

ASX Announcement

16 June 2021



Marine seismic results increase prospective resources by 120%, 7 new prospects identified

Key highlights:

- Significant increase in Plio-Pleistocene play prospective resource¹ - combined best estimate (P50) up from ~95 mmbbl to 209 mmbbl, an increase of 120%
- 13 offshore prospect & leads delineated (previously 6)
- Impressive PP6 prospect has multiple targets, closure up to 20 km² & prospective resource range (mmbbl): P90: 19 P50: 54 P10: 150
- Plio-Pleistocene carbonate reef targets emerging as potential major play in area, analogous to highly successful plays elsewhere in Indonesia
- Interpreted extension of 20 mmbbl Bula field into East Seram PSC with prospective resource of 2 to 7 mmbbl possible (P90-P10 range)
- Common seismic amplitude anomalies (interpreted direct hydrocarbon indicators) point to active oil & gas generation in the East Seram area
- Work planned on drilling cost estimates and economics of drilling highest ranked prospects
- Ongoing planning for onshore 200km seismic targeting deeper, large Jurassic carbonate prospects
- New data has helped select less-prospective PSC areas for the required 30% relinquishment prior to entering Year 4 of the PSC

Lion Energy Limited ("Lion" or "Company") is pleased to report on behalf of its 100% owned subsidiary, Balam Energy (Operator of the East Seram PSC), that the first phase of interpretation of the 664 km high resolution 2D seismic data is now complete. The data which was shot in November 2020 with processing completed in March 2021, was designed to investigate the offshore shallow (<1200m) Plio-Pleistocene play which includes the potential extension of the 20mmbbl Bula Field.

Lion at a glance

- ASX listed oil and gas company with PSC's in Indonesia.
- Focus on conventional oil and gas production and development, appraisal and step out exploration risk opportunities
- Exploring green hydrogen opportunities in Australia
- Net production around 40 bopd from the Seram (Non-Bula) PSC which also contains the 1.5TCF Lofin gas/condensate discovery
- Leveraging synergies in conventional assets and access to both infrastructure and markets
- Executive team and investors with impressive track records for value creation in Asia.

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¹ Prospective Resource: 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. The prospective resource numbers shown are unrisks.

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Two areas were targeted with 507 km recorded in the offshore Kobi area to the northwest and 157 km in the Bula Bay area. The data has significantly enhanced the understanding of the plays in the offshore portion of the East Seram PSC and a number of exciting new prospects and leads have emerged from the data.

Lion's Chairman, Tom Soulsby noted *"The prospects and leads that have emerged from the new seismic have exceeded our expectations and have significantly enhanced our view on the potential of the offshore portion of the East Seram PSC. Our focus is now on developing drilling cost estimates to determine the economics of testing the highest ranked targets while also planning for the onshore seismic acquisition program scheduled for late 2021/early 2022."*

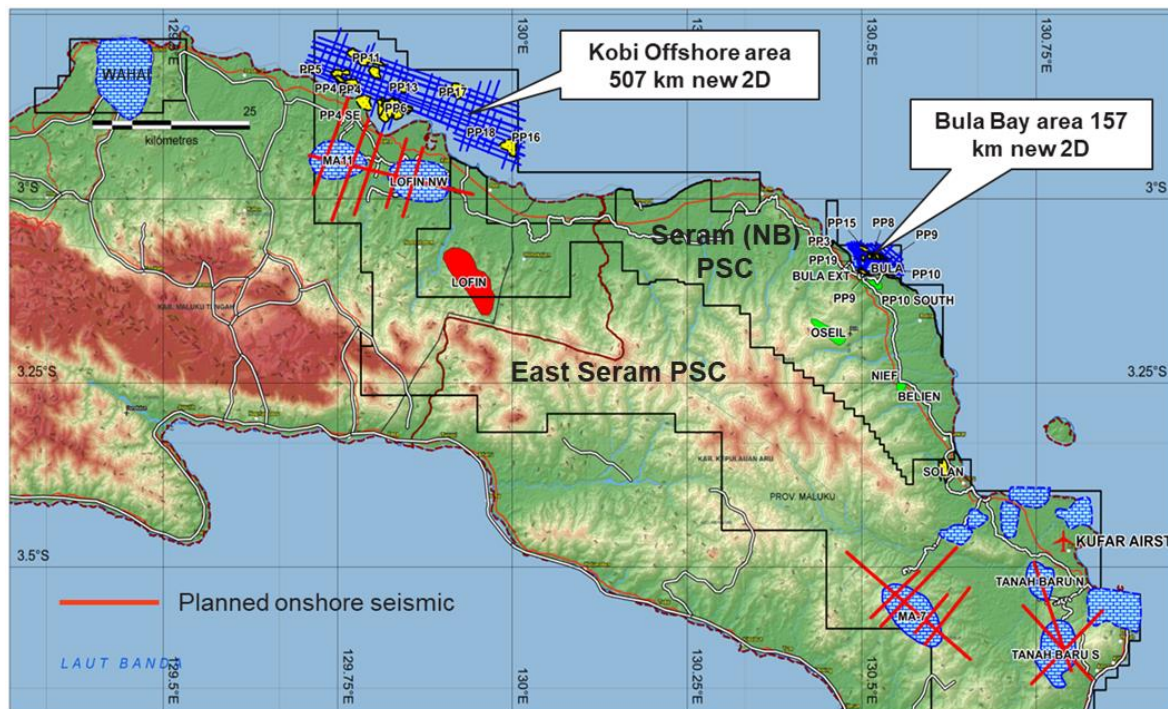


Figure 1: Map showing East Seram PSC location, new seismic with overlay of offshore and onshore leads and planned onshore seismic locations (post relinquishment area of East Seram PSC shown)

