

Collaborating at Scale

Can you unlock MER at a sub-basin level through industry collaboration?

Outer Moray Firth Special Interest Group

Presenting: Paul Lindop – 1st Subsurface

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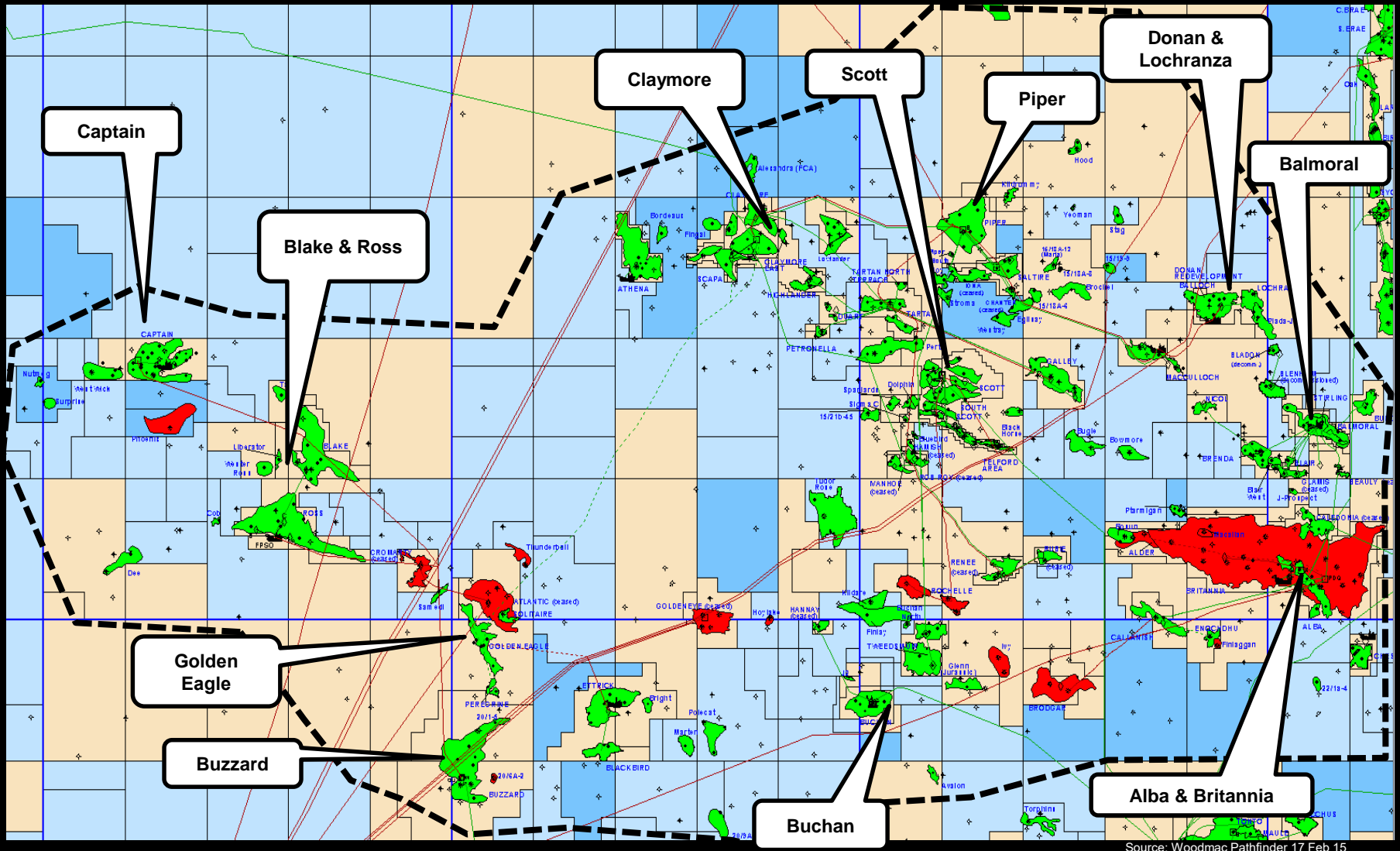


