

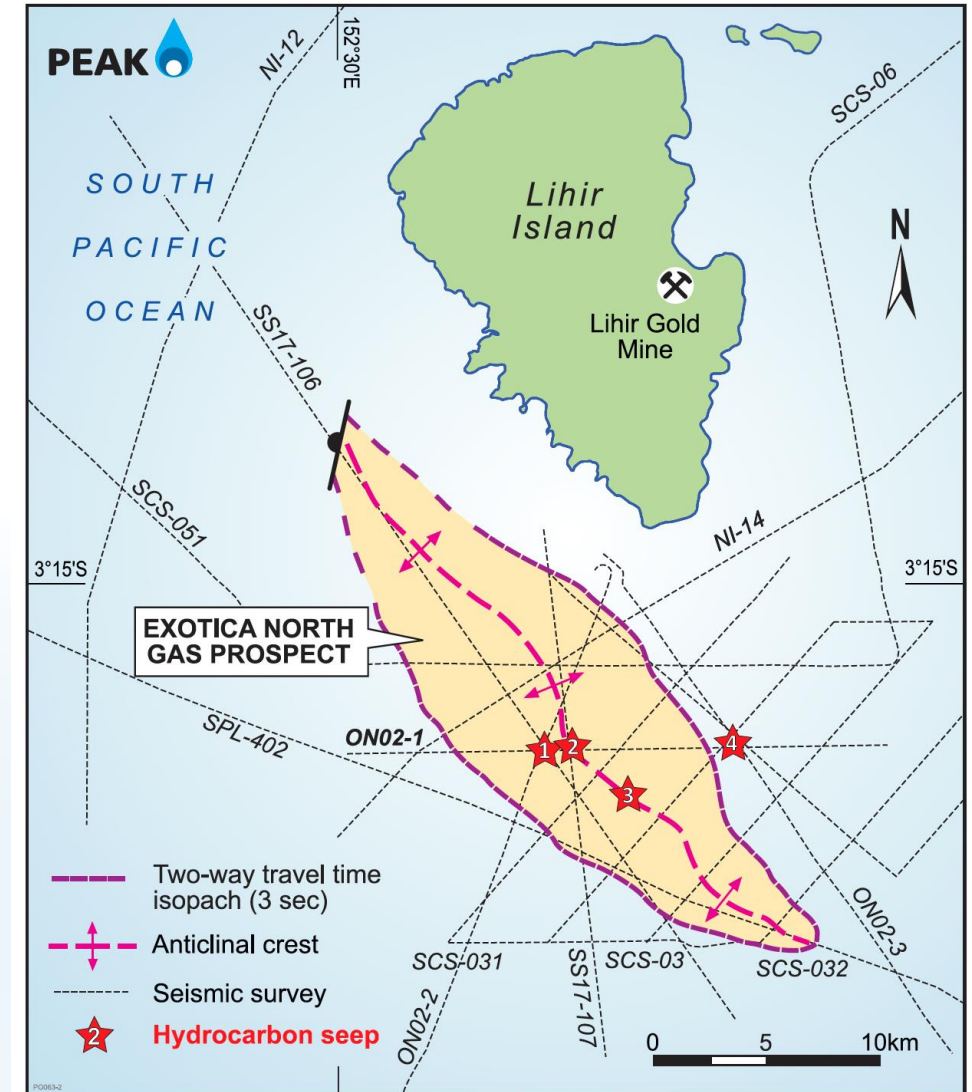
New Ireland Basin – Exploration Update

(PPL 352 & PPL 625)

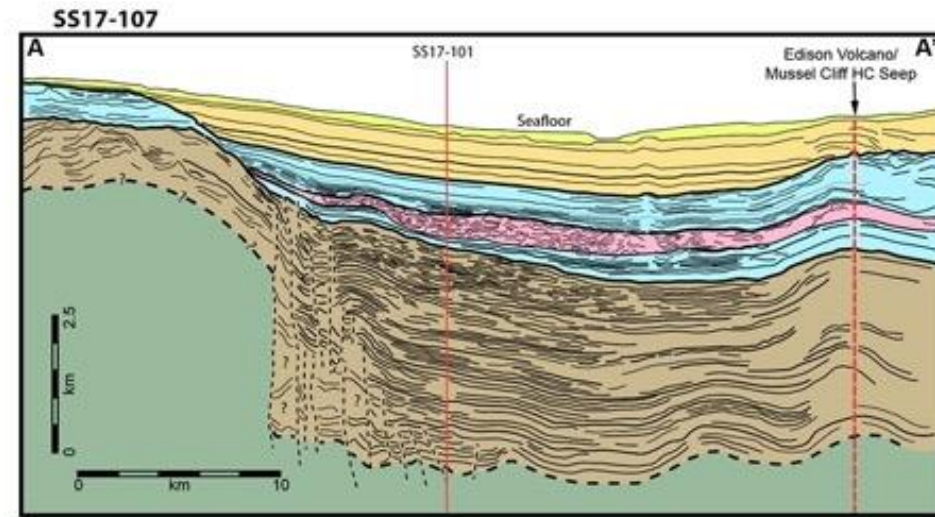
1. Completion of a major subsea exploration program
2. Discovery of natural gas and light crude oil seepage
3. Identification of giant anticlinal structure with multi-TCF potential
4. Prospects for a nascent LNG industry in New Ireland are excellent

*“Papua New Guinea is
a mountain of gold floating on a sea of oil”*

Sir Julius Chan/Charles Lepani



PEAK's New Ireland Basin Assets



- **PPL 352 (100% Peak)**
 - 91 blocks: 7,840 km²
- **PPL 625 (100% Peak)**
 - 60 blocks: 5,170 km²

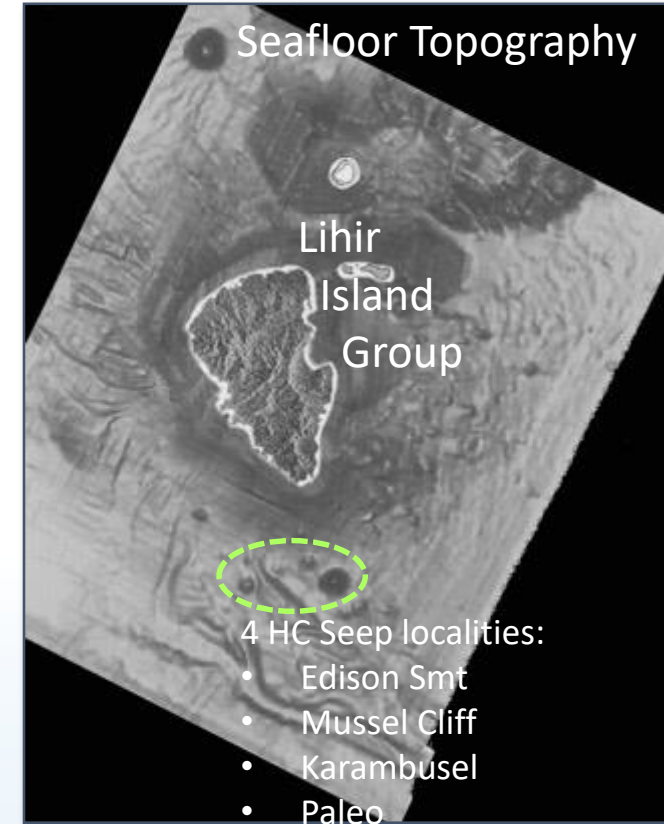
Strategic, contiguous land package across the Exotica slope carbonate play

New Ireland Exploration Activities – RV SONNE

- *RV Sonne* returned to New Ireland Basin for 4th time
- Departed Townsville June 6 – Arrived Singapore July 29, 2023
 - 31 crew; 36 scientists (Germany-Finland-PNG-Australia-Canada)
 - High resolution multibeam mapping of basin structures
 - Seismometer and magnetotelluric array
 - Heat flow probe surveys
 - Seep & sediment sampling

