“The Role & Importance of Subsea”

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The Role & Importance of Subsea

• CONTEXT
  − Supply/Demand and Planned Projections (UK)
  − BP’s Subsea perspective N Sea and Global

• WHAT DOES THIS MEAN For SUBSEA

• THE BIG CHALLENGES

• THE OPPORTUNITIES

• SUMMARY
Figure 14: UK Gas Production vs. Consumption 1970 – 2020

KEY POINTS
• Have been importing gas since 2003
• Large demand supply gap and getting bigger
KEY POINTS

- North Sea in decline
- Forecast demand exceeds supply 2009 onwards
Three Ages of the North Sea

- **Giant Fields**
- **90’s Growth: CRINE & Gas Market Liberalisation**
- **Increasing Basin Maturity**

**Sources:**
- History: Wood Mackenzie
- Future: BP Estimates

*Will the future really look like this?*
BP - The North Sea & Subsea

- Safety
- People
- Ops Efficiency
- Hopper

Sustain a material, high quality business

Production and Reserves

4.2 bn Barrels

Capex circa $1 bn p.a. 2011

Cash Costs up to $1.5 bn p.a.
BP - The North Sea & Subsea

Sustain a material, high quality business

Production and Reserves

4.2 bn Barrels

Capex circa $1 bn p.a. Cash Costs up to $1.5 bn p.a.

The Subsea Business Now:

- Mature subsea basin with little historical standardisation
- Current infrastructure
  - 130+ Subsea Wells
  - 3,000 Kms Pipelines + Umbilicals
- Mainly shallow-diveable, except West of Shetlands (DPU)
- 70% BP’s worldwide wellstock and + 50% subsea production
- Subsea wells currently provide ~20% BP’s North Sea NET production....
BP - The North Sea & Subsea

But - by 2011:

- Subsea wellstock will increase by ~ +50%
- Between 2006 and 2011 subsea wells provide +1/3 of the reserve additions
- Build rate > +10 subsea wells/year
- New Projects to provide +50% of 2011 NS production
- Subsea wells to provide +32% of new production
- Subsea Base % + new means that we expect to be increasing to +30%

...Subsea pretty important to BP’s North Sea...
BP Subsea Projects For North Sea

- A large complex technically challenging portfolio: Spend rate ave +$500 m pa
- Large number of small projects
- 3x Major Projects

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Provisional Schedule

Farragon – yesterday…

Subsea Pumping – tomorrow..
BP’s Global Perspective:
Deepwater & Subsea 2004 - 2010

Production Growth: - (>400metres)
•BP is opening out 4 new Subsea Provinces – GoM; Angola; Egypt and Azerbajahnn
•We will double our subsea wellstock
•Majority of growth will come from DW; “Wet Tree” SUBSEA production systems tied back to surface will provide > 75% of that growth
•Subsea/Deepwater developments will represent ~ 35% of BP’s production by 2010

Today
153 wells / 350mboed

5 Years
> 320 wells / 1,500mboed
future projects | Deepwater/Subsea

2006 - 2007
- Dalia
- Atlantis
- Gl. Antonio
- Kizomba C Ph 1
- Rosa
- Kizomba A Ph 2
- Harding Gas
- Skary

2008 - 2011
- Atlantis North
- Puma
- Tubular Bells
- Shenzi
- Great White
- Vietnam Ph 2
- Kizomba C Ph 2
- Lirio Cravo
- Kizomba B Ph 2
- ACG Ph 3

2012+
- Block 18 West
- Block 31 North
- Block 17 Miocene
- Shah Deniz Phase 2
- Shah Deniz Phase 3
- Das Bump
- Angola LNG
- Block 31 South
- Kizomba D
- Sakhalin V
- Mad Dog SW Ridge

Subsea Well numbers increase from 150 to over 300
GLOBAL
- Large Demand increase (China/India) : IEA predicts that by 2015 Oil +15-20% & Gas +40%
- Supply & Demand precariously balanced – little/no spare capacity
- Price expected to stay high for medium term

UK
- Gas Importer already – increasing deficit; Oil Importer; 2009 onwards
- UKOOA/DTI by 2020 = 500 mboed BUT 1.5-2.0 possible - given the right conditions & response
- Produced 34 Bn BOE / Potential 20-28 Bn BOE’s remaining in UKCS – large % to go!

- UKCS Brownfields Challenge (PILOT) :
  1. To implement actions which will increase the current rate at which reserves are developed over the next 10 years and beyond to help realise the PILOT vision of 3mmboed by 2010
  2. A vital UKCS is maintained as the UK is universally recognised as a world centre for the global business
So what does this add up to for Subsea?

Oil & Gas already has an existing high dependency + Dramatic demand
Increase Expected:

- **North Sea**: 2005 – 43% of production from subsea wells
- **Mature Basins**: eg The North Sea is in graceful decline BUT read that as expansion for Subsea (Hungry Hubs: West of Shetland analogy)
- **New Provinces**: RoW is now opening up DW Basins where Subsea often only means

- **In Summary - A lot is expected of the Subsea business for the future...**

  There’s a lot to play for

  AND “close to home” it sits at the centre of the N Sea Brownfield Challenge

*Why can’t the subsea business parallel the PILOT (Brownfields) Challenge and be recognised from the UK as the Subsea Centre of Expertise – globally?*
The Big Challenges on the Subsea Business

BUT – there are some serious structural issues to urgently fix:

1. **People: Chronic Skills shortages**
   - A real risk to DELIVERY.
   - Industry has to fix how to bring in a new supply of Subsea Engineers.
   - *How do we make subsea industry look to be more attractive?***

2. **Effective long range forecasting of demand to get the longer lead decisions onto a more strategic footing:**

3. **Greater levels of Industry Collaboration** – particularly x-Operators

4. **Technology into delivery faster** – Project sanction windows too short

5. **Reliability** a large untapped prize in the subsea world

6. **How to lift the awareness of the importance of Subsea…**

*There has been a steady HIDDEN increase of dependency within O&G*
The Opportunities Ahead for Subsea

• Create a Centre of Excellence in Subsea based here in the North Sea
  - A quality place, world’s largest subsea infrastructure, great track record of delivery
  - A mature Supply Chain across the UK
  - Provided 3 decades of solutions to problems
  - Politically stable and it’s on our back-door
  - Big Infrastructure to test new Technology developments at minimal risk (+ Technology track record)
  - Recruitment of People much easier than RoW
  - Safety – pushing boundaries further

• We now have access point to the whole Subsea supply chain via Subsea UK. It is the key, to more strategic leadership, with increased levels of support. We are only just starting to use it effectively
This **will** be... the future for new developments.

**The question is** how quickly can we get there ??

“**Deepwater and Subsea Excellence is a Journey and we are about to enter the most Challenging Phase.!”**