DEVEX 2018

9th May 2018

AECC, Aberdeen

Outer Moray Firth Area – Area of Interest

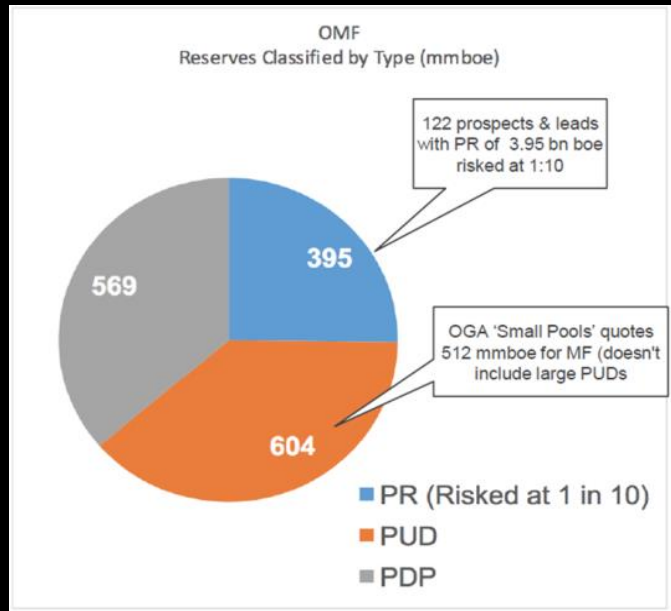
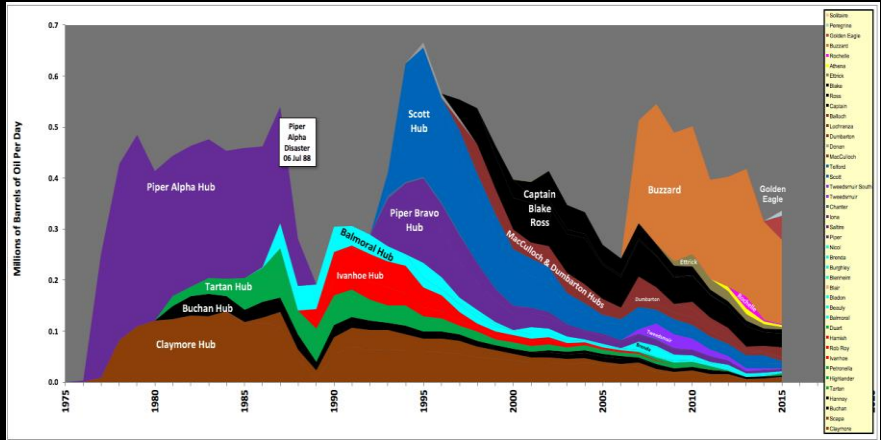


Source: Woodmac Pathfinder 17 Feb 15

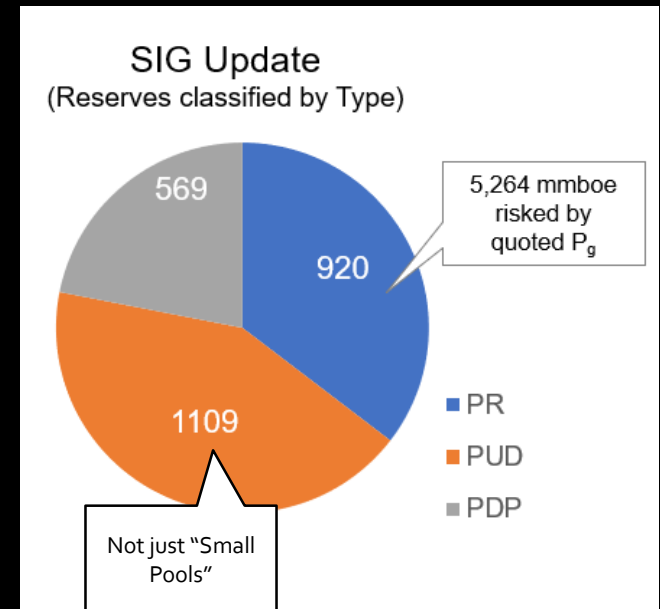
The OMF – Potential for new production

What the data was telling us:

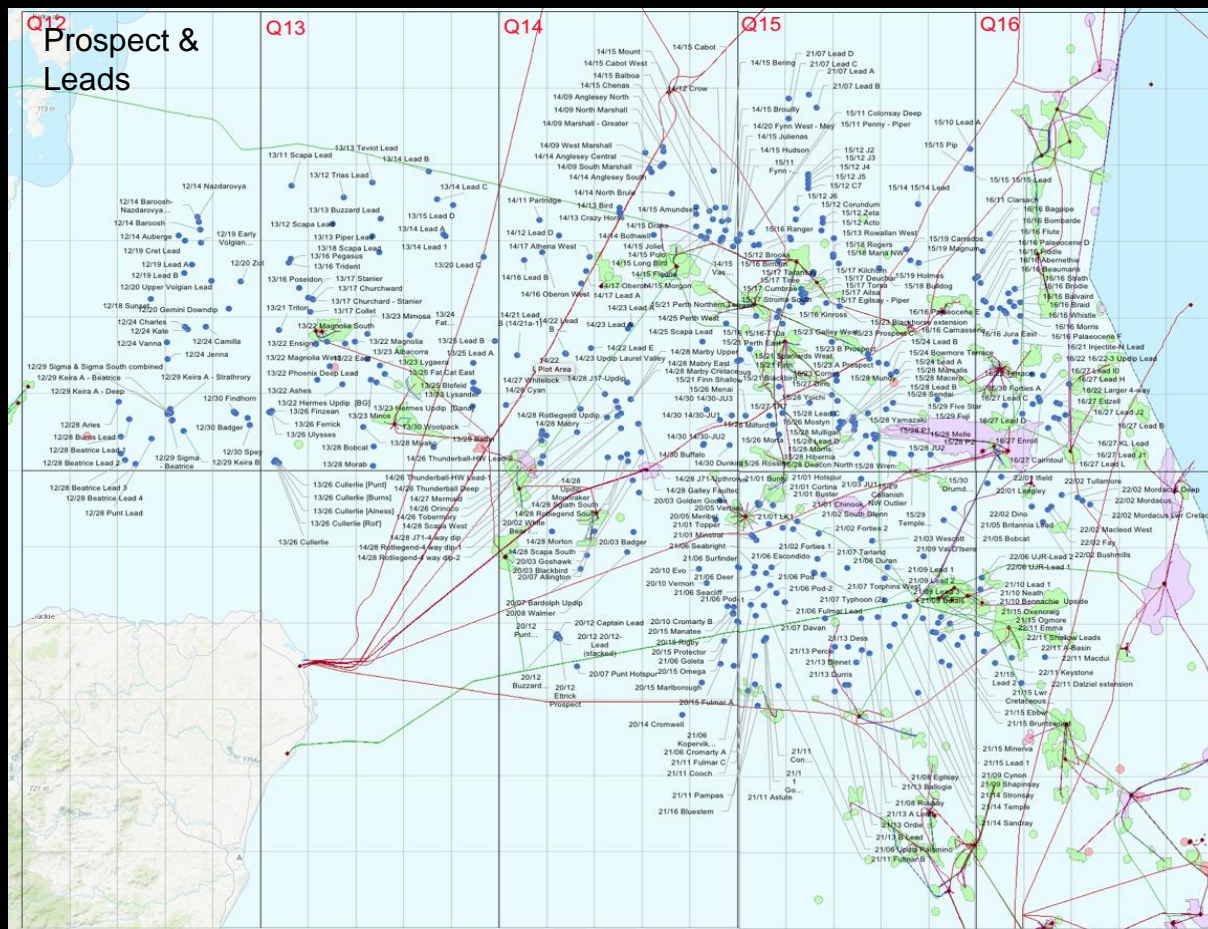
- Basin already had delivered three peaks.
- Published data said it had potential.



- The SIG study has quantified & increased the size of the prize.



What does the Outer Moray Firth have to offer?

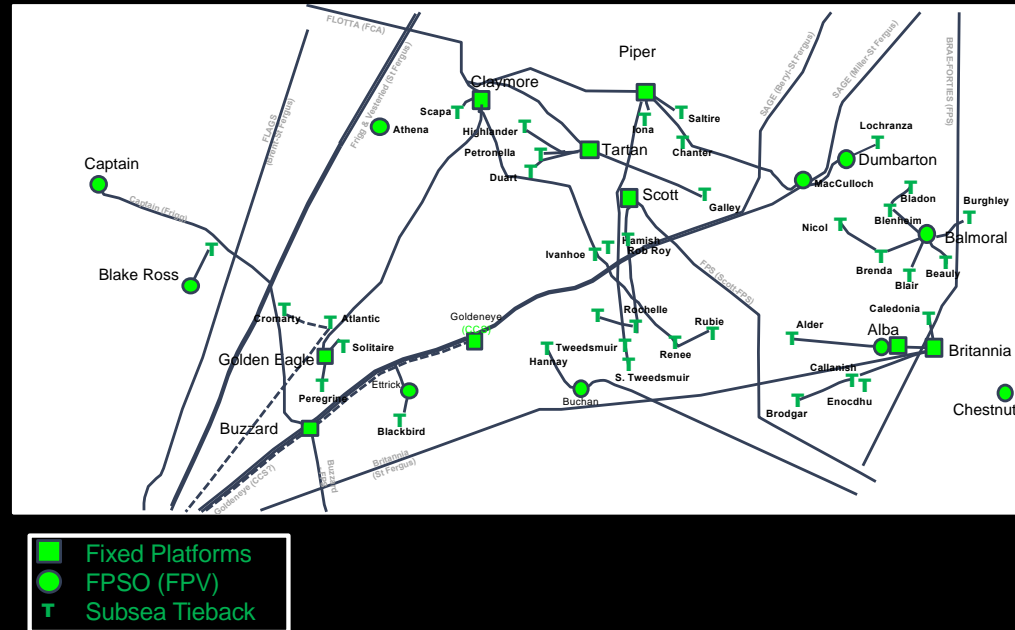


Prospects	No
Valid Prospects & Leads	298
Downgraded Leads	77
Total	375
Total with duplicate evaluations & stacked	438

