

# **Big Gas/Liquids Opportunities** High Impact Exploration in a Proven Underexplored Emerging Hydrocarbon Province

PESGB/SEAPEX Asia Pacific E&P Conference

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June 2018

# Offshore South Island, New Zealand

Canterbury &  
Great South  
Basins

- Offshore
- Underexplored
  - 14 offshore wells
  - 7 with oil & gas shows
- Proven
  - Barque located within 60 km of a well that flowed >2,200 bbls & 10 mmscf/d
- Emerging province
  - Moving to drilling phase

# High Impact Gas/Liquid 'Regional' Opportunity(ies)

**1**

**PEP 52717  
(Clipper Block)  
Barque Prospect**

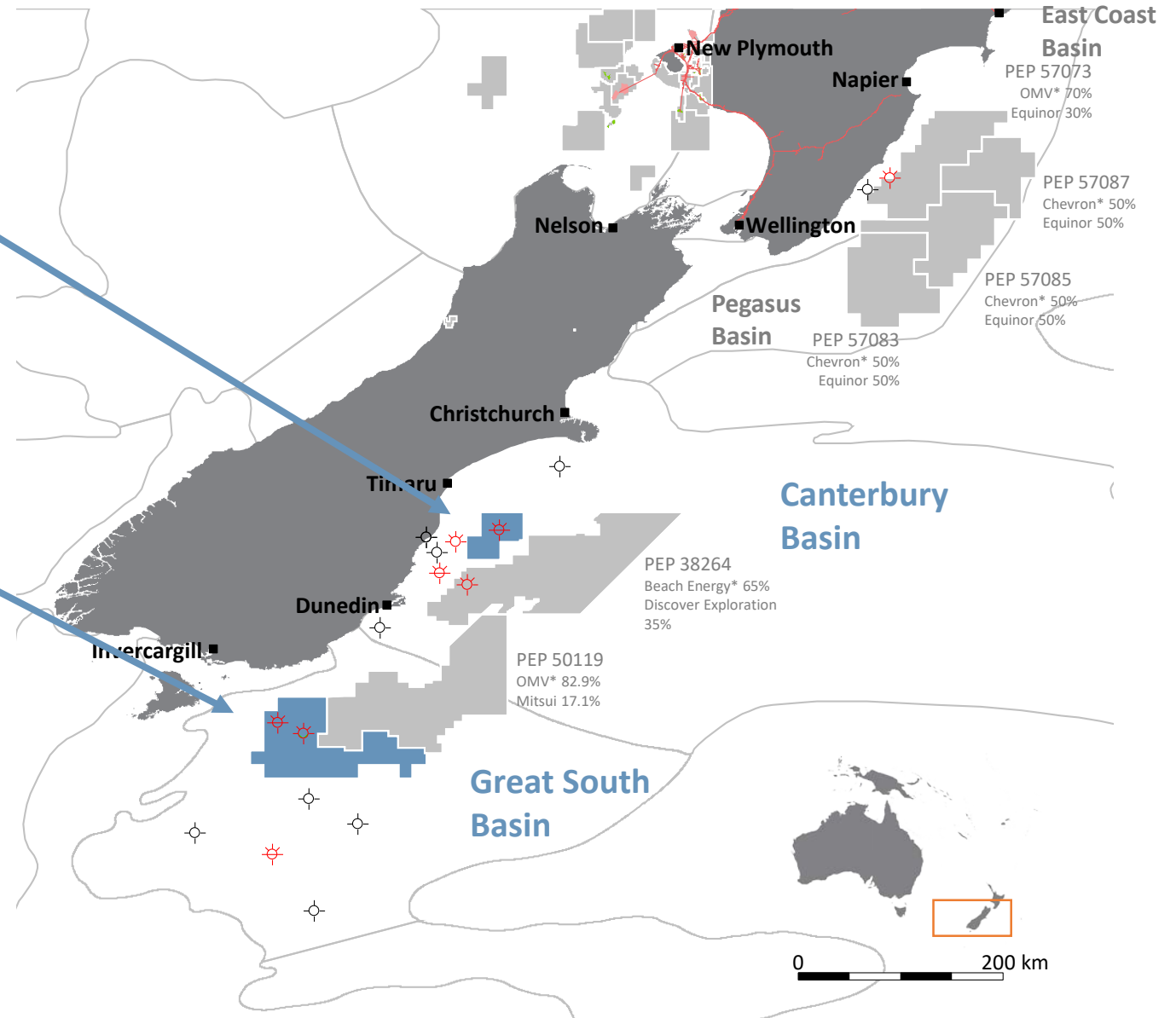
NZOG\* 50%  
Beach Energy 50%

**2**

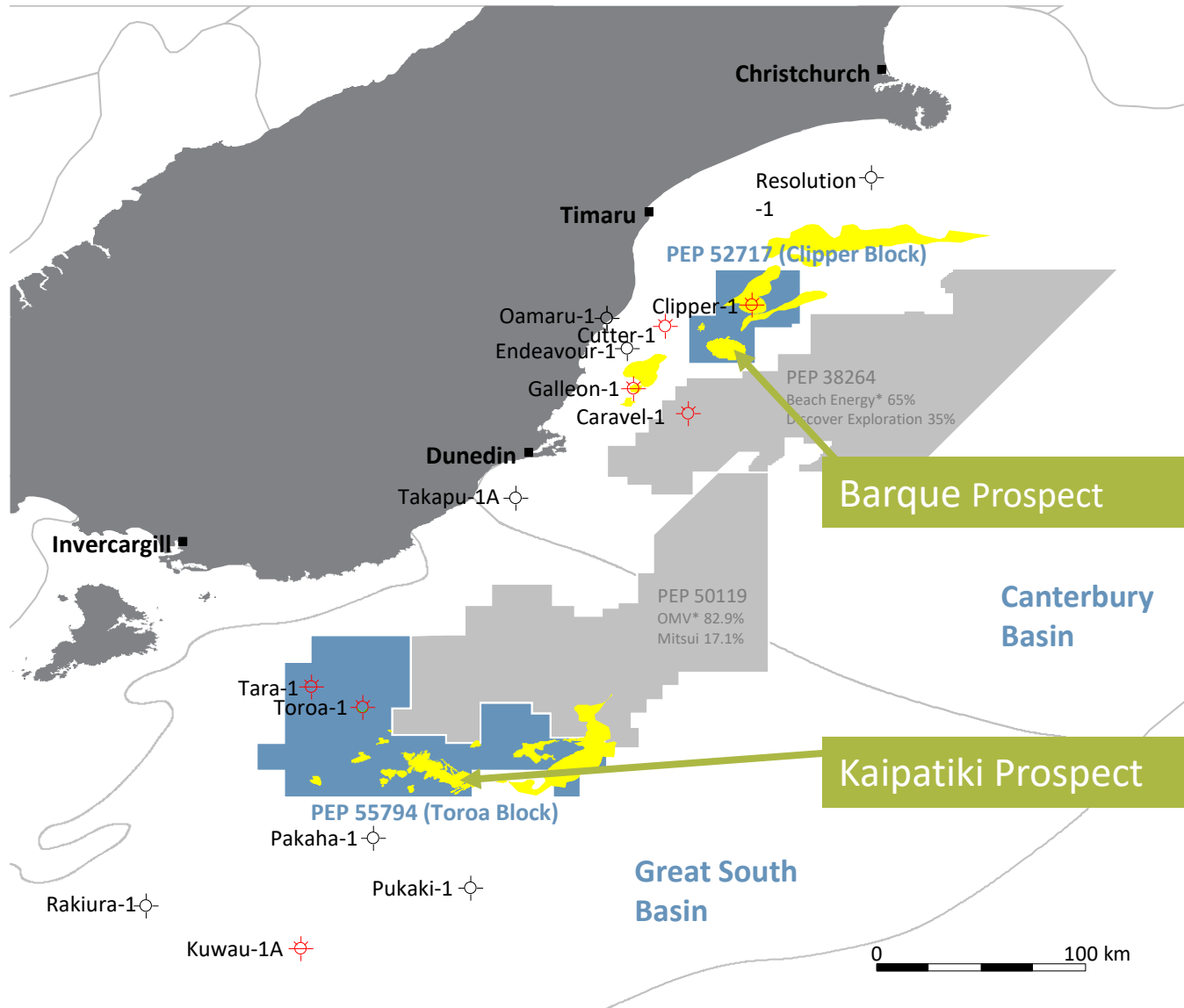
**PEP 55794  
(Toroa Block)  
Kaipatiki Prospect**

NZOG\*\* 100%

\* Subject to regulatory approval



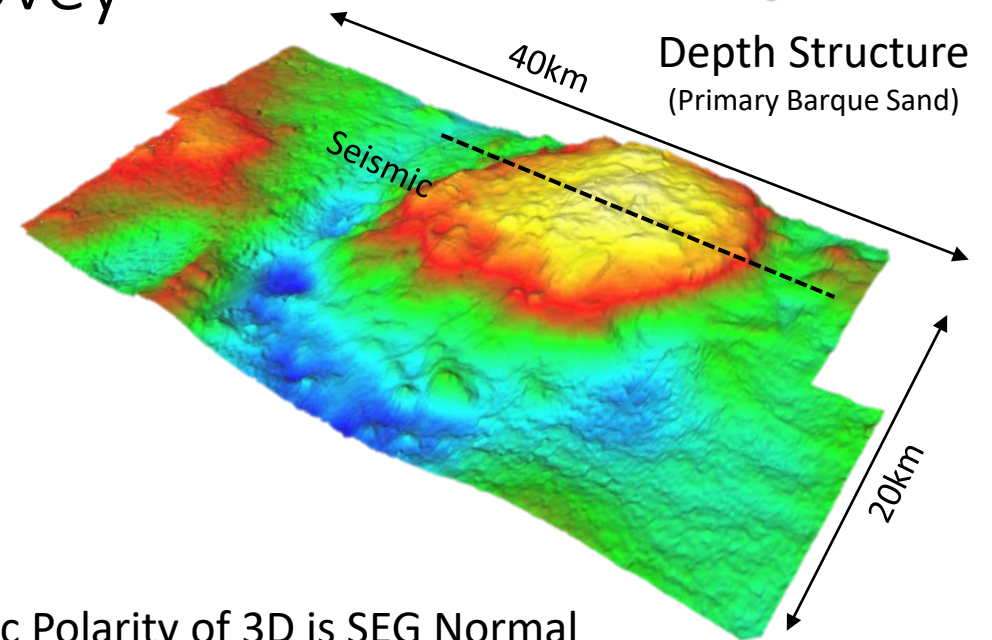
# Combined 10 tcf and 800 mmbbl Prospective Resource



