

A large offshore oil rig is shown in the background, extending into the ocean. The rig is a complex structure of steel and concrete, with various platforms and towers. The sky is a clear, light blue, and the water is a deep blue. The rig is the central focus of the image, with its structure extending from the bottom left towards the top right.

# Southeast Asia

## What crisis?

Insights into the oil and gas sectors  
of Malaysia, Singapore and Vietnam

Photo courtesy of PV Drilling

### SOUTHEAST ASIA: INTRODUCTION

# Introduction

*Leading the region in economic growth*

**D**espite the financial havoc and economic upheaval resulting from the global financial crisis, whereby companies went bankrupt and countries suffered massive retrenchments in growth rates, companies in Asia often ask, “What crisis?”

Asian countries continue to boast high GDP growth rates and those economies that did suffer, have since regained their former pace of growth. The falling oil and gas prices naturally affected the global exploration and production (E&P) scene, but nowhere is the hope and excitement for a comeback as evident as in the Southeast Asian region today.

As Asian powerhouses continue to expand, demand for oil and gas will increase and, with prices once again nearing pre-crisis levels, Southeast Asia will represent one of the most exciting and dynamic regions for investment in the oil and gas sector.

Despite each country’s petroleum industry being in variable stages of maturity, broader themes are evident across the region. Production is declining as oil and gas fields mature. To counter the downward trend in oil, gas production has generally risen in the region and liquefied natural gas (LNG) has become one of the major investment opportunities and areas for development. As onshore and shallow water fields are reaching exhaustion, E&P players are conducting exploration activities in deeper waters.

While the potential returns of deepwater discoveries are high, projects undertaken in these environments are riskier and much more expensive, and in Southeast Asia there is a need for increased deepwater and subsea technology. This provides opportunity for more technologically advanced companies who have the ability to make deepwater developments viable. “Southeast Asia represents one of the

main emerging markets for subsea production systems, as operators are having to go further out into deeper waters to sustain and increase production of oil and gas,” says Mads Hjelmeland, general manager of Asia Pacific for Framo Engineering. “The number of subsea tiebacks seen on a global scale has been increasing significantly over the last 5 to 10 year period, where remote and marginal fields are tied back to existing production facilities in a cost effective manner. This approach is now also being applied in Southeast Asia, in parallel with significant enhanced recovery strategies in order to get more hydrocarbons out of the ground.”

Apart from focusing on deepwater to stem decreasing flows of oil, companies have also been investing in enhanced oil recovery (EOR) projects and the development of brown and marginal fields. Over the next few years investment possibilities in both the upstream and downstream sectors will yield plenty of opportunities for companies already in the region and for those yet to come. By taking a look at some of the major countries in Southeast Asia - Malaysia, Vietnam and Singapore - this report will introduce potential investors with an overview of the main issues that will define the trajectory of the region’s hydrocarbon business over the next few years. □

This report was prepared by Global Business Reports for *Oil and Gas Investor*.

The authors are Eugene Yukin (eyukin@gbreports.com), Jolanta Ksiezniak (jksiezniak@gbreports.com) and Barnaby Fletcher (bfletcher@gbreports.com).

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# The Golden Khersonese

*A mature market transforms*

Appearing in Ptolemy's map dating to the second century AD, the peninsula of Malaysia was known to the ancients as the "Golden Peninsula." Nearly two thousand years later, the country today is one of Southeast Asia's largest economies with a GDP growth rate in 2010 of 7.2%. It is also the world's third largest exporter of LNG, the largest exporter of palm oil and ranks 27th in the world for its crude reserves and 10th for its gas.

Since the 70's, oil and gas have been Malaysia's chief economic drivers. First discovered in 1910 by Shell in Miri off the coast of Borneo, petroleum has been a primary sector attracting foreign investment into the country. Malaysia's oil reserves currently stand as the third highest in the Asia-Pacific region. The key producing regions are off the eastern coast of Peninsular Malaysia, the coasts off Sarawak and Sabah (located on the island of Borneo), and the Malaysian Thailand Joint Development Area, a 4,505 square mile zone created for the two countries to exploit petroleum reserves on the seabed that are claimed by both countries. According to figures from 2010, Malaysia's total reserves accounted for 20.56 billion barrels of oil equivalent (BOE). Oil reserves now stand at 5.80 billion BOE and natural gas amounts to 14.76 billion BOE. Despite recent increases in reserve estimates, Malaysia's oil production has steadily fallen since 2004 and the country is expected to become a net importer of oil by 2013. In 2010, oil production decreased to 657.2 thousand barrels per day and gas production stood at 5.8 billion cubic feet per day.

## Role of Petronas

An iconic symbol around the world, the twin Petronas towers in Kuala Lumpur are a testament to the role that the company has played in Malaysia. With close to 41,000 staff around the globe, Fortune 500 ranked it as the world's 107th largest company in 2010. Created by the Petroleum Development Act of 1974, Petronas was bequeathed ownership and exclusive rights to all of Malaysia's onshore and offshore oil and gas reserves.

As a result, oil and gas in Malaysia is synonymous with Petronas and each company wanting a meaningful participation in the industry must do it via a licence obtained from the company.

Having recently engaged itself in large scale and risky projects abroad, Petronas has refocused its attention on EOR projects at home in order to boost production. In ad-



Mr. Sofiyan Yahya, President of the Malaysian Oil and Gas Services Council

dition, recent discoveries off the coast of Sarawak containing more than 100 million barrels of oil and another find of 2.6 Tcf of gas have prolonged the lifespan of Malaysia's oil reserves to 24 years and 38 years for natural gas. As a result of these discoveries, Malaysia now plans to expand its exploration efforts and will drill more than 50 exploration wells over the next several years.

