

#### 4. INFORMATION ON THE GROUP

##### 4.1 BACKGROUND

###### 4.1.1 Details of Incorporation

Kencana Petroleum was incorporated in Malaysia under the Act on 28 September 2004 as a private company limited by shares under the name of Radiant Horizon Sdn Bhd. On 12 August 2005, it changed its name to Kencana Petroleum Sdn Bhd. Subsequently, on 14 September 2005, it was converted to a public company limited by shares and assumed its present name.

###### 4.1.2 Share Capital and Changes in Share Capital

The present authorised share capital of Kencana Petroleum is RM100,000,000 comprising 1,000,000,000 ordinary shares of RM0.10 each. The existing issued and paid up share capital of Kencana Petroleum is RM68,000,000 comprising 680,000,000 Shares.

Details of the changes in the issued and paid-up share capital of Kencana Petroleum since its incorporation are as follows:

Date of Allotment	No. of Ordinary Shares Allotted	Par Value (RM)	Consideration	Cumulative Issued and Paid-up Share Capital (RM)
28.09.2004	2	1.00	Subscribers' shares	2
24.05.2005	-	0.10	Subdivision of shares	2
01.08.2005	599,999,980	0.10	Issued as consideration for acquisitions of Kencana HL and Kencana Bestwide	60,000,000
11.10.2006	80,000,000	0.10	Issued pursuant to Capitalisation of Advances	68,000,000
To be issued pursuant to the IPO	200,000,000	0.10	Cash	88,000,000

###### 4.1.3 Listing Scheme

In conjunction with, and as an integral part of the listing of and quotation for the entire issued and paid-up share capital of Kencana Petroleum on the Main Board of Bursa Securities, the Company undertook a listing scheme which involved the following exercises:

###### (a) Capitalisation of Advances

On 11 October 2006, a capitalisation of advances by Khasera Baru to Kencana Petroleum amounting to RM20,000,000 was completed by way of an issuance of 80,000,000 Kencana Petroleum Shares to Khasera Baru at an issue price of RM0.25 per Share.

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The issue price of RM0.25 per Share was derived after taking into consideration the following factors:

- (a) a premium of RM0.15 or 150% above the par value of Share of RM0.10;
- (b) a premium of RM0.07 or 38.9% above the proforma NTA per Share before IPO of the Group of RM0.18 as at 31 July 2006; and
- (c) a PE Multiple of 8.24 times based on the proforma consolidated audited profit after taxation of the Group of RM26.7 million for the financial year ended 31 July 2006 and the enlarged issued and paid-up share capital of 880 million Shares upon Listing.

The completion of the Capitalisation of Advances resulted in the increase in the number of Kencana Petroleum Share from 600,000,000 Kencana Petroleum Shares to 680,000,000 Kencana Petroleum Shares.

The new Kencana Petroleum Shares issued pursuant to the Capitalisation of Advances ranked *pari passu* in all respects with the existing Kencana Petroleum Shares including voting rights and rights to all dividends and distributions that may be declared, subsequent to the date of allotment of Kencana Petroleum Shares issued pursuant to the Capitalisation of Advances.

The Capitalisation of Advances was made to settle the entire amount owing to Khasera Baru, which led to an increase in shareholders' funds, a reduction in the gearing level and an improvement in the NTA of Kencana Petroleum Group.

#### (b) IPO

Kencana Petroleum is undertaking an IPO comprising a Public Issue, the details of the IPO is included in Section 2.3 of this Prospectus.

The IPO was approved by the SC via its letters dated 23 February 2006, 8 June 2006, 4 August 2006, 6 October 2006 and 19 October 2006 respectively and is subject to the terms and conditions as stated in Section 6 of this Prospectus.

#### 4.1.4 ESOS

Kencana Petroleum had on 11 October 2006 obtained the approval of existing shareholders of the Company and on 20 October 2005 and 3 November 2006 obtained the approval of Bursa Securities, to establish an ESOS in order to retain and motivate eligible Executive Directors and employees who have contributed to the success of the Group. According to Bursa Securities' guidelines on ESOS, the effective date for the implementation of the scheme shall be the date of full compliance with all relevant requirements of Bursa Securities including the following:

- (i) submission of the final copy of the Bye-Laws of the ESOS to Bursa Securities;
- (ii) receipt of approval-in-principle for the listing of the shares to be issued under the ESOS from Bursa Securities;
- (iii) procurement of shareholders' approval for the ESOS;

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- (iv) receipt of approval of any other relevant authorities, where applicable; and
- (v) fulfilment of all conditions attached to the above approvals, if any.

AmMerchant Bank must submit a confirmation to Bursa Securities of full compliance of the above and stating the effective date of implementation together with a certified true copy of the relevant resolution passed by shareholders in a general meeting. The submission of the confirmation must be made no later than five (5) market days after the effective date of implementation.

The ESOS will be for a duration of five (5) years with an option to renew for another five (5) years and the maximum number of Shares that may be issued to eligible Executive Directors and employees of the Group under the ESOS is limited to 5% of Kencana Petroleum's issued and paid-up share capital at any point in time.

According to Bursa Securities' guidelines on ESOS, where the Options are granted before the Company is listed on Bursa Securities, the exercise price of the Options shall not be less than the IPO price. Where the Options are granted on or after the Company is listed on Bursa Securities, the exercise price shall be the higher of:

- (i) the weighted average market price of the Shares for the five (5) Market Days immediately preceding the date of offer, or with a discount of not more than 10% on the said weighted average market price; or
- (ii) the par value of the Shares.

The Directors of Kencana Petroleum propose to grant up to 22,000,000 Options to the eligible Directors of the Group ("**Initial Grant**"). The exercise price of the Options which is the subject matter of the Initial Grant is the IPO Price of the Shares, where the Options are granted before Kencana Petroleum is listed on Bursa Securities.

In addition to the Initial Grant, the Option Committee comprising Directors and/or senior management personnel appointed by the Board to administer the ESOS shall, within the duration of the ESOS, make offers to grant Options to the eligible Directors and employees of the Group in accordance with the ESOS Bye-Laws adopted by the shareholders of Kencana Petroleum.

The Directors of Kencana Petroleum intend to utilise the proceeds from the exercise of the ESOS Options for working capital purposes.

The new Shares to be allotted upon any exercise of the Options will upon allotment rank pari passu in all respect with the then existing issued ordinary shares of the Company except that the Shares so issued shall not rank for any dividends or other distribution declared, made or paid to shareholders which entitlement date thereof precedes the relevant exercise date of Option and will be subject to all provisions of the Articles of Associations of the Company.