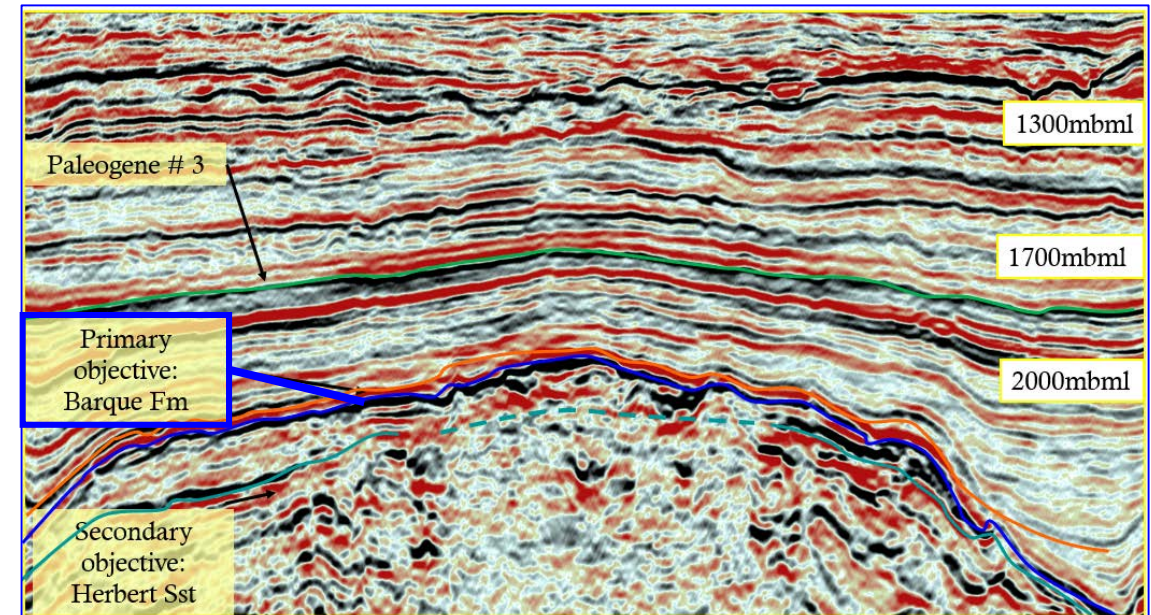
- Best estimate unrisks recoverable prospective resource
  - Barque: 3.5 tcf and 290 mmstb (871 mmboe)
    - one of three horizons
  - Kaipatiki: 5.6 tcf and 272 mmstb (1,328 mmboe)
- Success at Barque and Kaipatiki, including all Barque horizons: >2,200 mmboe / 13.2 Tcfe (unrisks recoverable prospective resource)
- Both permits have plenty of additional follow up prospects and leads

