

New East Seram seismic delivers 153 mmboe upgrade to targeted prospective resources

Key highlights

- **20% increase in Best Estimate (P50) Prospective Resource¹ for the fold-belt structures targeted by the 2022 seismic survey (Kobi, Waru and Tanah Baru) - new combined (unrisked) P50 for the three prospects is 828 mmboe up from previously reported 675 mmboe**
- **The Kobi Prospect, located 10 km NW of the 1.5 TCF Lofin gas field, has mapped areal closure of up to 110 km² & a prospective resource range (P90-P10) of 98 – 1047 mmboe (40% oil predicted)**
- **The Kobi Prospect has emerged as the standout prospect given its size and accessible location.**
- **The Waru Prospect, located 35 km south of the Oseil Oil field, has areal closure of up to 70 km² and a prospective resource range of 89 - 766 mmboe (75% oil predicted)**
- **The Tanah Baru Prospect has areal closure of up to 80 km² and a prospective resource range of 35 - 670 mmboe (65% oil predicted)**
- **Updated total prospective resources (unrisked) across the deep and shallow plays in East Seram PSC are P90: 465, P50: 1521, and P10: 4336 mmboe**
- **Lion is advancing the farm-out process which the company hopes will lead to a free-carried exploration well/s to target priority prospects**

Lion Energy Limited (“Lion”; ASX:LIO) is pleased to update our recent July 6, 2023 ASX release with additional information on the exciting Kobi, Waru and Tanah Baru prospects. These are all located in the East Seram PSC, Eastern Indonesia in which Lion is the operator with a 60% interest. These prospects share the same play elements as the producing Oseil oil field (over 20 mmbbl oil production) and 1.5 TCF Lofin gas field in the neighbouring Seram (NB) PSC (Lion 2.5% interest). The 200 km 2022 seismic survey has confirmed the presence of all structures targeted and detailed prospect evaluation has resulted in a 20% increase in the combined (best estimate) prospective resource over Lion’s pre-survey estimate.

¹Prospective Resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective Resources have both an associated chance of geologic discovery and a chance of development. Prospective Resources are further categorized in accordance with the range of uncertainty associated with recoverable estimates, assuming discovery and development, and may be sub-classified based on project maturity. Further exploration, appraisal, and evaluation is required to determine the existence of a significant quantity of potentially movable hydrocarbons.

Work is now focused on finalising prospect evaluation, determining drill locations, well planning and securing funding to drill some of the largest targets in the Indonesian region.