## PEMANDU and the Economic Transformation Programme

In the course of an ambitious plan for Malaysia to become a high-income nation by 2020, the government and the oil and gas industry entered the new millennia on a high note. Up until 2000, large scaled investments had been made into both the upstream and downstream sectors, but the past 10 years have seen a decline in activity. The government is thus determined to do more to ensure the success of the 2020 vision.

PEMANDU and the country's Economic Transformation Programme (ETP) are the country's answer. PEMANDU stands for the Performance Management and Delivery Unit, which is run directly by the Prime Minister Datuk Seri Najib Tun Razak's office, and is responsible for overseeing the successful implementation of the ETP. The program is meant to ensure that the country grows by at least 6% for the next 9 years and, since the program began, several major projects have been announced within the oil and gas sector.

On April 19th, the Prime Minister announced the creation of the Malaysian Resource Petroleum Unit (MPRC), whose sole purpose is to make the country the top oil and gas hub in Asia by 2017. In 2011 the unit is expected to attract MYR320 million (\$108 million) in investment.

Despite the fact that many of these initiatives were launched just last year, there has been a visible impact on the industry, according to Sofiyan Yahya, who is the president of the Malaysian Oil and Gas Services Council (MOGSC), an association promoting the interests of both foreign and local service providers. "With the government initiative and support to make Malaysia a hub for the region, we have seen greater interest by foreign companies to base their operations in Malaysia. Some have already set up large manufacturing facilities and others have set up their regional services center to support other regions such as India and China."

## The E&P Scene

All companies desiring to enter E&P activities in Malaysia do so by being awarded a Production Sharing Contract (PSC) by Petronas's Petroleum Management Unit. In 2010, 72 PSCs were in operation with 68 oil fields and 38 gas fields being developed in the country.

Malaysia's E&P sector has long been populated by familiar names. In 2010, Shell celebrated its 100th anniversary of drilling and exploration in Malaysia and currently is involved in 10 PSCs in Sabah and Sarawak. The company has also been on the forefront of EOR projects.

Following closely in Shell's footsteps, ExxonMobil has had a presence in Malaysia dating back to the early 1900's when its predecessor, Standard Oil, began exploration activities. Today Exxon is involved in 7 PSCs, developing 17 fields and operating 40 offshore platforms. Japan's Nippon Oil has been operating in Malaysia since 1987, Amerada Hess, Talisman Energy and Murphy Oil all signed PSCs in 1998, and others, like Petrofac and Newfield, arrived in 2004. More recently, in 2008, France's Total began its operations in Malaysia when it signed a PSC with Petronas for offshore exploration blocks. Finally, in 2010, four new PSC contracts went into effect heralding the entrance of Abu Dhabi's Mubadala Development Co.



Mr. Roni Adrian, Executive Vice President of Petroleum & Chemical Sector, Ranhill

Malaysia's hydrocarbons industry is mature and much of the infrastructure will need refurbishment and renovation if current production levels are to be sustained. "The industry has reached that 25 to 35 year period now, where a lot of the existing major facilities were built with life expectancies of far less than that," says Andrew Hill, regional general manager of Furmanite.

As a result, investment into the country's oil and gas industry by E&P players will see an upward curve.

Exxon has announced an investment program of MYR10 billion (US\$3.37 billion) to renew mature facilities and begin EOR projects on Malaysia's Tapis field. Shell also announced an investment of MYR5.1 billion (US\$1.7 billion) into its infrastructure in the country. "Improvements are needed to Malaysia's oil and gas infrastructure and we are looking at many oil and gas fields and evaluating what needs improvement and replacement," says Roni Adrian, who heads the petroleum and chemical division of Malaysia's largest EPC company, Ranhill. "I think all major players are very serious about ensuring that aging infrastructure gets rejuvenated, not only to increase their production life span, but also ensuring that they benefit from the latest technology making the facilities greener and safer."

## Marginal Fields

The opening of the marginal fields has been greeted with enthusiasm. As the major oil and gas players begin a transition to deeper waters, smaller companies, both Malaysian and foreign, have been actively seizing the opportunity that marginal fields present. So far Petronas has announced that they have found 106 marginal fields containing 580 million BOE and each containing up to 30 million barrels of recoverable oil. "Companies have, for some time, wanted to drill marginal fields in Malaysia, but it was very difficult to break into the market in this country," says C.Y. McCants, geoscience manager for Nio Petroleum. "There are small fields that have a lot of gas and it costs money to produce oil from these smaller reserves. Right now it is being realized that while some of these smaller fields may not produce as much oil as some of the players would like to see, government efforts and tax incentives will bring about renewed oil production from them."

Nio Petroleum was established in 2009 with offices in London, Bangkok and Kuala Lumpur and is in the process of evaluating 3D seismic of several fields in Malaysia for marginal development.

Petronas has reacted to companies desiring to develop marginal fields by introducing the Risk Services Contract (RSC), whose terms are meant to motivate smaller companies to take up marginal field development, as compared to the standard PSC contract. The major difference is that oil companies will now enter into consortiums with local service providers and would get a return of around 10%

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from field operations. Local partners must have 30% equity in the projects involved, but would have to participate in the development, both operationally and financially. In addition, taxes for such developments would be lowered from 38% to 25%.

This year Petrofac was the first company to sign an RSC contract; to develop the Berantai marginal field, alongside Malaysian companies, Kencana Petroleum and Sapura Crest.

“There is a reason that those fields are called marginal, often because they are either poor quality reservoirs, not very well defined, very small, away from existing infrastructure or a combination of all four,” says Keith Collins, general manager of Petrofac in Malaysia. “The pioneering RSC contract that has been put in place recently on the Berantai development is definitely a model that can be used to take marginal field developments forward.”

