.4 thousand bbl/d in 2013, while consumption rose by 3.6% to 29,782.9 thousand bbl/d in 2012.

The Asia-Pacific's proved natural gas reserves rose by 3.4% from a year earlier to 539.203 trillion cubic feet (Tcf) in 2014, as the region tried to replace oil and coal with natural gas to reduce carbon footprints and greenhouse effects. Production levels were up by 1.1% from a year earlier to 18,660 Bcf in 2012, consumption by 6.3% to 23,625 Bcf and imports by 6.5% to 9,663 Bcf, while exports fell by 5.3% to 4,023 Bcf. China's gas production grew rapidly with new pipelines and exploration of gas potential basins, especially in the western interior and offshore. It has the world's longest gas pipeline that began operating in the fourth quarter of 2012.

Australia's gas industry is also growing rapidly, with its deep waters providing long-term gas production growth. Fields throughout the North West Shelf are being developed to supply a growing domestic market and to expand LNG export capacity. New large deepwater discoveries in eastern India are also being developed, leading to higher gas output to replace that from Mumbai where production has peaked.

Industry Focus

Strengthening Energy Security

Asia is the second largest gas-consuming region, and demand is rising quickly. The International Energy Agency (IEA) estimates that the LNG market will expand by a third from 2011 to 2017. The demand for oil is also growing, and the region is exposed to potential petroleum supply disruption in the Middle East, where Iran currently threatens to block access for oil tankers to the Strait of Hormuz, through which 20% of the world's oil passes.

A major disruption in the strait could increase **oil** prices to US$160 per barrel and trigger a severe crisis in Japan. Without nuclear power to diversify its **energy** mix, Japan's federal deficit could reach Y12 trillion (US$112.8 **billion**), an associate for **energy** security and sustainability at Japan's Institute of **Energy** Economics estimates. Nuclear plants generated 30% of Japan's electricity before the Fukushima disaster, and the country has subsequently raised its imports of natural gas and introduced policies to boost renewable **energy** development. Without nuclear power, Japan is finding it hard to meet **energy** security goals.

Indonesia, a prominent regional producer of **oil** and gas, will need at least two more **oil** refineries to meet 50% of its fuel **oil** needs until 2020. Even with the construction of refineries with a capacity of 300 **million** bbl/d, the country will continue to be a net **oil** importer until 2025. Pertamina , the Indonesian state-owned **oil** and natural gas corporation, believes that demand for **oil** will continue to grow parallel with consumption in the transportation and industrial sectors, from 454.75 **million** barrels a year in 2013 to 850.38 **million** barrels in 2025.

China has urged Asian and European countries to boost their cooperation on **energy** security, disaster prevention and alleviation. It has also urged **energy** producers and consumers in Asia and Europe to work together to create a new principle of mutually beneficial cooperation, diversified forms of development and common **energy** security through coordination. Both regions need to develop clean and renewable **energy**, improve **energy** structure, stabilize prices, safeguard market stability, improve efficiency, and build **energy**-saving modes of production and consumption. Asian countries have acquired wide experience in disaster prevention, while European countries have developed the latest technology.

To boost **energy** security, **China** is urging the two regions to coordinate their policies, build a cooperative mechanism for emergency rescue in major disasters and provide mutual humanitarian assistance. **China** also recommends establishing an efficient information exchange channel to improve disaster monitoring and early warning and strengthen cooperation on the application of space technology in disaster prevention and alleviation. **China** has also suggested that countries share experience and improve their disaster prevention and alleviation ability through personnel exchange and training.

For Asia to reduce gas prices and improve **energy** security the region needs better physical connections between its various **energy** and electricity supplies. This was done by Europe to achieve relative **energy** security, and Asia could create such a super-grid by incorporating existing and new pipelines within Asia and those from Russia.

Policy and Regulatory Environment

Policies and regulations for all Asia-Pacific **oil** and gas industries are revised when the need arises to make them relevant and coherent with current markets and economic environments. Among the recent measures have been Myanmar Government reforming foreign investment laws, where the regime is made up of Myanmar Foreign Investment Law (2012) (FIL), Ministry of National Planning and Economic Development No.11/2013, Foreign Investment Rules (FIR), Myanmar Investment Commission Notification No.1/2013 (MIC Notification) and The State Law and Order Restoration Council Law No.9/89 (SOEEL).

The Ministry of National Planning and Economic Development (MNPED) is the government ministry responsible for foreign investment, while Myanmar Investment Commission (MIC) carries out administrative and regulatory function. In June 2014, MIC became an independent organization to encourage foreign direct investment in Myanmar.

The FIL applies to businesses that are not expressly prohibited and are listed economic activities under the MIC Notification. Foreigners must invest in **oil** and gas through a joint venture with a Myanmar citizen that could be an individual or corporation, with a shareholding split of 80% to 20%. Although this can be amended by MIC and there is subjective evidence to suggest that, the provision is not strictly enforced, especially with regard to more technical areas such as deep water offshore E&P activities, as long as there is a degree of local content. Under the SOEEL, investment in **oil** and gas is only permissible following approval from the Government and Myanmar's Ministry of **Energy** (MOE).

In order to obtain a permit from MIC, an **oil** and gas investor must first apply for a recommendation from MOE. Under the FIR, within seven days of the receipt of a recommendation request, MOE must then give its recommendation or otherwise to MIC for a final investment decision. Under draft environment regulations, which are applied in practice, as well as provisions contained in the MIC Notification, the application for MIC approval must now contain the Initial Environment Examination (IEE). The permit from MIC must be given within 90 days from the date of receipt of MOE recommendation. The further content of the Government's approval and recommendation is not precisely specified in the MIC Notification.