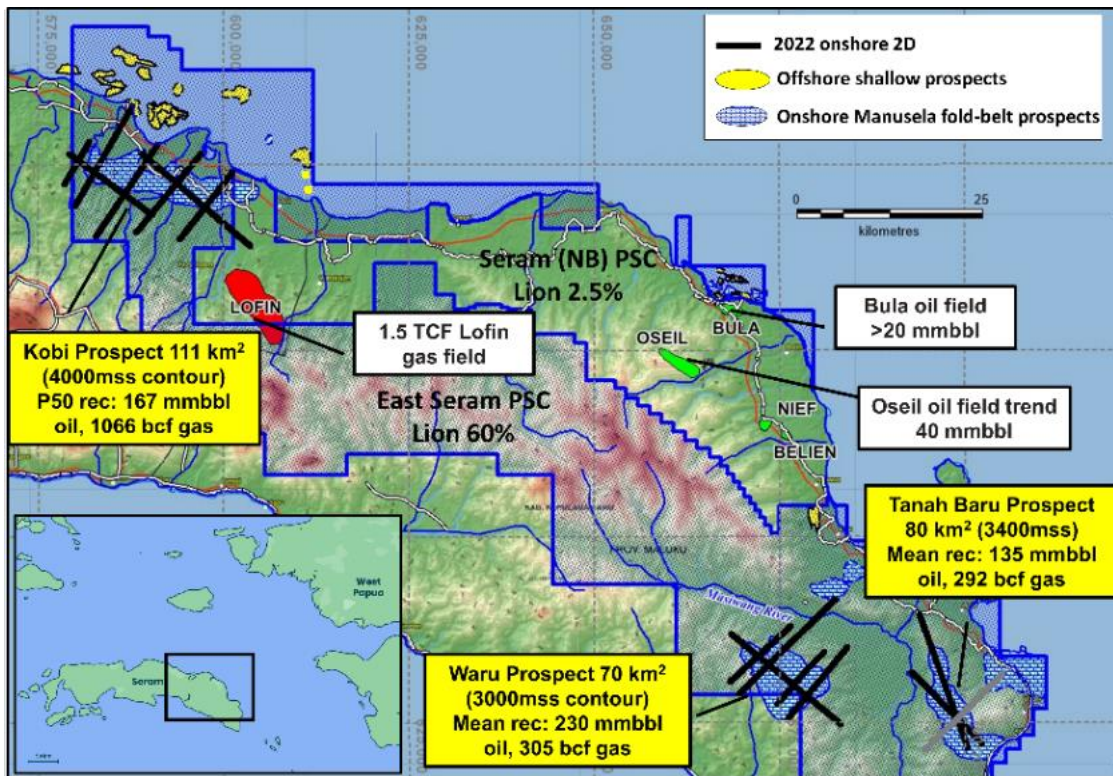


Figure 1 East Seram PSC showing onshore seismic survey with key fields & prospects

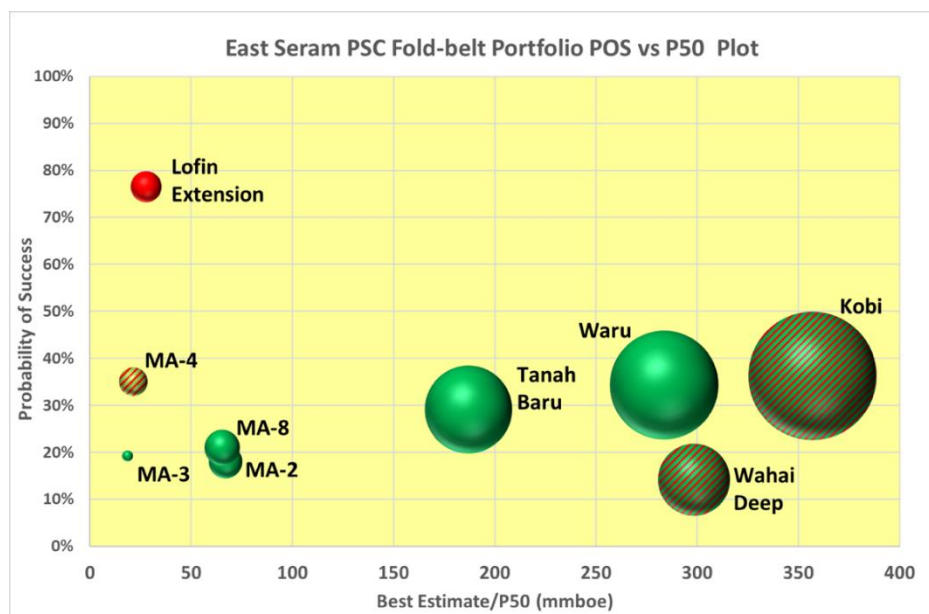


Figure 2 East Seram Fold-Belt Prospects and leads P50 Prospective Resource vs Probability of Success plot (Bubble size is comparative EMV)

A plot of Best Estimate (P50) Prospective Resources (unrisked) versus Probability of Success for Manusela limestone fold-belt targets in the East Seram PSC is shown in Figure 2. The new seismic has upgraded the Kobi, Waru and Tanah Baru prospects and these are now considered highly attractive drill opportunities. Importantly Waru and Tanah Baru are in the more oil prone south-east portion of the PSC with Kobi in the NW portion anticipated have mixed gas and oil phase.



