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Authority

APPEX 2018

The Future of the UK North Sea and its remaining E&P Potential

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Head of Exploration & New Ventures

27th February 2018

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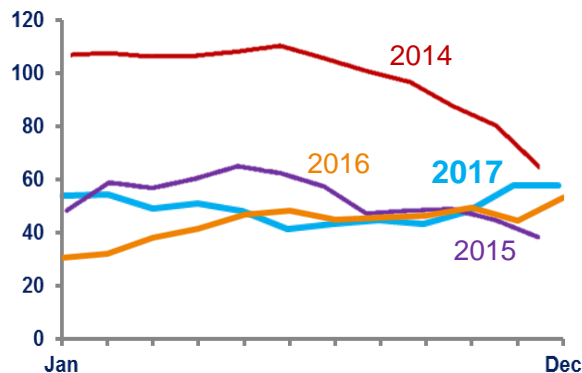
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UKCS Context



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Oil price



Government response

2014

Wood Review
Scotland's Expert Commission
HMT Driving Investment

2015

£1.3bn Fiscal Package
£20m for Seismic

2016

SCT & PRT Reduced
£20m for Seismic
£180m for OGTC

2017

£5m OGA Data & Studies
Decom Tax Transfer

Industry outcomes

2017
2016
2015
2014



E&A wells



22

26

31



Production (MMboepd)



1.65

1.6

1.4



Production efficiency (%)



73

71

65



Unit operating costs (\$)



16

21

30

UKCS Fiscally Competitive



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UK Offers a highly attractive fiscal regime on a full-cycle basis



£40m for new geophysical surveys & £5m Regional Studies



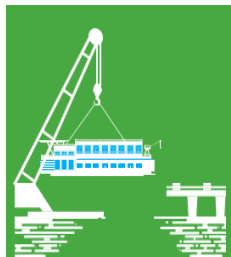
Introduction of new basin-wide Investment Allowance



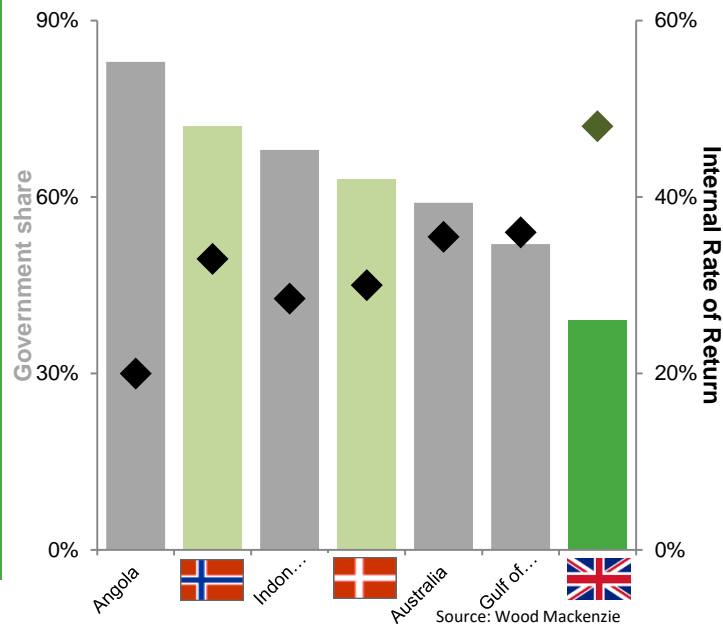
Supplementary Charge reduced from 32% to 10%



Petroleum Revenue Tax permanently reduced from 50% to 0%



Autumn 2017 Budget announcement on Transferrable Tax Histories, PRT Deduction for Decommissioning Liabilities



HM Treasury

Driving investment:

a plan to reform the oil and gas fiscal regime

December 2014

Driving Investment Plan Commits to Stable, Continuously Improving Fiscal Terms

OGA Exploration Plan



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Release of 2016 Gov-Funded Seismic & Additional Data	Q4 2017
Data Reporting/Retention Consultation	Q4 2017
Complete National Data Repository Levy Consultation	Q1 2018
Publish Regional Studies and Play Element Maps	Q1 2018
Announce Awards from 30 th Licensing Round	Q2 2018
Launch 31 st Round	mid-2018
Revise Yet-to-Find Estimates in Mature and Frontier Areas	Q4 2018

OGA delivering to agenda set out in 2017 Activity Plan

E&A Stewardship Expectations



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E&A Work Programme

- Annual E&A work programme
- Resource evaluations
- pre, syn & post drill evaluations & weekly drilling reports
- OGA involvement prior to investment decisions



