



VULCAN ENERGY
ZERO CARBON LITHIUM™

Equity Raising Presentation

May 2023



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By their nature, forward-looking statements inherently involve known and unknown risks, uncertainties and other factors that may cause actual results, performance and achievements to be materially greater or less than estimated, including those generally associated with the lithium industry and/or resources exploration companies, including but not limited to the risks listed in the International Offering Circular released to the ASX on 4 May 2023 ("**Other Disclosures**").

These factors may include, but are not limited to, changes in commodity and renewable energy prices, foreign exchange fluctuations and general economic conditions, increased costs and demand for production inputs, the speculative nature of exploration and project development (including the risks of obtaining necessary licenses and permits and diminishing quantities or grades of reserves), political and social risks, changes to the regulatory framework within which Vulcan operates or may in the future operate, environmental conditions including climate change and extreme weather conditions, geological and geotechnical events, environmental issues, the recruitment and retention of key personnel, industrial relations issues and litigation.

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Ore Reserves and Mineral Resources Reporting

It is a requirement of the ASX Listing Rules that the reporting of ore reserves and mineral resources in Australia comply with the Joint Ore Reserves Committee's Australasian Code for Reporting of Mineral Resources and Ore Reserves ("**JORC Code**"). Investors outside Australia should note that while ore reserve and mineral resource estimates of the Company in this document comply with the JORC Code (such JORC Code-compliant ore reserves and mineral resources being "Ore Reserves" and "Mineral Resources" respectively), they may not comply with the relevant guidelines in other countries and, in particular, do not comply with (i) National Instrument 43-101 (Standards of Disclosure for Mineral Projects) of the Canadian Securities Administrators (the "Canadian NI 43-101 Standards"); or (ii) subpart 1300 of Regulation S-K under the US Securities Act of 1933, as amended (the "Securities Act"), which governs disclosures of mineral reserves in registration statements filed with the US Securities and Exchange Commission ("**SEC**").

Information contained in this Presentation describing mineral deposits may not be comparable to similar information made public by companies subject to the reporting and disclosure requirements of Canadian or US securities laws. On 31 October 2018, the SEC adopted amendments to its disclosure rules to modernise the mineral property disclosure requirements for issuers whose securities are registered with the SEC under the US Exchange Act of 1934, as amended (the "Exchange Act"). These amendments became effective 25 February 2019, with compliance required for the first fiscal year beginning on or after 1 January 2021. Under these amendments, the historical property disclosure requirements for mining registrants included in Industry Guide 7 under the Securities Act were rescinded and replaced with disclosure requirements in subpart 1300 of Regulation S-K. As a result of the adoption of subpart 1300 of Regulation S-K, the SEC's standards for mining property disclosures are now more closely aligned to the JORC Code's requirements. For example, the SEC now recognises estimates of "measured mineral resources", "indicated mineral resources" and "inferred mineral resources." In addition, the SEC has amended its definitions of "proven mineral reserves" and "probable mineral reserves" to be "substantially similar" to the corresponding standards under the JORC Code. However, despite these similarities, SEC standards are still not identical to the JORC Code. Accordingly, investors are cautioned that there can be no assurance that the reserves and resources reported by the Company under the JORC Code would be the same had it prepared its reserve or resource estimates under the standards adopted under subpart 1300 of Regulation S-K.

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Effect of rounding

A number of figures, amounts, percentages, estimates, calculations of value and fractions in this Presentation are subject to the effect of rounding. Accordingly, the actual calculation of these figures may differ from the figures set out in this Presentation.

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Financial data

All monetary values expressed as "\$" or "A\$" in this Presentation are in Australian dollars, unless stated otherwise. All monetary values expressed as EUR or € in this Presentation are in Euros, unless stated otherwise. All monetary values expressed as "US\$" in this Presentation are in US dollars, unless stated otherwise. The assumed exchange rate to convert Euros into Australian dollars or US dollars (as applicable) is shown in the footnote to each respective slide.

Any pro forma financial information included in this Presentation is for illustrative purposes and does not purport to be in compliance with Article 11 of Regulation S-X of the rules and regulations of the U.S. Securities and Exchange Commission.

In addition, prospective investors should be aware that financial data in this Presentation includes "non-IFRS financial information" under ASIC Regulatory Guide 230 "Disclosing non-IFRS financial information" published by ASIC and also "non-GAAP financial measures" within the meaning of Regulation G under the U.S. Securities Exchange Act of 1934. Among other things, the disclosure of such non-GAAP financial measures in the manner included in this Presentation would not be permissible in a registration statement under the U.S. Securities Act.

The non-IFRS financial measures do not have standardised meanings prescribed by Australian Accounting Standards and, therefore, may not be comparable to similarly titled measures presented by other entities, nor should they be construed as an alternative to other financial measures determined in accordance with Australian Accounting Standards. Although Vulcan believes the non-IFRS financial information (and non-IFRS financial measures) provide useful information to readers of this Presentation, readers are cautioned not to place undue reliance on any non-IFRS financial information (or non-IFRS financial measures).

Similarly, non-GAAP financial measures do not have a standardised meaning prescribed by Australian Accounting Standards or International Financial Reporting Standards and therefore may not be comparable to similarly titled measures presented by other entities, nor should they be construed as an alternative to other financial measures determined in accordance with Australian Accounting Standards or International Financial Reporting Standards. Although Vulcan believes that these non-GAAP financial measures provide useful information to readers of this Presentation, readers are cautioned not to place undue reliance on any such measures.

Technical information

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 2021) ("**PFS**") and a definitive feasibility study for Phase One of its Zero Carbon Lithium™ Project ("**Project**") ("**DFS**") (the results of which were announced to the ASX in the announcement "Vulcan Zero Carbon Lithium™ Project DFS Results" dated 13 February 2023 ("**DFS Announcement**"). Vulcan has not yet carried out a definitive feasibility study for Phase Two of its Project. This Presentation includes 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 up to date 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.

Funding Strategy

To achieve the range of outcomes indicated in the DFS, additional funding will be required. Investors should note that there is no certainty that Vulcan will be able to raise the amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Vulcan's existing shares. It is also possible that Vulcan could pursue other financing strategies such as a partial sale or joint venture of the Project. If it does, this could materially reduce Vulcan's proportionate ownership of the Project.

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Each Joint Lead Manager, together with its respective affiliates and related bodies corporate, is a full service financial institution engaged in various activities, which may include trading, financing, financial advisory, investment management, investment research, principal investment, hedging, market making, margin lending, brokerage and other financial and non-financial activities and services including for which they have received or may receive customary fees and expenses. Each Joint Lead Manager (and/or its respective affiliates and related bodies corporate) have performed, and may perform, other financial or advisory services for Vulcan, and/or may have other interests in or relationships with Vulcan, and its related entities or other entities mentioned in this Presentation for which they have received or may receive customary fees and expenses.

In the ordinary course of its various business activities, each Joint Lead Manager (and/or its respective affiliates and related bodies corporate) may purchase, sell or hold a broad array of investments and actively trade or effect transactions in equity, debt and other securities, derivatives, loans, commodities, currencies, credit default swaps and/or other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/ or instruments of Vulcan, its related entities and/or persons and entities with relationships with Vulcan and/or its related entities. Each Joint Lead Manager and/or its respective affiliates and related bodies corporate, or their respective officers, employees, consultants or agents may, from time to time, have long or short positions in, buy or sell (on a principal basis or otherwise), and may act as market makers in, the securities or derivatives, or serve as a director of any entities mentioned in this Presentation. Each Joint Lead Manager (and/or its respective affiliates and related bodies corporate) currently hold, and may continue to hold, equity, debt and/or related derivative securities of Vulcan and/or its related entities.

In connection with the Placement bookbuild, one or more investors may elect to acquire an economic interest in the New Shares ("**Economic Interest**"), instead of subscribing for or acquiring the legal or beneficial interest in those shares. The Joint Lead Managers (or their respective affiliates) may, for their own account, write derivative transactions with those investors relating to the New Shares to provide the Economic Interest, or otherwise acquire shares in Vulcan in connection with the writing of such derivative transactions in the Placement bookbuild and/or the secondary market. As a result of such transactions, the Joint Lead Managers (or their respective affiliates) may be allocated, subscribe for or acquire New Shares or shares of Vulcan in the Placement bookbuild and/or the secondary market, including to hedge those derivative transactions, as well as hold long or short positions in such shares. These transactions may, together with other shares in Vulcan acquired by the Joint Lead Managers or their respective affiliates in connection with their ordinary course sales and trading, principal investing and other activities, result in the Joint Lead Managers or their respective affiliates disclosing a substantial holding and earning fees.

Acknowledgement and agreement

By attending an investor presentation or briefing, or accepting, accessing or reviewing this Presentation, you acknowledge and agree to the terms set out in this "Disclaimer" section of the Presentation and in the "International offer restrictions" section of this Presentation in Appendix 13.

Competent Person Statement

The information in this presentation that relates to estimates of Mineral Resources and Ore Reserves is extracted from the following ASX announcement:




- "Vulcan Zero Carbon Lithium™ Project Phase One DFS results and Resources-Reserves Update", released on 13 February 2023.

The above announcement is available to view on Vulcan's website at www.v-er.eu.

