



# Lakes Blue Energy

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Presentation to Annual General Meeting

Roland Sleeman, CEO

25 November 2022

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# 2021/22: Year in Review



Victorian  
exploration ban  
lifted  
1 July 2021

Wellesley-2 well  
drilled in  
Queensland

2021 AGM  
(25 March 2022)

Enterprise North  
Prospect identified  
in Otway Basin, Vic.

Work under way to  
resume exploration  
in Victoria

Successful capital  
raising (\$6.5m)

LKO Shares  
reinstated to trading  
7 February 2022

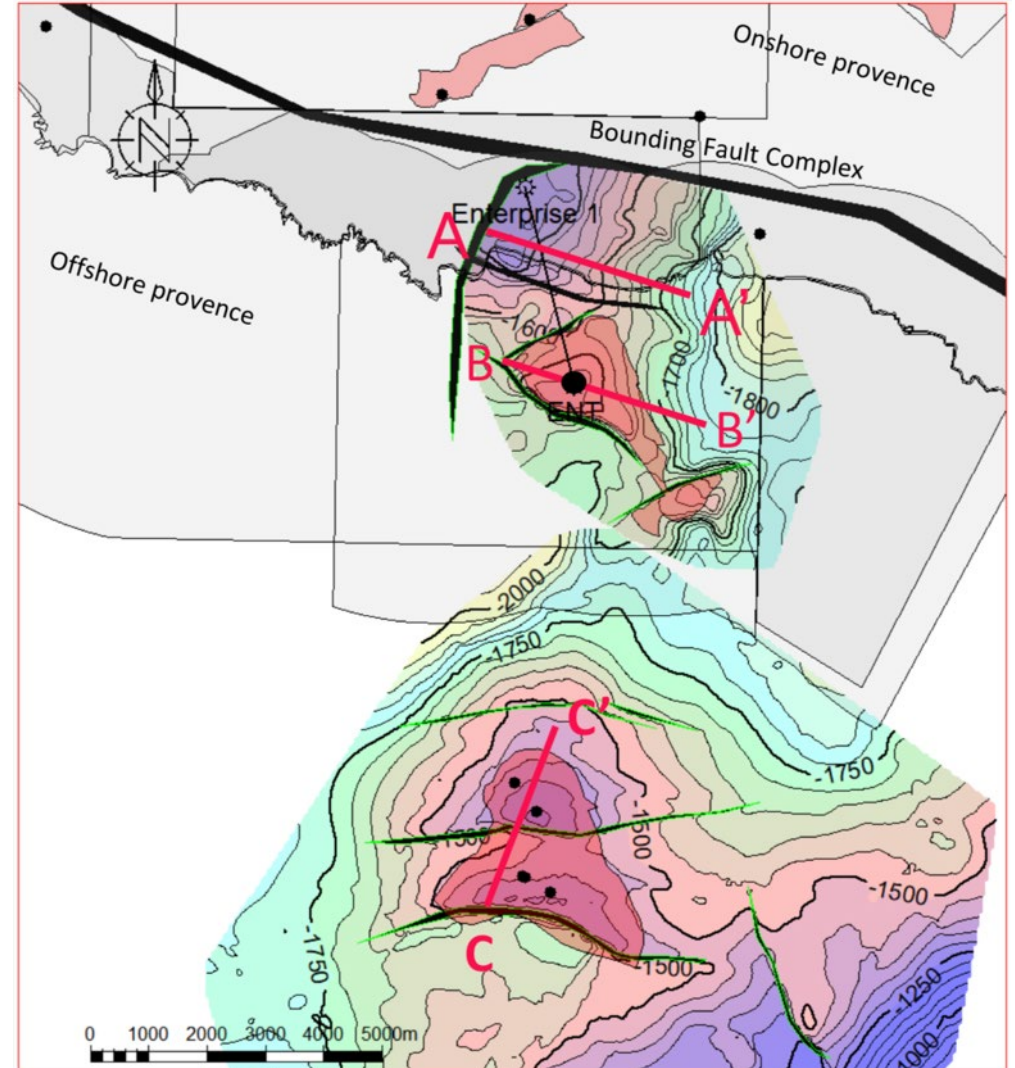
PNG: Technical  
Cooperation  
Agreement with  
TotalEnergies

PNG rock and fluid  
sampling program  
successfully  
completed

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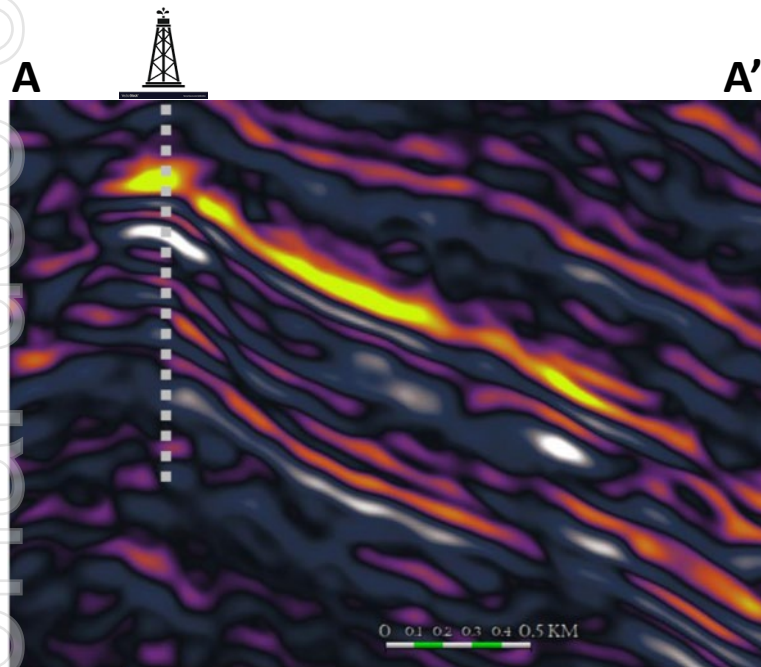
# Enterprise North Prospect Identified