Subsurface Data

- Common JV data sets
- Evaluation of best available data, technologies and tools
- Focus on quality geophysical data sets and workflows



Licence Activity

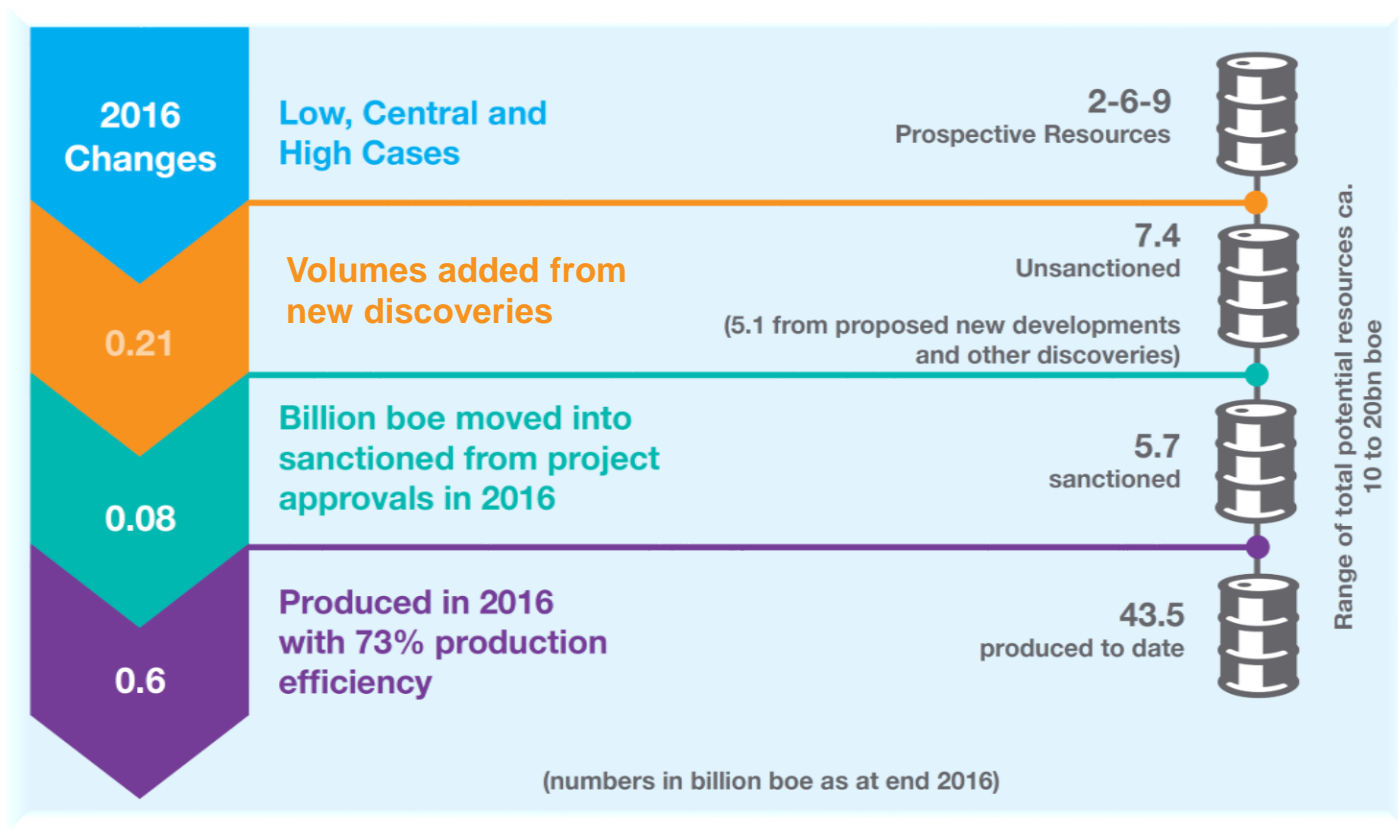
- Executed JOA 6 months from licence award
- Notify OGA of licence decisions in good time
- OGA notified of farm-out or divestment prior to activity commencing