Vulcan confirms that, in respect of estimates of Mineral Resources and Ore Reserves included in this presentation:

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

INVESTMENT HIGHLIGHTS - 1

 <p>Zero Carbon Lithium™ Company¹: a unique value proposition.</p>	<ul style="list-style-type: none"> Aiming to become the world's first integrated lithium chemicals and renewable energy producer with net zero greenhouse gas emissions. Vulcan's Zero Carbon Lithium™ Project aims to supply Europe with enough lithium hydroxide for production of 1 million EVs per annum and generate renewable heat for more than 1 million people by 2030 – all whilst avoiding 1 million tonnes of CO₂ emissions per annum².
 <p>Compelling Phase One DFS economics. Europe's largest lithium resource³.</p>	<ul style="list-style-type: none"> Two integrated revenue streams, Renewable Energy and Lithium Hydroxide, with combined €3.9bn pre-tax NPV, 34% IRR before tax, and 3.5-year payback period. Very low OPEX, driven by renewable heat. JORC Mineral Resource estimate of 26.6Mt LCE (Measured, Indicated & Inferred) from 10 of 16 licenses⁴, with the Upper-Rhine Valley hosting a large, renewable heated lithium-brine resource, capable of multiple phases of further expansion capacity⁵.
 <p>In the heart of Europe's fast-growing lithium battery production centre⁶.</p>	<ul style="list-style-type: none"> Europe is experiencing unprecedented growth in its electric vehicle and lithium-ion battery production, yet currently has zero local production of lithium hydroxide, with majority of global supply coming from China. Dual crises driving demand for renewable energy in Europe: 1) Climate - EU to be climate neutral by 2050, Germany to be fully renewable by 2035 2) Russia-Ukraine Conflict - prior to Russia's invasion of Ukraine, 55% of Germany's gas was sourced from Russia.
 <p>European policy tailwinds in Vulcan's favour.</p>	<ul style="list-style-type: none"> Recently released Critical Raw Materials and Net Zero Industry Acts present a strong focus on fast-tracking the permitting process and funding for technologies of relevance to the strategic autonomy of the EU economy. Potential for Vulcan to be granted Strategic Project and Net Zero Resilience Project status, which could significantly streamline project development and facilitate additional funding sources.

1: There are a number of risks and uncertainties (known and unknown) that are associated with resources exploration and development which are included in the risk factors contained in the International Offering Circular released to the ASX on 4 May 2023.

2: Refer to the footnotes in the slide entitled "Our Targets" for further information.

3: Refer to the DFS Announcement of 13 February 2023 and based on public, JORC-compliant data.

4: Refer to the Competent Person Statement within the Disclaimer slides.

5: Refer to Appendices 7 & 8 for further information regarding the Company's resources and reserves estimates.

6: Based on electric vehicle sales and lithium-ion battery production growth.

INVESTMENT HIGHLIGHTS - 2



Substantially de-risked; piloting completed, in-house IP, some assets already operational.

- Well advanced – DFS completed for Phase One integrated project, in bridging phase toward ordering commercial long lead items.
- Three years of lithium extraction and piloting testwork successfully completed on producing wells.
- VULSORB™ lithium sorbent means lithium extraction know-how and sorbent production is on-shored in EU and an in-house asset.
- Already a commercial producer – operating a commercial geothermal renewable plant and wells, which form the core of the larger Phase One development.



Substantial team in place with execution experience, ready to deliver.

- Experienced management team. ~300 experienced personnel majority in the fields of geothermal project development, lithium chemicals and integrated project execution, local to the project area in Germany.
- Two electric drill rigs with crews in-house for production well development: strategic asset for the Company at a time when Germany is investing heavily into geothermal energy development.



Supported by leading participants in the EV and battery chemicals industries.

- Five key offtake agreements secured, binding, take-or-pay, with mixture of pricing mechanisms to provide stability but keep some exposure to upside in pricing: **Stellantis, Volkswagen, Renault, LG and Umicore**¹. Provides comfort to lenders.
- Stellantis is second largest shareholder in the Company.



Robust financing plan with government-backed ECA support.

- Term sheet signed with Nobian for a proposed joint venture partnership: subject to definitive agreements, Nobian intends to contribute EUR 161m in cash as equity to fund CAPEX for the Phase 1 Central Lithium Plant (CLP) phase 1 in return for 50% of the shares in the CLP Special Purpose Vehicle (SPV2)².
- Project debt financing process underway with BNP Paribas, a leader in sustainability with a track record in advisory and financing of battery and renewable projects. Letters of Intent received from Export Credit Agencies from the French, Italian and Canadian Governments, including for untied financing from the French government-backed ECA.



Fully underwritten equity raising to maintain development timeline.

- Fully underwritten €66 million (A\$109 million) equity raising, together with existing cash of €112million (A\$182 million), will be used to progress Vulcan's integrated renewable energy and lithium project execution strategy for ordering of commercial long-lead equipment, in line with the recently published DFS development plan.
- Intended to provide sufficient capital to allow the Company to arrange debt financing arrangements and strategic equity commitments.

1: Refer to slide titled "Strategic Supply Partner Contracts" and slide 22 of September 2021 Equity Raising Presentation for further details on the offtake agreements, including their key conditions precedent

2: Subject to definitive documentation and other conditions precedent. Refer to announcement of 27 April 2023 for further information.

ZERO CARBON LITHIUM™ PROJECT - PHASE ONE DFS HIGHLIGHTS

Two integrated revenue streams –
lithium & renewable energy¹

PHASE ONE INTEGRATED PROJECT

Decarbonise the auto industry and energy supply in EU

Lithium: 24Ktpa LHM²

Renewable energy: >300GWh/a Power, >250GWh/a Heat

NPV₈: **€3.9Bn** Pre-tax, **€2.6Bn** Post-tax

IRR: **34%** Pre-tax, **26%** Post-tax

Revenues: **>€704Mpa**

EBITDA* margin of **84%**

3.5y payback

Use existing core, brine-producing assets and expand production

Two revenue streams,
one common goal:
decarbonisation

*Based on 20-year average production. See Vulcan's Phase One DFS, 13 February 2023

1. These are targets and may not be achieved. These DFS figures may be subject to further change as part of current bridging engineering phase, including value improvement opportunities, see Forward Looking Disclaimer as well as Vulcan's Phase One DFS, 13 February 2023.

2. Refer to "DFS Model Assumptions and Parameters" Appendix 12 for further information.



VULCAN ENERGY
ZERO CARBON LITHIUM™

I. Equity Raising



EQUITY RAISING OVERVIEW

Vulcan is conducting an underwritten institutional placement to raise €66 million (A\$109 million)¹

Offer structure and size	<ul style="list-style-type: none"> Underwritten single tranche placement to sophisticated, professional, experienced and institutional investors to raise gross proceeds of €66 million (A\$109 million)¹ ("Placement") 21,400,000 new fully paid ordinary shares ("New Shares") to be issued pursuant to the Company's available capacity under ASX Listing Rule 7.1 New Shares issued under the Placement will rank pari passu with existing fully paid ordinary shares in the Company
Offer price	<ul style="list-style-type: none"> Fixed Australian dollar offer price of A\$5.10 per New Share to be issued to investors who elect to trade those New Shares on the ASX, which at close of trading on 3 May 2023 represents a: <ul style="list-style-type: none"> 17.2% discount to the last traded price on ASX of A\$6.16; 14.7% discount to the 5-day volume weighted average price ("VWAP") of A\$5.98; and 14.1% discount to the 10-day VWAP on ASX of A\$5.93. Fixed Euro offer price of €3.08 per New Share to be issued to investors who elect to trade those New Shares on the FSE, which at close of trading on 3 May 2023 represents a: <ul style="list-style-type: none"> 18.0% discount to the last traded price on FSE of €3.76; 14.3% discount to the 5-day VWAP on FSE of €3.59; and 13.5% discount to the 10-day VWAP on FSE of €3.56.
Use of proceeds	<ul style="list-style-type: none"> Placement proceeds, together with existing cash, will be used to progress Vulcan's integrated renewable energy and lithium project execution strategy and order commercial plant long lead items, in line with the recently published DFS development plan² (refer to next slide).
Underwriters	<ul style="list-style-type: none"> Canaccord Genuity (Australia) Limited and Merrill Lynch Equities (Australia) Limited

Note 1: Based on a Australian dollar offer price of A\$5.10 per New Share, and a EUR offer price of € 3.08 per New Share

Note 2: There are a number of risks and uncertainties (known and unknown) that are associated with resources exploration and development (including in respect of the Company's Zero Carbon Lithium™ Project). Refer to the risk factors contained in the International Offering Circular released to the ASX on 4 May 2023 for more information. If certain conditions are not satisfied or certain events occur, the Joint Lead Managers may terminate the Placement Agreement. Refer to termination events in the summary of the Placement Agreement in Appendix 14. Termination of the Placement Agreement would have an adverse impact on the proceeds capable of being raised under the Placement.

I. EQUITY RAISING

SOURCES AND USES OF FUNDS

Placement Proceeds, together with existing cash, are intended to be used to progress Vulcan's integrated renewable energy and lithium project execution strategy in line with the recently published DFS development plan¹.