Key Points

Current Environment

Economic growth throughout the Asia-Pacific over the past six months led to a rise in the consumption of **oil** and liquefied natural gas (LNG) to fuel booming vehicle use and industrial growth, especially in **China**.**Oil** prices peaked at US$115.19 on June 19, 2014, before bottoming at US$99.37 a barrel on August 18 and then fluctuating upwards.Global **oil** demand rose slowly in the first half of 2014, due to slow economic recovery and tight **oil** supply due to sanctions on Iran.The stock prices of the top ten leading Asia-Pacific **oil** and natural gas companies by revenues rose by an average of 19.98% over the six months to June 30, 2014.The rate of Asia-Pacific **oil** and gas mergers and acquisitions (**M**&A) picked up slowly over the six months under review, amid a slowdown in the global economy and sanctions on Iranian **oil**.

Industry Profile

Asia-Pacific crude **oil** proved reserves grew by 1.1% from a year earlier to 45.875 **billion** barrels in 2014.Asia is the second largest gas-consuming region, with demand rising quickly and the IEA estimating the LNG market will expand by a third from 2011 to 2017.Asia could create a super-grid like Europe by incorporating existing and new pipelines within Asia and those from Russia to reduce gas prices and improve **energy** security.Floating LNG will be a solution to reduce E&P costs and unlock stranded gas.

Market Trends and Outlook

Asian companies are turning to unconventional gas to cut their reliance on imported **energy**, alleviate environmental damage and improve **energy** security.Growing Asian nations, especially **China** and India have led the world's **oil** demand over the past few years. The IEA expects Indian **oil** demand to rise by 3.9% annually and **Chinese** demand by 3.5% annually until 2030.Asian **equity** capital continued to flow into private North American **oil** and gas companies, continuing the trend for past four years.

The region's search for a more secure **oil** and LNG supply has driven it towards greater dependence on and engagement in key **oil** and gas exporting regions, especially the Persian Gulf and the Middle East.

Market Trends & Outlook

Asian Development of Unconventional Gas Increases

Asian economies are turning to unconventional gas to cut their reliance on imported **energy**, mitigate environmental damage and improve **energy** security. **China**, India and Thailand already consume more gas than they produce, and that gap will widen unless they can boost their production of unconventional resources such as tight gas, shale gas and **coal** bed methane. **Energy** ministers from Asia- Pacific Economic Cooperation (APEC) countries recognize the need to explore ways to secure supplies other than from conventional gas.

The growth in shale gas in the US is having ripple effects on gas pricing throughout the world, including Asia. Japanese companies are looking at Henry Hub pricing for natural gas, due to the correlation between that benchmark and the price Japan must pay to secure gas on the spot market. The prospects for continuing or have more rapid growth in production, both in the US and elsewhere, are pressuring mid and long-term price assumptions. The US Department of **Energy** 's latest long-term forecast expects shale gas production to reach more than 12 Bcf per day by 2020, and 17 Bcf per day by 2035. Asian companies are forming alliances with western firms who are familiar with the technology used in the US shale gas sector and are trying to secure a stand in that market themselves.

China is set to exploit more unconventional gas reserves to meet rising demand and to power its rapid economic growth as it grapples with **energy** shortages and climate change. The National **Energy** Administration (NEA) estimates **China** has huge unconventional gas resources, and that increasing unconventional gas production could ease **oil** demand, dodge rising costs of **oil** production and cut carbon emissions. **China**'s **coal**-based **energy** consumption mode is changing as the country seeks to reduce carbon dioxide emissions per unit of gross domestic product (GDP) by 40% to 45% from 2005 levels by 2020.

The Government is encouraging the use of more natural gas to meet its growing domestic **energy** needs, while reducing greenhouse gas emissions by using cleaner-burning gas and renewable **energy** resources. E&P companies are learning from foreign companies experienced in shale gas drilling how to explore for and develop **China**'s untapped shale gas resources. The development of shale gas has raised environmental concerns, including the possible pollution of groundwater supplies. However, most industry experts are confident that unconventional gas might soon become an additional alternative source of **energy**.

Asia-Pacific Continues to **Lead Oil** Demand Growth

The growing Asian nations, especially China and India, have led the world's oil demand over the past few years. The IEA expects Indian oil demand to rise by 3.9% annually and Chinese demand by 3.5% annually until 2030. Chinese oil demand is expected to more than double to 16.3 million bbl/d by 2030, from 7.7 million bbl/d in 2008, while Indian demand could jump from three million bbl/d in 2008 to 6.9 million bbl/d in 2030. This compares with just 1% year-on-year global growth, since most Organisation for Economic Cooperation and Development (OECD) economies are expected to have declining oil demand due to energy efficiency. India is likely to overtake Japan as the third largest oil and natural gas consumer by 2020, while China will overtake the US as the world's largest consumer by 2025.

The ten Association of Southeast Asian Nations (ASEAN) countries, many of which have seen rapid economic growth over the past three decades, will also see strong growth in energy demand. IEA estimates that total ASEAN demand is likely to increase from 3.5 million bbl/d in 2008 to 5.3 million bbl/d by 2030, because of rapid GDP growth and current levels of low energy consumption per person. ASEAN GDP is expected to rise by 4% annually from 2007 to 2015, and then by 3.7% a year from 2015 to 2030. Non-OECD Asia will see average annual oil demand growth of 1.8% until 2030.

Asian Investors Continue to Focus on North America

Over the past six months, Asian equity capital continued to flow into private North American oil and gas companies as it has over the past four years, with companies such as China Petroleum & Chemical Corp (Sinopec) (SSE: 600028), Itochu Corp (TES: 8001), Korea National Oil Corp (KNOC), CNOOC, Mitsui & Co (TSE: 8031), Marubeni Corp (TSE: 8002) and Reliance Industries Ltd (RIL) (BSE: RIL) very active. Investment targets ranged from Western Canada's oil sands and LNG complex to West Texas unconventional shale assets and the Gulf of Mexico through participation in buyout consortia that provide joint venture capital and preferred equity investment in corporations.

