Great Southern Drilling Opportunity

Unlocking value in the Canterbury & Great South Basins New Zealand

SEAPEX Technical and Farmout Forum
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April 2018
New Zealand's Great Southern Drilling Opportunity

**South Islands upstream landscape is evolving**

- PEP 52717 COC granted
  - Drill or Drop extended to April 2019
- Woodside withdrawing from PEP 55794
  - NZOG to acquire 100% (and Operatorship)
- Shell exiting New Zealand & PEP 50119
  - Commitment well currently planned to be drilled in early 2019 (now by OMV?)
- Anadarko exiting NZ and Wherry (PEP 38264)
  - Leaving Beach & Discover
  - Extension situation being worked through

* Assumes Lattice Energy Deal is granted Section 41 consent and Beach and Discover resting interest 65:35
** Assumes Woodside withdraw from permit
*** Assumes OMV acquire Shell’s interest in PEP50119
Kaipatiki Prospect

~750 mmbbl liquids and ~7.3 tcf gas in place (mean) within a Proven Petroleum System

PEP 55794

• NZOG (Operator) 100% *
• Permit Area: 7,983 km²
• Awarded: 1 April 2014 – March 2029
• Next step - Drill or Drop option 31 March 2020

An excellent address in the Great South Basin

• A proven hydrocarbon system with large kitchen
• Frontier area with only seven offshore wells
  • Discovery Kawau-1 (to the south)
  • Shows in Toroa-1 and Tara-1 (located within PEP 55794)
• Metocean conditions comparable to Great Australian Bight
• Excellent port infrastructure ~200km

* Assumes Woodside (70%) withdraw from permit and NZOG receive regulatory approval of Operatorship
Kaipatiki

Four-Way, DHI Supported Trap

- 162 km² four-way depth closed injectite mapped on recently acquired PSDM 3D seismic
- Structurally conformable DHI supported prospect
- ~900m water depth & ~2,000m bml to test primary target
- High quality primary reservoir expected
Kaipatiki: Injectite Play

New play opportunity in New Zealand

• Remobilised deep water sandstone
• Development of overpressure followed by fluidization and injection of sandstone up section
• Productive play type in Paleogene section of North Sea
  • Alba, Forth/Harding, Balder, Volund and Gryphon fields
• Commonly associated with rift related basin forming faults, as well as polygonal faulting
• Several similar structures observed on 2D data
Kaipatiki Volumes

~750 mmbbl liquids and ~7.3 tcf gas in place (mean)

<table>
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<tr>
<th>Kaipatiki Summary</th>
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<tr>
<td><strong>Volumes Gas (bcf) and Condensate (mmbbl)</strong></td>
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<td>Mean</td>
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<td>In Place</td>
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<td>Recoverable Recycling</td>
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<td>Recoverable Gas to shore</td>
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**Material Basin-Opening Commercial Opportunity**

- NZOG has documented several commercialisation options
  - Gas to shore
  - Offshore liquids stripping of the primary reservoir yields a mean of 482 mmbbl
- Range of play types at multiple levels
- Over 1 billion bbl of upside prospectivity identified on regional 2D seismic
Kaipatiki: Timeline and Process

**Current PEP 55794 Permit Status**

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<th>Year</th>
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- High quality, thorough G&G work completed by Operator (Woodside)
- Transfer of Operatorship pending (Woodside withdrawal due to change in corporate strategy)
- All commitments fulfilled to date
- Next commitment point
  - Drilling commitment by 31 March 2020
  - Drill by 31 March 2021
- Low cost entry
- Back-costs to date US$ 15 million

**Farm Out Process**

- Comprehensive data pack available
- Large equity available on negotiable terms
- Operatorship available, if qualified for frontier operations
- Offers in writing by **November 2018**
Barque Prospect

~1.6 billion bbl liquids and ~11.2 tcf gas in place (mean) within a Proven Petroleum System

PEP 52717
- NZOG (Operator) 50%, Beach Energy 50%
- Permit Area: 3,423km²
- Awarded: 11 October 2012 – extended to Oct 2027
- Next step - Drill or Drop option April 2019

