



MALAYSIA'S MARITIME TRANSPORTATION IN THE OIL & GAS INDUSTRY

Development, Outlook, Trends,
Opportunities and Key Challenges

NAZERY KHALID
Research Fellow

Aseambankers Oil and Gas Conference
Langkawi, 1-2 September 2007

PRESENTATION OUTLINE

- ➡ Oil and gas (O&G) market scenario.
- ➡ Malaysian O&G sector
- ➡ Deepwater development.
- ➡ Overview of maritime transport of energy : tankers / OSV.
- ➡ Outlook, trends opportunities and challenges.

OIL'S NOT WELL? OIL MARKET SCENARIO

- ➡ World's oil need : 82 mil. barrels/day.
- ➡ IEA projected this to double by 2030.
- ➡ Current reserves : 1.93 tril. barrels.
- ➡ Production depletion rate : 1 mil./day.
- ➡ Peak oil : no longer a myth?
- ➡ Imbalance in production / consumption and instability in oil-producing nations.
- ➡ US\$100 / barrel oil by year end?

GETTING GAS - GAS MARKET SCENARIO

- ➡ Accounts for 22% of global energy mix.
- ➡ Rapid global growth of LNG use.
- ➡ Production up from 240 bcm in 2004 to projected 360 bcm in 2010 (IEA).
- ➡ Advanced technologies allow extraction of gas from smaller wells quicker.
- ➡ LNG shipping investment ahead of demand.
- ➡ Pipeline investment a serious concern.

MALAYSIA'S ENERGY RICHES

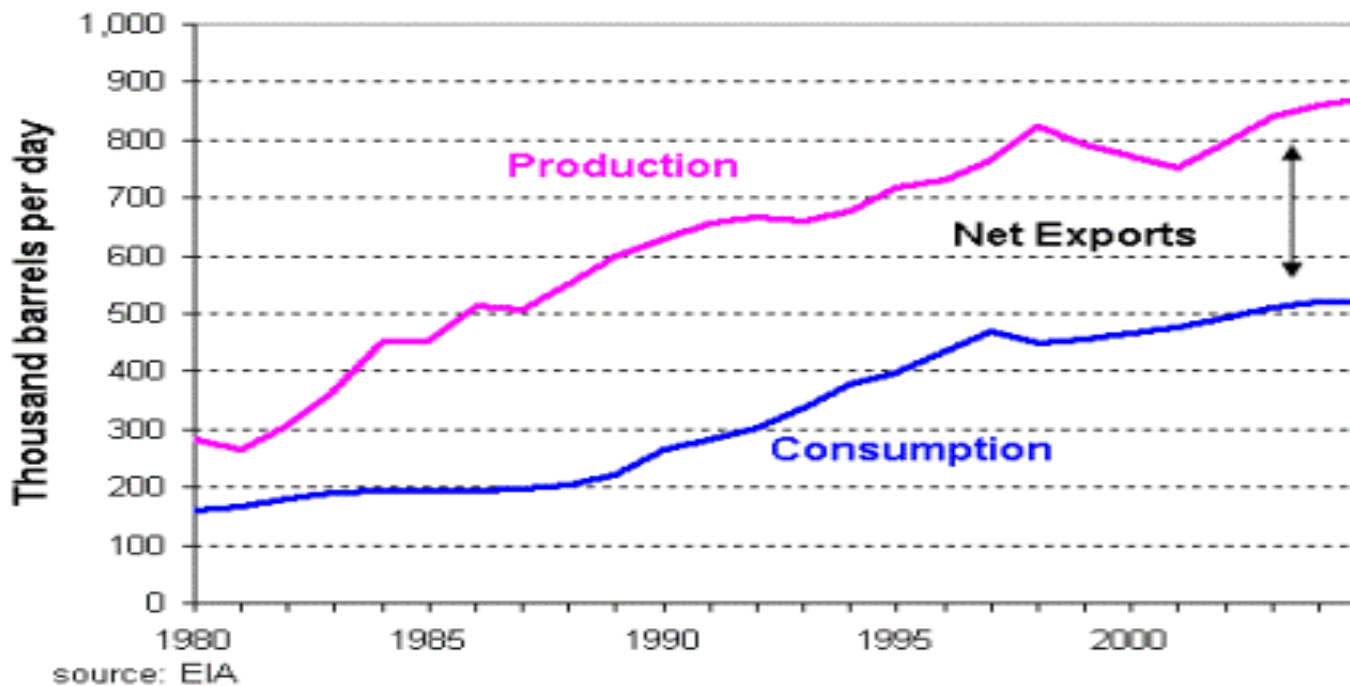
- ➡ 24th largest producer of oil and 14th for gas (2004).
- ➡ Oil reserves : 4.84 barrels.
- ➡ Gas reserves : 89 tcf.
- ➡ Offshore exploration area : 565,555 sq km / 60 blocks.
- ➡ One third of these are in deepwaters.

