

## **Zero Carbon Lithium™ Project Update**

Vulcan Energy Resources Limited (Vulcan; ASX: VUL, FSE: VUL, the Company), the renewable energy producer and zero fossil fuels, carbon neutral lithium developer, is pleased to provide a project progress update, for its Zero Carbon Lithium™ Project in the Upper Rhine Valley Brine Field, Germany.

### **Highlights:**

#### **Phase One area: Preliminary Environmental Impact Assessment approval**

- Approval received for Vulcan's preliminary EIA application (UVP-V) for drilling further development wells in its core Insheim license, in the Phase One area covered by the Phase One DFS<sup>1</sup>, where Vulcan has existing geothermal wells and a geothermal plant already in production.
- The preliminary EIA approval states that the authority has concluded that the environmental impacts of the planned deep wells for geothermal energy and lithium are not significant in terms of their size, extent, and impact intensity, and therefore do not require a full EIA.
- The Rhineland-Palatinate State Office for Geology and Mining (Authority) issued the approval after application was made by Vulcan's team in December 2022, showing a quick turnaround.
- This is the third preliminary EIA approval that Vulcan has received, following two approvals in the Taro license of the Phase One planned development area. Approvals are proceeding in line with Vulcan's development plan.

#### **Lithium Extraction Demonstration Plant and Production team**

- Onsite works continue at Vulcan's Lithium Extraction Demonstration Plant in Landau, where Vulcan remains on target for mid-year operations to commence. This follows two years of successful pilot plant testing the lithium extraction on the geothermal brine.
- Brine lines to the existing geothermal operation have been successfully installed.
- VULSORB™, Vulcan's proprietary sorbent, has been manufactured at the tonne scale by a French toll manufacturer for Vulcan's Demo Plant. Vulcan is in discussions with the toll manufacturer to move to commercial production of VULSORB™, which would represent the first and only lithium extraction sorbent produced in Europe, for Europe. Current supply chains for lithium extraction sorbent production mostly relies on either China or Russia.
- Growth continues in the Production team, under Vulcan's new Vice President of Production Christian Tragut, who recently joined Vulcan from BASF, where he was Vice President of Operations for BASF in Germany.
- Once operations commence mid-2023, Christian will focus on training the Vulcan Production team on the Demo Plant, targeting operational readiness prior to commercial scale production as part of Phase One start of production target for year-end 2025.

#### **Phase Two development**

- A comprehensive 3D seismic survey has now been successfully completed in and around the city of Mannheim by Vulcan. The results of the survey will be incorporated into Vulcan's next phases of lithium and renewable energy development plans. Vulcan has a heat offtake agreement with MVV, one of the largest municipal energy suppliers in Germany, to supply renewable heat to the city of Mannheim from 2025.

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<sup>1</sup> See Phase One DFS announcement, 13 February 2023

#### **Contact**



Figure 1: Brine preparation tank at Vulcan's Lithium Extraction Demonstration Plant at Landau



Figure 1: Brine line installation and construction progress at Vulcan's Lithium Extraction Demonstration Plant at Landau

## Clarification

Vulcan would like to provide an additional clarification to the notes to Table 1 on page 24 from Vulcan's Phase One DFS results and Resources-Reserves update announcement on 13 February 2023 titled "Zero Carbon Lithium Project Phase 1 DFS Results", and the associated DFS and Corporate Presentations, with the added text below in blue:

*Note 5: NTG and Phie averages have been weighted to the thickness of the reservoir. These averages are consolidations of multiple local zones and therefore multiplied together will not equate to the global elemental lithium values presented. The elemental lithium values presented are determined separately using detailed data for each zone and then summed together to show a total value for the purposes of this summary table.*

*Note 6: GRV refers to Gross Rock Volume, also known as the aquifer volume. GRV values presented in this table are rounded to the first significant figure for presentation purposes. The elemental lithium values presented are calculated using GRV values that have not been rounded.*

*Note 8: The values shown are an approximation and with globalised rounding of values in the presented summary table as per JORC guidelines, cannot be multiplied through to achieve the Mineral Resource estimated volumes shown above.*

## Vesting of performance rights

Following the announcement of its Definitive Feasibility Study on 13 February 2023 (**DFS**), Vulcan advises that a total of 2,860,000 performance rights have vested with the holders of these securities having until 14 September 2023 (in respect of 2,500,000 performance rights) and 1 December 2023 (in respect of 360,000 performance rights) to exercise these rights.

In relation to the vesting of 360,000 performance rights, Vulcan notes that whilst the DFS was not achieved by the milestone date of 31 December 2022, the Board has exercised its discretion to allow these rights to fully vest. In making this decision, the Board placed recognition on the individuals' material contribution to the DFS and the fact that the ~6-week delay in its release was not within the control of the relevant holders of the performance rights<sup>2</sup>.

## Upcoming Release of Shares from Escrow

Vulcan also advises in accordance with Listing Rule 3.10A, that 20,424 fully paid ordinary shares will be released from voluntary escrow restrictions on 7 April 2023.

