VULCAN ENERGY
ZERO CARBON LITHIUM™

ASX Release 29 October 2021

ASX:VUL
FRA:6KO

Fast Facts

Issued Capital: 123,834,613
Market Cap (@$14.99): $1.856b

Quarterly Activities Report September 2021

Vulcan Energy Resources Limited (Vulcan; ASX: VUL, the Company) has completed another strong quarter, as the Company remains focused on delivering the Zero Carbon Lithium™ Project, targeting first phase production in mid-2024.

Highlights:

Project Execution

- Agreements signed with LG Energy Solution (LGES), Renault Group and Umicore for the supply of battery grade lithium chemicals.
- Updated industry-leading Life Cycle Assessment results estimate Vulcan's Zero Carbon Lithium™ Project will produce negative CO_2 emissions intensity and confirms Vulcan's integrated geothermal lithium project has the lowest planned carbon footprint of any lithium project in the world.
- Successfully raised A$200 million through a well-supported Placement from existing and new institutional investors, including ESG-focused institutions.
- Vulcan's engineering team produced its first battery quality lithium hydroxide monohydrate (LHM) from piloting operations.
- Site secured for Vulcan's planned Central Lithium Plant (CLP).
- New exploration licence granted in the Upper Rhine Valley, Germany, covering 108km^2 of area.

ESG Excellence and Team Growth

- Included in the S&P Dow Jones Indices ASX300 Index and announced application to dual list on the regulated market of the Frankfurt Stock Exchange in the Prime Standard market segment.
- Hatch Ltd, GLJ Ltd and BNP Paribas engaged as key consultants to assist with the Definitive Feasibility Study (DFS).
- Partnered with Mr. Nico Rosberg and the Rosberg X Racing (RXR) electric racing team in the sustainability-focused Extreme-E competition.
- Experienced chemicals industry Chief Financial Officer (CFO) was appointed in Germany and key appointments made to Vulcan's Communications team in Germany and Australia. Total team growth to 80 personnel.
- Successful spin-off and IPO of its Norwegian battery metals subsidiary, Kuniko Ltd.

Highlights

Globally unique **Zero Carbon Lithium™** Project.

Combined lithium chemicals & renewable energy project in the Upper Rhine Valley of Germany.

EU's **largest** lithium resource.

Located at the heart of the EU Li-ion battery industry.

Fast-track development towards supplying the EU's battery & electric vehicle industry.

Corporate Directory

Managing Director
Dr Francis Wedin

Chairman
Gavin Rezos

Executive Director Germany
Dr Horst Kreuter

Non-Executive Director
Ranya Alkadamani

Non-Executive Director
Annie Liu

Non-Executive Director
Dr Heidi Grön

Non-Executive Director
Josephine Bush

Company Secretary
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Vulcan Managing Director, Dr. Francis Wedin said, "*This has been an important quarter for Vulcan as we continue to develop our Zero Carbon Lithium ™ Project and execute on our plan to build a fully integrated renewable energy and battery-quality lithium chemicals project in Europe.*

"We have expanded our exploration footprint and successfully completed a A$200 million capital raising, as we seek to grow our Project to service the battery and electric vehicle industry and meet increasing customer demand.

"Europe is the world's fastest growing electric vehicle and lithium-ion battery production centre, yet currently has no local production of lithium chemicals. Our agreements with LG Energy Solution, Renault Group and Umicore represent a diversified mix of offtakers from the cathode, battery and automotive sectors. Importantly, the partnerships are consistent with Vulcan's strategy to meet this demand gap, while working with Tier One companies in the European market.

"The recent successful production of the first battery quality lithium hydroxide monohydrate (LHM) sample from Vulcan's piloting operations, together with securing the site for our planned Central Lithium Plant (CLP) are important milestones and demonstrate our commitment to methodically progress, de-risk and execute on our project plan.

"Significantly, Vulcan's Zero Carbon Lithium™ Project is designed to have the highest environmental performance, with the lowest impacts, of any lithium project anywhere in the world. This was reconfirmed with our updated Life Cycle Assessment completed in August 2021.

"Our uncompromising approach to the climate and the environment, has allowed us to attract and grow a world-leading scientific, commercial and professional organisation. I would like to thank the team who together are working towards what is likely to be the first raw materials project with net zero greenhouse gas emissions in the world.