- Prospect identified through reinterpretation of merged 3D seismic, calibrated to known offshore fields.
- Advantageous onshore location within PEL 169 (49% Lakes; 51% Armour Energy), close to existing infrastructure.
- Very large, low-risk prospect, targeting the highly productive Waarre Sandstone Formation:
  - Up to 97 Bcf recoverable gas (net LKO).
  - Up to 2.4 MMBbl recoverable condensate (net LKO).
  - Prognosed 72% chance of geological success.
- Prioritised for pursuit given size, chance of success and cost.
- Approvals processes underway for Enterprise North 1 well.

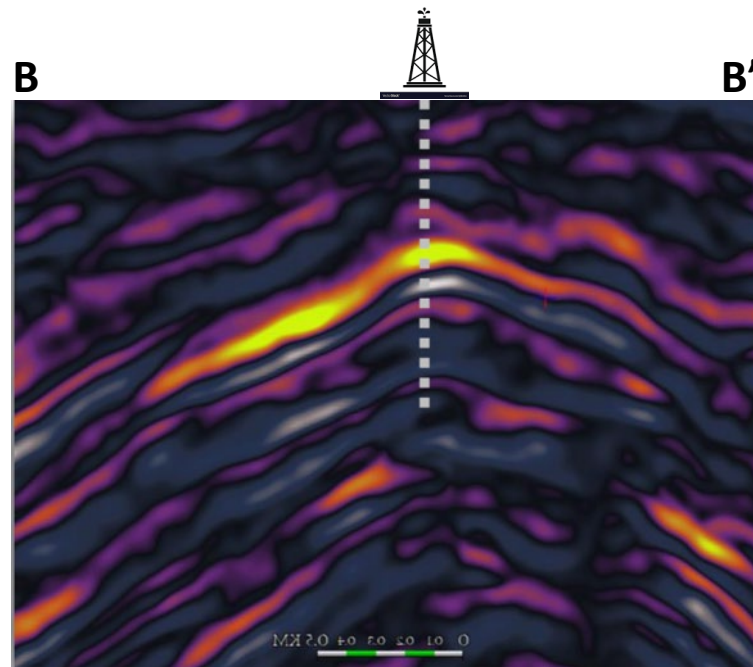


# Enterprise North – Comparatives

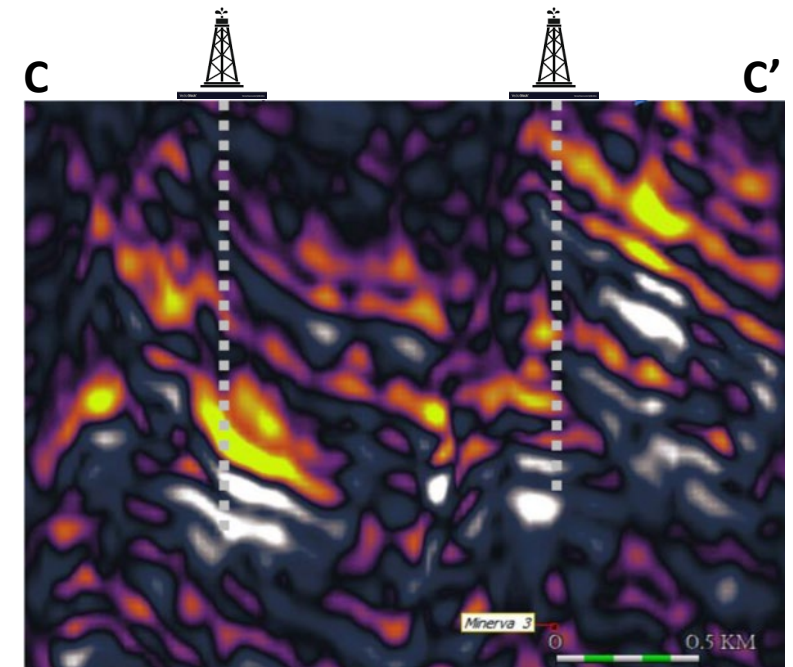
- On trend with, and with seismic amplitude similar to, the Enterprise and Minerva gas fields
- Interpreted gas-charged sands cause bright amplitude anomaly on seismic.