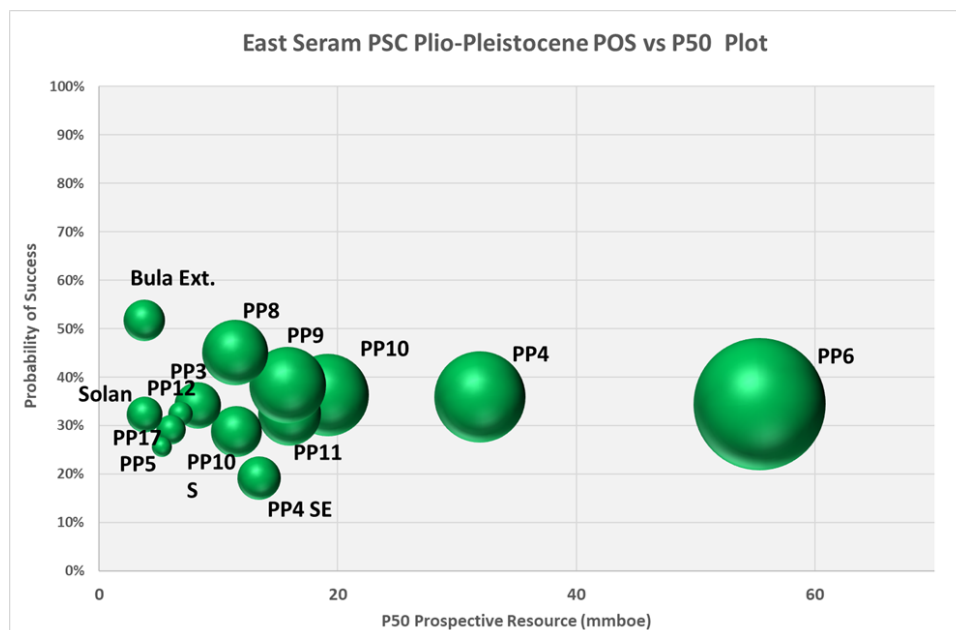


Figure 2. Chart showing the P50 volume Prospective Resource¹ (Best estimate technically recoverable) of the updated Plio-Pleistocene inventory plotted against the Probability of Success (chance of discovery). The PP6 Prospect is the standout with PP4, PP10, PP9 and PP8 also high-graded.

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The acquisition and processing of the seismic data has met the firm commitment obligations of the PSC. The data has also enabled selection of less prospective areas for a required 30% relinquishment of the East Seram PSC at the end of Permit Year 3. The new area of the PSC post relinquishment will be 4557 km² after July 17, 2021.

Concurrently, Lion continues to plan for an approximate 200 km onshore seismic survey targeting world class onshore gas and oil leads, with timing dependent on the Covid-19 situation in the region.

Lion has a 60% interest and operatorship of the East Seram PSC through its subsidiary Balam Energy Pte Ltd. Lion's cost of the survey was largely covered under the farm-in arrangement with OPIC East Seram Corporation who hold a 40% interest (refer ASX announcement 26/9/19).

Seismic interpretation summary

We acquired 664 kms of high resolution 2D seismic data offshore Seram Island in the East Seram PSC in November, 2020. Approximately 507 kms of high resolution 2D seismic was acquired in the NW Kobi area targeting both attractive shallow water prospects as well as a deeper water lead fairway. A total of 157 km was acquired in the Bula Bay area to investigate the potential offshore extension of the 20 mmbbl Bula oil field as well as other identified leads (refer Figure 1).

The survey was completed on time and on budget with data processing completed in March 2021. Data quality is generally good with some significant improvements evident on earlier vintage data sets allowing for more detailed and coherent stratigraphic and structural interpretation.

The new seismic data is focussed on the shallow Plio-Pleistocene sedimentary sequence with the 20mmbbl Bula oil field being the largest discovery in the play to date. The deeper Jurassic Manusela carbonate was not an objective of the marine survey due to the economics of drilling this target in an offshore setting. This Manusela play, which includes the Oseil oil field and Lofin gas field, is however the key objective of the planned onshore seismic survey in 2022 (refer Figure 1). The key plays on Seram Island are shown in Figure 3.

Interpretation of the data was undertaken from April through May this year, followed by an internal peer review process.

