

# Quarterly Report

1 October to 31 December 2023



## H2 project on track, and ongoing work confirms East Seram giant-sized discovery potential

Lion Energy Limited (“Lion” or “Company”) is pleased to report good progress in its core businesses of green hydrogen and oil and gas in Q4 2023.

### Highlights include:

- Lion submitted its Development Application in September 2023 and is expecting to receive Queensland Government approval in 1Q 2024 after moving into the public notification stage.
- Detailed project design commenced, and construction tender documents set to be issued in Q1 2024.
- Multiple parties have requested proposals for green hydrogen offtake.
- Potential joint venture discussions are ongoing.
- Specialist processing and modelling of the 2022 onshore 2D seismic and gravity data confirms the potential for giant-sized discoveries (greater than 500 mmboe) in the East Seram PSC.
- A crude oil lifting of 210,547 bbls was completed 30 December 2023 (Lion share 5,263 bbls pre government share, with Lion gross revenue entitlement of ~USD296,000 post government expected to be received end January 2024).
- Seram (Non-Bula) PSC production for the quarter was 99,045 bbls (Lion’s share 2,247 bbls).
- Cash at quarter-end was US\$2.6 million (excluding joint-venture cash), compared to US\$3.5 million at the end of Q3 2023.

Mr Soulsby, Lion’s Chairman, commented: “Lion has made considerable progress in hydrogen. We have moved our Port of Brisbane project development approval closer as we moved to the public notification phase. Lion is also maturing joint venture discussions with multiple parties who are currently performing due diligence on our project. At the same time, interest for green hydrogen in Queensland is gearing up, with Lion responding to multiple inquiries.

We are also excited by ongoing work in our East Seram PSC including integration of results of depth processing of selected new seismic lines and 3D modelling of the gravity data which confirmed the highly significant resource potential of the key fold-belt prospects. In December we engaged specialist advisors, Moyes and Co, to assist with bringing in a partner to fund drilling of one of our high-graded opportunities.”

### Lion at a glance

- ASX listed oil and gas E&P company with two conventional PSCs in Seram Island, Indonesia.
- Net production of around 37bopd from the Seram PSC which also contains the Lofin gas/condensate discovery.
- New focus on green hydrogen opportunities in Australia.

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### Directors & Officers

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Damien Servant Executive Director  
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Zane Lewis Non-Executive Director  
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## Green hydrogen update

Lion announced that it signed a milestone Heads of Agreement (HOA) with Port of Brisbane Pty Ltd (“PBPL”) for a long-term lease of land within the POB in Q1 2023, where it plans to build and operate its first hydrogen generation and refuelling hub. In Q3, we reported that Lion and PBPL have finalised lease agreement negotiations, and the parties have actively engaged on the development approval document preparation. After receiving development consent from the POB in August, we submitted our plan to the Queensland State Assessment and Referral Agency in September. We are now in the public notification stage and we expect to get project approval in Q1 2024.

The hub is geared towards heavy mobility fleets with a focus on public bus fleets, and the application of fuel cells providing onsite off-grid power to the Queensland construction and mining sectors. The POB project is the first site of a planned wider network and constitutes a major step in Lion’s hydrogen strategy and integral to a broader hub and spoke/depot supply model.

The location is strategic due to its proximity to the majority of Brisbane’s 70+ bus depots, and also the significant heavy vehicle traffic to and from the Port. The site will initially produce and dispense some 420kg/day of green hydrogen but has the ability to quickly double production to respond to increasing demand. The image below is a representation of the architects drawings for the development approval submission and should closely resemble the actual hydrogen generation and refilling station .



*Image 1: Artist's impression of Lion's H2 hub at the Port of Brisbane reflecting the development plan submitted to the State Assessment and Referral Agency*

Lion earlier reported that it signed a General Equipment and Procurement Agreement with various vendors for supply of electrolyzers, a refuelling package and tube trailers for the POB location. Our refuelling package has arrived in Australia and our local vendor is progressing this package to local standards as per the contract of purchase. The equipment includes 2 x 1MW alkaline electrolyser packages, a compressor, storage banks, dispenser and two tube trailers and we have used our time in Q4 2023 to progress design documents and progress local compliance requirements with each vendor.