Enterprise North



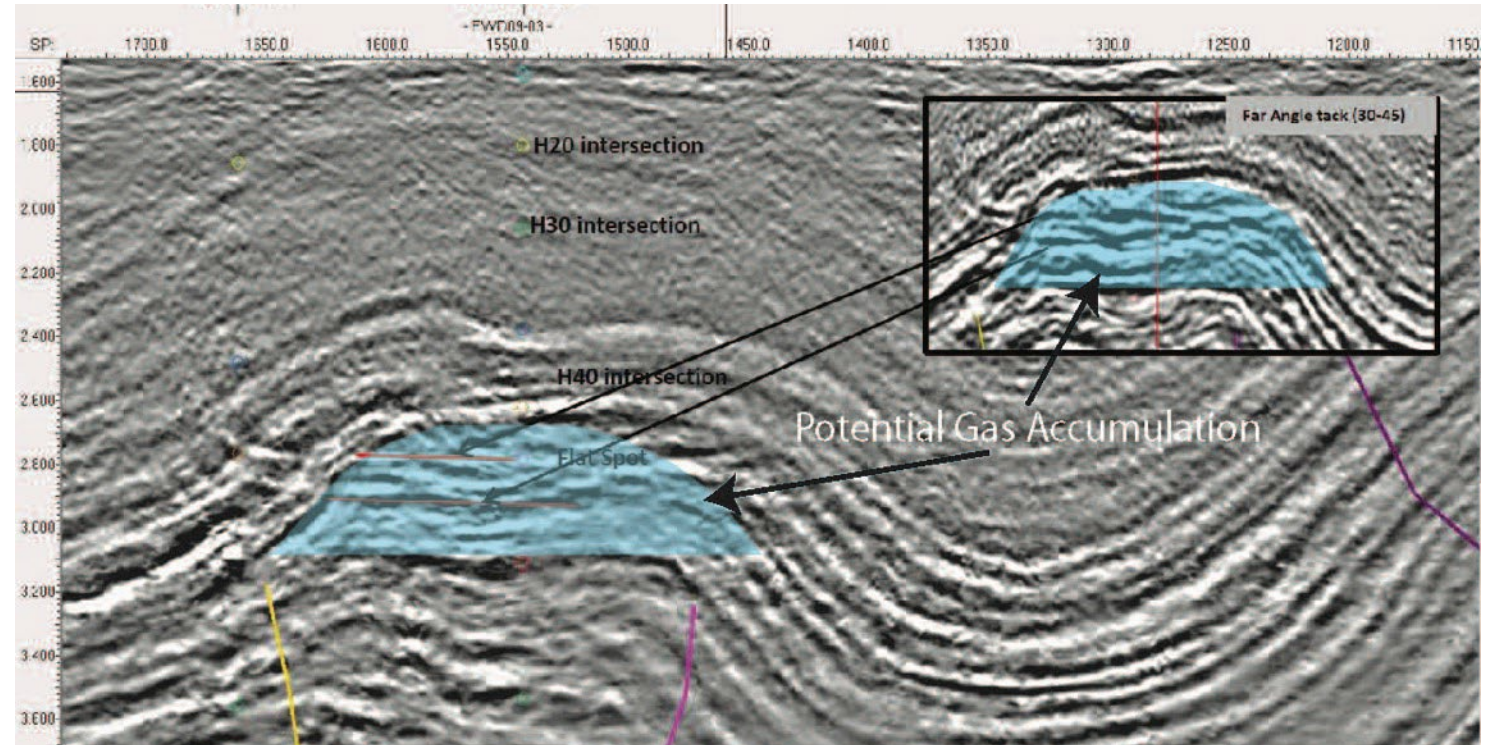
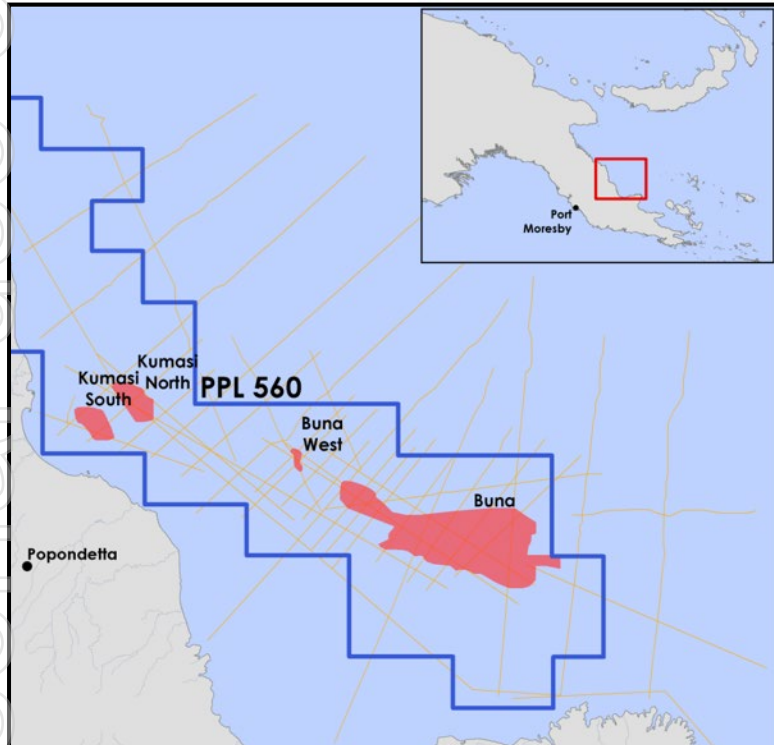
Enterprise



Minerva

# PNG: PPL 560 - Buna Prospect

- Buna Prospect (PPL 560), offshore shallow water, has 3.3 Tcf prognosis.
- Seismic flat spots indicate gas liquid contact.