"As the global decarbonisation effort ramps up, and the world recommits to reducing emissions at COP26, Vulcan is focused on delivering the Zero Carbon Lithium ™ Project, targeting phase one production in mid-2024,"

Project Execution Milestones

Agreements signed with LG Energy Solution (LGES) Renault Group and Umicore

During the quarter, Vulcan secured binding lithium offtake term sheet agreements with LGES, the largest EV battery producer in the world, and Renault Group, a top automotive player and pioneer in the European electric vehicle market, and (post quarter) a binding offtake agreement with Umicore, a leader in cathode materials production used in lithium-ion batteries for electrified transportation.

LG Energy Solution

- The Agreement is for an initial five-year term and can be extended by a further five years, with the start of commercial delivery set for 2025. It is subject to conclusion of a definitive agreement by November 2021.
- LGES will purchase 5,000 metric tonnes of battery grade lithium hydroxide for the first year of the supply term and will ramp up to 10,000 metric tonnes per year during the second and subsequent years of the supply term.

Renault Group

- The Agreement is for an initial five-year term which can be extended if mutually agreed. With the start of commercial delivery set for 2026, the contract secures between 6,000 and 17,000 metric tonnes per year of battery grade lithium chemicals for Renault Group. It is subject to conclusion of a definitive agreement by November 2021.

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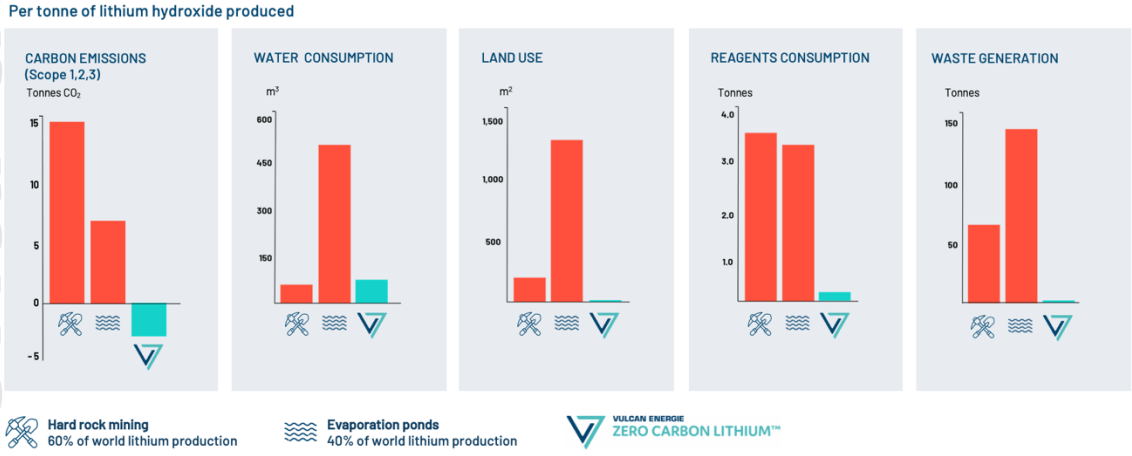
Umicore

- The Agreement is for an initial five-year term and the start of commercial delivery is set for 2025.
- Umicore is to purchase a minimum of 28,000 tonnes and a maximum of 42,000 tonnes of battery grade lithium hydroxide over the duration of the agreement.

Updated industry-leading Life Cycle Assessment

Having commissioned the world's first Life Cycle Assessment (LCA) and global study on the environmental footprint of lithium hydroxide monohydrate (LHM) production, in August 2021, Vulcan commissioned Minviro Ltd., to update its independent LCA based on more recent data from Vulcan's Pre-Feasibility Study (PFS).

The results confirmed Vulcan's peerless environmental credentials and estimated negative 2.9 tonnes of CO_2 emitted per tonne of LHM would be produced from the Zero Carbon Lithium™ Project, including Scope 1, 2 and 3 emissions.



Successful A$200 million Capital Raising

Vulcan completed a A$200 million Placement (€124 million equivalent), before costs, to accelerate and expand the company's dual renewable energy and lithium development strategy, at a time of unprecedented demand for lithium chemicals to supply the transition to electric vehicles in Europe.

Proceeds from the Placement, together with existing cash, will be applied to:

- Targeted acquisition and refurbishment of exploration equipment;
- Targeted acquisition and upgrade of existing brownfield energy and brine infrastructure;
- Expanded project development; and
- General working capital and costs of the Offer.

