

Multi-TCF Wet Gas Exploration Opportunities Close to Existing and Imminent LNG Export Infrastructure Onshore PNG

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1. Introduction

2. PPL437 & PPL676 – Western Province PNG

- TCF+ wet gas opportunity in the western clastic play of the Papuan Basin comprising late Jurassic to early Cretaceous sandstone reservoirs charged from deeper Jurassic source and sealed by intact early to mid Cretaceous shales
- Very high gas wetness ratios present early liquids monetisation opportunity in advance of gas sales

3. PPL 388, PPL 581 & PPL 596- Onshore Gulf Province

- Multi TCF gas opportunity in the emerging eastern carbonate LNG play of the Papuan Basin comprising Oligo-Miocene to late Miocene reef and platform carbonate reservoirs directly overlying mid to late Jurassic source facies
- Logistics and access much better than fold belt terrain with licences less than 300km from Port Moresby and good road access from Port Moresby to nearby Kerema

Introduction



- Today we present 2 exciting farm-in opportunities in Papua New Guinea (PNG)
- PNG is located 6km from the Australian border and is currently exporting LNG into the Asian and international markets from Port Moresby, its capital, via the Exxon PNG LNG project
- Two new multi-TCF projects Papua LNG Project; 2023 and P'Nyang; 2028 will be the next 2 LNG projects to be commercialised
- Extended infrastructure will herald the development of existing and new discoveries in the foreland basin south of the fold belt
- Here we present 2 onshore farm-in opportunities adjacent to existing discoveries and proximal to proposed infrastructure:
 - PPL437 & PPL676 Western Province PNG
 - PPL338, 581 and 596 onshore in Gulf Province



Western Province – PPL437 & PPL676

- PPL437 and PPL676 are highly prospective licences within the Western Papuan Basin, onshore PNG. The licences are located in the Foreland, south of the Papuan fold belt where the success rate is 1 in 2 for valid traps
- The licences are in a proven hydrocarbon fairway between the Stanley and P'Nyang fields to the northwest, the Juha and Muruk fields to the northeast and along strike from the Elevala/Tingu and Ketu gas condensate fields
- They will also benefit from proposed infrastructure for gas pipeline from P'Nyang to the LNG plant in Port Moresby and the upcoming development of the Stanley Field
- The combined licences comprise 36 graticular blocks and cover an area of 3081 km²
- The primary prospect, Malisa, has gross prospective resource of 2TCF (whole trap), with another 4TCF in the other leads



Licence Commitments and Work Program



PPL437

- Licence awarded 16th November 2020 for a period of 5 years
- Work commitments are light, total minimum expenditure is \$2.3m
- Note: 12 month extension awarded on 10th August 2021 for Covid. 12 month extension from the initial date of expiry

PPL437 Work Obligations and Expenditure							
Year	Dates	Work Commitment	Minimum Expenditure Commitment (US\$)				
1&2	16 th Nov 2020 – 15 th Nov 2022	 Soil gas survey Commercial screening study Seismic acquisition study/planning Drilling cost studies 	200,000				
3,4,5	16 th Nov 2022 – 15 th Nov 2025	 Drill Malisa prospect OR Acquire 60km 2D seismic data Permit review 	15,100,000 2,100,000				
		Total 5 year expenditure	15,300,000 OR 2,300,000				

PPL676

- Licence application submitted November 2021, awaiting formal approval from government
- Option to "walk away" end of each two year period
- Idea is to carry joint WP between APPL676 and PPL437 – joint studies for the geological work program, soil gas survey etc

PPL676 Work Obligations and Expenditure							
Year	Dates	Work Commitment	Minimum Expenditure Commitment (US\$)				
1&2	ТВС	Soil gas surveySeismic field crew studies	150,000 50,000				
3 & 4	ТВС	Seismic surveyLand rig drilling study	2,000,000				
5&6	ТВС	Drill one slim hole well	15,000,000				
		Total 6 year term commitment	17,200,000				

Arbitrary Seismic Line and Petroleum System

Line through Malisa Prospect and Ketu/Ubuntu discoveries





Malisa Prospect Seismic Comparison with Nearby Fields







Dara

leru

Elevala Kimu

Elevala

Kimu

- Malisa has a similar structural style to nearby discoveries at Elevala, Ketu and Stanley
- basement These all drape are structures overlain by Elevala, Toro, Kimu reservoir sands
- The seal for these reservoirs is the leru formation and they are sourced from the Jurassic Magobu formation

Volumetrics & Monetisation Options



Monetisation & Export Options

- An immediate monetisation opportunity exists due to the gas condensate nature of the prospective resource
- The Stanley development to the west is an example of a condensate stripping/gas recycling project. Stanley CGR is 30bbls/mmscf. We expect Malisa to be condensate richer and more profitable
- The stripping is achieved by relatively simple J/T expansion not by Turbo expander and deep recovery
- Development economics are enabled by an attractive fiscal regime and export of dead condensate via river barge avoiding significant pipeline costs
- Medium to longer term gas can be monetized by blowdown as ullage appears in existing LNG developments and/or additional LNG projects are sanctioned
- The proposed P'Nyang gas pipeline is local to Malisa (runs through the PPL437/676 blocks)
- Reserves base in PNG could support further LNG developments as the LNG prices in Asian target markets are expected to remain high for many years