Co-authored with industry, outline “good practice”, need to be followed

Reserves



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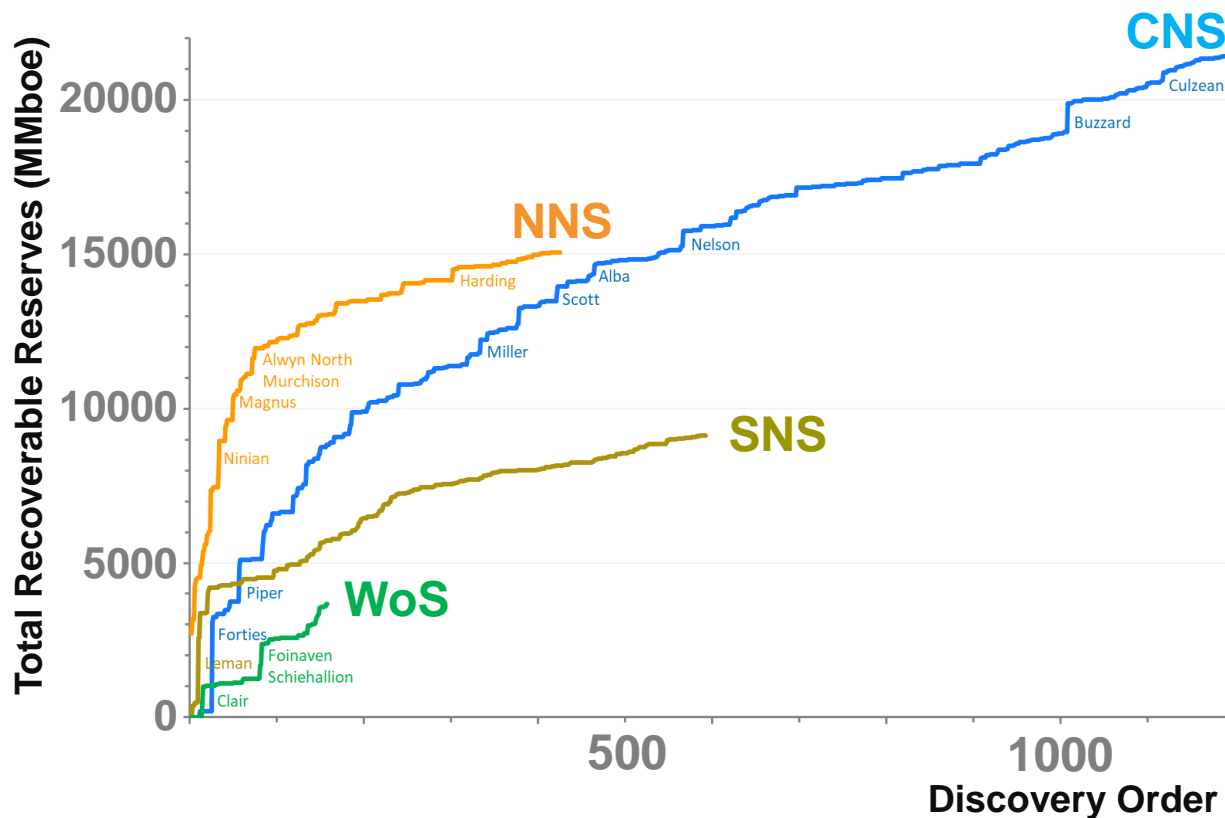


UK Oil and Gas Reserves and Resources Report published 31st October 2017

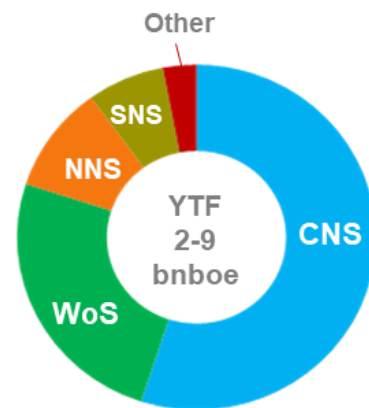
Yet-to-Find Potential



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- In consultation with Exploration Task Force, OGA has revised the UKCS Yet-to-Find Methodology
- Prospect Inventory Clean-up
- Extended to 'Unmapped' Yet-to-Find