Through various asset bases, structures, returns and counterparties, investments are aimed at learning leading edge onshore drilling techniques, establishing incumbency in attractive asset bases and achieving strong returns.

Asian public institutional equity investors are following their private investment counterparts in looking at North American oil and gas opportunities for attractive growth and returns. Asian institutions are underweight in North American oil and gas, with investment totaling US$7.3 billion, 85% of it coming from Japan. North American public equity holdings in upstream companies indicate that there are opportunities to speed up investment in the sector.

Asian investors currently hold more than US$109 billion in oil and gas assets under management, and their market depth is enough to attract potential shareholders. Japan is the second largest single-country capital market in the world, with capital totaling US$22 trillion, and US$700 billion invested in foreign equities, 44% of it in North America. Realizing the great potential of Asian investors, North American companies have conducted non-deal road shows in Asia to educate institutional investors, with prioritized stops in Tokyo, Hong Kong, Beijing, Seoul and Singapore.

Australian institutional investors are also beginning to look to companies in North America, where the LNG industry is increasingly a supplier of choice to Asian markets. Globalization within the North America industry has speeded up and companies are forming operational and financial partnerships with Asian counterparts.

Market Outlook

A significant restriction on economic growth is the region's huge dependence on foreign oil and gas imports. To reduce dependency and boost energy security, countries are seeking to satisfy as much demand as possible from domestic sources, especially in China, India, Thailand, Malaysia and Indonesia. Thus, Asia is becoming an increasingly important region for oil and gas exploration and drilling. As the sector is dominated by offshore production, its offshore capex is likely to grow significantly over the next five years.

Asia-Pacific is likely to become the world's second largest gas market by 2015, but the market is dominated by long-term contracts, in which the price of gas is linked to that of oil, that have helped keep Asian gas prices much higher than those elsewhere.

Asia's rapid growth depends on the availability of LNG supplies to meet rising future energy needs, mainly for new, cleaner electricity generation. Its rush for resources risks pushing oil and LNG prices higher and strengthens producers in using energy for political and diplomatic advantage. The region's quest for more secure oil and LNG supplies has driven it towards greater dependence on and engagement in key oil and gas exporting regions, especially the Persian Gulf and the Middle East. The uncertain political situation and unrest in the Middle East have concentrated the risks of supply disruption on the Asian oil market,

which is the primary destination of Middle East oil, while disruptions in the Persian Gulf would expose all importers to price rather than physical risks.

Japan, once considered a mature and saturated market, has now become a resurgent market and will remain the world's largest LNG importer for the next few years. Japan's rising LNG needs have begun to intensify concerns among other Asian LNG buyers over energy security. These concerns will likely continue for the next five years, until more supplies become available from major new projects. By 2020, North American shale gas supplies could play a key role in meeting Asia's needs for supply diversification.

Country Profiles

Australia

Sector Overview

Over the past six months, Australia's oil production fell as consumption rose, in a continuing long-term inverse trend that has remained ongoing over several years. The oil and gas industry contributes 58% of Australia's primary energy and A$28 billion (US$25.9 billion) a year to the economy, with access to energy resources essential to continuing economic growth. The industry is responsible for more than A$0.30 (US$0.28) in every dollar of Australian private sector investment. While Australia has found gas faster than it has produced it, as it has done for a quarter of a century, it only has a decade of known oil resources remaining at current production rates.

The development of Australia's gas resources continued due to the rise in demand from Asia and the ability to sell LNG to Asia at oil-linked prices. Nevertheless, Australia is the world's most expensive place for offshore petroleum E&P, three times more expensive than the US Gulf Coast and a little costlier than Norway. Despite that, it has benefited from a US$180 billion LNG investment boom with seven major projects under construction.

These projects are 80% more capital intensive than those in operation, mainly due to labor costs being double those of many of its competitors, even though productivity is lower. The industry is in danger of missing out on another US$150 billion investment in new LNG projects due to high costs, although the investment is needed for new projects to meet Asian and domestic demand. The LNG industry is likely to dry up by 2017 if there are no additional projects.

The resources boom has provided successive Australian Governments with extra tax revenues for the past decade. The May 2013 tax changes in the federal budget, which affect exploration costs, and new capitalization rules, will negatively influence the industry's international competitiveness. They continue the trend of fiscal and regulatory changes that have reduced investor confidence. The industry is currently investing around A$200 billion (US$185.04 billion) over five years on new projects that will pay billions every year to the Government and create more than 100,000 new jobs.

In July, the Economic Regulation Authority (ERA) warned that Western Australia's domestic gas reservation policy inhibits the long-term development of the state's gas market. It believes that the costs that the policy imposes on Western Australia's economy far outweigh any benefits that it is believed to have. The Australian Petroleum Production and Exploration Association (APPEA) claimed the ERA had demonstrated the Government's interference in the gas market deters investment and production.

Oil Sector

The Energy Information Administration (EIA) estimates Australia's crude oil proved reserves at 1.433 billion barrels in 2014, the same level as 2013. Production levels fell by 13.9% from 2012 to 446.7 thousand bbl/d in 2013, while consumption picked up by 0.9% to 1,136.1 thousand bbl/d. Imports increased by 2.2% from 2011 to 503.057 thousand bbl/d in 2012, while exports decreased by 3.9% to 261.333 thousand bbl/d.

Natural Gas Sector

The EIA estimates Australia's 2014 natural gas reserves at 43.037 Tcf, the same level as 2013. The country produced 1,902 Bcf in 2012, up by 4.6% from a year earlier, and consumed 1,718 Bcf, an increase of 28.3%. Imports in 2012 decreased by 22.6% from 2011 to 178 Bcf, and exports by 3.4% to 925 Bcf.