Tom Soulsby,
Lion's Executive
Chairman

“ The results of interpretation of our new seismic have exceeded our expectations and make it clear that Lion’s East Seram PSC contains some the largest oil and gas prospects in the Indonesian region. We are particularly excited by the large Kobi Prospect given its proximity to the Lofin gas field, reasonable drill depth, and relatively rapid commercialisation potential. If successful, Kobi could play a key role in the East Indonesian energy transition providing gas to displace coal or diesel-powered energy. Lion is well placed with a 60% participating interest to farm down and get a carried interest through a well. Lion already has a 20% carry for a well from existing partner, OPIC, up to a well cost cap of US\$10m. ”

Evaluation update

Since the positive results of the onshore 2D seismic data acquired in 2022 were first reported by Lion (refer to Lion ASX release dated 6 July 2023: “New East Seram seismic confirms world-class potential”) work has been focused on:

- Continued interpretation of seismic data.
- Depth mapping of the targeted Kobi, Waru, and Tanah Baru prospects.
- Additional seismic processing (test of Pre-stack Depth Migration on selected lines over the Kobi Prospect).
- Gravity analysis/modelling.
- Volumetric assessment to quantify the prospective resource potential for the prospects in the East Seram PSC.

Seismic acquisition summary

Lion acquired 200 kms of 2D seismic data in the East Seram PSC from June 2022 to January 2023. Six lines totalling approximately 100 kms were acquired in the NW Kobi area to the northwest of the 1.5 TCF Lofin gas field. A total of 5 lines were recorded over the Waru Prospect totalling 70 km and 2 lines totalling 30 km over the Tanah Baru Prospect. The survey was completed safely and within 10% of budget despite the challenging remote setting.

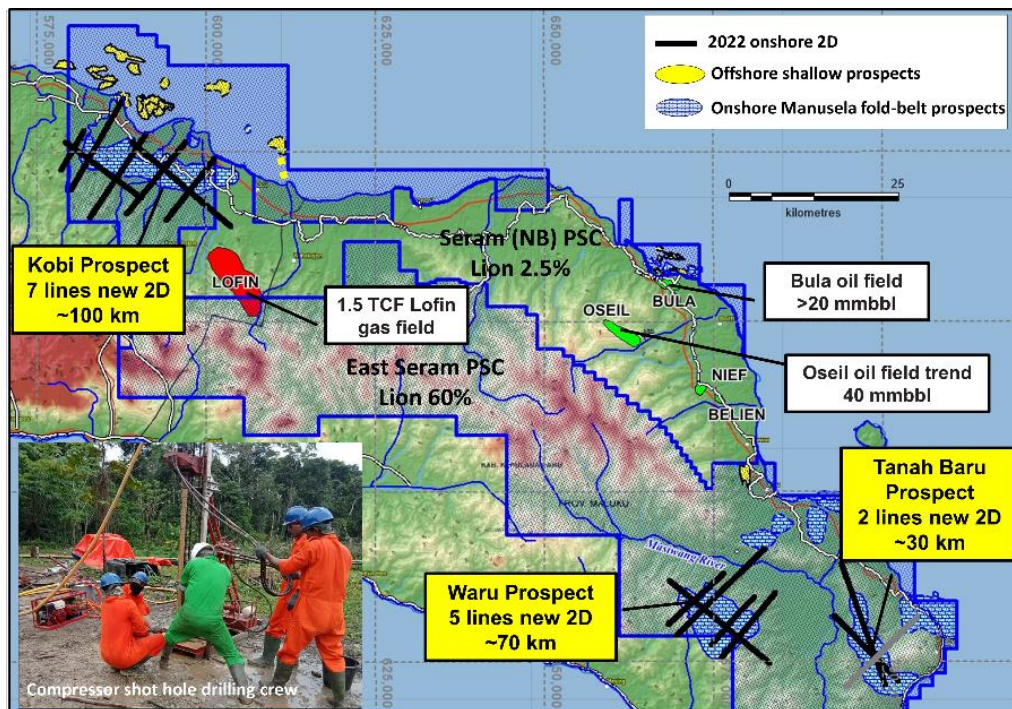


Figure 3 East Seram PSC showing onshore 2022 seismic locations

Seismic interpretation summary

Processing of the data commenced in December 2020 with final pre-stack time migration delivered to Lion in June 2023. Data quality overall is good with some significant improvements evident on earlier vintage data sets, allowing for more detailed stratigraphic and structural interpretation. Interpretation of the data was undertaken from June through September. Key horizons have been interpreted and depth converted using an interval velocity approach. Detailed depth maps have been produced for the Kobi, Waru and Tanah Baru Prospects at the top Manusela Carbonate objective which is the reservoir in the Oseil Oil and Lofin Gas fields. Pre-stack depth migration testing has also been conducted on two lines over the Kobi Prospect validating the current interpretation. Additional pre-stack depth migration is planned.