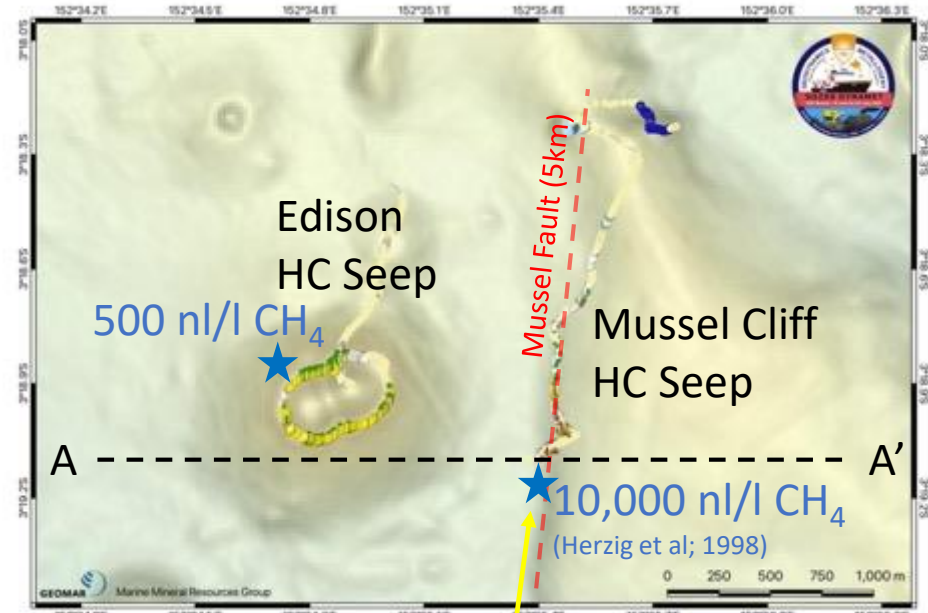
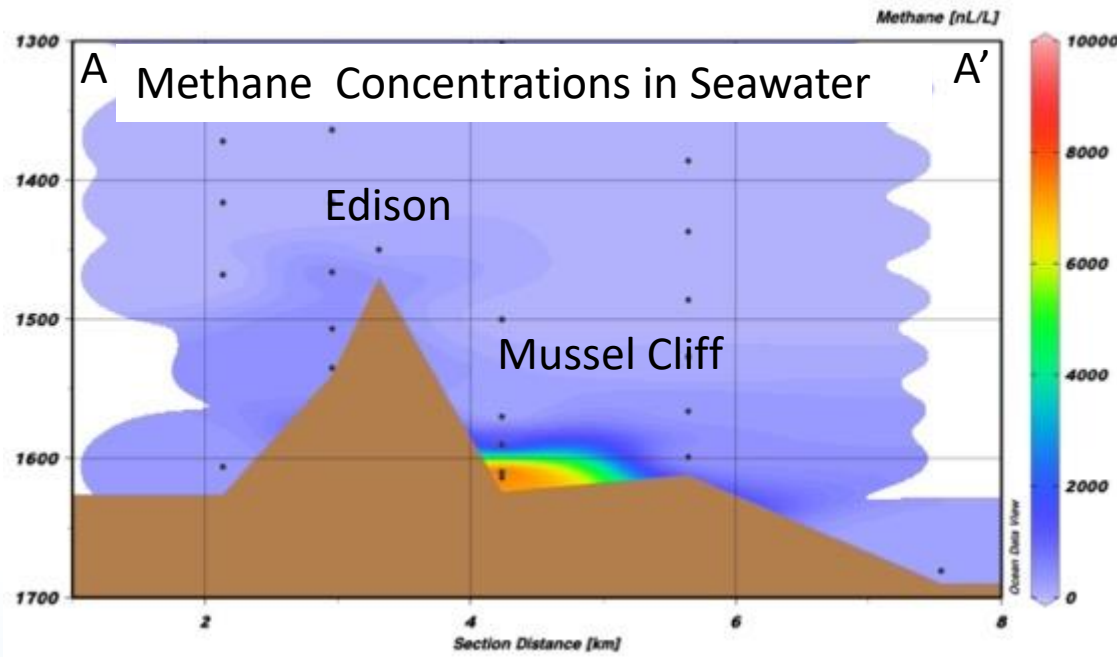


New Ireland Basin – Hydrocarbon Seeps

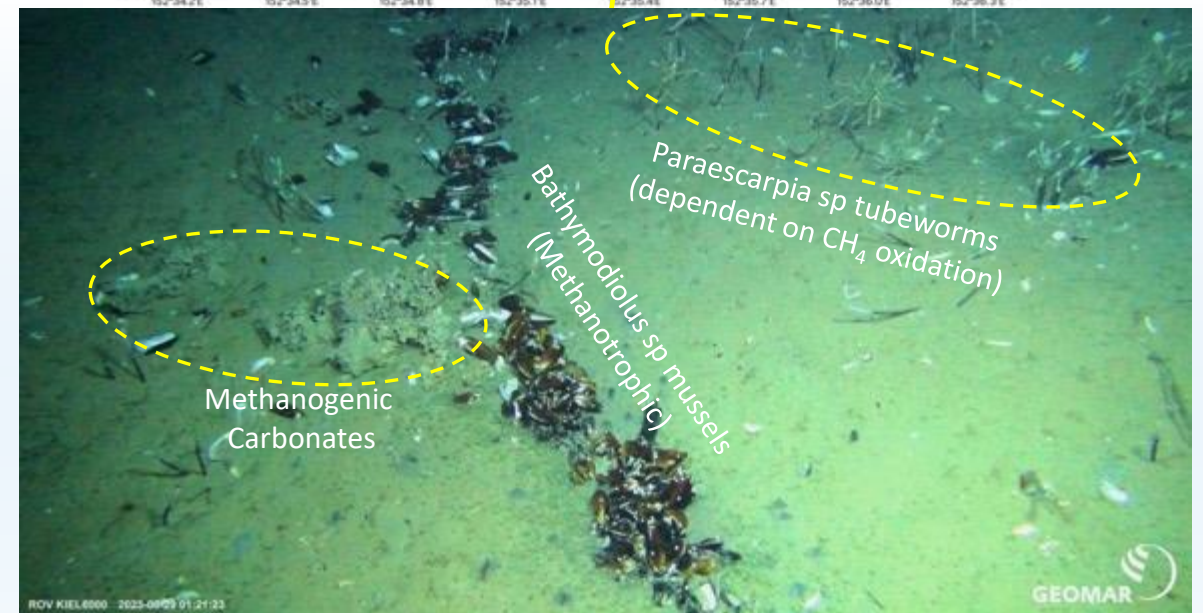


Mussel Cliff Hydrocarbon Seep

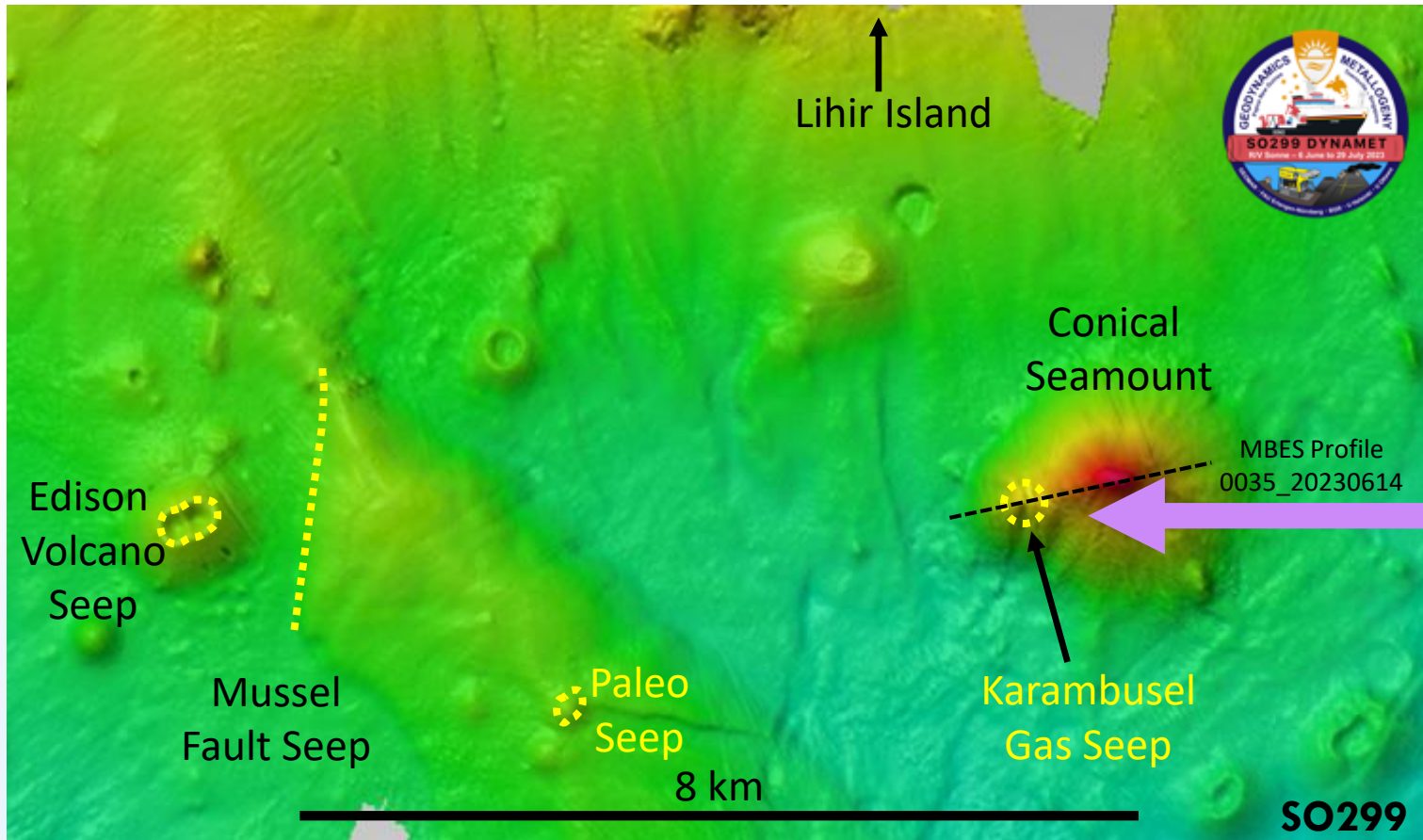
Continuous CH₄ seepage along 5 km fault for >25 years (SO133; 1998)