## Deepwater Exploration and the Making of a Subsea Hub

“Deep water is the next frontier,” says Edgar Pushparatnam, senior vice president of Technip Asia Pacific. Petrobras expects that deepwater will account for up to 40% of Malaysia’s oil output by 2020. The development of large-scale deepwater projects began after the discovery by Murphy Oil of the Kikeh field in 2002, 110 km (68 miles) off the coast of Sabah. Since then, development activities have begun on two more fields; Gumusut and Malikaj. Deepwa-

ter blocks represent 14.5% of Malaysia’s domestic reserves, but these areas contain high levels of CO<sub>2</sub> and are located in geologically complex structures.

Malaysia’s goal of becoming Asia’s deepwater hub will depend to a large extent on the breadth of technology and experience available to the local market. “When it comes to deepwater engineering, we are still very dependent on overseas capabilities and that is something the local industry has to catch up with,” says Dr. Shahreen Madros, CEO of MPRC. “We have the technology and the people to develop the fields, but it’s the experience part that we lack. Malaysia will require larger vessels and bigger infrastructure and this will provide increasing opportunities for foreign players to get involved.”

It is precisely for these reasons that many of the global leaders of oil and gas technology, like Aker Solutions, Cameron and Technip, have established their regional HQs in Malaysia and have invested particularly into the subsea sphere. But it’s not only the major players that have been drawn to the market.

“The decision to be in Kuala Lumpur is strategic,” says Hjelmeland of Framo Engineering (FE), which established their offices in Malaysia in 2009. “KL not only represents an ideal location to cover Southeast Asia, but the greater Asia Pacific as well. The region is developing rapidly, and there is an industry focus on deeper waters as well as EOR initiatives. FE sees this as an opportunity to provide and share its technologies and experience and especially to provide turnkey system solutions.”

  
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[www.akersolutions.com/subsea](http://www.akersolutions.com/subsea)

Aker Solutions, which has had a presence in Malaysia for 30 years, is at the forefront of deepwater. "A decision was made in 2006 from the board that we are going to invest in Asia Pacific and after an evaluation period we decided that the optimal place to invest in the region was Malaysia, particularly in light of Petronas's vision of making Malaysia the deepwater hub of Asia. After we took a decision to invest, it took us one year to start construction of the centre in Port Klang which was in excess of US\$90 million and which is considered the largest facility of its kind in the world for the complete production of subsea systems," says Aker Solutions president of Asia Pacific, Dave Hutchinson. Today the group has an extensive network all across the Asian region, with service and engineering bases spread out through India, Indonesia, Australia, Singapore, Vietnam and Thailand.

Several countries have been competing to become the regional hub for oil and gas manufacturing companies and for Cameron it was the availability of space and cheaper costs that made it decide on Malaysia. Jerome Cociella, district sales manager of Asia Pacific explains. "After Cameron recently restructured in Asia, we decided that our subsea facility needed more space and we looked at Singapore, Malaysia and Indonesia as possible locations for growth. It is difficult to expand in Singapore because there is only so much land available and prices are high, but Malaysia offered good incentives for companies investing there, and if you have sufficiently invested, they will give you a license to manufacture in country. So in 2007 we began the construc-

tion of a US\$30 million new facility and our first production was in December 2007." Since then Cameron undertook a further US\$60 million extension of the facility with an official opening that took place in February 2011.

## Services and Equipment Manufacturers Overview

Malaysia's service and manufacturing sector is witnessing a steady growth as positive government policies and more international opportunities are yielding fruit. Foreign companies have been keener to enter the market. Malaysian service companies have also matured and increasingly are looking abroad for growth.

The key to success for any service company in Malaysia is acquiring the much-coveted Petronas licence. The sooner that a company has one, the quicker it can be assured of business. The regulations governing the entry of foreign companies into the Malaysian market are pretty straightforward. So far there are three main avenues for entry: 1) A company can set up a joint venture (JV) with a Malaysian company; 2) a company can hire an agent who is registered and will carry out the business tasks of the foreign partner; 3) a business can apply for a Petronas licence, which takes 3 months or more.

## EPC Contractors

While it may not be so easy for new EPC entrants to Malaysia to get business immediately, the opportunities presented by partnership with Malaysian companies are immense and offer foreign players a smooth transition to eventually becoming independent. Sime Darby Energy & Utilities has been offering those opportunities for foreign players since its creation in 1974. Sime Darby is one of Malaysia's leading conglomerates, with 100,000 employees worldwide and its oil and gas unit, Sime Darby Engineering, has a long history within the oil and gas industry.

Mustang, a Wood Group company, is one of the most recent entrants into the Malaysian market, forming a JV with Sime Darby in January in order to expand their regional operations. "We were looking for the best partner for technological transfer, and we felt that Mustang fit in with us very well. We could benefit from their technological advantage and really expand our capacity in marginal fields, enhanced oil recovery and deepwater development. Mustang had been in the region earlier but they were not that successful so, after awhile of courting each other, we decided we were a good fit. We hope to start on new projects with Mustang this year," says Dato' Ir Jauhari Hamidi, executive vice president of Sime Darby's Energy and Utilities (Non-China Operations).

World renowned EPC contractor WorleyParsons also chose the JV path when it teamed up with Ranhill Berhad for oil and gas projects in Malaysia. "The joint venture was formed in 1995 when Worley, as it was known then, was looking for a partner and we were looking for expertise in the oil and gas industry. We started with approximately 200 people and we now have over 1400 people with the biggest office in Kuala Lumpur and 6 other offices in Malaysia," says Adrian, who is also the CEO of Ranhill WorleyParsons.



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Focusing on the upstream and offshore sectors, Ranhill has been one of Malaysia's most successful companies to work internationally, having completed projects in the North Sea, Qatar, Philippines and Australia.