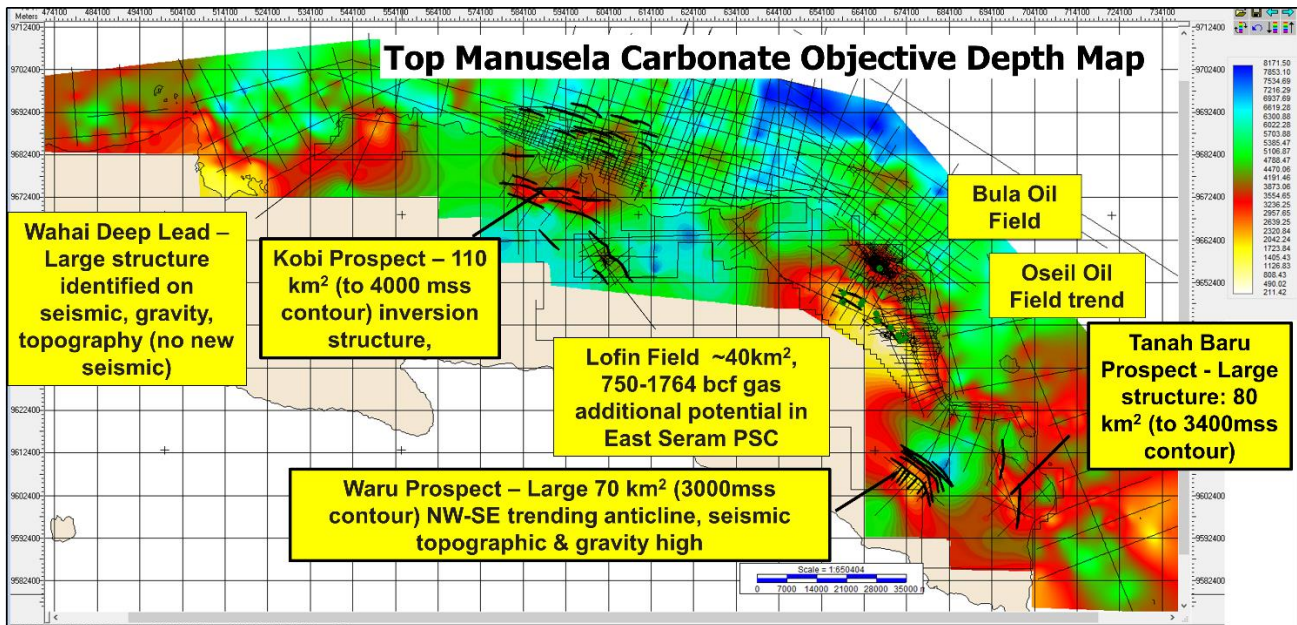


Figure 4 Manusela Carbonate Objective Depth Map

Gravity interpretation summary

Lion acquired a 1000 station gravity survey at the same time as conducting the onshore seismic survey. Data was acquired along the seismic lines as well as along roads in the survey area. The gravity data has been integrated with existing gravity data in the area and provides another data set, complementary to the seismic acquisition, to assess key prospects. Gravity highs are present across the targeted Kobi, Waru, and Tanah Baru prospects.