Following the Placement, Vulcan has a strong cash position of €187 million (A$301 million) at the end of Quarter.

Vulcan also undertook a non-underwritten Share Purchase Plan (SPP) to allow existing shareholders the opportunity to invest in the company at the same price as the Placement. The SPP, which closed subsequent to the end of the quarter, raised A$3.1 million through the issue of 228,434 new fully paid ordinary shares in the Company.

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First battery quality lithium hydroxide

The first battery quality lithium hydroxide monohydrate was produced from Vulcan's piloting operations and exceeded the traditional battery grade LHM product, including best on the market battery grade specifications required from offtake customers, at >56.5% $LiOH.H_2O$ and very low impurities.

Further production of battery quality material will continue to ramp up to supply Vulcan's offtake partners with samples, while the data generated will be used for Vulcan's ongoing Definitive Feasibility Study.

Site secured for Vulcan's planned Central Lithium Plant (CLP)

Vulcan signed an agreement with chemical park management company Infraserv, to secure a site for the planned CLP, at the Höchst Chemical Park (Industriepark Höchst), located just outside of Frankfurt.

The CLP is intended as a hub, processing lithium chloride from multiple combined geothermal and lithium sorption plants into lithium hydroxide monohydrate. Proximate to Vulcan's project areas, the location allows for low carbon transport options to the Company's European customers in the battery and electric vehicle industry, dramatically lowering the transport footprint of the current lithium supply chain.

New exploration licence granted in the Upper Rhine Valley, Germany

A new, three-year, exploration license for geothermal energy, geothermal heat, brine and lithium was granted to Vulcan. Covering 108km^2, the area is considered by Vulcan to be prospective for geothermal and lithium brine.

Vulcan's geological team is reviewing existing data over the area, with a view towards future resource definition, and addition to Vulcan's total Mineral Resource of 15.85Mt LCE @ 181 mg/l Li in the Upper Rhine Valley[1], the largest Lithium Resource in Europe.

ESG Excellence and Team Growth

Planned dual listing on the Frankfurt Stock Exchange (FSE) and S&P ASX300 Index

Vulcan plans to become the first Australian company to have a dual listing on the regulated market of the FSE, increasing the Company's international profile and European investor base.

Joh. Berenberg, Gossler & Co. KG (Berenberg) were appointed as listing advisors. The listing process is expected to be completed in the first half of 2022.

During the quarter, Vulcan was also included on the S&P Dow Jones Indices ASX300 Index.

Successful spin-out of Norwegian battery metals projects

In June 2021, the Company announced the lodgement of the IPO Prospectus for the spin out of its wholly owned subsidiary, Kuniko Limited, to raise $7,886,213 (before costs) to form a new standalone 'Zero Carbon Copper, Nickel, Cobalt' company, enabling Vulcan to be fully focused on development of the Zero Carbon Lithium™ Project.

Kuniko Ltd listed on the ASX on 24 August 2021 (ASX: KNI), with Vulcan Energy Resources Limited retaining 25.85% of the company.

[1] See Vulcan ASX Announcement, 15 December 2020

Key consultants to assist with the Definitive Feasibility Study (DFS)

Vulcan has partnered with external experts who, together with the Company's in-house teams, will drive the DFS output ahead of the report being finalised in mid-2022.

Hatch Ltd. was appointed as engineering consultant responsible for the lithium chemicals part of the DFS including the engineering and execution planning for the Direct Lithium Extraction (DLE) plants and CLP.

GLJ Ltd. was appointed as engineering consultant responsible for compiling the overall report, economic modelling and signing off on the geological engineering and geothermal renewable energy part of the DFS.

BNP Paribas will work on the Bankability Review in the lead up to the DFS. Upon completion of the DFS, Vulcan will continue to work with BNP Paribas on the structuring and execution of financing for the Zero Carbon Lithium™ Project.

Partnered with Mr. Nico Rosberg and the Rosberg X Racing

Mr. Rosberg, a German national who was Formula One World Champion 2016, is a prominent sustainability entrepreneur, and founder of the popular Greentech Festival, as well as the RXR Extreme-E team. Extreme E was created to highlight the impact of climate change and human activity on some of the world's most remote locations while promoting sustainability and the adoption of electric vehicles to help protect the planet.

The Partnership Agreement saw Vulcan Energy become an Official Partner of RXR. RXR and Mr Rosberg became shareholders in Vulcan, in return for advertising and promotional rights for the 2021 and 2022 racing seasons.