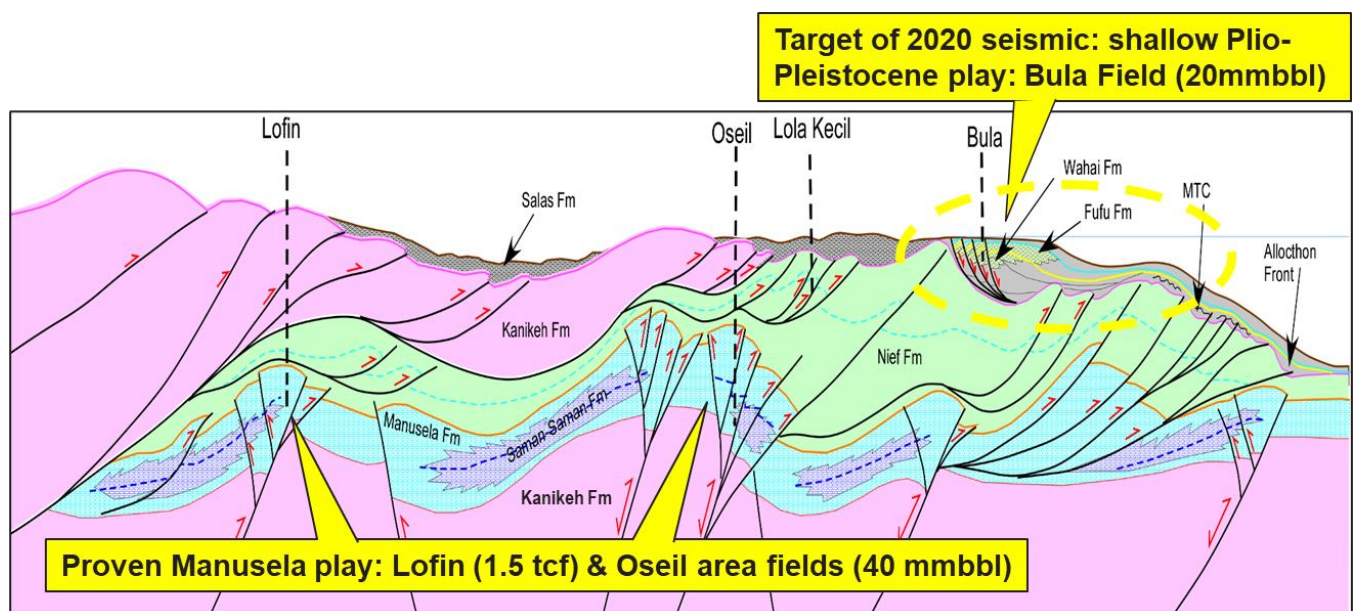


Figure 3: Summary of structure and plays on Seram Island

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The interpretation was undertaken systematically, integrating results from relevant existing well data, field data and other geological and geophysical data. Multiple seismic horizons were interpreted, and depth converted, faults were correlated, and prospects and leads identified with detailed assessment of the volumetric potential using parameters based on a probabilistic approach using available data from existing wells and fields in Seram.

The new seismic data shows interpreted oil and gas charge throughout the Bula Bay and Kobi area through common seismic amplitude anomalies interpreted as migration along faults, supported by reported sea floor seeps in the area.

A compilation of the updated Plio-Pleistocene prospect and lead portfolio is tabulated at the end of this release.

Offshore Bula Bay area

The new data has greatly enhanced our understanding of the area immediately offshore the Bula field and several new attractive prospects have emerged. A diagram based on interpreted seismic section shows the multiple plays present in the area.

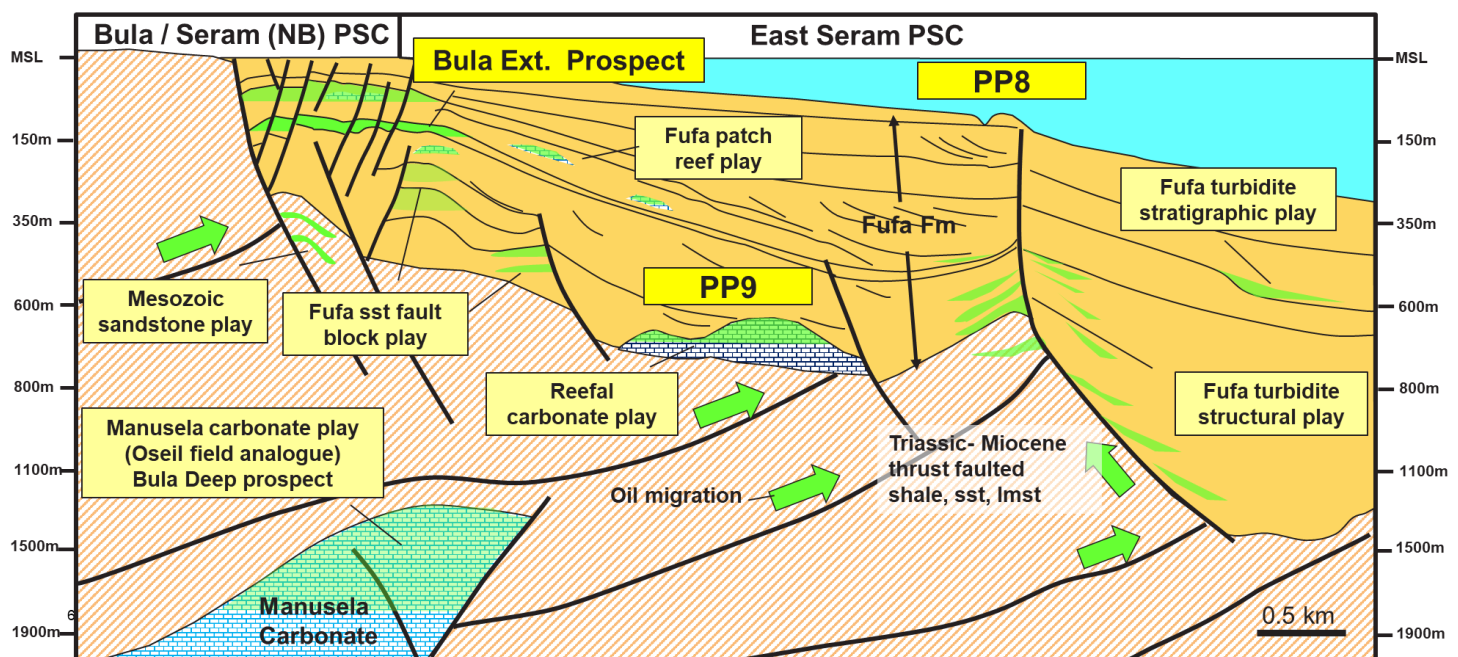


Figure 4: Geoseismic section showing key play types in the Bula Bay area

A summary of the key prospects and leads identified in the Bula Bay area is shown below (Figure 5). Of particular interest is:

- Well defined attractive carbonate reef prospects PP3, PP9 and PP10. PP9 is the best defined and represents an attractive drilling target. The PP9 carbonate build-up prospect is particularly well imaged on the new seismic with mapped closure up to 2.7 km² and approximately 80m of vertical relief.
- The interpreted extension of the Bula Field with an area of 0.7-1.1 sq km. The area is interpreted as likely a separate fault compartment of the Bula Field and hence considered a prospective resource. The objective section is the same productive interval in the Bula field with well-developed shallow marine sandstone and reefal limestones expected.
- The prominent PP8 anticlinal closure with multiple amplitude supported reservoir objectives.
- Common amplitude supported shallow marine and turbidite (deeper water sandstone deposits) in the area suggest an active, ongoing hydrocarbon generation and migration.

Work has commenced on the economics of potential exploration drilling in the area given the attractive volumetric potential of the key targets. The work including potential drilling plans will be completed during 2021.

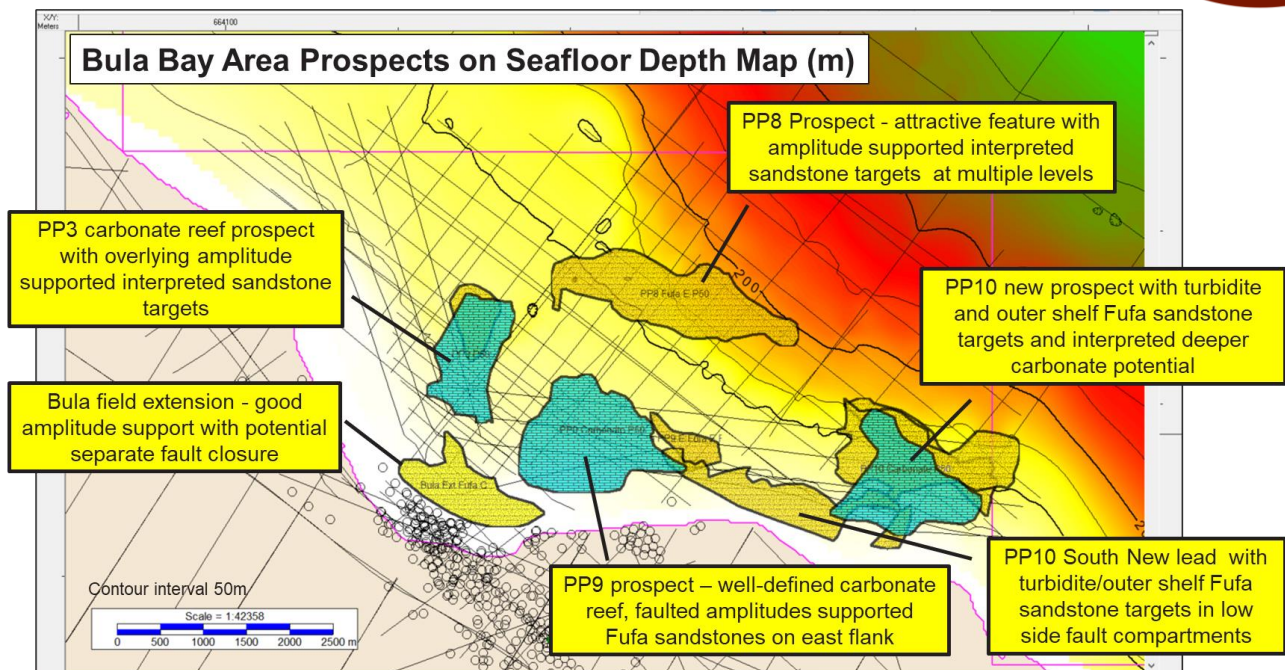


Figure 5: Bula Bay area prospects

Offshore Kobi area

The discovery of the onshore Lofin gas field proving significant hydrocarbon generation in the area has refocused attention on the Kobi area of the East Seram PSC. To date, only one well has been drilled in the offshore Kobi area of the East Seram PSC, Ceram B-IX drilled in 1973 testing the Plio-Pleistocene interval. The well encountered some minor gas shows although no significant hydrocarbons. The fact that the well did not test a valid structure has been confirmed by Lion's new seismic data which shows an up dip closure to the west (Prospect PP16). A geo-seismic section (Figure 6) based on seismic line BLM20-36 shows the previously identified PP4 structure and the newly characterised PP6 prospect which has emerged as an exciting new target.