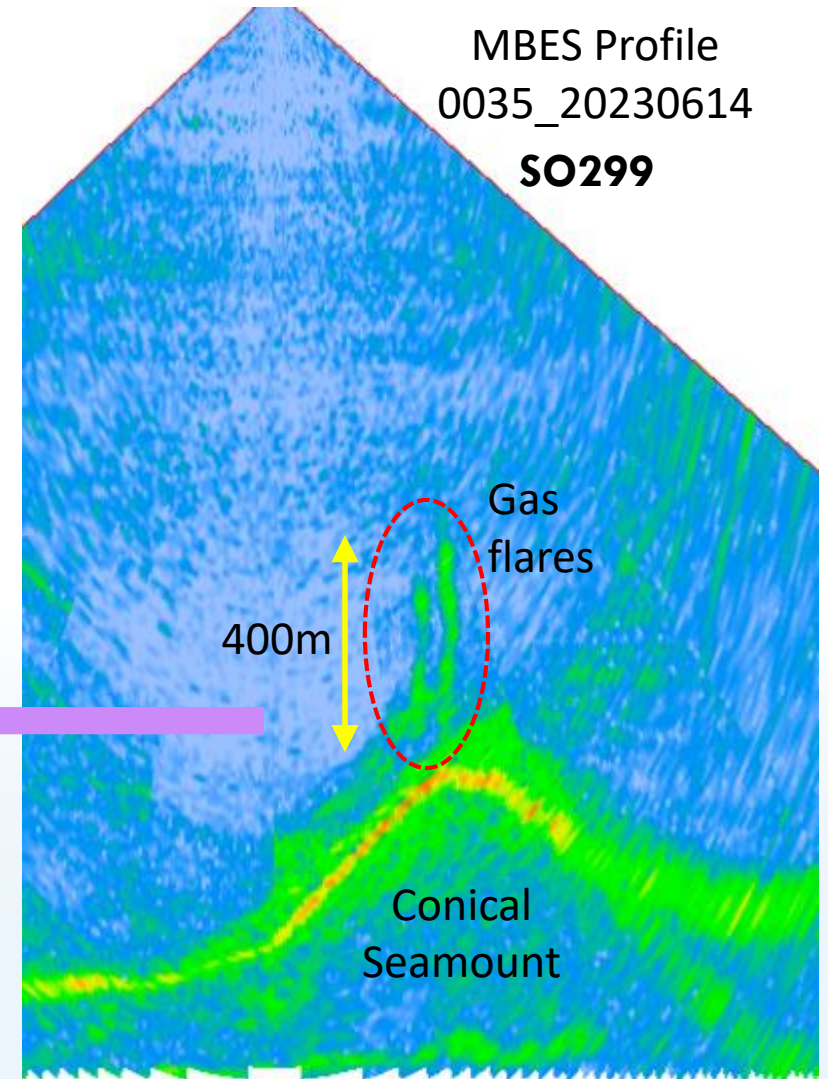
Hydrocarbon	Mussel Cliff Seep <i>(Herzig et al., 1998)</i>	Hides Gas Field <i>(PNG LNG)</i>
Methane (C1)	86 %	89 %
Ethane (C2)	10 %	7 %
Propane (C3)	3 %	2 %
Butane (C4)	1 %	1 %
Wetness Index	14%	10%



