PRESENTATION

ON

THE OFFSHORE INDUSTRY

Venkatraman Sheshashayee

Chief Operating Officer

GREATSHIP (INDIA) LIMITED

15th February 2007

A brief introduction

The Great Eastern Shipping Company Limited (G E Shipping)

- India's premier shipping company
- Over five decades of experience
- Currently owns and operates a fleet of 40 vessels comprising of 31 tankers (14 crude oil carriers, 15 product carriers, and 2 LPG carriers) and 9 dry-bulk carriers aggregating 2.96 million DWT
- New building order book comprises 8 Product tankers (4 Medium Range and 4 LR1 Product tankers aggregating around 0.47 million DWT)
- www.greatship.com

A brief introduction

Greatship (India) Limited (GIL)

- A wholly owned subsidiary of G E Shipping
- Establishing itself as a premier service provider to operators in the offshore energy exploration and production domain globally
- Eventually, GIL's scope will extend to full participation in the E & P value chain across the world
- Since beginning operations in April 2006, GIL has placed orders for five PSVs, six AHTSVs, and through a subsidiary in Singapore, one premium 350' jack up rig
- Capital commitments to date exceed USD 380 million
- Will leverage capabilities by entering into strategic alliances; will aim to be the partner-of-choice in India.

A brief introduction

Venkatraman Sheshashayee (Shesh)

- Indian, 44 years, married, two children
- B E (Marine) – DMET Calcutta
- PGDM – IIM Bangalore
- A wholly owned subsidiary of Radhika
- Has worked in Engineering, Operations, Commercial, Marketing, Sales, Human Resources and Finance
- Indulges in reading, writing, walking, playing badminton, and attempting golf
- USP – creates and executes visions/business plans impeccably
- vshesh@greatshipglobal.com, vshesh@greatship.com

Scope

- Defining the “offshore” business
- The offshore market – segments & assets
- The offshore market – business drivers
- The offshore market – today
- The offshore market – the coming years
- The offshore market in India

DEFINING
THE OFFSHORE BUSINESS

The offshore business

The offshore oil field business consists of the following activities -

- Survey
- Exploration
- Construction
- Production
- Maintenance & Upgradation

Each of these activities is distinct by virtue of life cycle, technology, assets required and expertise

The offshore business

Survey

- Seismic services
- Geo-technical services
- Data interpretation and analysis

The offshore business

Exploration

- Well engineering and well design
- Drilling (vertical and directional)
- Drilling services
  - Mud engineering and logging services
  - Cementing
  - Well logging
  - Perforation
  - Well testing and completion
  - Coring and fishing
- Logistics services – sea, air and land

The offshore business

Construction

- Platform
  - Platform design, fabrication & installation
  - Sub sea well engineering
  - Sub sea piping
  - Riser installation
- Pipe laying
- Logistics services – air, sea and land

The offshore business

Production

- Logistics services – air, sea & land
- FPSOs / FSOs
- Field & Marginal Field Development
  - Drilling
  - Drilling services
  - Horizontal drilling / Side tracking
  - Well stimulation

The offshore business

Maintenance & Upgradation

- Additional well drilling
- Additional risers / clamp ons
- Pigging services
- Sub sea maintenance and inspection
- Logistics services – air, sea & land
- De-commissioning

The offshore business

To sum it up, the offshore oil/gas exploration and production services industry now consists of about 450 operators and contractors, providing a diverse range of services including but not limited to –

Survey – provision and operation of seismic survey vessels, geological analytical services, support services

Drilling – provision and operation of assets such as jack up rigs, semi submersibles, drill ships; Drilling services – provision of mud services, mud logging services, directional drilling services, cementing services, well testing, logistics, line hangar services, etc.

The offshore business

Construction and development – provision of design, fabrication and installation services for jackets, platforms, pipelines, risers; provision and operation of pipelaying barges, accommodation and hook-up barges, Diving Support Vessels (DSVs), Remote Operated Vehicles (ROVs), etc.

Production – Platforms, FPSOs, FSOs, pipelines recovering the oil/gas and delivering it to refineries onshore, with or without some level of processing. Continued drilling of new wells in producing fields, stimulation of aging wells, etc.

The offshore business

Marine logistics – provision and operation of marine assets such as Anchor Handling Tugs (AHTs), Anchor Handling Tug Supply Vessels (AHTSVs), Platform Supply Vessels (PSVs), Multi Support Vessels (MSVs), standby vessels, crew vessels, etc., that support drilling unit and platform operations.

Support services - air logistics, shore supply base management, agency management, manning and personnel management, training, etc.

The offshore business

Some characteristics of the offshore market

- Regional markets
- Varied transaction processes
- Thus, ability to differentiate
- High regulatory barriers of entry – cabotage, country-specific security policies, etc.
- Akin to manufacturing
- Technology is a critical driver