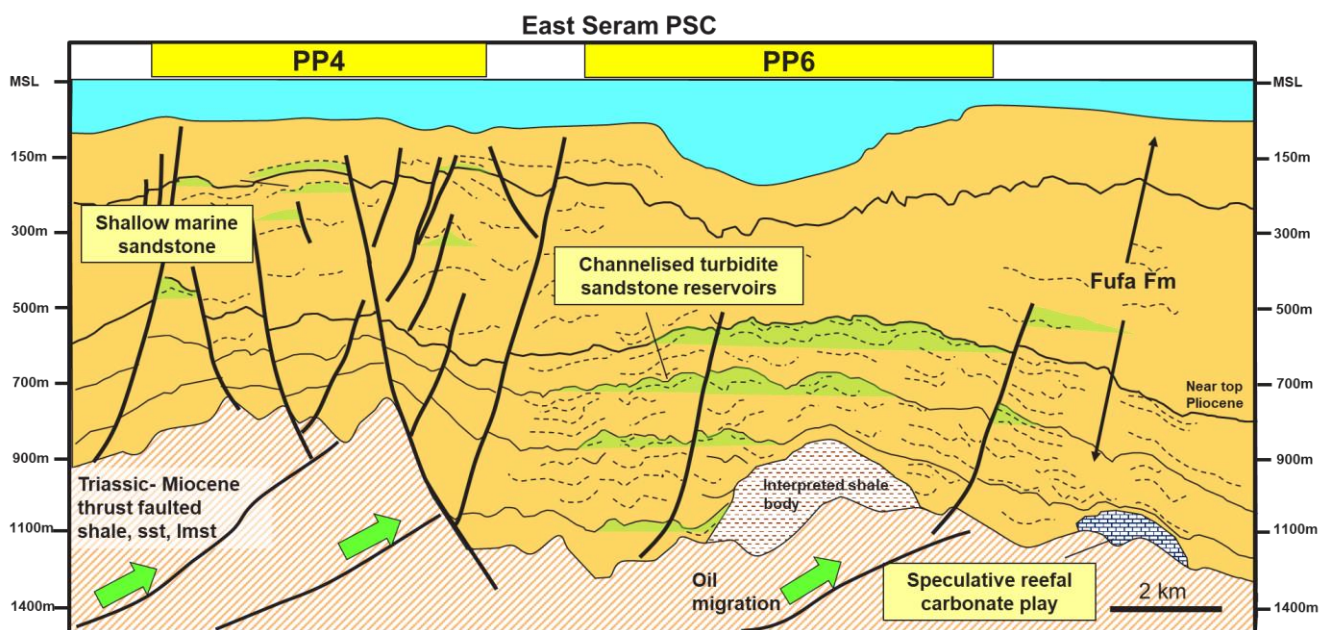


Figure 6: Geoseismic section offshore Kobi area

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A map showing the key prospects and leads identified in the offshore Kobi area following the interpretation of the new seismic is shown below (Figure 7). Of particular interest is:

- The delineation of PP6, a large highly attractive faulted, four-way dip closure anticline with four objective intervals and closure up to 20 km² and approximately 100 m of vertical relief. This prospect represents a significant addition to the East Seram portfolio. Work is planned during 2021 on the economics of exploration drilling PP6 and potential development options in a success case.
- The confirmation of PP4 prospect as a large structure which previously had only been covered by 2-3 seismic lines. The new seismic coverage of ~10 lines allow individual fault closure compartments to be identified, with some seismic amplitude support suggestive of trapped hydrocarbons.
- The potential extension of PP4 onshore. The planned 2022 onshore survey will investigate the onshore potential of this lead. If closure is determined, this would be a highly attractive target as it could be tested with a low cost onshore well with timing yet to be determined.
- A deeper water 250-450m fairway of prospect and leads with good amplitude response highly suggestive of trapped hydrocarbons. Prospect PP11 is the most attractive although the deeper water setting will impact the economics due to higher drilling cost. Importantly, the strong seismic evidence for trapped hydrocarbons is interpreted to confirm active oil and gas generation in the area.