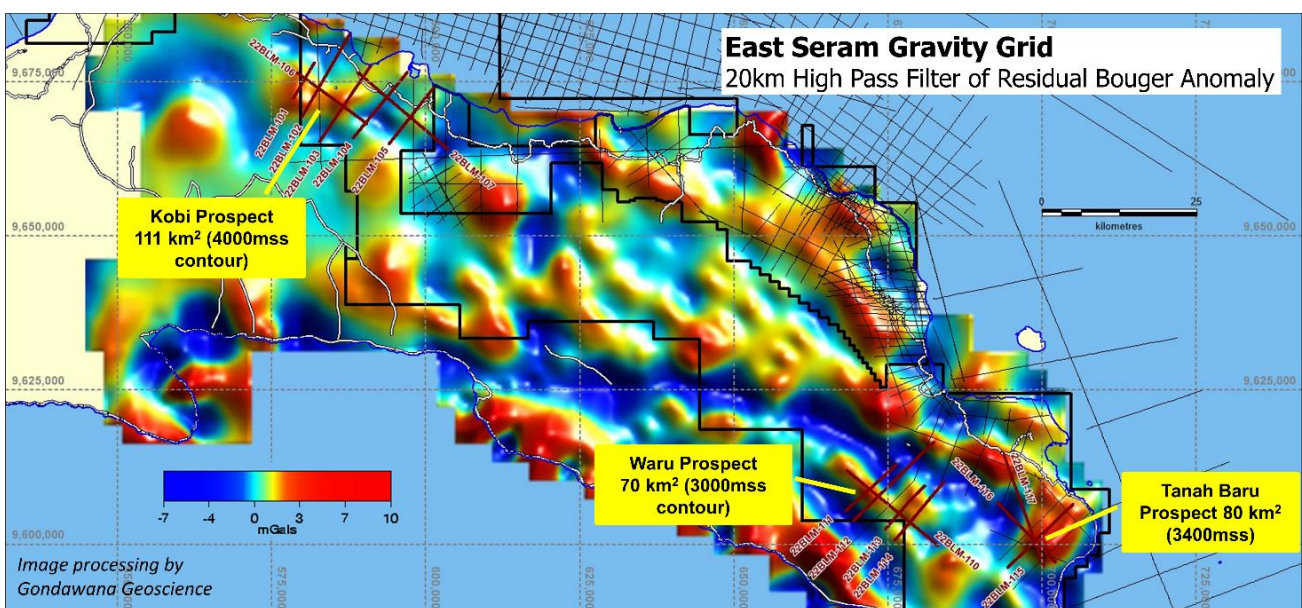


Figure 5 East Seram Gravity Image showing gravity highs over key prospects

Encouragingly, gravity modelling of lines over the key prospects undertaken has validated the seismic interpretation by providing a separate assessment of depth to the primary objective Manusela limestone.