THE OFFSHORE MARKET

SEGMENTS & ASSETS

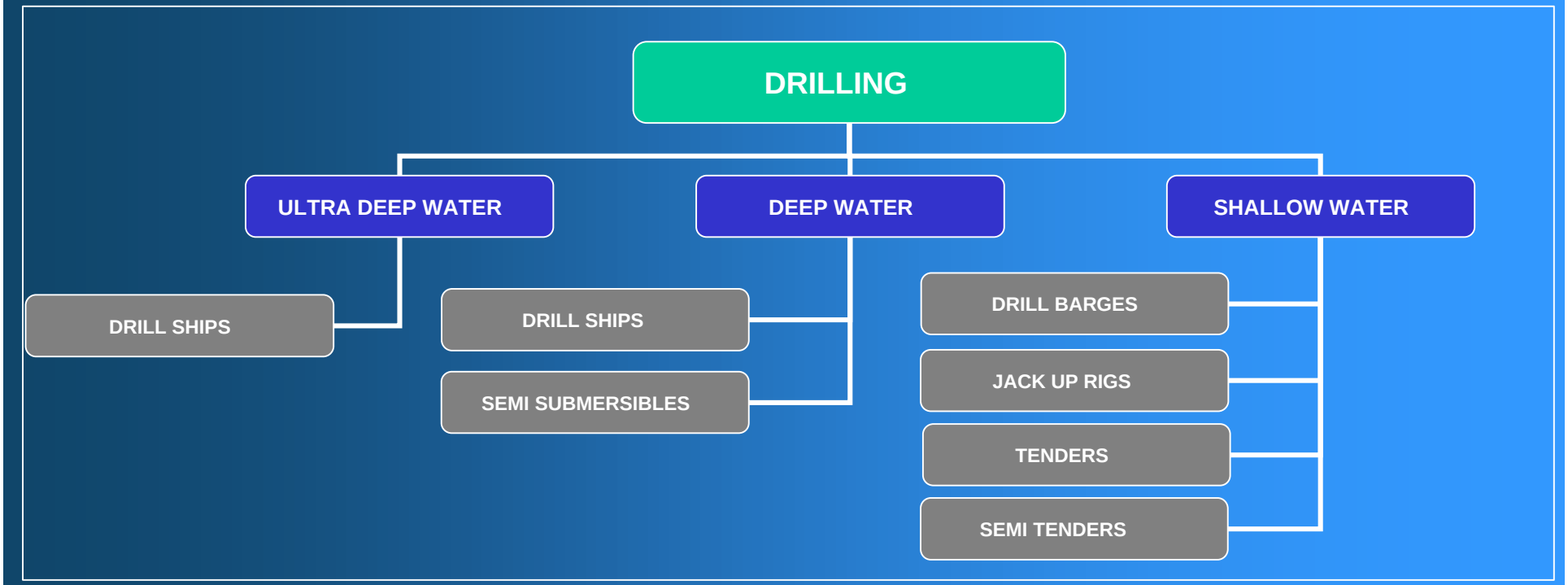
The offshore market

The offshore oil field market is broadly classified into the following four segments -

- Drilling & allied services
- Sea logistics & special services
- Offshore construction & projects
- Air logistics

Most service providers tend to specialise in one of the above market segments. A few encompass two or more, intending to be a broader spectrum player.