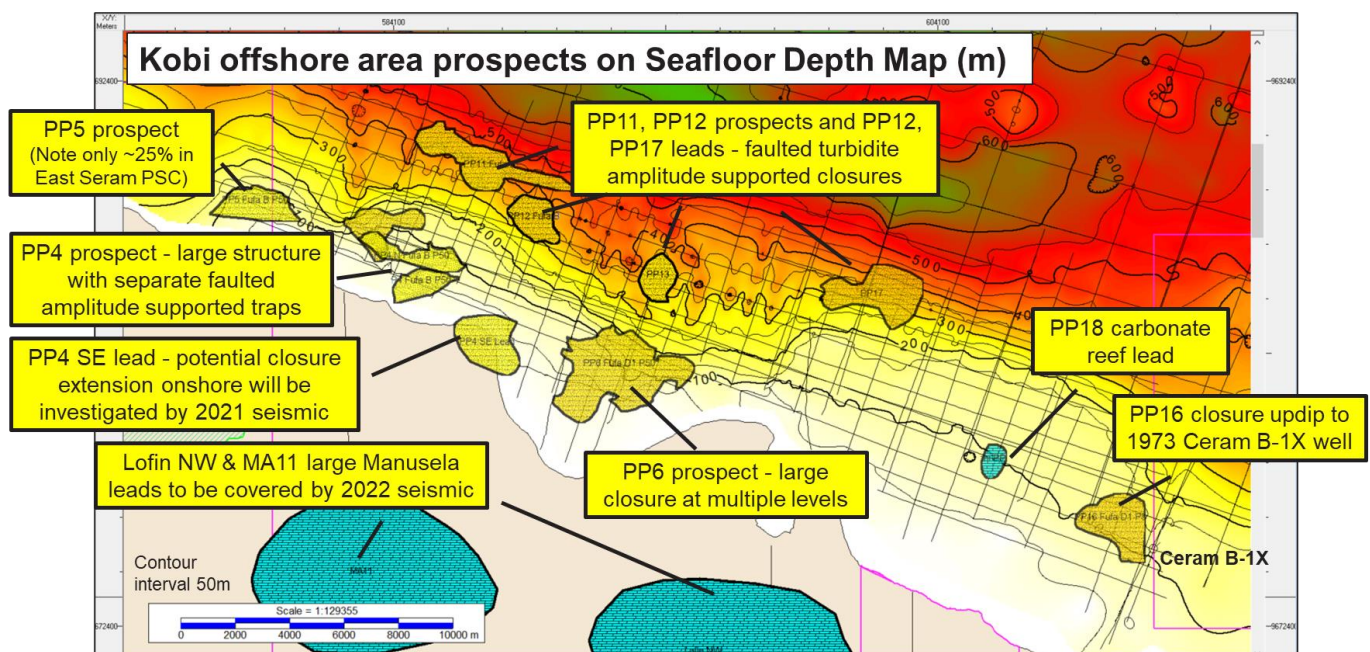


Figure 7: Kobi area prospects and leads

Prospective resource assessment

A table of the updated Plio-Pleistocene prospect and lead inventory with the new prospective resource estimate (unrisked) shown in shown below. The prospects are ordered in the table by size (mmboe). Lion has adopted a systematic approach to volumetric calculations, using a probabilistic approach looking at low (P90), Best (P50) and high (P10) side estimates for the key parameters. Key intervals from seismic interpretation of the new data were mapped and converted from the time domain to depth using established sedimentary section velocity from available well data and ensuring correction for the velocity impact of varying water depth in the area. Closure areas for individual prospects and leads are based on seismic interpretation with realistic low side and high side estimates. Estimates for reservoir porosity, hydrocarbon saturation, gas properties and the expected oil versus gas mix were based on available well and field data and established oil industry trends.

East Seram PSC Shallow Plio-Pleistocene Prospect & Lead Prospective Resource ¹ Inventory		Elevation / Water Depth	Oil-in-Place (mmbbl)			Gas-in-Place (bcf)			Oil Recoverable (mmbbl)			Gas Recoverable (bcf)			Combined Recoverable (mmboe) ³			POS ⁴
Prospect ²	Number of targets/name	m	P90	P50	P10	P90	P50	P10	P90	P50	P10	P90	P50	P10	P90	P50	P10	%
PP6	Four: Fufa C1, D1, D, E	-30 to -200m	63.7	166.9	446.9	23.3	61.0	160.7	16.2	47.6	138.0	15.1	40.5	108.6	19.1	55.3	158.7	34.3%
PP4	Three: Fufa B, B North, C	-10 to -200m	61.1	110.8	196.4	2.8	5.7	11.1	15.2	31.9	63.6	0.0	0.1	0.2	15.2	31.9	63.7	33.7%
PP10	Three: Fufa C N, D, Carbonate	-20 to -150m	28.7	57.6	118.3	3.7	7.9	17.0	8.5	18.8	41.9	0.9	2.1	4.5	8.7	19.2	42.8	36.3%
PP11	One: Fufa B	-350 to -450m	19.8	44.5	103.6	10.5	24.0	56.5	5.1	12.9	32.8	7.3	17.1	41.1	6.4	16.0	40.3	32.4%
PP9	Two: Fufa E, carbonate	-10 to -60m	21.3	47.0	106.8	0.2	0.4	0.8	6.6	15.8	38.1	0.1	0.3	0.6	6.6	15.8	38.3	38.3%
PP4 SE	One: Fufa B	3 to -10m	23.9	47.7	95.0				5.9	13.4	30.0				5.9	13.4	30.0	19.2%
PP10 S (lead)	One: Fufa C (South)	-5 to -50m	21.0	37.6	67.0	2.9	4.8	8.9	5.3	10.8	21.3	2.0	3.4	6.5	5.7	11.5	22.6	28.7%
PP8	Three: Fufa C, C amp, D	-75 to -200m	21.3	36.5	67.9	2.9	4.8	9.7	5.2	10.7	21.7	2.0	3.5	7.1	5.6	11.4	23.1	45.1%
PP3	Two: Fufa C/Fufa	-30 to -70m	14.2	24.0	42.8	0.2	0.3	0.6	4.3	8.2	15.8	0.2	0.2	0.5	4.3	8.3	15.8	34.1%
PP12	One: Fufa B	-300 to -400m	10.6	24.0	49.7	5.6	12.9	27.2	2.6	6.6	15.9	0.1	0.1	0.3	2.7	6.8	16.2	32.4%
PP16 (lead)	One: Fufa B	-80 to -150m	7.6	17.2	37.0	3.4	7.8	16.8	1.9	5.0	11.6	2.2	5.2	11.4	2.4	6.0	13.8	29.2%
PP5 (East Seram PSC only)	One: Fufa Sst / carbonate	-50 to -100m	8.7	18.2	38.4				2.2	5.3	12.4				2.2	5.3	12.4	25.5%
Offshore Bula Extension	One: Fufa sst/ carbonate	-5 to -20m	8.2	12.9	21.3				2.0	3.8	7.1				2.0	3.8	7.1	51.7%
Solan	One: Fufa turbidite	30	4.7	10.3	23.5	0.9	2.1	4.9	1.5	3.5	8.7	0.7	1.5	3.6	1.6	3.8	9.3	32.3%
Total Plio-Pleistocene			314.6	655.2	1414.7	56.4	131.6	314.2	82.5	194.3	458.8	30.6	73.9	184.3	88.4	208.6	494.3	33.7%

1. Prospective Resource: 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. The prospective resource numbers shown are unrisked.
2. Prospective resource estimates for individual target levels were calculated probabilistically. Prospect level resource estimate were from the arithmetic addition of the different targets within a prospect. This means the low side estimate may be overly conservative and the high side estimate overly optimistic. The aggregate P90 may be a conservative estimate and the aggregate P10 may be an optimistic estimate due to the portfolio effects of arithmetic summation.
3. Conversion factor of 6 mcf = 1 barrel of oil equivalent (boe)
4. The Probability of Success (POS) or chance of discovery estimate at the prospect level is shown. It is based on the volume weighted probability of success for all the individual target levels of the prospects. The chance of development is not included and will form part of the economics to be undertaken on individual high graded prospects during 2021.

