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The future of North Sea oil and gas in the UKCS

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Current state of the UKCS?

- Increasing number of players and smaller in scale
- Increasingly difficult to access with stranded fields
- High costs of production in context of falling oil prices
- Aging assets that will require decommissioning
- Limited major new finds and exploration
- Supports around 300,000 jobs across the UK

A small player in a global oil and gas market?

North Sea 2013 Production[1]

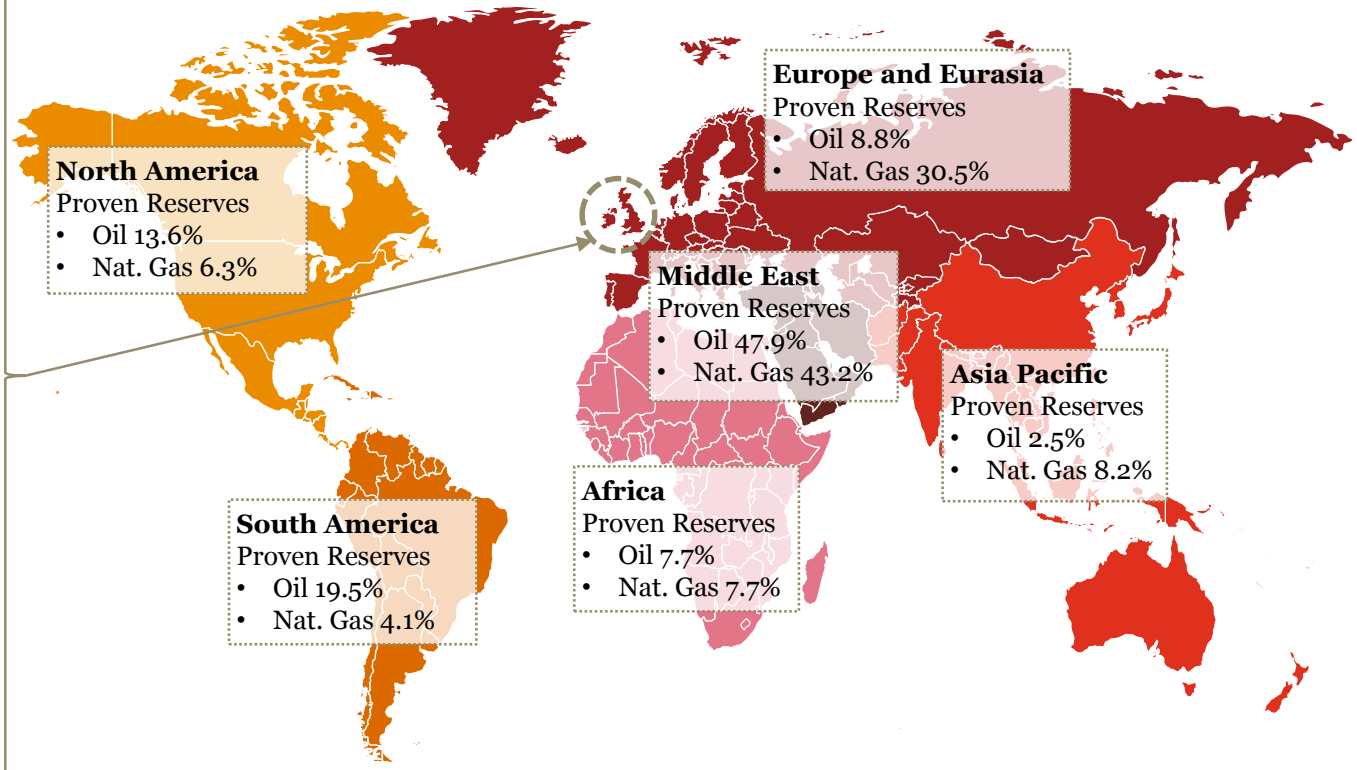
UK
- Natural Gas 73.11 BCM
  - **2.2%**
- Oil 866 KBD
  - **1.0%**

