GROWING DEEPWATER CAPABILITY

Aidan McKay
SE Asia Regional Context for Deepwater

1989-2009 – Small DW vs North Sea, USA GoM, W Africa or Brazil.
- Subsea tiebacks Malaysia, Brunei, Indonesia, mini-TLP & FPSOs.

Regional pipelines into deeper waters lagged Europe/USA/ W Africa
- Lack of demand for big gas transmission pipes or DW infrastructure.

Regional developments now focusing on deepwater & subsea activities:
- Malaysia - Kikeh, Gumust-Kapak, Malaki developments

SE Asia is under explored in DW & growing market for DW services
Independents & Supermajors

Independents have been successful provided they are nimble, take intelligent risks and focus on value.

In Deepwater in last 5-10 years we have seen this too:

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- Worldwide success in deepwater & subsea development
  - Application of innovative technology
  - Prudent risk management & mitigation
  - Leveraging off contracting community & non-operated
Best EP Technology replicated within 30 Months

Nakika 2004
Shell’s DW Technology Flagship

Shell/BP 50/50%
Water Depth: 6340 ft
Fields: 5200 - 7600 ft WD

6 small fields hooked up
(Ariel, Kepler, Herchel, E Anstey, Fourier, Couloumb)

Independence Hub 2007
Independents “Industry Solution”

5 Independents (Anadarko, KM, Spinnaker, Dominion, Devon)
Water depth: 8000 ft

7 small fields: Jubilee, Merganser, Atlas, Atlas N, San Jacinto, Spiderman, Vortex
Hess SE Asia Future

Hess SE Asia is a 90,000 boe/d scale business, vs 32,000 boe/d in 2005
• Development & production success in conventional EP business in Thailand, Indonesia & also Malaysia

In parallel, DW exploration campaign for big gas opportunities
• Obtaining a significant share of initial discoveries
• Assess new acreage very quickly, look to reduce Devt cycle times
• Build and improving our organisational capabilities
• Look for innovative technical and commercial solutions for value creation
• Remain flexible, fast & opportunistic

Hess execution capability (Drilling, Devts, Prodn, Tech) is building

A diverse portfolio, lots of growth opportunities to double production
Conger Subsea Devt ~2000-15 Kpsi trees

- First commercial 15,000 psi sub-sea tree, manifold & flowlines
- ~1,500 ft water / Peak Prodn Rates ~120 MMSCFD & 28,000 bopd

- 20-22,000’ MD WELLS
- HIGH PRESSURES
- HIGH TEMPERATURES
- HIGH WELL RATES
- VOLATILE OIL RESERVOIR SYSTEM
Equatorial Guinea 2005/6 - Okume Complex

- Okume/Ebano TLP
- Oveng TLP
- 15 Subsea Production Wells / 9 Water Injection Wells / Flowlines / Power and Control Umbilicals
- Framo Subsea multiphase pumps
- Fixed platforms, tension leg platforms
- Floating storage and offloading facilities

- Central processing facility (CPF)
- 300 MMBOE SCALE
- Net production ~65 MBOED

- Hydrocarbons
- Gas Lift
- Water Injection
- Gas Injection
- Processed Oil

Satellite 1
Satellite 2
Satellite 3
Sendje Ceiba FPSO
Elon

Ceiba
Shenzi Field BHP Operated - 2008

- Hess 28% W.I.
- Proved & Prob. Resources: 145 MMBOE
- Large deepwater production host TLP
  - 15,500 st payload capacity
  - 43,500 st hull displacement
  - ~4,300 feet water
- Oil & gas production end Q1 2009
- Currently ramping up production
- ~25 MBOED net peak in 2010
Shenzi – BHP Operated

Extensive subsea wells tieback architecture:
- 3 drill centers, expandable to 5
- 7 initial + 8 future production wells
- Dual piggable production flowlines
- 6 future water injection wells and facilities
- 10 steel catenary risers (SCRs)
- Multiple hydraulic control and chemical umbilicals
US Gulf Of Mexico – Pony Discovery

- Hess 100% W.I.
- Water Depth: 3,500 ft
- Drilling confirmed 200+ MMBOE net resource
- Currently evaluating development options
- Further exploration upside
Pony – 2010+ Devt One Concept Considered

1-2 Drill Centers – 7P Wells

TLP
Depth = 3500'

Gas Export

Discovery P/L

Gas Lift
Production

Umbilical

Water Injection

Oil Export

12”

6”

3 Remote WI Wells

I-N1

I-S4

I-C1

I-S1

I-XX

Well name

Drilling sequence

Umbilical

10”

12”

6”

4”

6”

6”
Australia Exploration Program

North West Shelf, Australia

WA-390-P
- Hess 100% W.I., operator
- Initial four well program resulted in three discoveries
- 3 discoveries Glencoe, Briseis & Nimblefoot discoveries
- Second drilling program of 10 wells to commence in 2H 09

WA-404-P
- Hess 50% W.I.
- Martell discovery encountered 360 feet gross gas column
- Drilling to resume in 1Q10

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Glencoe-1
Briseis-1
Nimblefoot-1
Semai V – Papua Deepwater Indonesia

PSC awarded end 2008, 2D seismic acquired, 3 expln wells by end 2011

Water Depth Range
300 to 6500 feet

Semai V Block

Wiriagar/Vorwata Fields
20 Tcf (2P)

Semai V Location
SE Asia is an under-explored & growing market for DW services (esp. gas)

Large number of DW developments & ongoing DW exploration activities in region, some will be successful.

PSC environment (contractors to host govts), remote locations, little infrastructure support, vs GoM/N Sea/Africa

Hess growing strongly in region building capabilities in DW
- Technocrats, nimble & a good company to work with.
- We have an exciting future in the region.
Growing Deepwater Experience