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# PNG: PPL 560 – Technical Collaboration Agreement



- **Technical Collaboration Agreement ('TCA') in place with French Major, TotalEnergies.**
- **TCA involves:**
  - **Phase A – rock and fluid sampling by Lakes (already completed), geological and geophysical studies by TotalEnergies.**
  - **Phase B – upon completion of phase A TotalEnergies has option at its cost to acquire seismic to delineate the Buna Prospect.**
  - **Phase C – if Phase B is completed, TotalEnergies has option to acquire 75% interest in PPL560 by funding first US\$30m of the cost of drilling an exploration well within the permit area.**
- **Lakes retains 25% ownership of PPL 560.**
- **Total is developing the 5.4 million tonnes per annum Papua LNG Project, with startup envisaged in 2027.**

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# PNG: PPL 560 – Rock and Fluid Sampling

- Rock and fluid sampling program successfully completed in October 2022.
- 46 rock outcrop samples, 9 sediment samples, 6 gas samples and 6 liquid samples collected.



*Gas sample collection*



*Field-test of gas bubbling from reservoir*



*Oil sample from oil seep*

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## Aim to Commercialise Victorian Gas Resource

Working to Secure Approvals for Multiple Exploration Wells across Victorian Permit Areas

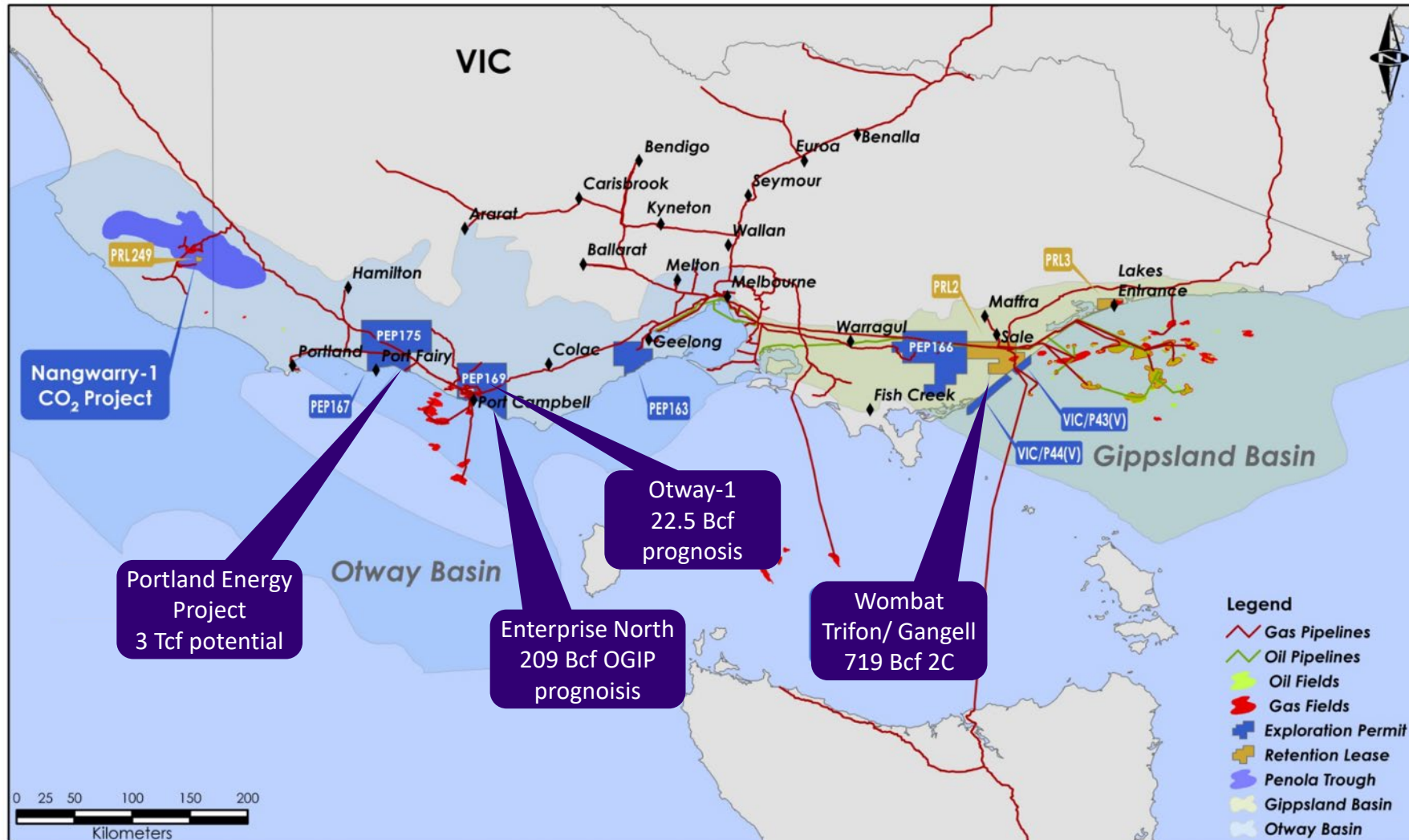
Exploring funding options, including Farmouts

Exploration Drilling Activity to Resume as Soon as Approvals are Secured and Equipment Available

