

Quarterly Report

1 July to 30 September 2022



Lion ramps up activities in Q3 2022

Lion Energy Limited (“Lion” or “Company”) is pleased to report progress for Q3 2022 in both green hydrogen and oil and gas.

Highlights include:

- **Completion of front-end engineering and design (FEED) for Lion’s first hydrogen production and refuelling station.**
- **Electrolyser and Refuelling Station equipment vendor selection advanced**
- **Hydrogen project location selection in progress**
- **Continued seismic drilling operations on ~200km survey targeting the exciting onshore fold belt play. Seismic recording is due to commence in early November.**
- **Testing of the Lofin-2 gas well preparation advances and it is now expected to commence in December 2022 following delays mobilising the rig to Seram Island**
- **Cash at quarter-end was US\$6.4 million (excluding joint-venture cash), compared to US\$7.9 million at the end of Q2 2022.**
- **Seram (Non-Bula) PSC production for the quarter was 116,981 bbls (Lion’s share 2,925 bbls).**

Mr Soulsby, Lion’s Chairman said that *“We continue our progress to position Lion at the forefront of hydrogen production and refuelling in Australia at a time when zero emissions are becoming more and more important for Federal and State Governments. Significantly, our work with Wasco, and our increased engineering capacity, enabled us to conclude FEED. Lion is now focused on its first location selection.”*

In terms of oil and gas activities, Mr Soulsby said that “we continue to have good production from the Oseil field and, whilst some delays have been experienced in mobilising the rig for the important Lofin-2 test, we are pleased to have confirmation that the rig will arrive in Seram by mid-November with the well test planned to commence in December 2022. Concurrently, Lion is making solid progress with our East Seram seismic campaign which will cover some of the largest hydrocarbon structures in Indonesia.”

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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Green Hydrogen update

In the previous quarter we outlined our reasons for our focus on heavy mobility and in particular, public transport bus operators. We also presented the results of the ARRB study whereby two key Zero Emission Bus (ZEB) technologies will effectively support a transition to net zero emissions by Australian states, Battery Electric Bus (BEB) and Hydrogen Fuel Cells.

As such, Lion is now moving quickly to establish key refuelling infrastructure for Fuel Cell Electric Buses (FCEB) and on 25th May 2022 appointed Wasco to conduct front end engineering and design (FEED) for its first hydrogen production and refuelling station in Australia. Wasco is an Engineering and Procurement Contractor (EPC) and Operations and Maintenance (O&M) contractor based in Brisbane. Wasco is part of the international Wasco Energy Group, headquartered in Kuala Lumpur, Malaysia. Wasco was the EPC contractor for Australia's first major hydrogen station, the Jemena West Sydney project, completed in 2021. In that project, Wasco constructed a new Electrolyser facility with underground hydrogen storage pipeline and hydrogen storage and handling systems.

The FEED was completed in September, 2022, paving the way for a final investment decision ("FID") for the first hydrogen production and refuelling station to be made by the Board. Lion started major equipment procurement process which we aim to complete by 4Q2022, for a project completion by 2H2023.

The highlights of the FEED results included:

- FEED scope includes hydrogen hub (electrolysis, compression, and loading), transport and refuelling station (receiving, compression, storage, and dispensing)
- Facility designed to produce and dispense 430kg hydrogen per day (155tpa), with allowance for capacity growth in the future up to 1.7t per day
- Lion expects the facility to start hydrogen production by 4Q 2023, with full handover by 1Q 2024
- The facility is expected to supply hydrogen fuel onsite to bus operators transitioning their fleet from diesel to zero-emission vehicles
- Lion envisions the facility to be the first of a green hydrogen refuelling network on the eastern seaboard of Australia, servicing initially the bus market and later the larger heavy mobility industry
- Project capex estimate of AUD12.0m
- Procurement process underway, with vendor quotes and delivery timing within expectations

Lion has shortlisted locations and is in the process of engagement with each landowner for securing long term rights of use.

Lion's plan is to produce the hydrogen via electrolysis at the hub. The hydrogen will then be compressed to 200 Bar and loaded on tube trailers. The tubes are unloaded at the refuelling station, where hydrogen is further compressed to 450 Bar to be stored or directly delivered to vehicles via onsite refueller. This is a well-established model in other countries with no technology risk and excellent safety records.

Roadmap

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.

Lion is currently assessing multiple locations for its first hydrogen production and refuelling site.