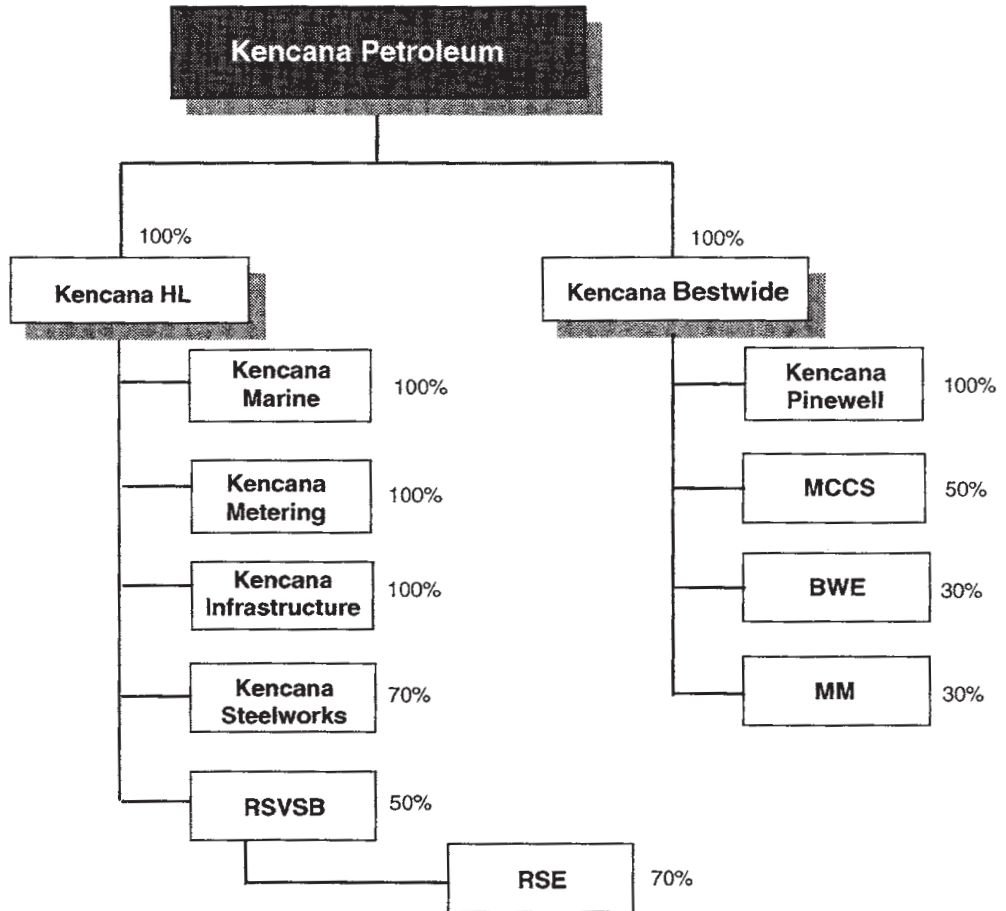
The Bye-Laws of the ESOS are set out in Section 12 of this Prospectus.

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**4.2 BUSINESS**

**4.2.1 Group Structure**

An overview of the structure of Kencana Petroleum Group together with the jointly controlled entities and associated companies of Kencana Petroleum as at 11 October 2006 is set out below:



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Details of the subsidiaries, jointly controlled entities and associated companies of Kencana Petroleum are summarised below:

Corporation	Date/Place of Incorporation	Issued and Paid-up Share Capital	Effective Equity Interest (%)	Principal Activities
<b>Subsidiaries of Kencana Petroleum</b>				
Kencana HL	09.04.1982/ Malaysia	RM20,000,000	100	Integrated engineering and fabrication of production facilities
Kencana Bestwide	28.06.1995/ Malaysia	RM5,000,000	100	EPCC, design and engineering and project management
<b>Subsidiaries of Kencana HL</b>				
Kencana Marine	28.03.2001/ Malaysia	RM1,000,000	100	Operation and management of fabrication yard
Kencana Metering	28.03.2001/ Malaysia	RM250,000	100	Pipeline construction, process skid systems and metering works
Kencana Infrastructure	07.10.2002/ Malaysia	RM1,000,000	100	Specialised fabrication and infrastructure construction
Kencana Steelworks	16.06.2005/ Malaysia	RM1,000	70	Dormant
<b>Jointly Controlled Entities of Kencana HL</b>				
RSVSB	26.10.2004/ Malaysia	RM2	50	Investment holding company and management services
RSE *	04.05.2005/ Sudan	SD20,000	35	Operation and management of fabrication yard in Sudan
<b>Subsidiary of Kencana Bestwide</b>				
Kencana Pinewell	14.06.1999/ Malaysia	RM500,000	100	Electrical and instrumentation services
<b>Jointly Controlled Entity of Kencana Bestwide</b>				
MCCS	25.09.1997/ Malaysia	RM100	50	Hook-up and commissioning services
<b>Associated Companies of Kencana Bestwide</b>				
BWE	07.10.1994/ Malaysia	RM1,000,000	30	Design and engineering services
MM	08.09.2000/ Malaysia	RM300,000	30	Valve testing and maintenance

Note:

\* A subsidiary of RSVSB

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**4.2.2 Competitive Strengths**

Kencana Petroleum Group's success and future prospects in the oil and gas industry are bolstered by a combination of strengths, including the following:

**(i) Integrated Engineering and Fabrication Capabilities**

Kencana Petroleum Group has in-house design, engineering and fabrication capabilities to undertake development of total production facilities, modules, process skid systems and specialised fabrication. This integration allows Kencana Petroleum Group to provide strategic and comprehensive coverage of its customers' need. The ability to provide a total turnkey solution under one-roof and be responsible for all the quality aspects of a project is a significant competitive advantage to Kencana Petroleum Group. This is also crucial to its customers as it is significantly more convenient from the aspects of administration, project management and logistics.

The Group has multi-discipline engineering capabilities including mechanical, structural, civil, instrumentation, electrical, piping, process and corrosion prevention. Each engineering discipline is supported by advanced engineering software. Combined with its fabrication expertise, the Group's integrated solution creates a very significant competitive advantage that few operators in Malaysia are able to emulate.