Positions Vulcan to continue to deliver the Zero Carbon Lithium™ Project as planned, and intends to provide sufficient capital to allow the Company to arrange debt financing and strategic equity commitments, with funds being applied to:

1) Ordering of long lead CAPEX items for Phase One Lithium Plant, including:

- Ion exchange system
- Eluate & desalination reverse osmosis
- Direct Lithium Sorption package
- Evaporator and Crystalliser system

2) Ordering of long lead items for Phase One Renewable Energy Plant

- Organic Rankine Cycle (ORC) type geothermal renewable energy plant for Phase One development

3) Other Phase One project execution CAPEX

- Drilling of initial new production/re-injection wells in Phase One area near current production wells, to increase current brine flow
- Acquisition of land for Lithium Plant and brine production sites
- VULSORB™ in-house lithium extraction sorbent co-investment for local commercial production, onshoring supply chain in Europe, away from China/Russia
- Engineering costs associated with Phase One execution including EPCM and bridge engineering

4) Phase 2 project development

- 3D Seismic acquisition for Phase 2 development

5) General working capital, overhead, corporate costs and costs of the Offer:

- General working capital required to support on-the-ground execution, and transactions cost associated with the Offer

Sources of funds	A\$m	€m ²
Placement proceeds (before equity raising costs)	109	66
Existing cash and cash equivalents (31 March 2023)	186	112
Total Sources	295	178

Uses of funds (including existing cash)	A\$m	€m ³
Ordering of long lead items for Phase One Lithium Plant	63	38
Ordering of long lead items for Phase One Geothermal Plant	38	23
Other Phase One project execution	131	79
Phase 2 project development	13	8
Corporate costs, equity raising costs, overheads and general working capital	50	30
Total Uses	295	178

Note 1: There are a number of risks and uncertainties (known and unknown) that are associated with resources exploration and development (including in respect of the Company's Zero Carbon Lithium™ Project). Please refer to the risk factors contained in the International Offering Circular released to the ASX on 4 May 2023.

Note 2: Assumes exchange rate of €0.603/A\$1.00

Note 3: Excludes SPV2 Nobian's conditional project equity investment of €15m (refer ASX announcement 27 April 2023)

Note 4: Equity Raising costs are €3.3 million. Remaining placement proceeds are allocated to Items 1, 2 & 5 noted above left.

INDICATIVE EQUITY RAISING TIMETABLE

Event	Time (AEST)/ Date ¹
Trading halt	9.00am, Thursday 4 May 2023
Launch of Placement	9.00am, Thursday 4 May 2023
Trading halt lifted and recommencement of trading on ASX	10.00am, Friday 5 May 2023
Settlement of New Shares issued under the Placement	11 May 2023
Allotment of New Shares issued under the Placement	12 May 2023
Quotation and commencement of trading of New Shares issued on ASX and FSE	15 May 2023

Note 1: The Placement timetable is indicative only and subject to variation. The Company reserves the right to alter the timetable at its discretion and without notice, subject to ASX Listing Rules and the Corporations Act and other applicable law





VULCAN ENERGY
ZERO CARBON LITHIUM™

II. INTRODUCTION



II. INTRODUCTION

1. WHO ARE WE?

Vulcan is aiming to become the **world's first integrated lithium chemicals and renewable energy producer** with net zero greenhouse gas emissions.

Company created in 2018

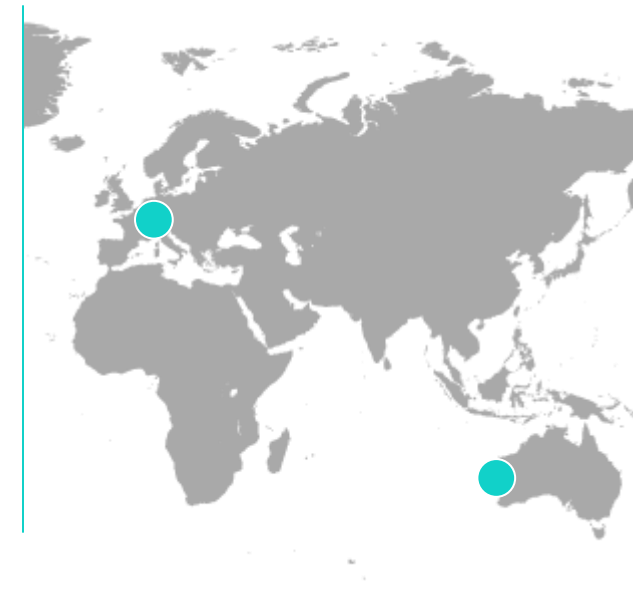
Offices in **Perth, Australia, Karlsruhe and Augsburg, Germany**

Dual listed on **ASX** and **Frankfurt Stock Exchange (Prime Standard)**

Majority of the approx. 300 personnel are on site in **Germany**

Extensive geothermal renewable energy and lithium chemicals expertise

Main focus is the **Zero Carbon Lithium™ Project**, a globally significant lithium resource, located on the border of Germany and France, in the **Upper Rhine Valley Brine Field (URVBF)**.

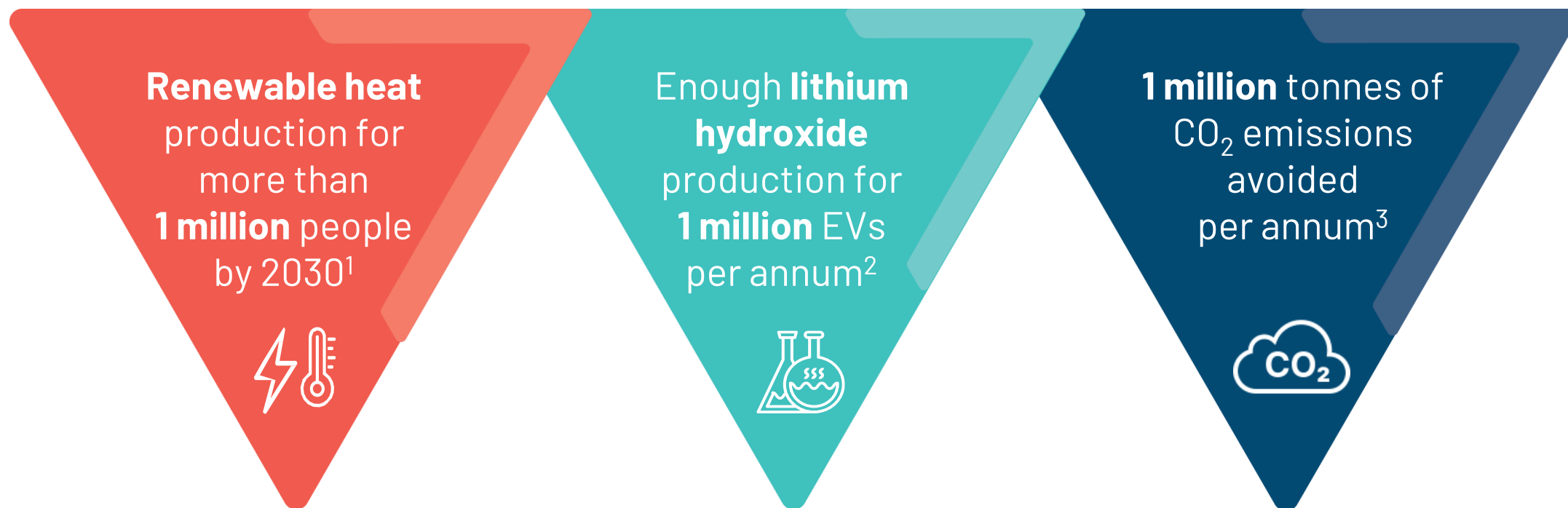


II. INTRODUCTION

2. OUR TARGETS⁴

We are aiming to become the world's first integrated lithium chemicals and renewable energy producer with net zero greenhouse gas emissions.

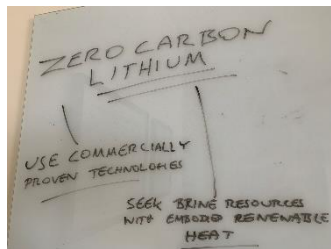
Vulcan's unique **Zero Carbon Lithium™** Project aims to produce both renewable geothermal energy, and lithium hydroxide for Electric Vehicle (EV) batteries, from the same deep brine source in the Upper Rhine Valley, Germany.



¹Based on average per capita heat consumption in Germany of 6,200 kWh (<https://www.destatis.de/>), and the estimated capacity for heat production from Vulcan's long term development areas, in a pure heat (no power) scenario. ²Based on Phase One production target of 24ktpa from DFS, Phase Two production target of approx. similar figure from PFS (refer to technical information statement), and Vulcan internal estimated average EV battery size and chemistry in Europe. ³CO₂ emissions avoidance target based on Minviro LCA data on Vulcan project and lithium industry peer averages in the same LCA. ⁴Read in conjunction with the risk factors contained in the International Offering Circular released to the ASX on 4 May 2023.

II. INTRODUCTION

3. OUR ACHIEVEMENTS TO DATE



Vulcan Energy Resources Ltd.
Founded privately as Zero Carbon Lithium Company by Dr. Francis Wedin and Dr. Horst Kreuter, starting from a "whiteboard idea"

2018

ASX Listing May 2018

Scoping Study completed

Estimation of Largest Lithium resource in Europe - Globally significant

Lithium extraction test work commences

2021

PFS Released

Acquisition of German engineering companies to create larger in-house team

2x institutional capital raises for total \$320 M



Acquisition of 2 electric drill rigs

5 binding lithium hydroxide agreements signed

STELLANTIS
VOLKSWAGEN
AKTIENTREIFESCHAFT

RENAULT GROUP
umicore

LG Energy Solution



Became a commercial renewable energy producer

STELLANTIS

Stellantis becomes first automaker to invest equity in a lithium company: \$76m investment into Vulcan

First renewable heat offtake signed, with MVV

High grade, lowest impurity LHM produced from pilot plant

Successful in-house development of VULSORB™

2022

FSE Prime Standard Dual Listing successfully completed

Construction of Vulcan's Lithium Extraction Optimisation Plant commences

Successful completion of lithium extraction pilot test work

2023

Nobian term sheet agreement¹ for proposed joint venture partnership, subject to definitive agreements

◆ NOBIAN



Completion of Positive Phase One DFS



1. Subject to definitive documentation and other conditions precedent, see announcement of 27 April 2023 for further information.

