

## Quarterly Activities Report for the period ending 31 March 2025

During the period ending 31 March 2025 (the Quarter), Vulcan Energy Resources Ltd (Vulcan, ASX: VUL, FSE: VUL, the Company) continued its positive trajectory in executing the operational and commercial objectives as part of the Phase One Lionheart Project (the Project).

### Highlights from the Quarter

- The Project was awarded Strategic Project status under the European Commission's Critical Raw Materials Act (CRMA), reflecting the Project's alignment with the objectives of the CRMA
- Production of the first battery-quality Lithium Hydroxide Monohydrate (LHM) at the Company's downstream Central Lithium Electrolysis Optimisation Plant (CLEOP) at Industrial Park Höchst, Frankfurt, representing the first fully integrated, battery-quality LHM produced in Europe, from raw material to final product
- Start of execution works on the Company's Project, with mobilisation of its V20 drilling rig (V20) to the Phase One Schleidberg well site near Landau, Germany
- Successful completion of 70 km of 2D seismic survey lines for the geothermal heat development project in the Ludwigshafen region of Germany, which the Company is undertaking in partnership with the owner of the world's largest integrated chemical complex, BASF SE (BASF)
- Approval of the main operating plan for the construction of the Lithium Extraction Plant (LEP) in the City of Landau in the state of Rhineland-Palatinate, Germany, in preparation for the construction of the Company's integrated Geothermal and Lithium Extraction Plant (G-LEP)
- The Share Purchase Plan, announced by the Company on 11 December 2024 (SPP) closed on 20 January 2025, raising an amount of ~A\$8m through the issue of 1,366,332 new fully paid ordinary shares in the Company, in addition to the €100m (A\$164m) institutional raise in December
- German Chancellor Olaf Scholz visited the Company's Lithium Extraction Optimisation Plant (LEOP) in Landau, Germany, along with the neighbouring geothermal power plant, emphasising the need for a secure domestic lithium value chain in Germany and Europe
- The appointments of Group Chief Financial Officer Felicity Gooding as Executive Director, and Non-Executive Director Angus Barker as Lead Independent Director and Deputy Chair were effective from 1 January 2025.

### Subsequent events

- The Company proceeded to detailed due diligence for the €1bn German Raw Materials Fund (RMF) in April and, as a result, committed to including government participation in the financing of its Project. Subsequently, the Company adjusted its Phase One financing target timeline to allow for the potential inclusion of the RMF in its financing package, and is now targeting H2 2025 to finalise these agreements and commence full project construction
- The Company completed the acquisition of geox GmbH (Geox), including its geothermal wells, renewable energy generation assets and a geothermal and lithium licence around the City of Landau, Germany. The assets will be used as part of the consolidation of Vulcan's wider upstream Project, to

produce lithium for conversion into battery chemicals for European offtake partners, and to produce renewable energy for local consumers.

- As part of optimising its lithium offtake agreements for Phase One financing, the Company is in advanced negotiations with a premium German automaker, with which it has signed a Letter of Intent (LOI) to enter into a binding lithium hydroxide offtake agreement for an eight-year period. The Company has freed up ca. 3% of its planned lithium sales volume in its first ten years of production by mutually agreeing to a termination of its agreement with Renault Group. Vulcan is targeting the finalisation of the agreement with the premium German automaker mid-year, to align with its financing timeline
- The Company commenced supply of geothermal renewable heat to German municipal energy supplier, EnergieSüdwest AG (ESW), from the Company's operations in Landau, Germany. The initiative marks the start of a long-term and continuous transition to renewable energy in Landau, with the switch to geothermal energy set to significantly reduce CO<sub>2</sub> emissions, and comes amid the start of a strong national push in Germany to use geothermal energy to decarbonise heating.