Key appointments

Mr. Markus Ritzauer was appointed CFO of Vulcan's German operations. Mr. Ritzauer has over 20 years' experience in finance roles within the chemicals industry, most recently as Head of Finance at Currenta, a chemical park service provider in Germany (formerly part of Bayer) with ~€1.7 billion turnover, ~5,300 employees and ~€250m million EBITDA. Prior to that, Markus was CFO of the Bayer Group of companies in South Korea, and Head of Corporate M&A in the APAC region for Bayer.

Mrs. Beate Holzwarth was appointed Chief Communications Officer in Germany and Ms. Jessica Bukowski as Public and Investor Relations Manager in Australia. Mrs. Holzwarth has over 20 years' experience in various communication and marketing roles within Mercedes-Benz Cars and Daimler Trucks. As a direct report of the divisional Board of Mercedes-Benz Cars Operations she was responsible for national and international ground-breaking events of new production sites with the involvement of state representatives and local politicians.

Led by Mrs Holzwarth, Vulcan has built a team of local communication and media experts to inform stakeholders about the Zero Carbon Lithium™ Project. At all stages going forward, local stakeholders and national media will be informed regularly about further project development.

Ms. Bukowski was previously Senior Media and Corporate Affairs Specialist at Fortescue Metals Group, and prior to that was Adviser to former Australian Prime Minister Kevin Rudd AC and External Affairs Coordinator at Origin Energy.

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Additional ASX Disclosure Information

1. ASX Listing Rule 5.3.1: Exploration and Evaluation expenditure during the Quarter was €1,032,000. Expenditure was on engineering studies on the Vulcan Zero Carbon Lithium™ Project as well as interpretation of existing 3D seismic and planning for 3D seismic in its license areas. Interpretation costs include capitalised salaries from recently acquired GeoThermal Engineering GmbH (completed in July 2021) where time was allocated to Vulcan licenses.

2. ASX Listing Rule 5.3.2: Development expenditure during the Quarter was €1,224,000 which related to the procurement of technical equipment for the demonstration plant as well as engineering studies towards the design of the demonstration plant. Engineering costs include capitalised salaries from recently acquired Geothermal Engineering and Consulting GmbH (completed in July 2021) where time was dedicated to the Vulcan demonstration plant.

3. ASX Listing Rule 5.3.3: There was one exploration license granted in the Upper Rhine Valley during the quarter, please refer to ASX announcement on 12 July 2021 for further details. During the quarter the Company effectively disposed of its Norwegian licences through the spin out of its Norwegian battery metals subsidiary Kuniko Ltd. For further details of the spin out please refer to ASX announcement on the 16 August 2021.

4. ASX Listing Rule 5.3.5:
    a. Payments to related parties of the Company and their associates during the Quarter per Section 6.1 of the Appendix 5B total €127,000. This is comprised of an allocation of the Managing Director remuneration of €13,000, Non-Executive Director fees of €54,000 as well as consulting fees of €17,000 to Alto Group Inc., a company related to one of the Non-Executive Directors, and a €50,000 capital raising fee (relating to February 2021 placement) to Viaticus Capital Pty Ltd, a company related to one of the Non-Executive Directors. Please see the Remuneration Report in the Annual Report for further details on Director's Remuneration.
    b. Payments to related parties of the Company and their associates during the Quarter per Section 6.2 of the Appendix 5B total €53,000. This amount is an allocation of the Managing Director's remuneration for work done on exploration activities associated with the Vulcan Zero Carbon Lithium™ Project. Please see the Remuneration Report in the Annual Report for further details on Director's Remuneration.

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About Vulcan

Vulcan is aiming to become the world's first lithium producer with net zero greenhouse gas emissions. Its Zero Carbon Lithium™ Project intends to produce a battery-quality lithium hydroxide chemical product from its combined geothermal energy and lithium resource, which is Europe's largest lithium resource, in Germany. Vulcan's unique, Zero Carbon Lithium™ Project aims to produce both renewable geothermal energy and lithium hydroxide, from the same deep brine source. In doing so, Vulcan intends to address lithium's EU market requirements by reducing the high carbon and water footprint of production and total reliance on imports. Vulcan aims to supply the lithium-ion battery and electric vehicle market in Europe, which is the fastest growing in the world. The Vulcan Zero Carbon Lithium™ Project has a resource which can satisfy Europe's needs for the electric vehicle transition, from a source with net zero greenhouse gas emissions, for many years to come.



