

Outer Moray Firth Breathing New Life Into Old Fields

Petroleum Pioneers: Future of North Sea Oil & Gas

Waldorf Hilton, London

23 November 2017



Outer Moray Firth Special Interest Group (“OMFSIG”)

1st Subsurface are delivering a basin-wide Area Plan for a group of licensees in the Outer Moray Firth.

OMF is a prolific basin with considerable remaining potential & diverse infrastructure in place, but in need of a holistic strategic review of the basin’s potential.

Its potential sits in 80 Fields, 80 Unsanctioned Discoveries & almost 400 prospects & leads.



OMF Area Plan Objectives

Maximise Economic Recovery (MER) on a regional, rather than solely field basis.

Combining prospectivity, exploration, development planning, asset and infrastructure utilisation and decommissioning

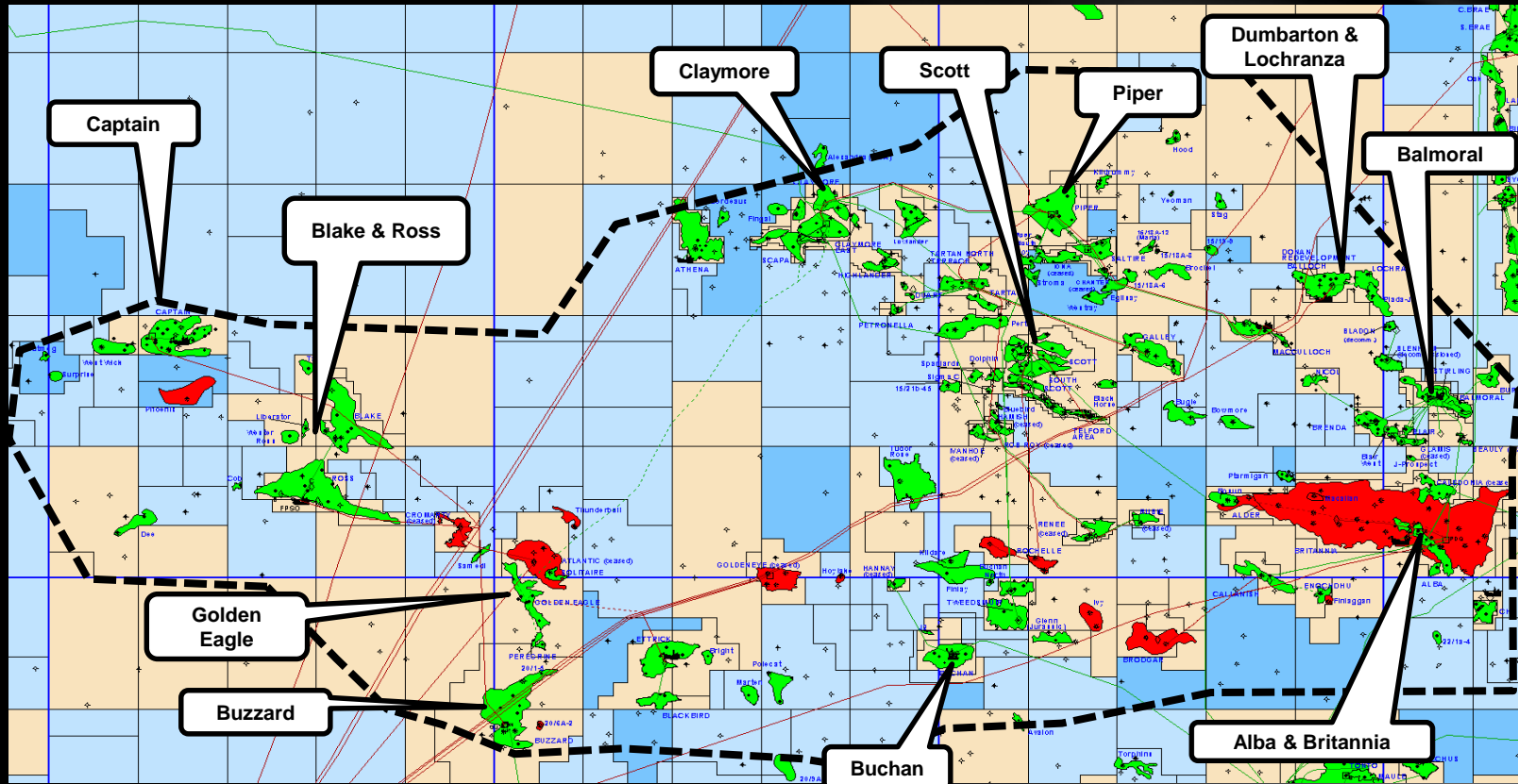
– an “OMF PLC” approach.