**(ii) Ownership of Major Fabrication Yard**

Kencana Petroleum Group operates the Lumut Fabrication Yard, a major fabrication yard located on approximately fifty three (53) acres of land (approximately 214,500 square metres ("m<sup>2</sup>")) in Lumut Port Industrial Park, Perak. The Group undertakes the majority of its major fabrication work at this facility. The ownership of Lumut Fabrication Yard reduces the uncertainty of relying on third parties, internalises costs and gives Kencana Petroleum Group the capacity to serve its client inside and outside of Malaysia.

***Lumut Fabrication Yard***

Independent soil investigation carried out at the Lumut Fabrication Yard indicates that the soil at the yard has minimum loading capacity of approximately 35 tonnes per square metre, which is sufficient for the fabrication of very large structures. The Group is able to carry out fabrication activities 24 hours per day in all weather conditions in the covered fabrication area and workshop of approximately 27,000 m<sup>2</sup>. Other key competitive advantages that Kencana Petroleum Group enjoys from its major facilities and infrastructures includes:

- Load out jetties enable the Group ability to move large structures of up to 12,000 tonnes onto transport vessels
- 281 metres long concrete bulkhead accommodates up to 2 barges, enabling more efficient loading and unloading of vessels
- Concrete bulkhead enables vessels to tie up with the quay without causing damage to the quayside
- Low tide quayside water depth of approximately 8.0 metres enables docking of large vessels

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The Lumut Fabrication Yard is a significant competitive advantage, as the number of comparable facilities in Malaysia is limited. The Group will be able to derive the following advantages from the fabrication yard:

- Ability to undertake large projects with its estimated 24,000 tonnes capacity
- Ability to undertake simultaneous projects for faster delivery with its large 53-acre total space and large available covered fabrication area and workshop
- Ability to undertake large structures with its deepwater quayside, 281 metres long quayside concrete bulkhead and 12,000 tonnes load-out jetty for transportation of structures by sea.

**(iii) Quality Control and Safety Track Record**

Kencana Petroleum Group has established a good reputation among its customers for quality service and high safety standards. The Group's engineering and fabrication activities and end-products adhere to stringent international quality standards. As part of Kencana Petroleum Group's emphasis on quality of its products and services, the Group's subsidiaries namely Kencana HL and Kencana Bestwide had received ISO 9001:2000 quality accreditations from Lloyd's Register Quality Assurance and Moody International Certification (Malaysia) Sdn Bhd respectively. The Group has also been awarded various health and safety awards.

Requirements in the oil and gas industry are stringent, with operators placing a high value on the quality of the final end-product. As part of the Group's emphasis on quality, the Group also adheres to internationally recognised standards and safety standards in Malaysia including:

- DOSH, Malaysia standards for unfired pressure vessels and gas pipelines; and
- ASME standards.

As at 11 October 2006, Kencana Petroleum Group has an experienced quality control and assurance team of fifty nine (59) personnel that ensures product quality conforms to client specifications, as well as external quality and safety standards and requirements.

**(iv) Strong Market Reputation and Established Track Record**

Kencana Petroleum Group via Kencana HL Group and Kencana Bestwide Group has substantial experience in providing a wide range of fabrication and engineering services for the local and international markets and has successfully completed a broad variety of projects for the oil and gas industry. Kencana Petroleum Group has successfully established itself as a reputable player known for quality, reliability, high technical skills and the requisite experience to undertake and deliver complex and large projects involving structures, modules and process skid systems for the oil and gas industry.



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The strong reputation and track record will assist Kencana Petroleum Group to secure new projects going forward. Kencana Petroleum Group's working relationship with a variety of local and international oil and gas companies has also enhanced its profile among oil and gas service providers in Malaysia and regionally. Track record and strong reputation are particularly important in the oil and gas industry as projects are likely to be awarded to organisations that have a long and proven track record for delivering quality and dependable products and services.

##### (v) **Petronas Approved Licence and Other Registrations**

Kencana Petroleum Group, through its subsidiary, Kencana HL has a major fabrication licence issued by Petronas ("Petronas Licence") which enables the Group to undertake major fabrication of offshore structures for the oil and gas industry in Malaysia. The Group is one (1) of only seven (7) licensees in Malaysia. This is a key advantage as licensing by Petronas creates a significant barrier to entry for new operators. Combined with the fact that not all the other six (6) licensees are fully active in engineering and fabrication of production facilities, it reduces the competitive intensity for Kencana Petroleum Group.

Kencana Petroleum Group through its subsidiaries has also obtained other approvals, major licences and permits as set out in Section 4.2.5 herein. The Petronas Licence and other registrations represent a major advantage in enabling the Group to address opportunities in the oil, gas, petrochemical and construction industries.

##### (vi) **Experienced Management and Skilled Technical Team**

Kencana Petroleum Group's senior management team and key technical personnel have in-depth knowledge and experience in the oil and gas industry. Some of the key operating personnel have experience in the oil and gas industry inside and outside Malaysia and have worked with international oil and gas companies. The management believes that the dedication and expertise of the current senior management team and key technical personnel have played a significant role in Kencana Petroleum Group's success and growth. The management is focused on achieving high operating efficiency and returns.

#### 4.2.3 Types of Products and Services

##### (a) **Fully Integrated Engineering and Fabrication**

Kencana Petroleum Group is a provider of integrated engineering and fabrication of production facilities for the oil and gas industry. The Group also provides multi-discipline design and engineering services, as well as specialised fabrication for the non-oil and gas industry.

The principal business activities of the Group are as follows:

- Engineering and Fabrication of Production Facilities;
- Engineering and Fabrication of Modules;
- Engineering and Fabrication of Process Skid Systems;
- EPC Services;
- Provision of Supporting Services; and
- Specialised Fabrication.



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Kencana Petroleum Group has the capability to provide a fully integrated engineering and fabrication services for the total production facilities for the oil and gas industry.

An oil and gas production facility may be located offshore or onshore. The oil extracted is commonly called crude oil and may undergo some form of processing before being transported to another location. Offshore oil and gas production facilities are commonly self-contained to enable workers to live and work on the platform for long periods of time.

Due to the complexity and safety requirements for oil and gas production facilities, the ability to provide total solution is highly regarded in the oil and gas industry locally as well as internationally. This implies that there are only a few number of Malaysian companies that are able to provide total turnkey solutions for engineering and fabrication of production facilities, in which Kencana Petroleum Group is one of them.