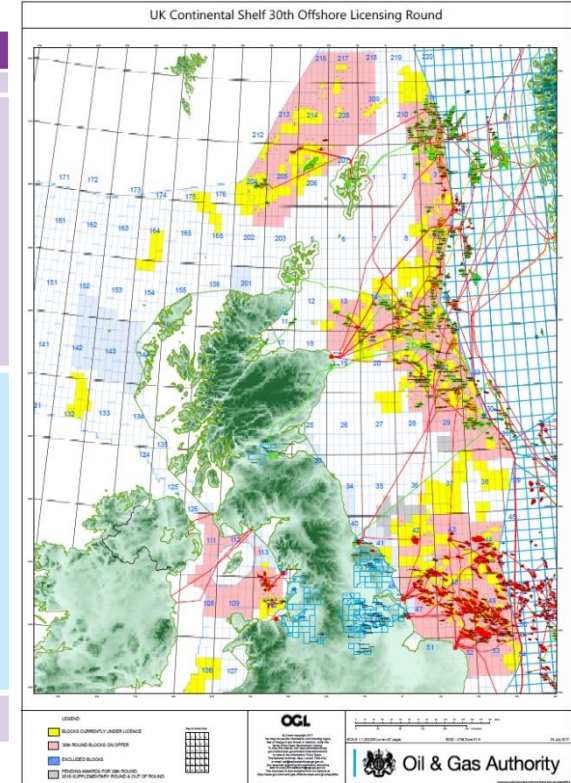
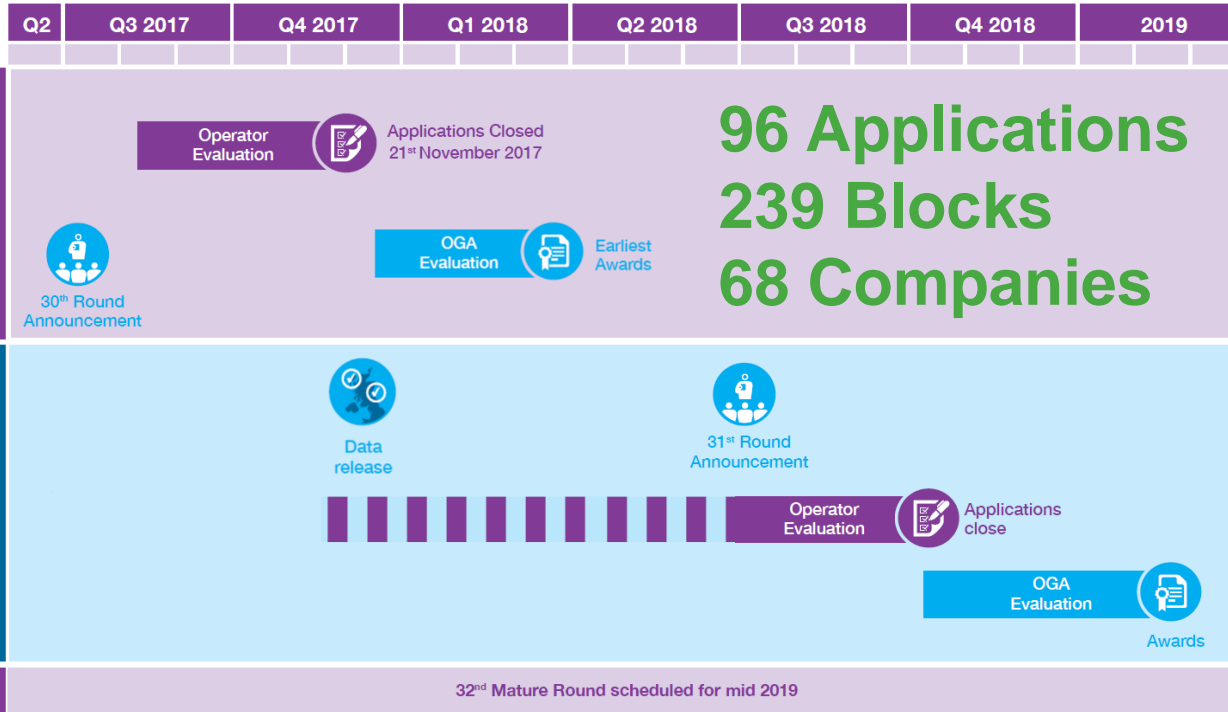


YTF Range 2-6-9 billion boe, OGA update 4Q 2018

2017/18 Offshore Licensing Rounds



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31st Offshore Round will open in mid-2018 covering Frontier Areas