Lion has been working closely with the bus and genset supply industries on their requirements around refuelling reliability and speed as part of its green hydrogen strategy. Lion is continuing to respond to requests for proposals for green hydrogen supply for bus operators in South East Queensland. We are also fielding enquiries for hydrogen supply to the fuel cell genset market.

Finally, we have been managing multiple prospective joint venture partners who have now started due diligence phase with an interest in joining Lion in its East Coast hydrogen strategy with an initial focus on the Port of Brisbane project. Our prospective partners have skills in power, renewable energy, transportation, large project execution and have strong balance sheets. However, there is no assurance at this stage that these discussions will result in an actual transaction. As part of recent announcements, Lion presented the following provisional roadmap and has responded to the objectives as listed in Table 1, in the quarter under review.

**Table 1: Lion's provisional green hydrogen roadmap vs response (as at end December 2023)**

Stated Objective	Response
<b>Stage 1</b>	
Publish broad green hydrogen strategy	Completed
Register business name	Completed
<b>Stage 2</b>	
Establish team of hydrogen experts	Completed
Appoint experts to systematically analyse optimal electrolyser locations in Australia	Completed
Review the best value and fit for purpose solar, wind, and electrolyser technologies	GPA phase 2 work completed, appointed Amarna Energy as special advisors
The review of opportunities in which Lion may be able to combine its expertise and resources with a suitable market and partner to progress a green hydrogen development using identified electrolyser locations and appropriate technologies	Partnership expanded: Wagners, Censtar H2 Technology, Foton Mobility, BLK Auto and Pulitano Group. Lion is working with public transport authorities and bus fleet operators in NSW, VIC, and NSW
Expand the scope of the Advisory Board to review opportunities in H2 distribution and hydrogen fuel cells for heavy equipment and vehicles	Advisory board have an ongoing role and involvement in the work being undertaken by Wasco, Amarna including reviewing submissions by Censtar and other equipment providers
<b>Stage 3</b>	
Appoint consultants to undertake a feasibility study to ascertain the economic viability of a short-listed opportunity and the anticipated cost	FEED completed, work in progress
Secure any required land rights conditional upon Lion proceeding with an opportunity	Work in progress
Investigate investing in a pilot or demonstration plant including H2 distribution and hydrogen fuel cell heavy equipment and vehicles	Submissions made to back to base fleet businesses
<b>Stage 4</b>	
Subject to a positive feasibility study, progress the opportunity by participating in the development of a smaller or larger solar/wind farm and relevant energy storage facilities to produce green hydrogen at low cost for domestic or export markets	Conditional upon stage3 work being completed
Form a joint venture with a suitably experienced and funded partner	Working up proposals with counterparties

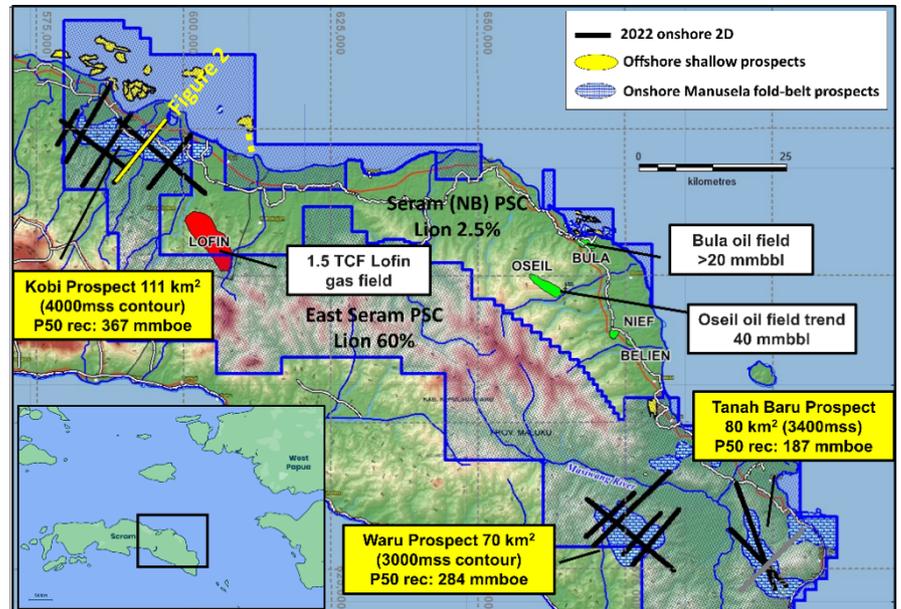
## Oil and Gas Operations update

### East Seram PSC

Lion holds a 60% interest and is Operator of the 4557 km<sup>2</sup> East Seram PSC.

