Malaysia: Driving Towards the Region’s Subsea and Deepwater Industry Hub

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In Asia Pacific, the significant growth of subsea technology is driven mainly by the emergence of deepwater activities. 

**CHINA**
- First Proven DW Discovery
- Large untested DW acreages
- Active exploration to continue
- DW Oil field in production (Liuhua 11-1 & Lufeng 22-1)

**INDIA**
- Proven DW discoveries
- Commenced development
- Large untested DW acreages
- Aggressive DW block awards and exploration drilling plans
- DW Oil and gas field in production (D6-MA, Dhirubhai & Dhirubai 3)

**VIETNAM**
- Bidding and award of DW blocks started (2006)
- Untested DW acreages
- Exploration to continue

**MYANMAR**
- Untested DW acreages
- Exploration to commence
- 10 DW blocks awarded in 2006/2007

**INDONESIA**
- DW incentive Package approved on 2001
- Proven DW discoveries
- DW oil field in production – West Seno (2003)
- Bidding and award of DW blocks for exploration started (2008)

**MALAYSIA**
- Proven DW Discoveries
- DW gas field in production
- Gumusut unitized development with Murphy Kakap
- Kikeh on stream on 2007
- EOR on Kikeh (planned)
- Proven DW Discoveries
- Ongoing DW exploration and development

**AUSTRALIA**
- Proven DW discoveries
- DW gas field in production
- Large untested DW acreages, DW acreage bidding in 2006
- More emphasis on DW gas, recent emphasis on DW oil

**PHILIPPINES**
- Proven DW Discoveries
- DW gas field in production
- Galoc field is on stream on 9 Oct 2008
- Large untested DW acreages, DW acreage bidding in 2006
- More emphasis on DW gas, recent emphasis on DW oil

Source: Wood Mac, HIS, Various Sources, SP Analysis
First application of subsea technology in Malaysia is for shallow operation in 1999 (F23SW Shell-operated Gas fields)

With the increase of deepwater activities in Malaysia in recent years, subsea technology application has become more prominent

From 2013 - 2015, 30% - 35% of oil production in Malaysia would be contributed from deepwater fields, placing more importance in the development of deepwater and subsea industry in Malaysia

<table>
<thead>
<tr>
<th>Fields</th>
<th>First Oil</th>
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<tbody>
<tr>
<td>Kikeh</td>
<td>2007</td>
</tr>
<tr>
<td>Gumusut/ Kakap</td>
<td>2012</td>
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<tr>
<td>Malikai</td>
<td>2014</td>
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Gumusut-Kakap and Malikai deepwater development have been executed locally and overseas.

**Objective:**
- Encourage capability and capacity growth of service companies providing deepwater and subsea technology and expertise
- Encourage oil companies and service companies collaboration

**Initiative:**
- Development of deepwater blueprint and deepwater contracting strategies
- Assess appropriate incentives

### Summary of Malaysian deepwater development projects:

<table>
<thead>
<tr>
<th></th>
<th>Kikeh</th>
<th>Gumusut Kakap</th>
<th>Malikai</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development concept</td>
<td>SPAR (with FPSO)</td>
<td>Semi-Submersible</td>
<td>TLP (pending FDP)</td>
</tr>
<tr>
<td>Operator</td>
<td>Murphy</td>
<td>Shell</td>
<td>Shell</td>
</tr>
<tr>
<td>Status</td>
<td>Production</td>
<td>Development</td>
<td>Pre-Development</td>
</tr>
<tr>
<td>Water depth/ location/</td>
<td>= 1,300 m Block K 150km offshore</td>
<td>= 1,200m Block J &amp; K 120km offshore</td>
<td>= 1,500m Block G 120km offshore</td>
</tr>
<tr>
<td>First oil</td>
<td>2007</td>
<td>2012</td>
<td>2014</td>
</tr>
</tbody>
</table>
| Key contractors | • MISC (including MMHE)  
• SBM Offshore  
• Technip-Coflexip  
• Aker Kvaerner | • MISC  
• FMC Technology  
• MMHE  
• Atwood Oceanics  
• JP Kenny  
• Technip | +MMC |

**As of April 2009**

### Status Updates

- **Kikeh’s experience**
  - Local Content: 51.3% (Manual), 2.9% (Foreign)
  - Breakdown of contract value:
    - FFO: 69%
    - CTU: 32%
    - Subsea: 1%
    - PLAR: 1%
    - FTL: 9%

- **Gumusut-Kakap’s experience**
  - Local contract: 66%
  - Foreign contract: 34%

Source: Kikeh – Murphy sets new records for Malaysia’s first deepwater projects, Murphy
Malaysia as a Regional Deepwater and Subsea Industry Hub

An activity center offering a complete range of deepwater and subsea services and technology to support regional needs