Karambusel Natural Gas Seep Discovery South Lihir

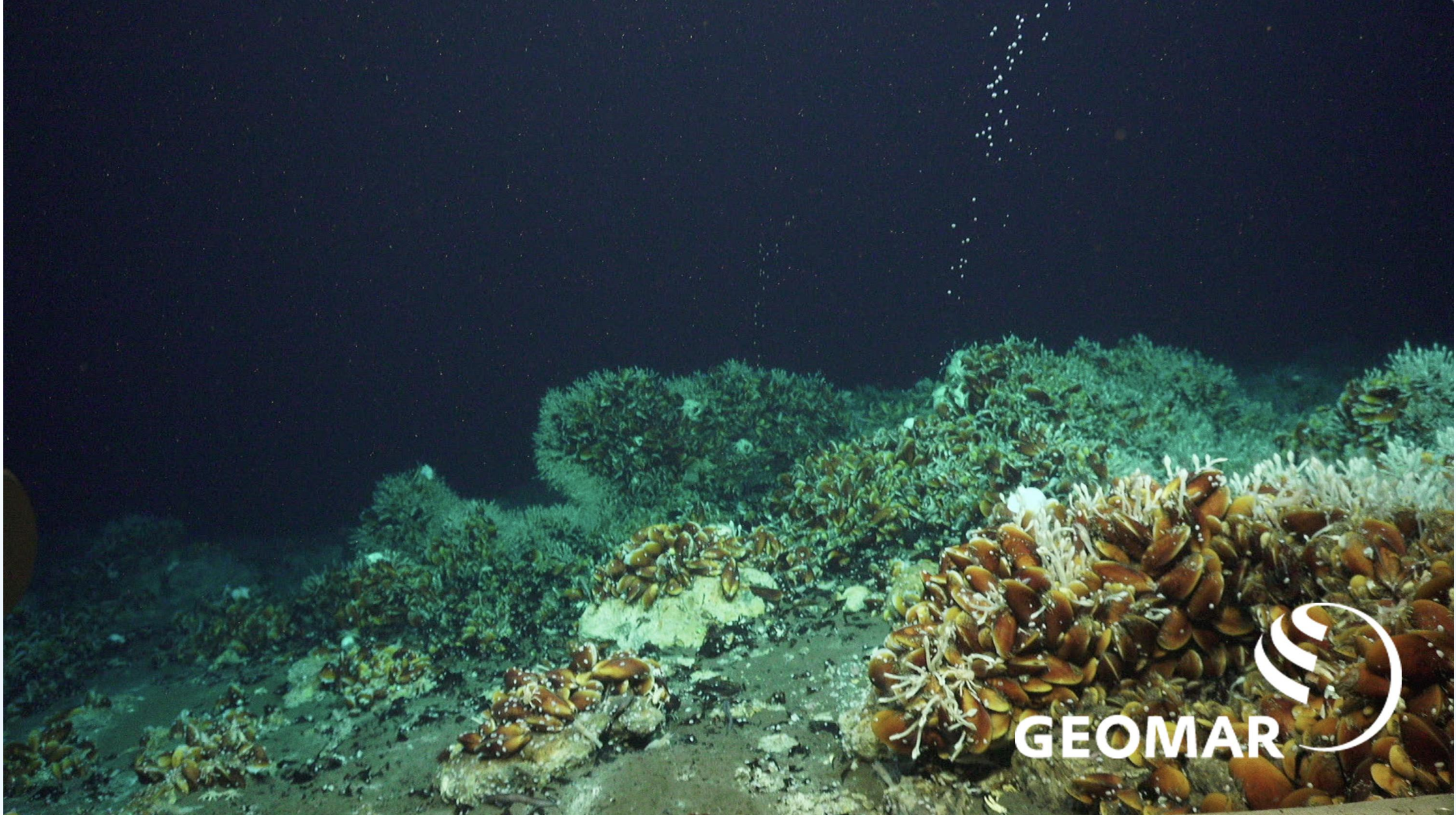


Bathymetry map



Multi-beam echo sounding profile
across Conical Seamount

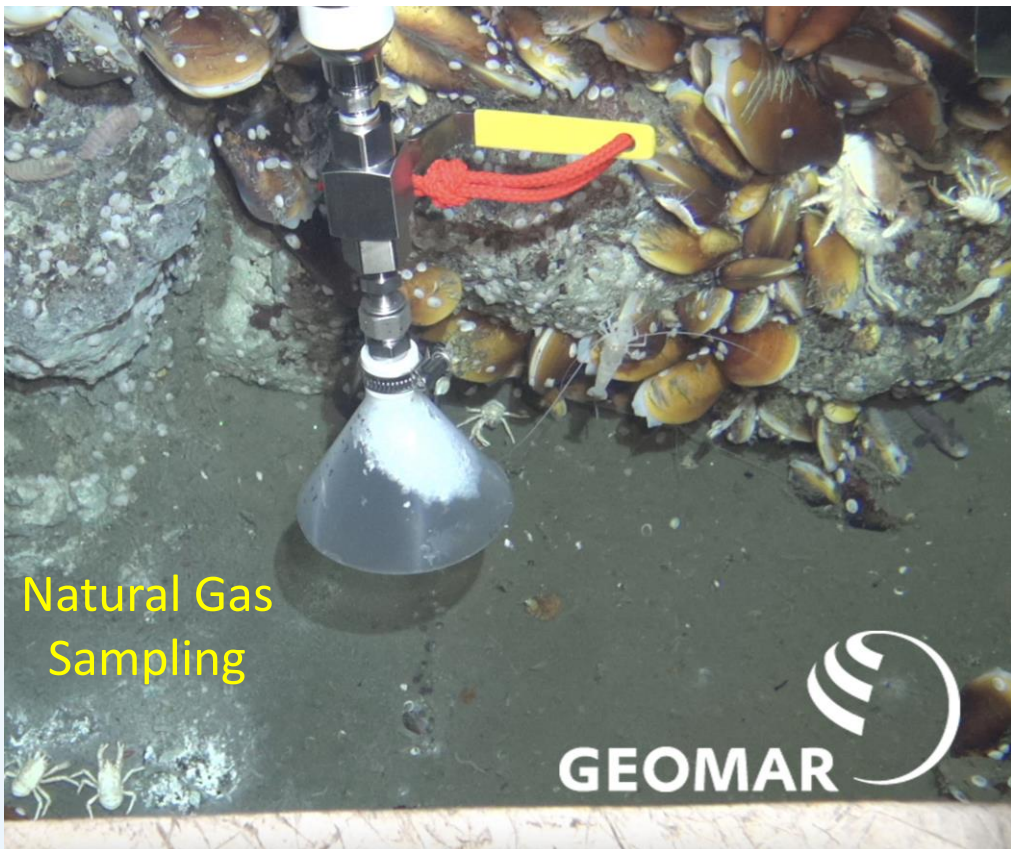
Karambusel HC Seep (21 acres): Sampling







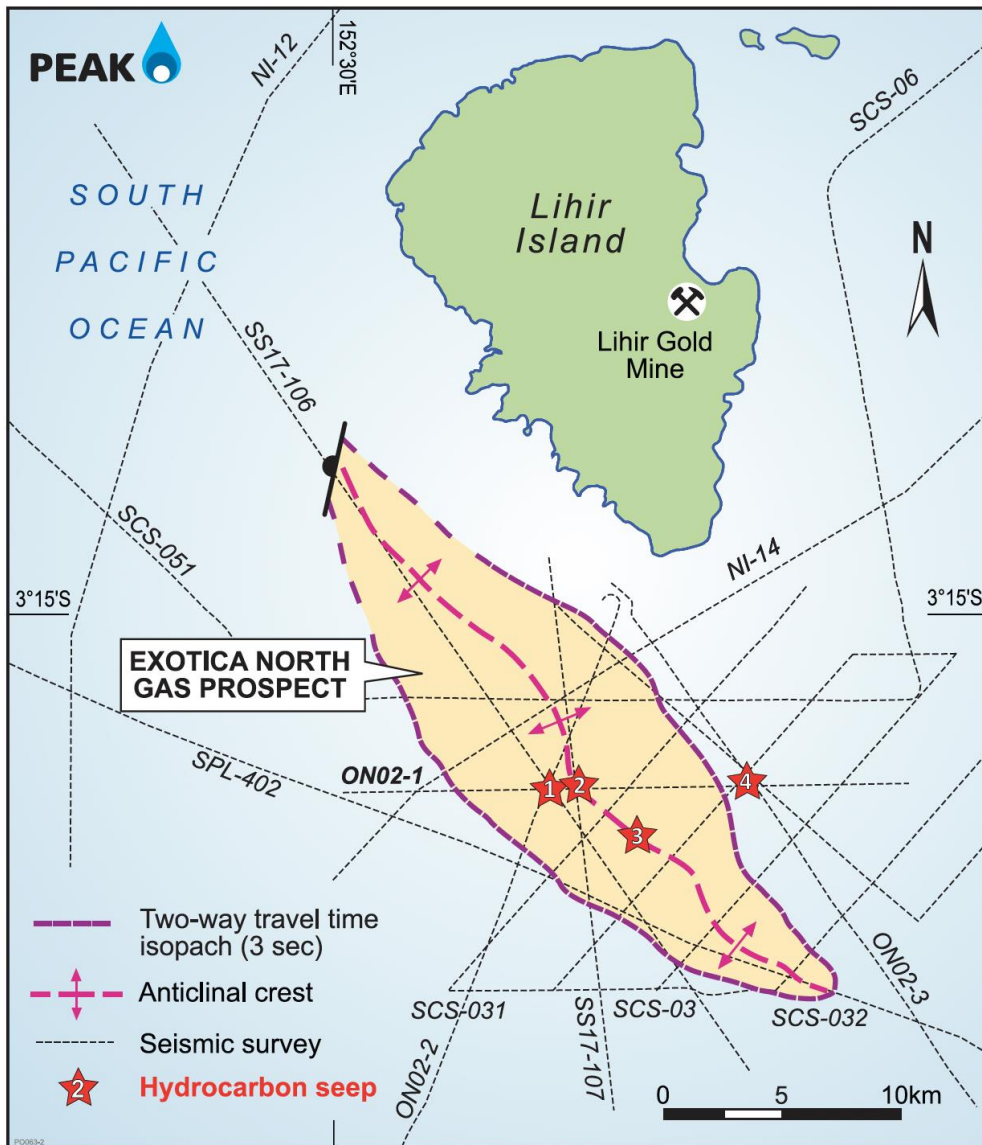
Karambusel Seep Emissions – Gas Composition Data



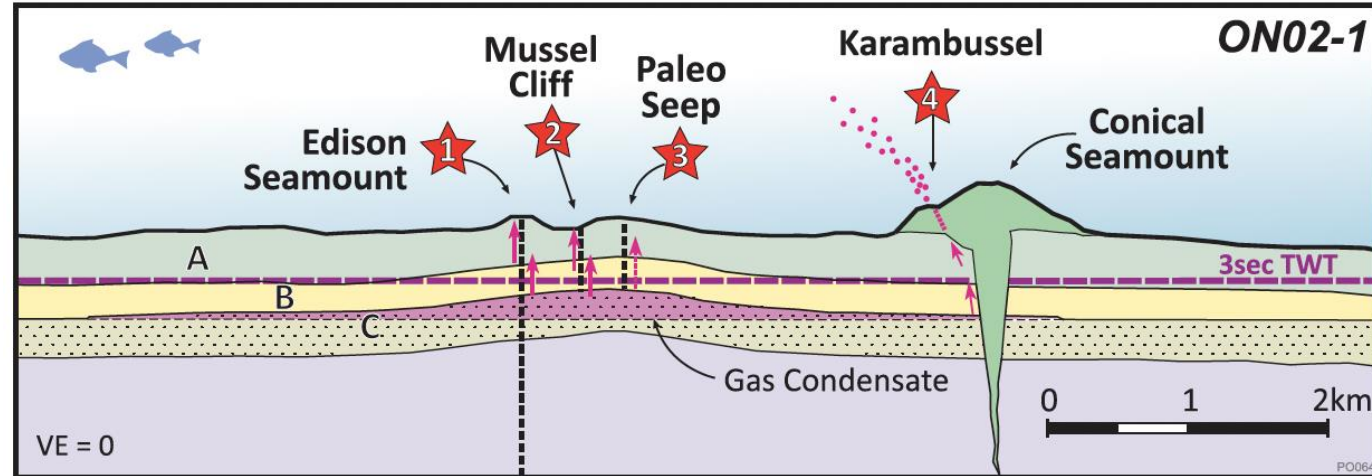
Gas	K1*	K2*	K3*	Hides	China Ave
Methane (C ₁)	81.2	80.7	82.8	84.0	86.3
Ethane (C ₂)	2.8	2.7	2.9	6.5	2.8
Propane (C ₃)	1.4	1.3	1.7	5.5	0.9
Butane (C ₄)	0.4	0.4	0.6	1.0	0.3
Pentane (C ₅)	0.1	0.1	0.1	?	?
N ₂	8.7	9.0	10.5	2.1	5.1
CO ₂	5.5	5.6	1.4	0.9	3.0
H ₂ S	0.1	0.2	0.1	0.0	1.0
Total	100	100	100	100	99.4