The offshore market – Drilling & allied services



- 1,500 M +
- DP2
- 15,000 psi
- HPHT wells

- 150 - 1,500 M
- Moored or DP
- 10 - 15,000 psi
- Normal wells

- < 150 M
- Pinned / moored
- 10,000 psi
- Normal wells

The offshore market – Drilling & allied services

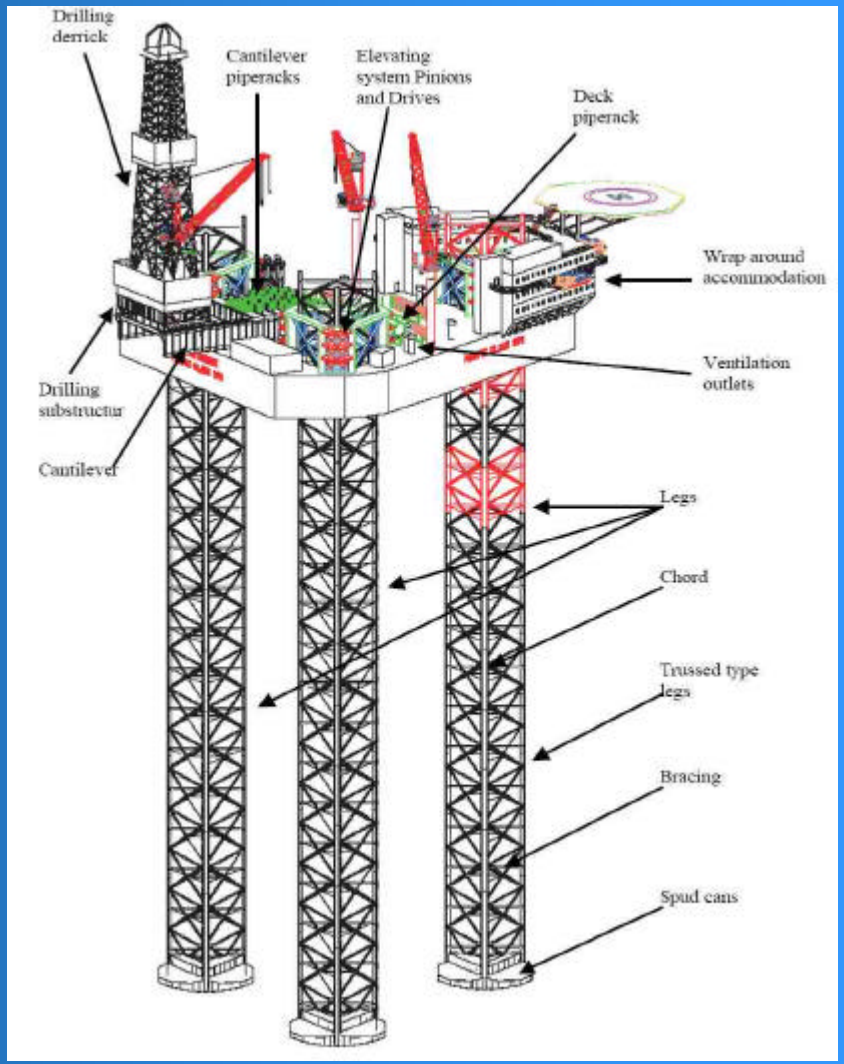
Common drilling unit categories –

- Jack Up Rig
- Semi submersible
- Drillship

The offshore market – Drilling & allied services

Common drilling unit categories –

Jack Up Rig



The offshore market – Drilling & allied services

Common drilling unit categories –

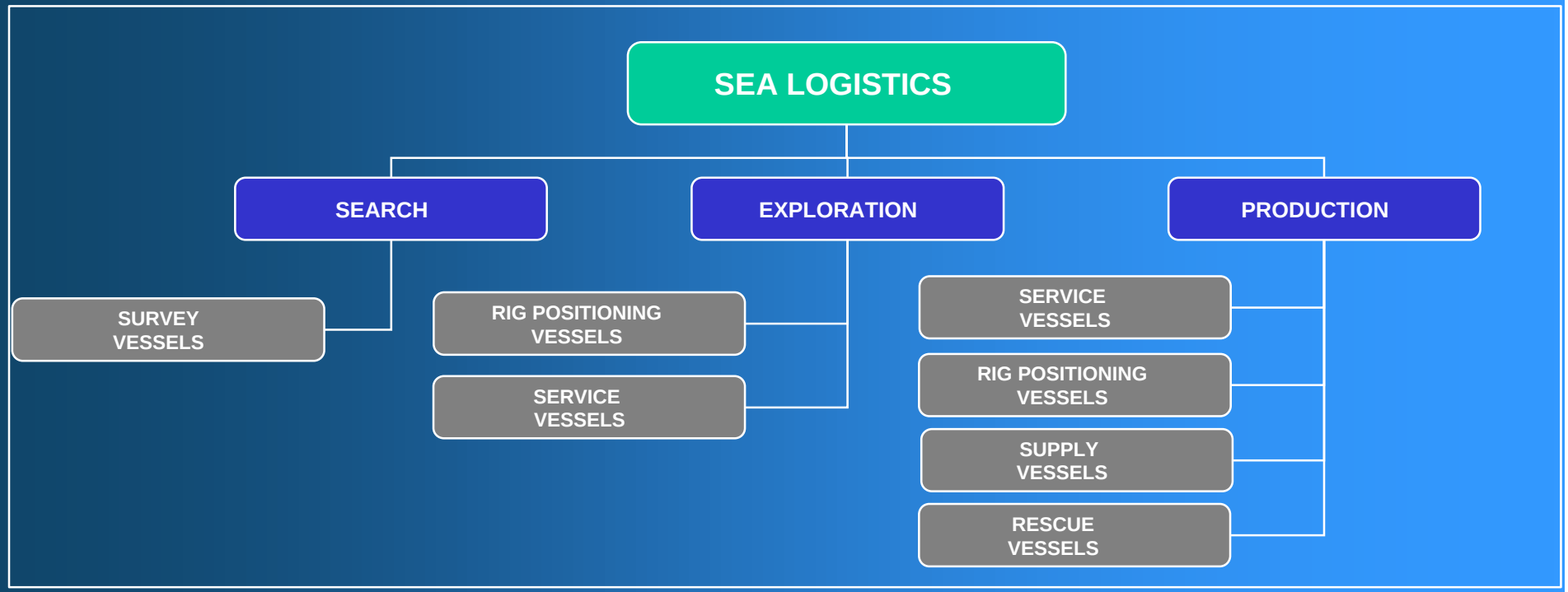
Semi-submersible

The offshore market – Drilling & allied services

Common drilling unit categories –

<u>Drillship</u>

The offshore market – Sea Logistics, etc.

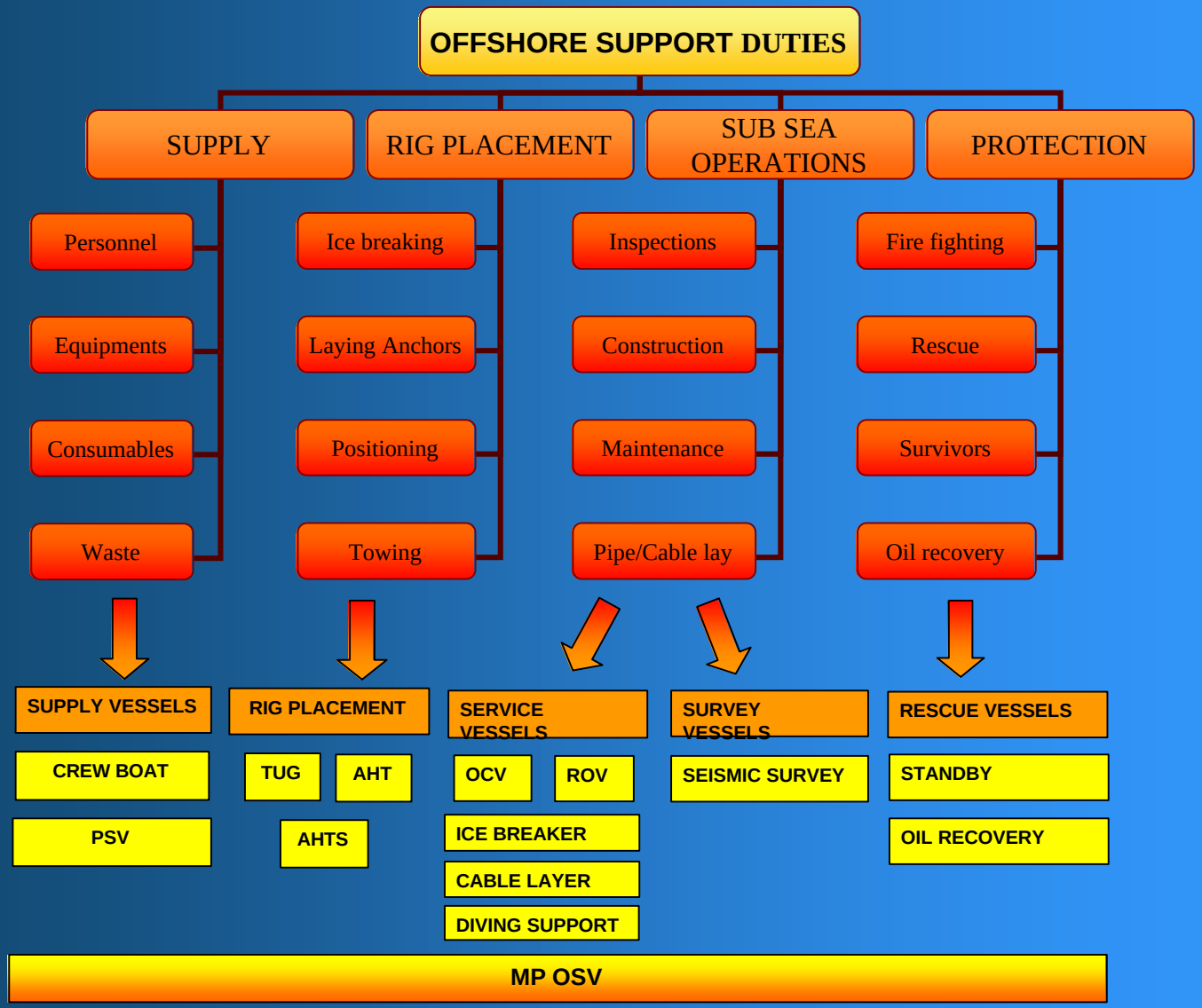


SEARCH
Scanning the seabed

EXPLORATION
Test drilling
Well construction
Towing
Supplying

PRODUCTION
Supply
Anchor Handling & Towing
Stand-by
Oil recovery
Well maintenance
Well intervention

The offshore market – Sea Logistics, etc.