- **Activity Center**: Operators/E&P players and service providers use Malaysia as preferred location for business activities relating to deepwater and subsea, towards achieving cost, time and technology advantage
- **Center (geographical)**: deepwater and subsea activity areas strategically located within Malaysia
- **Deepwater and subsea services**: covers exploration, development and production

**ENDSTATE**

- Aggressive deepwater exploration and subsea technology application
- Efficient execution of development and operations of deepwater fields, utilizing latest subsea technology
- Deepwater operators and subsea service companies and technology provider utilize Malaysia as regional hub
- Establish deepwater activity & subsea R&D centers in Malaysia
  - Execution of Joint Industry Projects (JIPs) to provide fit-for-purpose deepwater and subsea technology solutions
- Availability of a pool of matured technical expertise in Malaysia
PETRONAS will spearhead this initiative with active involvement from the industry.

**PETRONAS Stewardship:** Drive E&P industry in Malaysia to become a Regional Deepwater and Subsea Center.

**AREA OF FOCUS**
- Promote deepwater and subsea upstream service industry and technology growth to support Malaysia and region.
- Position key parties in PETRONAS group to optimize and harness opportunities from Malaysia deepwater.

**Encourage and steer pace of Malaysia upstream deepwater and subsea technology development.**

Deepwater PSC Operators  
Service Industry  
PETRONAS GROUP  

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Some key service companies have established bases in Malaysia, supporting plans for increasing execution of deepwater and subsea project work locally.

Supported by service companies based in Malaysia

- Aker
  - Kikeh (Subsea)
- Diamond Offshore
  - Kikeh (Development drilling)
- FMC
  - Kikeh (riser system – installation & maintenance)
  - Gumusut-Kakap (Subsea hardware)
- Germanischer Lloyd
  - Kikeh (quality assessment & control)
  - Gumusut-Kakap (quality assessment & control)
- INTEC
  - Kikeh (engineering services)
- JP Kenny
  - Kikeh (development engineering services)
  - Gumusut-Kakap (SIFOE)
- MMIC/ MMHE
  - Kikeh
  - Gumusut-Kakap
- Solus Oceaneering
  - Gumusut-Kakap (Umbilical)
- Schlumberger
  - Kikeh
- SBM
  - Kikeh (fabrication of Gravity Actuated Pipe system)
- Technip
  - Kikeh (pipeline, riser system & DTU)
  - Gumusut-Kakap (Umbilical installation)

Other service companies based in Malaysia with selected deepwater capabilities…..

- Cooper
- APL
- Wellstream

EPDW Task Force conducting industry mapping to identify potential local and foreign service companies (initial focus - floaters and subsea).

Some indication/information on Malaysian deepwater based servicing regional activities.
Potential benefits are apparent at different levels should Malaysia be positioned to capture the deepwater and subsea industry opportunities.

**SPECIFIC BENEFITS**
- **Capability Development** – in PETRONAS and Malaysia industry
- **Value Retention** – industry growth and value creation for Malaysia oil and gas industry
- **Synergy** – support PETRONAS Corporate Strategy

**ULTIMATE BENEFITS**
- **Time advantage** - expedite project turn-around
- **Cost advantage** – efficient execution of regional deepwater projects
- **Technology advantage** - rapid technology enhancement and solution development
Success of the center is dependent upon the contribution by key stakeholders

- Intensify deepwater exploration and development activities
- Maximise utilisation of subsea technology and services available in Malaysia
- Drive fit-for-purpose deepwater and subsea technology application

PETRONAS

- Drive the creation of the center
- Promote growth of DW and subsea resource base
- Encourage capability and capacity growth of service companies
- Encourage oil companies and service companies collaboration

DEEPWATER AND SUBSEA HUB

REGIONAL DEEPWATER & SUBSEA INDUSTRY CENTER

- Provide conducive investment climate for deepwater activities and subsea industry development
- Establish business and technical centre in Malaysia to support Asia Pacific
- Develop local deepwater and subsea expertise
- Form alliance among service companies

MALAYSIAN GOVERNMENT

SERVICE COMPANIES

DW OPERATORS
Deepwater and Subsea Regional Hub – Key challenges

Key Challenges

- Shortage of resources
- Investment risk
- Lack of expertise
- Dynamic nature condition
- Capable human capital
- Tight market and cost escalation
- Technology selection
- Cost effectiveness solution
Moving forward - Collaboration is crucial between key players

Global Capability Mindset

- To pursue in developing deepwater and subsea capabilities of local industry players
- Transition from domestic to global mindset

Engagement & Relationship-building

- Initiate further efforts to enhance cooperation between Deepwater and Subsea industry Key Players in supporting regional and global objectives
- Adopt more collaboration rather than competition among the region

Technology & Best Practices

- Promote new and efficient deepwater and subsea technologies and enhancing existing technologies for future practices
- Capture lesson learnt and best practices and share amongst E&P players
Thank You