

10. INDUSTRY OVERVIEW

10.1 Global Economy

Global economic expansion is expected to remain firm at 4.3% while the growth in world trade is projected to expand at a stronger rate of 7.4% in 2006. A more balanced global growth is expected across the major economies, with the recovery in Japan and Europe. Another notable feature is the stronger investment uptrend seen in several major economies while consumption remains robust. Growth in the East Asian region is expected to be sustained at a strong pace of 7~7.2%. The growth is also supported by the recovery in the electronics sector following higher ICT-related spending in the industrial economies and continued strength in domestic demand in the region. The latter will be driven by higher consumption of the significant young population that have high discretionary spending power and strong demand for consumer electronic products.

While the global economy is expected to expand, there are still downside risks on the horizon; in particular, uncertainties still remain with respect to adjustments in the imbalance brought about by the sharp increases in oil prices. There were notable shocks to the world economy when oil prices rose sharply to almost USD70 per barrel on 30 August 2005. Given the likely pressure on general price levels, interest rate policy is likely to continue to tighten with rates expected to gradually continue with its upward trend, especially in the US. Rising oil prices also edged global inflation upwards, but still at a manageable level.

(Source: BNM's Annual Report 2005, BNM Press Release on BNM Annual Report 2005 (Ref. No. 03/06/03) and Ministry of Finance Malaysia's Economic Report 2005/2006)

10.2 Overview and Outlook of the Economy of Malaysia

Overview

Malaysia has a diversified economy; the principal sectors of which are services, manufacturing, agriculture, mining and construction. Malaysia produces and exports a wide range of manufactured goods, including electronic components and equipment, electrical machinery and appliances chemicals, plastics, textiles and apparels, wood products and rubber products, and also exports petroleum, liquefied natural gas, sawn timber, sawn logs and tin. During the past three (3) decades, through the implementation of strategic policies, Malaysia made significant progress towards the transformation of its economy from one characterised by agricultural production and mining to one characterised by manufacturing and services.

Set out below the annual change on real GDP by sector (1987=100).

Growth (%)	1997	1998	1999	2000	2001	2002	2003	2004	2005p	2006f
GDP	7.7	-7.4	5.8	8.3	0.3	4.1	5.3	7.1	5.3	6.0
Agriculture	0.7	-3.3	3.8	6.1	-0.6	2.6	5.7	5.0	2.1	2.0
Manufacturing	10.1	-13.4	13.5	18.3	-5.9	4.1	8.3	9.8	4.9	7.0
Mining and quarrying	1.9	0.8	-3.1	0.3	-1.5	4.0	5.9	3.9	0.8	5.0
Construction	10.6	-23.0	-5.6	0.6	2.1	2.3	1.9	-1.5	-1.6	1.0
Services	9.9	-0.7	3.3	6.7	6.0	6.4	4.4	6.8	6.5	6.0

Notes:

P preliminary

f forecast

Source: Infocredit D&B

10. INDUSTRY OVERVIEW (Cont'd)

Despite concerns over the impact of high oil prices and uncertainty in the external outlook in the early part of 2005, aggregate domestic demand recorded a strong growth rate of 7.3%. Private consumption continued to increase, supported by positive developments in the economy, namely, rising disposable incomes, the increase in job vacancies and the accommodative financing conditions. The higher fuel prices did not dampen private consumption activity as consumption levels were maintained with some moderation in savings, underscoring consumer confidence on income growth and positive outlook for the economy. In addition, the Government took active measures following the adjustment of administered prices to reinstate allowances to mitigate the increase in the cost of living and in reducing road taxes on smaller vehicles used by the lower-income group. As for private investment, concerns over the impact of high oil prices and the uncertain outlook for the economy was balanced by positive developments, particularly the upturn in the electronics cycle towards the end of 2005 as well as the sustained strength in domestic demand.

As a net oil exporter, Malaysia benefits to a degree from the higher world oil prices as crude oil accounts for approximately 5% of total exports. Since the 2001 economic slowdown, most industrial countries, but notably the US, have pursued highly expansionary macroeconomic policies. As a result, world interest rates are close to historical lows and many countries have high fiscal deficits. Low interest rates have fuelled housing and asset price rises, at the same time supporting consumption and leading to a sharp deterioration in the current account in the US. As global GDP accelerated over the past year, inflationary pressure started to mount, albeit remaining very mild.

Inflation increased in response to the high global oil prices, but remained at manageable levels. While retail petrol prices had increased, it did not have disruptive effects on the cost structures of companies. At the same time, producers had partly absorbed some of the price increases due to competitive pressures, and thus moderated the increase in domestic prices. The cost-push increase in prices was mainly seen in the transport and communications category while core inflation remained relatively subdued at 2% in 2005 (2004: 1%). Headline inflation, as measured by the annual change in the Consumer Price Index ("CPI") stood at 3% for the year 2005. More importantly, higher energy prices also appeared to have intensified efforts towards greater energy efficiency and increased productivity in order to minimize costs. There was evidence of greater efficiency in terms of energy usage in the manufacturing sector, indicated by the downward trend in the energy intensity, as measured by energy consumption over sales. Labour market conditions remained stable with unemployment rate remaining low at 3.5% in 2005.

Public and Private Consumption and Investment

Domestic demand conditions remained favourable in 2005, registering a strong growth of 7.3% in 2005 (2004: 7.5%). Growth in aggregate domestic demand was supported mainly by the buoyant expansion in private sector activities.

In spite of concerns on high oil prices and some uncertainty on the external outlook in the early part of the year, private consumption was sustained at a high level throughout 2005, growing by 9.2% in 2005 (2004: 10.5%). Consumer confidence remained buoyant as income continued to grow due to high export earnings and favourable employment conditions. The Malaysian Institute of Economic Research ("MIER") Consumer Sentiment Index ("CSI"), which reflects consumers' assessments of their personal finances and the economy, peaked at 120.9 in the first quarter of 2005. However, higher oil prices started to impact consumer sentiments, which softened in the second and third quarters of 2005. To a large extent, consumers were insulated from large increases in oil prices through the Government's subsidy for fuel, though a portion of the subsidies was removed. The Government also announced a temporary halt on price increases on fuels and toll rates, and a reduction in road tax. In the second half-year of 2005, improvements in labour market conditions were also accompanied by higher commodity prices, especially prices of rubber, leading to rising disposable income of households in both urban and rural areas. This, together with the bonus payments to civil servants at the end of the year, boosted consumer confidence. The improved sentiment was reflected by the increase in the CSI in the fourth quarter of 2005.

10. INDUSTRY OVERVIEW (Cont'd)

Public investment turned around to register a marginal growth of 0.4% in 2005 (2004: -8.7%). The Federal Government continued to focus on developmental projects that improved economic and social services sectors of the country. Most importantly, these programmes were implemented based on the emphasis of achieving a greater balance between the development of urban and rural areas. In the economic sector, expenditures were mainly focused on modernising the agriculture sector, improving infrastructure in rural areas, enhancing industrial growth and improving transportation infrastructure. At the same time, capital expenditures for the social services sector were mainly allocated towards enhancing and upgrading of essential services, namely education, training and health and medical services as well as provision of affordable houses to the people. Meanwhile, capital expenditures by the Non-Financial Public Enterprises (“NFPEs”) were stronger in 2005, largely attributed to capacity expansion efforts and commitment to improve efficiency by the NFPEs, such as Petronas and Telekom Malaysia Berhad.

Monetary and Fiscal Policies

The conduct of monetary policy in 2005 focused on balancing the risks to economic growth and inflation over the medium term. Over the course of 2005, the risk of slower economic growth diminished, while the risks to inflation remained. Consequently, the Overnight Policy Rate (“OPR”) was then raised by 30 basis points to 3% on 30 November 2005 and by 25 basis points on 22 February 2006. At 3.25%, the OPR continues to remain below its neutral level. Monetary policy therefore continues to remain supportive of the economy.

On 21 July 2005, BNM announced the change from a fixed exchange rate system to a managed float exchange rate regime. The ringgit’s value is now monitored against a basket of the currencies of Malaysia’s major trade partners. The continued strengthening of economic and financial conditions provided the conditions required to enable an efficient transition to the new arrangement. Following the floating of the ringgit, speculative portfolio positions that had been built-up in the first half of the year were unwound.

Outlook of the Malaysian Economy in 2006

The Malaysian economy is expected to strengthen further in 2006 in an environment of more favourable global conditions. Real GDP is projected to grow at a faster rate of 6%, driven by strengthening export performance and resilient domestic demand. The global semiconductor up-cycle, sustained global growth and higher prices for primary commodities are expected to have positive effects on exports, as well as private consumption and investment. Current indicators suggest that the upturn in the global semiconductor industry, which began in the second half of 2005, would gain momentum in 2006. Malaysia is expected to benefit from this favourable development with a stronger growth in manufactured exports, particularly in the computer and semiconductor segments. Domestic demand would be driven by private consumption as a result of rising income and demographic factors. The latter underscores the high propensity to consume of Malaysia’s relatively large young working population. At the same time, in an environment of ample liquidity, credit conditions are expected to remain supportive. Private investment is expected to expand particularly in the manufacturing sector and the oil and gas industry, spurred by the favourable demand conditions.

On the supply side, growth in the manufacturing sector is expected to strengthen in line with the upturn in the global semiconductor cycle, while the services sector is expected to sustain its strong performance supported by higher trade-related activities, and continued increase in consumption and business activities. The commodities sector is expected to see a more broad-based growth, with improvement in the production of rubber, crude oil and the other agriculture segments, while crude palm oil output consolidates after three years of strong performance. The construction sector is expected to register a positive growth in line with the improvement in the civil engineering segment.