Kencana Petroleum Group has integrated in-house capability to undertake the full project cycle of EPCC of oil and gas production facilities as follows:

**(i) Engineering**

Engineering work carried out by the Group includes initial conceptualisation, process simulations, undertaking research, development and analysis to optimise solutions, computer run-through and 3-dimensional modelling, and undertaking detailed project and multi-discipline engineering designs. The Group usually works from specifications and in consultation with customers.

Kencana Petroleum Group is able to apply a wide range of engineering skills to meet its customer's needs, including mechanical, electrical, corrosion, process, civil/structural, piping and instrumentation.

**(ii) Fabrication**

Fabrication includes the procurement of raw materials and components, where Kencana Petroleum Group normally deals directly with its suppliers to obtain the most cost-effective prices and exercise control over the quality of supplied raw materials and components.

Kencana Petroleum Group undertakes all disciplines of engineering and commissioning, including electrical and instrumentation installation of offshore platforms, onshore plants/facilities and process skid systems utilising in-house design and installation resources.

Quality assurance and quality control measures are carried out at all phases of the fabrication process. Weld testing is primarily of the non-destructive type, and is carried out by the Group using in-house resources. Destructive testing and independent third-party testing are carried out at the request of the customer.

The Group is equipped with all of the necessary facilities and heavy lifting equipment to support in-yard fabrication and load-out of structures onto barges. The Group usually handles large and heavy structures, the lifting and transporting of which requires the use of specialised equipment. As such, the Group usually engages a service provider to undertake transportation to the client's site.

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##### (iii) Installation and Commissioning

In most cases, the platform is installed, hooked-up, and commissioned at the client site by third-parties. The Group undertakes a final round of testing at site, before commissioning and final handover. In some cases, the Group carries out the complete scope of work, including installation, hook-up and commissioning.

In addition, its fully integrated engineering and fabrication capabilities have been used for non-oil and gas facilities and structures to provide incremental revenue, business diversification and growth opportunities.

##### (b) Service and Product Overview

The Group is engaged in the design, engineering and fabrication of the following:

##### (i) Engineering and Fabrication of Production Facilities

Kencana Petroleum Group is involved in all stages of production facility engineering and fabrication. Engineers employed by the Group undertake all engineering work related to total production facility design and engineering utilising in-house expertise and licensed third party Computer Aided Design ("CAD") and Plant Design Management System ("PDMS") software.

Kencana Petroleum Group works together with the client to procure equipment and systems for installation in the total production facility. All fabrication and related work is carried out directly by the Group. Kencana Petroleum Group may engage skilled contract workers to carry out some of the fabrication work. Contract workers are managed by Kencana Petroleum Group's supervisors.

The Group is able to fabricate both offshore and onshore production facilities at its Lumut Fabrication Yard. In instances where Kencana Petroleum Group is the primary contractor for a facility, the Group is also responsible for integrating equipment and systems fabricated by third parties. The Group will also be responsible for hook-up and commissioning. However, the installation of the jacket and topside are carried out by third-party contractors, as highly specialised, heavy and expensive equipment are required.

The Group's business activity in engineering and fabrication of offshore and onshore production facilities are as follows:

- **Engineering and Fabrication of Offshore Production Facilities**

Kencana Petroleum Group is involved in the engineering and fabrication of offshore platforms, including topsides and jackets.

An offshore platform is a structure located in a marine environment that houses workers and equipment required to drill and/or extract oil and gas from underground reserves. Offshore platforms typically comprise two parts, the topside and the jacket. Various modules are installed on the topside.

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Kencana Petroleum Group undertakes all engineering and fabrication works for offshore platforms utilising mostly in-house resources.

The Group is also responsible for full system integration of the completed offshore production platform, whereby all the separate systems installed on the platform, including those fabricated by third parties, are hooked-up and commissioned.

Topside modules and jackets are typically fitted with equipment and brought as close to full operational status as possible at the Lumut Fabrication Yard. This is to minimise the amount on-site equipment installation required, as well as to facilitate testing and corrective action should any of these systems fail to function as specified.

Kencana Petroleum Group is currently engaged in fabricating jack-up type production platforms. Kencana Petroleum Group has the yard space and resources required to undertake simultaneously fabrication of topsides, modules and their accompanying jackets.

- **Engineering and Fabrication of Onshore Production Facilities**

Onshore production facilities refer to the broad range of onshore facilities that carry out various production activities in the oil and gas industry, including activities such as production, initial processing, storage and transportation.

Kencana Petroleum Group is currently completing the engineering, design and fabrication of an onshore oil processing facility for the Thar Jath Development Project located approximately 1,400 km southwest of Khartoum, Sudan.

The facilities designed, engineered and fabricated by the Group are in two separate locations:

- Thar Jath Central Processing Facility ("CPF") with capacity of 80,000 barrels per day;
- a buffer tank farm and metering station at Heglieg, 170 km away from the Thar Jath CPF.

The Group is involved in the EPCC of process skid systems and processing facilities, while a local partner, Sudan Pile for Roads & Bridges, carries out the civil and building construction.

The CPF engineered and fabricated by the Group is where crude oil is pumped from surrounding wells and are transported and collected for processing and storage, prior to pipeline transmission to storage terminals. Initial processing at the central processing facility includes heating, degassing, dewatering, metering and pumping.



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Process skid systems engineered, designed and fabricated by the Group include crude oil separator, electrostatic precipitators, crude oil metering, flare scrubbing, chemical injection, water treatment and compressed air.

Facilities engineered, designed and fabricated by the Group include pressure vessels, shell and tube heat exchanger, storage tanks, process piping, metering system, compression equipment related to pipeline hydrocarbon transmission and pumping system. The Group also designed, installed, tested and commissioned the instruments, control, electrical and telecommunications systems for the complete plant.

- **Mobile Offshore Production Unit Conversion**

A Mobile Offshore Production Unit ("MOPU") is a semi-submersible mobile offshore production platform that can be moved from location to location. A MOPU typically includes equipment for drilling, as well as oil and gas production. Like other offshore platforms, the MOPU is typically self-sustaining and includes accommodation, power generation, water desalination and other systems.

The use of MOPU enables small or marginal reserves to be developed, as the MOPU is reusable and there is no need to make a large capital investment by erecting a fixed structure. Once the reserve is depleted, the MOPU can be freed from its moorings, floated and towed to a new field.

Field development is also typically faster with a MOPU, as it usually takes less time to undertake MOPU conversion or fabrication compared to traditional platform fabrication. In addition, floating and installing an existing MOPU should take even less time.