II. INTRODUCTION

4. WHY DO WE NEED LITHIUM IN EUROPE?

The market



- EU targets new cars to be **100%** electric by 2035¹
- **1,400GWh** li-ion battery manufacturing estimated capacity by 2030² for EV transition
- Predictions indicate Europe will see a **57-fold** increase in lithium demand³

The crisis



- **Zero** local supply of lithium hydroxide. **80%** reliant on China⁴
- Current supply of lithium is **CO₂** intensive. Western automakers want low carbon sources⁵

The solution



- Vulcan is developing the only **CO₂ neutral**, zero fossil fuel lithium project in the world, producing lithium **from Europe, for Europe**⁶
- Vulcan's Zero Carbon Lithium™ Project is the largest lithium resource in Europe⁷

Vulcan has offtake agreements with some of the largest battery, cathode and EV producers in Europe.

STELLANTIS

VOLKSWAGEN
GROUP

LG Energy Solution

umicore

RENAULT GROUP

¹ https://ec.europa.eu/commission/presscorner/detail/en/ip_22_6462

² <https://www.spglobal.com/marketintelligence/en/news-insights/research/investment-in-lithium-ion-batteries-could-deliver-5-point-9-twh-capacity-by-2030>

³ <https://www.euractiv.com/section/economy-jobs/news/eu-unveils-critical-raw-materials-act-aiming-to-lesser-dependence-on-china/>

⁴ <https://www.bloomberg.com/news/articles/2020-12-03/eu-aims-to-have-30-million-electric-cars-on-the-road-by-2030?leadSource=uverify%20wall>

⁵ Refer to next slide

⁶ Vulcan is not aware of any other such projects either in development or operation

⁷ According to public, JORC-compliant data

5. WHY DO WE NEED CARBON NEUTRAL LITHIUM SUPPLY?

RENAULT GROUP

'Reducing **carbon footprint** is not just reducing vehicle emissions while they are being operated, but also from the company's resource extraction and production processes through to the end of the vehicle's life cycle'.¹



'We work in partnership to implement responsible procurement practices, to ensure **sustainable** progress throughout the entire supply chain, with specific emphasis on the wise use of natural resources'.²



'By 2025, the company aims to reduce the carbon footprint of cars and light-commercial vehicles across the entire value chain by 30 percent compared to 2015 – and by 2050 to make the entire Group's balance sheet **CO₂ neutral**'.³



'Umicore commits to carbon neutrality for its Scope 1 and Scope 2 GHG emissions by 2035 ... Umicore pledges that its future growth, whether organic or through M&A, will be entirely **carbon neutral**'.⁴



'LG Energy Solution commits to be 100 percent **carbon neutral** by 2030. LG will set an example in cutting carbon emissions through battery production and promote the expansion of EVs'.⁵

¹ <https://www.renaultgroup.com/en/our-commitments/respect-for-the-environment/carbon-footprint/>

² <https://www.stellantis.com/en/responsibility/csr-vision>

³ <https://www.volkswagenag.com/en/news/stories/2019/12/what-volkswagen-is-doing-for-the-environment.html#:~:text=To%20this%20end%2C%20Volkswagen%20has,balance%20sheet%20company%20by%202050.>

⁴ <https://www.umicore.com/en/newsroom/news/umicore-unveils-bold-sustainability-ambitions-and-commits-to-achieving-carbon-neutrality-by-2035/>

⁵ <https://www.lghomebattery.com.au/post/lg-energy-solution-commits-to-be-100-percent-carbon-neutral-by-2030>

6. WHY DO WE NEED GEOTHERMAL RENEWABLE ENERGY IN EUROPE?

The market



- EU to be climate neutral by 2050. Germany to be fully renewable by 2035¹
- EU wants to develop local sources of energy²

The crisis



- Dual crises: Ukraine war and climate crisis
- EU is now sourcing gas from Norway and other areas in the EU. Domestic energy sources are key³
- 55% of Germany's gas came from Russia pre-Ukraine invasion⁴
- European emissions need to fall dramatically to avoid climate breakdown and meet carbon neutral by 2050⁵

The solution



- Fraunhofer: Geothermal renewable energy can meet a quarter of Germany's heating needs⁶
- German Govt. announced in November '22 the need for 100 new Geothermal projects targeting 10 TWh of geothermal output by 2030⁷
- The Upper Rhine Valley Brine Field has the hottest geothermal resource in central Europe
- Vulcan is already commercially producing geothermal, baseload energy in Germany
- Vulcan is ramping up with the aim to supply a million households with renewable energy by 2030.⁸

¹ <https://www.reuters.com/business/sustainable-business/germany-aims-get-100-energy-renewable-sources-by-2035-2022-02-28/>

² https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal/repowereu-affordable-secure-and-sustainable-energy-europe_en

³ <https://www.consilium.europa.eu/en/infographics/eu-gas-supply/>

⁴ <https://www.cleanenergywire.org/factsheets/germanys-dependence-imported-fossil-fuels#:~:text=Germany%20%2D%20GAS,imports%2C%20according%20to%20the%20BGR.%E2%80%8B>

⁵ https://climate.ec.europa.eu/eu-action/climate-strategies-targets/2050-long-term-strategy_en

⁶ Roadmap deep geothermal energy for Germany – recommendations for action for politics, business and science for a successful heat transition.

⁷ <https://www.thinkgeoenergy.com/germany-aims-for-100-new-geothermal-projects-by-2030/>

⁸ Based on average per capita heat consumption in Germany of 6,200 kWh (<https://www.destatis.de/>) and the estimated capacity for heat production from Vulcan's long term development areas, in a pure heat (no power) scenario.

II. INTRODUCTION

7. POLICY TAILWINDS IN VULCAN'S FAVOUR

The recently released *Critical Raw Materials*¹ and *Net Zero Industry Acts*² present a strong focus on fast-tracking the permitting process and funding for technologies of relevance to the strategic autonomy of the EU economy

	Critical Raw Materials Act - Proposed Framework	Net Zero Industry Act - Proposed Framework	Implications for Vulcan
Overview	<ul style="list-style-type: none"> Establishing a framework for ensuring a secure and sustainable supply of critical raw materials "Strategic project" status, indicating the status of the highest national significance possible 	<ul style="list-style-type: none"> Establishing a framework for strengthening Europe's net-zero technology products manufacturing ecosystem Net Zero Resilience Projects shall get the status of the highest national significance possible 	<ul style="list-style-type: none"> Should it be granted, Strategic Project and Net Zero Resilience Project status could significantly streamline project progress
Permitting	<ul style="list-style-type: none"> One stop-shop for permitting handled by one national authority, with all permitting documentation to be sent out to a centralised system Permit granting process shall not exceed 24 months for Strategic Projects 	<ul style="list-style-type: none"> Limit to permit granting procedures for Net Zero Resilience Projects are set to 12 months for the construction or expansion of Net Zero Resilience Projects, with a yearly production output of more than 1 GW. Environmental impact assessments to not exceed a period of 30 days from the date of project submission. 	<ul style="list-style-type: none"> Potentially fast track and streamline the permitting process
Funding	<ul style="list-style-type: none"> Better coordination and synergy creation between the existing funding programmes at Union and national level as well as ensuring better coordination and collaboration with industry and key private sector stakeholders. Potential public funding support, in the form of guarantees, loans or equity and quasi-equity investments. 	<ul style="list-style-type: none"> Member States to provide financial support to address financing gaps in the form of: <ul style="list-style-type: none"> a) guarantees to decrease borrowing costs b) off-take guarantees for tech made in Europe Innovation Fund auctions to allocate grants to Net Zero industry projects 	<ul style="list-style-type: none"> Potential EU & State grant/subsidies Assistance with other financing alternatives

¹ https://ec.europa.eu/commission/presscorner/detail/en/ip_23_1661

² https://single-market-economy.ec.europa.eu/publications/net-zero-industry-act_en

II. INTRODUCTION

8. WHAT DO WE WANT TO BUILD?

Phase
one

300GWh power
250GWh heat

LiCl concentrate for
24,000tpa LHM equivalent

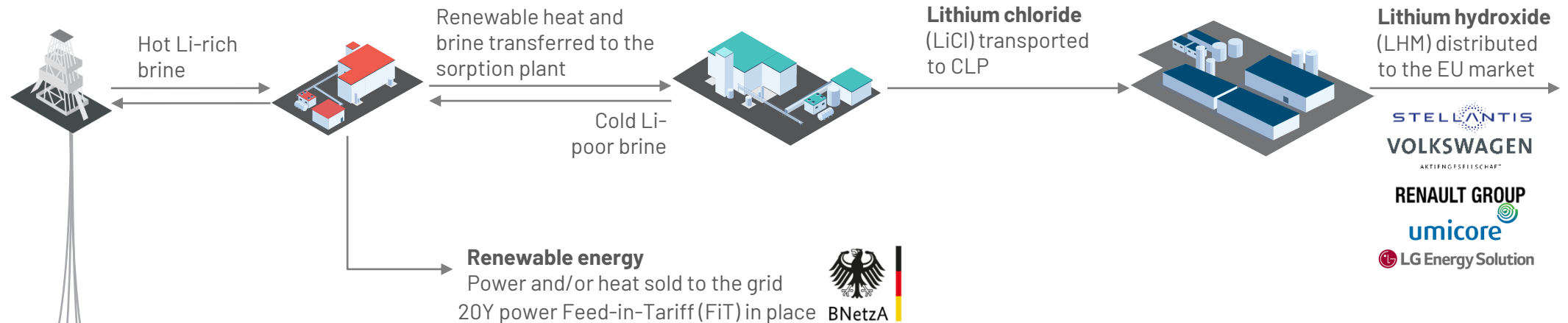
24,000tpa
LHM

2.
Well
sites

3.
Geothermal Plant

4.
**Lithium Extraction
Plant (LEP)**

5.
**Central Lithium
Plant (CLP)**





VULCAN ENERGY
ZERO CARBON LITHIUM™

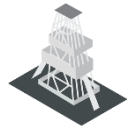
III. ZERO CARBON LITHIUM™ PROJECT



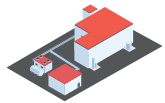
III. THE PROJECT

PHASE ONE UPSTREAM-DOWNSTREAM INTEGRATED PRODUCTION STRUCTURE

Phase One:
expanding upstream capacity,
building downstream



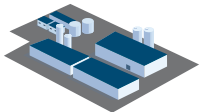
Increasing the number of
production/re-injection well sites
from 2 to 9