Include resource maturation plans as a basis for decision-making in stewardship discussions.

- Phase 1 - defines the MER Opportunities and Barriers
- Phase 2 - addresses the prioritised strategic actions.

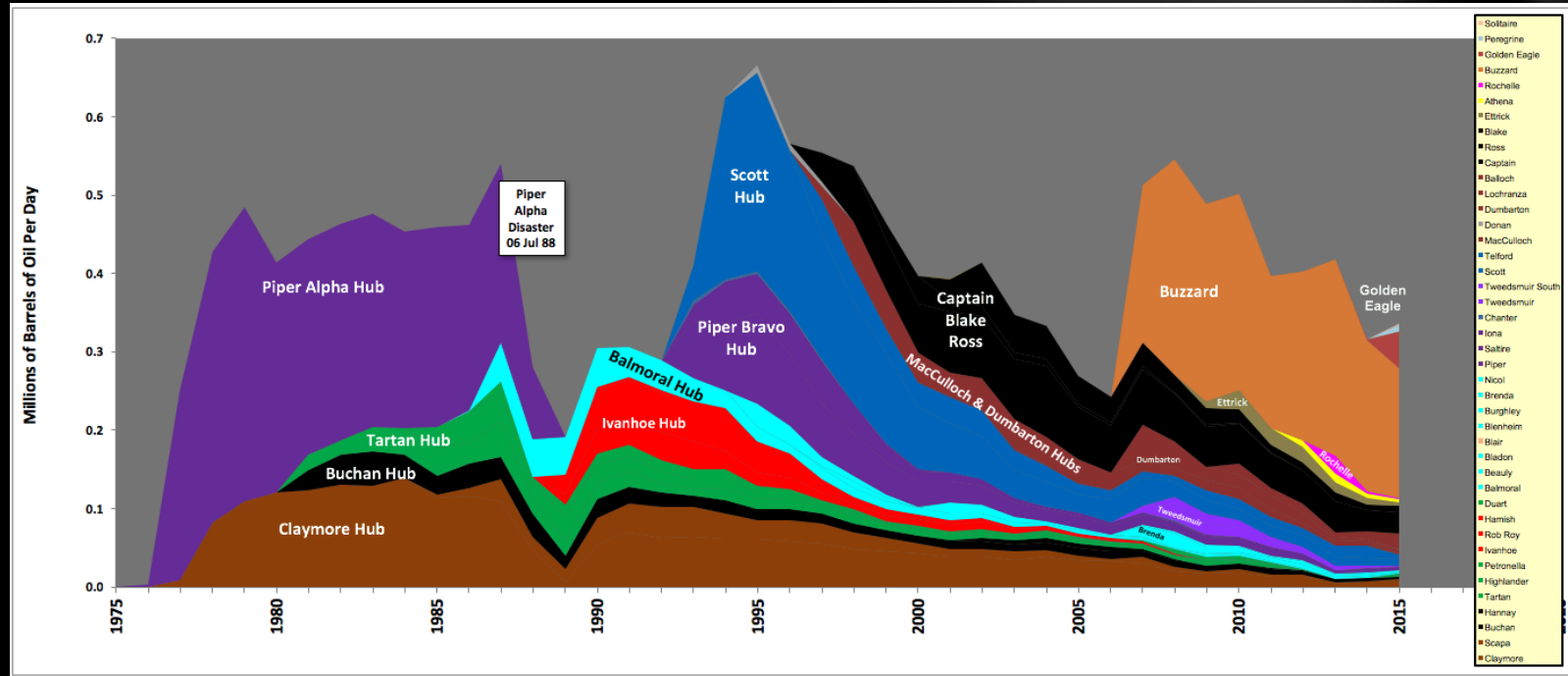


Outer Moray Firth Area Plan – Area of Interest



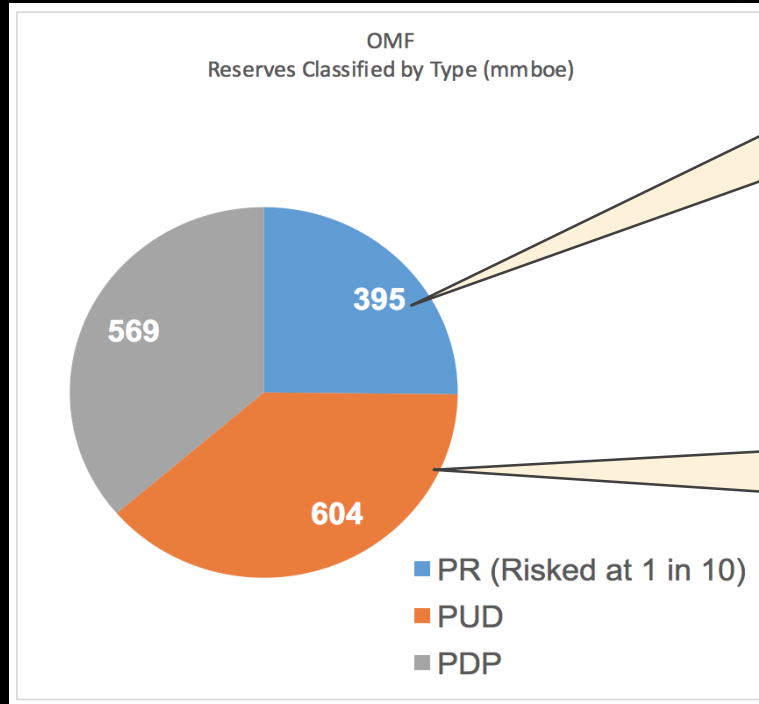
Source: Woodmac Pathfinder 17 Feb 15

OMF Historic Production - Delivering the next Renaissance?



- Three peaks
- Most fields now high water cut, low oil rate
- Impact of COP – MacCulloch, Athena, Ettrick.

Total Remaining Technical Reserves & Resource in Outer Moray Firth Study Area Commercial Database PR Assessment



122 prospects & leads with PR of 3.95 billion boe risked at 1:10

OGA 'Small Pools' quotes 512 mmboe for MF (doesn't include large PUDs)

Data for PUD's and PR sourced from commercially available databases,

Prior to start of OMF SIG



1st Subsurface

Business Case for OMF Area Plan

- The OMF has PDP, PUD & PR potential
- “PUD + PR = 2 x PDP”
- Diverse ownership – some production focused, some exploration focused, but no one with a foot in all camps; Area Plan engenders collaboration.
- Infrastructure becoming sub-economic
- Infrastructure has capacity to develop more – not always where needed
- Show case solutions for many MER challenges and be the catalyst for a new cost base and owner/supply chain offering