Table 1: Lion's provisional green hydrogen roadmap vs response (as at end September 2022)

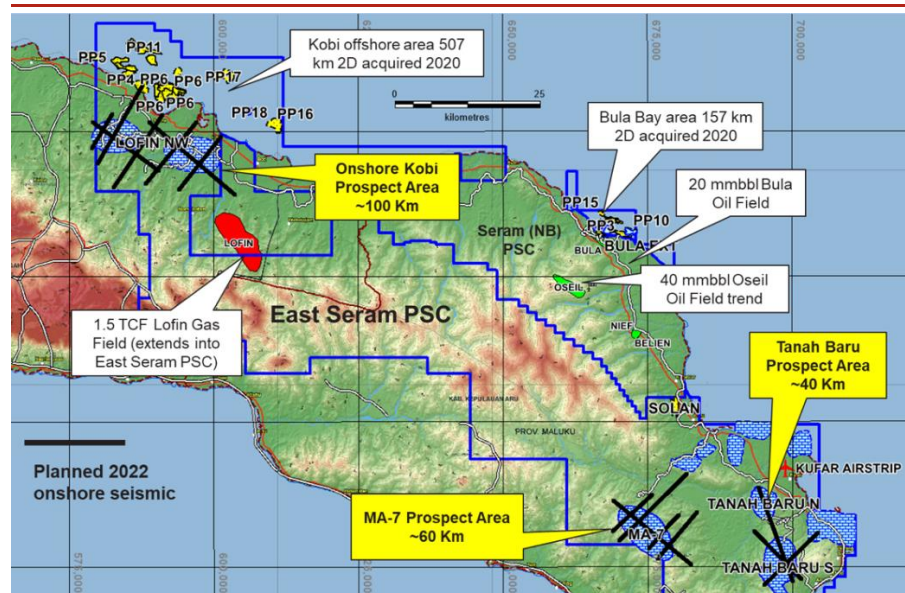
Stated objective	Response
Stage 1	
Publish broad green hydrogen strategy	Completed
Register business name	Completed
Stage 2	
Establish team of hydrogen experts	Completed
Appoint experts to systematically analyse optimal electrolyser locations in Australia	Completed
Review the best value and fit for purpose solar, wind and electrolyser technologies	GPA phase 2 work completed, appointed Armana 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	Partnerships expanded: Wagners, Censtar H2 Technology, Foton Mobility, BLK Auto and Pultano 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, Armana including reviewing submissions by Censtar and other equipment providers
Stage 3	
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
Stage 4	
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 stage 3 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

During Q3 2022 Lion continued with operations on our 200km seismic survey targeting the exciting fold belt play. Good progress was made with surveying and line clearing which was approximately 85% complete at quarter end. Shot hole drilling has proven challenging in the southeast area due to hard lithology being encountered however the seismic contractor, BGP, sent additional drilling crews to the island during the quarter resulting in significantly improved production. As of reporting time, shot hole drilling is approximately 50% complete and recording is now expected to commence in early November. Good progress was made with the concurrent gravity data acquisition which was approximately 50% complete by quarter end. The survey continues to be conducted safely with a strong emphasis on HSE.

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



The survey is designed to mature the high-graded prospects and leads of the exciting Seram fold-belt play. The play has the Jurassic age Manusela Formation fractured carbonate reservoir objective that is already proven with the oil producing Oseil Oil Field and the 1.5 tcf Lofin Gas Field. A combined, unrisks, P50 (Best estimate) prospective resource¹ of 675 mmboc is calculated for the 5 key targeted leads (MA-7, Tanah Baru North, Tanah Baru South, MA-10 and MA-11).

The largest lead, MA-7, has an oil prospective resource¹ of Low (P90) 39 mmbbl, Best (P50) 190 mmbbl, and High (P10) 881 mmbbl and a chance of success currently estimated at 24% (refer Lion ASX release dated 4 March 2019).

Photo 1: Compressor shot hole drilling operations



The onshore seismic program has an estimated cost of USD7.2mm and approximately 80% of this cost is funded by Lion’s partner, OESC. Lion, via its wholly owned subsidiary Balam Energy Pte Ltd, holds a 60% participating interest in the East Seram PSC, located on and offshore east Seram Island in Eastern Indonesia.

Photo 2: Crew carrying geophone recording cables



In November 2020 Lion shot 664 km of marine seismic which targeted the shallow Plio-Pleistocene play and allowed Lion to mature a highly attractive offshore portfolio (refer ASX release dated 16 June 2021). Work conducted in 2021 showed some of these offshore structures, including the PP9 carbonate reef prospect, can be drilled from onshore greatly enhancing their economic appeal.

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 moveable hydrocarbons.

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.

The block contains the Oseil oil field and surrounding structures that have yielded cumulative crude oil production of 19,623,243 barrels since production started in January 2003 through to 30 September 2022.

As previously reported by Lion, in 2015 the Lofin-2 appraisal well confirmed a highly material gas discovery in the SNB PSC. Re-entry and testing of the Lofin-2 well has been approved by the joint venture (refer Lion ASX Release 21 December 2021) and by the Government of Indonesia as part of the 2022 work program and budget. Following a delay in mobilising the rig to Seram Island, the test is now expected to commence in December 2022. This is a key step toward commercialisation of the Lofin Gas Field Contingent Resources (2C) of 1450 bcf (100%), Lion share 36.3 bcf.