Many Malaysian and foreign EPC contractors are excited by the prospects that marginal fields now offer, especially given the fact that the RSC contract gives equity holding opportunities to service providers. "The opening up of the marginal fields is important for us and we have been studying and engineering innovative concepts for early and cost effective production systems. Some of these concepts are now proven in production. While the opportunities these marginal fields present are not attractive to the large international oil companies, they are still viable to smaller oil independents provided the terms of the development and production contracts and risk sharing schemes are equitable," says Adrian.

## Mixed Blessings

Petronas's dominance of the oil and gas sector has resulted in mixed blessings for Malaysia's local companies. The relationship of near complete dependence on the national petroleum company has on one hand guaranteed steady flows of business for some, while making it difficult for others to expand their client base beyond Petronas. The advantages and disadvantages of Petronas's complete control of the market are clearly reflected in its policies for ethnic Malay companies. Due to the large-scale historical immigration of Chinese and Indian workers into Malaysia under British rule, the country's indigenous Malay population was progressively isolated and marginalized; the reason why today both the government's and Petronas's policies and regulations particularly serve to support the bumiputra population (Bumiputra in Malaysian translates to 'son of the soil' and refers to ethnic Malays).

One such policy has been the Vendor Development Program (VDP). Under this scheme, local companies are selected to be approved suppliers for certain product categories. Serving the Malaysian oil and gas industry since 1977, Bumi Wangsa is a successful example of how a bumiputra company can benefit from such initiatives. In 2007, the company was awarded sole distributorship for all oil and gas wellhead control panels and now controls 100% of this market sector.

"The strategy is to go up the value chain and that is what the VDP program is all about," says Jadid Ismail, CEO of Bumi Wangsa, "We are now developing the whole distributorship system from scratch to meet the requirements and standards of all our clients. In order to hold on to the principals we need a strategic partner to manufacture the products in Malaysia, instead of having to import all of them from abroad. So whereas right now we need to import all the components of the wellhead control panels, we are now planning to manufacture those components ourselves."

The most recent project that the company has engaged in is a MYR50 million (US\$16.9 million) contract to rejuvenate well head control panels of 14 platforms in the waters of Peninsular Malaysia. Looking ahead, Jadid Ismail is confident of his company's abilities to become a more important player in Malaysia's market. "The VDP program is one that

is very beneficial to the growth of the local industry and it will help Bumi Wangsa expand further. We are often being asked by new principals to distribute new products and we are always on the lookout for more partnerships."

The downside of this policy is that certain companies become too comfortable and start to rely overly on it for their sole stream of income. Industry insiders have complained that this over-reliance has often resulted in lower levels of quality found in both products and services offered by Malaysian companies.

This is precisely the reason why Petra Energy, a bumiputra company and now one of Malaysia's leading brown field service providers, decided it was time to move beyond the VDP which it was awarded back in 2004. CEO Kamarul Albakri explains, "This program has worked well for Petra in the past but we have developed further and now all of our jobs are given as a result of our participation in bids and tenders and not as the result of the VDP program. This is not to say that all jobs given by the VDP program are handed to you on a silver platter, but it certainly makes it easier for companies to keep having business in the market."

Lacking the bumiputra standing does not automatically preclude success, but does pose other challenges to local Malaysian companies. Operating since 1990, Suka Chemicals is a distributor of products for the oil and gas industry, such as catalysts, heat transfer fluids, petroleum dyes, and amine treatment solutions for gas purification. "We have now grown to about 50 people, with facilities all over the country to distribute specialty chemicals. Through strate-

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gic partners we have been exporting to Vietnam and the Philippines and we are now exploring opportunities to export our products to the Middle East and China,” says H.A. Khoo, CEO of Suka Chemicals.

The challenge for Suka Chemicals and so many other local entities is that all too often, Petronas and its long list of subsidiaries are their only clients within Malaysia. As a result, companies who want to grow either have to expand abroad, diversify their product range or do both. That is how Khoo plans to double his company’s revenue in the next five years, “We recognize that this will be an uphill journey but we are confident that Suka Chemicals is capable of achieving those levels of growth by looking for more principals to become their preferred distributor in the region.”

## Change in Attitude

In recent years however, Petronas’s longstanding policies and attitudes toward Malaysian service companies have started to change. “The government wants to see Malaysia becoming more of a global player and this change of thinking has also been seen in Petronas, who is now willing to invite international managers into some of its very senior positions, a development which would have been unthinkable a few years ago,” says Anthonie Versluis, managing partner of Roland Berger, a German based consulting company which opened its offices in Malaysia in May.

This new found openness to think internationally has been visible not only in the people being allowed into what has always been a closed organization, but also shows a unique willingness to introduce new ideas and processes not yet seen within Malaysia’s oil and gas sector. When Toralf Mueller, CEO of ALCIM, started making trips to Malaysia back in 2002 to do consultancy work in the power sector,



Mr. Dave Hutchinson, President of Aker Solutions, Asia Pacific

he developed an idea that companies increase their risk by relying on software and Information Technology (IT) instead of focusing on the usage and quality of the data they receive. In 2004, Mueller established his own Malaysian consultancy, ALCIM, which now works solely with Petronas Carigali as an information management advisor and business consultant. “We believe in Information Management as a discipline which shall be driven by business needs and business process requirements, focusing on the usage, quality and integrity of data and information, whereas Information Systems (IT) and Information Technologies (IT) are enabling information management,” explains Mueller. “ALCIM’s track record in the Malaysian oil and gas industry shows that the implementation of data governance combined with data and information management audits for the sector will drastically increase the data and information quality and improves and supports decision making and risk management processes.” Since its establishment, ALCIM has grown to 50 people, and is now beginning to bring its IM solutions abroad by bidding for projects in the Middle East.