The offshore market – Sea Logistics, etc.

Common vessel categories –

- PSV : Platform Supply Vessel
- AHTSV : Anchor Handling Tug Supply Vessel
- AHT : Anchor Handling Tug
- STBY : Standby Rescue Vessel
- CONSTR : Construction/Subsea Vessel

The offshore market – Sea Logistics, etc.

Common vessel categories - PSV

The offshore market – Sea Logistics, etc.

Common vessel categories - AHT

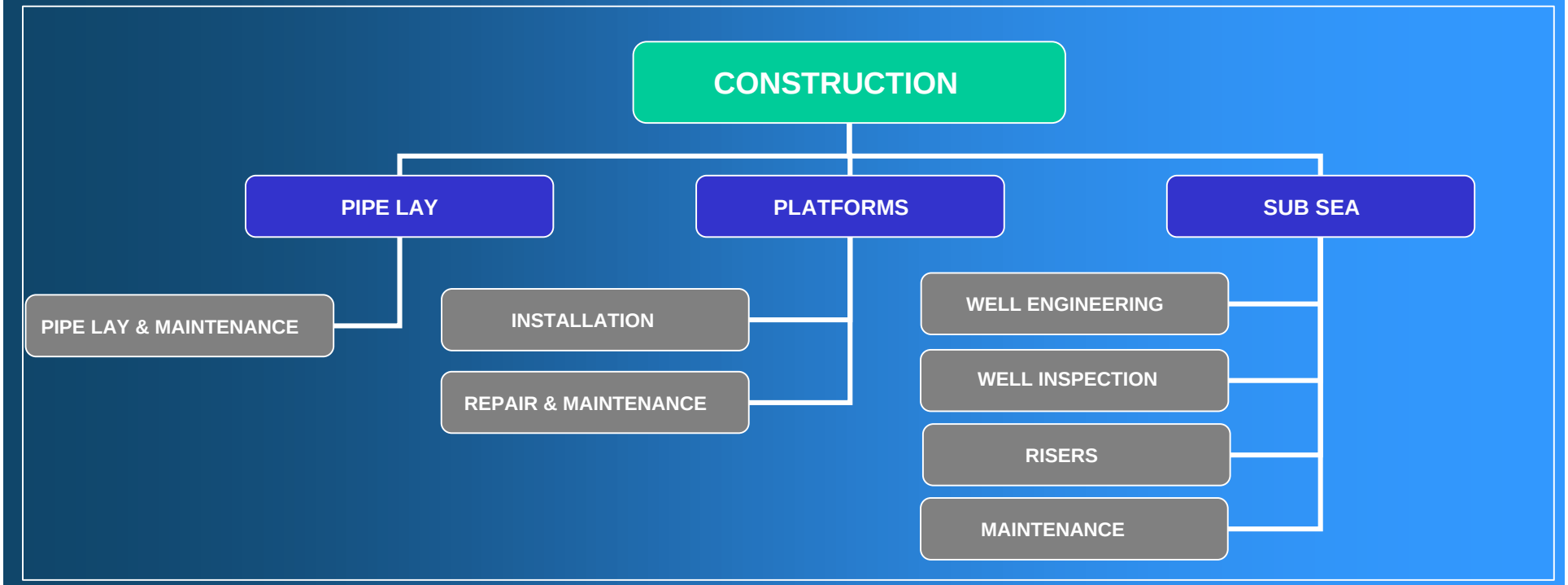
The offshore market – Sea Logistics, etc.

Common vessel categories - AHTSV

The offshore market – Sea Logistics, etc.