# Barque: Gas / Condensate Offset Discoverey

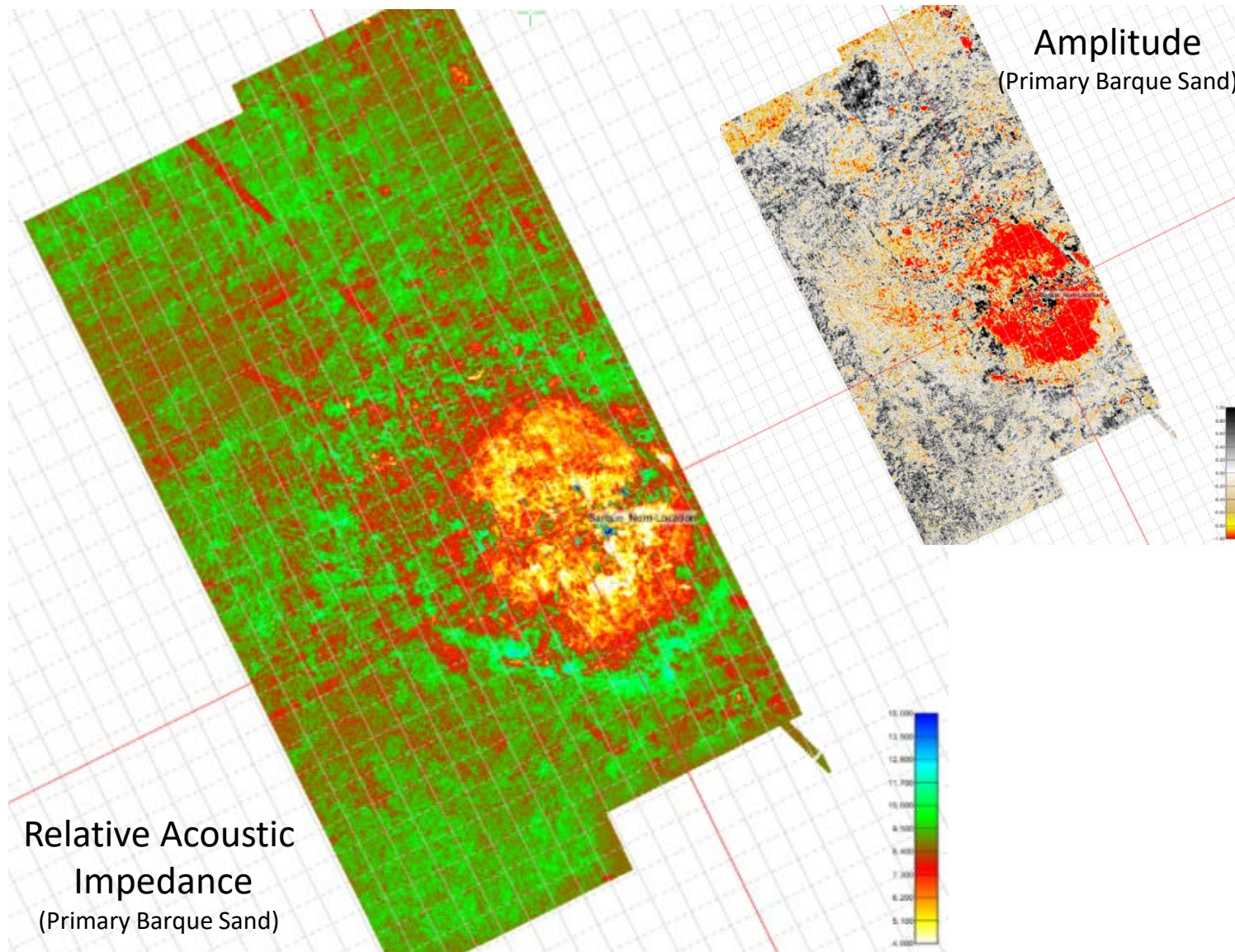
- Permit Area of 2,601km<sup>2</sup> with 15 year term
- Drill ready, 150km<sup>2</sup> four-way dip closed trap
- Located within proven kitchen
- Offset by that flowed >2,200 bbl liquids and 10 mmscf/d gas to surface (CGR 230 bbl/mmcf)
- Favourable reservoir characteristics (>90% N:G & ~19% porosity)
- Three target reservoirs
  - Barque Fm (primary)
  - Herbert Sst
  - Paleogene #3
- Significant seal capacity demonstrated by capillary pressure data and seismic
- Benign metocean conditions
- Port & support facilities within 100 km at Timaru
- Drill or drop 2019, with drilling following in 2020