Gas production is growing, but generates less than 9% of the country's electricity, low by international standards. Gas is an under-used resource with potential for further expansion as it is the cleanest practical source of large-scale base load and peaking power for Australia, is cheaper than solar and wind power, and does not depend on weather conditions or the time of day.

Leading Companies

Santos (ASX : STO)

In first quarter 2014, Santos produced 12.2 **million** boe, up by 1% from a year earlier due to the start-up of Fletcher Finucane in Carnarvon Basin, offshore of Western Australia in May 2013 offset by lower Western Australia gas production. Sales volumes increased by 6% to 13.8 **million** boe from a year earlier, but decreased by 12% from the previous quarter. Sales revenue rose by 28% to US$913 **million**, due to higher third-party crude **oil** sales. Gas production of 8.7 **million** boe was 4% lower than a year earlier, with higher Darwin LNG and Cooper Basin production offset by lower production from Carnarvon Basin due to lower customer nominations.

Woodside Petroleum (ASX : WPL)

Woodside Petroleum 's production increased to 23 **million** boe in first quarter 2014, up by 5% from the corresponding period in 2013, but down by 0.9% from the previous quarter. Sales volumes also increased, by 6.9% from a year earlier to 23.2 **million** boe, but only rose by 0.9% from the previous quarter. The increase in production and sales volumes was due to the restart of the Vincent FPSO, offshore Western Australia in late 2013. Sales revenue increased by 15.9% to US$1,675 **million** from a year earlier and increased by 1.6% from the previous quarter due to additional **oil** volumes **sold** and higher realized prices for Pluto LNG volumes **sold** in the period. The average Brent price for the quarter was US$107.87 per barrel, below the US$112.64 per barrel a year earlier.

Market Outlook

New plants are likely to boost Australia's LNG capacity from 24 **million** metric tonnes a year to more than 80 **million** metric tonnes by 2017, with most of the additional output designated for Asian markets. Many sedimentary basins have seen little exploration, while many regions with hydrocarbons have not been drilled to any significant extent.

The closure of Kurnell refinery at New South Wales, which will happen by the end of 2014, will result in Australia sourcing only around half of its refined **oil** products domestically. The full closure of BP Plc 's (LSE: BP) Bulwer **Island** refinery, Brisbane in mid-2015 would result in Australia supplying only around one third of its own petrol and diesel. The increasing reliance on **oil** imports is likely to benefit independent trading houses.

China

Sector Overview

Over the past six months, **China**'s economic growth has slowed and **oil** and petrochemical demand has been weak, although demand for **oil** products continued to grow. The Government further improved the pricing mechanism for **oil** products, adjusted natural gas prices and announced a premium pricing policy for upgraded quality **oil** products.

China is the world's largest **energy** consumer and the second largest **oil** consumer behind the US. Its economic development and prosperity depends on its access to natural resources of which it has few of its own. **China**'s 12th Five-Year-Plan sets aggressive targets for shale gas production of 0.6 Bcf per day by 2015, with plans to scale-up production to between 5.8 and 9.6 Bcf per day by 2020. Between 1,200 and 1,500 wells need to be drilled to meet the target, but only 60 exploration wells have been drilled so far.

China continued to focus on developing largely unexploited reserves in the western interior provinces and offshore fields, since its large **oil** fields have matured, and production has peaked. It had speeded up its exploration for **oil** and gas in deepwater areas in the South **China** Sea, which contains up to 30 **billion** tonnes of **oil** and 16 trillion cubic meters of gas.

China continued to build pipelines to ship 440,000 barrels of crude and 12 **billion** cubic meters of natural gas a day from the Bay of Bengal in Myanmar to Kunming, Yunan Province. The **oil** pipeline will be 800km long and the natural gas pipeline will extend further to meet the needs of cities such as Kunming, Guizhou and Guangxi in southwestern **China**. This project is part of the country's efforts to improve **energy** security as its economy continues to expand.

Oil Sector

EIA data shows **China**'s crude **oil** proved reserves in 2014 rose by 2.8% from 2013 to 24.376 **billion** barrels. Production in 2013 rose by 2% from 2012 to 4,459.4 thousand bbl/d, and consumption by 4.3% from 2011 to 10,276.8 thousand bbl/d in 2012.

In July, China National Petroleum Corp (CNPC) relocate its billion-dollar rig, HD 981 from the disputed area off the Paracel Islands in the South China Sea to an area around the Qiongdongnan basin, closer to Hainan Island, after the giant oil rig was deployed two months ago. During the exploration, the rig found signs of oil and gas and the company planned to assess the data and decide on its next steps.

China had proved natural gas reserves of 155.382 Tcf in 2014, an increase of 10% from 2013, EIA data shows. Production levels rose by 5% from 2011 to 3,811 Bcf in 2012, consumption by 12% to 5,181 Bcf and imports by 32.8% to 1,471 Bcf while exports decreased by 10.6% to 101 Bcf. Domestic productions could not match consumption, causing a big rise in imports.

China made a US$400 billion gas supply deal with Russia in May as part of a longer term strategy to raise natural gas imports through pipeline and LNG. While China is also connected to pipeline corridors in central Asia and Myanmar, it will take years to ramp up to their full potential.

Leading Companies

China Petroleum & Chemical Corporation (Sinopec) (SSE: 600028)

Oil and gas production increased by 8.77% from a year earlier to 118.96 million boe, where crude oil production increased by 8.76% to 89.37 million barrels and natural gas by 8.68% to 177.37 Bcf. The construction of shale gas production capacity in Fuling, Sichuan achieved significant progress with 22 wells in operation in the pilot project in the first quarter.