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Cost-push inflation is expected to rise following the increase in the price of petroleum products on 28 February 2006. Strong demand could also provide some modest upward impetus to inflation. In the absence of further price adjustments, inflation is expected to peak in the first half of 2006. Subsequently, inflation is likely to ease in the third quarter of 2006 following the lapse of the effects of price adjustments that were implemented in 2005. For 2006 as a whole, the average rate of inflation is estimated to be in the range of 3.5% to 4%.

The balance of payments position is expected to remain strong in 2006 with a continued large current account surplus supported by a strong trade balance. The projected strong growth in exports, based on the continued expansion in manufactured exports, in particular exports of electronics and electrical products, will contribute to the surplus in the trade account. In addition, growth in commodity exports is expected to be sustained by high prices and increases in volume. In the financial account, steady inflows of foreign direct investment ("FDI") would also strengthen the overall balance of payments. A large portion of the FDI would be in the form of reinvestments by the existing MNCs in Malaysia.

Policies in 2006 focus on initiatives to generate greater quality growth in the near term to provide a strong foundation for long-term sustainable growth. These initiatives would include various measures to enhance national resilience and the ability to meet emerging external challenges, arising from rising oil prices and increasing global competition. The Federal Government's overall financial position is expected to strengthen further in 2006 as the economy regains its growth momentum.

The 2006 Budget is the first annual Budget for the Ninth Malaysia Plan (2006-2010). Fiscal policy in 2006 will thus focus on initiatives to generate greater quality growth in the near term to provide a strong foundation for long-term sustainable growth. The 2006 Budget put forth various measures to enhance national resilience and the ability to meet emerging external challenges arising from rising oil prices, higher global interest rates and increasing global competition.

(Source: BNM's Annual Report 2005, BNM Press Release on BNM Annual Report 2005 (Ref. No. 03/06/03) and Ministry of Finance Malaysia's Economic Report 2005/2006)

10.3 General Industry Overview, the Regional Oil and Gas Industry and the Malaysian Oil and Gas Industry

Except as otherwise indicated, statistical and certain other information contained in the following description is based on or derived from data prepared by Infocredit D&B. The information has not been independently verified by us or any other person. Most of the available information is based on best estimates and should therefore be regarded as indicative only and treated with appropriate caution.

General Industry Overview

As our operations in relation to the offshore support services industry is directly related to the level of activities in the offshore oil and gas industry, we set out below an overview of the oil and gas industry.

10. INDUSTRY OVERVIEW (Cont'd)

Essentially, the fluctuation in crude oil prices was very much related to the fundamentals of demand and supply conditions of the global market. In 2005, the International Energy Agency ("IEA") estimated that global oil demand stood at 83.3 million bpd, an increase of 1.4% from the 82.2 bpd registered in the previous year. The strong global demand was mainly attributed to the robust industrialisation activities of China which translated to energy required and the US's need to build up its inventory level. With the surging economy, China overtook Japan in 2002 to become the second largest oil consumer after US and accounted for at least one-third of the increase in global demand. Market sentiment was further heightened by the geopolitical risks in some producing countries, among others Russia, Venezuela and Iraq, resulting in risk premium inherent to crude oil prices widening significantly hence, higher speculative activities. In addition, the situation was further influenced by decisions made by the OPEC which accounts for almost 40% of global oil supply.

Several factors are seen to have contributed to the generally high crude oil prices and are likely to keep them at or near present levels. First, worldwide petroleum demand growth is projected to remain robust, despite high oil prices. China's demand growth slowed down in 2005 but is anticipated to rise in 2006. However, other developing countries are expected to fill in the gap. Second, expected growth in non-OPEC supplies is not expected to accommodate worldwide demand growth. Third, worldwide spare crude oil production capacity has recently diminished as non-OPEC producing nations have very little spare capacity; in practice, only Saudi Arabia has considerable spare production capacity. Despite additions in Saudi Arabia and other Persian Gulf countries expected in 2005-2006, spare capacity is not projected to grow significantly over the next two (2) years. Fourth, downstream sectors such as refining and shipping services are expected to remain tight as well. Finally, geo-political risks, such as the continued insurgency in Iraq and political unrest in Nigeria and Venezuela as well as the uncertainty over the fate of Russia's top oil producer Yukos, are expected to keep the level of uncertainty in world oil markets high.

Meanwhile, gas is an increasingly popular fuel in Asia-Pacific, with natural gas demand expected to grow steadily and to continue to play a role as a volume-growth driver in the region. New LNG terminals are being built, especially across Asia-Pacific; new tankers are also being built and new companies are being established. Reflecting the booming natural gas industry, a number of LNG projects are in the pipeline running up to 2010, to meet the rising energy demand in Asia-Pacific. The projects include the MLNG in Malaysia, an expansion project in New South Wales, Australia, Phase Two of Ras Laffan in Qatar, Russia's Sakhalin II and Tangguh at Irian Jaya, Indonesia. These projects aim to supply LNG to energy thirsty China and India, and to the existing markets of Japan, South Korea and Taiwan.

The Middle East Region Oil and Gas Industry

The Middle East region accounts for approximately 65% of the world's proven crude oil reserves and more than 40% of the global proven natural gas reserves. The bulk is situated in the Persian Gulf. The Persian Gulf encompasses countries like Bahrain, Iraq, Iran, Kuwait, Qatar, Saudi Arabia and the United Arab Emirates. Collectively, these countries hold around 57% of the global crude oil reserves. Even more significantly, the Persian Gulf countries normally maintain almost all of the world's excess crude oil production capacity. These countries are expected to progressively increase their share of the global crude oil production over the next fifteen (15) years, according to the Energy Information Administration in the US. In addition, countries like Iran, Qatar, Saudi Arabia and the United Arab Emirates hold the world's second, third, fourth and fifth largest reserves of natural gas, respectively (Russia maintains the number one position).

10. INDUSTRY OVERVIEW (Cont'd)

With one-fourth of the world's proven oil reserves and some of the lowest production costs, Saudi Arabia is likely to remain the world's largest net oil exporter for the foreseeable future. Overall, Saudi Arabia may contain up to one (1) trillion barrels of ultimately recoverable crude oil. Saudi Arabia is the world's leading oil producer and exporter, and is expected to remain the key player in the global oil and gas industry. Saudi Arabia maintains claims that it is easily capable of producing up to fifteen (15) million bpd in the future and maintaining that production level for another fifty (50) years. There were a total of 1,076 offshore platforms in the Middle East in 2004.

Set out below are the Crude Oil and Natural Gas Reserves and Production in the Middle East:

Country	Crude Oil Reserves (billion barrels)	Production (bpd)	Natural Gas Reserves (Trillion cubic feet)	Production (Trillion cubic feet)
Saudi Arabia	261.9	10,900,000 (2004)	235.0	2.1 (2003)
Algeria	11.4	2,083,400 (2005)	160.5	2.90 (2003)
Bahrain	0.13	44,000 (2003)	3.25	0.33 (2002)
Kuwait	99.0	2,500,000 (2005)	55.5	0.29 (2002)
Libya	39.0	1,580,000 (2004)	52.0	0.22 (2002)
Oman	5.5	784,000 (2003)	29.3	0.53 (2002)
Qatar	15.2	1,068,000 (2004)	910.0	1.0 (2002)
Sudan	0.56	343,000 (2004)	3.0	0
U.A.E.	97.8	2,760,000 (2004)	212.0	1.53 (2002)
Iran	125.8	4,259,800 (2005)	940.0	2.8 (2003)
Iraq	115.0	1,942,000 (2004)	110.0	0.10 (2003)
Syria	2.5	535,000 (2003)	8.5	0.205 (2002)
Yemen	4.0	416,000 (2005)	16.9	0

Source: Infocredit D&B

The Regional Oil and Gas Industry

The Asia Pacific region is the third most important region in the offshore oil and gas industry, after the North Sea and the Gulf of Mexico. It is expected to have the highest growth rate of all the eight (8) regions in the world, in terms of offshore exploration and offshore activities. It has also been estimated that around 20 billion boe await prospectors in the region's vast, but largely untapped deepwater acreage, representing more than 40% of the region's proven oil reserves. Many countries in the region have had falling crude oil production rates for several years but have only recently begun addressing this decline by allowing exploration activities in the deepwater realm.

10. INDUSTRY OVERVIEW (Cont'd)

Set out below are the crude oil, and natural gas reserves and production in the Asian countries:

Region / Country	Crude Oil Reserves (billion barrels)	Production (bpd)	Natural Gas Reserves (Trillion cubic feet)	Production (Trillion cubic feet)
Malaysia	5.29	727,000 (2005)	85.2	1.99 (2004)
Australia	1.5	553,331 (2005)	29.0	1.26 (2003)
Brunei	1.4	196,000 (2003)	13.8	0.37 (2002)
China	18.3	3,620,000 (2004)	53.3	1.21 (2003)
India	5.4	632,000 (2005)	30.1	1.00 (2003)
Indonesia	4.7	1,178,600 (2004)	90.3	2.60 (2003)
Pakistan	0.03	60,000 (2004)	26.8	0.84 (2003)
Philippines	0.20	25,600 (2005)	3.8	0.10 (2003)
Thailand	0.6	296,900 (2005)	13.3	0.80 (2003)
Vietnam	0.6	403,300 (2004)	6.8	0.08 (2002)
Azerbaijan	10	319,200 (2004)	30.0	0.18 (2003)
Kazakhstan	15.4	1,221,300 (2004)	65.0	0.50 (2003)
Turkmenistan	0.6	260,000 (2004)	71.0	1.8 (2003)
Uzbekistan	0.6	150,000 (2004)	66.2	2.07 (2004)

Source: Infocredit D&B

The Malaysian Oil and Gas Industry

Crude oil and condensate reserves increased from 4.5 billion barrels in 2000 to 5.3 billion barrels in 2005. The average production of domestic crude oil and condensate increased from 681,000 bpd in 2000 to 727,000 bpd in 2005. Based on this production level, which is in line with the National Depletion Policy, the reserves are projected to last for nineteen (19) years. Although the total refining capacity declined from 591,000 bpd to 546,000 bpd, it was sufficient to meet the demand for petroleum products.