Seismic Polarity of 3D is SEG Normal



# Barque: Structurally Conformable DHIs

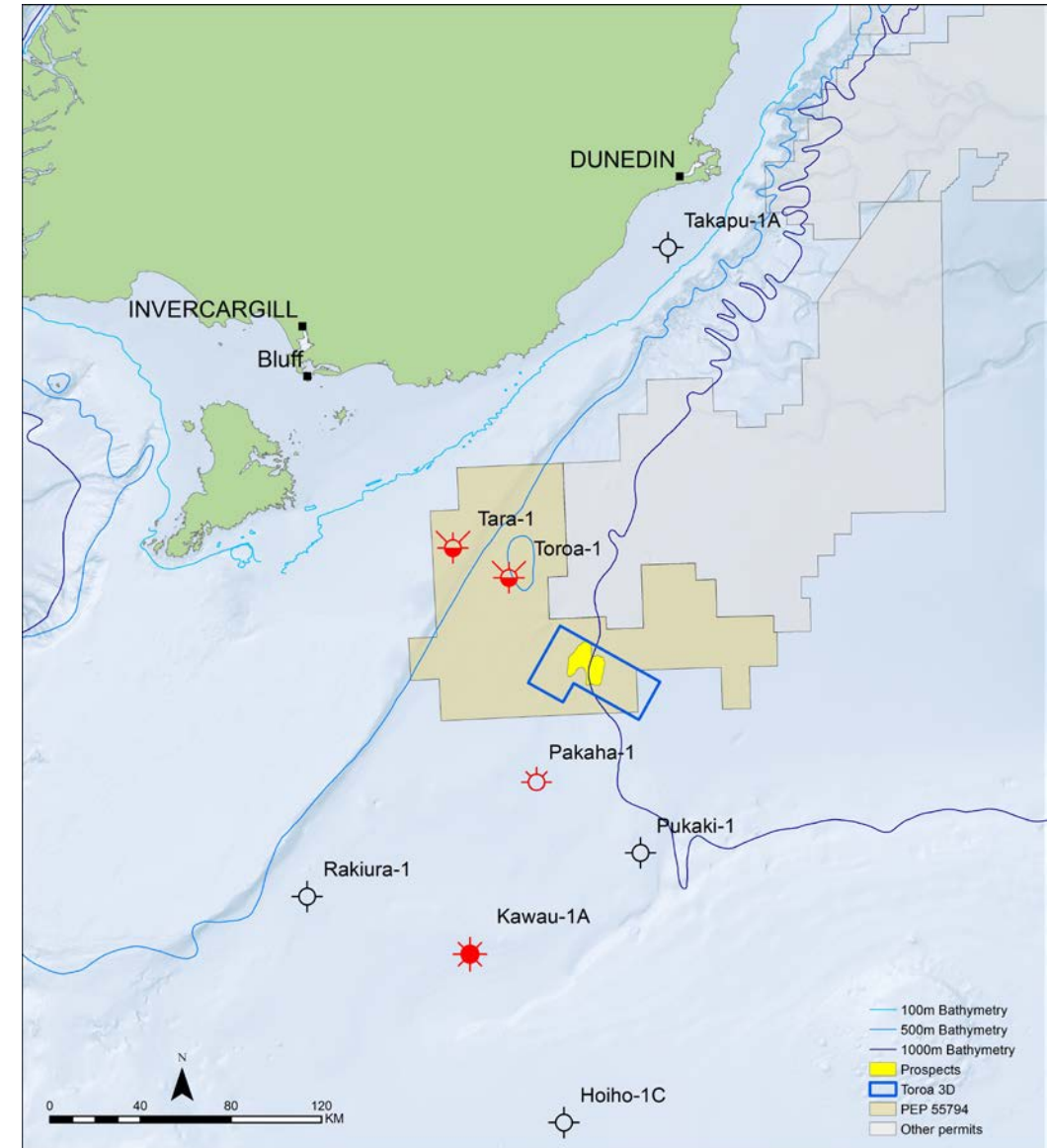


- Barque has structurally conformable DHI's at the primary objective "Barque Sand"