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For and on behalf of the Board

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Vulcan does not undertake any obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in this announcement. To the maximum extent permitted by law, none of Vulcan, its Directors, employees, advisors or agents, nor any other person, accepts any liability for any loss arising from the use of the information contained in this announcement. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.

This announcement is not an offer, invitation or recommendation to subscribe for, or purchase securities by Vulcan. Nor does this announcement constitute investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.

Competent Person Statement:

The information in this report that relates to Mineral Resources is extracted from the ASX announcement made by Vulcan on the 15 December 2020, which is available on www.v-er.eu. The information in this presentation that relates to the Pre-Feasibility Study for the Vulcan Lithium Project is extracted from the ASX announcement "Positive Pre-Feasibility Study", released on the 15th of January 2021 which is available on www.v-er.eu. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Appendix One: Vulcan Zero Carbon Lithium™ Project License Summary

Name	Area (ha)	Status	Expiry date	Ownership at End of Quarter	Change in Ownership
Ortenau	37,360	Granted	06/2023	100%	N/A
Mannheim	14,427	Granted	06/2024	100%	N/A
Taro	3,268	Granted	08/2022	100%	N/A
Ludwig	9,641	Application	N/A	100%	N/A
Heßbach	5,079	Application	N/A	100%	N/A
Rheinland-Pfalz MoU Area[2]	1,900	Granted		MoU to earn in to 80% after formation of formal JV	N/A
Lampertheim	10,803	Granted	07/2024	100%	N/A

Appendix Two: Norwegian Projects License Summary – spin-out has completed

TENEMENTS	REG NO.	STATUS	GRANTED	AREA (KM^2)	OWNERSHIP AT END OF QUARTER (%)
UNDAL 101	1059/2018	Granted	05/07/2018	10.00	0
UNDAL 102	1058/2018	Granted	05/07/2018	10.00	0
NYBERGET 101	1056/2018	Granted	05/07/2018	10.00	0
NYBERGET 102	1057/2018	Granted	05/07/2018	10.00	0
VANGROFTA 102	1161/2018	Granted	27/08/2018	10.00	0
SKUTERUD 101	0285/2020	Granted	19/10/2020	4.01	0
SKUTERUD 102	0286/2020	Granted	19/10/2020	4.01	0
SKUTERUD 103	0287/2020	Granted	19/10/2020	4.01	0
SKUTERUD 104	0288/2020	Granted	19/10/2020	7.01	0
SKUTERUD 105	0289/2020	Granted	19/10/2020	4.01	0
SKUTERUD 106	0290/2020	Granted	19/10/2020	8.02	0
SKUTERUD 107	0291/2020	Granted	19/10/2020	5.01	0
SKUTERUD 108	0292/2020	Granted	19/10/2020	8.02	0
SKUTERUD 109	0293/2020	Granted	19/10/2020	5.01	0
SKUTERUD 110	0294/2020	Granted	19/10/2020	3.01	0
ROMSÅS 101	0298/2020	Granted	26/10/2020	10.00	0
ROMSÅS 102	0299/2020	Granted	26/10/2020	10.00	0
ROMSÅS 103	0300/2020	Granted	26/10/2020	10.00	0
ROMSÅS 104	0301/2020	Granted	26/10/2020	10.00	0
ROMSÅS 105	0302/2020	Granted	26/10/2020	10.00	0
ROMSÅS 106	0303/2020	Granted	26/10/2020	10.00	0
ROMSÅS 107	0304/2020	Granted	26/10/2020	10.00	0
ROMSÅS 108	0305/2020	Granted	26/10/2020	10.00	0
ROMSÅS 109	0306/2020	Granted	26/10/2020	10.00	0
FEØY 101	0307/2020	Granted	27/10/2020	9.00	0
FEØY 102	0308/2020	Granted	27/10/2020	9.00	0
FEØY 103	0309/2020	Granted	27/10/2020	10.00	0
FEØY 104	0310/2020	Granted	27/10/2020	9.00	0
FEØY 105	0311/2020	Granted	27/10/2020	10.00	0
FEØY 106	0312/2020	Granted	27/10/2020	10.00	0
FEØY 107	0313/2020	Granted	27/10/2020	6.25	0
FEØY 108	0314/2020	Granted	27/10/2020	7.50	0

[2] Refer ASX announcement 19 November 2019

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