Licence Round Storyboard



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2016 to mid-2017

Innovate Licences

Undeveloped Discovery Packs

CNS Regional Maps

25th July 2017

**Announcement of the 30th
Offshore Licensing Round**

22nd August 2017

30th Round Technology Event with OGTC

21st November 2017

**30th Round
Closed**

Q2 2018

**30th Round
Licence
Awards**

Until Mid-March 2018

**Licence Application
Assessments
(OGA/BEIS/HSE)**

27th November 2017

**Release of 2016 Seismic
Data & SNS Regional Maps**

mid-2018

31st Round Launch

Ongoing

**OGA Management of
Exploration Portfolio**

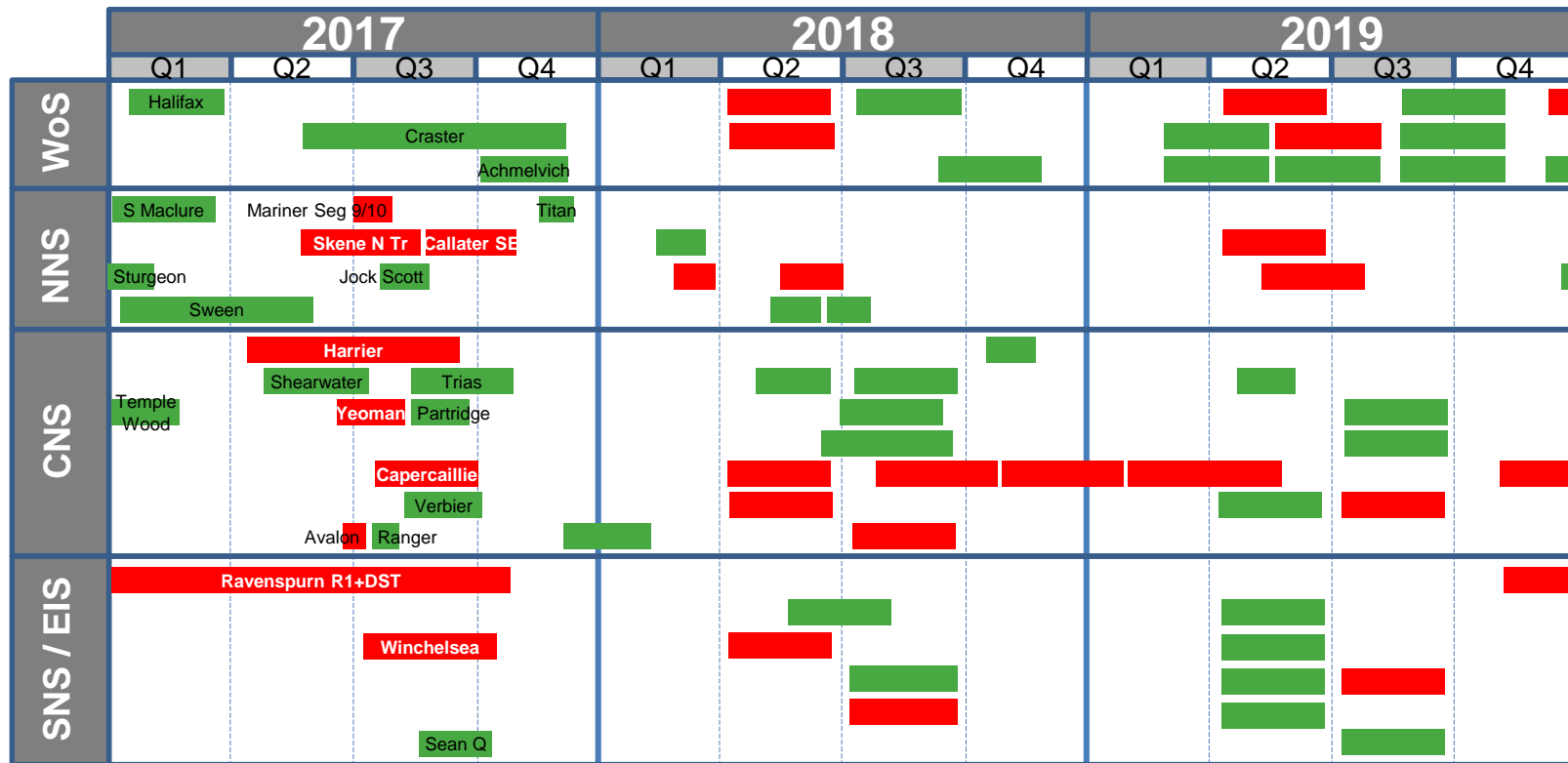
end-2018

Revised Yet-to-Find Estimate