Since acquiring the PSC in 2018, Lion has conducted an active exploration program. A 664 km offshore 2D survey targeting the Plio-Pleistocene foreland basin play in 2020 delineated an attractive shallow oil portfolio. From June 2022 to January 2023 Lion recorded 14 2D seismic lines totalling 200km and a 1000 station gravity survey. The survey was designed to mature some highly attractive onshore fold-belt structures with the proven Jurassic fractured Manusela limestone the primary reservoir objective.

**Figure 1: East Seram PSC – location map showing 2022 seismic survey**



Despite the challenges with operating in the remote location the survey was conducted safely and within 10% of the pre-survey budget.

Processing, modelling and interpretation has confirmed the presence of all prospects targeted by the 2022 survey. Six (6) lines, totalling approximately 100 kms, were acquired over the Kobi prospect approximately 15km to the northwest of the 1.5 TCF Lofin gas/condensate field. The pre-stack time migrated seismic, and also pre-stack depth migration on selected lines (see Figure 2), show the Kobi Prospect to be a robust feature partly analogous to the Lofin discovery. The Lofin field at the objective Manusela level has an area of approximately 40 km<sup>2</sup> and a 1300m hydrocarbon column with top of the reservoir at approximately 4100mss. The Kobi prospect has mapped Manusela closure up to 110 km<sup>2</sup>, vertical closure up to 1100m with top of the Manusela objective interpreted at approximately 3000mss. The new gravity data shows that a gravity high is present over the Kobi structure and detailed 2D and 3D gravity modelling undertaken during the Quarter aligns well with the seismic interpretation. The P50 (unrisked) prospective resource<sup>1</sup> potential for Kobi is 357 mmboe with upside (P10) potential over one billion boe.

In the southeast area of the PSC, which is modelled to be more oil prone, Lion recorded 5 lines over the Waru fold-belt prospect which has a clear topographic expression with elevation rising to around 400m. The new seismic confirmed the presence of a high-relief, thrust faulted anticline with areal closure up to 70 km<sup>2</sup> and mapped vertical closure of up to 1200m. A gravity high is present with 2D modelling conducted during the Quarter again confirming the overall seismic interpretation. The P50 (unrisked) prospective resource<sup>1</sup> potential for Waru is 284 mmboe with upside (P10) potential of 766 mmboe.

Two seismic lines and additional gravity were recorded over the Tanah Baru prospect which also has a clear topographic expression. Despite challenges in the data quality in the area, the presence of a large structure with areal closure up to 80 km<sup>2</sup> and relief of up to 1050m is confirmed by existing and new seismic and 2D modelling of the new gravity data. The P50 (unrisked) prospective resource<sup>1</sup> potential for Tanah Baru is 187 mmboe with upside (P10) potential of 679 mmboe.

Ongoing exploration plans include completing PSDM processing on a further 10 lines to confirm crestal locations and continuing well planning activities with the Kobi prospect currently high-graded for potential drilling in 2025.