## Challenges

Despite the growth that companies across the oil and gas industry are expecting to see, the one major challenge affecting most players in the country and the wider region is the lack of talent and expertise available. While education in Malaysia is improving, the country lacks the focus to mature and develop engineers and specialists in the oil and gas sector, and those who are available have a tendency to be tempted by the higher paying salaries that they can find abroad. “You cannot find the same long depth experience that you can locate in the Gulf of Mexico or the North Sea where talent is readily available. We have a good



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## LNG Technology

A variety of new and exciting projects and technologies in the LNG sphere have recently brought attention to the role that Southeast Asia will play in the emergence of this fuel source. The increasing demand from top LNG consuming countries in Asia including Japan, China, and South Korea has spurred Singapore and Malaysia into investing immensely in LNG related projects. By 2013, the world's first open access and multi user LNG terminal will come on stream in Singapore, with a capacity to handle 6 million tonnes per year and comes at a cost of SG\$1.5 billion (US\$1.07 billion). Speaking out of Singapore, Sanjiv Lamba, executive board member of the Linde Group, commented on the ever growing importance that liquefied gas will have. "Given the current situation in Japan, LNG is only going to be more important for the energy portfolio in cases where nuclear is ruled out. One of the ways to extract value is to identify stranded gas and use technology to treat, liquefy and purify the gas so that it can be moved more effectively."

Since so much of stranded gas is located offshore,



Mox-Linde (Linde Group's Malaysian subsidiary) air separation plant in Pasir Gudang, Johor

floating LNG (FLNG) has emerged as a new technology, and global leaders such as the Linde Group and Technip have focused on its development. Linde has teamed up with Single Buoying Mooring (SMB) to develop the world's first floating production and storage unit (FPSO) specifically for LNG.

On the other hand, in Malaysia, which is the world's

third largest LNG exporter, Technip has been awarded a contract by Petronas to construct an FLNG unit with a one million tonnes capacity per year. "FLNG is not something that has ever been built before and Technip is now combining its offshore, onshore and subsea technologies in bringing this forward. The challenge you have in FLNG is not only the fact that LNG will be produced in an offshore environment. You also need to have storage. When you have LNG offshore, you need to have a way of offloading it and this is very challenging," says Pushparatnam, senior vice president of Technip Asia Pacific.

The FLNG unit that Technip is constructing is scheduled for completion by the second half of this year. □

and young workforce here and they are very capable, but it takes time to get the knowledge and the capability across," says Hutchinson of Aker.

Procurement in Malaysia will also continue to be a challenge for companies. One of the major causes for the suspension of the free trade agreement (FTA) negotiations between Malaysia and the US was the issue of procurement, as Fui Soong, executive director of the American Malaysian Chamber of Commerce (AMCHAM) explains. "There is a need to review the current practices because the existing framework of preferences for goods and for people does not work in favor of international investors. Transparency improvement measures will contribute to a much better procurement policy and will increase investment into the country."

Nevertheless, the general mood is upbeat. "From our perspective Malaysia represents a very stable investment environment that is business friendly. There is a drive here to make things happen in order to achieve the business targets set by the authorities. If you look at what is happening in other parts of the world, this is a very good place to be," says Collins of Petrofac. That sentiment is expressed all across the line from geologists to engineers and construction managers who have all been drawn to the investment opportunities that Malaysia offers.

With the government and Petronas under pressure to create investment opportunities in the country, the next few years will show how initiatives in EOR, marginal field development and deepwater will pay off in getting Malaysia to its much coveted 2020 goal. □

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# Emerging from the Waters

*Business friendly environment consolidates Singapore as a gateway to the region*

**W**ith global sea levels rising and most of the world's low lying islands being slowly swallowed by the oceans, Singapore is one of few places where landmass is expanding into the sea and not the other way around. With a limited land area of 687 square kilometres (427 sq. miles), the country has expanded through ambitious land reclamation projects more than 18% since 1960 in order to grow massive industries in the oil and gas, chemical and offshore sectors.

Due to its strategic positioning between the world's two fastest growing economies of China and India, Singapore has been able to become a hub for a variety of industries.

A British colony since 1826, Singapore won its independence in 1963, and after an unsuccessful union with the Malaysian Federation, the tiny island state was on its own. Ever since, business has been good for Singapore and in 2010 the country's economy expanded by 14.7%.

The same year Singapore was listed top of the World Bank's 2010 "Ease of Doing Business Report." Aided by the fact that it has the world's second busiest port, the city-state has become a logistics hub, a finance hub, and a downstream and offshore hub for the world.

Today there are over 7,000 multi-national corporations in the country.

"We have had a long history in the energy space, especially in oil refining, since the first refinery was set up here in the 1960's. Ever since, Singapore has maintained its position as one of Asia's major energy hubs. The logistics, together with ports and connectivity to the region, enable us to serve Asia's energy needs. As this industry developed, we have gained a position as a trading hub. Many of the oil products today are priced out of Singapore, so the trade of business and exchange of information also take place here, which enhances our role in the overall energy complex both regionally and globally," says Eugene Leong, head of energy for Singapore's Economic Development Board (EDB). The EDB is Singapore's primary body for the promotion of industries in the country.

Central to Singapore's downstream industry is Jurong Island, which has grown in size from an original 4 sq miles to 12 sq miles today, and is the base for Singapore's petroleum refineries, as well as 95 of the world's leading oil, gas and petrochemical companies. The history of Singapore's



Mr. Sanjiv Lamba, Member of the Executive Board, Linde AG, and Regional Business Unit Head for South & East Asia

refining capacity started a while ago, when in 1968 ExxonMobil set up their first refining plant there. Forty three years later, Singapore is the third largest refining center in the world after Rotterdam and Houston, with a daily average of 1.4 million barrels produced by Shell, ExxonMobil and Singapore Refining Corp. (SRC). Jurong Island saw a multitude of massive projects underway back in 2008, and by 2010 investment into the island has amounted to SG\$31 billion (US\$25.3 billion).