MALAYSIAN ENERGY PRODUCTION CAPACITY

- ➡ Six oil refineries with 545,000 bpd processing capacity.
- ➡ Oil output : 750,000 bpd.
- ➡ Half of current crude production comes from Tapis field (off the east coast of Peninsula).
- ➡ Gas output : 5 bil. cu. ft per day.
- ➡ 0.9 tcf exported to Japan, Korea, Taiwan.

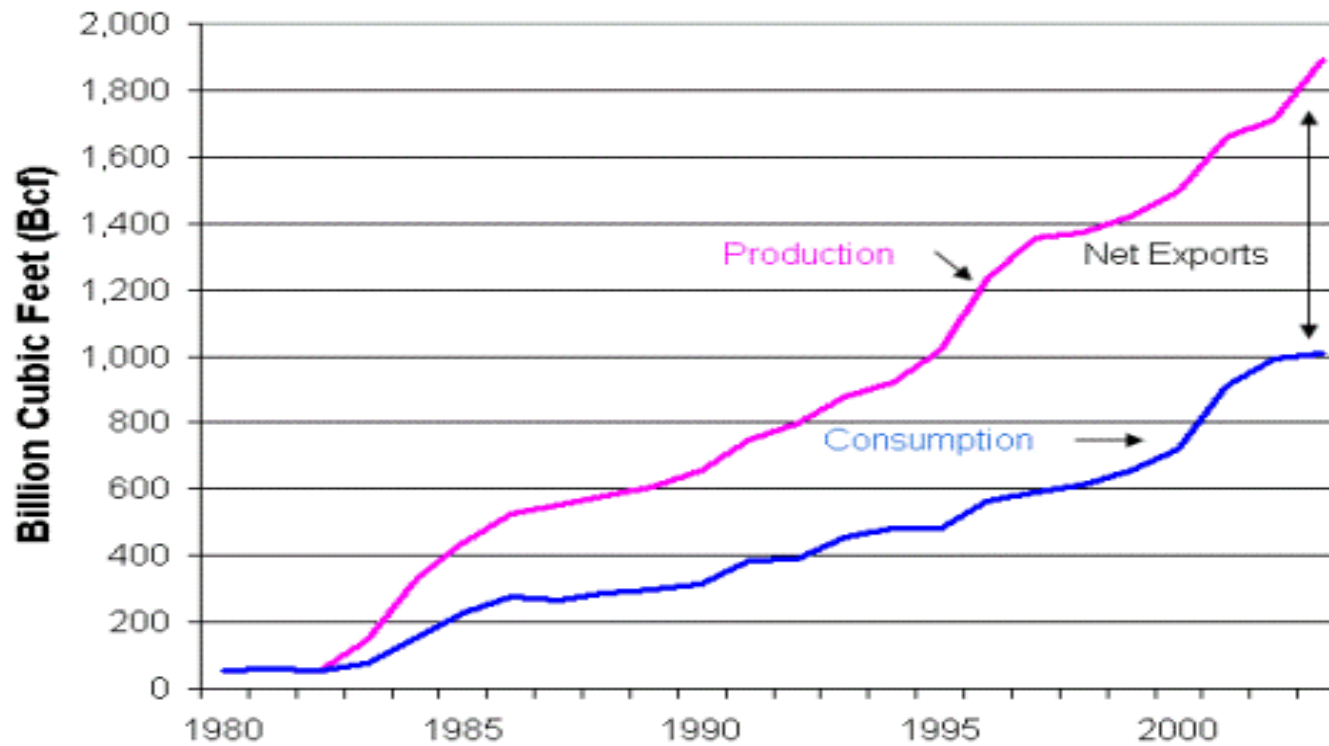
MALAYSIA'S OIL PRODUCTION & CONSUMPTION 1980-2005