Seek to Advance PNG interest (with TotalEnergies) and South Australian Interests

Continue to Monitor Sustainable Energy Opportunities

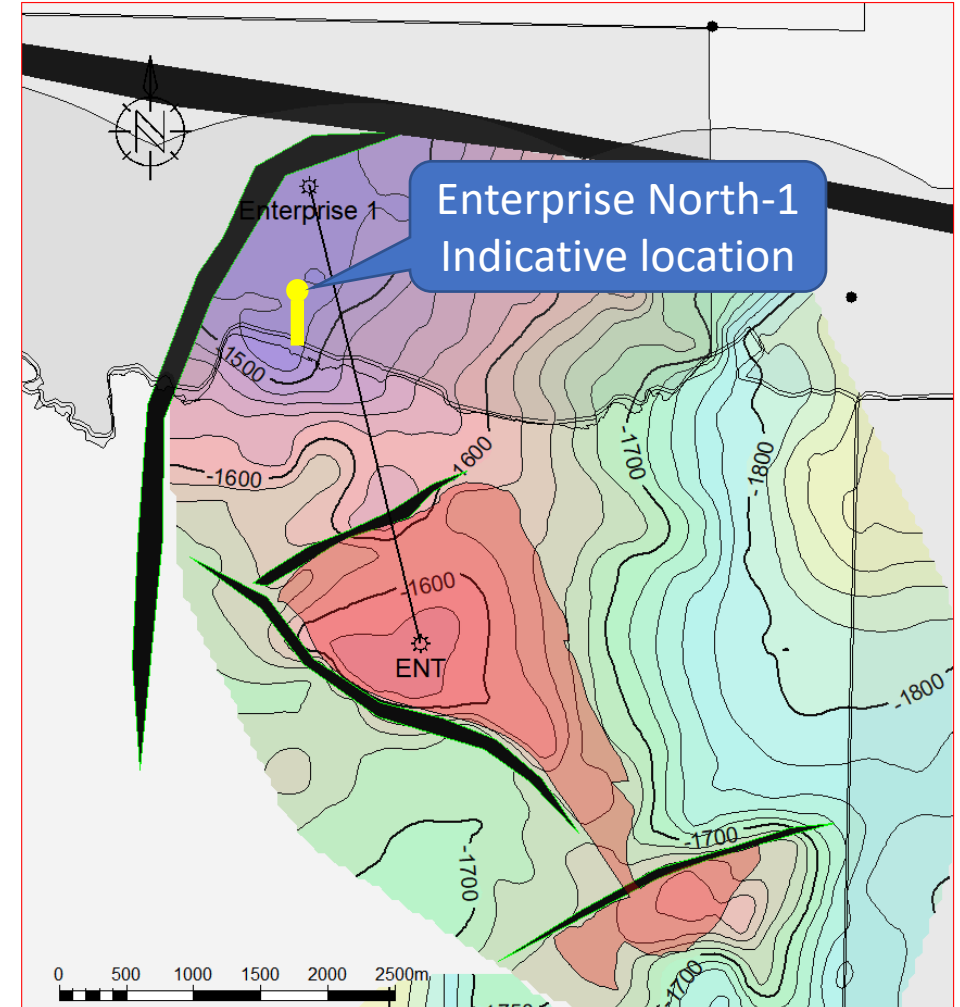
# Victoria Exploration Focus



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# Enterprise North-1 Gas Well

- Located within PEP 169 (49% LKO).
- Deviated well design, from private property to target location.
- Access and Approvals processes underway.
- Well drilling cost estimate ~\$4m (LKO share \$2m) highly dependent upon rig mobilisation costs.



Risk Assessment	
Risk	Chance of Geological Success
Closure	95%
Reservoir	95%
Seal	80%
Charge	100%
Overall	72%