Production

During the quarter, gross crude oil production from Oseil and surrounding oilfields was 116,981 bbls (Lion’s gross share 2,925 bbls). Daily production averaged 1,272 bopd (Lion’s interest being 32 bopd).

Crude oil available for lifting as of 30 September 2022 was 108,056 bbls.

A well service was performed on Oseil-12 in August to replace the downhole electric submersible pump (ESP). The well was offline for 10 days.

Operating costs were steady at US\$25.49 per barrel, after allowing for the production decline from the previous quarter.

Regulatory update

In January 2021, CITIC Seram, the 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.

Figure 2 Seram (Non-Bula) Block PSC - location map

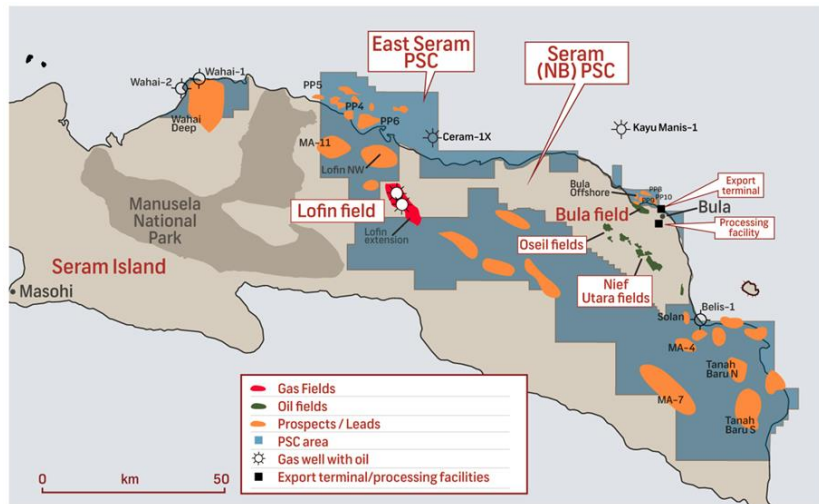
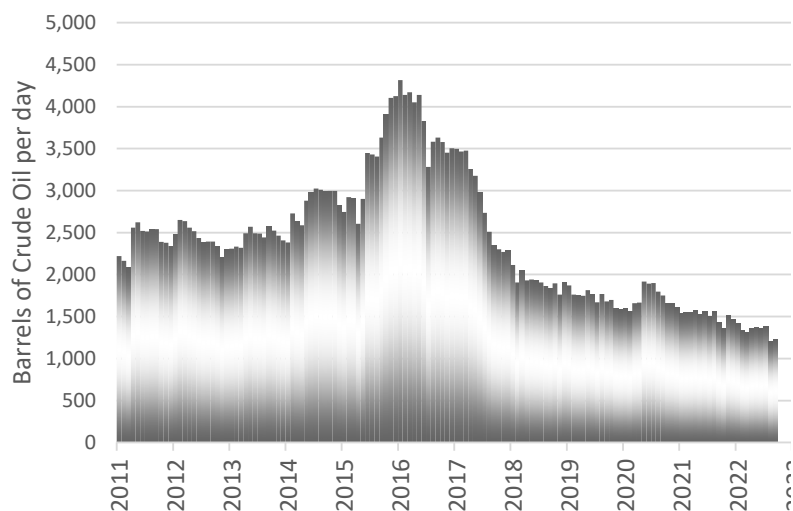


Chart 1 Seram (NB) Block - daily production per calendar month (bopd)



In March 2021, CITIC Seram received a first Letter of Intent from the Regional-Owned Company requesting to start a due diligence process. In January 2022, the Regional-Owned Company advised that it had completed its due-diligence and intends to acquire the 10% participating interest subject to commercial terms to be agreed. Based on a letter issued by the Minister of Energy and Mineral Resources in the Republic of Indonesia, the price for the 10% participating interest will 10% of the performance bond provided by the PSC at the time of the PSC extension in 2019.

The process continues and is now expected to complete in November 2022. At completion, Lion's participating interest in Seram (Non-Bula) PSC will reduce to 2.25% from 2.5% currently.

Corporate

The Company continues to maintain a focus on costs, whilst pursuing activities in Indonesia and in Green Hydrogen in Australia. Lion expects G&A costs to track steady year on year below US\$1m. During the quarter the Company incurred US\$184k in production costs from the operations of the Seram Non-Bula operation.

Related Party Payments

During the quarter, the Company made payments of US\$243,000 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 30th September 2022

	% 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	mmboe: million barrels oil equivalent	ss TVD: sub-sea true vertical depth
FTP: first tranche petroleum	MD: measured depth	TD: total depth