- The DHI extent and conformance de-risks charge and reservoir presence

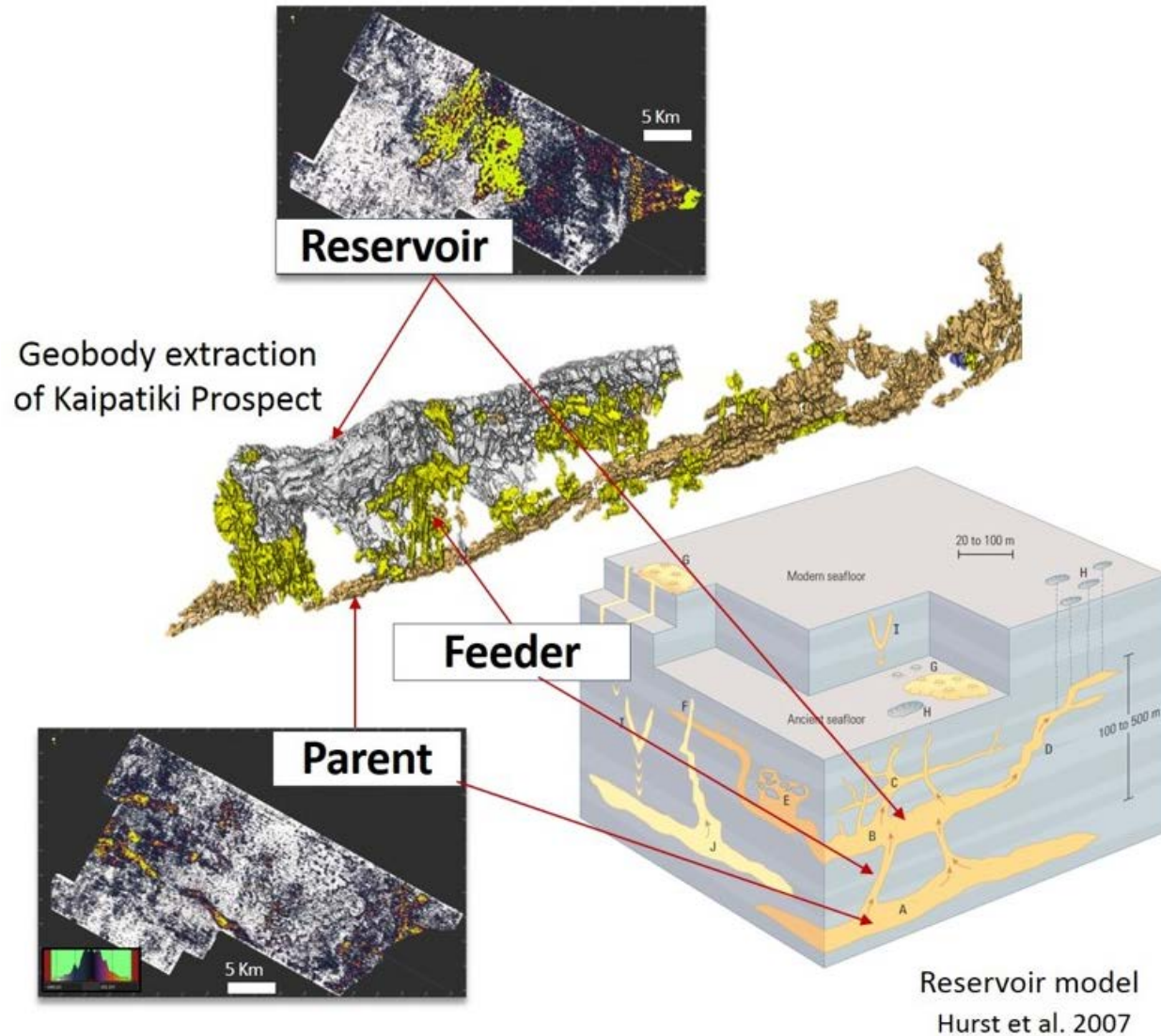
**3,000m well  
in water depth of 800m  
will test 3 objectives**