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PetroChina , the nation's largest oil and gas producer, earned a net profit of RMB34,758 million (US$5,648.18 million) in first quarter 2014, down by 5.3% from a year earlier, basic earnings per share totaled RMB0.19 (US$0.03), and its operating income down by 2.1% to RMB528,947 million (US$85,953.89 million). The company made significant progress in oil and gas E&P and achieved steady output increases in the first quarter. Crude oil production increased by 0.3% from a year earlier to 231.7 million barrels and marketable natural gas by 6% to 789.7 Bcf. Adhering to the principles of market-orientation and profitability, PetroChina optimized resource allocation and sought rigorously to reduce losses and increase profitability in refining and chemicals. It also adjusted its marketing strategies to boost sales and enhance profitability by focusing on quality and profitability.

Market Outlook

The EIA estimates that China will import about 75% of its crude oil by 2035, as demand is likely to grow faster than domestic production. China's access to natural resources is an important requirement for social stability and economic growth. China hopes that the semi-submersible CNOOC 981 rig, the first independent deepwater drilling rig operated by a Chinese company, which began drilling in the second quarter of 2012, will reduce its dependence on oil imports and help develop deepwater exploration technologies and equipment. Further shale exploration will help to meet the growing domestic demand for gas and reduce the country's dependence on imports.

India

Sector Overview

The oil and gas industry is one of the six main industries in India and plays an important role in the economy. India being the world's fourth largest importer increasingly relies on imported LNG. It has a network of 9,537 km of crude pipeline with a capacity of 138.3 million metric tonnes per annum (mmtpa). IOCL has the longest crude pipeline network, 4,376 km, 45.9% of the national total, and has the longest pipelines, the 1,870 km Salaya-Mathura-Paripat Pipeline and the 1,302 km Haldia-Barauni or Paradip-Barauni Pipeline. Oil and Natural Gas Corporation (ONGC) (BSE: ONGC) has the largest capacity, 65.5 mmtpa, or 47.4% of the national total, followed by OICL's 40.4 mmpta, or 29.2%.

On July 16, the Government has officially approved HPCL to set up its proposed refinery and petrochemical complex in Barner district, Rajasthan. The refinery will have a crude processing capacity of 9 million tonnes per year and will be implemented by HPCL Rajasthan Refinery Ltd (HRRL), a joint venture of HPCL and other equity partners and would use crude produced locally and from elsewhere, making it Rajasthan's first refinery and the country's first petrochemical plant designed to process indigenous crude. The Indian Ministry of Petroleum and Natural Gas estimated the project cost at US$6.85 billion and construction time at 4 years.

Oil Sector

India had proved crude oil reserves of 5.654 billion barrels in 2014, up by 3.3% from a year earlier. Production levels declined by 0.8% from 2012 to 982.2 thousand bbl/d in 2013, while consumption rose by 6.2% from 2011 to 3,621.8 thousand bbl/d in 2012.

Indian NOCs have purchased equity stakes in overseas oil and gas fields in South America, Africa and the Caspian Sea region to obtain reserves and production capability. Nevertheless, most imports continue to come from the Middle East, where Indian companies have little direct access to investment.

Natural Gas Sector

India's proved reserves of natural gas rose by 7.2% from 2013 to 46.968 Tcf in 2014. Production decreased by 12.3% from 2011 to 1,504 Bcf in 2012 and consumption by 9.1% to 2,056 Bcf, while imports increased by 3.1% to 597 Bcf, with no exports.

The country has a huge potential demand for natural gas, the penetration of which is much lower than the global average. India wants to double the current 10% share of gas in its energy mix by 2020, and reduce the consumption of expensive diesel and fuel oil. The finance head at LNG importer Petronet LNG Ltd (NSE: PLNG), 50% owned by state-run firms, said that any increase in natural gas prices would help raise the acceptability of imported LNG.

Leading Companies

Oil and Natural Gas Corporation (ONGC) (BSE: ONGC)

ONGC provides 72% of the country's total crude oil and 48% of natural gas production. For the fiscal year ended March 31, 2014, it reported 10.9% higher profit after tax of Rs31,524 crore (US$5,201.46 million) compared with a year earlier, and 14.1% higher revenue of Rs56,384 crore (US$9,303.36 million). Crude oil production declined by 0.5% from a year earlier to 25.99 million metric tonnes and natural gas by 1.9% to 24.85 billion cubic meters.

ONGC's subsidiary ONGC Videsh Ltd (ONGC Videsh) signed a memorandum of understanding (MoU) with Turkish Petroleum Co (TPAO) on the sidelines of World Petroleum Congress (WPC) 2014 at Moscow. The MoU paves the way for joint co-operation between two NOCs in the hydrocarbon sector. The MoU envisages two companies working together for E&P activities in Turkey, joint participation in bidding for opportunities including exploration bid rounds in third countries and pursuit of hydrocarbon area related research and development activities.

Reliance Industries Ltd (RIL) (BSE: RIL)

RIL, the largest private sector enterprise in India, and one of the world's top ten producers of petrochemical products, increased revenue by 8.1% from a year earlier to Rs4,01,302 crore (US$66,214.83 million) in the fiscal year ended March 31, 2014, and net profit rose by 4.7% to Rs21,984 crore (US$3,627.36 million). Higher prices and increase in volumes accounted for 7.7% and 0.4% growth in revenue respectively.

The company is set to restart its petrol-retail operations as diesel prices are likely to be de-regulated by Diwali Festival in mid-October. The company had to close down its pumps in 2008 due to the differential with the diesel prices of state-owned oil marketing companies and private retailers. About 1,100 pumps are closed since 2008 and the company would start them first before setting up new pumps.

Market Outlook

India is likely to experience an energy deficit, importing 77% of its total domestic crude oil demand. The gas deficit is likely to continue for the next six months, boosting LNG imports, while a large portion of demand will remain unsatisfied due to price sensitivity among end users.