- (ii) **Engineering and Fabrication of Modules**

In the context of the oil and gas industry, a module is a set of equipment fabricated on a small platform that is designed to fulfil one or more functions. A module may be engineered and fabricated independently of the rest of the facility, with the condition that the module can ultimately be physically and functionally integrated with the rest of the facility.

Conceptually, a module is similar to a process skid system, with the exception that a module is much larger and therefore less mobile.

- **Gas Compression Modules**

Gas compression modules are used to compress gas on offshore production facilities. The key components of a gas compression module are power source and gas compressor.

A large gas compression module may be equipped with its own power source, such as a gas turbine engine or diesel internal combustion engine. The power source generates mechanical power to directly drive the gas compressor.



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Smaller gas compression modules are supplied with power from the platform's power generating module.

The gas compressor decreases the volume and increases the pressure of a given quantity of gas.

Gas compression capacity on an offshore production facility may be utilised for the following purposes:

- To reduce the volume of natural gas for more space efficient storage;
- To produce compressed gas for gas lift or for injection into hydrocarbon reserves to stimulate production of crude oil; and
- To drive natural gas transmission through pipelines.

Due to high output required in terms of compression pressure and output volume, gas compression modules are usually larger than process skid systems and relatively immobile.

Gas compression modules fabricated by the Group may be installed on offshore production facility fabricated by the Group or on offshore production facilities fabricated by third parties, or on an existing offshore production facility.

- **Carbon Dioxide Removal Modules**

Carbon dioxide removal modules are used to separate high carbon dioxide gas content from natural gas to minimise the size of the transport pipeline required. Natural gas extracted from the well is compressed through a series of membrane in which carbon dioxide gas is physically removed. Kencana Petroleum Group carries out all the engineering, construction and module fabrication work. The Group membrane-based carbon dioxide removal technology is licensed from UOP LLC.

- **Water Injection Modules**

Water injection modules are used to inject water back into hydrocarbon reserves as a means of stimulating crude oil production.

In water injection, water is injected into a reserve to force unrecovered crude oil out of reservoir rocks and into nearby oil wells. Water injected into a reserve replaces crude oil that has been extracted, thereby helping to maintain the pressure in the reserve for a longer period of time. The use of water injection can increase the percentage of recoverable crude oil from a reserve, and can maintain the production rate from a reserve over a longer period of time.

Water for injection is either collected from water separated from crude oil extracted from the reservoir, or seawater. If seawater is used, the water collection pumps collect seawater through large pipes that extend out into the ocean.

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Filters are used to clean the water and to remove impurities, such as shells and algae. Typical filtration is down to two (2) micrometers. Sand filters, consisting of a series of sand beds are typically used.

Oxygen must be removed from the water as it encourages the growth of certain bacteria in the hydrocarbon reserve. Growth of bacteria can block the porous rock in the reserve, which has an adverse effect on production.

Filtered water drops into a de-oxygenation tower, splashing onto various trays causing dissolved gas to be released from the water. The gas is sucked out of the tower with vacuum pumps, and the water fills the bottom of the tower. The de-oxygenated water is taken by boosting pumps to the high pressure water injection pumps.

High pressure water injection pumps are used to pump water back into the hydrocarbon reserve. The water, being denser than crude oil, flows to the bottom of the reserve and pushes crude oil towards the wells like a piston.

#### (iii) Engineering and Fabrication of Process Skid Systems

A process skid system refers to any type of equipment or system that is housed on a transportable mini-platform. A process skid system incorporates all of the piping, electrical, control and instrumentation systems, and other systems that are required for it to function. Process skid systems may be integrated into a larger facility, or used on a stand-alone basis.

Kencana Petroleum Group is involved in the design, engineering and fabrication of process skid systems through its subsidiaries, namely Kencana HL and Kencana Bestwide. Process skid systems fabricated by Kencana Petroleum Group are commonly used in the oil and gas industry.

Process skid systems currently fabricated by Kencana Petroleum Group include the following skids:

- **Metering Skids including Multi-Phase Metering Skids, Gas Flow Metering Skids and Liquid Flow Metering Skids**

Metering skids are designed and installed to obtain a measurement and record of the flow rate of fluids, such as crude oil, gas and condensates. The Group has fabricated numerous metering skids for all functions, for a large number of oil and gas industry operators. Metering skids are also used as custody metering systems, whereby there is a change in ownership of the fluid being metered.

- **De-Sanding Skids**

De-sanding skids are used to remove sand, solids and other impurities that have been produced in the extraction of crude oil from underground reserves. The sand, solids and other impurities that accumulate will be removed periodically during maintenance of the de-sanding skid.

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- **Air Compression Skids**

Air compressor skids are installed for the purpose of producing compressed air for pressurisation and control systems, instrumentation systems or as a utility fluid.

- **Gas Conditioning Skids**

A gas conditioning skid is a system that modifies incoming gas such that it becomes suitable for the intended use of the gas. This is achieved by drying, filtering, cooling/heating, and controlling the pressure, temperature, dew point and flow rate of the gas. Equipment and instruments used to perform these tasks include dryers, filters, heat exchangers, control valves, flow meters, and control software. Typical end uses of conditioned gas include the use of the conditioned gas as fuel gas, instrument gas, utility gas, and seal gas.

- **Chemical Injection Skids**

Chemical injection skids are equipped with pumps, tanks and meter valves to inject chemicals into oil and gas facilities for various purposes, including corrosion and scaling reduction, aiding emulsion separation, preventing hydrates formation, reducing viscosity of pour point, controlling bacterial growth and oxygen absorption.

- **Air Dryer Skids**

Air dryer skids are used to remove water vapour from air to reduce its dew point. The air dryer skid is a component of the air compressor skid, where air is dehydrated to prevent any condensation that may damage sensitive instruments.

- **Crude Oil Separator Skids**

Crude oil separator skids are used to separate economically useful hydrocarbons from the other constituents of crude oil, such as water and mud.

Due to its in-house technical capabilities, Kencana Petroleum Group is capable of designing and fabricating other process skid systems such as deoilers, electrostatic precipitators and glycol dehydrators.

**(iv) EPCC Services**

Kencana Petroleum Group is engaged in EPCC of facilities for the oil and gas industry for both new plants (Greenfield Project) and retrofits (Brownfield Project). Kencana Petroleum Group also provides stand-alone design and engineering services encompassing multiple engineering disciplines to customers.