1st Subsurface

The Process

Setting the Challenge

- Incremental, Huge Leap, Game Changer



1. Joint Venture Hub Strategy

2. Exploration and Appraisal Subsurface Work Programmes

3. Optimum Use of Subsurface Data

4. Licence Activity, Decision Points and Milestones

5. Robust Project Delivery

6. Production Optimisation

7. Information Management

8. Technology Plans

9. Collaboration

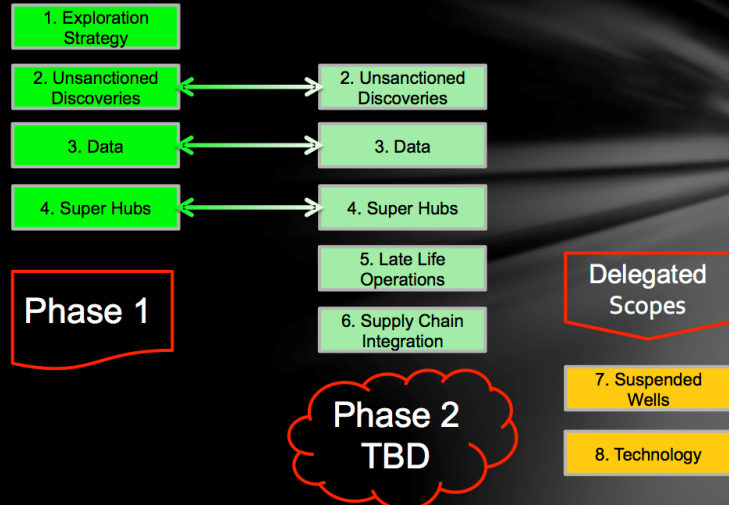
10. Planning for Decommissioning

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Organising

Planning

Projects Underpinning OMF Area Plan - Phasing



Early Thoughts

- Incremental

*Efficiency
Improvement*

*Shared
Learnings/
Benchmarking*

*Data
Release/Sharing*

*Reduced Well
Cost*

- Huge Leap

*Sort out
Competition
Law Fear*

*Alignment –
Commercial;
Licence;
Unitisation*

*Hub Upgrades/
Super Hubs*

*OMF plc
Ownership?*

- Game Changer

*True
Collaboration*

*Unconventional
Resources*

*OGA
Sponsored
rig*

*Behavioural
Change*

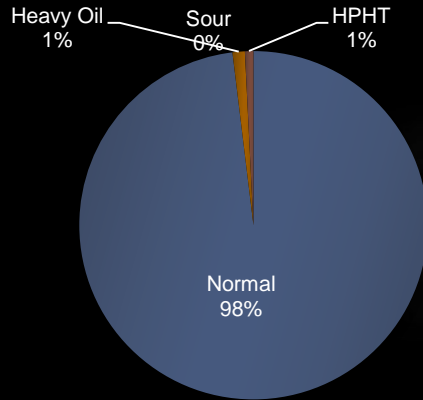
OMF Area Plan – A Strategic Plan

- The OMF SIG had its Vision
 - *A vibrant future for the Outer Moray Firth.*
- But to formulate a Strategic Plan we needed the “As Is”.

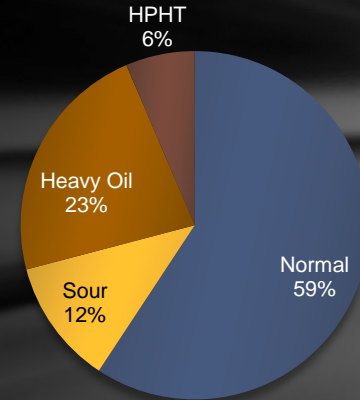


Nature of the Resources in Outer Moray Firth Study Area

Prospective Resources



Discoveries



Whilst there is diversity in the nature of Discoveries, the “prospects” do not reflect the same spread with a heavy bias to “normal”.

Data for PUD's and PR sourced from commercially available databases, prior to start of OMF SIG