The export of crude oil and condensate increased to 369,000 bpd with a value of RM28.5 billion in 2005. Major export destinations were Australia, Thailand, India, and the Republic of Korea.

The discovery of new gas fields contributed to the increase in reserves from 84.3 tcf in 2000 to 85.2 in 2005 and is expected to last for 33 years. The average natural gas production increased from 4,367 million standard cubic feet per day ("mmscfd") to 5,800 mmscfd. Natural gas was also imported from West Natuna, Indonesia beginning 2002 and the Malaysia-Thailand Joint Development Area ("MTJDA") in 2005.

The average demand for natural gas in Peninsular Malaysia increased from 1,643 mmscfd in 2000 to 2,141 mmscfd in 2005. The power sector continued to be the major consumer accounting for 66%, followed by the non-power sector at 28%. The remaining 6.0% was exported to Singapore. To meet the increased demand from the non-power sector, the Natural Gas Distribution System ("NGDS") was expanded from 455 km to 1,365 km.

10. INDUSTRY OVERVIEW (Cont'd)

Exports of LNG increased from 15.4 million tones in 2000 to 21.9 million tones in 2005, mainly to Japan, the Republic of Korea and Chinese Taipei. In 2005, total export earnings from LNG amounted to RM20.8 billion compared with RM11.4 billion in 2000.

(Source: Ninth Malaysia Plan 2006-2010, published by the Economic Planning Unit, Prime Minister's Department, Putrajaya, 2006)

Development of the Oil and Gas Industry in Malaysia

According to the official record, the earliest recorded oil find was in Sarawak, discovered by the British Resident in July 1882. Initially the oil was used for medicinal purpose. In later years, the oil was used to light lamps and waterproofing of boats.

In 1910, Anglo-Saxon Petroleum Company, the forerunner of the present Sarawak Shell Berhad which was granted the sole right to explore for petroleum in Sarawak, began commercial exploitation when they struck oil in the town of Miri. This marked the start of the Malaysian petroleum industry. The Miri success encouraged further attempts to discover other onshore fields. However, only traces of petroleum were found, and these were not large enough to justify drilling activities. As a result, they had limited success in Miri, Sarawak. Subsequently, with the aid of technology, offshore exploration of oil started in Sarawak in the 1950s. In 1962, oil was discovered in two (2) offshore areas of Sarawak. Meanwhile, in Peninsular Malaysia exploration commenced in 1968. However, it was not until 1971, that the first oil field was discovered in Peninsular Malaysia.

Prior to the Petroleum Development Act, 1974, oil companies in Malaysia were operating under the concession system. The Government had little control over the concessions. In return, the oil companies paid royalties and taxes to the Government.

By 1974, with the Petroleum Development Act, the Government established Petronas to manage the country's petroleum resources in line with the nation's aspirations. Petronas was accorded the ownership, exclusive rights, power, liberties and privileges of exploring, exploiting, winning and obtaining petroleum whether onshore or offshore of Malaysia.

Petronas group comprises over 80 companies of which 43 are subsidiaries. The group is a fully integrated oil corporation, offering a wide range of activities from E&P (upstream activities) down to distribution of crude oil and petroleum products, gas processing, transmission and distribution, natural gas liquefaction, transportation and marketing of liquefied natural gas, and manufacturing and marketing of petrochemicals (all can be categorised as downstream activities).

To effectively develop the oil resources, Petronas uses the PSC system. PSC contractors undertake the entire financing and bear all the risk with respect to exploration, development and production activities in exchange for a production share. In addition to Petronas, the other players in the E&P sector include ExxonMobil Exploration and Production Malaysia Incorporated, an affiliate of ExxonMobil Corporation which is the largest crude oil producer in Peninsular Malaysia and Shell Malaysia. Shell Malaysia is one of the pioneers in the E&P sector in Malaysia. The rest of the field operators include among others, ConocoPhillips, Murphy Oil, Amerada Hess, Talisman and Newfield.

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10.4 Introduction & Background of Offshore Support Services

In the early days, oil E&P activities started onshore. Crude oil was produced onshore and transported using shallow draft tankers and crude oil barges. In turn, these were towed by tugs along the river to other tank farms for storage or to storage tankers for export purposes. As oil production moved progressively from onshore to offshore, oil exploration, development and production activities increased in tandem. This resulted in more companies stepping up their involvement in both the oil and gas, and offshore support services industries.

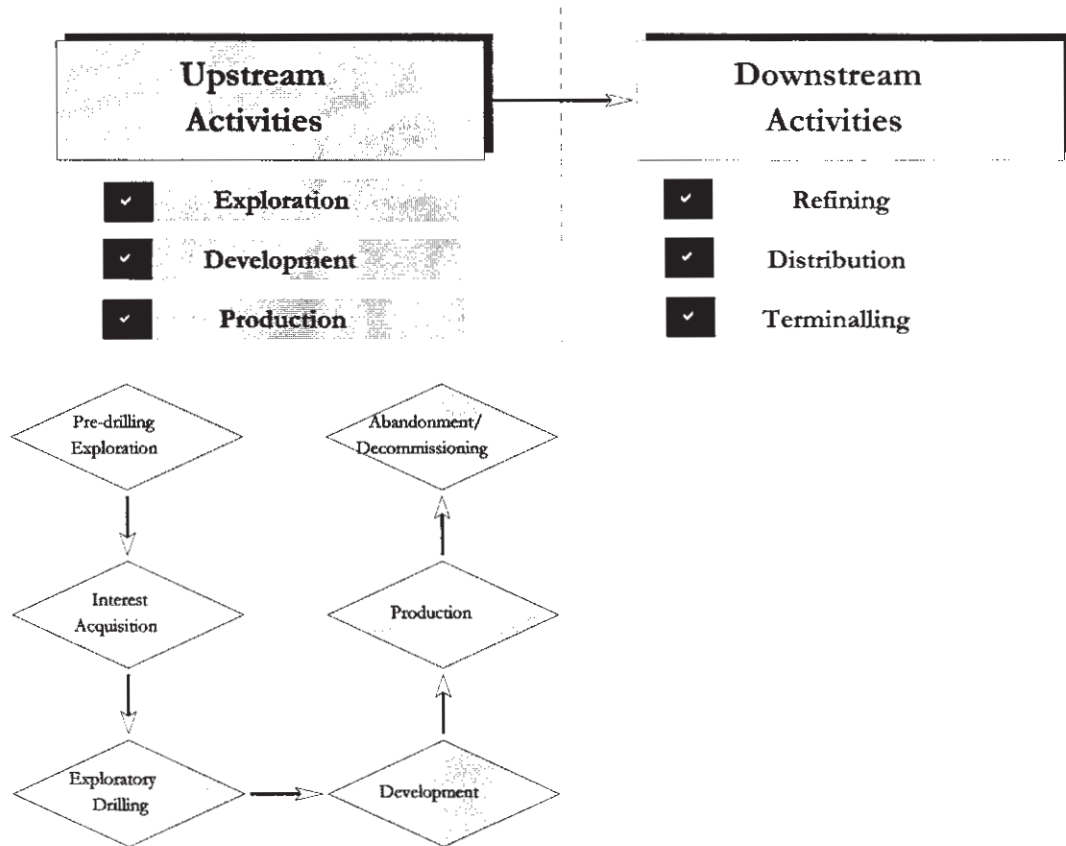
Today, oil exploration has also ventured into deep-water exploration, which contains significant oil and gas deposits, with the aid of the latest technologies.

Offshore E&P activities are dominated by gigantic integrated oil and gas companies and national oil and gas companies. Integrated oil and gas companies are fully integrated multinational companies that are geographically diversified and engaged in exploration, production, refining and distribution activities as well as ownership or partial ownership of petrochemical plants. Examples of such companies are Royal Dutch/Shell, British Petroleum and Exxon Mobil. National oil and gas companies, usually wholly owned by the Government, are vested with the country's entire oil and gas resources and entrusted with the responsibility of developing and adding value to these resources. Primary examples of such companies are Petronas, PT Pertamina of Indonesia, Petroleum Authority of Thailand, China National Offshore Oil Corporation, China National Petroleum Corporation, Saudi Arabian Oil Co. and Nigerian National Oil Company.

Supporting these integrated and national oil and gas companies are companies providing a wide range of support services relating to the oil and gas industry. These support services could be provided at various phases of the value chain of the industry which encompasses services such as consultancy, engineering, fabrication and construction, pipeline maintenance and repair, marine transportation, drilling and well services, environment and safety, equipment repair and service, certification, verification and inspection, and others.