OGA encouraging industry to pick up pace of exploration activity



E&A Well Activity



Wells Spudded

12 E, 8 A

13 E, 11 A

17 E, 10 A

OGA working with operators to ensure quality well activity is undertaken

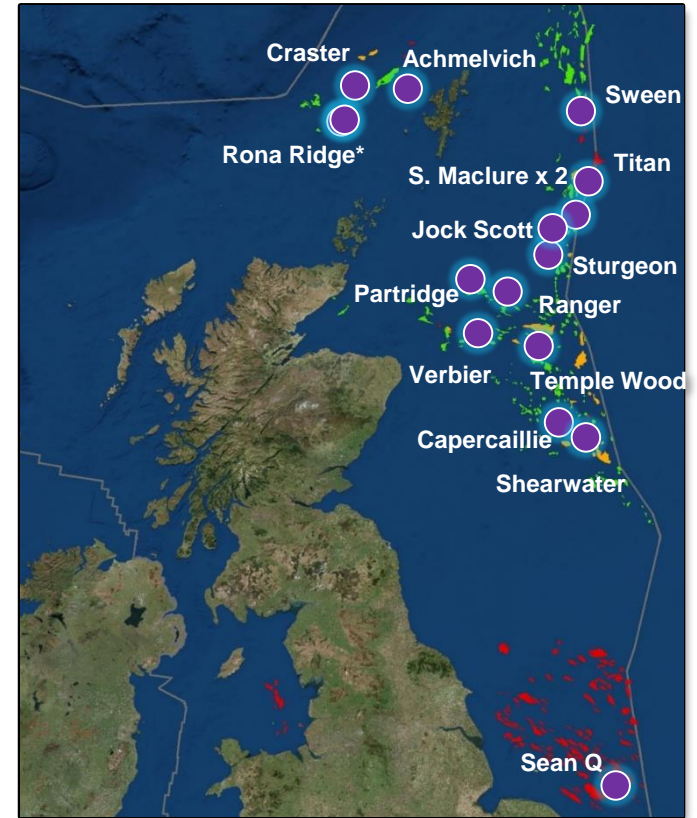
2017 Exploration Drilling

Provisional Results – so far...

- To date **16** wells concluded at an average well cost of **£21.5 mm** – halved since 2014
- **172 MMboe** potentially commercial recoverable resources in 7 discoveries
- **38%** commercial, **44%** technical success rate
- Finding cost **\$2.5/boe @ \$/£ 1.25**



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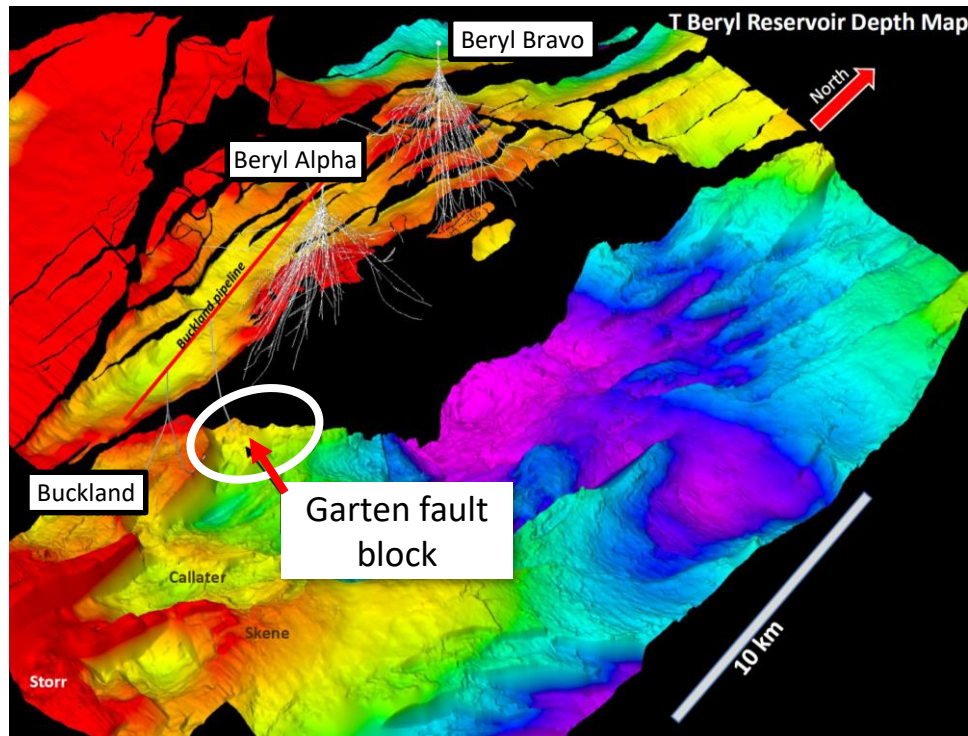
* Rona Ridge under evaluation