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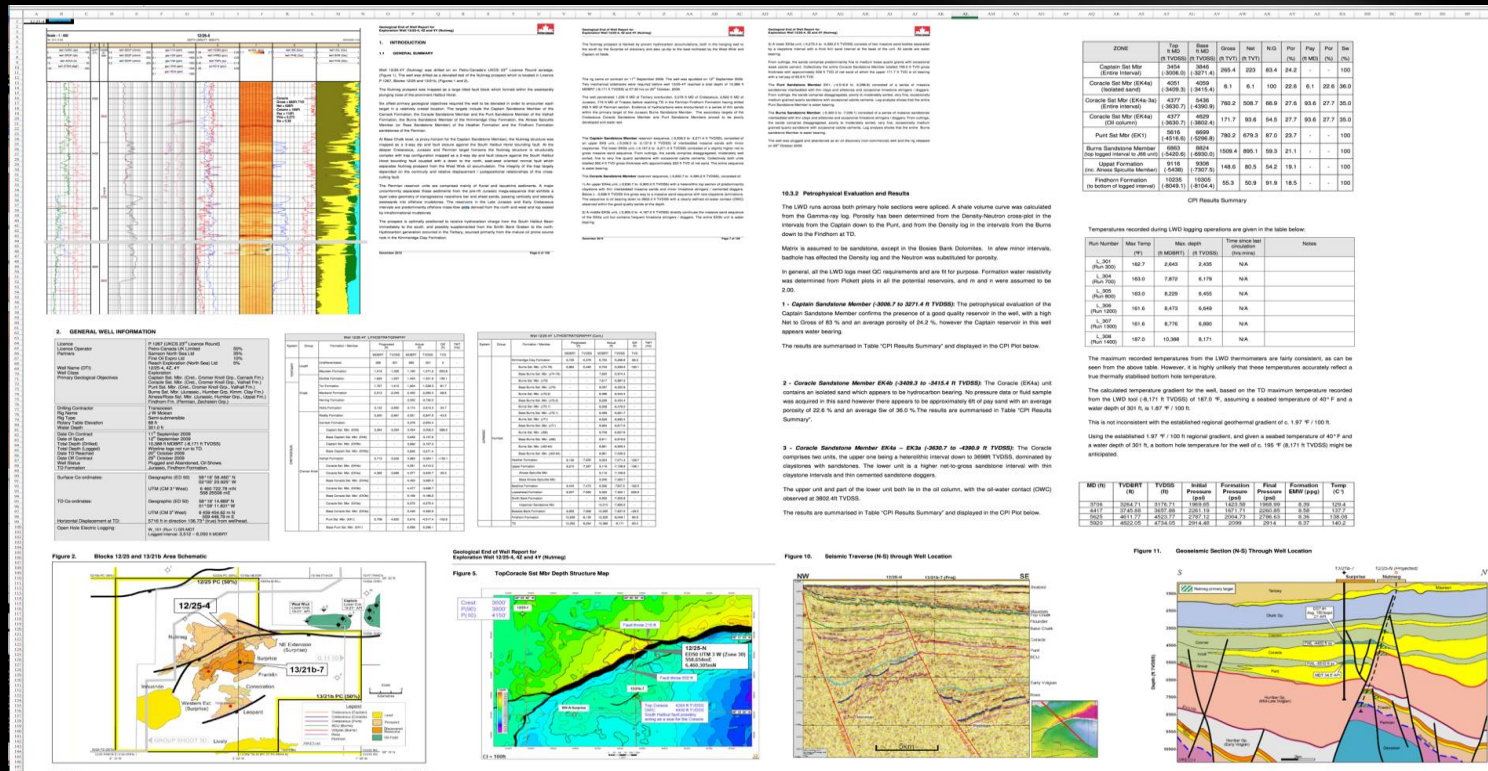


OMF Area Plan – A Strategic Plan

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 - *A vibrant future for the Outer Moray Firth.*
- But to formulate a Strategic Plan we needed the “As Is”.
 - Existing data sources were felt to be out of date, compromised, unauditable....
 - 1st Subsurface’s TROVE database now supplies the As-Is

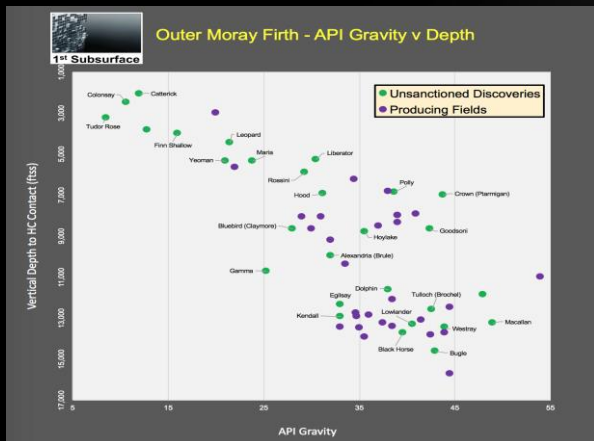
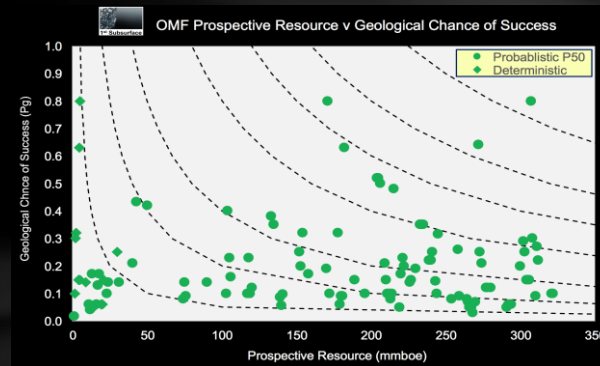