PPL437/676 Mean Prospective Resource Summary (Whole Trap)

Name	Reservoir / Target	Play	Expected Hydrocarbon	Prospect Specific Geological Chance of success	Proability of achieving mean	Whole Trap Gross Unrisked Mean GIP bcf	Whole Trap Gross Unrisked Mean OIP MMstb	Gross Unrisked Mean Potential Gas Resources bcf		Gross Unrisked Mean Potential Resources MMboe
Malisa ^E	Elevala/Toro + Kimu	Clastic Cretaceous / Jurassic	Wet Gas	36%	3.0%	2,027	N/A	1,323	48	268
Ketu North E	Elevala/Toro + Kimu	Clastic Cretaceous / Jurassic	Wet Gas	20%	3.0%	709	N/A	462	18	95
Ebony	Elevala/Toro + Imburu/Kimu	Clastic Cretaceous / Jurassic	Wet Gas	27%	6.6%	1,467	N/A	960	36	196
Ebony East	Elevala/Toro + Imburu/Kimu	Clastic Cretaceous / Jurassic	Wet Gas	21%	3.5%	517	N/A	338	13	69
Ebony West	Elevala/Toro + Imburu/Kimu	Clastic Cretaceous / Jurassic	Wet Gas	21%	2.9%	316	N/A	206	8	42
Mango E	Elevala/Toro + Imburu/Kimu	Clastic Cretaceous / Jurassic	Wet Gas	25%	4.2%	1,868	N/A	1,216	46	249
						6,903	0	4,506	168	919



Work to date & Proposed Farm in Program



- The JV has obtained a contemporary seismic database of >1400km through acquisition, reprocessing and data trades:
 - In 2014 the JV acquired 106km modern 2D seismic data
 - 884km legacy seismic data has been reprocessed
- Seismic interpretation, offset well analysis, extensive regional biostratigraphic and reservoir characterisation has confirmed the Malisa Prospect
- 50% equity is available for drilling Malisa-1 to test Elevala, Toro and Kimu Sandstones
- P50 Well cost US\$14.5m (2019)
- Aim is to drill the well while rig is onsite for the Stanley development
- Numerous follow up leads exist in the licences in the event of success





Eastern Papua Basin, Uramu Platform PPL338, 581 & 596



- PPL338, PPL 581 and PPL 596 are very prospective licences in the Eastern Papuan Basin, onshore PNG. The licences are located in the foreland south of the Papuan fold belt
- The licences are in a proven hydrocarbon fairway between the offshore Uramu Field, the giant Elk Antelope Fields (located in the fold belt) and the Kuru Field to the northwest
- The southern licences are east of the leru shale truncation edge allowing direct access from Mesozoic source rocks to Tertiary carbonate reservoirs
- Any discovery in the south will benefit from upcoming infrastructure for the proposed gas development pipeline from Elk Antelope to the coast and the LNG plant in Port Moresby
- The licences lie in flat terrain covered by nipa palm and open grass land. Proximity to the coast allows good access
- They are located on the Uramu Platform where well data confirms presence of platform and reefal carbonate development similar to the reservoir encountered in Elk Antelope
- The Nipa, Mangrove and Snake leads are potentially large with a combined P50 resource estimate of greater than 8TCF
- New seismic data is required to confirm a drilling location at Nipa Mangrove or Snake
- The combined licences comprise 30 graticular blocks and cover an area of 2430 km²



Antelope to Uramu Well Correlation

Demonstrates good reservoir presence, source rock and seal on the Uramu Platform





- West of the Uramu Platform, continued late stage uplift has exposed the carbonates at surface on the Darai Platform
- Reinvestigation of the Uramu, and Iviri wells shows many of the favourable characteristics recognised at Elk Antelope are present on the Uramu Platform



Uramu Platform Untested Carbonate Structures



Seismic shows large untested carbonate structures

delineate the structures on the Uramu Platform





PPL338

- Licence awarded 31st January 2017 for a period of 5 years
- 12 month extension awarded on 10th August 2021 for Covid.
 12 month extension from the initial date of expiry
- Work commitments currently require seismic

PPL581

- Licence awarded 31st January 2017 for 6 year period
- 12 month extension awarded on 10th August 2021 for Covid.
 12 month extension from the initial date of expiry
- Work commitments currently require seismic

• PPL 596

- Licence awarded 31st March 2017 for 6 year period
- 12 month extension awarded on 10th August 2021 for Covid.
 12 month extension from the initial date of expiry
- Work commitments currently require seismic

Proposed Work Program

- The 3 licences are held by Kina 100%
- Kina proposes rationalising its holdings in the east to 1 licence covering the Uramu Platform
- Kina envisages a work program comprising 250 to 300km of seismic over Nipa, Mangrove and Snake
- Program costs are likely to be of the order of US\$6 million & we are looking for a carry through the seismic



Thank you!