Polycyclic aromatic hydrocarbons confirmed by GC-MS

Seismic Stratigraphy, Structures and Seeps: A Model



Double-plunging anticline: 32 km x 9 km

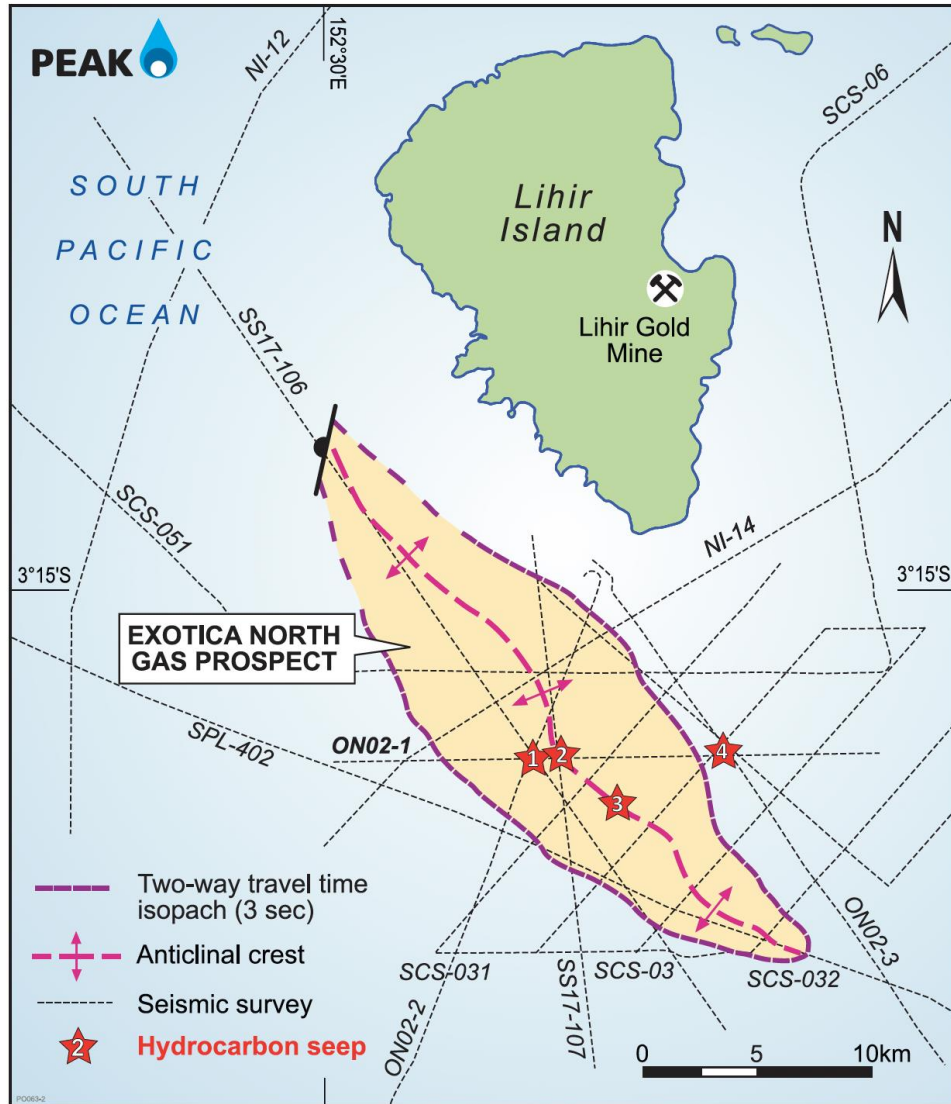


A genetic model with hydrocarbon accumulation at the top of Group C.

Structural and volcanic piercements of the anticline are conduits for the migration of hydrocarbons to the seafloor from an overpressured gas reservoir.

The minimum height of the gas column is 250 m.

Exotica North Gas Prospect vs PNG LNG Hides Gas Field



Exotica North Anticline: 32 km x 9 km (minimum)

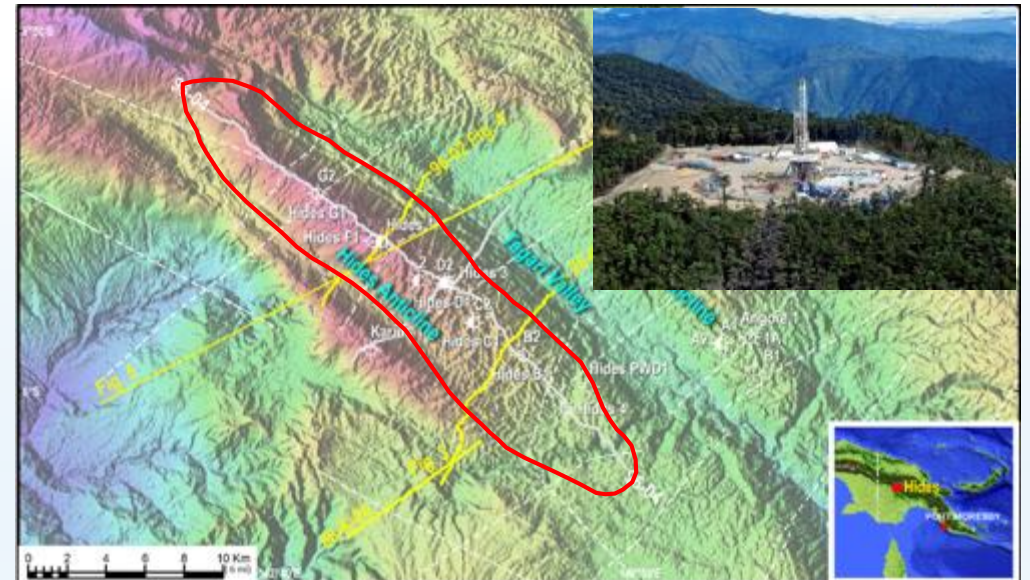
Hides Gas Field (ExxonMobil Operator)

Trap Type: Anticline (thrust-fault induced)

Dimensions: 30 km x 5 km

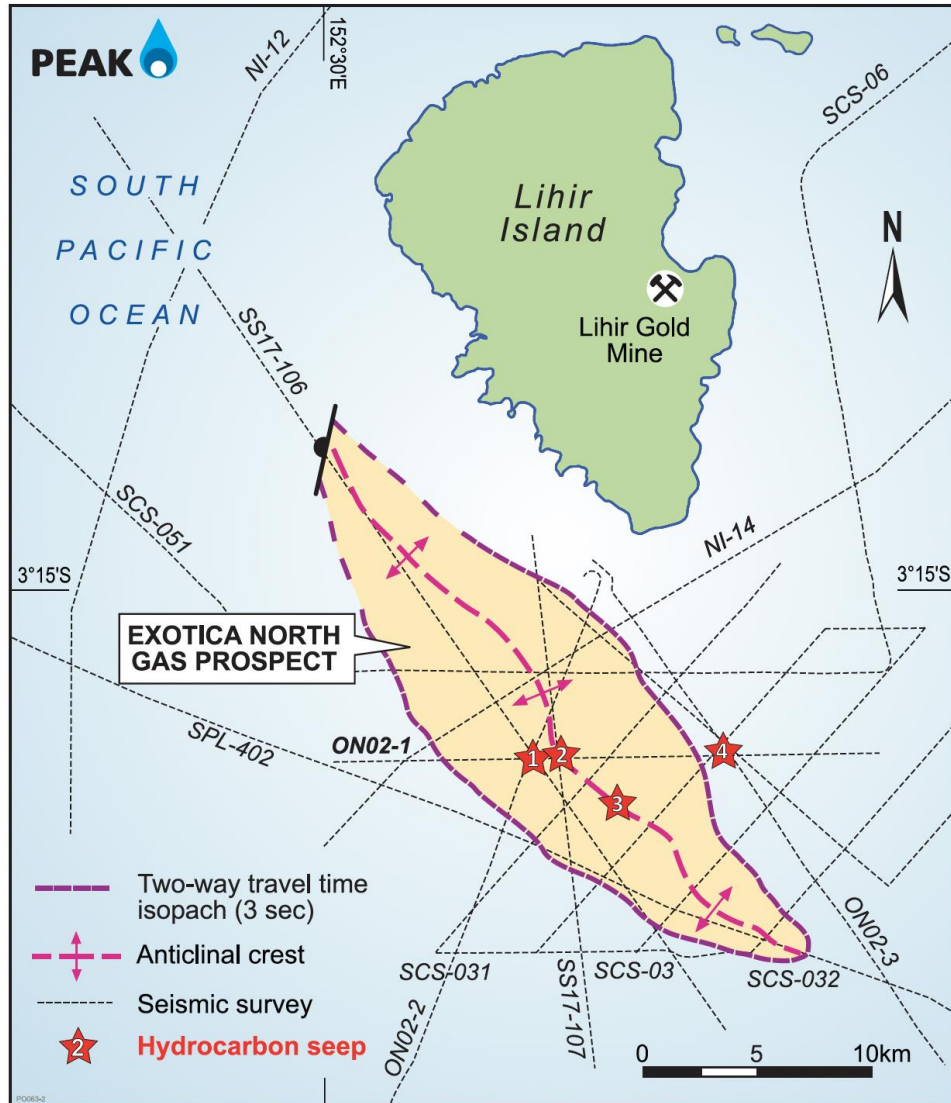
Reserves: 7.1 trillion cubic feet gas, 142 mm bbl oil

Expected Life: 2044 (25% depleted as of Q4 2023)