TROVE – each entry has rich back up



- Seeded with open data, but SIG Participants now contributing their own data.

TROVE – data are extracted, structured and analysed for insight

[illegible]

Fields & Unsanctioned Discoveries

Data quality and validity improved with input from SIG participants



SIG Participants

Diversity reflecting the life stages of the basin

- Promote companies
- Explorers
- Developers
- Mature asset operators
- JV Partners
- Prospective licensees

Full value chain perspective – sand face to point of sale.



SIG Status

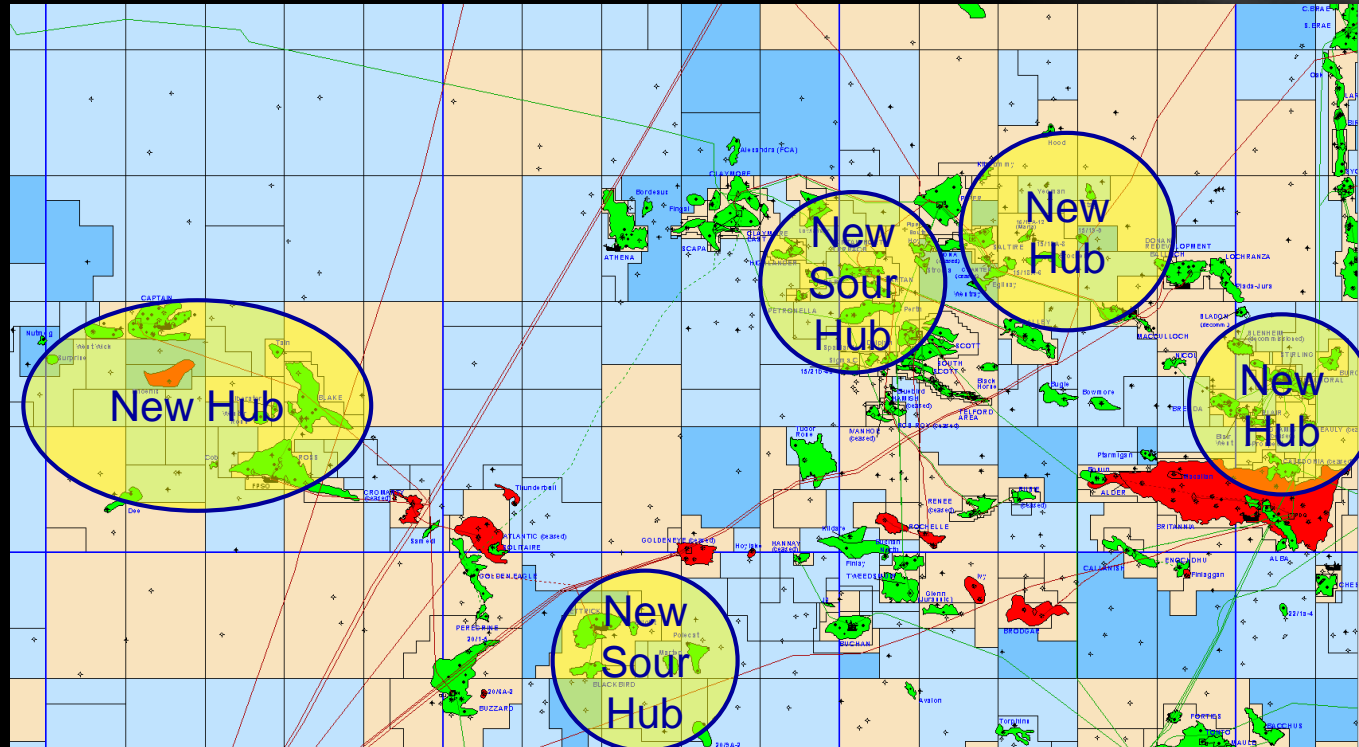
Nine partners companies signed up – opportunities to join at low subscription rates.