*Managing Director and CEO, Cris Moreno, commented: "Vulcan commenced 2025 by achieving key milestones related to our Phase One Lionheart Project. One of the most significant of these was the production of the first battery-quality LHM at the downstream optimisation plant, by processing high purity lithium chloride concentrate extracted from brine at the upstream A-DLE optimisation plant in Landau, Germany - a wonderful achievement for our OneVulcan team.*

*"In March, we were also awarded Strategic Project status under the European Commission's CRMA, validating the importance of our integrated lithium and renewable energy project to European industry. Given recent developments on global tariffs, our Project is uniquely positioned to support the CRMA benchmarks and diversify the EU's lithium supply away from third countries.*

*"We remain focused and committed to delivering on our objectives for the remainder of 2025, including commencing the drilling of new production wells, completion of Phase One financing, starting construction of our lithium plants, and commencing product qualification of V-LiON™ lithium product with offtake partners.*

*"I sincerely thank our shareholders for their continued support and look forward to sharing updates on our objectives throughout the remainder of the year."*

## **Health and safety**

- There were no Lost Time Injuries (LTI) during the reporting period.

## **Integrated renewable energy and lithium production**

### **Renewable energy operations**

- Operations continued at Vulcan's Natürlich Insheim geothermal renewable energy plant with production of approximately 5.730MWh of gross baseload, renewable power, at an average selling price of €0.257/kWh, with €1.477m gross revenue generated.

### Well site preparation and rig readiness

- Mobilisation of Vulcan's V20 rig to the Phase One Schleiberg production well site near Landau, Germany was completed during the reporting period by the Company's in-house well execution company, Vercana. This followed successful completion of key infrastructure works, including well pad construction, crew camp establishment, and building of access roads
- Following assembly, routine commissioning procedures and technical testing will be carried out for the safe operation of V20 and associated equipment. Well execution operations are currently scheduled to commence in Q2 2025, subject to successful commissioning of the rig
- The V20 is a 2,500-horsepower drilling rig and has 550 tonnes of hook load capacity, and is equipped with a 7,500-psi fluid pressure system
- Vercana's other drilling rig, V10, will be mobilised to the Company's new planned Trappelberg well site, after Phase One financing closes.



Figure 1: V20 rig installed at Phase One Schleiberg well site near Landau, Germany

### Lithium Extraction Optimisation Plant (LEOP)

- High-quality 40% lithium chloride (LiCl) solution was produced using Adsorption-type Direct Lithium Extraction (A-DLE) with VULSORB®, Vulcan's internally developed aluminate-based lithium extraction adsorbent, at the upstream optimisation plant LEOP, and transferred to the downstream CLEOP at Industrial Park Höchst for the production of lithium hydroxide monohydrate (LHM)
- Preparations were finalised to transition to direct brine supply from the wells following well repairs at the neighbouring Geox geothermal facility. The direct connection will allow continuous supply of brine at LEOP.

### Central Lithium Electrolysis Optimisation Plant (CLEOP)

- On 13 January 2025, the Company's downstream CLEOP, located in Industrial Park Höchst, Frankfurt, started production of battery-quality lithium hydroxide monohydrate (LHM), by processing high purity lithium chloride concentrate extracted from brine at the upstream, A-DLE optimisation plant in Landau



- The development represented the first fully integrated, battery-quality LHM produced in Europe, from raw material to final product
- Battery-quality LHM from CLEOP will be used in product qualification processes with the Company's European-focused offtake partners, including Stellantis, LG and Umicore, while the Project is being constructed.



Figure 2: Inside Vulcan's downstream optimisation plant at Frankfurt-Höchst

### Phase One execution preparation

- During the reporting period, significant progress has been made in finalising major contracts with selected technology-, engineering-, and construction partners ahead of execution, with engineering works also progressing in supporting permits for remaining Phase One areas
- The Company received approval of the Main Operating Plan for the Project's Lithium Extraction Plant (LEP) in Landau, Germany, marking the final approval needed for the full execution of the LEP.

### Commercial and financing

#### Share Purchase Plan (SPP) closes

- The Company's Share Purchase Plan, announced on 11 December 2024, closed on 20 January 2025. The SPP raised A\$8m through the issue of 1,366,332 new fully paid ordinary shares in the Company
- The SPP followed the successful completion of the institutional and strategic placement on 12 December 2024, which raised €100m (A\$164m) at the same issue price as the SPP.

#### Board appointments

- As part of the evolution of the Company Board, the appointment of Group Chief Financial Officer, Felicity Gooding, as Executive Director, and Non-Executive Director, Angus Barker, as Lead Independent Director and Deputy Chair, were effective on 1 January 2025

- Ms Gooding joined the Company in January 2024, and has been responsible for the Company's corporate services, including steering the Phase One debt and project-level equity financing
- As Lead Independent Director, Mr Barker will represent the Board when Executive Chair, Dr Francis Wedin, is unable to do so, and will act as the principal liaison between independent directors, company executives, investors and other stakeholders, and Dr Wedin. Mr Barker has also assumed the role of Chair of the People and Performance Committee (PPC) and has joined the Audit, Risk and Environmental, Social and Governance (ARESG) Committee.