Prospective Resource	
No with Prospective Resource	205
Sum of P50 PR (mmboe)	5,264
Sum of risked P50 PR (mmboe)	920
Average Pg Tertiary / Sub-Tertiary	0.2 0.28 / 0.17

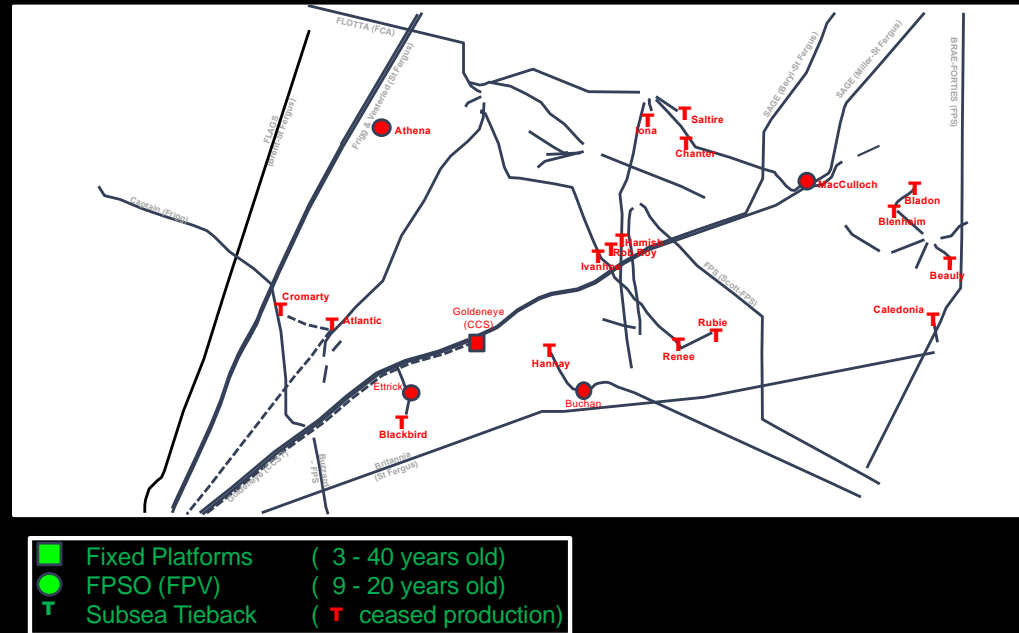
OMF Infrastructure

- Infrastructure rich area
 - Pipelines, platforms and FPSOs
 - Options for opportunity development



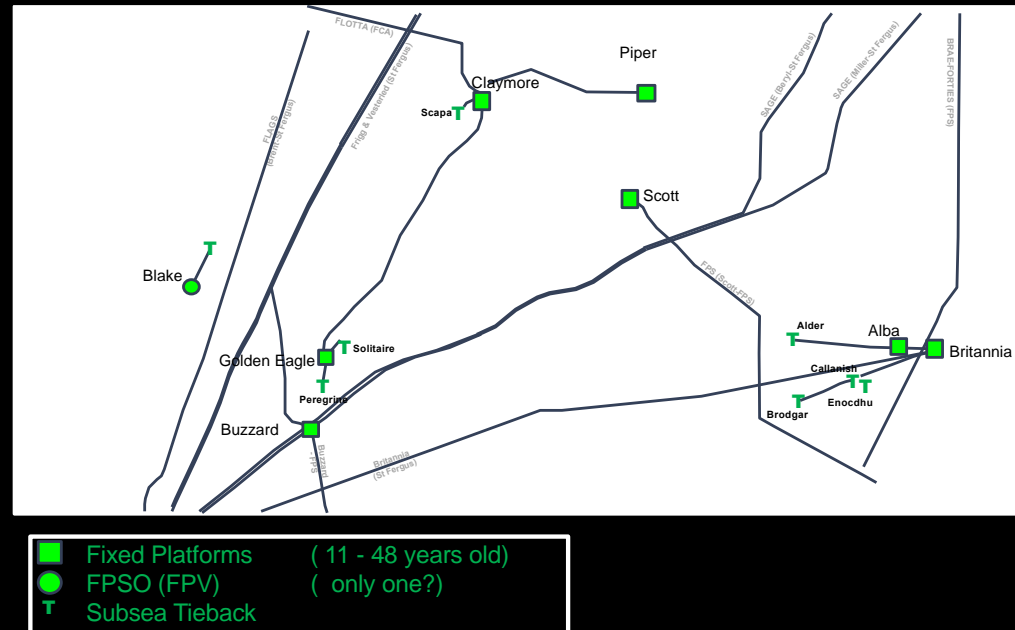
Time pressure - the OMF “cliff edge”