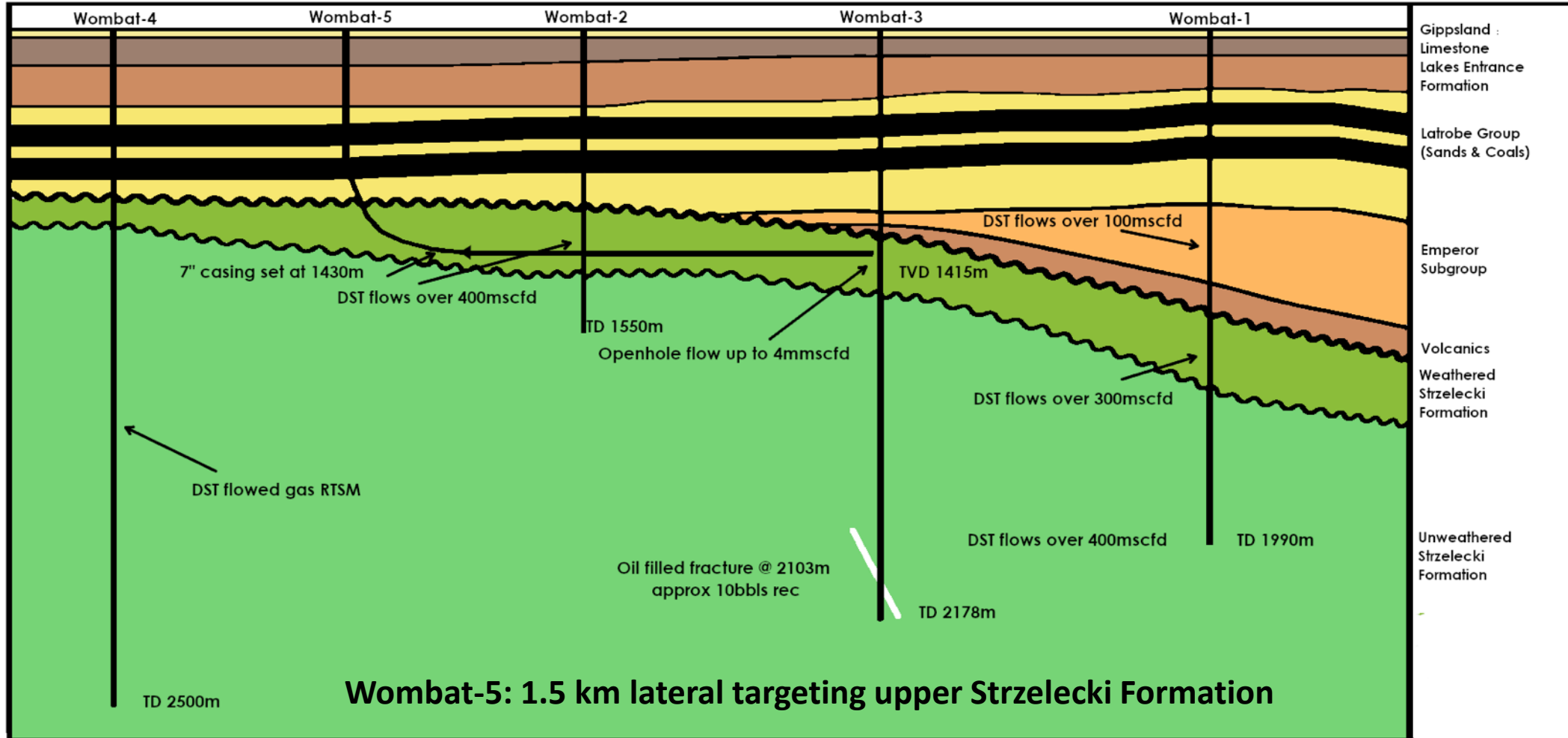
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# Wombat Gas Field

- **Certified Contingent (2C) gas resources:**
  - Wombat field – 329 Bcf.
  - Trifon/Gangell field – 390 Bcf (223 Bcf net to LKO).
- **Wombat-5 well.**
  - Conventional, lateral gas well.
  - Estimated 10 TJ/d potential.
  - Approvals process underway.
- **Development concept:**
  - Integrated Wombat – Trifon/Gangell development.
  - Fields are close to existing infrastructure.
  - Target 20 PJ/a for 20 years (10% of Victorian demand).
  - Independent research points to LKO value uplift.



# Wombat-5 Gas Well



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# Otway-1 Gas Well

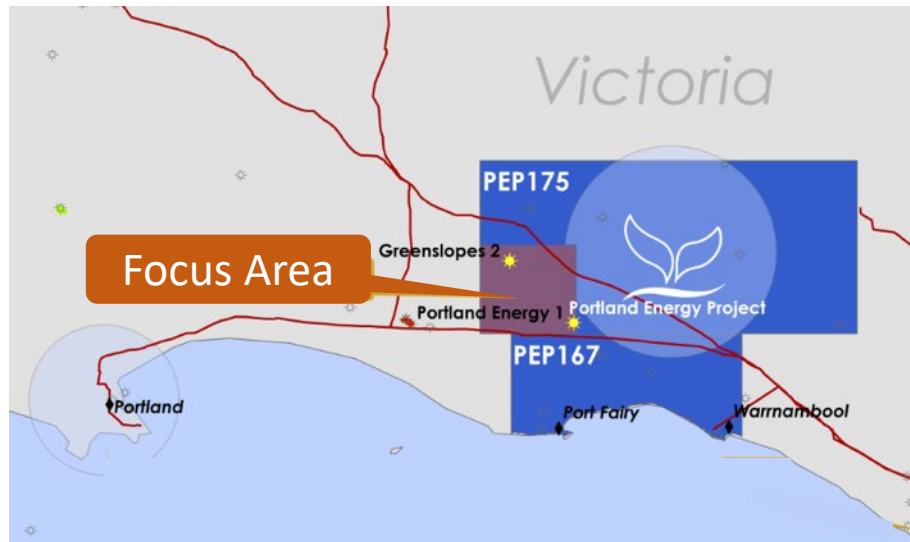
- Located within PEP 169 (49% LKO).
- Potentially drilled in campaign with Enterprise North-1 well.
- Approval process underway.
- Conventional vertical well, adjacent to Iona Gas Storage.
- Targets 3 distinct reservoirs.
  - Pebble Point Sandstone, 0.37 MM Bbl oil
  - Waarre 'C' Sandstone, 5.3 Bcf
  - Eumeralla Formation, up to 50 Bcf.
- Eumeralla flowed up to 7.5 MMcfd at nearby Skull Creek-1.