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<sup>2</sup> Further information on the Company's remuneration and performance rights will be provided in the Company's Annual Report.

## About Vulcan

Founded in 2018, Vulcan's unique Zero Carbon Lithium™ Project aims to decarbonise lithium production, through developing the world's first net carbon neutral, zero fossil fuels business, with the co-production of renewable geothermal energy on a mass scale. By adapting existing technologies to efficiently extract lithium from geothermal brine, Vulcan aims to deliver a local source of sustainable lithium for Europe, built around a net zero carbon strategy with strict exclusion of fossil fuels. Already an operational renewable energy producer, Vulcan will also provide renewable electricity and heat to local communities.

Vulcan's combined geothermal energy and lithium resource is the largest in Europe, with license areas focused on the Upper Rhine Valley, Germany. Strategically placed in the heart of the European electric vehicle market to decarbonise the supply chain, Vulcan is rapidly advancing the Zero Carbon Lithium™ Project to target timely market entry, with the ability to expand to meet the unprecedented demand that is building in the European markets.

Guided by our Values of Integrity, Leadership, Future-focused and Sustainability, and united by a passion for environmentalism and leveraging scientific solutions, Vulcan has a unique, world-leading scientific and commercial team in the fields of lithium chemicals and geothermal renewable energy. Vulcan is committed to partnering with organisations that share its decarbonisation ambitions and has binding lithium offtake agreements with some of the largest cathode, battery, and automakers in the world. As a motivated disruptor, Vulcan aims to leverage its multidisciplinary expert team, leading geothermal technology and position in the European EV supply chain to be a global leader in producing zero fossil fuel, net carbon neutral lithium while being nature positive. Vulcan aims to be the largest, most preferred, strategic supplier of lithium chemicals and renewable power and heating from Europe, for Europe; to empower a net zero carbon future.



<sup>3</sup> According to public, JORC-compliant data. See Phase One DFS announcement, 13 February 2023.



### Corporate Directory

Managing Director and CEO	Dr. Francis Wedin
Deputy CEO	Cris Moreno
Chairman	Gavin Rezos
Non-Executive Director	Ranya Alkadamani
Non-Executive Director	Annie Liu
Non-Executive Director	Dr. Heidi Grön
Non-Executive Director	Josephine Bush
Non-Executive Director	Dr. Günter Hilken
Non-Executive Director	Mark Skelton
Executive Director, Germany	Dr. Horst Kreuter
Company Secretary	Daniel Tydde

### For and on behalf of the Board

Daniel Tydde | Company Secretary

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Please contact Vulcan's Legal Counsel Germany, Dr Meinhard Grodde, for matters relating to the Frankfurt Stock Exchange listing on [mgrodde@v-er.eu](mailto:mgrodde@v-er.eu).

### Reporting calendar

<b>22 March 2023</b>	Annual Report
<b>28 April 2023</b>	March Quarterly
<b>28 July 2023</b>	June Quarterly
<b>15 September 2023</b>	Half Year Report
<b>27 October 2023</b>	September Quarterly

## Disclaimer

Some of the statements appearing in this announcement may be in the nature of forward-looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industries in which Vulcan operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward-looking statement. No forward-looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside Vulcan's control.

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.

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Vulcan has so far only carried out a pre-feasibility study (the results of which were announced to the ASX in the announcement "Positive PFS & Maiden JORC Ore Reserve: Zero Carbon Lithium™ Project" dated 15 January 2020) ('PFS') and a definitive feasibility study for Phase One of its Zero Carbon Lithium™ Project ('Project') (the results of which were announced to the ASX in the announcement "Zero Carbon Lithium Project Phase 1 DFS Results" dated 13 February 2023) ('DFS'), ('DFS Announcement'). Vulcan has not yet carried out a definitive feasibility study for Phase Two of its Project. This announcement includes certain information relating to both the PFS and DFS. Investors should not rely on the results of the PFS as Vulcan considers that the material assumptions underpinning that study are no longer correct in light of the additional studies undertaken in preparing the DFS.

The DFS is based on the material assumptions outlined elsewhere in the DFS Announcement. While Vulcan considers all of the material assumptions to be based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the DFS will be achieved.

### Competent Person Statement:

The information in this announcement that relates to Mineral Resources and Ore Reserves, and any Exploration Results and Production Targets, of Vulcan's Zero Carbon Lithium™ Project is extracted from the DFS Announcement, which is available to view on Vulcan's website at [www.v-er.eu](http://www.v-er.eu). Vulcan confirms that in respect of estimates of Mineral Resources and Ore Reserves, and any Exploration Results and Production Targets, included in this announcement:

- it is not aware of any new information or data that materially affects the information included in the original market announcement, and that all material assumptions and technical parameters underpinning the estimates in the original market announcement continue to apply and have not materially changed;
- the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement; and
- all material assumptions underpinning any production targets (and any forecast financial information derived from such production targets) included in this announcement continue to apply and have not materially changed.