Although Indian oil and gas companies are likely to explore global investment opportunities in shale gas, this is unlikely to have any impact on improving the gas deficit situation in the near future. India is likely to become a net importer of natural gas in the next two years if the situation does not change, risking over-dependence on other countries and giving it little bargaining power. The Petroleum Ministry expects imports of LNG to surpass domestic production in fiscal 2015.

The Government calculates that without the price increase, the gas supply will be only half of India's demand, which will rise from the present 286 million cubic meters a day to 466 million cubic meters in 2016 or 2017.

Indonesia

Sector Overview

Indonesia is the world's third fastest growing economy, with its **energy** sector seen by the Government as playing a key role in maintaining the country's development. Crude **oil** production has declined since 1998, as the largest **oil** fields have matured and no new comparable resources have been developed. The Indonesian Petroleum Association (IPA) warned that **oil** and gas potential needs to be developed to drive sustainable economic growth, and the country is focusing on securing **energy** sources for its domestic market.

In February, PT Kreasindo Resources Indonesia (KRI) and Nakhle Barani Pardis Co (NBP) signed a MoU to explore the feasibility of building a refinery designed to process heavy crude **oil** in either West Java Province or Banten Province, Indonesia. Under the agreement, KRI will own 70% of the planned 300,000 bbl/d refinery, while NBP own the remaining 30% and act as the refinery's heavy crude supplier. The companies estimated the refinery would require an investment of US$3 **billion**, which is based on an initial capacity of 150,000 bbl/d.

Oil Sector

Indonesian crude **oil** proved reserves fell by 10.9% from 2013 to 3.591 **billion** barrels in 2014. Production levels fell by 5% from a year earlier to 939.7 thousand bbl/d in 2013, while consumption increased by 3.6% from a year earlier to 1,590 thousand bbl/d. The remaining hydrocarbons in Indonesia are becoming harder to extract as most are in remote spots that require lots of expensive new infrastructure and technology, and state-owned Pertamina lacks the necessary expertise.

Natural Gas Sector

Indonesia's proved natural gas reserves fell by 3.7% from 2013 to 104.37 Tcf in 2014. Production levels declined by 5.2% from 2011 to 3,087 Bcf in 2012 and exports by 10.4% to 1,230 Bcf, while consumption increased by 0.7% to 1,329 Bcf, and there were no imports in 2011.

Three new gas fields developed by Chevron Indonesia Co - Bangka field, Gendalo and Gehem, all in East Kalimantan - are likely to begin production in 2015, 2017 and 2018, respectively. Masela block in the Arafura Sea, north of Australia, with total reserves of 171.316 **billion** cubic meters and a soon to be set up floating LNG plant is expecting first production in 2016.

Leading Companies

PT Medco Energi Internasional Terbuka (JSX: MEDC)

Medco Energi's main activities are **oil** and gas exploration, development and production, power generation and renewable fuels with operational areas in Indonesia, Cambodia, Oman, Yemen, Libya, Tunisia and the US, including one liquefied petroleum gas (LPG) plant and three power plants. In the first quarter of 2014, operating revenue declined by 8.3% from a year earlier to US$201,979,262 and gross profit by 3.1% to US$85,918,093.

The **company** through its subsidiary, PT Medco E&P Indonesia has shut down its **oil** production from Meta and Lica **oil** wells in South Sumatera for to security reasons. The production was brought to a standstill due to a road blocking incident by a **group** of people who disturbs crude **oil** transportation from the **oil** wells to Matra **oil** gathering station in Musi Banyuasin, South Sumatera. The **oil** production from both wells are approximately 1,000 bbl/d, 2% of Medco Energi total **oil** and gas production in Indonesia. The wells belongs to the Government, with its 80% production owned by the Government.

PT Energi Mega Persada (ENRG) (JSX: MEDC)

PT Energi Mega Persada (ENRG) is an independent upstream **oil** and gas **company** with **operations** ranging from Northern Sumatra to East Kalimantan, Java and Eastern Indonesia. Its net sales for the first quarter of 2014 rose by 8.3% from a year earlier to US$193,843,392, operating income by 12% to US$58,243,101, net income by 508.8% to US$17,793,588 and gross profit by 9.1% to US$62,429,614.

In July, the **company**'s 60.49% owned and operated Malacca Strait PSC block commenced its first **commercial** gas volume of 8.5 **million** cubic feet (MMcf) per day. The gas output is produced from the block's Kuat gas field and is **sold** at US$8 per **million** British thermal unit (btu) with an escalation term of 3% per annum from July 2014 to August 2020.

Market Outlook

According to Special Task Force for Upstream **Oil** and Gas Business Activities (SKK Migas), Indonesia will miss its 2014 liquids production target of 870,000 bbl/d set in the annual budget despite the additional production of 13 new **oil** and gas projects. The new projects will have combined production capacity of

954,000 thousand cubic feet per day of gas and 194,121 bbl/d of **oil** and condensate, and are expected to start production in 2014 with production of an average 803,800 bbl/d.

Japan

Sector Overview

Japan is the world's largest LNG importer, second largest **coal** importer and third largest net **oil** importer. The country relies almost solely on imports to meet its **oil** consumption needs, as Japan's **oil** resources are very limited. Japan's limited hydrocarbon reserves and its need to secure **energy** imports are the reason the Government uses to support upstream Japanese companies in their quest to **purchase** overseas **oil** and natural gas **equity**. Japan that is highly dependent on the Middle East for the majority of its supply is seeking to diversify its supply sources in Russia, Southeast Asia and West Africa.