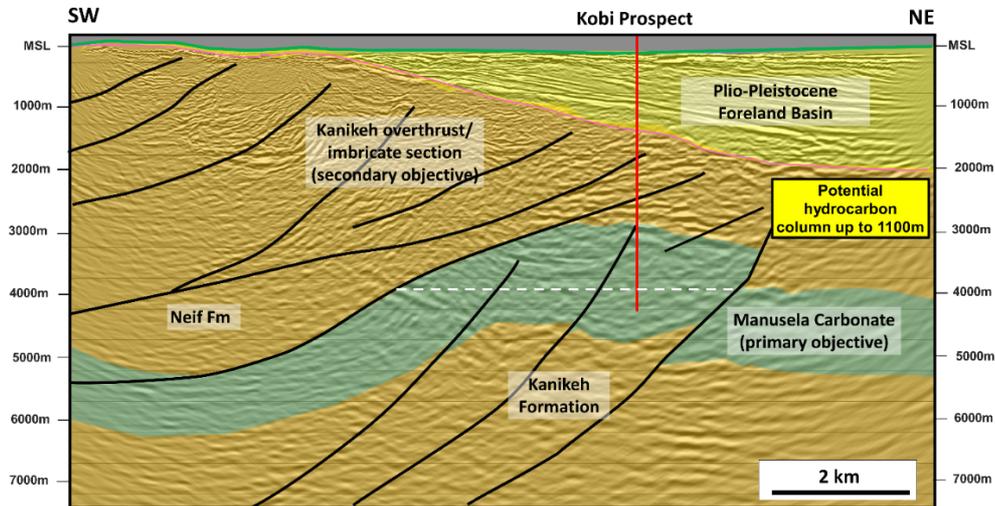


Figure 2: Geoseismic section showing interpretation on PSDM line over the Kobi Prospect

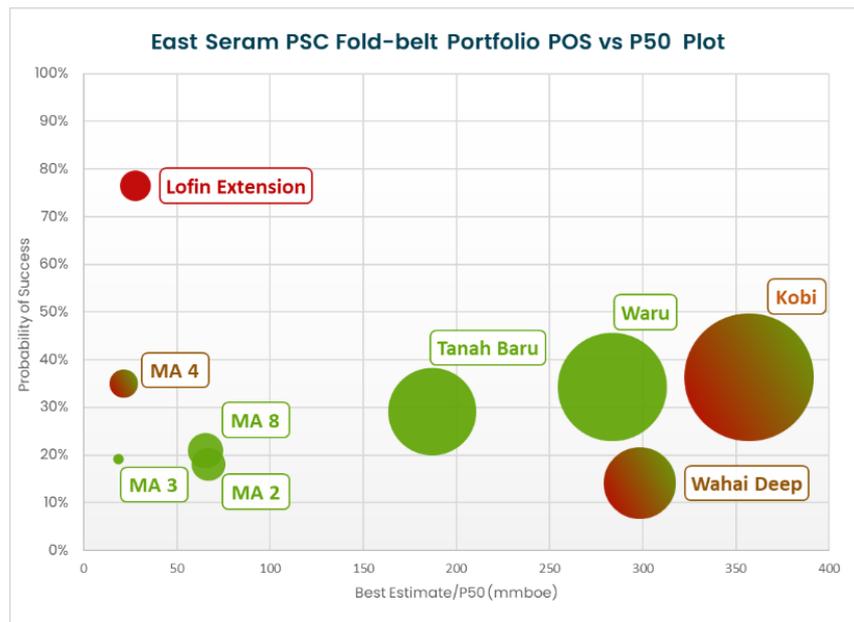


Figure 3: East Seram Fold-Belt Prospects and leads P50 Prospective Resource<sup>1</sup> vs Probability of Success plot (Bubble size is comparative EMV)

**Notes:**

<sup>1</sup>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.

## Seram (Non-Bula) PSC

Lion, via its wholly owned subsidiary Lion International Investment Ltd, holds a 2.5% participating interest in the Seram (Non-Bula) PSC (“SNB PSC”), located onshore Seram Island in eastern Indonesia.

Lion expects the divestment of 0.25% interest in Seram (Non-Bula) PSC to be finalized in 2024. At completion, Lion’s participating interest in the Seram (Non-Bula) PSC will reduce to 2.25% from 2.5% currently.

As previously reported by Lion, in 2015, the Lofin-2 appraisal well confirmed a highly material gas discovery in the SNB PSC. The Lofin Gas Field has Contingent Resources (2C) of 1450 bcf (100%), Lion share 36.3 bcf at current equity holding of 2.5%.

Re-entry and testing of the Lofin-2 well commenced on 18 December 2022. The testing completed on 4 March 2023, with completion of the final pressure build-up. The land rig remained on location to complete the well ready for production. The running of the completion was completed, and the rig was released on 15 June 2023.

For details of the Lofin-2 testing and completion, refer to the Company’s ASX release of 11 July 2023 “Lofin-2 well completed following successful well testing program”.