Johnstone & Emmett, 2000

Exotica North Gas Prospect vs PNG LNG Hides Gas Field



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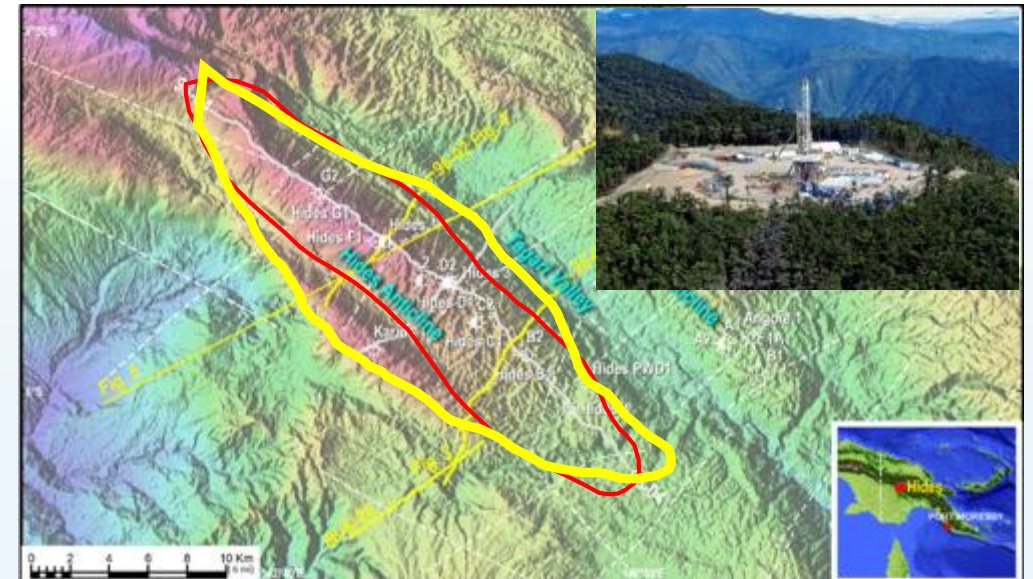
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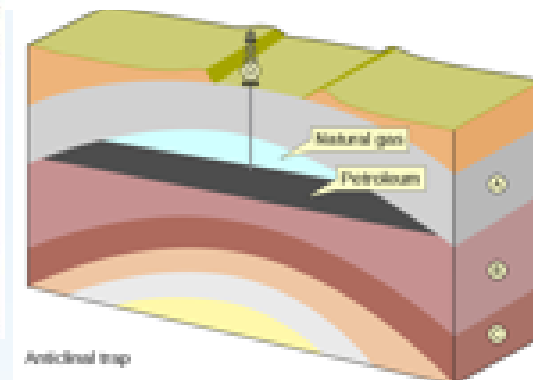
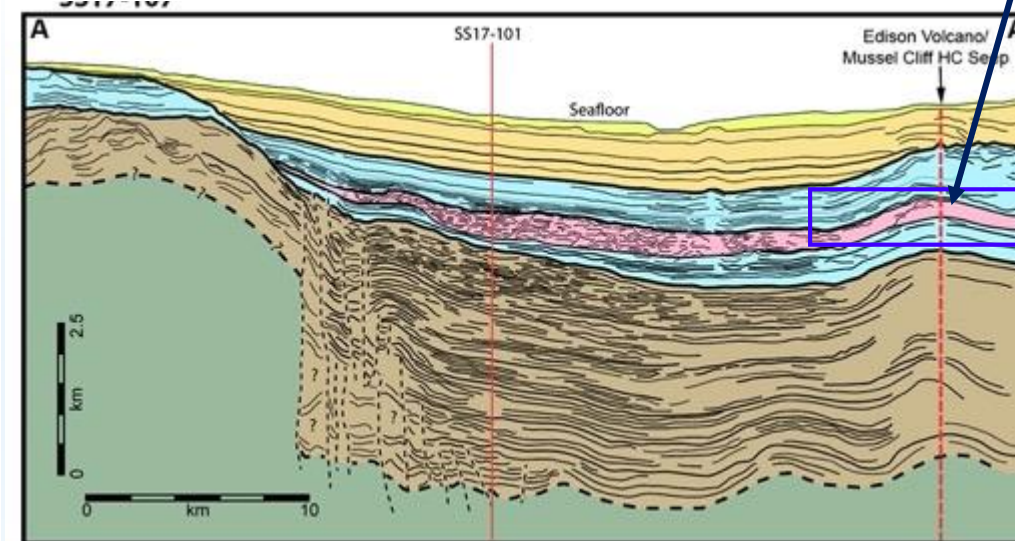
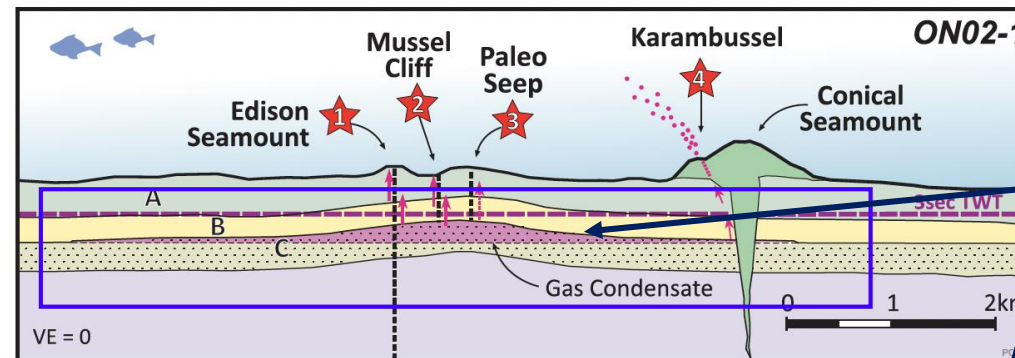
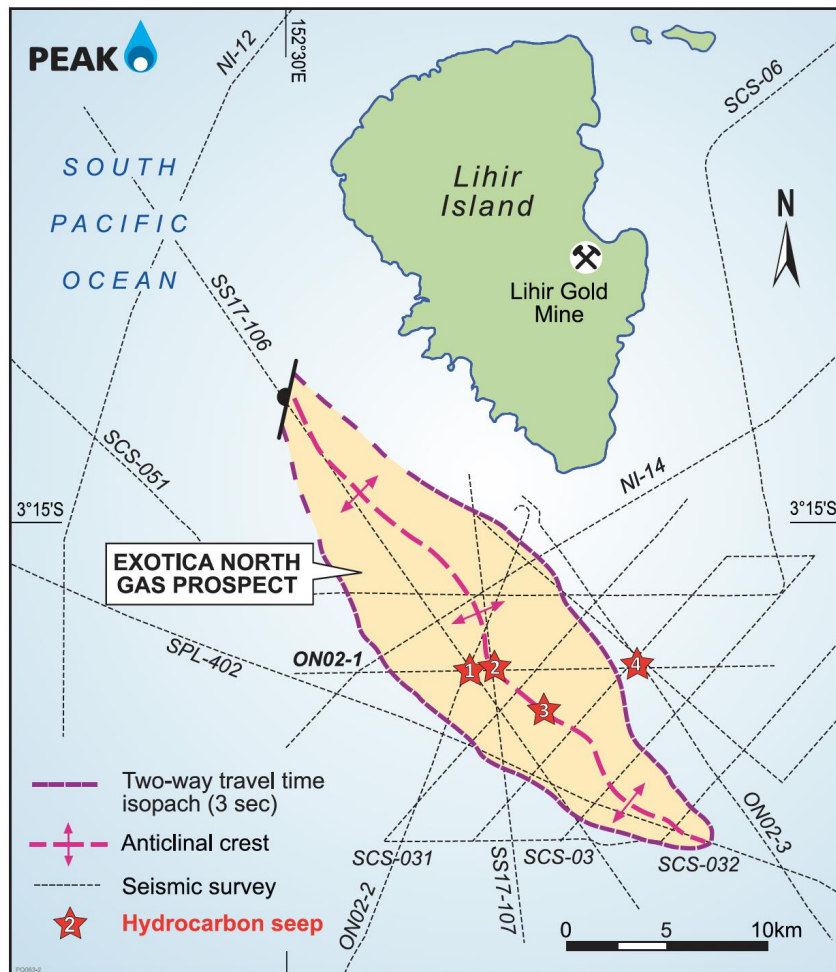
Johnstone & Emmett, 2000