The next stage of development into the island is being called Jurong Island version 2.0, an ambitious 10

year plan which will see the area transformed further. The underlying themes of this development would be to bring more energy sustainability to the island and diversify feedstock options. "Now with the new initiative, we aim to enhance existing infrastructure by creating a product grid so that a network of plants will be able to get feedstock from multiple parties. We want to also make the whole environmental situation more sustainable by studying solutions such as tapping waste heat to power processes or converting carbon dioxide into useful products," says Leong.

The need to diversify feedstock options is clear given Singapore's complete reliance on Malaysia and Indonesia for all of its fuel resources, and even though LNG will start making an impact once Singapore's first LNG terminal starts running in 2013, the government has been looking at other interesting solutions, including biomass, coal and refinery bottoms.

The diversification of feedstock will provide interesting investment opportunities for players leading in these technologies. One of the major players to benefit from such a development would be the Linde Group, a global industrial gases and engineering player which runs one of the world's most complex gasification plants on Jurong Island.

"Southeast Asia is not a homogeneous market and each one of the countries has their own energy needs and portfolios of energy supply that they wish to manage more effectively," says Sanjiv Lamba, executive board member of the Linde Group, "In Singapore, we would be pleased to support any coal gasification project that may be promoted by the Singapore Government. We feel that this is the right thing to do because they have to manage their portfolio effectively and we believe that we can offer a solution to help them to do that."

## Fierce Competition

The government's efforts to make the city-state the easiest place in Southeast Asia to do business has ironically made it more challenging. As Singapore continues to attract more and more companies, competition has become so intense that businesses from the EPC sphere to HR have struggled to find opportunities within the market.

During the time of heightened construction activity on Jurong Island in 2008, two major expansion projects by Shell and Exxon had about 30,000 to 40,000 people involved, keeping everyone from contractors to logistics companies busy. Over the past three years however, activity in the market dropped immensely and EPC companies are now finding the competition extremely challenging. "You are going from a market where contractors had full books and were struggling to get resources to perform on the jobs that they had. Today, contractors generally don't have enough work so they are going in extremely aggressively to find contracts and that upward trend



Mr. Murray Dundas, Managing Director of McConnell Dowell, Southeast Asia

has a long way to go before there is a balance," says Murray Dundas, managing director of McConnell Dowell Southeast Asia.

The well known engineering, construction and maintenance player has had a solid track record in Singapore of 40 years and has been involved in many of the major downstream projects on Jurong Island, such as the ExxonMobil SPT project and the Interconnecting Piperacks project.

The scale of difficulty of getting in-

involved in new projects is summed up by Andrew Carnie, business development manager for McConnell Dowell. "After the market shift, Singapore was seen as a safe haven and all of those companies in the Middle East established here because there were very low barriers to entry. We have gone from a 1 of 4 bidding scenario to a 1 in 10 scenario, and for some projects 1 in 16."

This competitive environment has trickled down to various other sectors in Singapore, such as HR. With so many companies basing their HQ's in the city, HR companies have also flooded the market, and some estimate the number to be in the thousands. While the availability of choice is beneficial, the fierce fight for good quality candidates in the oil and gas sector has had a negative impact on the standard of professionals that companies can offer. It was the negative toll that competition caused that prompted Mannsfield Shamrock to establish itself in 2009. "Our founders are seasoned players in the industry who believe that honesty and integrity

A large industrial facility, likely a refinery or gas processing plant, with several tall distillation columns and complex piping. The scene is illuminated by warm lights, suggesting dusk or dawn. In the upper right corner, there is a blue rectangular box containing the text "THE LINDE GROUP" and the "Linde" logo in white script. At the bottom, there is a white rectangular box with the headline "Setting new standards." and a paragraph of text. The Linde logo is also visible on some of the industrial structures in the background.

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are two very important attributes that tend to be overlooked in the HR business in Singapore. For example, we always mark our candidate's true areas of expertise instead of misrepresenting their profile," says Aaron Teow, global consulting manager for the firm.

Though some companies pride themselves on the high amount of candidates that they have in their databases, the main challenge for all companies is to find candidates with sufficient years of experience to meet the needs of the industry.

"Everyone feels they have an advantage, but we would say we are lean and mean by not having thousands of people in our database like other companies," says Peter Campbell, founder of Campbell and Associates. "We know all of our personnel so that reduces exposure to unforeseen problems and we look for people that we know who meet our criteria so we could tailor them to what the client wants."

Campbell and Associates has been offering various services to oil and gas companies since it was established in Singapore in 1981.

To survive the competition, Singapore's companies have either relied on diversification or specialization. McConnell Dowell chose to focus on its other service lines instead of relying solely on oil and gas. "If you looked at pre 2008, the local oil and gas business was great, but during the last 2 years we have seen better opportunities in public infrastructure, so it is useful having a business with a civil group, mechanical group and pipeline group where we can have some flexibility in the markets we serve," says Dundas.

For HR companies the way forward has been zeroing in on specific skill sets. Campbell and Associates specializes in offering engineers, managers and technicians to oil and gas projects, while Mannsfield Shamrock decided to focus on other areas: "In the oil and gas industry, the people we specialize in are geologists and including the senior management level, which goes all the way to the directorship level. The fact that we have been trying to find the best geologist candidates is also putting us ahead because these types of candidates are very challenging to find in this region," says Teow.

## Servicing the Region

With space running out in Singapore, both foreign and local companies have had only one way to go and that is abroad. In this respect, the Singapore Stock Exchange (SGX) and the presence of hundreds of financial firms and banks has been a gift for local companies desiring to try their business elsewhere. As of April 2011, 784 companies were listed on the SGX. 464 come from Singapore, 154 are Chinese companies, and 166 are from overseas.