Common vessel categories - MSV

The offshore market – Construction services



The offshore market – Construction services

Platforms

The offshore market – Construction services

Accommodation Barge

The offshore market – Construction services

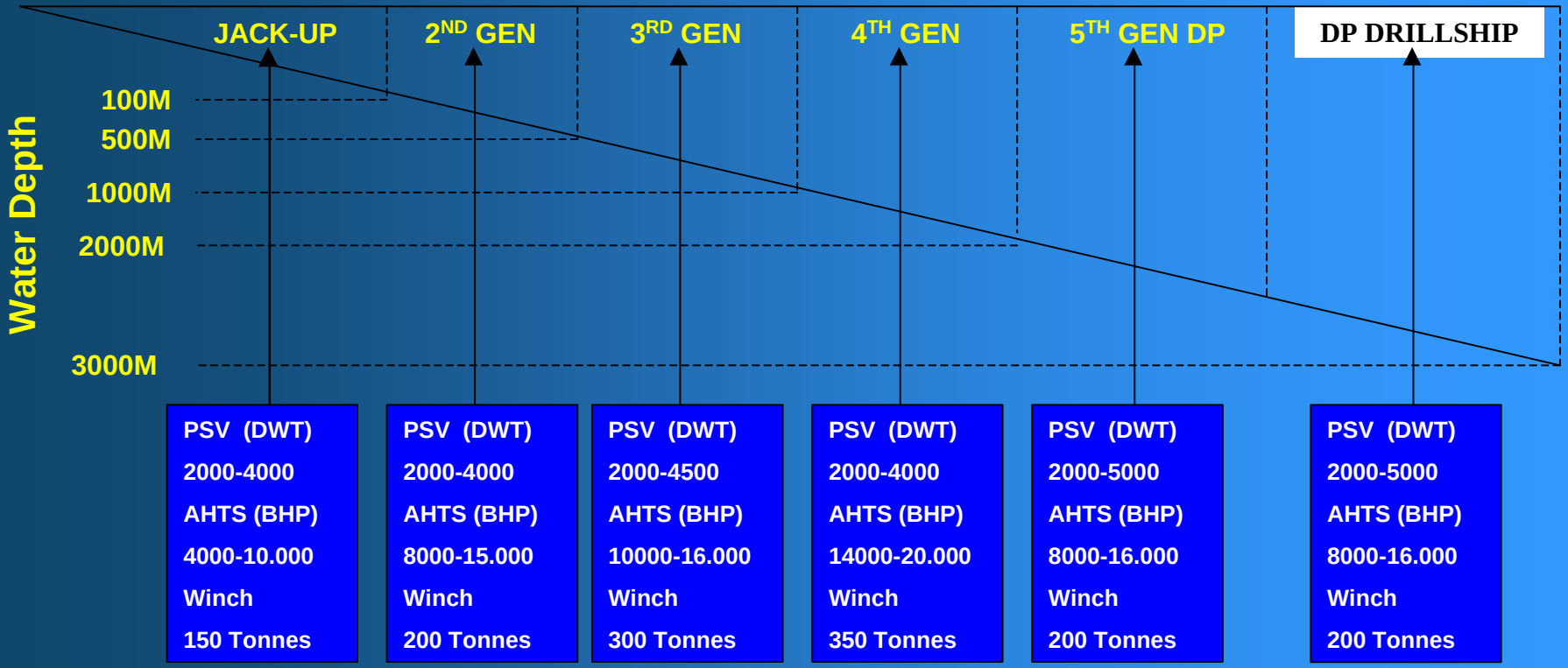
Diving Support Vessel

The offshore market – Air Logistics

Helicopters

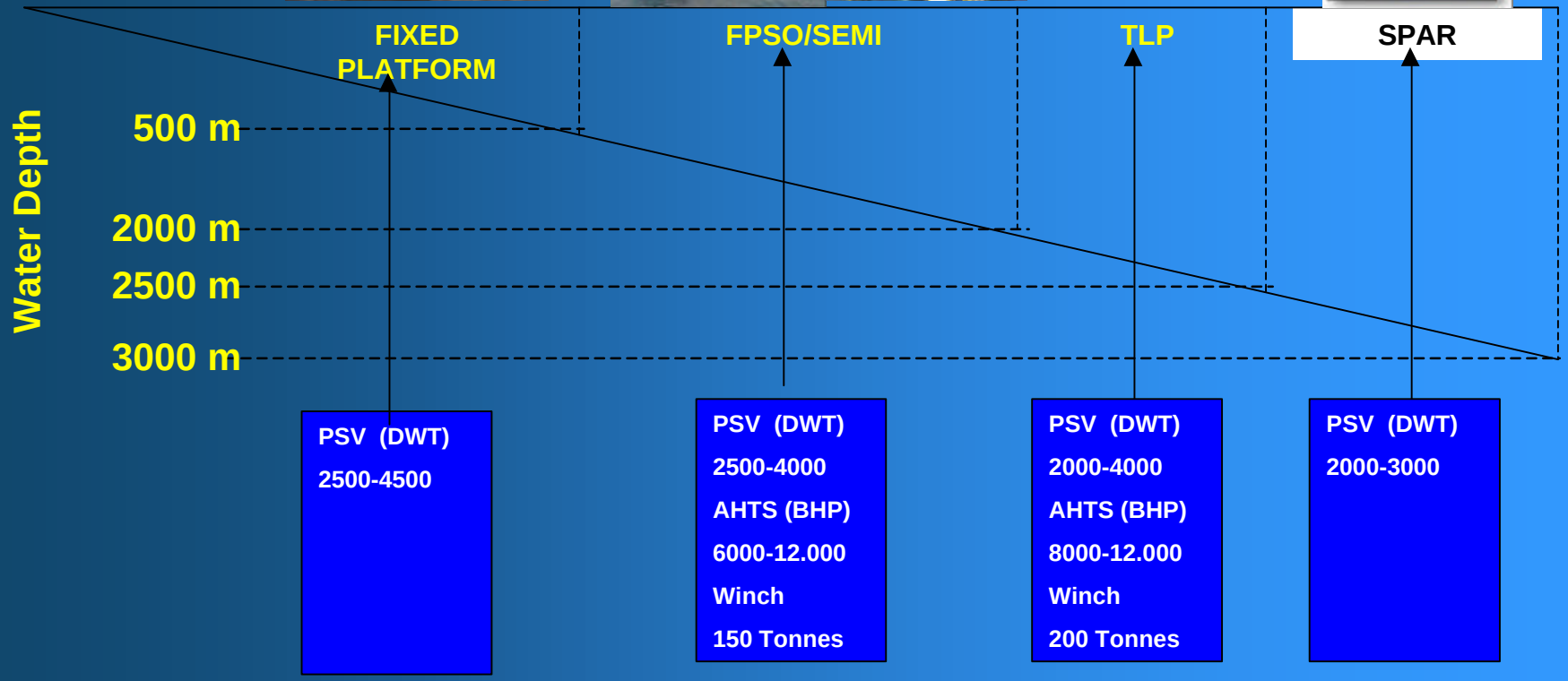
The offshore market

Matching drilling units to vessels



The offshore market

Matching platforms to vessels



THE OFFSHORE MARKET

BUSINESS DRIVERS

The offshore market – a brief history

The offshore oil/gas exploration and production services industry is relatively quite nascent.