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The value chain of the oil and gas industry is diagrammatically illustrated below:



Source: Infocredit D&B

Upstream and Downstream Sectors

Various support services are involved in the upstream activities. Over the last thirty (30) years, various supporting industries have developed along side the oil and gas industry in Malaysia. The main beneficiaries from the upstream sector which support the E&P activities are companies involved in seismic surveys, exploration drillings, deep sea diving, drilling rigs rental, offshore logistic companies providing support and supply by way of vessels and helicopters.

Since 80% of Malaysia's oil and gas reserves are offshore, most of the E&P activities are concentrated around the continental shelves. The upstream activities may be broadly categorised into two (2) phases namely, exploration and production.

Meanwhile, the downstream sector covers the following areas, such as:

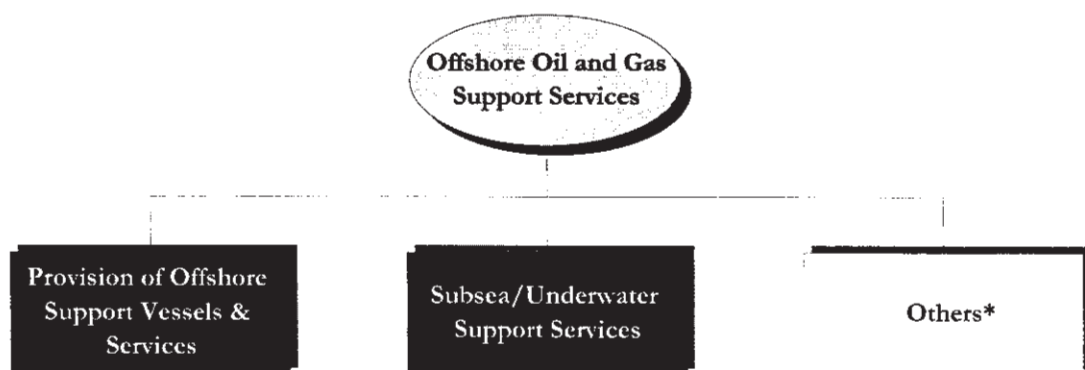
- transportation of oil and gas (major pipeline systems, including pumping systems and compressors);
- LNG systems (Liquefied Natural Gas including liquefaction and re-gasification plant);
- oil refineries, gas processing and petrochemical plant; and
- marketing and sales of oil and gas-related products.

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Essentially, once the oil and gas had been separated, the products would be transported via pipelines and/ or vessels to the various processing plants. The gas and natural gas liquid would be further separated into various other gases such as methane before being channelled to distributors and industrial end users. Once the crude oil reaches the refineries and petrochemical plants, it will also be separated into many categories of oil and fuels as well as other chemical by-products.

Classification of Support Services

There is a wide variety of support services available to the offshore oil and gas industry. Our focus coverage is on the provision of offshore support vessels and services supporting the oil and gas E&P activities which is the main business activity of our Group, contributing approximately 94% of our Group's revenue in 2005. The market segmentations of the oil and gas support services industry are set out below:



Note:

- * Others include fabrication/ construction services, consultancy services, drilling and well services, equipment repair services, supply of equipment and consumables, environmental & safety services, etc

Source: Infocredit D&B

Industry Linkages

The offshore support services providers offer essential support to the oil and gas industry, operating primarily offshore of Malaysia. The services provided may take place at different phases of the offshore activities ranging from exploration to production stage.

For offshore support vessels and services in particular, various services can be provided in each phase of the exploration, development and production activities as set out below:

(i) Pre-Production Phase

During this phase, the following offshore support services are required:

- to assist seismic operators to perform seismic surveys. Seismic surveys are carried out by or on behalf of oil and gas companies to locate oil and natural gas reserves in the seabed. In this scenario, vessels are essential to accommodate and carry seismic equipment;
- to assist the deployment of spreader lines which are used to identify and detect the presence of oil and natural gas in the seabed;

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- to refuel other offshore support vessels used in seismic operations as it is not feasible for these vessels to call into port to refuel their tanks during the process of ongoing seismic operations;
- to provide chase boat activities to caution other ships against approaching into areas where oil and gas exploration process is being carried out, such as seismic operations and during deployment of spreader lines; and
- to transport personnel between platforms and two-way transportation between shore and rigs during crew changes as well as other necessities such as food, beverages and other grocery supplies.

(ii) Drilling Phase

Once the drilling site has been identified by the oil company, a rig will be deployed to drill the exploratory well in the oil company's allocated concession. During this phase, the following offshore support services are required:

- to tow and moor rigs offshore to the exact location based on the given coordinates;
- to position anchor of the rig at the drilling location;
- to transport bulk cargo such as cement, barite, base oil mud, brine, gas oil required for drilling operations, deck cargo such as pipes, equipment and spares;
- to tow floating equipment, barges and to provide assistance to other vessels when they are on standby duties including provision of fuel, water and other consumables and assisting in crew changes;
- to provide standby duties such as fire-fighting duties, anti-pollution and prevention measures to react to oil slicks and offshore fires, search and rescue operation when required; and
- to assist pipe-laying, cable-laying, jacket commissioning or decommissioning through the deployment of remote operated vehicles into the oceans and diving operations which are necessary for the repair and maintenance of platforms, pipelines and cables in the oceans.

(iii) Production Phase

Once the drilling operation is completed and decision is made to commence oil and gas production, the rig will be towed away and production facilities have to be built with platforms and pipelines installed. Normally, a cluster of several platforms for production, processing, accommodation and drilling facilities are also required to be built offshore which can be linked together with inter-connecting pipes and bridges. FPSO/ FSO platform are used as an alternative to fixed platforms in some offshore production fields which require offshore vessels to support in various ways. During the production phase, the following offshore support services are essential:

- to assist the demobilisation of rigs after completion of a drilling operation and towing away the rigs;
- to assist the towing, setting up and mooring of the FPSO/FSO platforms to the oil well location;
- to anchor the FPSO/FSO platforms to the location of oil production;

10. INDUSTRY OVERVIEW (Cont'd)

- to transport bulk cargo such as cement, barite, base oil mud, brine and gas oil which are required for the drilling operations and deck cargo such as pipes, equipment and spares; and
- to transport personnel between platforms and two-way transportation between shore and rigs during crew changes as well as other necessities such as food, beverages and other grocery supplies.

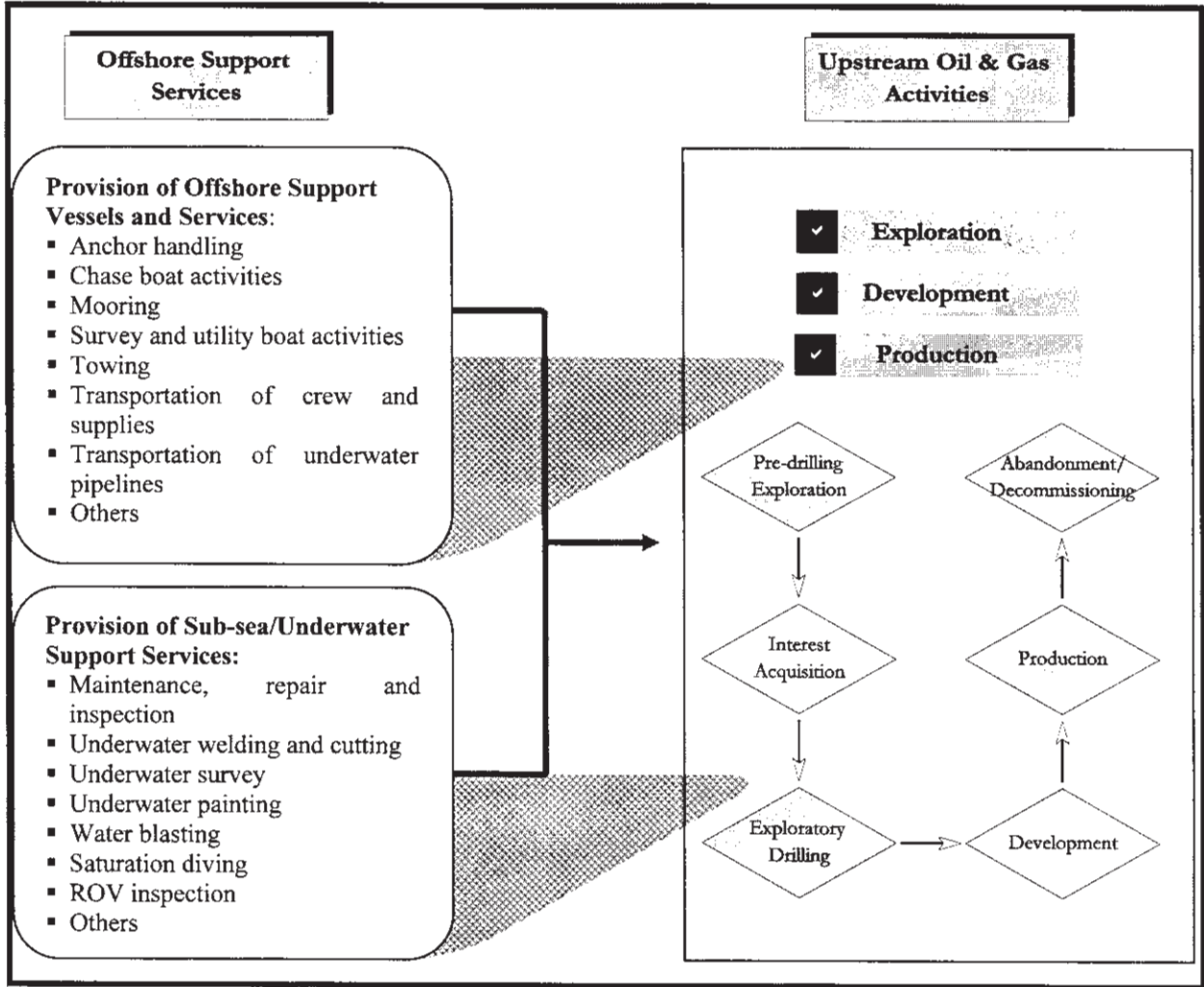
(iv) Post-production Phase

This is final stage of the drilling / production process whereby offshore support services are still required to decommission the platforms. While demobilising activity is being carried out, some of the following support services may still be ongoing:

- to assist the demobilisation of FPSO/FSO or platform. The decommissioned platform structure is either towed away or placed on deck the offshore support vessels for transportation back to shore;
- to provide standby duties such as fire-fighting and anti-pollution and prevention measures to react to offshore fires and oil slicks respectively;
- to transport personnel from one platform to another platform, to and from shore to rigs during crew changes as well as other necessities such as food, beverages and other grocery supplies; and
- to provide support services during well-killing. Well-killing is the process whereby the oil wells are being sealed after they are exhausted.