Exotica North Prospect – Resource Estimation

Probability	Natural Gas (TCF)	Light Crude Oil (MMBOE)
90%	3.6	160
50%	7.8	400

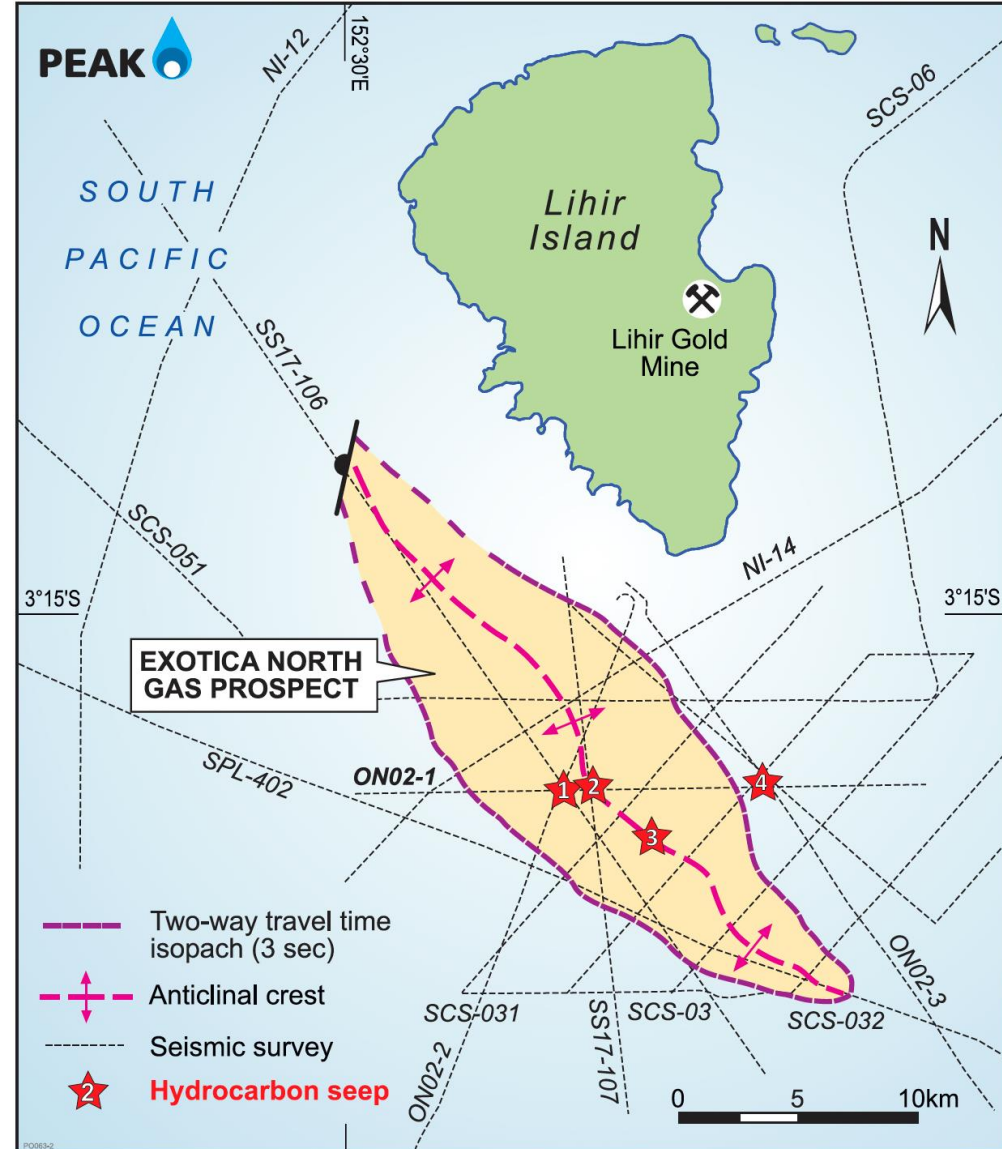
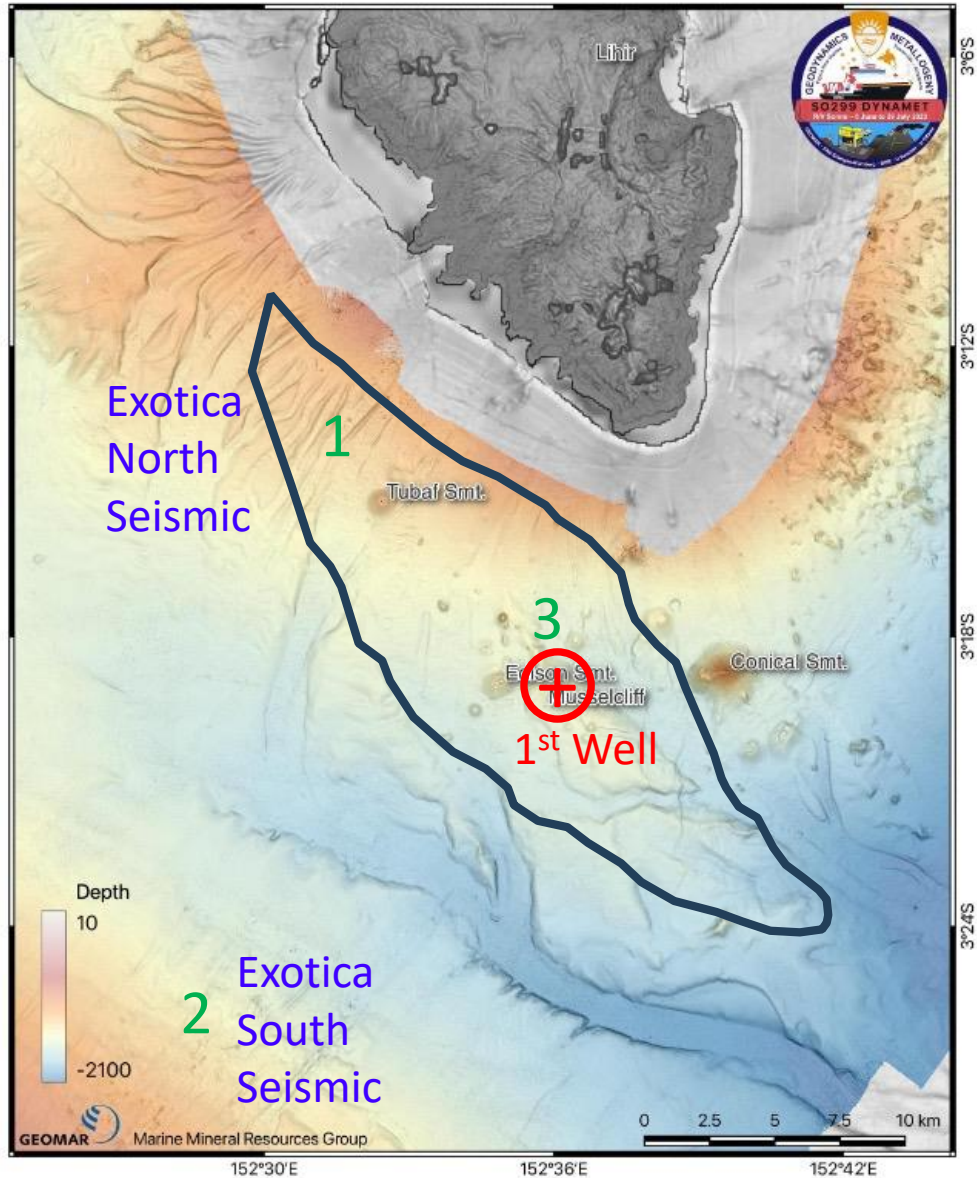
Exotica North Assumptions

- Hydrocarbons present
 - 100% gas condensate
 - Gas:oil = 20-50 bbl/mmcf
- Trap Area
 - $P_{10} = 165 \text{ km}^2$
 - $P_{90} = 100 \text{ km}^2$
- Reservoir Net Pay
 - $P_{10} = 350 \text{ m}$
 - $P_{90} = 150 \text{ m}$
- Porosity
 - $P_{10} = 15 \%$
 - $P_{90} = 6 \%$
- Recovery
 - $P_{10} = 80 \%$
 - $P_{90} = 60 \%$