## Future phase update

Ongoing discussions in relation to future phase licence regions, including Taro, Ortenau and Mulhouse continued throughout the reporting period in addition to the following updates:

### Mannheim, Germany

- Discussions with the City of Mannheim continued during the reporting period regarding the terms of its heat offtake agreement, including the start date, following indications it wishes to increase the heat supplied under the terms of the agreement from one to two geothermal doublets.
- The site-selection process was jointly completed between Vulcan and its heat offtake partner MVV and preparations for all required permits for well site construction and drilling aligned and started.

### Rüsselsheim, Germany

- Vulcan and Opel-Stellantis-Rüsselsheim intend to modify their current cooperation agreement as project partners, to instead proceed as renewable heat supplier and offtaker, allowing Vulcan to serve multiple heat customers in the area and enlarge the project. Heat offtake negotiations with Opel and others in the area are ongoing.

### 2D seismic survey completed in conjunction with BASF

- The Company successfully completed a 2D seismic survey for the geothermal heat development project in the Ludwigshafen region of Germany, which the Company is undertaking in partnership with the owner of the world's largest integrated chemical complex, BASF. The survey was conducted on approximately 75 kilometres of roadway within Vorderpfalz, a region on the western border of Germany's Upper Rhine Valley Brine Field, including the towns and municipalities of Bad Dürkheim, Deidesheim, Mutterstadt, Frankenthal and Ludwigshafen, with the results of the survey to determine optimal location/s for the next stage of development and will be followed by a 3D seismic survey.

## Environmental, Social and Governance (ESG)

### Morningstar Sustainalytics rating

- During the reporting period, the Company maintained its position as an ESG Industry Top Rated Company by Morningstar Sustainalytics. The Sustainalytics' ESG Risk Ratings covers more than 14,000 companies across 42 industries and identifies the top companies in each industry. Maintaining this rating validates



the Company's strong ESG practices and provides an important endorsement for attracting investment.

### Climate risk assessment

- In collaboration with ENGIE Impact, the Company completed the qualitative assessment of its physical climate risks and is now progressing to quantify the potential financial impacts of material risks, including identifying applicable mitigation and adaptation measures. Prioritised climate-related risks will be incorporated into the Company's enterprise risk management register.

### Site visits from political representatives

- German Chancellor Olaf Scholz visited the Company's LEOP and geothermal plant in Landau in February 2025. Chancellor Scholz observed the Company's integrated production of sustainable lithium and renewable energy and reaffirmed his then-government's commitment to geothermal energy projects and harnessing domestic and sustainable raw materials to strengthen Europe's independence and resilience in critical supply chains.



Figure 3: (L to R) Vulcan Co-Founder and Special Advisor, Dr Horst Kreuter, German Chancellor Olaf Scholz, and Vulcan's Chief Technology Officer, Dr Stefan Brand at the Company's Lithium Extraction Optimisation Plant (LEOP) in Landau, Germany

### Other stakeholder and community events

- During the reporting period, the Company continued to actively engage with local communities and regional stakeholders. As part of the 2D seismic campaign in the Ludwigshafen region, 14 information and community events were held to ensure transparent communication and address residents' questions. Dedicated public events in Frankenthal, Deidesheim and Ludwigshafen also provided a platform for open dialogue
- The Company also participated in the Renewable Energy Theme Day in Frankenthal, contributing to discussions on the potential of geothermal energy and sustainable lithium production

- Several universities and schools from the Company's exploration licence areas visited the Vulcan geothermal plant in Insheim, where students learned about geothermal energy, climate protection, and career opportunities in the energy transition
- In addition, the Vulcan InfoCenter hosted a business evening and networking event organised by the local SME association, further strengthening the regional exchange between industry, politics and the community
- As part of the V20 being mobilised to Schleidberg, direct mailings were also sent to all affected households. Advertisements were also published in official regional newspapers.