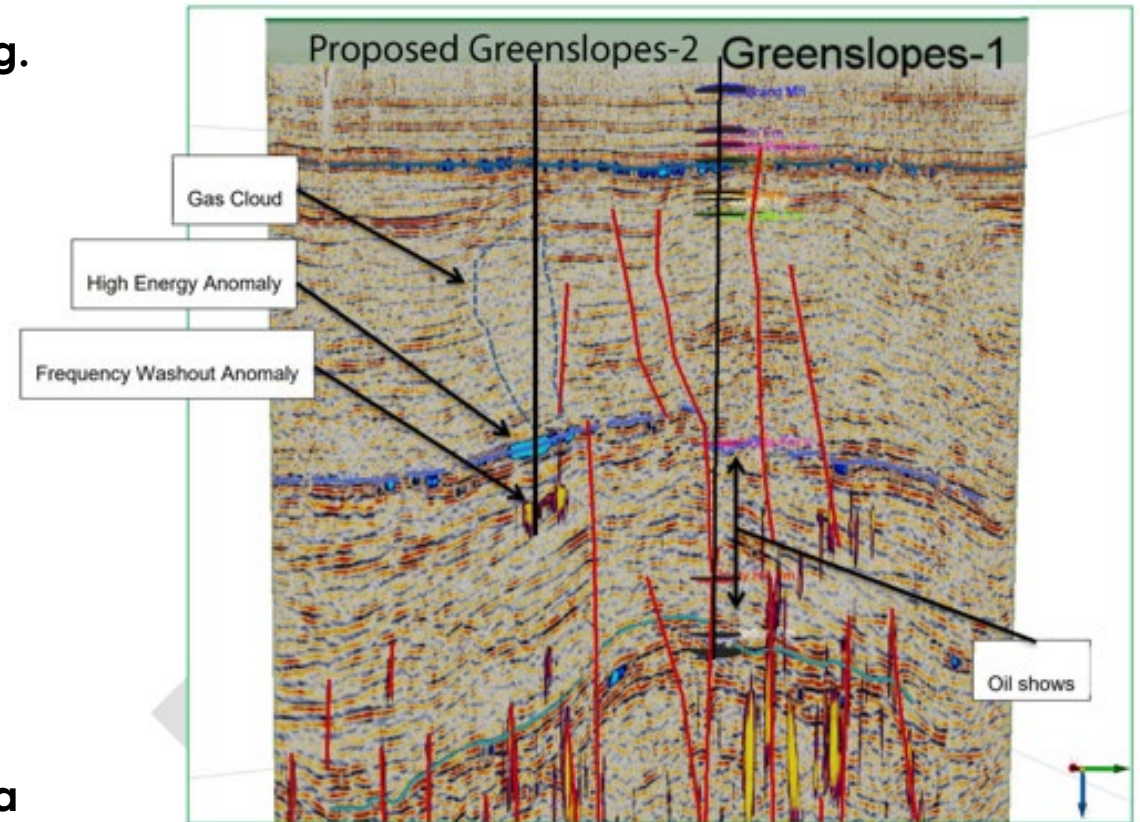
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# Portland Energy Project

- Project 'Focus Area' in SW corner of PEP 175 (100% LKO)
- 3 Tcf conventional gas resource defined by SRK Consulting.

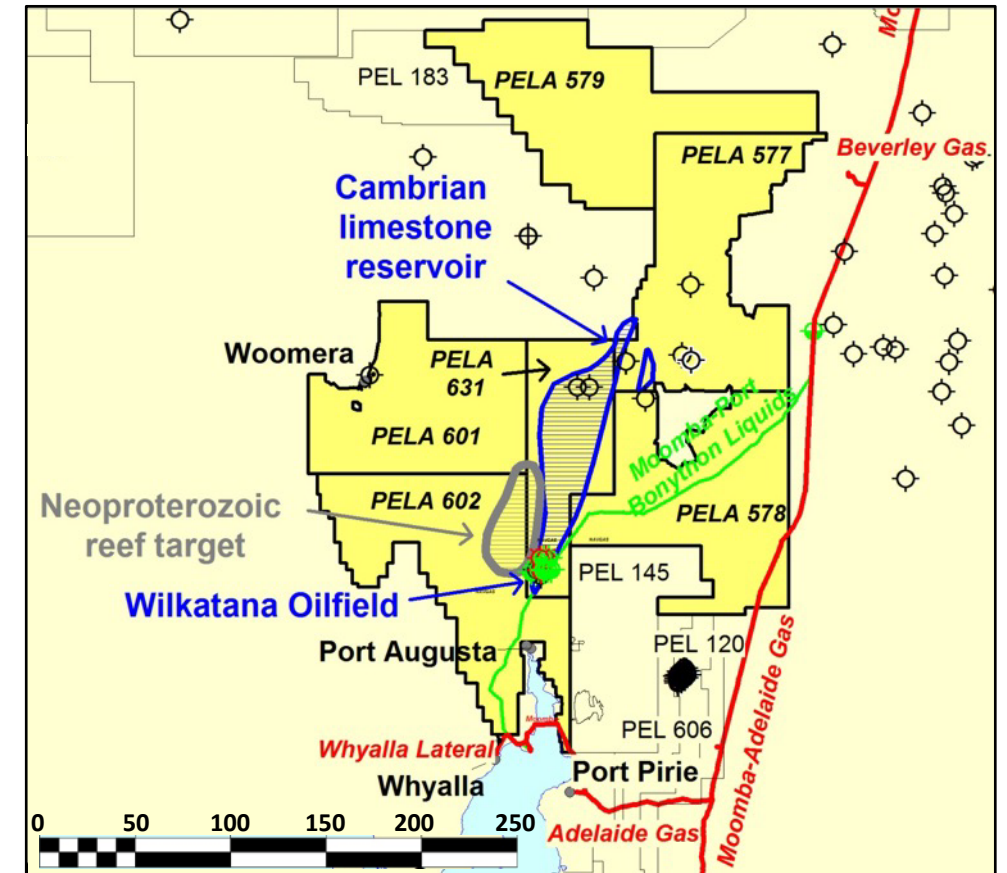
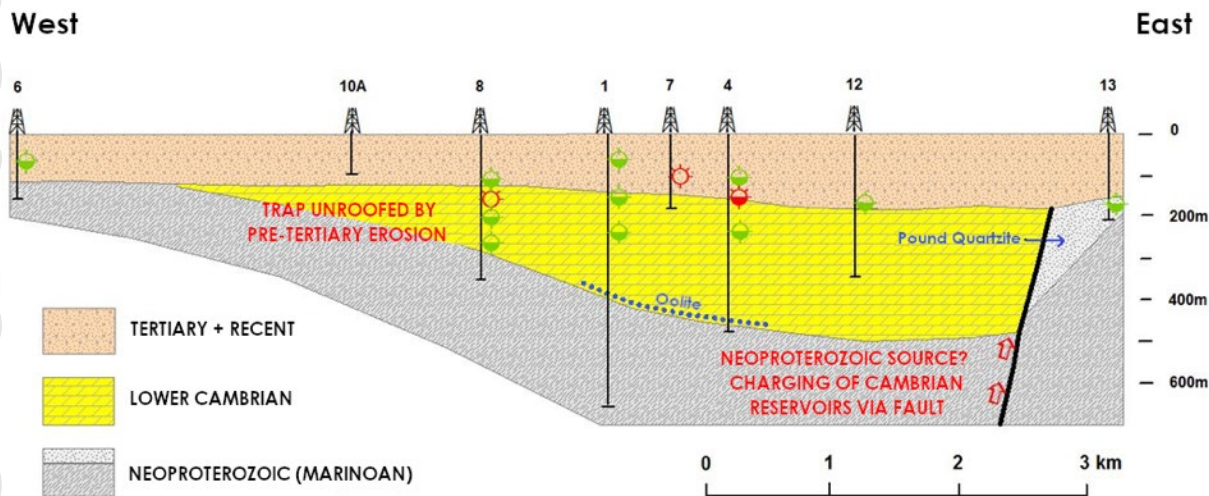