- the first offshore exploration venture took place in the Mississippi delta in 1929
- the first submersible drill barge, Mr. Charlie, was launched in 1954
- the first offshore support vessel, Ebb Tide, was delivered in 1955

The offshore market – a brief history

Three upheavals drove the world to offshore exploration -

- The discovery of huge oil reserves in the North Sea in the sixties
- The OPEC oil shock in the early seventies
- USA reaching peak onshore oil production in the late seventies

The offshore market – drivers & influencers

Direct drivers :

- World economy
- Oil (and Gas) prices
- Asset supply/demand equations

Influencers :

- Oil consumption patterns and growth rates
- Production/ reserve replacement ratio
- OPEC policies
- Global and regional politics
- Oil futures speculation
- Stated reserves
- Nature (weather patterns and calamities)

The offshore market – drivers & influencers

Boosters :

- Surveying, exploration & drilling technology
- National energy security policies
- Manufacturing growth
- Increase in automobile usage

Threats :

- Alternative energy measures / subsidies
- Energy efficiency measures

The offshore market – drivers & influencers

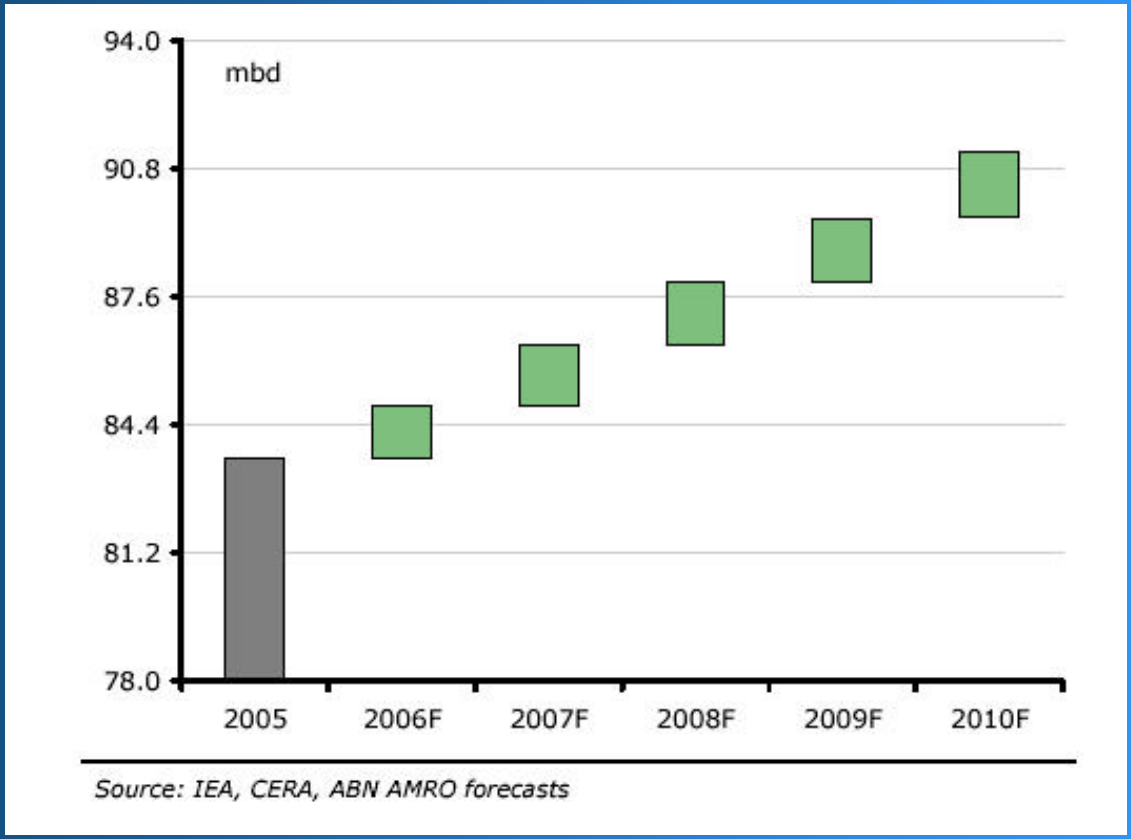
Global consumption (past 30 years) :

Year	1975	1980	1985	1990	1995	2000	2005
Oil Consumption ('000 Bpd)	54,962	61,678	59,015	66,390	69,506	75,779	82,459

EIA expects oil demand to grow at a CAGR of 1.8% over 2006-10. The anticipation of increased oil demand is putting pressure to discover larger oil reserves every year to ensure replacement, to delay the threat of peak oil and diminishing reserves.

The offshore market – drivers & influencers

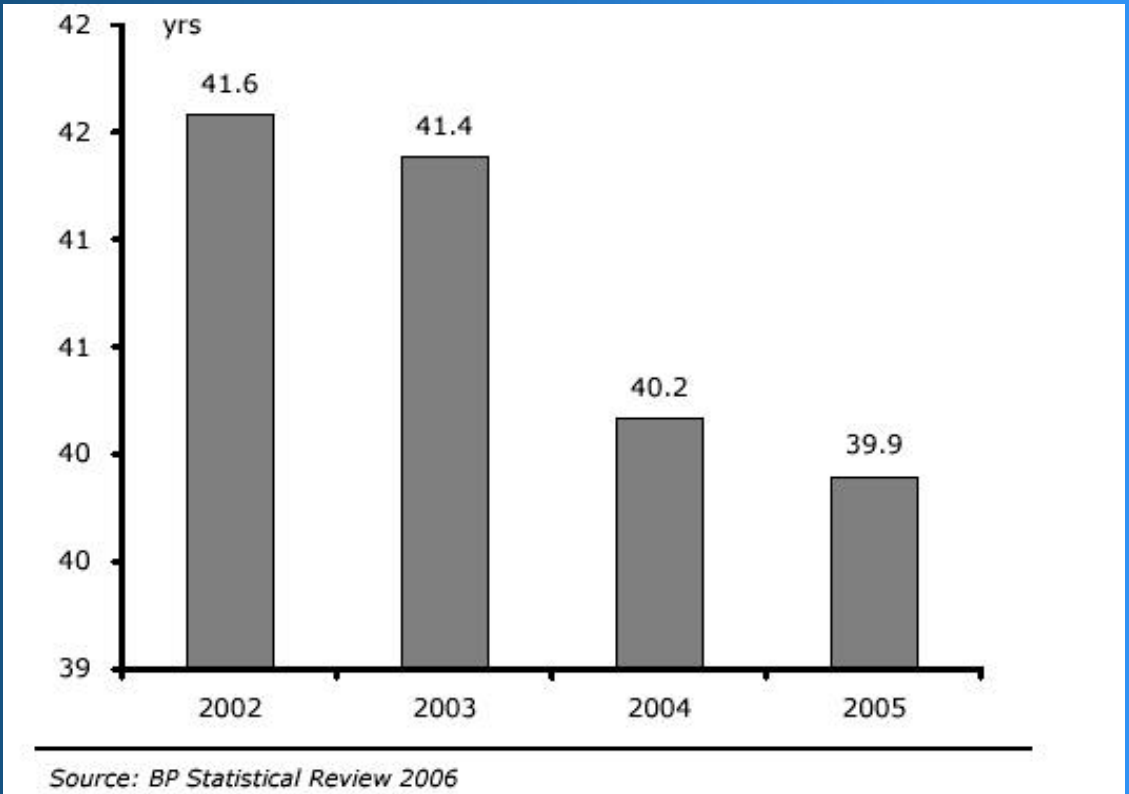
Global demand forecasts (next four years) :