An excellent address in the Canterbury Basin
- A proven hydrocarbon system
- Six offshore wells
  - One well flow tested (Galleon-1)
  - Significant shows/pay in two other well (Clipper-1, Cutter-1)
  - Inboard of current exploration by Beach/Discover JV
  - Located within 60km of a well that flowed >2,200 bbl liquids and 10 mmcf gas to surface
- Favourable metocean conditions
- Excellent port infrastructure ~100km
Barque: Stacked Play

Four-Way, DHI Supported Trap

- 150 km² four-way depth closure mapped on PSDM 3D seismic
- Structurally conformable DHI supported prospect
- ~800m water depth & ~2,000m bml to test primary target (~2,200m bml all targets)
- High quality primary reservoir

Seismic polarity of the Endurance 3D is SEG normal
Barque Volumes

~1.6 billion bbl liquids & 11.2 tcf (mean) over three mapped horizons

<table>
<thead>
<tr>
<th>In Place volumes</th>
<th>P90*</th>
<th>P50*</th>
<th>Mean†</th>
<th>Condensate*</th>
<th>P10†</th>
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<td>Total</td>
<td>11,165</td>
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In Place volumes P90* + P50* + Mean† + Condensate* + P10†

* Gas in place in Bcf  *Mean estimated condensate in place in mmbbl

Gas recycling development of the primary reservoir yields a mean of 460 mmbbl plus 1.3 tcf of gas

Material Basin-Opening Commercial Opportunity

- NZOG has documented several commercialisation options
- High liquids ratio (proven by offset well Galleon-1), favours option as:
  - Offshore liquids stripping (Phase 1)
  - Gas blow-down to shore (Phase 2)
- Massive upside running room leads in permit (~18 tcf and 2.4 billion bbl)
Barque: Timeline and Process

Current PEP 52717 Permit Status

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- Low cost entry: seismic reprocessing & inversion commitment remaining (due by April 2019)
- Back-costs to date US$ 12 million
- Next commitment point
  - Drilling commitment by 10 April 2019
  - Drill by 10 June 2020

Farm Out Process

- NZOG is jointly farming out on behalf of entire JV
- At least 50% equity available on negotiable terms
- Operatorship available, if qualified for frontier operations
- Offer in writing by **November 2018**
Sharing the Rewards for the Benefit of All

- All upstream participants to benefit from success
  - Direct economic benefit of participating in hydrocarbon discover; plus
  - Re-rating of the overall exploration prospectivity of the basins

- NZ Govt will see flow through economic benefits of any commercial discovery and enhanced exploration prospectivity
  - Development and production will provide royalties and taxes

- Local population will see GDP growth and jobs from the development of any discovery
  - Any discovery has the potential to support the building of downstream industries

- Upstream suppliers will see enhanced business opportunities

Example: potential national and regional economic impact

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Any gas discovery of size has the potential to underpin development of a local South Island downstream gas market

Construction phase NZ$ (7 years)  Ongoing operations NZ$ (20 years)
Source: offshore development, Barque field development economic impact assessment
Great Southern Drilling Rig Club:

Value Drivers

- Timetable
- Subsurface Risk
- Drill rig availability & cost reductions
- Gas / liquids resource
## Timetable

### Schedule in context of other wells in New Zealand

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Great Southern Drilling Rig Club:

**Value Drivers**

- Timetable
- Subsurface Risk
- Drill rig availability & cost reductions
- Gas / liquids resource

Single well estimate USD 45M, 3 well campaign well cost USD 41M
South Island is a Great Place to Explore and Invest

Material prospects with scale

- Drill ready, material basin entry assets to build a business in New Zealand
- GSB: ~750 mmbbl liquids and ~7.3 tcf (mean) in place
- Canterbury: ~1.5 billion bbl liquids & 11.2 tcf (mean) over three mapped horizons in place
- Minimal outstanding commitments
- Drilling window of 2020/2021
- High equity participation & operatorship available

Rig Club

- Potential to lock in low drilling rates now
- Opportunity to join with multiple basin partners
- Potential to prove up Greater Canterbury / GSB
- The more you drill the luckier you get
- Attractive opportunity set for potential new entrants

Come talk to us at the exhibition

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All volumes presented are based on a best estimate, derived from a probabilistic methodology for resources in place and a deterministic methodology for recoverable volumes, which are net of royalties and have not been adjusted for risk.

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April 2018