#### **Additional ASX Disclosure Information**

ASX Listing Rule 5.3.1: Exploration and Evaluation expenditure during the Quarter was €1.9m. Expenditure related to planning for the upcoming project execution and interpretation costs. Interpretation costs include capitalised costs from Vulcan Energie Ressourcen GmbH staff costs where time was allocated to Vulcan licence areas.

ASX Listing Rule 5.3.2: Development expenditure during the Quarter was €7.5m. Expenditure predominately related to drill casings equipment (€2.8m), Schleidberg wellsite preparation (€1.1m), refurbishment costs for Vulcan's two electric drill rigs (€0.5m), construction of the Central Lithium Electrolysis Optimisation Plant, Central Lithium Plant and Lithium Extraction Plant (€1.5m), and other expenditure (€0.6m) including the interconnected pipeline and power (ICPP).

ASX Listing Rule 5.3.3: During the Quarter, no licences were acquired, nor disposed of. For further information see Table 1 below.

ASX Listing Rule 5.3.5: Payments to related parties of the Company and their associates during the Quarter per section 6.1 of the Appendix 5B amounted to €331,000. This is comprised of an allocation of the Managing Director remuneration of €62,000, Group Chief Financial Officer remuneration of €87,000, Executive Chair remuneration of €101,000 and Non-Executive Director fees of €81,000. Payments to related parties of the Company and their associates during the quarter per section 6.2 of Appendix 5B total €52,000. This amount is an allocation of the Managing Director's remuneration for work done on exploration activities associated with Vulcan's Phase One Lionheart Project. Please see the Remuneration Report in the 2024 Annual Report for further details on Directors' Remuneration.



## Vulcan's integrated lithium and renewable energy project licence table

| NAME                       | STATE  | RESOURCES APPLIED FOR       | AREA (KM <sup>2</sup> )                         | EXPIRY  | OWNERSHIP AS AT 31 MARCH 2025   | CHANGE IN OWNERSHIP | TYPE        |
|----------------------------|--------|-----------------------------|---|---------|---|---------------------|-------------|
| <b>Ried</b>                | Hessen | Geothermal, brine & lithium | 289.92  | 7.2025  | 100 % VER GmbH  | N/A                 | exploration |
| <b>Luftbrücke</b>          | Hessen | Geothermal, brine & lithium | 207.25  | 9.2026  | 100 % VER GmbH  | N/A                 | exploration |
| <b>Rift-Nord</b>           | RLP    | Geothermal & lithium        | 61,83 (VER share), 149.74 km <sup>2</sup> total | 6.2027  | 50 % VER GmbH, 50 % GET, Vulcan has rights to develop production projects with 100% ownership in the licence area | N/A                 | exploration |
| <b>Waldnerturm</b>         | BW     | Geothermal, brine & lithium | 20.43   | 12.2026 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Lampertheim II</b>      | Hessen | Geothermal, brine & lithium | 1.99  | 7.2026  | 100 % VER GmbH  | N/A                 | exploration |
| <b>Ortenau II</b>          | BW     | Geothermal, brine & lithium | 374.1   | 12.2025 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Mannheim</b>            | BW     | Geothermal, brine & lithium | 144.49  | 6.2027  | 100 % VER Pty Ltd   | N/A                 | exploration |
| <b>Taro</b>                | RLP    | Geothermal                  | 32.68   | 8.2025  | 100% GGH (part of VER Group)  | N/A                 | exploration |
| <b>Lisbeth</b>             | RLP    | Lithium                     |   | 9.2027  | 100 % VER GmbH  | N/A                 | exploration |
| <b>Ludwig</b>              | RLP    | Geothermal & lithium        | 96.34   | 12.2027 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Therese</b>             | RLP    | Geothermal & lithium        | 81.12   | 12.2027 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Lampertheim</b>         | Hessen | Geothermal, brine & lithium | 108.03  | 7.2026  | 100 % VER GmbH  | N/A                 | exploration |
| <b>Kerner</b>              | RLP    | Geothermal & lithium        | 72.26   | 12.2027 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Löwenherz</b>           | RLP    | Geothermal & lithium        | 75.43   | 12.2026 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Flaggenturm 2023</b>    | RLP    | Geothermal                  | 166.75  | 12.2027 | 100 % VER GmbH  | N/A                 | exploration |
| <b>Fuchsmantel 2023</b>    | RLP    | Lithium                     |   | 7.2025  | 100 % VER GmbH  | N/A                 | exploration |
| <b>Landau-Süd</b>          | RLP    | Geothermal                  | 19.41   | 5.2034  | Agreement signed by Vulcan to acquire 100% of Geox*   | 100%*               | production  |
| <b>Ilka</b>                | RLP    | Lithium                     |   | 11.2025 | Agreement signed by Vulcan to acquire 100% of Geox*   | 100%*               | exploration |
| <b>Insheim</b>             | RLP    | Geothermal                  | 19  | 11.2037 | 100% Natürlich Insheim GmbH   | N/A                 | production  |
| <b>LiThermEx</b>           | RLP    | Lithium                     |   | 7.2025  | 100% VER GmbH   | N/A                 | exploration |
| <b>Kachelhoffa</b>         | FR     | Geothermal                  | 463.34  | 7.2029  | 100% Vulcan Énergie France  | N/A                 | exploration |
| <b>Kachelhoffa minéral</b> | FR     | Lithium                     |   | 7.2029  | 100 % Vulcan Énergie France   | N/A                 | exploration |
| <b>Cesano</b>              | IT     | Geothermal & Lithium        | 11.46   | 01.2027 | 50% Vulcan Energy Italy Pty Ltd., 50 % Enel Green Power   | N/A                 | exploration |
| <b>Boccaleone</b>          | IT     | Geothermal & Lithium        | 4.31  | 07.2025 | 50 % Vulcan Energy Italy Pty Ltd., 50 % Enel Green Power  | N/A                 | exploration |