2017 costs and commerciality show significant improvement

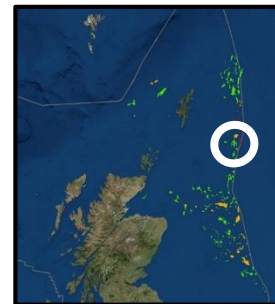
Near Field Exploration 2018 – Garten



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- **Apache JV** has successfully unlocked multiple discoveries around Beryl with broadband seismic
- Garten is downthrown block north of Buckland
- Fast-track development via Buckland infrastructure if successful



OGA supporting fast-track developments

Free Subsurface Data



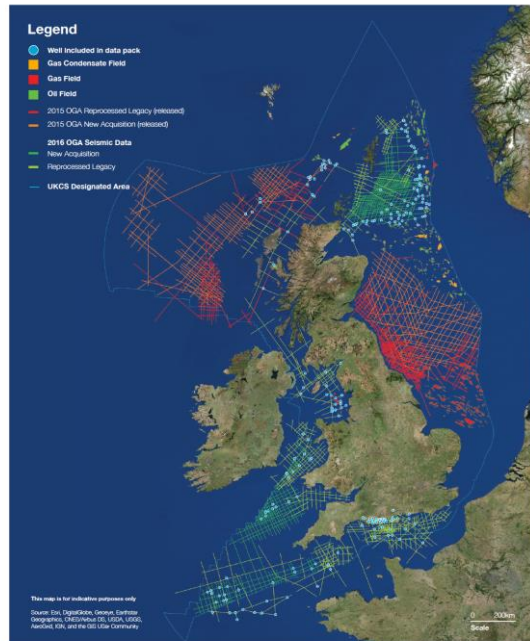
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Free Subsurface Data

31st Offshore Licensing Round (2018)



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Revitalising Exploration

www.ogauthority.co.uk

Free Subsurface Data

New, openly-available seismic and well data packages on the East Shetland Platform and South & West of Britain in support of the UK's 31st Offshore Licensing Round (due to open mid-2018).

These Government-Funded data packages will be delivered as workstation-ready products, as well as industry standard formats, and include:

- Processed seismic data, pre-stack time migrated (full offset stack and angle stacks)
- New 2D broadband acquisition (approx. 19,000 km) from South West Britain (WesternGeo) and the East Shetland Platform (PGS)
- Reprocessed legacy 2D seismic data (approx. 23,000 km) from North West UK, South West Approaches, East Irish Sea, Celtic Sea, Cardigan Bay, Morecambe Bay, Bristol Channel and English Channel
- Seismic acquisition and processing reports
- Database of released well data including joined wireline logs, checkshots and deviation data
- Synthetic well ties
- Gravity and magnetic data
- All data (including field data) available to order on media – handling and media charges apply

To download the data including shapefiles, visit CDA's website:

www.ukoilandgasdata.com

oga.correspondence@ogauthority.co.uk

Regional Reports

The OGA is also openly releasing a number of geological reports as part of the 21st Century Exploration Roadmap (21CXR – Phase 1). These studies were wholly-funded by the OGA to investigate the key subsurface uncertainties in the SW Approaches and East Shetland Platform areas.

East Shetland Platform Studies

Frogtech & IGI

- Evaluation of the structural evolution of the East Shetland Platform area primarily using potential fields data (also integrating other available data sets)
- Assessment of source rock potential using geochemical methods (incl. compilation & interpretation of available raw geochemical data, collection of new geochemical samples, compilation & interpretation of relevant seep data)

SW Approaches Studies

Geotech & BGS

- Compilation of processed gravity & magnetic potential fields data across the SW Approaches & Western Europe
- Comprehensive literature review of the late- and post-Variscan basins of Western Europe (specifically focused on source rock potential of the Late Carboniferous to Lower Permian intervals)

Reports and supplementary data are available via:

<http://data-ogauthority.opendata.arcgis.com>



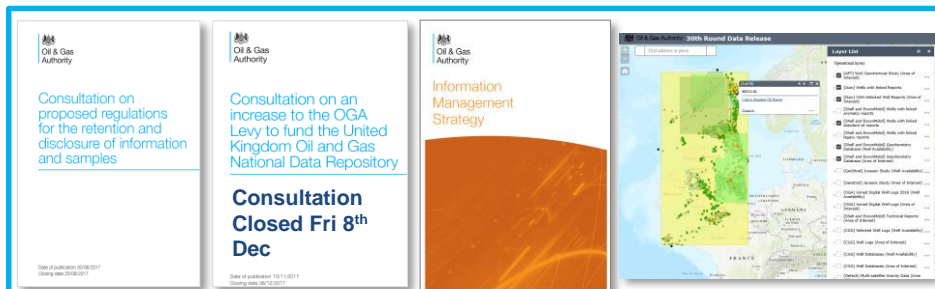
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Further Information Available on OGA Website