10. INDUSTRY OVERVIEW (Cont'd)

Provision of support services to the offshore oil and gas E&P activities



Source: Infocredit D&B

10. INDUSTRY OVERVIEW (*Cont'd*)

Product / Service Definition

The offshore support vessels and services employ various types of vessels, referred to broadly as offshore support vessels. Offshore support vessels are generally classified into the following classifications derived from their primary or predominant operating characteristics or capabilities. Currently, our Group own a total fleet size of fifteen (15) vessels comprising Platform Supply Vessel, Anchor Handling Tug, Anchor Handling Tug Supply Vessel, Straight Supply Vessel, Survey/Utility Vessel and Diving Support Vessel.

(i) Platform Supply Vessel ("PSV")/ Straight Suply Vessel ("SSV")

PSVs/SSVs serve drilling and production facilities and support offshore construction and maintenance work. They are differentiated from other offshore support vessels by their cargo handling capabilities, particularly their large capacity and versatility. PSVs/SSVs utilise space on deck whilst space below deck is used to transport supplies such as fuel, water, drilling fluids, equipment and provisions. Generally, PSVs/SSVs range in size from 150 ft to 200 ft however, there are larger PSVs/SSVs ("Lg PSVs/LgSSVs") ranging up to 275 ft in length and are particularly suited for supporting large concentrations of offshore production locations because of their large, clear above deck and below deck capacities.

(ii) Anchor Handling Tug ("AHT")/ Anchor Handling Tug Supply Vessel ("AHTS")

AHT/AHTS vessels are used primarily to handle and set anchors for positioning, mooring drilling rigs, towing mobile drilling rigs and for standby fire-fighting duties. In addition, AHTS vessels can also be deployed to transport cargo from one location to another due to its bigger deck space. These vessels can also be typically used in limited supply roles when they are not performing anchor handling and towing services. Occasionally AHTS vessels function as PSVs/SSVs.

(iii) Standby Rescue Vessels ("SRV")

SRV performs safety patrol and is required for all manned locations. These vessels typically remain on station to provide a safety backup to offshore rigs and production facilities and carry special equipment to rescue personnel. They are equipped to provide first aid and shelter and, in some cases, also function as supply vessels.

(iv) Crew boat

Crew boat transports personnel and cargoes to and from production platforms and rigs. Older crew boats (early 1980s build) are typically 100 ft to 120 ft in length and are designed for speed to transport personnel. Newer crew boat designs are generally larger, 130 ft to 165 ft in length and can be longer with greater cargo carrying capacities. They are used primarily to transport personnel and cargoes on a time-sensitive basis.

(v) Work Boat & Work Barge

A work boat or work barge generally has special features to meet the requirements of specific jobs. The special features include large deck spaces, high electrical generating capacities, slow controlled speed and varied propulsion thruster configurations, extra berthing facilities and long-range capabilities. These vessels are primarily used to support offshore facilities maintenance, diving operations and ROV operations.

(vi) Survey Vessel ("SV")

A survey vessel is designed to support hydrographic and oceanographic research as well as survey operations and seismic data gathering.

10. INDUSTRY OVERVIEW (Cont'd)

(vii) Utility Vessel ("UV")

These vessels are typically 90 ft to 150 ft in length and are used to provide limited crew transportation, oil field support equipment transportation and, in some locations, UV serves as a standby function.

(viii) Diving Support Vessel ("DSV")

This vessel facilitates underwater diving especially saturation diving. However, its functions can be integrated to provide a versatile base for a variety of activities. In addition to a saturation diving spread, most DSVs are equipped with a heavy compensated crane, ROVs and possibly an air diving spread (for shallow dives down to -30 m). This makes it a more versatile ship capable of performing several different construction tasks as well.

10.5 Industry Dynamics**10.5.1 Market Performance and Trend**

The demand for offshore support vessels and services in the oil and gas industry is directly related to the performance and activities of the latter. Oil and gas companies decide to embark on their E&P decisions based on the crude oil and natural gas reserves, geology, national production policies, national depletion policies, price of crude oil and natural gas in the market, political climate, the land and lease conditions, the distance from markets and pipelines and the cost of operating.

Historically, some petroleum development in Malaysia had been delayed by the National Depletion Policy formulated in 1980 which was aimed at safeguarding the oil reserves in Malaysia. The policy gives Petronas the right to dictate the country's level of production, development timing and production levels of oil fields with in-place reserves.

While new shallow water crude oil and natural gas discoveries are still likely, deepwater exploration will most probably become the focal point of the upstream sector as only about half of the identified exploration areas have been explored. The recent rash of discoveries is set to spark a boom in jobs for service providers like our Group.

10. INDUSTRY OVERVIEW (Cont'd)**10.5.2 Market Demand and Supply**

Globally, there are approximately 7,300 oil and gas platforms. Detail locations of these platforms by regions for the period of 1980 to 2004 are depicted in the following table:

Year	US Gulf [^]	Other Parts Of North America	Central & South America	Europe*	Middle East	Africa	Asia Pacific	Total
1980	2,367	102	118	250	325	156	231	3,549
1981	2,514	114	142	262	396	192	271	3,891
1982	2,689	133	159	286	466	233	344	4,310
1983	2,797	144	176	308	548	264	424	4,661
1984	2,930	152	192	338	635	299	475	5,021
1985	3,030	161	206	368	705	316	522	5,308
1986	3,087	169	219	393	772	328	568	5,536
1987	3,138	171	228	415	789	350	596	5,687
1988	3,187	172	242	440	794	366	625	5,826
1989	3,251	173	248	458	804	377	648	5,959
1990	3,318	181	251	479	815	398	674	6,116
1991	3,361	187	252	491	824	422	704	6,241
1992	3,346	192	255	519	866	445	740	6,363
1993	3,307	196	259	557	898	463	774	6,454
1994	3,311	205	266	582	917	475	802	6,558
1995	3,313	205	267	614	940	483	830	6,652
1996	3,350	205	268	636	964	511	853	6,787
1997	3,343	206	282	649	975	547	900	6,902
1998	3,358	207	301	672	1,004	567	951	7,060
1999	3,330	222	313	694	1,027	577	981	7,144
2000	3,286	239	320	716	1,045	584	997	7,187
2001	3,278	249	322	729	1,049	587	1,029	7,243
2002	3,262	249	325	740	1,071	591	1,052	7,290
2003	3,227	252	327	757	1,074	599	1,095	7,331
2004 [#]	3,233	253	332	767	1,076	608	1,107	7,376

Notes:

[^] Takes into account possible removals

* Includes Mediterranean Sea

Latest figure available as at October

Source: Infocredit D&B

As for Malaysia, it is estimated that there are 253 offshore oil and gas platforms in the upstream sector. They present tremendous opportunities to the offshore support vessels and services companies along every step in the value chain. In view of Petronas' intention to increase production by 3% over the next five (5) years, it is anticipated that more platforms will be built hence increasing the demand for offshore support services especially the services of offshore support vessels.

10. INDUSTRY OVERVIEW (*Cont'd*)

10.5.3 Competitive Environment

Generally, the offshore support vessels and services industry perceived to be a competitive industry. Competing players in this industry are wide and include companies in various sizes ranging from large MNCs to local companies, both large and small. To remain resilient against adverse market conditions and stay ahead of competition, the competitive factors behold are price and quality of vessels and services.

Presently, there are fifteen (15) major players in Malaysia that are engaged in the provision of offshore support vessels and services. Currently, these players in aggregate owned approximately 160 vessels which consist of various types of offshore support vessels, as illustrated in the following table. It is noteworthy that the number of offshore support vessels is constantly changing as the demand is dependant on the level of exploration, development and production activities in the oil and gas industry.

