Revitalising Exploration – An OGA Perspective

Seismic 2017 Conference

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Framework & approach

Role of the OGA

- Effective stewardship
- Encouraging collaboration
- Investment and action

Striking the right balance

Sanctions

Rewards

Asset Stewardship

Strategies & Delivery Plans

Area Plans

OGA is a progressive regulator working closely with government & industry
UKCS resource progression

- 2016 changes
  - 0.21 Billion boe added from new discoveries in 2016
  - 0.08 Billion boe moved into Sanctioned from project approvals in 2016
  - 0.6 Produced in 2016 with 73% production efficiency

Range of total potential resources ca. 10 to 20bn boe

- 2-6-9 yet to find
- 4.8 unsanctioned
- 5.7 sanctioned
- 43.5 produced to date

OGA assessment of potential resource 10 – 20bnboe
Revitalizing exploration

- Seismic surveys and reprocessing in under-explored areas
- Release of reports and data
- New approach to licensing
- Increased technical rigour

Integrated OGA approach to revitalizing exploration in UKCS
Exploration & appraisal activity

2016 Discovery Rate better than 50% with <$2/bbl Exploration Finding Cost

Source: OGA
Unlocking undeveloped discoveries

- Producing fields
- Ongoing developments
- Currently locked discoveries

2.4 bnboe

Over 350 undeveloped discoveries and a key focus area of 30th Round

Source: OGA
Government support

2015 & 2016 Seismic & Data Programs

- 80,000 km new & reprocessed quality 2D seismic
- Issue geotechnical reports and maps

Competition to define potential

- £1m prize money shared between 2015 & 2016

Supporting Academia

- £750,000 for 3 post-doctoral appointments

New world-class visualization facility

- £700,000 funding for Lyell Centre in Edinburgh

Government has provided £40m funding in last two years
Government seismic data

- Create a low-cost regional grid across the UKCS in key prospective areas
- Explore the use of modern processing algorithms for better imaging and imaging deeper
- Reprocessed seismic complementary to new data acquired in 2015 and 2016 especially in areas that are environmentally sensitive or difficult to access
- Provide ties to regional well control over 200 conditioned wells
- Seek access to both multi-client and proprietary seismic data

New & reprocessed seismic data provides improved structural & stratigraphic understanding
New licencing approach

Variable initial term for exploration

- The Initial term may comprise up to three phases:
  - Phase A: Geotechnical Studies & Geophysical Data Reprocessing
  - Phase B: New Seismic & other Geophysical Data
  - Phase C: For Drilling Exploration & Appraisal
- Maximum 4 years any one phase & must include Phase C

Flexible approach to licensing allowing fit-for-purpose work programmes to be applied
## 10 Asset Stewardship Expectations

<table>
<thead>
<tr>
<th>Expectation</th>
<th>Details</th>
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<tbody>
<tr>
<td>JV Hub Strategy</td>
<td>Link to supporting obligations of MER UK Strategy and/or Energy Act</td>
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<tr>
<td>E&amp;A Work Programme</td>
<td>Set out minimum expectations of what good looks like</td>
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<tr>
<td>Optimum use of Subsurface Data</td>
<td>Expectations have a one page overview &amp; short guidance</td>
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<tr>
<td>Licence Activity, Decision Points &amp; Milestones</td>
<td>Issued in 4Q 2016 with implementation during 2017</td>
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<td>Robust Project Delivery</td>
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<td>Production Optimisation</td>
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<td>Information Management</td>
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<td>Technology Plan</td>
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<td>Collaboration</td>
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<td>Planning for Decommissioning</td>
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*Asset Stewardship Expectations co-authored with industry*
29th Licensing Round

- Applications stimulated by 2015/16 Government Funded Seismic Data
- Offers of award for 25 licences across 111 blocks or part-blocks to 17 companies
- Super-Majors and New Basin Entrants to UKCS
- Firm Well Commitments

Keen interest in first frontier exploration round for two decades
OGA will issue a 5 year licensing plan in 3Q 2017

Timelines are indicative, and final schedule is subject to variation.
Bask development confirmed.

- Broadband acquired and processed by WesternGeco.
- New acquisition broadband data was also acquired by GeoPartners/DownUnder Geosolutions and merged into the OGA-acquired dataset.
- Merge is a butt merge at full fold with polarity flip, no static adjustments needed.
East Shetland Platform

- 2016 PGS acquired & processed seismic
- A number of 2D lines have been interpreted and merged with PGS 3D extracted lines in order to tie back to the North Viking Graben
- Data will include well tied geoscience interpretations as well as horizons, potential source rocks and interpreted faults

New 2D data shows excellent deep imaging not seen on legacy data
Gravity & Magnetics

- Frogtech East Shetland Platform interpretation
  - Tectonostratigraphic history & depth to Moho
  - Inferred basement heat flow
- Getech Southern Britain interpretation
  - Gravity and magnetics derivatives
  - Interpretations of crustal & sediment thickness
  - Stretching factor ($\beta$)

OGA funded studies as part of 21 CXRM, seeking additional industry contribution
Key messages

• OGA is undertaking an integrated approach to revitalizing exploration in UKCS

• Availability and use of quality data is key

• Seismic data and technology crucial to success

• Industry needs to contribute more to the exploration agenda through seismic group shoots & more sharing