Restoration and reconstruction from the Great East Japan Earthquake pushed the Japanese economy to modest recovery over the past six months. All of Japan's nuclear power generation capacity was removed from service in late 2013. **Oil** and natural gas replaced all of the lost nuclear generation in 2011 and 2012. As nuclear capacity resumes operation following government approval of facilities, Japan expects to reduce the current share of fossil fuel generation. Japan began producing natural gas from offshore methane hydrates in March 2013, a major breakthrough with potentially explosive consequences for both **energy** markets and efforts to deal with climate change. It is considered the world's first major breakthrough in tapping a potentially massive alternative source of natural gas and could meet Japan's needs for 100 years. The Government plans to develop technology to enable **commercial** use by 2018.

Oil Sector

Japan's crude **oil** proved reserves in 2014 were the same as in 2013, 0.044 **billion** barrels. Production levels dropped by 0.1% from 2012 to 135.4 thousand bbl/d in 2013, and consumption by 3.5% to 4,563.1 thousand bbl/d, while imports increased by 2.7% from 2011 to 3,456.989 thousand bbl/d in 2012 and there were no exports.

Japan has long seen a declining trend in domestic demand for petroleum products, and this continued over the past six months due to more use of fuel-efficient vehicles and the progress of industrial **energy**-saving measures. Nevertheless, the demand for petroleum products was at a similar level to that of a year earlier because of increased demand for fuel oils for electric power stations resulting from the suspension of nuclear power **operations** after Fukushima disaster.

Natural Gas Sector

Japan's 2014 proved reserves of natural gas were the same as in 2013, 0.738 Tcf. Production decreased in 2012 by 2.9% from a year earlier to 169 Bcf, while consumption rose by 3.5% to 4,617 Bcf, imports by 4.4% to 4,295 Bcf, and there were no exports.

Although Japan is a large natural gas consumer, it has a relatively limited domestic natural gas pipeline transmission system for a consumer of its size. The limited pipeline system is partly due to geographical constraints posed by the country's mountainous terrain and the result of previous regulations that limit investment in the sector. The nuclear plant shutdown after the Fukushima disaster forced Japan to import more LNG for power utilities, causing short-term prices to shoot up on the spot market.

Leading Companies

JX Holdings (TSE: 5020)

The **company**'s net income fell by 32.9% to Y107,042 **million** (US$1,006.19 **million**) in the fiscal year ended March 31, 2014; net sales rose by 10.6% to Y12,412,013 **million** (US$116,672.92 **million**), operating income fell by 15% to Y213,657 **million** (US$2,008.38 **million**) and ordinary income by 7.9% to Y302,329 **million** (US$2,841.89 **million**). The Vietnamese government approved its plan to develop the Rand Dong **oil** field, offshore Vietnam using a technology that enhances the crude **oil** recovery rate by injecting hydrocarbon gas into an **oil** reservoir, and approved a five-year extension of the production sharing contract term in the block.

Idemitsu Kosan (TSE: 5019)

Its net sales rose 15.1% to Y5,034,995 **million** (US$47,328.95 **million**), while ordinary income fell 24.9% to Y81,921 **million** (US$770.06 **million**). Operating income down by 29.4% to Y78,197 **million** (US$735.05 **million**) due to increased crude **oil** costs following the depreciation of the Japanese yen was partially offset by increased earnings from petrochemical products and the increase in the impact of inventory valuation.

Market Outlook

Japan's **oil** consumption is likely to remain static in the next six months. The Government is increasingly cautious about the impact of high fuel costs on the economy, especially since the Fukushima disaster forced utilities to return to thermal power generation. Japan is now trying to obtain shale gas from the US, and hoping to negotiate a price cut from other resource-rich countries such as Russia, which is facing a declining share of the European market.

South Korea

Sector Overview

South Korea is a major **energy** importer, mainly of **oil**, natural gas and **coal**. It is the world's fifth largest crude **oil** importer and second largest LNG buyer. South Korea and Turkmenistan signed a US$4 **billion** deal in June to construct natural gas processing plants in Turkmenistan. The state-owned Turkmengaz together with LG International Corp (KSE: 1120) and Hyundai Engineering & Construction Co Ltd (KSE: 720) will build the gas processing plants. Under the contract, South Korean firms would build a US$2.5 **billion** gas-to-liquids plants with an annual capacity of 600,000 tonnes and a US$1.5 **billion** plant to produce 290,000 tonnes of polyvinyl chloride and 190,000 tonnes of hydrate a year.

Oil Sector

South Korea does not have its own **oil** reserves and imported 2,548.657 thousand bbl/d in 2012, an increase of 1.3% from 2011. It consumed 2,305.4 thousand bbl/d in 2013, an increase of 0.2% from 2012. **Oil** demand is likely to continue to drop up to 2019, due to more stringent **energy** efficiency standards and a declining population. **Oil** companies have upgraded refining facilities and increased upstream investment, and have begun investing in alternative **energy** projects.

Natural Gas Sector

South Korea's proved reserves of natural gas increased by 9.1% from 2013 to 0.203 Tcf in 2014. Production increased by 2.8% from 2011 to 37 Bcf in 2012, consumption by 7.5% to 1,764 Bcf, imports by 2.3% to 1,688 Bcf, and there were no exports. In June, during the summit talks between South Korean President **Park** Geun-hye and her Uzbek counterpart Islam Karimov, both agreed to push for new joint projects in gas development, and exchanged views on development of the Surgil gas field near the Aral Sea and construction of a gas-chemical plant.

Leading Companies

SK **Energy** (KSE: 96770)

SK **Energy** is planning to secure its reputation as South Korea's leading export **company** through the reinforcement of its export product portfolio and the verification of export markets.