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10. INDUSTRY OVERVIEW (Cont'd)

Malaysia: Major Players in Offshore Support Vessels and Services, by Type of Vessels

Company	PSV/ SSV	AHT/ AHTS	SRV	Work boat/ Work barge	Crew	SV	UV	DSV	T/B	Others
Ajang Shipping Sdn Bhd		X	X		X	X	X			X
AMRB	X	X	X	X		X	X	X		
Bumi Armada Navigation Sdn Bhd	X	X		X			X		X	X
Coastal Contracts Bhd	X	X					X		X	X
Jasa Merin (M) Sdn Bhd	X	X	X			X	X		X	
Perkapalan Mesra Sdn Bhd	X	X		X	X		X		X	
Petra Perdana Berhad*	X	X		X	X	X	X		X	
Scomi Group Berhad^		X								
Sealink Sdn Bhd		X	X						X	X
Semaring Logistics (M) Sdn Bhd		X								
Syarikat Borcos Shipping Sdn Bhd									X	
Tanjung Offshore Berhad		X			X					
Tidewater Marine Services (M) Sdn Bhd**	X	X			X		X		X	X
Viva Omega Sdn Bhd		X								
Wira Swire Sdn Bhd		X								

Notes:

PSV – Platform Supply Vessel

AHT - Anchor Handling Tug

AHTS – Anchor Handling Tug Supply

SRV – Standby Rescue Vessel

Crew – Crew boat

Others – Dredger, Landing Craft, Pilot/Mooring

SSV – Straight Supply Vessel

SV – Survey Vessel

UV – Utility Vessel

DSV – Diving Support Vessel

T/B – Tug /Barge

* Through its subsidiaries, Ampangship Marine Sdn Bhd and Intra Oil Services Berhad

^ Through a joint-venture company, Oilserve Marine Sdn Bhd, with SapuraCrest Petroleum Bhd

** A principal for Nubayu Offshore Company Sdn Bhd

Sources: Infocredit D&B

10. INDUSTRY OVERVIEW (Cont'd)

10.5.4 Barriers to Entry

- **Capital Intensiveness**

Generally, the oil and gas support services industry is geared towards heavy capital commitment. This is mainly attributable to the costs of any products, equipment, machinery and vessels, which are on the high side as it often involved technical complexities in designing and building. Although the purchasing of equipment, machinery and vessel can be financed through bank borrowings, buyers are still required to fund the rest of the balance via internal source for downpayment. Under circumstances whereby bank borrowings are not available due to poor financial standing, operations may be severely disrupted in view of the absence of the relevant equipments and vessels to honour the contracts secured or to secure new contracts. In addition, more often than not, a banker's guarantee which usually ranges between 5% and 20% of the contract value is required from the bidder or contractor. These challenges pose high barrier to entry because financing and other bridging facilities are not easily obtainable without a good track record in the industry.

- **Industry Knowledge and Technical Competency**

Players providing the support services to oil and gas companies need to have the relevant industry knowledge and technical skills in order to offer safe and satisfactory services. This involves effective process management in the entire support activities which refers to the planning, executing, monitoring and reviewing process. They must keep abreast with the latest technological development and market trend in order to build and maintain the business relationships with their customers. The players must be able to identify the equipment and/or service that are fit-for-purpose for a specific task. Besides, the technical personnel must be technically competent in order to multi-task on a vessel.

Furthermore, a company must have the technical integrity in the planning, evaluating, recording, documenting, organising and training in order to ensure that its support services meet the standards in accordance to the work scope specified by the clients.

- **Proven Track Record**

The long period of time required in establishing a strong track record and building up the relationships with clients can prove daunting to newcomers. It is mutually beneficial for both customers and suppliers to form long-standing relationships once the quality of services are accepted and recognised. Oil and gas companies are more inclined to use products and services from support services companies with a proven track record. In this context, well-established companies will most likely be the preferred choice. They are often viewed as the strategic partners by oil and gas companies where both parties seek to gain greater economic value in such project-specific partnership. These emerging business practices in the oil and gas industry will be a significant barrier of entry for many new players to the industry.

10. INDUSTRY OVERVIEW (*Cont'd*)

- **Licensing and Certification Requirements**

The oil and gas industry in general is a highly regulated industry. From the Malaysia perspective, the authority is vested with Petronas whereby operators or service providers are required to possess the relevant licences issued by Petronas in order to provide services to Petronas and other oil and gas operators. Without the requisite licence, one is not allowed to participate in the bidding process. In addition, the MOF is also regulating the industry through the issuance of relevant licence.

Apart from the above licences, service providers such as our Group must also adhere and conform to the Malaysian legislations and international standards for safety management, operation as well as pollution controls. In addition, all vessels are required to have the necessary certifications from international classification societies such as the ABS and DNV prior to commencement of operations.

The licensing and certification requirements act as a deterring factor for new entrants as they are not easily attainable while conformity to international standards involves various procedures and substantial amount of documentations.

- **Substitute products / Services**

There is no substitute to offshore support vessels as means of transportation for the petroleum companies as they rely on this industry in supporting their activities at various stages of exploration, development and production.

10.6 Industry Challenges

10.6.1 Uncertain Operating and Regulatory Administration

Many oil and gas companies are cautious about high levels of investments in parts of Asia due to uncertain operating and regulatory regimes. Some offshore reserves lie in contested waters, such as parts of the South China Sea (Spratly islands), the East China Sea (Diaoyu/ Senkaku islands) and the East Timor Sea (Timor Gap). Conflicts over drilling areas have flared up between Malaysia and Brunei (Kikeh oilfield), Malaysia and Indonesia (Ambalat islands in the Celebes Sea) and China and Japan (Diaoyu/ Senkaku and Okinotorishima islands). In Indonesia, many oil and gas companies are hesitant about venturing into E&P activities due to the slow pace of liberalisation in the oil and gas industry that affects the confidence of foreign companies.

10.6.2 Consolidation and Rationalisation in the Oil and Gas Industry

Consolidation and rationalisation have been the key word in the oil and gas industry over the last decade. In tandem with the widespread mergers and acquisitions taking place in the business world, many petroleum companies are also merging so as to achieve economies of scale and higher crude oil reserves. The trend is also driven by globalisation forces as most of the oil and gas players are global in nature. The markets, prices and profitability are all tightly inter-linked between regions by extensive trade and competition. The net effect is that there are fewer petroleum companies in the scene while the number of supporting services companies remain fairly constant. By virtue of this, service providers supporting the oil and gas industry must be able to demonstrate quality services and meeting customer demand for vessels equipped with greater technological capabilities and larger in size as well as reliability in order to remain competitive.

10. INDUSTRY OVERVIEW (Cont'd)

10.6.3 Shortage of Skilled Technical Staff

There is a shortage of skilled technical personnel in the oil and gas support services industry. A skilled staff takes a few years to train and there is no guarantee that he or she might be poached by another company in the industry after the training is completed. The relatively small pool of seafarers, technicians, divers and engineers is due to the fact that the offshore support services industry is highly specialised in nature. As the oil and gas industry is seeing steady growth in activities, there is knock-on demand placed within the economic area for extra human resources to fuel the additional work levels. Added to this is the use of multi-functional teams needed to operate in different geographic locations and environments.

10.6.4 Project-Based Business

One of the industry challenges faced by companies providing supporting services is to maintain a stable source of income due to having a majority of income derived from project-based businesses. Once the term of the project is completed, the support services companies would have to source for new projects to derive a new source of revenue. The exception is that the contracts are renewed for another fixed period of time, when the oil and gas companies are satisfied with their work. Hence, fluctuations in revenue are quite normal in project-based businesses. On a positive note, some service providers like our Group view this as an advantage where they could explore the best possible deal from time to time. Although long term contract is perceived to be providing a secured revenue stream, there could be risk involved in entering into unfavourable arrangement rate due to unforeseen circumstances throughout the long contract period.

10.6.5 Greater Demands on Support Services Companies in Deepwater Environment

In deepwater environment, the field architecture, technology and concept options are more complex and diverse and hence present greater risks. The need for a myriad of floater designs and sub-sea systems require extensive engineering expertise to manage a multitude of equipment and systems interface.

The high risks present in deepwater development demands greater diligent risk mitigation, with the greatest investment of expertise vested in both operators and contactors. At the onset of the front-end engineering development, the operators will involve the engineers, fabricators and installer in early planning, thus creating a dialogue for optimum project development and reliable operations. The front-end engineering development phase identifies and mitigates uncertainty or risks. The further the offshore platform is located from land, the greater is the risk and the smaller the permissible margin of error.

10.7 Outlook and Positioning**Market Growth Factors**

The market growth factors of the oil and gas industry are as follows:

10.7.1 Increasing Demand for Oil and Gas

Oil and gas are expected to account for around two-thirds (2/3) of global energy consumption by 2020. Similar to other commodities, the industrialisation and economic growth of China have led to voracious demand for crude oil and natural gas. China overtook Japan to become the second largest consumer of oil and gas in 2002, after the US. The country is projected to account for 25% of global oil consumption by 2025. The global consumption of oil rose by 2.5 million bpd in 2004, the sharpest rise in demand in 30 years.

10. INDUSTRY OVERVIEW (Cont'd)

China's annual oil bill is running at about USD89 billion, or 5.3% of GDP, twice as high as the global average. In the case of South Korea and Taiwan, the comparative figures are 4.4% and 2.9%. These figures illustrate the importance of oil and gas supply to some of Asia's leading economies. The effect is to spur additional E&P activities, with the spill-over effects reaching the services support companies eventually.