Building new, larger geothermal plant
near existing one

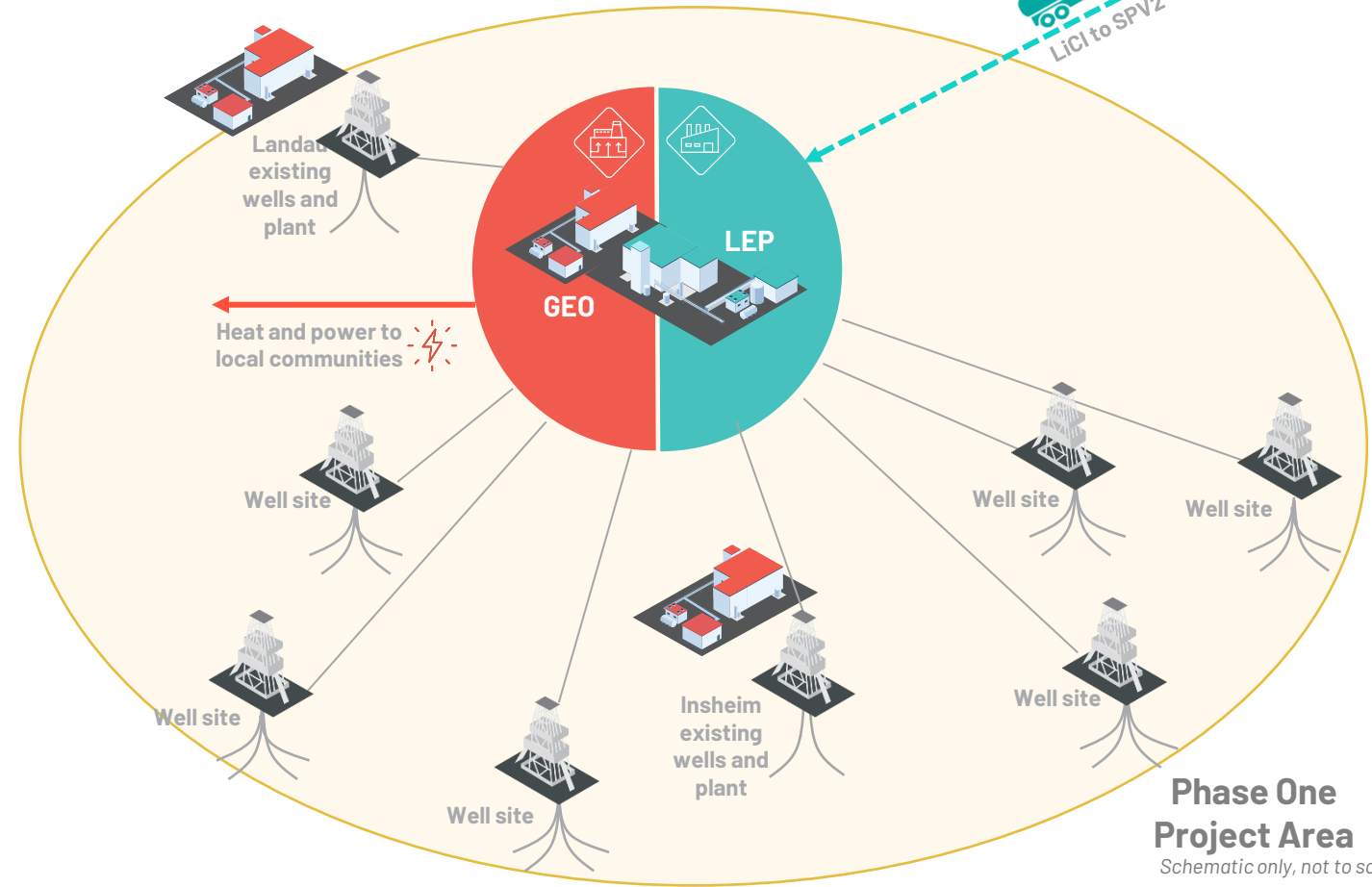


Building new Lithium Extraction
Plant



Building new Central Lithium Plant

**SPV1: upstream G-LEP,
wells, resource.**
LiCl and energy production



**Phase One
Project Area**
Schematic only, not to scale

III. THE PROJECT

1. THE UPSTREAM RESOURCE

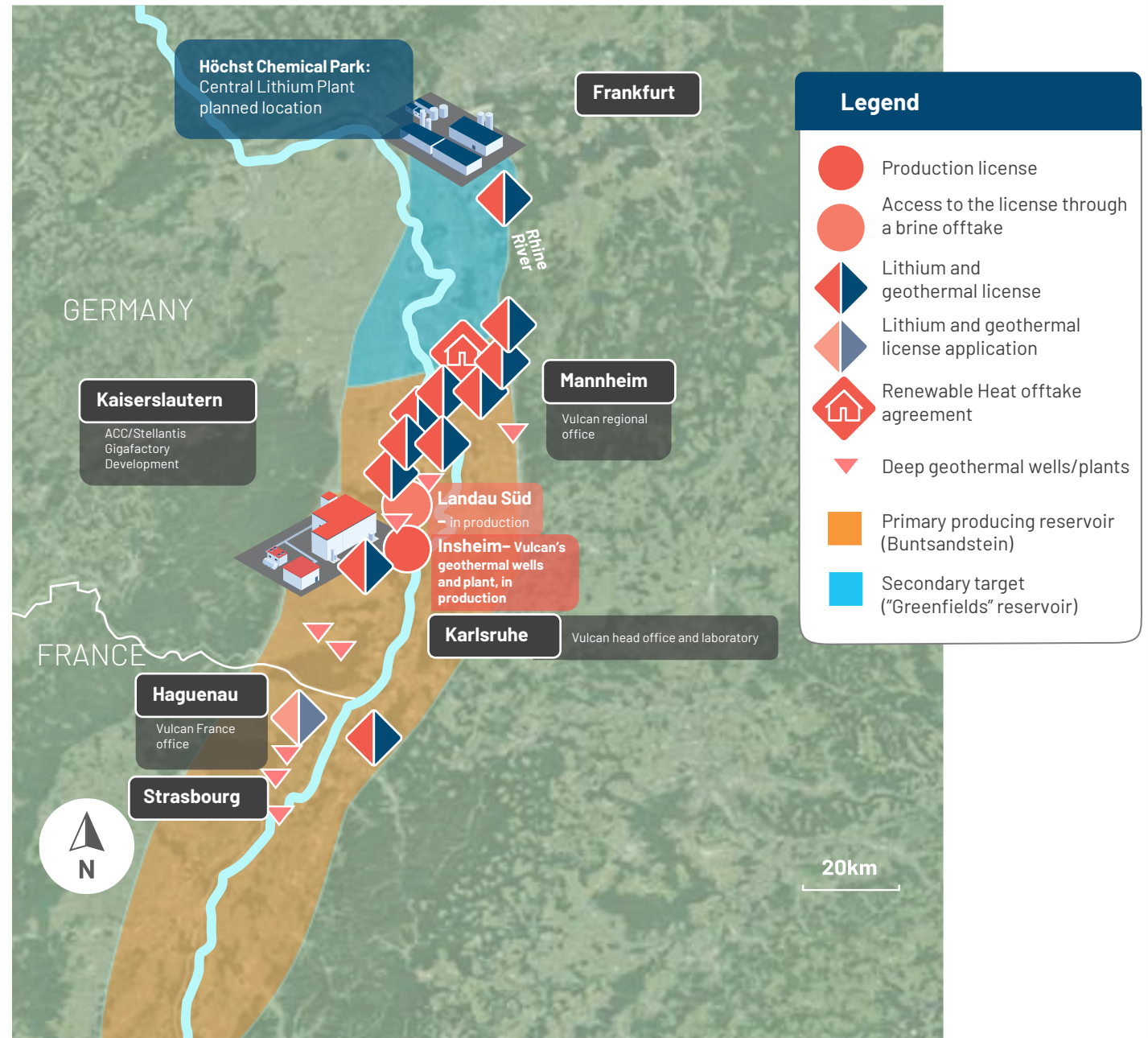


- ✓ Vulcan's Upper Rhine Valley Brine Field (URVBF), consisting of 16 licenses for a total area of >1,500 km², represents **Europe's largest lithium resource**¹, with **26.6Mt contained LCE from 10 of its 16 licenses**.
- ✓ Large, **300km-long** graben system containing consistent sedimentary-hosted geothermal-lithium reservoir.
- ✓ There are currently **36 geothermal plants** operating in Germany and **42 active projects**². The Federal Government targets to reach 100 plants by 2030³
- ✓ URVBF area is a **mature, producing field**, with **>1,000 oil & gas** and **24 deep geothermal wells** already drilled in the URV