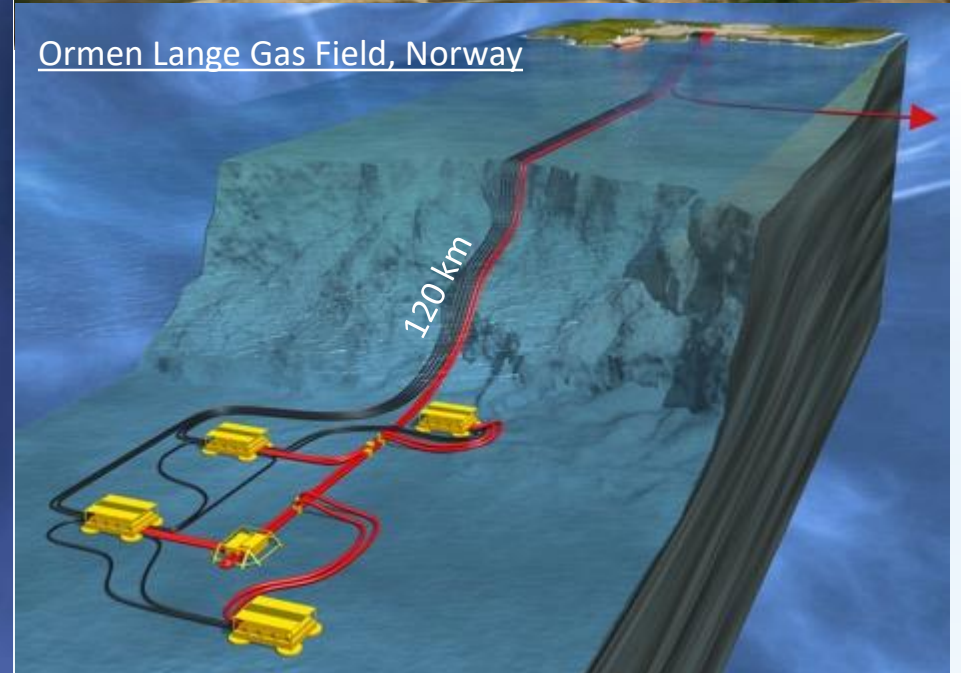
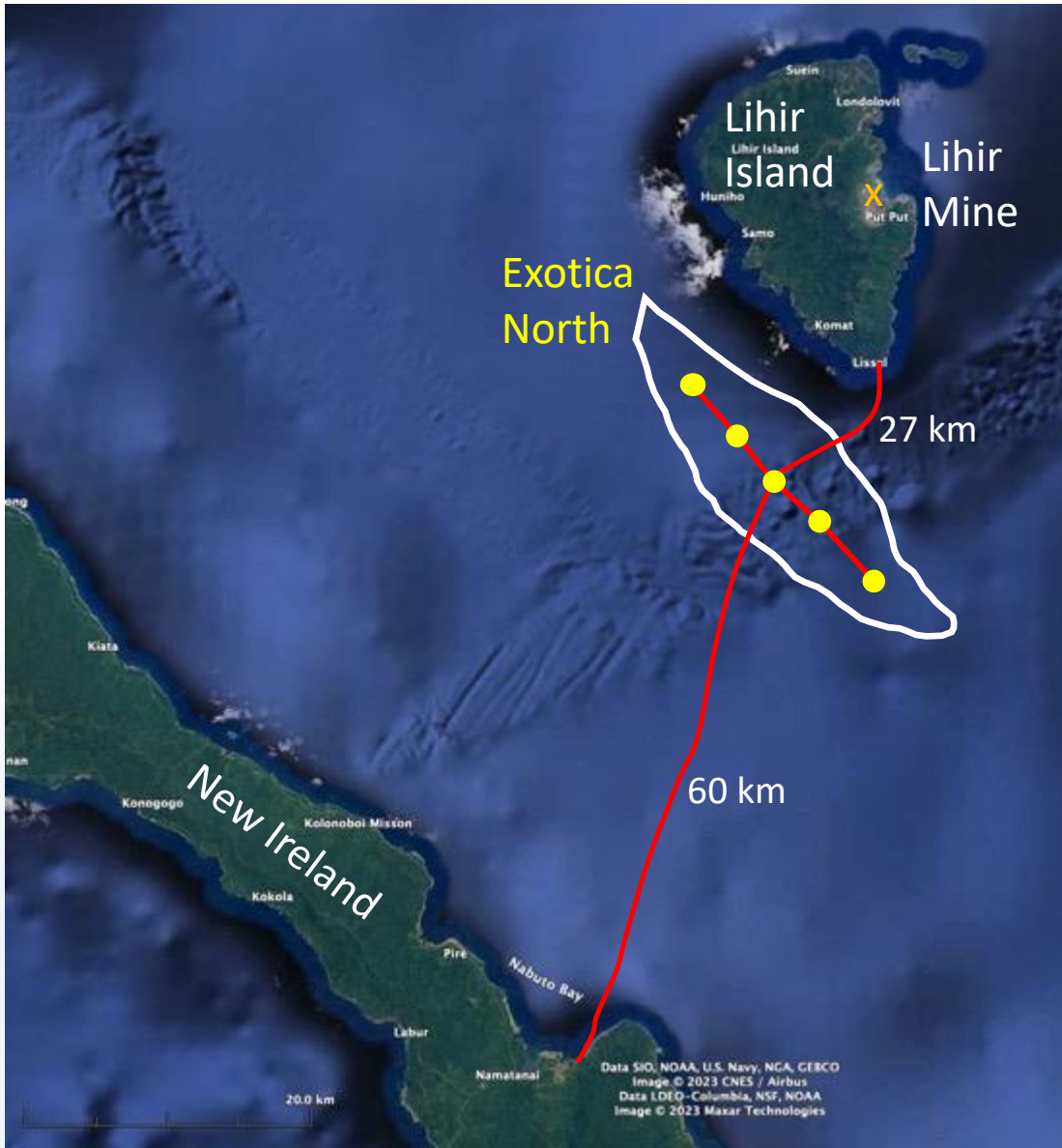


Anticlinal trap

Next Steps – Seismic (1,2) & Drilling (3)



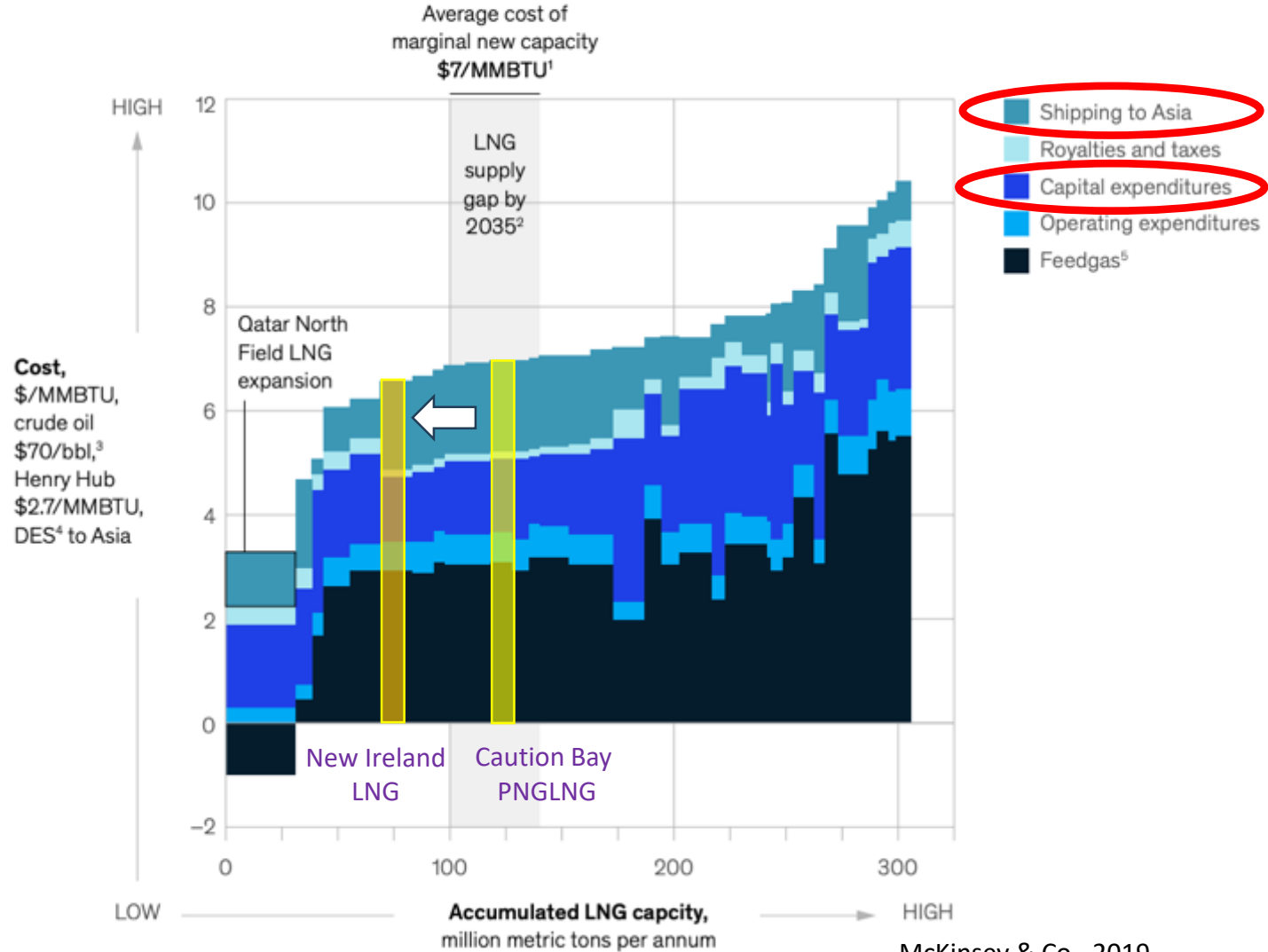
Exotica Subsea Production Concept



New Ireland LNG – Proximity to Asian Markets

To stay competitive, projects need to be priced at \$7 per MMBTU.

Liquefied-natural-gas (LNG) cost curve for future projects



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