Table 1: Vulcan's licences as at the date of this report, with the licences of Phase One shaded in grey.

\* As announced on 7 April 2025, the acquisition of Geox was completed subsequent to the end of the Quarter.



## Mineral resources and ore reserves

Vulcan's Phase One Lionheart Project lithium (Li) brine Mineral Resource estimates, as well as Mineral Reserve estimates, did not change during the Quarter.

## For and on behalf of the Board

Daniel Tydde | Company Secretary

## Media

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## About Vulcan Energy

Vulcan Energy (ASX: VUL, FSE: VUL) is building the world's first carbon neutral, integrated lithium and renewable energy business to decarbonise battery production. Vulcan's Lionheart Project, located in the Upper Rhine Valley Brine Field bordering Germany and France, is the largest lithium resource in Europe<sup>1</sup> and a tier-one lithium project globally. Harnessing natural heat to produce lithium from sub-surface brines and to power conversion to battery grade material and using its in-house industry-leading technology VULSORB®, Vulcan is building a local, low-cost source of sustainable lithium for European electric vehicle batteries. For more information, please go to <https://v-er.eu/>

## 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

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<sup>1</sup> On a lithium carbonate equivalent (LCE) basis, according to public information, as estimated and reported in accordance with the JORC Code 2012. See Appendix 4 of Vulcan's Equity Raise Presentation dated 11 December 2024 for comparison information.

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.

Vulcan has carried out a definitive feasibility study ("DFS") and bridging engineering study ("Bridging Study") for its Phase One Project, the results of which were announced to the ASX in the announcements Phase 1 DFS Results dated 13 February 2023 (DFS Announcement) and Bridging Study Results on 16 November 2023 (Bridging Study Announcement). This announcement may include certain information relating to the DFS and the Bridging Study. The DFS and Bridging Study are based on the material assumptions and parameters outlined in their respective announcements. 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 Bridging Study or DFS will be achieved. This announcement may also include certain information relating to Phase Two of its Project, Vulcan has not yet carried out a definitive feasibility study for Phase Two of its Project.

#### Competent Person Statement

The information in this announcement that relates to estimates of Mineral Resources and Ore Reserves is extracted from the Bridging Study Announcement which is available to view on Vulcan's website at <http://v-er.eu> . Vulcan confirms, that in respect of the estimates of Mineral Resources and Ore Reserves included in this announcement:

- a) 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;
- b) the form and context in which the Competent Persons' findings are presented in this announcement have not been materially modified from the original market announcement; and
- c) all material assumptions underpinning the production targets (and the forecast financial information derived from such production targets) included in this announcement continue to apply and have not materially changed.