10.7.2 Rising Crude Oil Prices

Rising crude oil prices have spurred the oil and gas industry to undertake more E&P projects. Due to strong demand, prices of crude oil increased by a compound annual growth rate of 12.9% between the years 2000 and 2005. As a result, oil and gas fields that were deemed uneconomical and marginal in the past were reassessed and found to be economical by petroleum economists and geologists. Exploration activities in the oil and gas industry are akin to research and development activities in the manufacturing sector. New and future projects initiated by the giants in the oil and gas industry are deemed essential to close the global supply-demand gap for energy. Set out below are the average crude oil prices between 2000 and 2005:

USD/barrel	2000	2001	2002	2003	2004	2005	CAGR
Crude Oil	27.60	23.12	24.36	28.10	36.05	50.64	-
% increase	-	-16.2	5.4	15.4	28.3	40.5	12.9

Source: Infocredit D&B

10.7.3 New Frontier in Deepwater Exploration

The next impetus for growth in the oil and gas industry would be in deepwater and ultra-deepwater explorations. With oil and gas resources being finite, oil and gas companies are going further afield to recover hydrocarbons from remote locations. Deepwater refers to water depth of between 200 metres and 1,000 metres while ultra-deepwater refers to water depth beyond that. Many terrestrial techniques do not work well in deepwater situations. The cost of drilling just one dry well in a deepwater environment is in excess of USD50 million. Over the past few years, there have been drastic changes in technology that greatly reduces the cost of accessing petroleum deposits. Both ultra-deep platforms and next generation seismic-imaging techniques allow reservoirs to be envisaged on a screen in a matter of minutes rather than months. Seismic surveys use acoustic waves generated by the explosions to scour the sea floor for the right petroleum source rocks. The arrival of three dimension seismic imaging in the late eighties and nineties helped altered the oil and gas industry.

However, there is still room for additional improvement. Another potential technological advance lies in the development of smarter drill bits that encase sensors capable of measuring conditions in the surrounding rocks. They act as the eyes and ears for the driller, by looking far ahead of the drill bit and communicating to the operator in real time.

Electromagnetic mapping is also an emerging technology, utilising a series of receivers dropped in a specific pattern on the seabed. A ship tows a machine that sends out electromagnetic waves over the sea floor. The signal received by the transmitters is affected by the resistance it encounters. Hydrocarbons show a higher level of resistance compared to water, rock or sediments. The technology was originally used by geologists and geophysicists to study volcanic systems.

Deepwater exploration activities are primarily found in Brazil, Gulf of Mexico, Norway, Angola and Nigeria. Malaysia has announced several major deepwater crude oil finds in East Malaysia, with an estimated 1,540 million boe.

10. INDUSTRY OVERVIEW (Cont'd)

Deep water exploration is the ultimate frontier of the petroleum industry, with the maturing of existing petroleum fields. Oil and gas companies are expected to continue increasing their capital spending to offset declining production volumes and to increase their reserves to meet the anticipated demand for crude oil in the future.

Forecast for Global Deepwater and Ultradeep Water Expenditures (USD Million)

Region	2005	2006	2007	2008	2009	CAGR (%)
Africa	4,303	5,442	5,183	4,490	22,617	51.4
Asia	812	841	879	841	3,599	45.1
Australasia	242	134	241	263	920	39.6
Europe	400	809	1,164	591	3,063	66.3
Middle East	0	78	12	85	198	275.1
Latin America	2,864	2,690	2,511	3,263	13,581	47.6
North America	2,515	3,704	2,499	1,907	13,192	51.3
Total:	11,136	13,698	12,489	11,440	57,170	50.5

Source: Infocredit D&B

Malaysian Deepwater Fields

Field	Discovered	Estimated reserves (million boe)	Onstream	Operator
Kamunsu East	1999	120	2009	Sabah Shell
Kamunsu East North	2000	185	2008	Sabah Shell
Kikeh	2002	560	2007	Murphy Oil
Kikeh Kecil	2003	100	2009	Murphy Oil
Gumusut	2004	300	2008	Sabah Shell
Kakap	2004	75	2010	Murphy Oil
Senangin	2004	100	2010	Murphy Oil
Malikai	2004	100	2009	Sabah Shell

Source: Infocredit D&B

10.7.4 Increasing Underwater / Sub-sea Operations**(a) Installation and maintenance**

In special circumstances, for example where large diameter gas pipelines are used, some operators decided, as a result of their assessments, to provide additional pipeline protection by installing sub-sea isolation systems to give further protection of the installation and the persons on it against the failure of the topside emergency shutdown valve or the rupture of the pipeline riser. This was also due to the increasing general emphasis on safety by oil and gas companies since the Alpha Piper disaster in the North Sea in 1988. Circumstances like these would require specialised equipments such as ROV to be deployed to deepwater to undertake survey and sampling activities. In turn, offshore support vessels are used to support these activities.

10. INDUSTRY OVERVIEW (Cont'd)

(b) Corrosion in the Oil and Gas Industry

Corrosion refers to the deterioration of a metal or its properties and it attacks every component at every stage of every oil and gas field, from casing strings to production platforms. It happens on every marine structure in oxygen-rich environments and wells exposed to sulphide stress. Although offshore installations are often painted with zinc-rich primers to form a barrier against rain, condensation, sea mist and spray, the splash zones are often subjected to severe corrosion while the jackets of a production platform sink into the seabed and prone to attack by hydrogen sulphide produced by sulphate-reducing bacteria.

Hence, corrosion monitoring and inspection are critical in order to prevent downtime and disaster from occurring. Preventing corrosion is vital in every step of the oil and gas industry. As it is almost impossible to prevent corrosion from taking place, it is apparent that controlling the corrosion rate maybe the most economical solution. In this context, corrosion engineers are increasingly involved in estimating the cost of their solutions on corrosion prevention and estimating the useful life of the equipment. At the same time, inspection also takes place to complement the task. All these would require specialised equipments as well as divers to carry out the operations and the utilisation of offshore support vessels to ferry the equipments and personnel.

(c) Start of Decommissioning Era

Many oil and gas platforms are approaching the end of their lifecycles in the Asia-Pacific region. This heralds the start of the decommissioning era in the oil and gas industry due to aging offshore platforms. With congested waterways and increasing cargo ship traffic, the proper decommissioning of oil and gas platforms is essential. A collision involving oil tankers at sea due to improper disposal of oil and gas platforms would be disastrous to the economic wellbeing of the littoral countries. Out of the over 7,000 active platforms in the world, more than a quarter of the platforms are over 25 years old and reaching the end of their intended design lives. Currently, Malaysia has around 253 offshore platforms in the oil and gas industry. Out of this amount, 28 platforms are over 25 years old while another 11 platforms are over 30 years old. This would require the support of offshore vessels in carrying the decommissioned parts back to the shore as well as the requisite equipments to perform the decommissioning.

10.7.5 Growing Demand for Non-Destructive Testing Services

Non-destructive testing is an extremely important field in the industrial sector. Although it is sometimes considered a matured field, there are more innovative methods being invented periodically that enable tiny flaws on materials invisible to the naked eye to be seen. With both safety and quality issues are paramount in the workplace, non-destructive testing is a necessity and not a luxury. It assists companies to ensure that they are producing quality products as well as maintaining safety in the workplace. The traditional role of non-destructive testing in quality control has been augmented with material characterisation, stress management and inspections in-service in recent years. The correct application of non-destructive testing can help to prevent accidents, save lives, protect the environment and avoid economic loss.

10. INDUSTRY OVERVIEW (*Cont'd*)

10.8 Contribution to the Country's Economy

Malaysia aspires to become a maritime nation by 2020, hence the contribution of the maritime sector towards the growth and dynamism of the Malaysian economy is significant. Various establishments were set up such as the Maritime Institute of Malaysia and Malaysia Maritime Academy in achieving this vision. The former focuses on the research of implementing a National Ocean policy in the context of protecting and enhancing the larger trade interests of the Malaysian economy while the latter is an institution providing maritime education and training.

The oil and gas offshore support services industry involve a multi-disciplinary team of specialists in particular seafarers and underwater engineers and technician. Of significance too are the services that support the efficient functioning of the support services sector, especially ship building and ship repairing. In this aspect, our Group is moving in tandem with the nation's vision through employment and nurturing of multi-disciplinary specialists. It also commissions local ship builders and operators for new vessels building and vessels repairs/maintenance. This contributes to curbing foreign exchange outflow. In general, our Group is operating within an industry that contributes to the nation's economy in the sense of strengthening the overall balance of payments via supporting the oil and gas E&P activities that has attracted substantial foreign direct investments.

10.9 Government Legislations, Incentives and Policies

10.9.1 International Codes and Standards

- (i) The United Nations Convention on the Law of the Sea ("Convention").

The Convention came into force in 1994. On 14 October 1996, Malaysia became a party to the Convention. The Convention lays down a comprehensive regime of law in the world's oceans and seas establishing rules governing all uses of the oceans and their resources. Today, it is the globally recognised regime dealing with all matters relating to the law of the sea. Among the important features of the Convention are navigational rights, territorial sea limits, economic jurisdiction, legal status of resources on the seabed beyond the limits of national jurisdiction, passage of ships through narrow straits, conservation and management of living marine resources, protection of the marine environment, a marine research regime and, a more unique feature, a binding procedure for settlement of disputes between parties to the Convention ("States").

Under the Convention, coastal States have sovereign rights in a 200 nautical mile exclusive economic zone with respect to natural resources and certain economic activities, and the exercise of jurisdiction over marine science research and environmental protection.