Data Reporting and Release



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Open Data Site

- 30,000 downloads a month

Interactive Maps & OGA GIS server

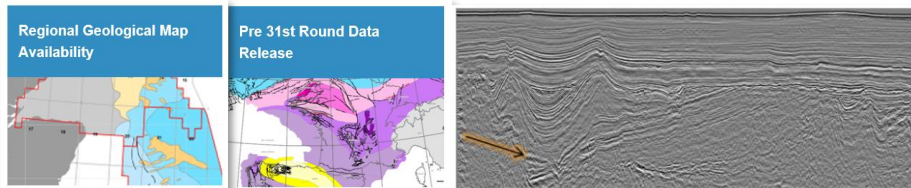
- Most popular OGA website pages

Undeveloped Discoveries

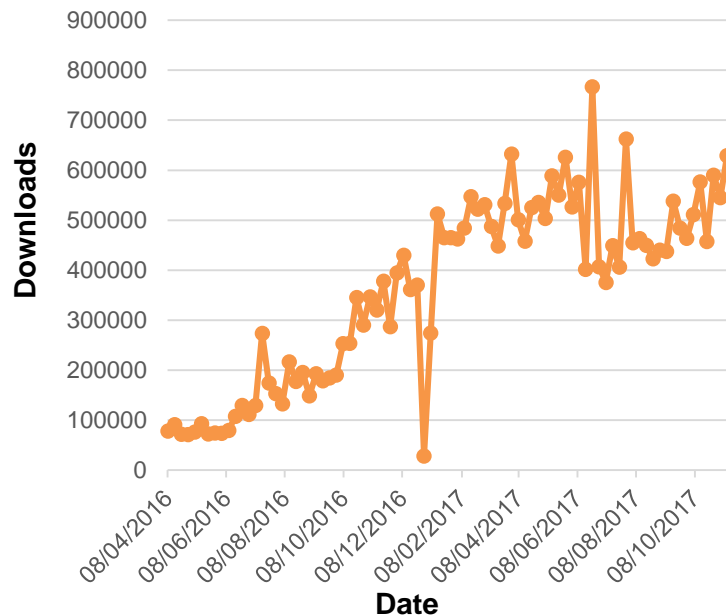
- 7000+ downloads via CDA

2015 & 2016 OGA seismic

- > 6500 data package downloads via CDA



The appetite for data published by the OGA is high and increasing



The OGA is working towards an Open NDR with modern, cloud-based access

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2018 onwards

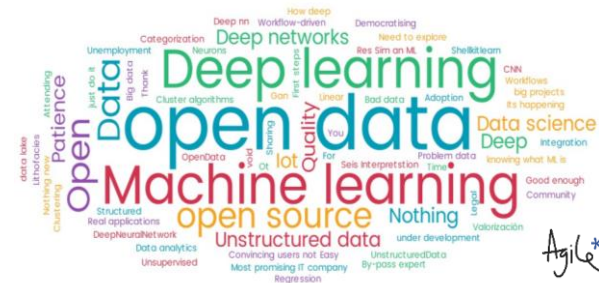
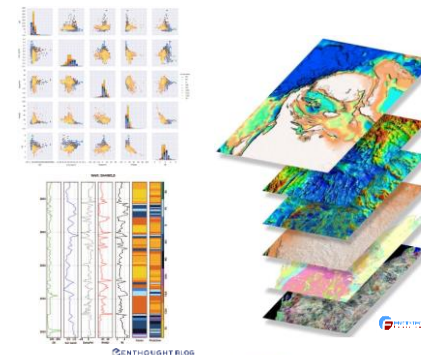
21CXRM

Phase 1

Phase 2

Holistic UKCS Project

Data & Technology Focus



Agile*

Key Messages



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OGA is supporting industry activity across UK

UKCS continues to deliver commercial volumes through E&A

E&A successes delivered across a range of basins and plays

Great remaining E&A potential across UKCS, offering attractive value

OGA, industry and government need to continue to work together