Relinquishment

Under the terms of the East Seram PSC, at the end of the first three-year term, being July 17, 2021 a 30% reduction (1953 km²) in the PSC area is mandated. The new area of the PSC from July 17, 2021 will be 4557 km².

Following review of existing and new seismic and other geological and geophysical data Lion has proposed relinquishing six separate areas as shown on the map below. The areas are considered to have lower prospectivity due to thin objective sedimentary section, removal from areas for proven oil and gas source or with objective section too deeply buried to be a viable target.

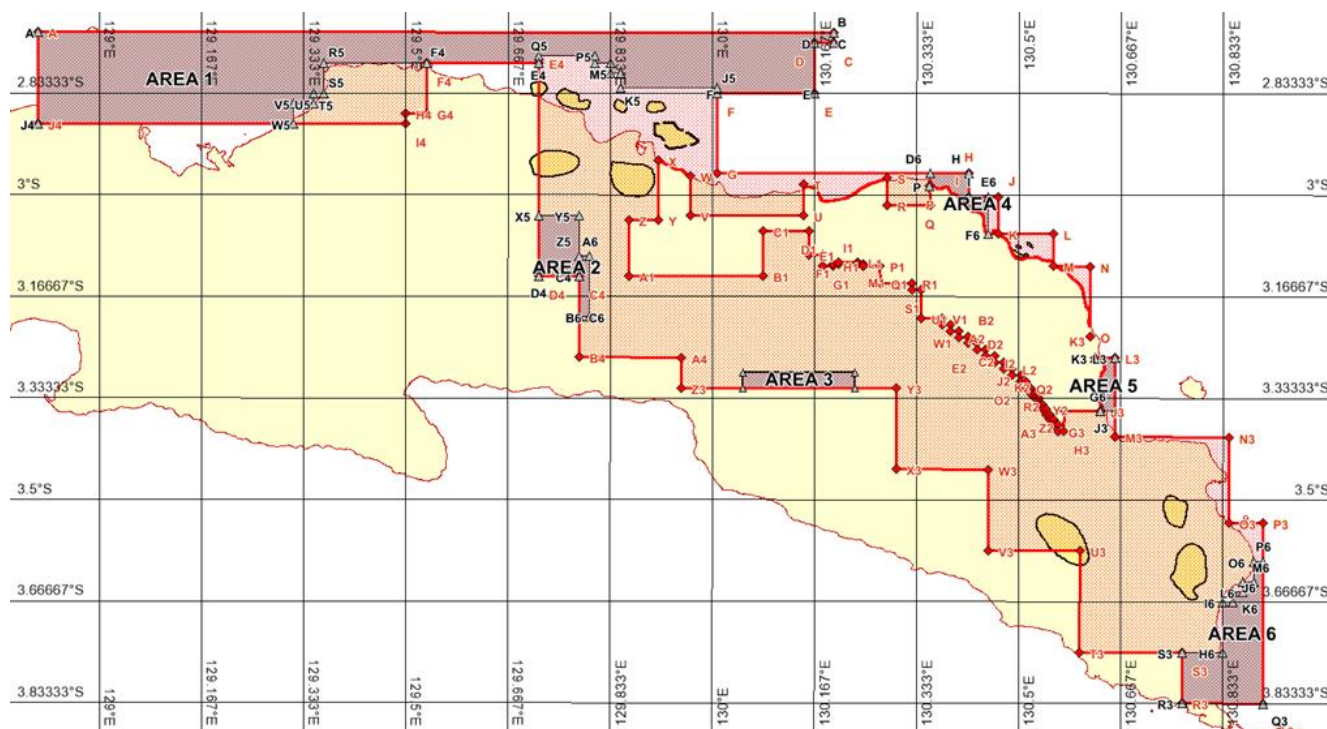


Figure 8: Six areas to be relinquished from the East Seram PSC

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East Seram PSC New Prospective Resources Table.

Includes previously reported onshore leads (refer ASX release 4 March 2019)