The Operator is currently preparing to conduct an extensive 4 rate flow test of the completed well, the results of which are required as part of imminent commerciality negotiations with prospective customers.

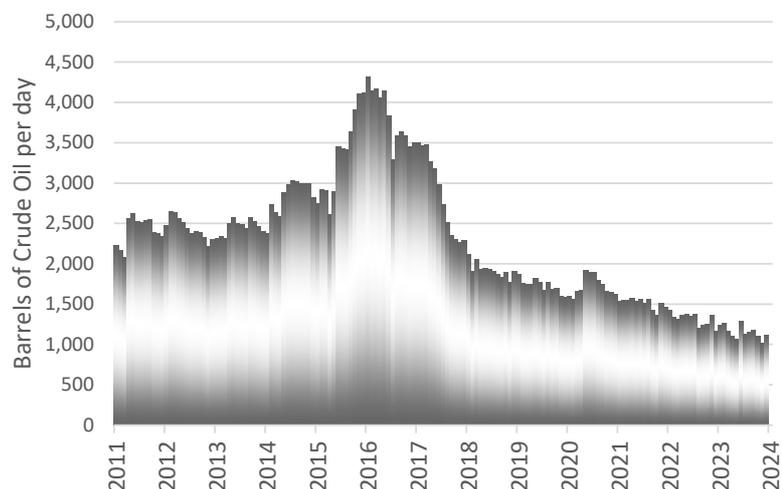
### Production

During the quarter, gross crude oil production from Oseil and surrounding oilfields was 99,045 bbls (Lion’s gross share 2,476 bbls). Daily production averaged 1,077 bopd (Lion’s interest being 27 bopd). Crude oil available for lifting as of 31 December 2023 was only 4,872 bbls following the crude lifting completed 30 December 2023. The next crude oil lifting is scheduled for late June 2024 and expected to be approximately 200,000 bbls. Operating costs were US\$30.49 per barrel for the Quarter, higher than the annualised operating cost (\$27.60/bbl for 2023).

Figure 4: Seram (Non-Bula) Block PSC – location map



Chart 1: Seram (NB) Block – daily production per calendar month (bopd)



### Regulatory update

In January 2021, CITIC Seram, as operator of the Seram (Non-Bula) PSC, was requested by the Government of Indonesia, in accordance with the terms of the PSC, to offer a 10% participating interest to a Regional-Owned Company appointed by the local Government of Maluku. The 10% would be transferred by the existing participants in the PSC pro-rata to their respective participating interests.

The process remains unresolved as the Seram (Non-Bula) joint venture continues negotiations with the Government of Indonesia to resolve the issue to the satisfaction of all parties. At completion, Lion's participating interest in the Seram (Non-Bula) PSC will reduce to 2.25% from 2.5% currently.

### Related Party Payments

During the quarter, the Company made payments of US\$158,000 to related parties and their associates. These payments relate to the existing remuneration agreements for the Executive and Non-Executive Directors.

### Summary of petroleum tenements held as of 31 December 2023

	% interest	Tenement	Location
Held at end of quarter	60%	East Seram PSC	Seram Island, Indonesia
	2.5%	Seram Non-Bula PSC	Seram Island, Indonesia

### ENDS

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

### Qualified petroleum reserves and resources evaluator requirements

In accordance with ASX Listing Rule 5.43 the Company confirms that references to petroleum reserves, contingent resources and prospective resources have previously been announced (7/9/2018, 10/9/2018, 04/03/2019, 13/04/2021 and 16/06/2021). The Company confirms that it is not aware of any new information or data that materially affects the information included in this announcement and that all the material assumptions and technical parameters underpinning the estimates in this announcement continue to apply and have not materially changed.

### Glossary

bbl: barrels	JV: joint venture	PSC: Production Sharing Contract
bcf: billion cubic feet	KB: Kelly bushing	psi: pounds per square inch
bopd: barrels oil per day	mmscfd: million standard cubic feet of gas / day	tcf: trillion cubic feet
BOP: blow out preventer	mmbbl: million barrels	Sq.km: square kilometres
ESP: Electric submersible pump	mboe: million barrels oil equivalent	ss TVD: sub-sea true vertical depth
FTP: first tranche petroleum	mss: metres subsea	TD: total depth