Leeden is a leader in welding equipment and services, as well as the distribution of industrial gases and safety equipment to oil and gas companies. Though it listed back in 1975, a lack of market has forced it to expand. "Singapore is a small place so we found that the market here was too limited in scope for us. Hence, we needed to expand and initially we started in Malaysia. As a result, in the last 7 years we have grown tremendously by 18 times in the Malaysian market and for FY2010, Malaysia accounts for 43% of our overall business," says Steven Tham, CEO of Leeden.

Rope manufacturer Teho International, exemplifies how small Singaporean companies have become successful abroad post IPO. Starting out in the 50's, Teho's founder used to recycle marine equipment. After steady growth, the company became listed on the SGX in 2008 and since then has expanded exponentially with a subsidiary in North Carolina, a representative office in Shanghai and logistics arrangements in Antwerp, Houston and Sharjah. "Although the marine industry is our core market, our products are very much related to the oil and gas industry," says Lim See Hoe, CEO of Teho International. "We are very keen to expand our presence there. We specialize in steel wire rope and synthetic fiber rope for a wide range of applications in the marine, offshore oil and gas, and construction industries."

## Offshore and Marine

Despite the fact that Singapore has none of its own oil and gas reserves to explore, some 70% of the world's jack-up rigs are manufactured here. Utilizing its excellent location and infrastructure, the country has become a leader

in the manufacture of drilling rigs and offshore support vessels for the world's market. Undeterred by the lull in business last year due to the financial crisis and a ban on drilling following the Macondo accident in the Gulf of Mexico, things have been busy for the world's largest producer of jack up rigs, Keppel Offshore and Marine (Keppel O&M). "For the last five years, we have had a very large backlog of orders, so when the financial crisis hit the world and everyone was scrambling for work, we were very fortunate that our sole challenge was executing our orders and getting everything out on time," says Tong Chong Heong, CEO of Keppel O&M. Singapore's Keppel O&M is now one of the world's largest offshore marine groups, with 20 yards located around the globe. While there were fewer orders last year, this was offset by some SG\$5 billion (US\$4 billion) of new orders secured by the company in the first half of 2011, clearly demonstrating the good demand the offshore industry is seeing right now.

Looking ahead, Singapore's offshore industry is set to grow with rising exploration activities in deepwater. While deepwater currently accounts for 15% of global exploration efforts, more such projects are under development in the area, and ever increasingly Keppel O&M's rigs are being utilized in various parts of the world. Mr. Tong is optimistic on the market outlook. "We would not want oil prices to get too high, but as long as oil is around \$80 - \$100 then there will be many prospects for fields to be further developed and more exploratory wells to be drilled. In the foreseeable future we expect a steady demand for new rigs."

Limited land space will continue to be a factor in Singapore's desire to grow, but the high level of investment the city-state has seen in the last couple of years shows that its downstream and offshore businesses are here to stay. In addition, the business friendly environment will go a long way to keep companies based here. As Binu Chaudhary, head of oil and gas, Mott MacDonald Asia Pacific, puts it: "Everything here is so meticulous and so straightforward that companies don't have to waste any time to set up their business. If I were an oil company I would not go anywhere else." □



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# After 1,000 Years

*The role of the oil and gas industry in modern Vietnam*

## The State Behemoth

The history of Vietnam's petroleum industry is essentially the history of the Vietnam National Oil and Gas Group, Petrovietnam. Established 35 years ago, Petrovietnam has grown to the point that today its 20 subsidiaries, numerous joint ventures and hundreds of affiliated companies dominate every facet of the country's petroleum industry. Its Vietsovpetro Joint Venture alone, in which it works in partnership with Zarubazneft, contributes 80% of Vietnam's oil and gas production and 27% of the government's revenue. Petrovietnam Exploration Production Corporation (PVEP) has 60 exploration contracts, domestically and overseas, providing exploration and production activities for the next 20 years.

PetroVietnam Drilling & Well Services Corp. (PV Drilling) is the fastest growing drilling contractor in the country. Similar success can be seen in everything from Petrovietnam Finance Corp. (PVFC), which has grown its capital from US\$6 million to US\$3 billion in the space of ten years, to Petrovietnam Transport Corp.'s (PVTrans), covering everything from logistics to ship brokerage.

There is no doubt that the state owned entities, which span the breadth of Vietnam's economy, are often monolithic in nature. One needs only to look at Vinashin's admission of a US\$4.5 billion debt last year to realize potential downfalls to the system.

However, the competent management of Petrovietnam is proven not just by success in Vietnam, but their growing activities overseas. As Petrovietnam continues to expand and diversify this is conversely creating more opportunities for many outside players, rather than less.

Firstly, there is the opportunity for direct investment. An increasing number of Petrovietnam's subsidiaries are publicly listed, with 15 of their subsidiaries currently trading on the open market.

Secondly, as Petrovietnam becomes more technically adept, it is



PV Drilling has achieved an impressive reputation for operational efficiency

taking on projects on its own, rather than playing the traditional role of silent partner to foreign expertise.

This increased presence diversifies the client base for service companies. "One of the interesting things domestically about Petrovietnam is that they are now starting to form their own oil companies.

With Petrovietnam becoming the operator and

driving force behind an increasing number of projects, they are increasingly a direct customer for our services, rather than simply a partner," says Alan Sherrard, regional manager Asia, Aker Solutions.

Petrovietnam's subsidiaries are also working hard to compete for outside clients. PVFC, a financial services organization that manages accounts, raises investment funds and offers consultation, is leading the way in this.