Malaysia's Oil Production and Consumption, 1980-2005



MALAYSIA'S GAS PRODUCTION & CONSUMPTION 1980-2003

Malaysia's Natural Gas Production and Consumption, 1980-2003



MALAYSIA'S OFFSHORE O&G SITES



OFFSHORE ENERGY FORAY

- ➡ Exploration in shallow waters started in 1960s, deepwater in 1990s.
- ➡ Deepwater is 15% of its 402,000 sq. km of its offshore territory.
- ➡ First success : discovery of Kikeh in 2002 by Murphy Oil & Shell Sabah.
- ➡ Estimated deepwater deposits : 1bil. barrels of oil and 6 tcf of gas.

MAJOR DEEPWATER SITES

BLOCK	SITE	CONTRACTORS
F	Offshore Sarawak	Amerada/Total
G,J	Gumusut, Malikai, Ubah, Pisagan	Shell /Conoco Phillips
K	Kikeh, Keabangan, Todak, Senangin, Kakap	Murphy Oil
ND6&7	Tarakan Basin off Tawau	Shell
P	Offshore Labuan	Murphy Oil

Sources : Petronas, Murphy Oil, Shell, Conoco Phillips, Worldoil.com

DEVELOPING DEEPWATER

- ➡ New mantra : Diversify supply. This has led to exploring new frontiers.
- ➡ Quest for O&G goes further, deeper.
- ➡ Deepwater definition will change as deeper frontiers are explored.
- ➡ Cost to drill a well : US\$30-50m.
- ➡ Cost to develop a single field : US\$1b.

FACTORS DRIVING DEEPWATER DEVELOPMENT

- ➡ Traditional fields fast exhausting.
- ➡ Rising world energy demand, propelled by developing countries.
- ➡ Bullish forecast of deepwater reserves.
- ➡ Availability of E&P technologies and strong support services.
- ➡ Jitters over oil supply.

OIL TANKER



www.onassis.gr

OIL TANKER MARKET SCENARIO

- ➡ Supply of tankers = Existing fleet – scrapping / loss of tonnage + newbuilding.
- ➡ Carriage of crude & oil clean products.
- ➡ IMO requirement of double hull tankers.
- ➡ Two types of operators : captive fleet & independent tanker fleet.
- ➡ Tanker demand depends on demand / supply, location and refining of oil.

OIL TANKER MARKET SCENARIO

- ➔ Oil tanker fleet grew from 143 in 2000 to 175 in 2004.
- ➔ MISC through AET has global reach and a modern, young fleet of 45 oil tankers.
- ➔ Prospect of demand for oil tanker services arising from Trans-Peninsular Pipeline.
- ➔ M'sia exported RM32.56 bil. crude in 2006. Higher export forecasted near term.

GAS TANKER



GAS TANKER MARKET SCENARIO

- ➔ LNG/LPG carrier fleet grew from 38 in 2000 to 45 in 2004.
- ➔ MISC is world's largest owner-operator of LNG fleet (23 tankers now, 29 by 2010).
- ➔ Kikeh to start production 4Q 2006, expected to produce 120,000 bpd of oil.
- ➔ Malaysia exported RM23.28 bil. of LNG in 2006. Higher export projected in near term to meet rising global demand.