(Expected to reach 118 mbd by 2030)

The offshore market – drivers & influencers

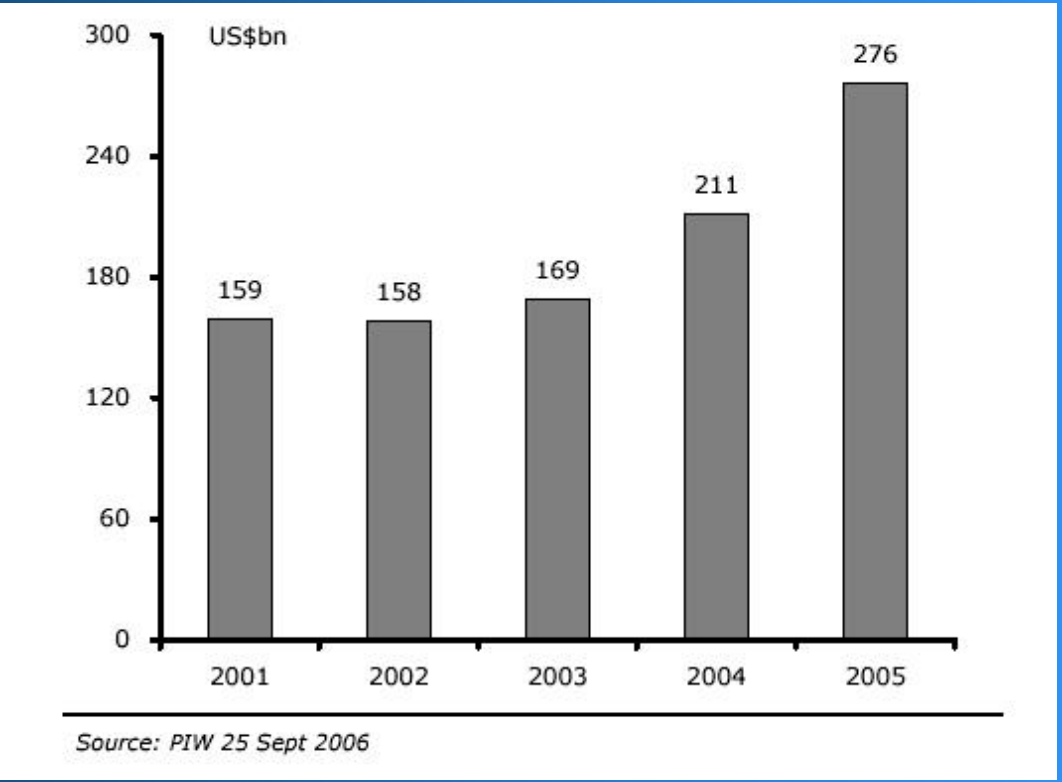
Proved Reserves (Life in years) :



(At current rate, expected to reach 31 years by 2015)

The offshore market – drivers & influencers

Global Upstream Capital Spending (2001 - 2005) :



(Average spend between 1990 – 2000 = US$ 65 billion)

The offshore market – drivers & influencers

Comparative consumption figures :

Regional Oil Consumption	2000	2005	CAGR
USA	23,522	24,875	1.12%
Europe	15,942	16,415	0.59%
Asia Pac	20,839	23,957	2.83%
China	4,772	6,988	7.93%
Japan	5,577	5,360	-0.79%

(Non-OECD Asia expected to grow at 3.5%)

The offshore market – drivers & influencers

Comparative consumption figures :

Country	Per capita annual oil cons.
USA	25 bbls
Japan	16 bbls
China	02 bbls
India	01 bbl (Urban = 2; Rural = 0.5)

(Expected growth : China = 4.5% pa; India = 3.2% pa)

The offshore market – drivers & influencers

What has been driving the price of oil in the recent past?

While the eighties oil price spike was largely due to supply side crises, the current steady rally over the past two and a half years is believed to be due to :

- Robust consumption growth / anticipated growth in non-OECD countries (especially China and India)
- Inadequate investment in the nineties, resulting in,
  i. dipping buffers between demand and production capacity
  ii. future reserves depletion
- Geo-political concerns (Iran, Nigeria, Venezuela, Russia)

The offshore market – drivers & influencers

What has been driving the price of oil in the recent past?

Inadequate investment in offshore –

	1975-84	1985-94	1995-2004
Wells drilled	18,400	11,240	7,800
Rigs built	483	72	83
OSVs built	2,971	780	1,869

THE OFFSHORE MARKET

TODAY

The offshore market – overview of today

The Oil & Gas Industry is currently defined by high oil prices and low spare capacities.

The primary reason for low spare capacities – low investments in E&P activities during 1980s and 1990s.

Oil/Gas E&P industry growing rapidly due to need for energy self-sufficiency and to curb huge import bills.

Increased investments in E&P activities by Oil/Gas producing nations and emphasis on tapping unexplored potential reserves. (Eg: China's expenditure on E&P has grown at 14% year on year)

The offshore market – overview of today

EIA estimates that global oil consumption will rise from 85 mbd in 2006 to 118 mbd in 2030.

Oil prices are estimated to remain within a band of US$ 45 – US$ 60 (2004 prices) between now and 2030.

Maximum Oil/Gas consumption growth projected in non-OECD Asian countries. Emerging Asia (including China and India) to account for 45% of the total world increase in oil use.

Higher costs and longer gestation periods due to increasing difficult terrains for conducting E&P activities.

Source : EIA 2006 Report

The offshore market – overview of today

Offshore Oil/Gas E&P services industry growing rapidly in terms of size, spread & value due to increased E&P activities.