- Infrastructure rich area
 - Pipelines, platforms and FPSOs
 - Options for opportunity development
- But are we on the edge of the cliff?
 - Fields and facilities starting to be CoP'd and decommissioned



Time pressure - the OMF “cliff edge”

- Infrastructure rich area
 - Pipelines, platforms and FPSOs
 - Options for opportunity development
- But are we on the edge of the cliff?
 - Fields and facilities starting to be CoP'd and decommissioned
- Reduced infrastructure options?
 - Potential scenario for 2025
 - Leaving stranded opportunities?
- New ownerships – new opportunities?
 - How does this align to area plans and MER?



OMF SIG – How it all started

- Challenging economic conditions
- Ongoing Initiatives for Maximising Economic Recovery
 - Area Plans
 - Small Pools
 - 30th Round
- Was DECC & UKOOA. Now OGA, OGUK & OGTC.
- Belief that OMF still has substantial prize to offer
- Series of workshops starting in 4Q2016 – forming the industry lead SIG in 1Q2018

OMF SIG – Some important factors

- Clear Shared Vision – To Maximise MER in the Outer Moray Firth
- Participants prepared to ditch “Net” and look at it holistically
- Industry lead initiative, not mandated
- Value placed on diversity of perspectives – from Promote Licence to Mature Asset

Outer Moray Firth Special Interest Group

**Major
Infrastructure**

**Unsanctioned
Discoveries**

**Joint Venture
Partners**



**Exploration
Licensees**

**Non-OMF
Licensees**

**Promote
Licensees**

What is an Area Plan?

- A holistic, common view of opportunities and infrastructure
- Supports understanding of risks – threats and opportunities – and associated decision making
- Requires shared, validated and granular view of opportunities
- Firm proposals in sub-areas for extending life of old hubs or establishing new hubs
- It's not just stacks of economics!

Creating The OMF MER Area Plan

- Full spectrum of inputs from Exploration to Mature Assets
- From reservoir to point of sale.
- Shared and trusted data:
 - Existing sources “compromised” and could not be verified or challenged.
 - A data source that could answer the MER challenge, drive better decisions, grow through user inputs, etc.
- Understand the Prize – Exploration, Development, Reactivation & Sustaining

Phased Approach

- Large Area
- Scale of Prize
- Multiplicity of Options

Projects Underpinning OMF Area Plan - Phasing

1. Exploration Strategy

2. Unsanctioned Discoveries

3. Data

4. Super Hubs

Phase 1

2. Unsanctioned Discoveries

3. Data

4. Super Hubs

5. Late Life Operations

6. Supply Chain Integration

Phase 2
TBD

Delegated
Scopes

7. Suspended Wells

8. Technology

Existing
OGA & OGTC
work streams

Creating the OMF Database

Exploration Workgroup decided that existing data sources were not up to the job of being the “shared data repository” required.

New database created from wide range of sources:

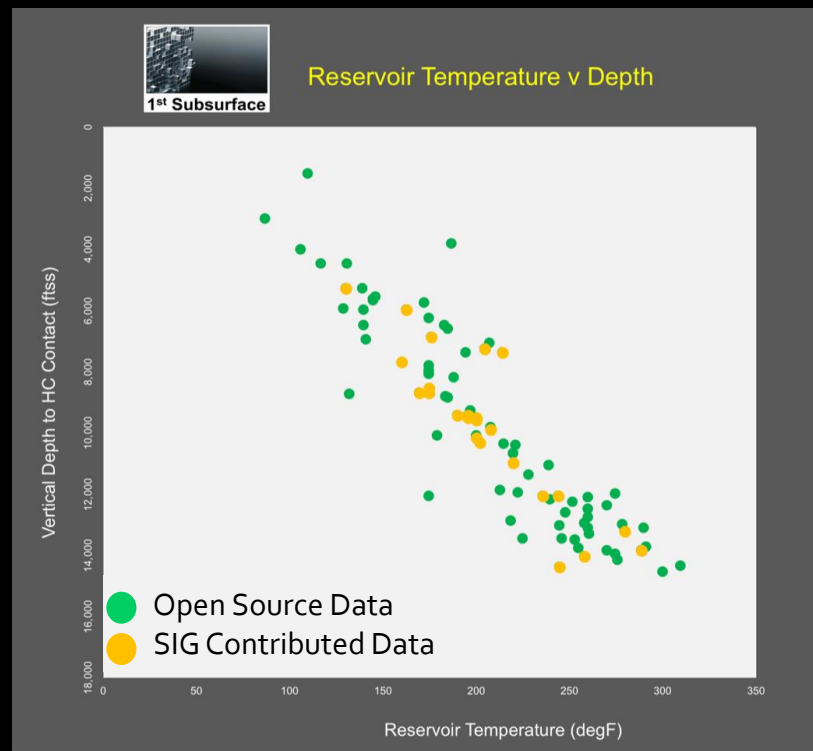
- Relinquishment reports;
- Publically available reports and papers (CPR, 10K, Annual Reports, Company websites etc.)
- OGA Open Government Licence publications;
- User non-commercial contributions (SIG & non-SIG members)

Processed to create structured database – fields, unsanctioned discoveries, prospects & leads – with audit trail.

Now known as TROVE and available across all UKCS basins and beyond.

Data insights

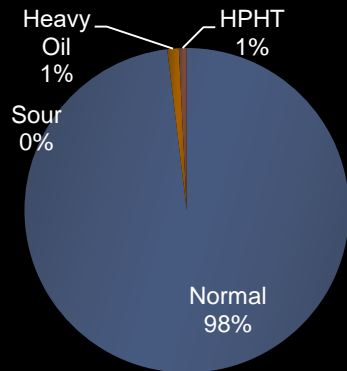
The power of data collaboration.



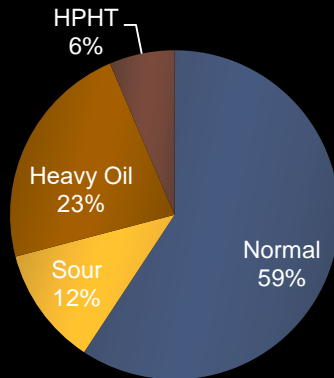
Has data collaboration delivered any benefit?