- Greenslopes-2 and Portland Energy-1 conventional wells proposed to confirm gas production potential of Eumeralla Formation.



# South Australia – Arrowie Basin

- Six 100% owned PEL applications covering 53,000 sq-km.
- Hydrocarbon potential confirmed by Santos at Wilkatana.
- Objective to have PELs granted and to investigate Cambrian – Proterozoic mega field potential.



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# The Lakes Blue Energy Opportunity

- Significant Onshore Conventional Victorian Gas Opportunities being Pursued
- All Opportunities Can be Brought to Market Quickly
- Eastern Australian Gas Market is Suffering Supply Shortfalls and Very High Prices
- Onshore Conventional is Much Lower Cost than Offshore or Distant Resources
-  Points to Potential for Significant Transformative Upside

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# Sources of Resource Estimates

## **Enterprise North**

Resource estimates have been prepared by Mr John Mackintosh, Reservoir Engineering Advisor, DGR Global Limited. Mr Mackintosh has over 25 years of diverse oil and gas industry experience and has significant reservoir engineering, production technology and operations experience in multiple basins worldwide with a variety of International Operators and Consulting firms. He has previously held roles in Santos (Australia/Houston), Halliburton Consulting (Russia), Wintershall (Norway) and Apache (Egypt). Mr Mackintosh has sufficient experience that is relevant to Armour Energy Limited and Lakes Blue Energy NL for reserves and resources to qualify as a Reserves and Resources Evaluator as defined in the ASX Listing Rules.

## **Wombat and Trifon / Gangell Gas Fields**

Source of Contingent Resources estimate: "Technical GIP and EUR Estimate Update Post Wombat #4: Wombat Field", June 2010, Gaffney, Cline and Associates.

Source of Wombat-5 gas production potential: "Production Forecast for the Proposed Lakes Oil Wombat 5", September 2013, Stimulation Petrophysics Consulting LLC.

## **Otway-1**

Eumeralla: In-house estimate prepared by Mr Tim O'Brien, MSc in Geology and Geophysics, member of PESA, SPE and AAPG.

Waarre and Pebble Point: probabilistic estimate independently prepared by Dr Greg Blackburn, BSc (hons), PhD, Terratek Petroleum Consultants Pty Ltd, February 2011

## **Portland Energy Project**

From "Estimated Unconventional Gas Potential for a Defined Prospect Area in PEP 175, Otway Basin, Victoria", May 2015, SRK Consulting (Australasia) Pty Ltd.

# Sources of Resource Estimates

## **Buna Prospect, PPL 560, PNG**

Source of estimate: "Undiscovered Hydrocarbon Resources, Petroleum Prospecting Licence (PPL) Blocks 257 and 258, Papua New Guinea", 31 August 2010, Fekete Associates Inc.

## **Arrowie Basin**

In-house volumetric estimate prepared by Mr Nick Mather, BSc (Hons Geology), member Australian Institute of Mining and Metallurgy.

## **Overriding Qualifications, applicable to all estimates**

The Company is not aware of any new information or data that materially affects the information included in this presentation and confirms that all the material assumptions and technical parameters underpinning the estimates in this presentation continue to apply and have not materially changed.

The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.