- (ii) SOLAS Convention

The main objective of the SOLAS Convention is to specify minimum standards to be met for the construction, equipment and operation of ships, to ensure overall safety of passengers and crew of ships. The SOLAS Convention is regarded as the most important of all international treaties concerning the safety of the ships, whereby regulatory controls and standards are imposed covering areas as below:

- Construction- Subdivision and stability, machinery and electrical installations;
- Fire protection, fire detection and fire extinction;
- Life-saving appliances and arrangements;

10. INDUSTRY OVERVIEW (*Cont'd*)

- Radio communications;
- Safety of navigation;
- Carriage of cargo;
- Carriage of dangerous goods;
- Nuclear ships;
- Management for the safe operation of ships;
- Safety measures for high-speed craft;
- Special measures to enhance maritime safety;
- Additional safety measures for bulk carriers; and
- Tanker safety and pollution prevention.

(iii) ISM Code 2002

The ISM Code 2002 was made mandatory through SOLAS and addresses the responsibilities of the people who manage and operate ships and to provide a common international standard for the safe management and operation of ships and for pollution prevention. The purpose of this ISM Code 2002 is not only to provide an international standard for the safety management and operation of ships and for pollution prevention, but also act as a platform to support and encourage the development of a safety culture in shipping. All governments are invited to take the necessary steps to safeguard the shipmaster in the proper discharge of his responsibilities with regards to maritime safety and the protection of the marine environment. ISM Code 2002 is applied to all ships internationally. There are basically several areas which ship owners should pay critical attention to whilst complying with this Code namely safety management, operation of ships and environment protection.

(iv) ISPS Code

ISPS has been identified as vulnerable to global terrorism. Initiated following the aftermath of the September 11 incident, the IMO members of most countries formally adopted various security related amendments to the SOLAS Convention of 1974, including the introduction of ISPS Code. The purpose of the ISPS Code is to provide a standardised, consistent framework risk evaluation, which enables governments to offset changes in threat with changes in vulnerability for ships and port facilities.

The ISPS Code is applicable to passenger ships and cargo ships greater than 500 gross tonnes, and mobile offshore drilling units. Under the ISPS Code, ship owners must undertake a Security Assessment, develop and implement a Security Plan for each applicable vessel in their fleet. Compliance with the ISPS Code results in the issuance of an International Ship Security Certificate ("ISSC") that is valid for five (5) years.

10.9.2 Malaysia Regulations and Legislations

(i) Petronas licence

Petronas is Malaysia's national petroleum corporation established under the Petroleum Development Act. Petronas is wholly-owned by the Malaysian Government. According to the Petroleum Development Act, the entire ownership in, and exclusive rights, powers, liberties and privileges of exploring, exploiting, winning and obtaining petroleum whether onshore or offshore of Malaysia shall be vested in Petronas.

10. INDUSTRY OVERVIEW (*Cont'd*)

Under the Petroleum Development Act, the Prime Minister of Malaysia may make regulations for the purpose of carrying into effect the provisions of the Petroleum Development Act and such regulations may, in particular, provide for the conduct of or the carrying on of (i) any business or service relating to the exploration, exploitation, winning or obtaining of petroleum; (ii) any business involving the manufacture and supply of equipment used in the petroleum industry; and (iii) downstream activities and development relating to petroleum.

Petronas licenses are issued under the regulations of the Petroleum Development Act and allow the holders to supply equipment, facilities and services to Petronas, its group companies and also to other companies dealing with exploration and obtaining oil and natural gas in Malaysia. Petronas licenses specify the scope of supply of services and equipment a licensee is allowed to carry out. Company groups are prohibited from having more than one Petronas licence with a specific scope of supply of services and equipment. Company groups with more than one of the specific permitted scopes under a Petronas licence are required to elect to surrender the excess licences it holds so that its group only holds one Petronas licence for each specific permitted scope.

The Petronas license general conditions specify that the licences are not transferable and licensees are prohibited from appointing any other company as its principal, agent, sub-contractor or otherwise, to provide any service or to supply any facilities or equipment on its behalf without prior approval from Petronas. Licensees are required to employ local Malaysian workers and foreign workers are only allowed if it can be proved that no local workers are available. Licensees are also required, unless otherwise approved by Petronas, to carry on its business activities in Malaysian and to utilise local facilities such as banks, insurers or other professional services managed by Malaysian firms or companies established or incorporated in Malaysia. Licensees must notify Petronas of any changes such as the status of its equity ownership, directorship and management personnel within fourteen (14) days from the occurrence of such changes. Failure to comply with these conditions could result in the revocation of the Petronas licence. Petronas licences are renewable either annually or every two years.

(ii) Malaysian Shipping Ordinance 1952 (“MSO”)

In Malaysia, the law pertaining to registration of ships is now governed entirely by the MSO. The Ministry of Transport implements the Malaysian Government’s cabotage policies under which the transportation of goods in domestic trades are reserved for ships flying the Malaysian flag.

A few issues in ship registration are highlighted as below:

Obligation to Register Malaysian Ships

- Every Malaysian ship unless exempted otherwise shall be registered under the MSO.
- If a ship required by the MSO to be registered is not so registered, she shall not be recognised as a Malaysian ship.
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- A ship required by the MSO to be registered may be detained until the master of the ship, if so required, produces the certificate of registry of the ship.

10. INDUSTRY OVERVIEW (Cont'd)

Exemption from Registry

The following ships are exempted from registration:

- (a) any ship not exceeding 15 tonnes net used for navigation on the rivers and coastal waters of Malaysia;
- (b) any vessel licensed under section 475 (A603/84) of the MSO; and Section 475 (A 603/84) which reads:
 - (i) Any person desirous of having a boat licence shall apply to the Port Officer of the nearest port, who shall examine the boat, and, if he thinks it seaworthy and proper for the purpose for which licence is applied, may cause the boat to be licensed for such purpose; and
 - (ii) The Port Officer may by endorsement on the licence of a licensed cargo boat, licence the boat to carry, when empty of cargo, such number of passengers as he thinks fit, and in that case it shall not be necessary for such licensed cargo boat to be separately licensed as a passenger boat.
- (c) any local fishing vessel not exceeding 500 tonnes gross where such vessel is licensed under any written law relating to fisheries (A603/84).

Before registration, the owner of every Malaysian ship shall be surveyed and measured by a Surveyor of Ships and the tonnage to be ascertained in accordance with the provisions of regulation. The Surveyor of Ships shall grant a certificate specifying the ship's tonnage and build and other descriptions of the ship.

(iii) Environment Quality Act 1974 ("EQA")

EQA is established for the prevention, abatement, control of pollution and enhancement of the environment. EQA is required for the prohibition and control of pollution of the atmosphere, soil, inland waters and seas.

With the enforcement by Department of Environment Malaysia, there are various provisions to environmental quality, including water, atmosphere, noise, soil, waste treatment and disposal services, sewage and industrial effluents and other environmental issues.

Sub-section 27 of EQA, Prohibition of Discharge of Oil into Malaysian Waters reads that no person shall, unless licensed, discharge or spill any oil or mixture containing oil into Malaysian waters, whilst sub-section 29 of EQA, Prohibition of Discharge of Wastes into Malaysian Waters reads that no person shall, unless licensed, discharge environmentally hazardous substances, pollutants or wastes into the Malaysian waters. Any person who contravenes sub-section 27 or 29 shall be guilty of an offence and shall be liable to a fine not exceeding RM5,000 or to imprisonment not exceeding five (5) years or both.

10. INDUSTRY OVERVIEW (Cont'd)

10.9.3 Incentives**Incentives for Approved Service Projects (“ASP”)**

ASPs or projects in the transportation, communications and utilities sub-sectors approved by the Minister of Finance qualify for the following tax incentives:

(a) Main Incentives for ASPs**(i) Exemption under Section 127 of the Income Tax Act 1967**

Generally, under Section 127 of the Income Tax Act 1967, companies undertaking ASPs can apply for a tax exemption of 70% of their statutory income for five (5) years. However, companies undertaking ASPs in Sabah, Sarawak and the designated “Eastern Corridor” of Peninsular Malaysia are eligible for a tax exemption of 85% of their statutory income for five (5) years, while companies undertaking ASPs of national and strategic importance are eligible for a 100% tax exemption of their statutory income for ten (10) years.

(ii) Investment Allowance (“IA”) under Schedule 7B of the Income Tax Act 1967

The Investment Allowance (IA) under Schedule 7B of the Income Tax Act 1967 is an alternative to the incentive offered under Section 127. Generally, under IA, companies undertaking ASPs are eligible for an allowance amounting to 60% of the qualifying capital expenditure incurred within five (5) years from the date the first capital expenditure is incurred. The allowance can be offset against 70% of the statutory income and any unutilised allowance can be carried forward to subsequent years until fully utilised.

However, companies undertaking ASPs in Sabah, Sarawak and the designated “Eastern Corridor” of Peninsular Malaysia, are eligible for an allowance of 80% on the qualifying expenditure which can be offset against 85% of the statutory income.

Companies undertaking ASPs of national and strategic importance will be granted an allowance of 100% on the qualifying capital expenditure incurred within five (5) years. This allowance can be offset against 100% of the statutory income.

(b) Additional Incentives for ASPs

Companies undertaking ASPs will enjoy exemptions from Import Duty, Sales Tax and Excise Duty on raw materials, components, machineries, equipment, spares and consumables.

Imports of raw materials and components not available locally and used directly to implement ASPs are eligible for exemption from import duty and sales tax, while locally purchased machinery or equipment are eligible for exemption from sales tax and excise duty.

Companies providing services in the transportation and telecommunications sectors, power plants and port operators can apply for import duty and sale tax exemption on spares and consumables that are not produced locally.