Pre-SIG Case

Prospective Resource

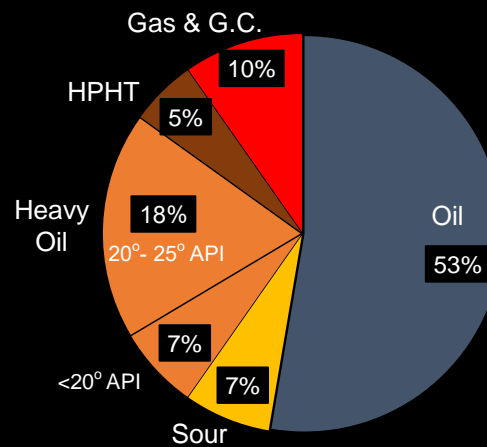


Discoveries

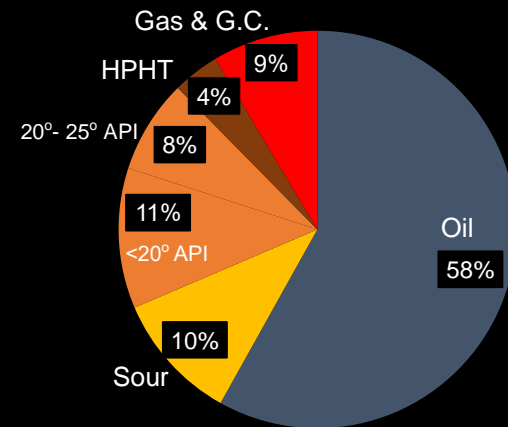


SIG Case

Prospective Resource



Discoveries

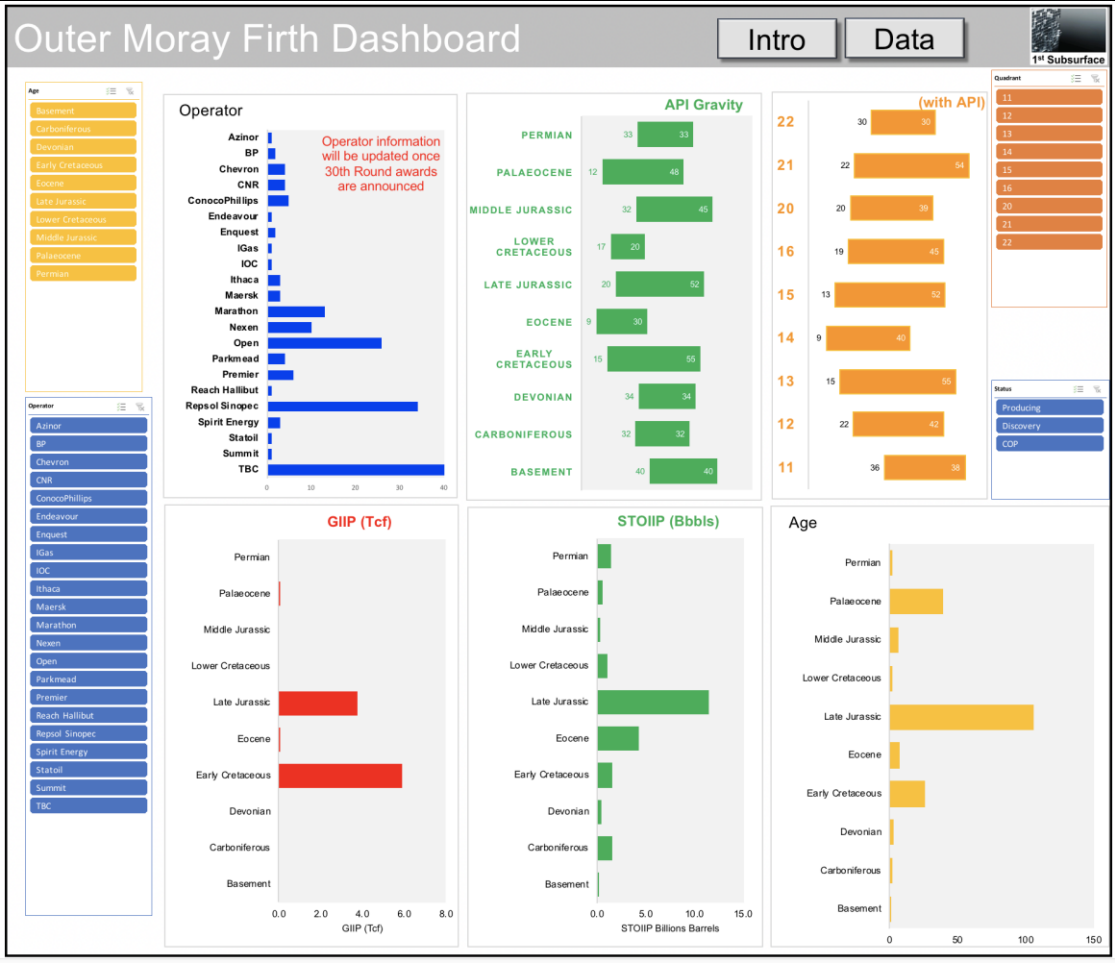


More granular,
more consistent dataset

Diversity of potential within OMF

Geologic
Age

Operator

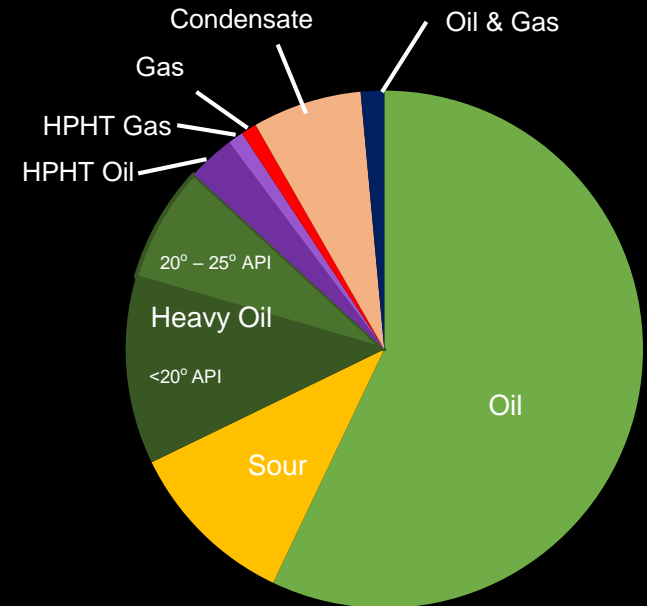


Data Collaboration - Small Pools/Unsanctioned Discoveries

- Small Pools was major concurrent theme with start of OMF SIG and remains so.
- OMF SIG embraced the NSRI challenge

“With respect to progressing small pools we need to determine which technical solution is most applicable and in what circumstances. The challenge needs the detail to be refined in terms of three parameters; the size of the accumulation, the fluids complexity and its proximity to existing infrastructure”
- All of which is now available in our database and feeds into the forward work plan.