# Kaipatiki: Commitment Optionality

- Permit area of 9,385km<sup>2</sup> with 15 year term
- 3D defined amplitude conforming drill ready closure
- 160km<sup>2</sup> stratigraphic trap with remobilized sand reservoir in ~900m water depths and 180 km from shore
- Dense 2D coverage across permit with multiple follow up prospects identified on existing 3D
- A proven hydrocarbon system with large kitchen/charge
- Frontier area with only seven offshore wells
  - Discovery Kawau-1
  - Shows in Toroa-1 and Tara-1 (located within PEP 55794)
- Metocean conditions comparable to Great Australian Bight or West of Shetland
- Excellent port infrastructure ~200km
- Drill or drop not required until 2020, with drilling following in 2021



# Kaipatiki: Injectite Reservoir Model

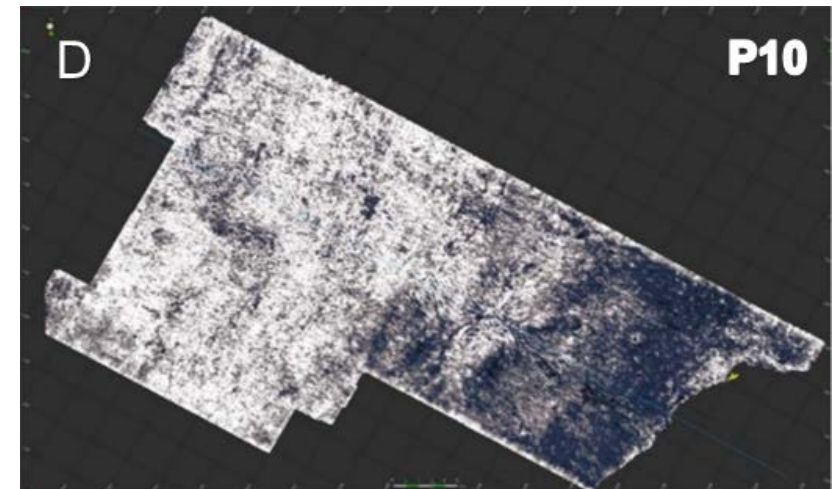
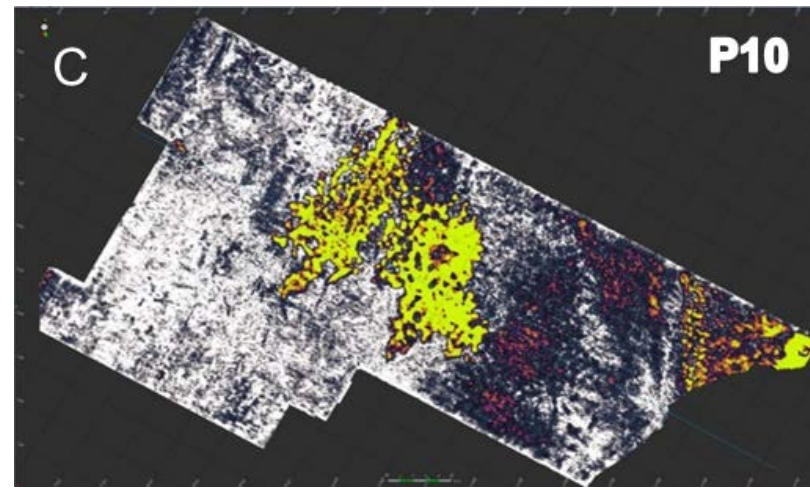
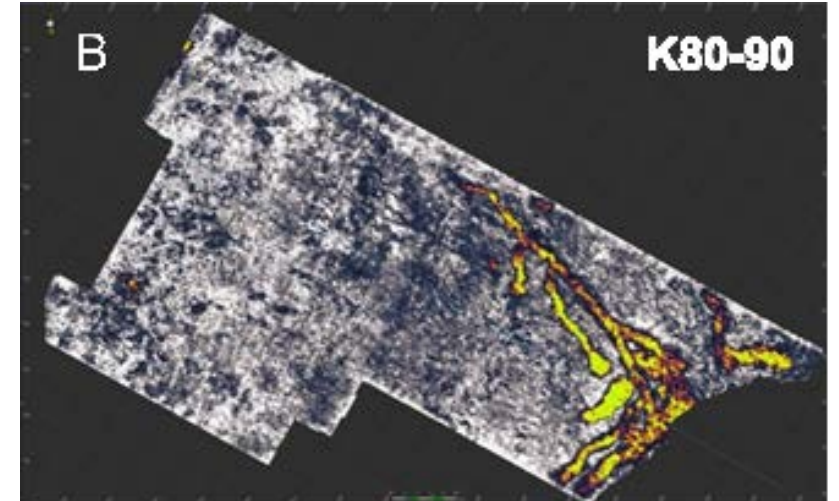
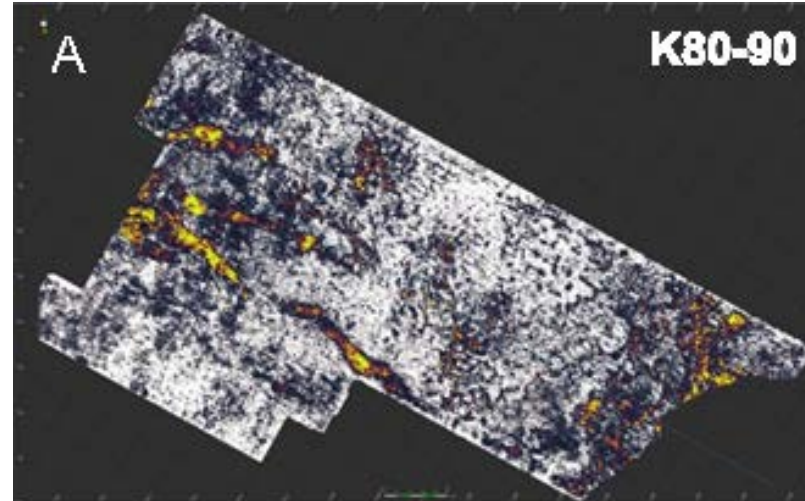


- Primary reservoir target is a remobilised and injected deep-water sand sourced from older sand rich flows from the west
- Source facies remobilised due to the development of overpressure as sediments compacted over the basement complex
- Supported by presence of a series of clastic dykes and sill “feeder” features beneath the interpreted top reservoir
- Remobilisation of parent sands is expected to have enhanced the overall quality of reservoir, with predicted porosity ranging from 15-27%.



# Kaipatiki: Amplitude Conformance

- Horizon slices show evolution of injectite
- Seismic evidence demonstrates presence of both reservoir and seal



# Potential 'success case' Development Options

1

## Liquids Stripping / Gas Recycling

### Recoverable Prospective Resources\*

	Barque Single Horizon	Kaipatiki
Gas (bcf)	-	-
Liquids (mmstb)	460	482
LPG (ktonnes)	-	-
<b>Total (mmboe)</b>	<b>460</b>	<b>482</b>

Or

2

## Gas to Shore

### Recoverable Prospective Resources\*

	Barque Single Horizon	Kaipatiki
Gas (bcf)	3,293	5,565
Liquids (mmstb)	293	272
LPG (ktonnes)	6,029	7,263
<b>Total (mmboe)</b>	<b>891</b>	<b>1,259</b>

Or

3

## LNG

### Recoverable Prospective Resources\*

>2,200 mmboe / 13.2 Tcfe

would require success in all 3 Barque horizons and Kaipatiki

## In Place Prospective Resources

Prospect	Mean Condensate in Place (mmstb)	Mean Gas Initially in Place (bcf)
Barque (3 Horizons)	1,585	11,165
Kaipatiki	754	7,322
<b>Total (Arithmetic)</b>	<b>2,339</b>	<b>18,487</b>