Kencana Petroleum Group possesses the experience and ability to integrate multi-discipline engineering skills to a range of projects, thus enabling it to provide design and engineering services.

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A typical engineering exercise may be divided into two sets of related activities, design and engineering. Design and engineering utilise much shared knowledge and tools, including similar computer tools.

The design stage precedes the engineering stage, and consists of the following tasks:

- Front End Engineering Design ("FEED");
- Concept Design; and
- Basic Design.

Design stage output includes items such as process flow diagrams, control philosophy and overall plant layout. The engineering stage follows the design stage, and it is essentially an elaboration of the work done during the design stage. The engineering stage usually goes into much more detail, with the ultimate goal of producing detailed data-sheets, material take-offs, equipment specifications, and construction drawings.

In addition to outputs typically generated from the design and engineering stages, EPCC services typically include services related to the following:

- Procurement of raw materials, equipment and systems, including expediting and logistics;
- Construction services, including the provision of project management services; and
- Commissioning includes installation, hook-up, testing and commissioning.

#### (v) Supporting Services

Kencana Petroleum Group provides supporting services to its clients. These supporting services are for the oil and gas industry, and includes:

- **General Maintenance Services**

Kencana Petroleum Group provides the following maintenance services to the oil and gas, and other industries:

- Valve maintenance and refurbishment;
- Testing, repair and recalibration of pressure safety valves; and
- Plant shutdown and turnaround maintenance services.

Valves maintained and refurbished by the Group include control valves, gate valves, ball valves, globe valves, and check valves. The Group also undertakes the testing, repair and recalibration of pressure safety valves. Plant shutdown and turnaround maintenance services include the provision of services such as the removal, cleaning, overhaul, testing and reinstallation of valves, rupture disks, flame arrestors and other instruments.



#### 4. INFORMATION ON THE GROUP *(Cont'd)*

- **Single Buoy Mooring Maintenance**

A Single Buoy Mooring ("SBM") system is a buoy anchored to a fixed location for the purpose of mooring to a fixed location on the seafloor. The SBM system also acts as a connection point for the transfer of oil from the tanker or special purpose vessel, such as a Floating Production, Storage and Offload vessels ("FPSO"), to another receptacle or container.

- **Other Supporting Services**

Other supporting services provided by the Group includes:

- Shutdown engineering services;
- Provision of material and equipment maintenance; and
- Third-party consultancy services to client.

**(vi) Specialised Fabrication**

Kencana Petroleum Group utilises its engineering, design and fabrication capabilities to undertake specialised fabrication of structures for the non-oil and gas industries.

These projects are opportunistic and provide Kencana Petroleum Group with the following advantages:

- business diversification incorporating non-oil and gas industry;
- incremental revenue and profit stream;
- revenue and profit growth potential;
- synergistic use of existing design and engineering expertise; and
- skilled workforce and fabrication facilities.

*(Source: Business Overview of Kencana Petroleum Berhad prepared by Vital Factor Consulting Sdn Bhd)*

#### 4.2.4 Technology Used

Technologies relevant to Kencana Petroleum Group include technology that is related to the provision of the following products and services:

**(a) Welding Technologies**

Welding is a fabrication process that joins materials, usually metals or thermoplastics, by causing coalescence.

Welding is often done by melting the workpieces and adding a filler material to form a pool of molten material that cools to become a strong joint. Sometimes pressure is also used in conjunction with heat, or by itself, to produce the weld.

Kencana Petroleum Group currently utilises shielded metal arc welding, gas tungsten arc welding, shielded metal arc welding, flux cored arc welding, submerged arc welding, and oxyacetylene welding in fabrication.

#### 4. INFORMATION ON THE GROUP (Cont'd)

##### (b) Non-Destructive Testing Technologies

Once the fabrication of a structure is completed, it has to undergo rigorous weld inspection and testing to determine the integrity of the structure to ensure that there is no fracture or weaknesses in the welding. This is a critical component of quality assurance, ensuring the safety and integrity of the structure.

Defects in welding sometimes occur. As such, developments in inspection technologies have advanced over the years to ensure these defects are detected and, if possible, rectified before installation and commissioning.

Gamma ray, X-ray and magnetic particle inspection are examples of non-destructive testing techniques commonly carried out on welds. Using these techniques, welds are checked to ensure that they possess the following qualities:

- free from foreign-matter inclusion, for example slag inclusion;
- possess adequate penetration;
- the weld is free from distortions; and
- the dimensions of the weld are accurate.

Although conventional radiography (gamma ray and X-ray inspection) is one of the more popular methods of weld inspection, it has limitations compared to more advanced ultrasonic techniques. The drawbacks of using X-ray to determine quality of welds include:

- time consuming process;
- process produces dangerous ionising radiation;
- process requires the clearance of personnel from the site within a certain radius; and
- limitations in detecting all defects from certain angles.

In comparison, ultrasonic weld inspection technology has a number of significant advantages over radiography technique:

- more sensitive in detecting defects with an accuracy of up to +/- 0.2mm;
- no ionising radiation, thus eliminating exposure of personnel;
- no need for site clearance, thus reducing downtime and process disruptions; and
- fast and shorter scan rates.

The Group currently utilises ultrasonic weld inspection technology in the testing and inspection of its structures. This affirms the company's emphasis on quality and safety of its products.

##### (c) Mechanical Engineering

Kencana Petroleum Group employs mechanical engineering principles and makes use of PDMS and CAD software in designing large complex structures.

Mechanical engineering is the application of physical principles to the creation of useful structures, devices, objects and machines. Mechanical engineers use principles such as heat, force, and the conservation of mass and energy to analyse static and dynamic physical systems, in contributing to the design of things such as structures, vehicles, industrial equipment and machinery, and other objects.

#### 4. INFORMATION ON THE GROUP (Cont'd)

The use of computers and specialised engineering software are now common in mechanical engineering. The following types of computer programs are currently commonly used in mechanical engineering:

- Computer Aided Design ("CAD");
- Computer Aided Manufacturing ("CAM");
- Finite Element Analysis ("FEA");
- Computational Fluid Dynamics ("CFD"); and
- Plant Design and Management System ("PDMS").

Computers are now used extensively to help create models and design drawings, and in subjecting these designs and models to simulations. PDMS and CAD programs now permit the creation of 3-dimensional models that may be viewed from all angles.