Phase 1 Scopes of Work agreed and initial products being delivered.

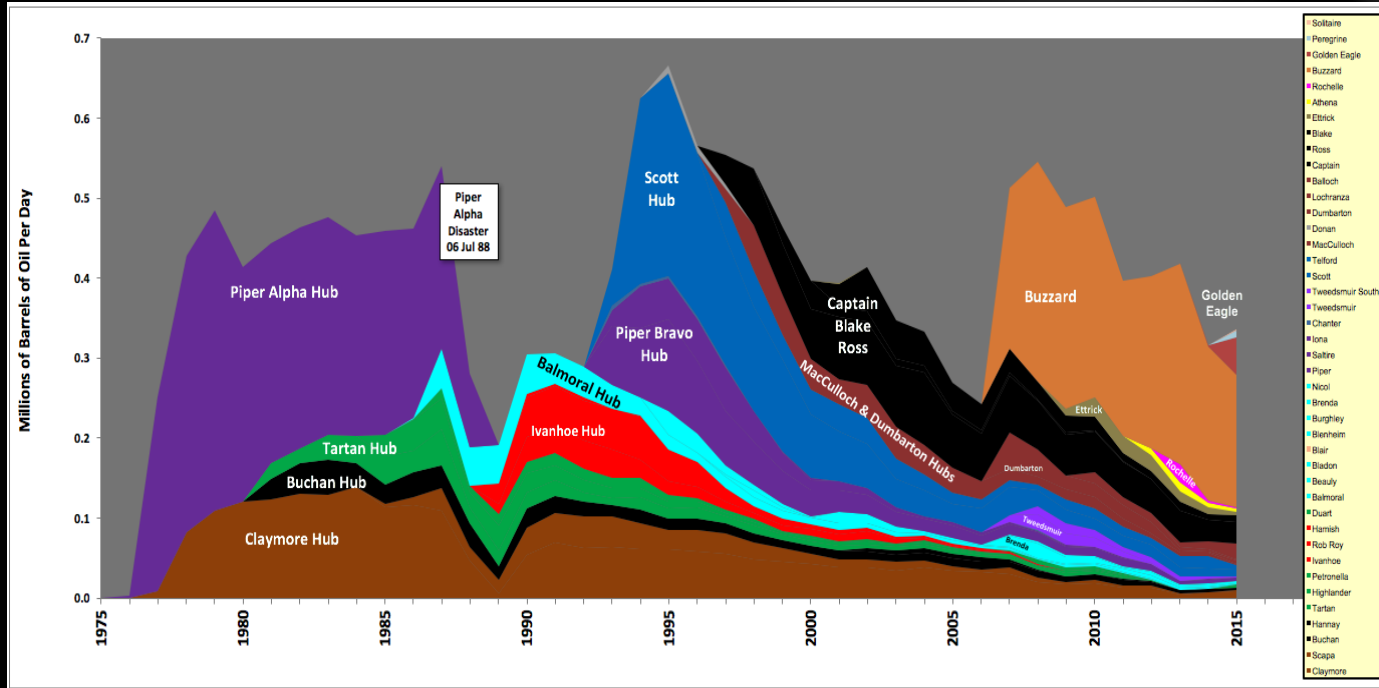
OMF TROVE database almost complete, commencing “As-Is” analysis.

Will complete Phase 1 in 1Q 2018.

Vision – what could the future look like?



OMF - the next Renaissance – how soon, how big?



Come and join us and discover the answers.

Thank you for your time

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