¹According to public, JORC-compliant data

²Bundesverband Geothermie

³Geothermie_Eckpunktepapier_ressortabgestimmt (bmwk.de);

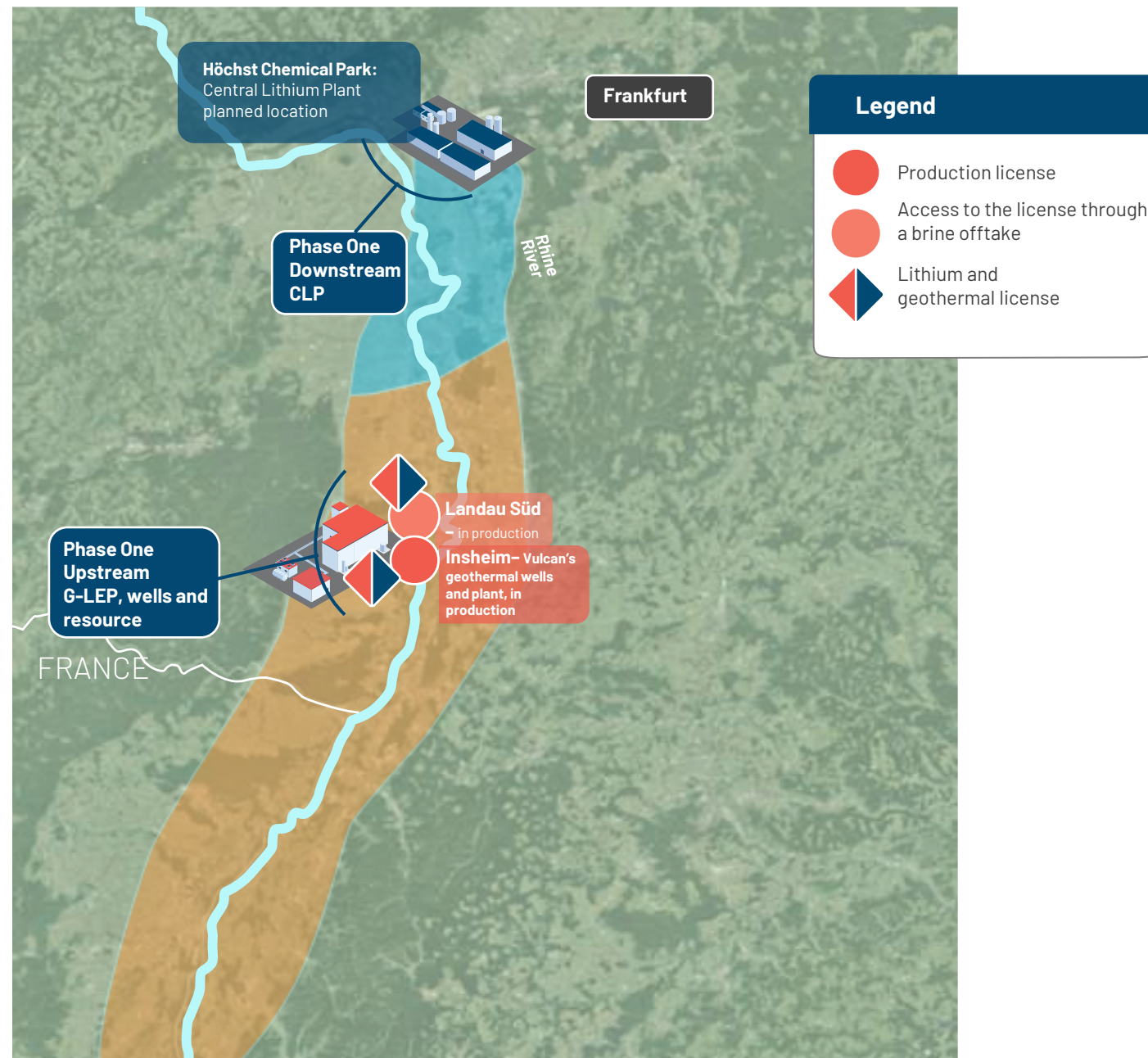


III. THE PROJECT

1. PHASE ONE AREA



- ✓ **Phased growth approach**, starting from core of field where Vulcan already owns production/re-injection wells in operation.
- ✓ **Phase One focuses on** the core of the field including existing production wells.
- ✓ Large resource allows for further modular expansion



III. THE PROJECT

2. INCREASING UPSTREAM BRINE PRODUCTION



Well-known area

- >1,000 oil & gas and 24 deep geothermal wells already completed in the URVBF.
- In our Phase One project area, 4 deep geothermal wells have been in operation for more than 10 years.

In-house expertise, team and assets

- Vulcan has established its own in-house geothermal drilling company, Vercana, due to high demand for geothermal renewable energy projects.
- Two electric rigs acquired in-house.
- Contract labour company acquired.

Conservative approach

- Targeting brine production from sandstone only, where seismicity risks are remote, in line with industry best-practice.
- Using conservative flow rates estimates, with an average flow rate (69l/s), below nearby projects (>100l/s), leaving room for upside.
- Brownfield development, Vulcan is increasing the number of its existing production well sites from 2 to 9 during Phase One project build.

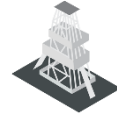
Execution

- Duration: expected 2.5 years starting H2 2023, part of Phase One CAPEX.
- Vulcan has secured a number of pre-EIA approvals for its sites and has also secured land to start wells.



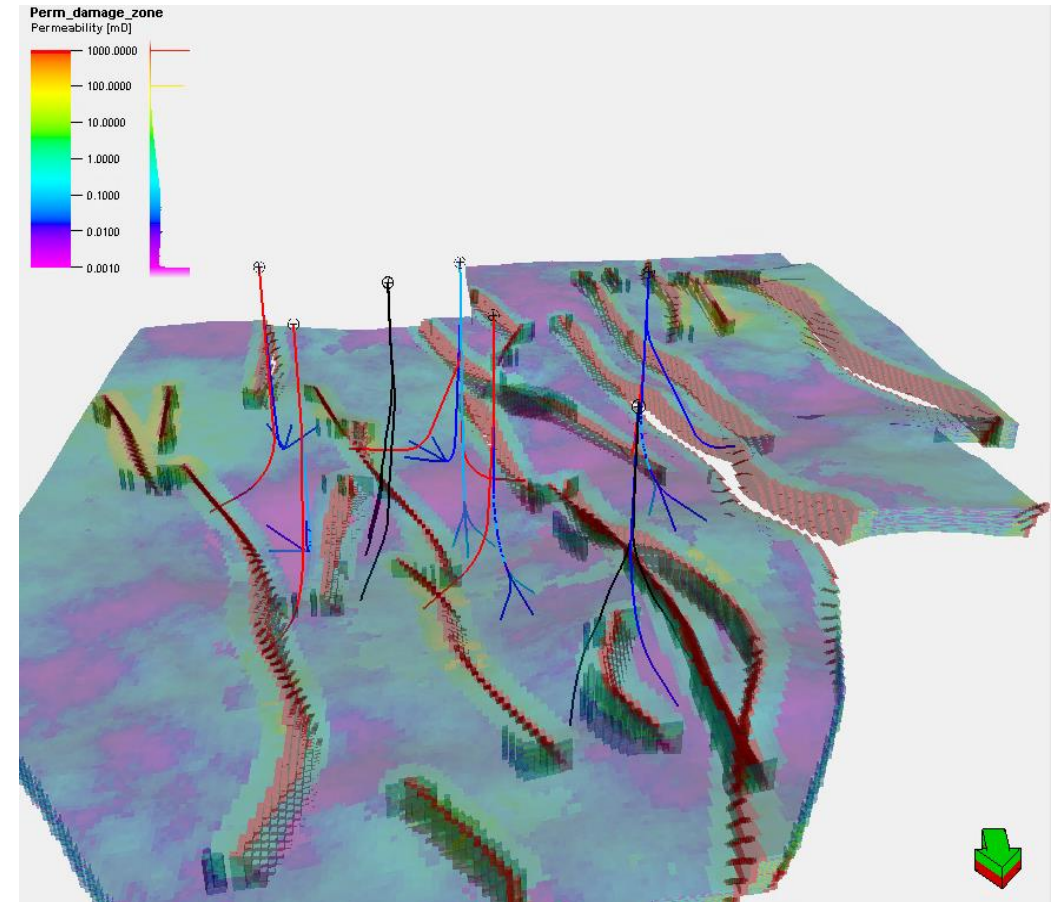
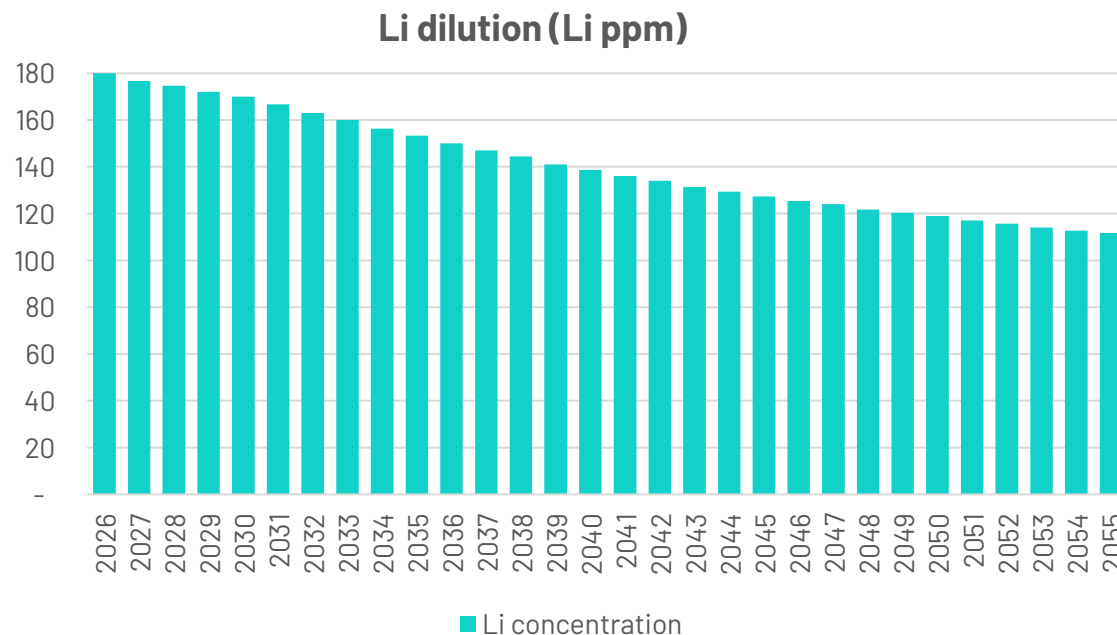
III. THE PROJECT