Forward Model of Gravity 2D – Line 103

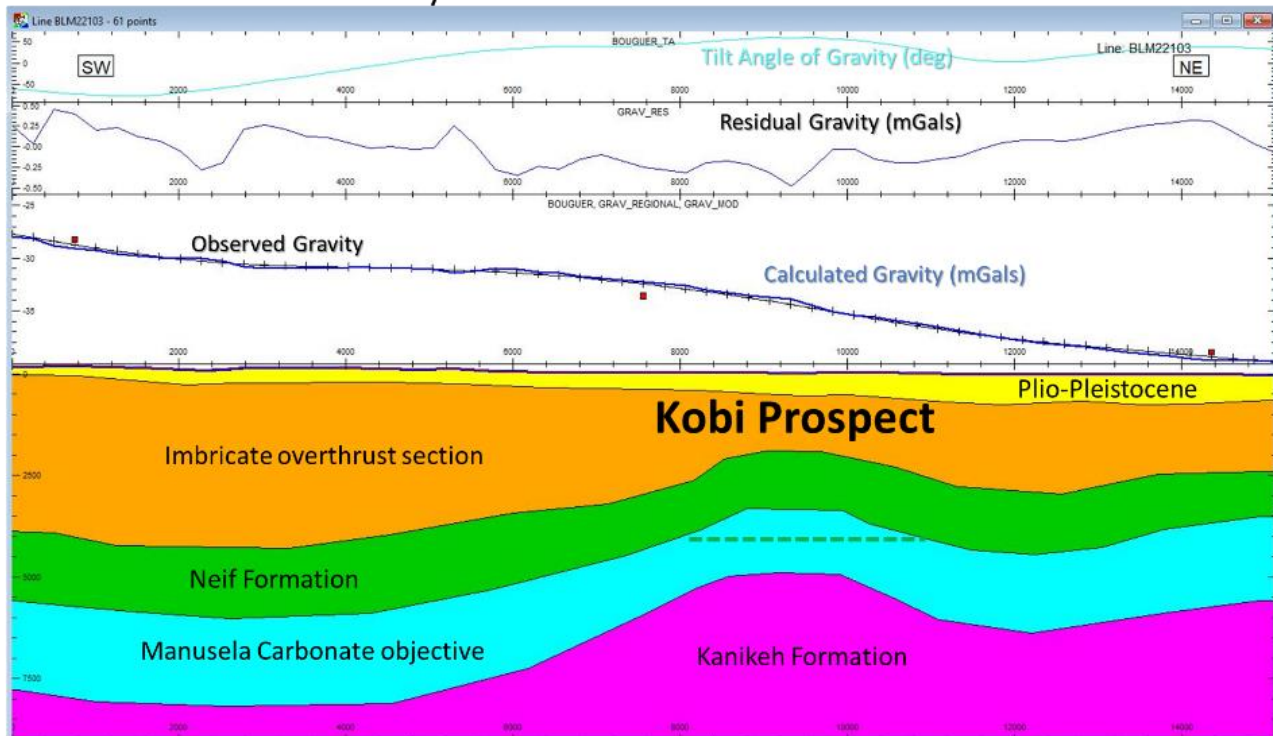


Figure 6 Gravity modelling of Line 103 validating seismic interpretation of large Kobi structure (Work conducted for Lion by Gondwana Geoscience)

Prospective resource assessment

A table of the updated East Seram PSC prospect and lead inventory with the new prospective resource estimate (unrisked) is shown in Table 1 below. This table contains both the Manusela Carbonate objective fold-belt prospects as well as the shallow Plio-Pleistocene sandstone and reefal limestone prospects targeted by Lion’s 2020 marine seismic program (refer to Lion ASX release dated 16 June 2021).

Methodology

The volumes are based on the new Top Manusela Objective depth maps which have integrated the new seismic data. Prospects are ordered in the table by play type with the three prospects targeted by the 2022 onshore survey the highlighted in yellow the clear standout opportunities. 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 an interval velocity approach based on established sedimentary section velocity from available well data. Closure areas for individual prospects and leads are based on the area depth relations from generated depth maps. 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.