Fluid complexity OMF
Unsanctioned Discoveries



Data Collaboration Beyond the Reservoir

ICOP+

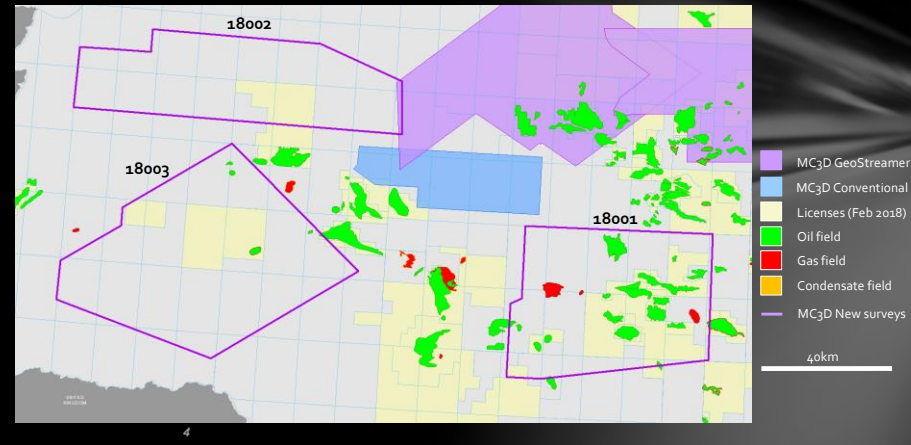
“Which Guide” to Subsea Trees

Knowledge – Lessons Learned?

Options to Improve P_g through collaboration

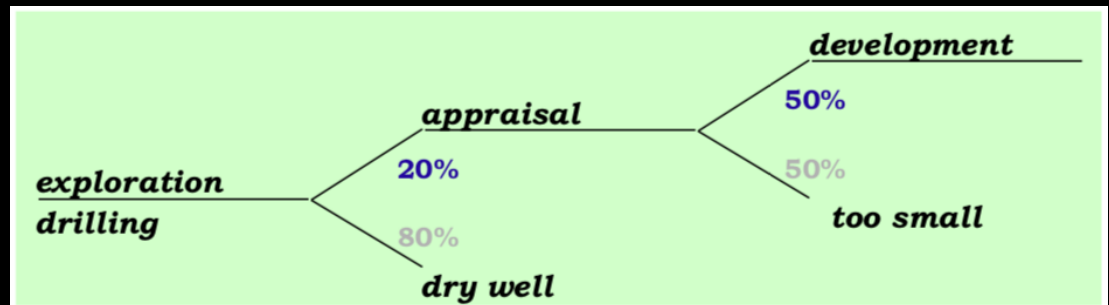
- Seismic
 - Joint programmes?
- Drilling
 - Joint work on a new play.
- Technology
 - Sharing the “risk” of being first mover on new tools.
 - Sharing data.

NEW 3D MULTICLIENT SEISMIC SURVEYS



Options to Improve P_{be} through collaboration

- Reducing Costs – e.g. Actively embracing principles of Tie Back of the Future
- Apply New Technology
 - Sharing the “risk” of being first mover on new tools.
 - Sharing of data – codifying project lessons learned; “circular economy” on knowledge
 - Data analytics
- Portfolio development
 - Diversified Risk
 - Affects EMV



Barriers to Collaboration?

- People
 - Need to better convey the message that collaboration benefits everyone – even if not directly.
- Competition Law
 - Misunderstood and often misused.
 - We have developed a protocol to avoid this.
- All can be managed

OMF SIG has open doors!

26th April – OMF SIG held its inaugural conference.

SIG presented the opportunities, Industry Bodies and the Supply Chain showcased solutions.

Everyone worked together to help shape Phase 2.



1st Subsurface



Results of Phase 1

Vastly improved data set captured and ready for Phase 2

Analysis confirms **there is** a Sizable Prize, not just in Unsanctioned Discoveries, but also Exploration.

Locations are emerging that lend themselves to deeper analysis in Phase 2 for firm proposals in sub-areas for extend life of old hubs or establish new hubs.

Technology – adoption, adaptation and development – will play a major part in MER. Need to work in Phase 2 on matching opportunity to solution.

Phase 2 will involve a wider group of licensees and the supply chain.

We'd encourage you to get involved – NOW!

For further information about the SIG please see:

Website: www.omfmer.uk

Email: info@1stsom.com