2. LONG LIFE, SUSTAINABLE UPSTREAM PRODUCTION MODELLED



State-of-the art reservoir management principles from O&G industry

- Lithium dilution at the well sites modelled over 30 years and remains above cut-off, with only ~1.6% annual grade decrease.
- Production levels could be increased by adding new wells in the future, not modelled here¹.
- Heat modelling shows no material decrease over time.

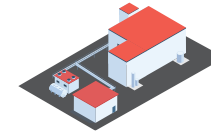


¹Production and dilution is based on reservoir estimation, modelling and simulation, and is subject to further review as further development wells are drilled to increase brine production from Phase One area. Dilution is based on weighted average of two areas.

Note: See the DFS announcement dated 13 February 2023, material assumptions on Appendix 14 of the 13 February 2023 presentation, the risk factors contained in the International Offering Circular released to the ASX on 4 May 2023 and Competent Persons Statement.

²Output of 24ktpa is estimated as at the fully ramped up commencement of production as shown above.

3. INCREASING RENEWABLE ENERGY PRODUCTION



Long established industry with strong growth potential

- Geothermal energy: 16GW of power & 107GW of heat capacity deployed worldwide¹
- There are currently 36 geothermal plants operating in Germany, 42 active projects (c. 84 wells), and the Federal Government is targeting to reach new 100 projects by 2030²
- Vulcan owns an existing geothermal renewable energy plant with over 10 years of successful production
- The plant is supplying ~6,500 households with renewable power
- Extensive operational experience in-house
- Plants are simple and “off the shelf” from vendors

With more wells comes more geothermal renewable energy

- Phase One will utilise Vulcan’s existing operational capacity, and increase geothermal renewable energy production:
 - Insheim: 4.2MW power capacity
 - Additional total plant generation capacity: 33MW power capacity, 30MW heat capacity

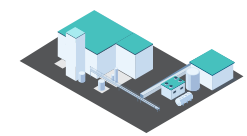


¹[Global geothermal market and technology assessment \(irena.org\);](https://www.irena.org/publications/2019/04/global-geothermal-market-and-technology-assessment)

²[Geothermie_Eckpunktepapier_ressortabgestimmt \(bmwk.de\);](https://www.bmwk.de/SharedDocs/Gesamtdokumentation/DE/Geothermie_Eckpunktepapier_ressortabgestimmt.pdf)

III. THE PROJECT

4. LITHIUM EXTRACTION: PROVEN, SUSTAINABLE METHODS, IN-HOUSE IP



Commercially proven methods, combined. Testwork phase complete

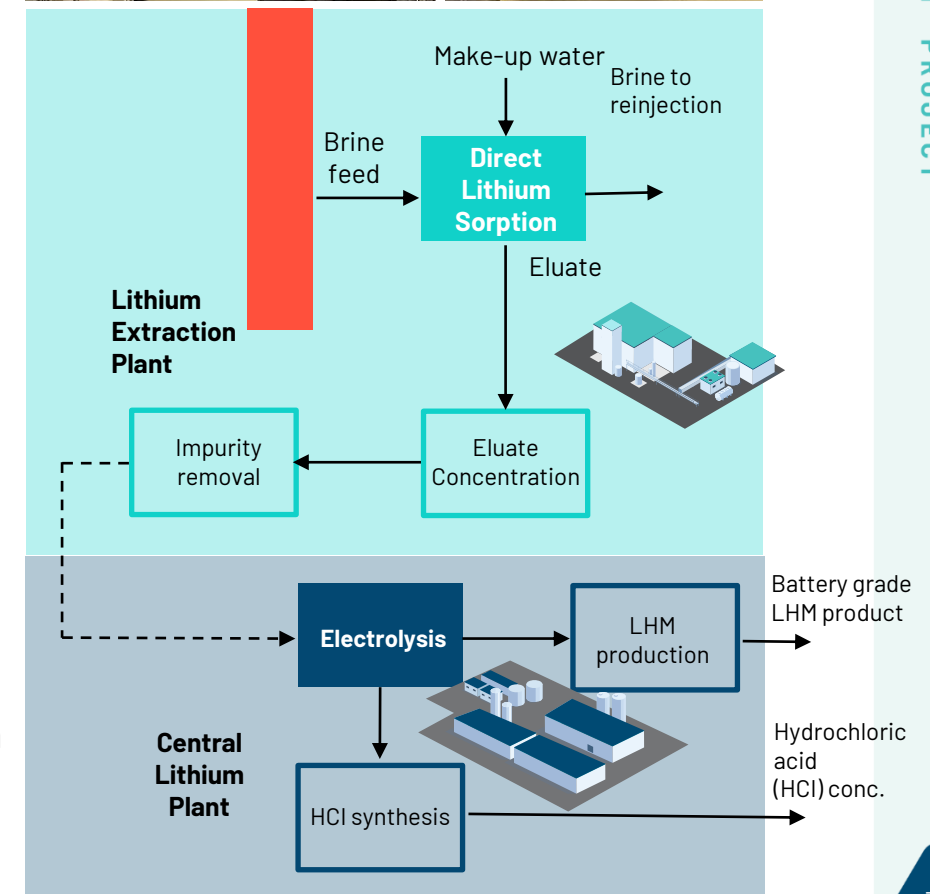
- ✓ Vulcan is using sorption to extract lithium; invented in the '70s and used commercially worldwide since 1996, including by top 5 producer Livent and multiple Chinese producers.
- ✓ Increasingly the “new normal” way of extracting lithium. Chile has declared new lithium projects will have to use these methods¹.
- ✓ 3 years of testwork and 2 years of in-house piloting on URVBF brines successfully completed at multiple well locations. Technology de-risked on our brine chemistry.
- ✓ Lithium hydroxide, better than battery-grade, already produced.

In-house intellectual property

- ✓ Commercially available Li-sorbents are mostly manufactured in China and Russia, which have been successfully tested by Vulcan, however, Vulcan has developed its own sorbent, VULSORB™, which has demonstrated better performance.
- ✓ Vulcan is manufacturing VULSORB™ in France, thereby onshoring the critical parts of its supply chain in Europe.

Sustainable, quick process

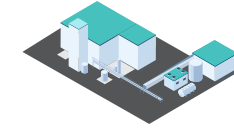
- ✓ Inputs to sorption are heat, salinity and water, all of which naturally occur in the URVBF brine. Process takes hours, instead of months with legacy methods.
- ✓ Vulcan’s process driven by renewable heat in the brine, major advantage over existing producers who use fossil gas to heat up the brine prior to sorption, and legacy production methods, which use large quantities of reagents.
- ✓ Produces very pure LiCl product, important for processing for battery EV industry.



¹ <https://www.mining.com/web/chilepushes-new-lithium-extraction-method-in-risk-to-future-supply/>

III. THE PROJECT

4. BUILDING NEW LITHIUM EXTRACTION PLANT (LEP)



Phase One commercial: sorption-type LEP

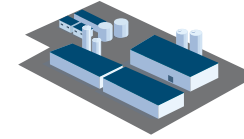
- To be constructed next to new Phase One geothermal plant
- Total targeted capacity to be 24,000tpa LHM equivalent in LiCl form¹
- From the LEP, LiCl concentrate solution will be trucked to the CLP
- Modular build allows for further phased development across other phases in URVBF
- Targeting Phase One start of production in late 2025
- In-house designed Optimisation Plant under construction, planned to start operation mid-year, training staff in pre-commercial environment prior to start of commercial production for **targeted operational readiness in 2025**
- Optimisation plant also built to start sending significant volume of product to offtakers for pre-qualifications

¹. See Competent Person Statement in the Disclaimer slides.



Planned new commercial Phase One geothermal and LEP development.
Top: construction of optimisation plant onsite

5. LITHIUM PROCESSING: PROVEN, SUSTAINABLE METHODS



Proven chlor-alkali type process, sustainable inputs, no fossil fuels

- Vulcan to use the electrolysis process to convert lithium chloride into lithium hydroxide. Electrolysis produces very pure lithium hydroxide product, important for battery EV industry. Main input is green power, in contrast to legacy methods which use large quantities of reagents and fossil fuels.
- This is similar to the **well-known chlor-alkali process used for >100 years** to produce caustic soda (sodium hydroxide) from sodium chloride, since cells for lithium chloride electrolysis are the same
- Chlor-alkali electrolysis process: there are **36 active plants in Germany**, c. 5.4Mt chlorine production capacity, of which 3.4Mt is using the exact same membrane technology as Vulcan.