Tabel 1 East Seram PSC Prospective Resources

East Seram PSC Prospective Resources ¹ (as at 1 Oct 2023)			100% (Gross)									Probability of success
			Gas/Associated Gas Recoverable (Bcf)			Oil/Condensate Recoverable (MMbbl)			Combined (mmboe)			
Prospect/Lead	Designation	Play	Low P90	Best P50	High P10	Low P90	Best P50	High P10	Low P90	Best P50	High P10	%
Kobi (previously MA-10, MA-11)	Prospect	Manusela	297.6	1066.0	3060.0	48.5	179.3	537.2	98.1	357.0	1047.2	36.3%
Waru (previously MA-7)	Prospect	Manusela	97.1	304.7	849.0	73.0	232.9	624.8	89.1	283.7	766.3	34.3%
Tanah Baru (previously N & S)	Prospect	Manusela	57.8	292.2	1086.0	25.9	138.3	498.0	35.5	187.0	679.0	29.2%
Wahai Deep	Lead	Manusela	177.6	623.5	1800.0	52.6	194.6	596.4	82.2	298.5	896.4	14.1%
Lofin Extension	Prospect/Field ext.	Manusela	69.2	154.4	291.7	0.9	2.0	3.9	12.4	27.7	52.5	76.5%
MA 2	Lead	Manusela	51.5	125.7	283.0	16.9	45.9	111.5	25.5	66.9	158.7	18.0%
MA 8	Lead	Manusela	75.0	161.5	336.7	15.4	38.4	89.9	27.9	65.3	146.0	21.0%
MA 4 (previously MA-4 & MA-4NE)	Prospect	Manusela	28.5	92.0	284.7	0.9	6.1	29.3	5.7	21.4	76.7	35.0%
MA 3	Lead	Manusela	18.1	40.3	87.5	4.6	11.7	28.5	7.6	18.4	43.1	19.2%
MA 1	Lead	Manusela	4.8	9.8	18.4	0.9	2.2	4.9	1.7	3.8	7.9	23.3%
PP6	Prospect	Plio-Pleistocene	15.1	40.5	108.6	16.6	48.6	140.6	19.1	55.3	158.7	34.4%
PP4	Prospect	Plio-Pleistocene	0.0	0.1	0.2	15.2	31.9	63.7	15.2	31.9	63.7	35.9%
PP10	Prospect	Plio-Pleistocene	0.9	2.1	4.5	8.5	18.9	42.1	8.7	19.2	42.8	36.3%
PP11	Prospect	Plio-Pleistocene	7.3	17.1	41.1	5.2	13.1	33.4	6.4	16.0	40.3	32.4%
PP9	Prospect	Plio-Pleistocene	0.1	0.3	0.6	6.6	15.8	38.2	6.6	15.8	38.3	38.3%
PP4 SE	Lead	Plio-Pleistocene				5.9	13.4	30.0	5.9	13.4	30.0	19.2%
PP10 S	Lead	Plio-Pleistocene	2.0	3.4	6.5				0.3	0.6	1.1	45.1%
PP8	Prospect	Plio-Pleistocene	2.0	3.5	7.1	5.3	10.8	22.0	5.6	11.4	23.1	28.7%
PP3	Prospect	Plio-Pleistocene	0.2	0.2	0.5	0.0	0.8	1.4	0.0	0.8	1.5	34.1%
PP12	Prospect	Plio-Pleistocene	3.9	9.1	19.9	2.7	6.8	16.2	3.3	8.3	19.5	32.4%
PP16	Lead	Plio-Pleistocene	2.2	5.2	11.4	2.0	5.2	11.9	2.4	6.0	13.8	29.2%
PP5 (East Seram PSC only)	Prospect	Plio-Pleistocene				2.2	5.3	12.4	2.2	5.3	12.4	25.5%
Offshore Bula Extension	Prospect/Field ext.	Plio-Pleistocene				2.0	3.8	7.1	2.0	3.8	7.1	32.3%
Solan	Prospect	Plio-Pleistocene	0.7	1.5	3.6	1.5	3.6	8.7	1.6	3.8	9.3	51.7%
Total East Seram PSC²			911.6	2953.0	8300.9	313.2	1029.3	2952.0	465.2	1521.4	4335.5	

1. Prospective resources are those quantities of petroleum estimated, as of a given date, to be potentially recoverable from undiscovered accumulations by application of future development projects. Prospective resources have both an associated chance of discovery (geological chance of success or GCOS) and a chance of development (economic, regulatory, market and facility, corporate commitment, or political risks). The chance of commerciality is the product of these two risk components. There is no certainty that any portion of the prospective resources will be discovered and, if discovered, there is no certainty that it will be developed or, if it is developed, there is no certainty as to either the timing of such development or whether it will be commercially viable to produce any portion of the resources.
2. Prospective Resources in this Table have been estimated probabilistically at prospect 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.
3. Conversion factor of 6 mcf = 1 barrel of oil equivalent (boe).

Glossary

bbbl: barrels	GIP: gas in place	PSC: Production Sharing Contract
Bcf: billion cubic feet	JV: joint venture	PSDM: Pre-stack depth migration
bpd: barrels per day	KB: Kelly bushing	psi: pounds per square inch
bcpd: barrels condensate per day	mmcfd: million cubic feet gas per day	ss: sub sea
bopd: barrels oil per day	mmbbl: million barrels	TCF: trillion cubic feet
bwpd: barrels water per day	mmboe: million barrels of oil equivalent	TVD: true vertical depth
CO₂: carbon dioxide	mss: metres subsea	Conversion factor: 6 mcf = 1 bbl oil equivalent (boe).



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, Exploration Manager 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 website. 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.

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

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