PDMS and CAD programs also permit the creation of solid-state models, which may then be subjected to FEA and/or CFD modelling to predict how a real structure would function under expected operational conditions. Designs may be refined or modified based on the results of this modelling. As computer simulations are carried out without the need to construct actual physical models, computer simulation is likely to be cheaper and less time consuming compared to traditional testing.

Kencana Petroleum Group employs mechanical engineering principles and makes use of PDMS and CAD software in designing large complex structures.

#### (d) Electrical Engineering

Electrical engineering is the engineering discipline that deals with the study and application of electricity and electromagnetism. Like mechanical engineering, electrical engineering is characterised by the application of knowledge to the creation of useful devices, objects and machines.

Kencana Petroleum Group applies the principles of electrical engineering to practical purposes such as the design of electrical systems for offshore platforms, and skidded systems.

Electrical engineering is a broad field that encompasses many sub fields. All of these sub fields are centred on electromagnetism. Instrumentation engineering is a sub-field of electrical engineering. Instrumentation engineering is concerned with the accurate measurement of electrical properties.

The central issue that is confronted by the field of instrumentation engineering is that any measurement of an electrical circuit will inevitably change the voltages and current in it. The objective of instrumentation engineering is to minimise the influence of the measuring circuit, or even to compensate for it.

The sub-field of instrumentation engineering also includes the study and design of:

- sensors that use a material's electrical properties for measurement, for example the use of piezoelectricity to measure pressure; and
- electromechanical means of measurement, for example the use of temperature-dependent resistors to measure temperature.

#### 4. INFORMATION ON THE GROUP (Cont'd)

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These sensors can be used by control systems to gather input regarding the state of the environment, and to use this information to make control decisions.

Kencana Petroleum Group utilises sensors designed using the principles of instrumentation engineering in the supply of products and services to its clients.

**(e) Carbon Dioxide Membrane Filtration**

Kencana Petroleum Group uses licensed third-party carbon dioxide membrane filtration technology for its carbon dioxide removal skids. The principle function of these skids is to remove carbon dioxide gas from natural gas pumped from hydrocarbon wells.

A typical membrane system consists of a pre-treatment skid and a series of membrane modules. The system is highly adaptable to accommodate treatment of various gas volumes and natural gas specifications. The compact nature of the system makes it suitable for use on offshore platforms.

The driving force behind this filtration process is the partial pressure difference across the membrane for carbon dioxide and natural gas. The filter fibres are relatively more permeable to carbon dioxide, and as a result carbon dioxide flows through the membrane at a higher rate than natural gas. This results in the separation of carbon dioxide from natural gas.

Membrane modules normally consist of a cylinder of circular cross-section composed of an arrangement of polymeric hollow filter fibres. Pressurised feed gas enters the module from the outside surface of the cylinder module.

Due to the selective permeation to carbon dioxide and natural gas, the natural gas stays under pressure while the carbon dioxide is collected at a lower pressure.

Carbon dioxide membrane filtration technology can be very selective, making high rates of natural gas recovery possible.

Other advantages of the carbon dioxide membrane filtration technology over alternative chemical methods include:

- Carbon dioxide is separated by a physical process, and with the proper safety precautions may be returned directly to the environment;
- No possibility of natural gas being contaminated by carbon dioxide removal chemicals;
- Eliminates need to transport and process spent chemicals onshore; and
- Eliminates need to continuously recharge chemicals, eliminating the logistical burden and cost of transporting and handling bulky chemicals on offshore platforms.

**(f) De-sanding and De-oiling**

Kencana Petroleum Group is engaged in the engineering and fabrication of de-sanding and de-oiling process skid systems, utilising hydrocyclone technology.



#### 4. INFORMATION ON THE GROUP (Cont'd)

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The Group works with a US-based global provider of hydrocyclone technology, with over 50 years of experience in providing solutions for size separation and classification, de-sanding and de-oiling applications.

De-sanding refers to the removal of sand from crude oil produced at the wellhead. The removal of these solid contaminants is necessary, as their presence can have a negative effect on downstream equipment, for example by clogging and eroding facilities such as pipelines, tanks, vessels, valves, and other equipment.

De-oiling refers to the separation of liquid hydrocarbons from produced water.

De-sanding and de-oiling are carried out in equipment known as "hydrocyclones", which utilises centrifugal force to physically separate sand and water from liquid hydrocarbons.

In de-sanding, the mixture of sand and crude oil is fed tangentially into the hydrocyclone. As the mixture flows through the unit, it accelerates, sending the heavier solids into the underflow stream, while the lighter crude oil flows through the overflow. Depending on the properties of the fluid, a hydrocyclone can remove up to 99% of sand particles that are larger than 10 microns in size.

De-oiling is similar to de-sanding, except that the liquid hydrocarbon is the relatively lighter component. As a result, the liquid hydrocarbon reports to the overflow, while the heavier water goes to the underflow.

De-sanding technology is typically used in the following applications:

- Wellhead de-sanding;
- Produced water de-sanding;
- De-sanding to protect downstream filters;
- Jet washing; and
- De-sanding of drilling mud.

Typical oilfield de-oiling applications include:

- Produced water de-oiling;
- Free water knock-out; and
- Effluent water de-oiling.

#### **(g) Flow Metering**

A flow meter is a system that is designed to measure the rate of a flow of a fluid through a channel. By measuring the rate of flow, it is possible to measure the quantity of fluid flowing through the channel within a certain period of time. The objective of installing a flow meter is to obtain a measurement of the rate of flow that is unambiguous and within a specified range of accuracy.

There are three broad categories of flow meters, categorised according to the type of fluid measured:

- Liquid flow meters;
- Gas flow meters; and
- Multiphase flow meters.

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**4. INFORMATION ON THE GROUP (Cont'd)**

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Liquid flow meters and gas flow meters are single phase flow meters, in that they are used to measure the rate of flow of fluids that exist in a single phase, i.e. a liquid or a gas.

Multiphase flow meters are used to measure the rate of flow of a fluid that simultaneously contains a mixture of one or more fluids in one or more phases (gas or liquid). Crude oil from producing wells is an example of a multiphase fluid, as it is typically composed of a mixture of oil, water and gas.

Kencana Petroleum Group currently utilises the following liquid flow metering technologies:

- Liquid turbine meter;
- Coriolis meter; and
- Ultrasonic liquid flow meter.

The Group currently utilises the following gas flow metering technologies:

- Orifice plate;
- Gas turbine meter; and
- Ultrasonic gas flow meter.