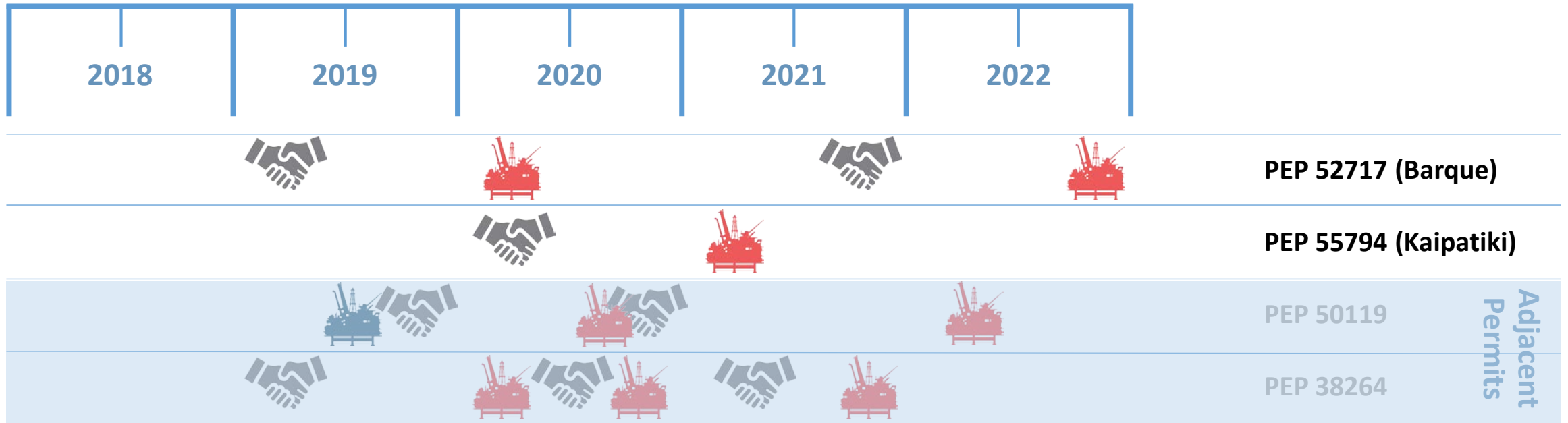
Preliminary review of development scenarios suggests sub US\$10/boe F&D costs upon 'success' for the majority of the success development options




\* Best estimate of unrisks recoverable resources.

# Regionally Aligned Drilling

- Two plus one contingent wells across NZOG’s two permits
  - Barque permit requires a drill/drop decision (well commit) by Q1 2019, with drilling by Q2 2020
  - Kaipatiki permit well commit is not until Q2 2020, with drilling by 2021
- Barque exploration well cost is estimated at US\$45mm and Kaipatiki US\$45mm also, assuming shared mob/demob

Adjacent joint ventures have, subject to election, commitments of up to four wells, providing rig share options



 Committed Well  
  Well Commit  
  Contingent Well

# Material Equity & Potentially Operatorship

- 1 PEP 52717 Joint Venture  
(NZOG 50% & Operator and Beach Energy 50%)
- 2 PEP55794 Joint Venture  
(NZOG 100% & Operator)



Seeking one or more farminees of appropriate scale looking to gain material equity in, and potentially Operatorship of, one or both of these highly prospective permits in return for contributing to the funding of a well in one or both permits

# NZOG

- Indirect Interests in Australia & Indonesia (through Cue Energy)
- New major shareholder
- Looking outside New Zealand into Asia Pac
- Well capitalized

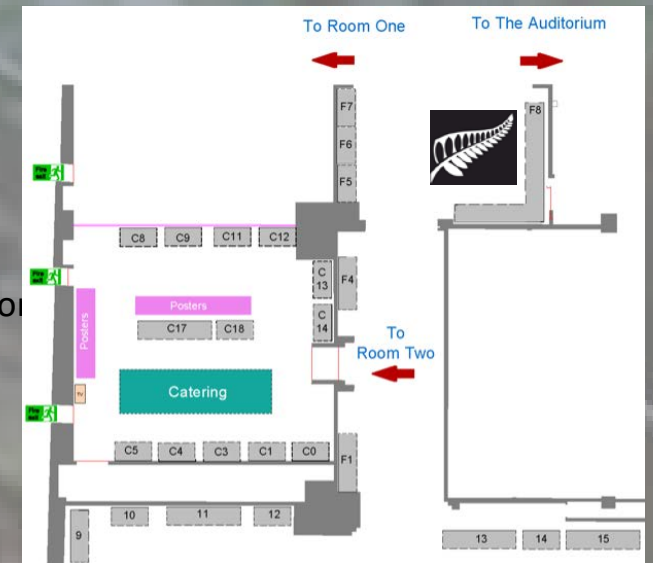
Positioned For  
**Growth**  
Outside NZ



# Offshore South Island New Zealand

Let's Explore Together

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