Exploration outlook: higher profits and fiscal change

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Dr Andrew Latham
Exploration and fiscal terms update

1. Exploration back in the money
2. Changing fiscal terms
3. Outlook for 2019 and beyond
Exploration is now back in the black

Reduced costs and quicker commercialisation of discoveries are now creating value

Exploration industry value creation

Exploration industry returns

Progress on many fronts is driving exploration recovery

“How exploration can fix its broken economics” (published 2016)

- Reduce exploration costs by >50%
- Reduce development costs by >25%
- Refocus portfolios to avoid complexity
- Avoid tough fiscal terms
- Reload acreage at low cost

= Exploration returns up

Source: Wood Mackenzie
Exploration’s return to profitability from 2017

New discoveries add 11+ billion barrels of oil and 6+ billion boe gas

Source: Wood Mackenzie
More success in 2018, including many high value discoveries

Discoveries > 50 mmboe
- 2018 gas discovery
- 2018 oil discovery

Source: Wood Mackenzie
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What drives exploration investment?

Wood Mackenzie’s 2018 exploration survey

- Prospectivity
- Value Creation Potential
- Cost of Entry
- Returns on Investment
- Fiscal Terms
- Payback Time
- Ease of Entry
- Above Ground Risk
- Repeatability

Source: Wood Mackenzie
Fiscal terms should reflect prospectivity

High prospectivity / low fiscal attractiveness

Low prospectivity / low fiscal attractiveness

Low prospectivity / high fiscal attractiveness

High prospectivity / high fiscal attractiveness

Investment deterred?

Investment most attractive

Source: Wood Mackenzie, Upstream Competitiveness Index (1Q 2019)

Source: Wood Mackenzie Fiscal Service – Upstream Competitiveness Index (UCI)
Harsh terms in Southeast Asia may shift explorers to Australasia

Source: Wood Mackenzie Fiscal Service – Upstream Competitiveness Index (UCI)
Asia Pacific exploration and licensing yet to recover

Some countries have introduced new fiscal systems or improved licensing systems

Exploration investment in the region

Exploration licence awards in the region

Source: Wood Mackenzie Exploration Service, Upstream Data Tool
Fiscal change is on the agenda for almost all countries in the region

India, Indonesia and Thailand introduced new terms

- **India**
  - Revenue-sharing contract
  - Revenue-sharing bid caps
  - Incentives for unexplored areas
  - Streamlining of pre-NELP PSC: EOR incentives

- **Indonesia**
  - Indirect tax exemption (exploration)
  - New gross split PSC legislated, adjusted and new tax rules

- **China**
  - Indirect tax exemption extended five years
  - Resource tax on shale reduced

- **Thailand**
  - New PSC for contract extensions

- **Papua New Guinea**
  - APT reintroduced for all projects

- **Malaysia**
  - New deepwater PSC terms

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Source: Wood Mackenzie Fiscal Service
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Upstream cash margins looking strong

But a cautious exploration industry is set to hold its budgets flat in real terms

Source: Wood Mackenzie
Fiscal changes to look for in 2019

- **Canada (Federal)**
  - Lower CIT

- **US (GoM)**
  - Lower royalty rate for the deepwater

- **Colombia**
  - New terms for unconventional and deepwater assets

- **Trinidad and Tobago**
  - Oil SPT review

- **Norway**
  - Review of tax rates, ST uplift and CIT depreciation

- **Romania**
  - Review of royalty rates and APT deductions

- **Russia**
  - More targeted incentives or gradual switch to APT?

- **Netherlands**
  - Tax incentives for offshore fields

- **Algeria**
  - New fiscal terms

- **Egypt**
  - Revenue sharing mechanism to replace PSC

- **Peru**
  - Royalty incentives

- **Nigeria**
  - PIFB and licence extensions

- **Gabon**
  - New fiscal terms

- **Indonesia**
  - Improved terms for exploration and incremental production

- **Sri Lanka**
  - New fiscal terms

- **Timor-Leste/Australia**
  - Ratification of border treaty/new PSC terms

- **Philippines**
  - CIT reduction

- **Australia**
  - PRRT review

- **Myanmar and Bangladesh**
  - New fiscal terms

- **Cambodia**
  - Overlapping claims area resolution

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Source: Wood Mackenzie Fiscal Service
Selected 2019 wildcats to watch – more deepwater and frontiers

- Jethro
- Venus-1
- Block 48-1
- Alto Cabo Frio O
- Brulpadda-1RE
- Glarus-1
- KBD-2X
- Cholula-1
- Etzil-1
- Kingsholm-1
- Blackrock
- Vinstra
- Hazri-3
- Khan Khubrat-1
- Mondi
- Agogo
- Nour-1
- Kekra-1
- Boyuy-2
- Mailu-1
- Peroba-1

Primary hydrocarbon phase - Gas
Primary hydrocarbon phase - Oil
Planned Drill
Drilling / results awaited

Source: Wood Mackenzie
Key exploration themes

A smaller, more profitable industry

1. Majors continue to dominate
2. Little sign of inflation
3. Continuing fiscal change
4. Most budgets stay cautious, but will some break ranks?
5. Latin and North American deepwater and frontier basins drive success
6. Average full cycle returns well above 10%
Dr Andrew Latham

Vice President, Global Exploration

Biography

Andrew has over 25 years experience assisting majors and independents in the development of their exploration strategy and currently works on Wood Mackenzie’s Exploration Research. He provides analysis of exploration economics, strategies and industry trends.

Andrew previously led the Exploration Strategy offering within the Upstream Consulting business. He worked with clients to help optimize their investments in petroleum exploration and advised on strategy, process, opportunity characterization and evaluation. As part of this offering, Andrew directed Wood Mackenzie’s series of multi-client projects on exploration, deepwater and Arctic themes.

Andrew has been with Wood Mackenzie’s energy team since 1995. Until the end of 2001, he managed the team responsible for Sub-Saharan Africa research products and consultancy, undertaking a range of market analysis and regional strategy projects.

He started his career in 1990 as an international new ventures geologist with Ranger Oil. Later, as Ranger focused on West Africa, he became project geologist for Angola.

Andrew graduated from Imperial College, London, with a BSc Honours degree in Geology, and holds a PhD in Geology from University College, Cardiff.
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