OSV MARKET SCENARIO

- ➡ OSV play critical role in supporting the offshore O&G industry.
- ➡ Needed in exploration & production (E&P), transportation of crew and supplies, maintenance activities.
- ➡ Boom in Asian offshore O&G activities has increased demand for OSV.
- ➡ OSV deployment most prominent in deepwater.

FEATURES OF OSV MARKET

- ➡ Leading yards like Nam Cheong, NGV Tech booming with OSV orders.
- ➡ Some yards like Sealink not only build OSV for clients but own and operate own OSV fleet.
- ➡ Market is bullish - most OSV easily leased out on long-term or spot charter.

FEATURES OF OSV MARKET

- ➡ More orders built to specs of clients than secondhand orders.
- ➡ Boom in newbuilding orders is in favor of OSV suppliers to win long-term contracts from oil majors.
- ➡ Chartering of OSV a lucrative business – can fetch margins up to 40%.

OSV USED IN MALAYSIAN WATERS

- ➡ Conventional offshore supply / support vessels (OSV).
- ➡ Platform supply vessels (PSV).
- ➡ Anchor handling tug supply (AHTS) vessels.
- ➡ Tugboats.

CONVENTIONAL OSV



CONVENTIONAL OSV

- ➡ Used to support operations of offshore O&G industry.
- ➡ Typically carries supplies and crew to offshore sites / platforms.
- ➡ Usually not exceeding 6,000 GRT in capacity.
- ➡ Produced in leading local yards.
- ➡ Increasingly fitted with state-of-the-art components, systems and technology.

PSV



PSV

- ➡ Ship specially designed to support offshore oil platforms.
- ➡ Services provided : supply of drilling muds, fuel, chemicals, water, pulverized cement, tools used in drilling process; crew transportation.
- ➡ Range from 65-350 feet in length.
- ➡ Can handle special tasks like laying, monitoring and retrieving seismic cables.

AHTS



mmc-shipdesign.com

AHTS

- Provide supply to oil platforms.
- Tow platforms to location.
- Anchor platforms to seabed.
- Act as Emergency Rescue and Recovery Vessels (ERRV).

TUGBOAT



TUGBOATS

- Pull and push ships into and out of harbors and through rivers and canals.
- 'Tow' ships in distress / out of accident areas.
- Tow barges and equipment.
- Carry construction materials to and from offshore development sites.

OUTLOOK

- ➡ High demand for energy carriers / OSV set to continue as deepwater projects kick off and more discoveries are made.
- ➡ More focus on compliance with regulations i.e. MARPOL and IBC Code on carriage of chemicals.
- ➡ Greater emphasis on safety, reliability and comfort features of OSV.

TRENDS

- ➡ Growing orders for multipurpose OSV, AHTS and PSV.
- ➡ Fleet expansion in energy carriers by Petronas.
- ➡ More conversion activities at yards i.e. converting seismic vessels into OSV.
- ➡ Growing emphasis on meeting compliance i.e. IMO double hull ruling.
- ➡ Award of short term charter contracts.

OPPORTUNITIES

- ➡ Huge demand for tankers, OSV, AHTS, PSV due to rising offshore activities.
- ➡ MISC to expand LNG routes to North and Central America.
- ➡ Demand for new fleet of OSV and double-hull tankers.
- ➡ Opportunity in medium range segment of tanker market (<10,000 DWT).

CHALLENGES

- ➔ Boom in offshore O&G activities in demand yards to increase production.
- ➔ Rising costs of production i.e. raw materials, equipment and labor.
- ➔ Difficulty to obtain competitive financing.
- ➔ Shortage of local vessels.
- ➔ Shortage of local seafarers.

CHALLENGES

- ➡ More OSV deployed beyond useful life with upgrading and refurbishment.
- ➡ Ageing fleet of OSV i.e. average age in Malaysia is 20 years.
- ➡ Phasing out of single hull tankers.
- ➡ Categorization of offshore shipping as coastal shipping.



MARITIME INSTITUTE OF MALAYSIA

THANK YOU



nazery@mima.gov.my

www.mima.gov.my