Norway
- Natural Gas 4.42 BCM
  - **0.1%**
- Oil 1,837 KBD
  - **2.1%**

North Sea 2013 Proven reserves[1]

UK
- Natural Gas 0.24 TCM
  - **0.1%**
- Oil 866 KBD
  - **1.0%**

Norway
- Natural Gas 2.05 TCM
  - **1.1%**
- Oil 8.68 BB
  - **0.5%**



[1]*Source: BP Statistical Review 2014*

Evaluating risk and return

UKCS	Frontier regions
	E.g. Arctic, East Africa, Offshore Cyprus, Argentina, China, Madagascar etc.
Pros	**Pros**
✓ Existing infrastructure – Tie back potential etc. ✓ Access to local skills and talent ✓ Technology innovation ✓ More readily available seismic data ✓ Experienced supply base ✓ Proven exploration drilling track record • Mature environment • Marginal fields/MER • Harsh environment/deepwater • Decommissioning ✓ New industry regulator – Embryonic stage	✓ High return potential ✓ Potential large finds ✓ Diversification of portfolio ✓ Lower cost ✓ Less competition ✓ Early market entry ✓ Less stringent HSE – A positive or negative?! ✓ Smaller local talent pool ✓ PSC Economics ✓ Lower valuations? ✓ More fiscally stable than North Sea?
Cons	**Cons**
✗ Smaller fields/depleting reservoirs ✗ Uneconomic for larger operators ✗ Deep water/harsh environment ✗ Seasonality and weather impact ✗ Higher cost base – People, supply chain etc. ✗ Tax and fiscal complexity and uncertainty (UK over Norway) ✗ Political uncertainty ✗ New industry regulator – Embryonic stage	✗ Higher risk – Potentially 'uncharted' territories ✗ Less drilling track record in certain areas ✗ Lack of quality infrastructure ✗ Geopolitical instability/security issues ✗ Ultra deep/Arctic/unconventional challenges ✗ High equipment and technology requirements – Logistics ✗ PSC economics ✗ Environmental impact & PR

Is the North Sea still a valid investment proposition?

Fiscal and regulatory certainty and stability is critical

Fiscal

- Critical to focus on exploration and development to attract finance and ensure the sector is competitive
- Marginal tax rate is now 80% for fields where development consent happened before 1993
- Rate reduction announced to the supplementary charge announced in the 2014 budget as well as other incentives – appears to be increasing willingness to discuss the necessary measures
- Recent years though have seen new taxes that have impacted on the sector e.g. NI on off-shore employment

Regulatory

- New Oil & Gas Authority will be established as an independent entity on 1st April under the new CEO
- Remit following the Wood review to Maximise Economic Recovery across the UKCS
- Key requirement is a cultural shift to enable collaboration and the sharing of infrastructure across the sector
- Also focus on driving efficiency through new contractual models and the sharing of information

Companies must take responsibility for driving efficiency

- Operational performance is driven by a complex, connected system
- Companies need to consider all aspects such as:
  - Operations management
  - Functional interfaces
  - Integrated planning
  - Work execution
  - Frontline leadership
  - Performance culture
  - Contractor and supplier management
  - Asset integrity and maintenance
- Consolidation appears likely to achieve operational synergies
- Avoid excessive headcount reduction and loss of key talent
- Collaborative approach is required to negotiations in context of desire to maximise overall recovery

Advanced techniques and innovation may unlock the North Sea potential

Unlocking the potential in the North Sea

- **Optimise production** in challenging fields
- **Continuous innovation** of new technology – Safe, cost efficient, environmentally friendly
- Bring new and existing fields into a **commercial and economic position**

Hydraulic fracturing

- Making abandoned fields economic
- Multi well drilling campaigns
- The new norm?

Artificial lift and other EOR methods

- Essential to maximising returns
- Continuous technology development
- Potential for production gains significant

Challenging convention

- Clustering, knowledge and cost sharing
- Innovation and collaboration go hand in hand
- Learning from other industries

Potential continues to exist, but changes are needed

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