East Seram PSC Prospect and Lead Prospective Resources ¹	PSC / Lion WI Share	Play	Expect- ed Fluid	100% (Gross)						Lion WI Share						
				Gas/Associated Gas Recoverable (Bcf)			Oil/Condensate Recoverable (MMbbl)			Gas/Associated Gas Recoverable (Bcf)			Oil/Condensate Recoverable (MMbbl)			
Prospective Resources ²				Category	Low P90	Best P50	High P10	Low P90	Best P50	High P10	Low P90	Best P50	High P10	Low P90	Best P50	High P10
East Seram PSC (Lion 60%)																
MA 7	East Seram PSC/60%	Manusela	Oil/Gas	33.7	160.6	748.3	39.4	189.8	881.4	20.2	96.3	449.0	23.6	113.9	528.8	
Tanah Baru S	East Seram PSC/60%	Manusela	Oil/Gas	196.4	689.6	2632.9	34.1	129.1	466.8	117.8	413.8	1579.7	20.4	77.5	280.1	
Lofin NW (MA 10)	East Seram PSC/60%	Manusela	Oil/Gas	164.2	587.4	2017.5	15.9	55.1	184.3	98.5	352.4	1210.5	9.5	33.1	110.6	
MA 3	East Seram PSC/60%	Manusela	Oil/Gas	77.4	281.9	911.1	22.7	90.0	339.1	46.4	169.1	546.6	13.6	54.0	203.5	
Tanah Baru N	East Seram PSC/60%	Manusela	Oil/Gas	147.6	485.6	1623.5	13.9	49.0	146.7	88.6	291.3	974.1	8.3	29.4	88.0	
MA 2	East Seram PSC/60%	Manusela	Oil/Gas	62.5	236.3	860.1	10.7	40.9	143.5	37.5	141.8	516.0	6.4	24.6	86.1	
MA 8	East Seram PSC/60%	Manusela	Oil/Gas	36.1	123.7	424.6	4.6	17.5	61.1	21.6	74.2	254.8	2.8	10.5	36.7	
MA 1	East Seram PSC/60%	Manusela	Oil/Gas	23.8	96.4	349.6	4.8	19.2	75.0	14.3	57.8	209.7	2.9	11.5	45.0	
Lofin Extension ³	East Seram PSC/60%	Manusela	Oil/Gas	23.8	96.4	349.6	4.8	19.2	75.0	14.3	57.8	209.7	2.9	11.5	45.0	
MA 4	East Seram PSC/60%	Manusela	Oil/Gas	32.1	100.4	294.6	5.4	17.8	53.3	19.3	60.2	176.7	3.2	10.7	32.0	
MA 4 NE	East Seram PSC/60%	Manusela	Oil/Gas	69.2	154.4	291.7	0.9	2.0	3.9	41.5	92.6	175.0	0.6	1.2	2.3	
PP6	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	15.1	40.5	108.6	16.2	47.6	138.0	9.1	24.3	65.2	9.7	28.6	82.8	
PP4	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	0.0	0.1	0.2	15.2	31.9	63.6	0.0	0.1	0.1	9.1	19.1	38.1	
PP10	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	0.9	2.1	4.5	8.5	18.8	41.9	0.6	1.2	2.7	5.1	11.3	25.1	
PP9	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	7.3	17.1	41.1	5.1	12.9	32.8	4.4	10.3	24.7	3.0	7.7	19.7	
PP11	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	0.1	0.2	0.4	6.4	15.4	37.7	0.0	0.1	0.3	3.8	9.3	22.6	
PP4 SE	East Seram PSC/60%	Plio-Pleistocene	Oil				5.9	13.4	30.0	0.0	0.0	0.0	3.6	8.0	18.0	
PP8	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	2.0	3.5	7.1	5.2	10.7	21.7	1.2	2.1	4.3	3.1	6.4	13.0	
PP10 S	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	2.0	3.4	6.5	5.3	10.8	21.3	1.2	2.1	3.9	3.2	6.5	12.8	
PP3	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	0.2	0.2	0.5	4.3	8.2	15.8	0.1	0.1	0.3	2.6	4.9	9.5	
PP12	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	0.1	0.1	0.3	2.6	6.6	15.9	0.0	0.1	0.2	1.6	4.0	9.5	
PP16	East Seram PSC/60%	Plio-Pleistocene	Oil	2.2	5.2	11.4	1.9	5.0	11.6	1.3	3.1	6.8	1.2	3.0	7.0	
PP5 (East Seram PSC)	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas				2.2	5.3	12.4	0.0	0.0	0.0	1.3	3.2	7.5	
Solan	East Seram PSC/60%	Plio-Pleistocene	Oil/Gas	0.7	1.5	3.6	1.5	3.5	8.7	0.4	0.9	2.1	0.9	2.1	5.2	
Offshore Bula	East Seram PSC/60%	Plio-Pleistocene	Oil				2.0	3.8	7.1				1.2	2.3	4.2	
Total East Seram PSC Prospective Resource ⁴				897.3	3086.4	10687.4	239.4	823.6	2888.3	538.4	1851.8	6412.4	143.7	494.1	1733.0	

Notes to East Seram PSC New Prospective Resource Table

1. Prospective Resource: 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. The prospective resource numbers shown are unrisks.
2. Closure areas for individual prospects and leads are based on seismic interpretation with realistic low side and high side estimates. Other key parameters, such as net pay, porosity, hydrocarbon saturation and oil versus gas ratios, used to calculate prospective resource are taken from known field data and regional trends.
3. Lofin Field Extension potential in East Seram PC potential currently assigned as prospective resource rather than contingent resource pending further analysis.
4. Prospective Resources have been estimated probabilistically at prospects and lead level but combined arithmetically to provide the portfolio number. The aggregate P90 may be a very conservative estimate and the aggregate P10 may be a very optimistic estimate due to the portfolio effects of arithmetic summation.

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Glossary

bbl: barrels	KB: Kelly bushing	psi: pounds per square inch
bcf: billion cubic feet	mmbbl: thousand barrels	TCF: trillion cubic feet
bopd: barrels oil per day	mmbbl: million barrels	sq.km: square kilometres
GIP: gas in place	mmboe: million barrels of oil equivalent	TD: total depth
JV: joint venture	PSC: Production Sharing Contract	

Competent Persons Statement: Qualified Petroleum Reserves and Resources Evaluator

Pursuant to the requirements of the ASX Listing Rules Chapter 5, the technical information, reserve and resource reporting provided in this document are based on and fairly represent information and supporting documentation that has been prepared and/or compiled by Mr Kim Morrison, previous Chief Executive Officer of Lion Energy Limited. Mr Morrison holds a B.Sc. (Hons) in Geology and Geophysics from the University of Sydney and has over 30 years' experience in exploration, appraisal and development of oil and gas resources - including evaluating petroleum reserves and resources. Mr Morrison has reviewed the results, procedures and data contained in this announcement. Mr Morrison consents to the release of this report and to the inclusion of the matters based on the information in the form and context in which it appears. Mr Morrison is a member of AAPG and PESA.

ENDS

This ASX announcement was approved and authorised for release by the Board of Directors.