Multiphase metering of crude oil may be complicated, as crude oil produced from different wells usually vary in ways that may influence metering, including:

- Composition of crude oil in terms of oil, water and gas fractions;
- Relative velocities of oil, water and gas;
- Total liquid velocity of the crude oil; and
- Viscosity and density of crude oil.

Flow patterns from an individual well may also be unsteady and vary over time. The interfaces between oil, water and gas may also vary over time, and may be difficult to quantify.

A multiphase metering system usually comprises integrated system of mechanical parts, sensors, instrumentation and computer systems. The system may be segmented as follows:

- Primary measurement devices;
- Secondary equipment; and
- Tertiary equipment.

Kencana Petroleum Group currently utilises the following multiphase flow metering technologies:

- Partial separation; and
- In-line multiphase meter.

Other common multiphase meter system primary measurement sensors may include:

- Density transducer;
- Platinum resistance thermometer; and
- Pressure transmitter.

#### 4. INFORMATION ON THE GROUP (Cont'd)

##### (h) Corrosion Prevention Engineering

Corrosion is the deterioration of the useful properties of a material due to reactions with its environment. An example of corrosion is the weakening of iron or steel due to the formation of iron oxides, or rusting.

Corrosion engineering is the field of engineering that is related to the prevention or minimisation of corrosion. While corrosion engineering with regards to metal, and especially iron and steel, is perhaps most commonly known, corrosion engineering is also applied to materials such as concrete, rubber and plastics. Corrosion is particularly serious within a marine environment, where equipment is exposed to the sun, moisture, and the corrosive salt water.

Kencana Petroleum Group has the capability to provide corrosion prevention engineering services utilising the following technologies:

- Cathodic protection;
- Material selection;
- Blasting;
- Coatings;
- Thermal sprayed metal coating; and
- Corrosion inhibitor injection.

##### (i) Load-Out Techniques

Kencana Petroleum Group utilises three main load-out techniques to move and load heavy structures:

- **Multi-Axle Transporters**

Kencana Petroleum Group normally uses multi-axle ("boogie") transporters to move structures that weigh less than 1,500 tonnes. A multi-axle transporter is a large, rugged chassis supported by a large number of wheels attached to a large number of axles.

The structure is lifted off the ground and placed on the multi-axle transporter by crane. The structure is then secured and towed to its intended destination.

Kencana Petroleum Group normally utilises multi-axle transporters for in-yard transport, as well as to move structures from the fabrication yard to a load-out jetty for transfer onto a barge. Structures commonly transported in this manner include offshore platform module sections and skidded systems.

- **Skidding**

Structures that weigh more than 2,000 tonnes are normally moved using the "skidding" technique. A skid bin leading from the structure in the fabrication yard to the barge moored at the load-out jetty is assembled. The skid bin is extended onto the barge to accommodate the structure. The skid bin consists of two or more parallel skid beams.

A set of launch-leg and launch cradle sections are fabricated. The launch-legs resemble sections of large steel piping. The launch cradle is installed on the lower circumference of the launch-leg. Sections of timber are installed on the outside surface of the launch cradle. This launch-leg assembly is set up on the skid beam, with the timber resting

#### 4. INFORMATION ON THE GROUP *(Cont'd)*

on the skid beam. The structure is either fabricated on the launch-leg assembly itself, or lifted onto the launch-leg assemble after fabrication. The structure is carefully pushed along the length of the skid bin. The skid beams and launch-leg runners are heavily greased to reduce friction and to ease movement. The barge is manoeuvred such that the skid bins on the load-out jetty and the barge are properly aligned, before the structure is pushed from the load-out jetty onto the barge.

- **Lifting by Derrick Barge**

Kencana Petroleum Group normally uses the lifting by derrick barge technique when other load-out techniques, such as multi-axle transporters and skidding, are not practical.

A derrick barge equipped with a lifting crane of sufficient capacity to lift the structure is mobilised and moored alongside the jetty adjacent to the barge.

The crane will lift up the structure from the fabrication yard using slings and shackles, and move it onto the barge. Movement of the derrick barge that may result during the lifting and setting up operation is controlled by a mooring system.

Once the structure is onboard the barge, it is properly secured so as to prevent excessive movement that may cause the structure to fall off the barge or cause the barge to capsize. The barge is then towed to the work site by tugboats.

*(Source: Business Overview of Kencana Petroleum Berhad prepared by Vital Factor Consulting Sdn Bhd)*

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#### 4. INFORMATION ON THE GROUP (Cont'd)

##### 4.2.5 Approvals, Major Licences and Permits Obtained

Details of the approvals obtained by the Company for the Listing from the MITI, SC and Bursa Securities together with the conditions imposed by these authorities and status of compliance are set out in Section 6.1 of this Prospectus. Other approvals, major licences and permits obtained by the Group for the operation of business are set out in the table below. Based on major conditions imposed by the authorities as set out below, the Company is of the opinion that the dilution of the Bumiputera equity interest upon listing does not affect Kencana Petroleum Group's licences and registrations as well as the Group's current and future business operations.

Company	Date of Issuance/ Expiry	Authority	Description	Major Conditions Imposed	Status of Compliance
Kencana HL	03.08.2000/	MITI	Manufacturing Licence to Produce Offshore Structure Jacket, Module, Metering Skid, Offshore Oil Rig, Tug Boat and Barges at the place of manufacturing of Plot D-1, Lumut Port Industrial Park, Mukim of Lumut, District of Manjung, 32000 Lumut, Perak. (Licence No.: A 012293) (Serial No.: A019006)	<ul style="list-style-type: none"> <li>• The composition of the board of directors of Kencana HL should generally reflect the equity structure of Kencana HL, and MITI should be notified of the appointments and any change in the composition of the said board of directors;</li> <li>• At least 70% of the entire share capital of Kencana HL must be acquired and held by Malaysian citizens including at least 30% of the share capital must be reserved;</li> <li>• Kencana HL must procure the written approval from MITI prior to it entering into any agreement for the transfer of technology with foreign parties, for instance joint venture agreements, technical assistance and know-how agreements, licence agreements, trademarks and patents agreements, turnkey contracts and management agreements (the condition is not imposed on any purchase of machines requiring the service of technical officers from the manufacturers of the machines for purposes of supervising the assembly or commencement of operation for such machines); and</li> </ul>	<p>Noted and to be complied.</p> <p>Complied.</p> <p>Not applicable.</p>