Offshore industry suffers from outdated and antiquated assets (more than 50% of fleet > 20 years old)

Industry requires larger, more capable, specialized assets as it moves further offshore to operate in much more challenging and harsher environments.

Huge improvements in technology over past 20 years.

The offshore market – overview of today

Increasing requirement of tailor made & specialized assets for regional and multipurpose operations.

Shipyards' order books are full till 2009 in general, and till 2010 for certain vessel classes.

Rig building yards' order books are full till 2009 for JURs, and till 2011 for floaters.

Larger (and continuously expanding) market, perceived urgency, and demand for technically advanced & high capacity offshore assets are resulting in extremely attractive charter rates.

The offshore market – overview of today

Some indicative charter rates (US$ per day) -

	2002	2006
Jack Up Rig (300')	45,000	150,000
PSV (3,000 DWT)	8,500	17,000
AHTSV (150 TBP)	14,500	25,000
Semi sub (1,500 m)	175,000	400,000
MSV	35,000	75,000

The offshore market – overview of today

Some indicative asset prices (US$ million) -

	2002	2006
Jack Up Rig (300')	90	160
PSV (3,000 DWT)	16	22
AHTSV (150 TBP)	18	31
Semi sub (1,500 m)	200	375
MSV	35	55

THE OFFSHORE MARKET

THE COMING YEARS

The offshore market – the coming years

The burning question -

- How long is this booming market situation going to last?

The concomitant concerns –

- Will the oil price remain high?
- What about petroleum substitutes? How will they affect the future?
- Isn't the industry overbuilding assets? Won't the classical cycle repeat?

The offshore market – the coming years

The EIA (Energy Information Administration) and the IEA (International Energy Agency) have both reported -

- The price of oil is expected to range between US$ 45 – US$ 60 over the next 25 years.
- This price band is based on business-as-usual. Any disruption (war, terror, weather, geopolitics) will have an adverse impact.
- Demand for oil is expected to outstrip production, in the medium term. Non-OECD Asia consumption is expected to grow at 3.5% or more.
- Most incremental oil demand is projected for use in the transportation sector.

The offshore market – the coming years

The Oil & Gas Journal 2006 report states -

- Worldwide crude and condensate production rose a mere 0.18%, from 72.26 million b/d to 72.39 million b/d.
- Depletion continues to overwhelm new production in the North Sea (-9.6%).
- Most regions were flat (Asia-Pacific +0.6%, Africa -0.2%, Western Hemisphere -0.4%).
- Only Eastern Europe and the Former Soviet Union increased substantially (+4.3%).

The offshore market – the coming years

Some facts -

- Today, there is no economically scalable alternative to oil.
- Existing alternatives suffer from –
  - lack of energy density and inability to scale
  - energy intermittency
  - inappropriateness as transportation fuels
  - most alternatives need oil to locate, extract and process the raw materials required to generate the alternatives
- In 2003, the world consumed 420 quadrillion BTUs. Of this, 1.1 quadrillion BTUs was generated by Solar and Wind energy. About 0.26%.
- All renewable sources accounted for just over 10%.

The offshore market – the coming years

Some facts -

- 55% of the world's offshore vessel fleet is more than 20 years old.
- 42% of the world's offshore drilling unit fleet is more than 30 years old.
- The average depth of offshore oil well drilled in 1985 was 2,800 feet. The average water depth was 372 feet.
- The average depth of offshore oil well drilled in 2005 was 7,100 feet. The average water depth was 525 feet.
- 39% of all new discoveries of oil and gas have come from deep water locations (> 3,000 feet)

The offshore market – the coming years

Some facts -

- The total world order book for offshore vessels adds up to 16.5% of the existing fleet.
- The total world order book of offshore drilling units adds up to 17.2% of the existing fleet.
- 120 platforms need to be de-commissioned in the North Sea. Each platform de-commissioning requires 3 boat-years.
- 140 platforms need to be de-commissioned in GOM.
- Since 1998, 18 new countries have commenced the search for and exploration of oil.

THE OFFSHORE MARKET

INDIA

The offshore market – India

Some facts -

- Only 18% of India's total offshore area has been explored.
- 58 offshore wells were drilled between 2000–2004; NELP envisages 498 wells to be drilled between 2006-2012.
- India imports 73% of its crude oil requirements. In 2006, the crude import bill crossed 4.5% of GDP.
- Indian operators chartered 25 rigs in 2004. By 2010, it is estimated that 44 rigs will be chartered for working in the Indian offshore.
- The number of offshore vessels working in India has moved from 89 in 2004 to 112 in 2007. By 2010, it is estimated that 135+ vessels will be required.

The offshore market – India

Some facts -

- Of the 87 vessels chartered by operators for the Indian offshore, only 47 are Indian. The rest come from Europe, Middle East and Far East.
- Of the 31 drilling units chartered by operators for the Indian offshore, only 8 are Indian. The rest come from USA and Europe.
- 80% of all seismic and exploration services are provided by foreign MNCs.
- Two of India's largest operators have been unable to obtain drilling units since 2005. All drilling programmes are delayed.

The offshore market – India

Some facts -

Mainstream Indian companies working in India (and their fleets)

	Vessels	Drilling units
Great Offshore	37	2
SCI	10	0
Varun Shipping	3	0
Garware Offshore	6	0
Tag Sea Logistics	6	0
Aban Offshore	0	9
Jindal Drilling	0	2

The offshore market – India

Some facts -

Mainstream Foreign companies working in India (and their fleets)

	Vessels	Drilling units
Transocean	0	88
ENSCO	0	49
Noble Drilling	0	63
Pride Offshore	0	64
Tidewater	457	0
Solstad	31	0
Swire Pacific	46	0
Gulf Offshore	48	0
Schlumberger		
Baker Hughes		
Clough Offshore, & so on..		

THANK YOU

Bibliography

- IEA (International Energy Agency)
- EIA (Energy Information Administration)
- BP Energy Review (www.bp.com)
- CIA World Factbook
- Bloomberg
- DOE (USA - Department of Energy)
- ODS Petrodata
- Directorate General Of Hydrocarbon (www.dgh.org)
- Rigzone (www.rigzone.com)