S-**Oil** Corp (KSE: 10950)

S-**Oil** is in the fuel, petrochemical and lubricants businesses and is one of the most competitive Asia-Pacific **oil** refiners. It owns the 580,000 bbl/d Onsan Refinery at Ulsan and other facilities producing petrochemicals and lube base. Its first quarter 2014 sales fell by 5.1% from a year earlier to KRW7,602,458 **million** (US$7,602.46 **million**), gross profit by 59.1% to KRW186,211 **million** (US$186.21 **million**), operating income by 85.6% to KRW46,938 **million** (US$46.94 **million**) and cash flow by 3% to KRW779,477 **million** (US%779.48 **million**).

Market Outlook

As South Korea plans to boost production at its overseas fields to 35% of imports by 2020, to strengthen **energy** security, the Government is introducing comprehensive measures to reduce **oil** consumption, which greatly affects economic growth. The measures include boosting production of more fuel-efficient cars, tax exemptions for buyers of hybrid cars and small vehicles, and increasing tax deductions by KRW1 **million** (US$9,000) for public transport users who make payments through credit or transportation cards.

The Government hopes that the measures will reduce **oil** consumption by 26 **million** barrels up to 2015, and cut dependence on **oil** to 33% of all **energy** consumption in 2015, from the estimated 37.5% in 2012. At the same time, South Korea has made the development of shale gas and electricity storage systems the new economic growth engines, and is looking to tap overseas shale gas. The Ministry of Knowledge Economy wants to expand imports of the new fossil fuel to 20% of all natural gas imports by 2020, hoping that the development will reduce the price of LNG and the money spent on gas imports.

Currency Conversion Table

Currency exchange rates as of September 10, 2014

currency unit	Units per US$	US$ per Unit
Australian Dollar (A$)	1.0808	0.9252
Chinese Yuan (RMB)	6.1551	0.1625
Hong Kong Dollar (HK$)	7.7502	0.1290
Indian Rupee (Rs)	60.5457	0.0165
Indonesian Rupiah1 (Rp)	11,764.7000	0.0001
Japanese Yen (Y)	106.2000	0.0094
Malaysian Ringgit (RM)	3.1931	0.3132
South Korean Won (KRW)	1,026.8000	0.0010

Bank Indonesia

Key References

Key References

Global

BP Statistical Review of World **Energy**

A comprehensive guide to **energy** market statistics.

http://www.bp.com/centers/**energy**

Energy Information Administration (EIA)

A statistical agency of the US Department of **Energy** .

http://www.eia.doe.gov

International **Energy** Agency (IEA)

An intergovernmental body committed to advancing security of **energy** supply, economic growth and environmental sustainability through **energy** policy cooperation.

http://www.iea.org

Organization of Petroleum Exporting Countries (OPEC)

Comprised of 11 **oil** developing countries, OPEC 's primary mission is to stabilize **oil** prices and help producers achieve a reasonable rate of return on their investments.

http://www.opec.org

Australia

Australian Bureau of Agricultural and Resource Economics (ABARE)

A government economic research agency that provides economic analysis and forecasts to enhance the competitiveness of the Australian agricultural, mineral, **energy** and forestry industries.

http://www.abare.gov.au

Australian Bureau of Statistics (ABS)

Australia's national statistical agency.

http://www.abs.gov.au

Australian Institute of Petroleum (AIP)

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http://www.aip.com.au

Australian Petroleum Production and Exploration Association (APPEA)

A representative body of the **oil** and gas exploration and production industry in Australia.

http://www.appea.com.au

Australian Trade Commission

Australia's trade and investment development agency.

http://austrade.gov.au

China

General Administration of Customs

A full ministerial level government agency that directly reports to the State Council of **China** and manages all the customs regions nationwide.

http://www.customs.gov.cn

National Development and Reform Commission (NDRC)

A macroeconomic regulatory department that develops national economic strategies, long-term economic plans as well as annual economic plans.

http://www.ndrc.gov.cn

India

India Brand **Equity** Foundation (IBEF)

A public-private partnership between the Ministry of Commerce and Industry, the Government of India , and the Confederation of Indian Industry whose primary objective is to build positive economic perceptions of India globally.

http://www.ibef.org

Ministry of Petroleum and Natural Gas

The ministry that develops and coordinates policy, law and projects related to petroleum in India.

http://www.petroleum.nic.in

Indonesia

Badan Pelaksana Minyak dan Gas Bumi (BP Migas)

A regulatory body responsible for all upstream **operations** in Indonesia.

http://www.bpmigas.com

Indonesian Petroleum Association (IPA)

.

http://www.ipa.or.id

Ministry of **Energy** and Mineral Resources (MEMR)

The ministry responsible for developing Indonesia's substantial **energy** and mineral resources.

http://www.setjen.dpe.go.id

Japan

Ministry of Economy, Trade and Industry (METI)

METI is responsible for a wide range of industrial fields, including basic industries, machinery and information industries, and consumer goods industries. It is also in charge of affairs related to foreign trade, high technologies, environmental protection and industrial location, **energy** and other areas.

http://www.meti.go.jp/english

Petroleum Association of Japan (PAJ)

PAJ is an association of refiners and primary distributors in Japan. Its main activities include collecting the opinions of its member companies and compiling the proposals to be incorporated into the Government's petroleum policy.

http://www.paj.gr.jp/english/index.html

South Korea

Korea **Energy** Economic Institute (KEEI)

The KEEI contributes to national **energy** policy-making by collecting, analyzing, and disseminating **energy** information.

http://www.keei.re.kr/keei/main_eng.html

Korea Petroleum Association (KOPA)

KOPA aims to attain a sound and systematic development of the petroleum industry through the promotion of mutual understanding among member firms.

http://eng.**oil**.or.kr

Ministry of Commerce, Industry and **Energy** (MOCIE)

MOCIE plays a pivotal role in South Korean economic policy regarding industrial development, international trade and **energy** resource management.

http://www.mocie.go.kr/eng

Sales Contacts

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IPD Oil and Gas

PUB Mergent, Inc.

AN Document MIRAUS0020141015ea9100008