"The fact that PVFC is part of Petrovietnam is a strong advantage, providing us with an early connection to the oil and gas industry in Vietnam. The key priority for us is to utilize that connection and convert this advantage into a tangible benefit for our other clients. How we do this differs according to the client and the service they require. In addition, at PVFC we have a wide network of institutions and relationships with many banks, both domestically and internationally. Our focus on engaging the services of global financial leaders such as Deloitte, PwC and Ernst & Young, who we engage as consultants and auditors, mean

that foreign investors can be guaranteed the same international standards that they would find anywhere else in the world," says Nguyen Thien Bao, CEO, PVFC.

As Petrovietnam moves beyond its own borders, such relationships could prove a boost to business elsewhere. ONGC Videsh has requested Petrovietnam to look at bidding on exploration blocks in India.

Aker Solutions has already worked with Petrovietnam in Tunisia. Banks such as HSBC and Standard Chartered are now looking to continue their domestic rapport with Petrovietnam overseas.



Mr. Nguyen Thien Bao, CEO of Petrovietnam Finance Corporation

## Upstream Activities

While tourists may come to Vietnam for its fantastic beaches, a little further off Vietnam's 3,444 km of coastline lies a natural asset of more interest for investors. Although Vietnam's current oil production of 338,400 bpd places it as the fourth largest producer in Asia Pacific, behind Indonesia, Malaysia and Thailand, its 4.7 billion barrels of proven reserves are the largest in the region.

Vietnam is not immune however, to the general trend of decreasing oil production that is affecting Asia Pacific's other hydrocarbon nations. Disputed territories and unconventional reserves have all conspired to result in a production rate steadily falling from its 400,000 bpd 2007 peak.

Despite this, Vietnam is also following one of the more positive trends in Asia Pacific. Vietnam's proven gas reserves jumped from 192.5 bcm in 2009 to 610 bcm in 2010. Production levels rose 15% in 2010 to 7.9 bcm. With projects like Chevron's Block B project expected to increase gas production by at least 5 bcm, and significant discoveries in Nam Con Son, the government hopes to increase gas production to 15 bcm per year by 2015.

"With the continued development of Vietnam, the energy needs of the country also increase significantly year by year," says Nguyen Vu Trung Son, president and CEO of PVEP, emphasizing the importance of Vietnam's oil industry. "Exploration activities are therefore essential to balance our current production and increase it in order to produce the energy that the country requires. Besides that,

the potential for new finds in blocks currently open and being developed is decreasing, meaning that exploration will need to be carried out in more difficult areas, such as deep-water blocks and unconventional structures."

PVEP is making moves to meet this challenge, working closely with foreign partners in an effort to share and benefit from the knowledge, experience and expertise available. Its subsidiaries, such as PV Drilling, are doing the same. "The semi submersible tender-assist rig that we are currently building in Singapore is for this very purpose. It is designed for wells of over 130 meters, as well as being able to cope with high temperature and high pressure wells. We are hiring experts in these types of difficult drilling conditions from all over the world, determining our operating procedures and getting them cross-checked by third-party organizations in order to be fully prepared," says Pham Tien Dung, president and CEO, PV Drilling.

Foreign players, however, still play a vital role. James Jenkins, country manager, Weatherford, does not deny the technical complexity of Vietnam's reserves, but is far from disheartened by it. "The Vietnam market does present some significant technical challenges. Many of the exploration areas that are being considered for the future are extremely high temperature and pressure. In addition, specific geological data on many of these areas is not yet available... This technical complexity actually provides Weatherford with a competitive edge in the market. We have key business areas that we focus on. We have huge amounts of experience and expertise in these areas and we are one of



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the very limited number of companies that have the necessary technology readily available.”

Due to the relatively recent focus on gas, this industry does not face the same aforementioned technical challenges. The discovery last year of significant gas reserves in Nam Con Son, for example, occurred in water depths of less than 500 meters. However, the former lack of interest has also meant that the necessary infrastructure is underdeveloped.

Three gas pipelines currently exist from onshore to offshore; the Nam Con Son pipeline, the Bach Ho pipeline and the PM-3 pipeline. The Ministry of Industry and Trade has plans for two more pipelines; to support Chevron’s gas project in Block B and in Nam Con Son gas discovery. However, additional efforts will still be required.

## Refined Ambitions

In May last year, Vietnam officially inaugurated the Dung Quat oil refinery. This 140,000 bpd capacity facility is Vietnam’s first step in its ambition to develop a downstream industry to complement its upstream activities. A second step is currently under construction with the Nghi Son refinery, due to become operational in 2014. Three further refineries, under various preconstruction phases of development and with a planned combined capacity of 24 million tons per year, will soon have Vietnam marching towards self-sufficiency in refined petroleum products.

Pushing further down the value chain, the Long Son petrochemical complex aims to have an annual capacity of

1.45 million tons of polyethylene and polypropylene, alongside other basic chemicals. In addition, Vietnam National Chemical Group (Vinachem), is already producing around 60% of Vietnam’s fertilizer requirements, has two joint venture companies producing around polyvinyl-chloride and dioctyl-phthalate a year and is currently working on a petrochemical joint venture with Petrovietnam.

It is well known, however, that even the best-laid plans are never free from problems. The hesitancy that accompanies any first step stretched, in the case of Dung Quat, to a seven-year delay. Questions concerning its location, feedstock and the impact of political, rather than economic considerations, in its development still linger. Of the three refineries now in pre-construction phase, two are currently stalled. “Right now Vinachem has an ambition to establish a petrochemical industrial zone. We have prepared our plan, surveyed demand both nationally and regionally, but are still looking for a supply of feedstock,” says Ngo Manh Hoai, vice president, Vinachem.

Vietnam’s calm approach to opening up the market has provided investors a degree of confidence. “The initial expectation when Vietnam first opened its domestic market was that there would be a flood of investment and projects.” Explains Sherrard, “Instead, Vietnam has taken things step by step in an intelligent and sensible fashion. Foreign investment has been controlled, resulting in a positive and steady growth that benefits both the Vietnamese people and the investors.” □

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