NORAM

- Vulcan is working closely with NORAM, lithium chloride electrolysis experts in charge of detailed engineering.
- NORAM brings their extensive experience of testing production of lithium hydroxide from lithium chloride through electrolysis
- Testwork with Electrosynthesis (partly owned by NORAM) completed, better than battery grade specification LHM successfully produced from Vulcan's LiCl.

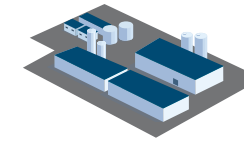
◆ NOBIAN

- Term sheet for JV agreement signed with Nobian, for proposed strategic partnership, subject to definitive agreements.¹
- Nobian has a strong pedigree in chlor-alkali operations and a heritage stretching back over 100 years. Nobian has a production site at the Hoechst Industrial Park, where Vulcan's site is also planned, providing additional synergies.
- Nobian and Vulcan have been collaborating for 15 months.

1. Subject to definitive documentation and other conditions precedent. Refer to announcement of 27 April 2023 for further information.

III. THE PROJECT

5. BUILDING NEW CENTRAL LITHIUM PLANT (CLP)



Commercial CLP

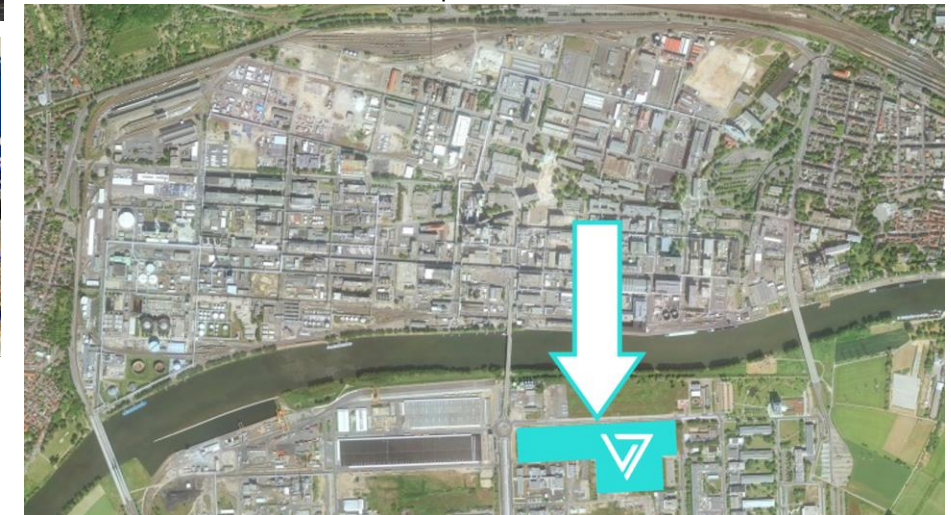
- CLP planned to be located in Frankfurt (Höchst Industrial Park). Close to 100,000sqm secured.
- **Targeted 24,000tpa LHM capacity with space for further modular expansion.**
- Conversion of LiCl to battery grade LHM using electrolysis. By-products HCl and Sodium Hypochlorite. Significant synergies with existing chlor-alkali producers in the same chemical park.
- Höchst is one of Europe's largest industrial estates and is home to around 90 chemical and pharmaceutical companies.
- Term sheet signed with Nobian, the fourth largest chlor-alkali producer in Europe and formerly part of Akzo-Nobel, for proposed strategic partnership. Nobian intends, subject to the parties entering into definitive agreements, to contribute 161m EUR in cash as equity for 50% equity in SPV2, which contains the CLP.¹
- Vulcan is targeting a 65:35 debt equity funding split across Phase One.
- Targeting late 2025 for commercial start of operations.
- Optimisation plant under construction, planned to start operation in H2, training staff in pre-commercial operational setting, will send significant volume of product to offtakers for pre-qualifications. Intended to ensure **commercial operational readiness**.



Optimisation plant under construction



Secured plot at Hoechst



¹ Equity investment subject to execution of definitive agreements, see announcement of 27 April 2023 for further information.

III. THE PROJECT

6. EXPERIENCED TEAM READY TO DELIVER



Deputy CEO
Cris
Moreno

20+ years' major energy and chemicals project execution experience



MD-CEO
Dr. Francis
Wedin

Founder of Zero Carbon Lithium™ Project. Extensive lithium and climate tech industry executive experience

CORE FUNCTIONS

Development Organisation

CDO
Thorsten Weimann

30+ years' drilling and geothermal leadership experience

CTO
Dr. Stefan Brand/
Dr. Stephen Harrison

25+ years' technical experience in speciality chemicals

Project Execution

Senior Director Programs
(starting 1 June)

25+ years' global project management experience

Production Organisation

VP Production
Christian Tragut

30+ years' global chlor-alkali project execution and production experience

SUPPORT FUNCTIONS

CCO
Vincent Ledoux-Pedailles

15+ years' commercial lithium leadership experience

CEO - GER
Dr. Horst Kreuter

35+ years' geothermal and rock mechanics experience, co-founder Vulcan

ESG LEAD
Storm Taylor

Director Comms & IR
Annabel Roedhammer

CFO
Markus Ritzauer (Germany)
Rob Ierace (Australia)

CoSec/ In-House Legal
Daniel Tydde (Australia)
Dr. Meinhard Grodde (Germany)

Executive experience

acquired across relevant corporations

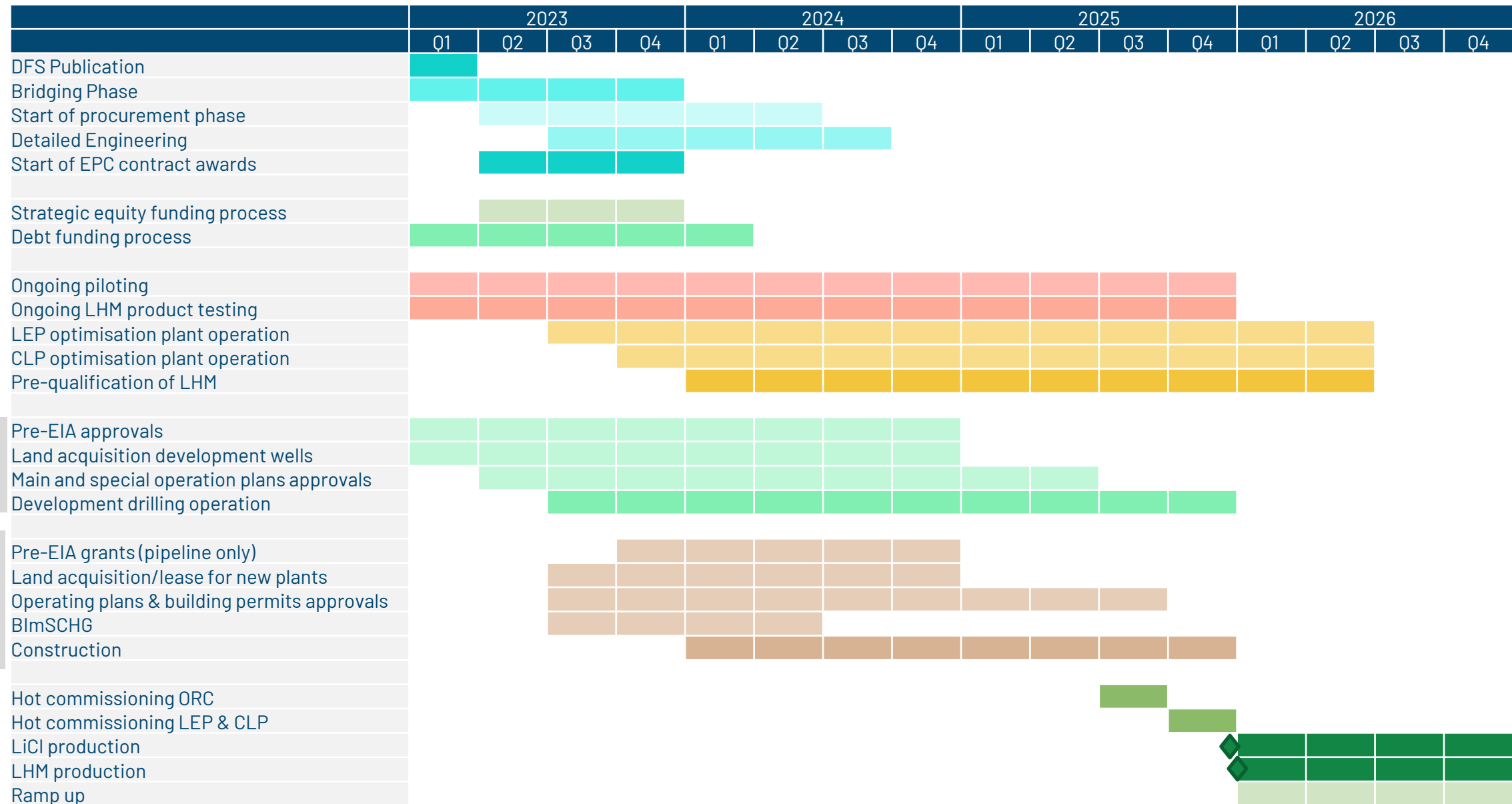


~300 personnel

spread across development, execution and production

III. THE PROJECT

7. TARGET PROJECT TIMELINE – PHASE ONE



(Note) Under targeted timetable, material revenue would be expected from 2026 onwards

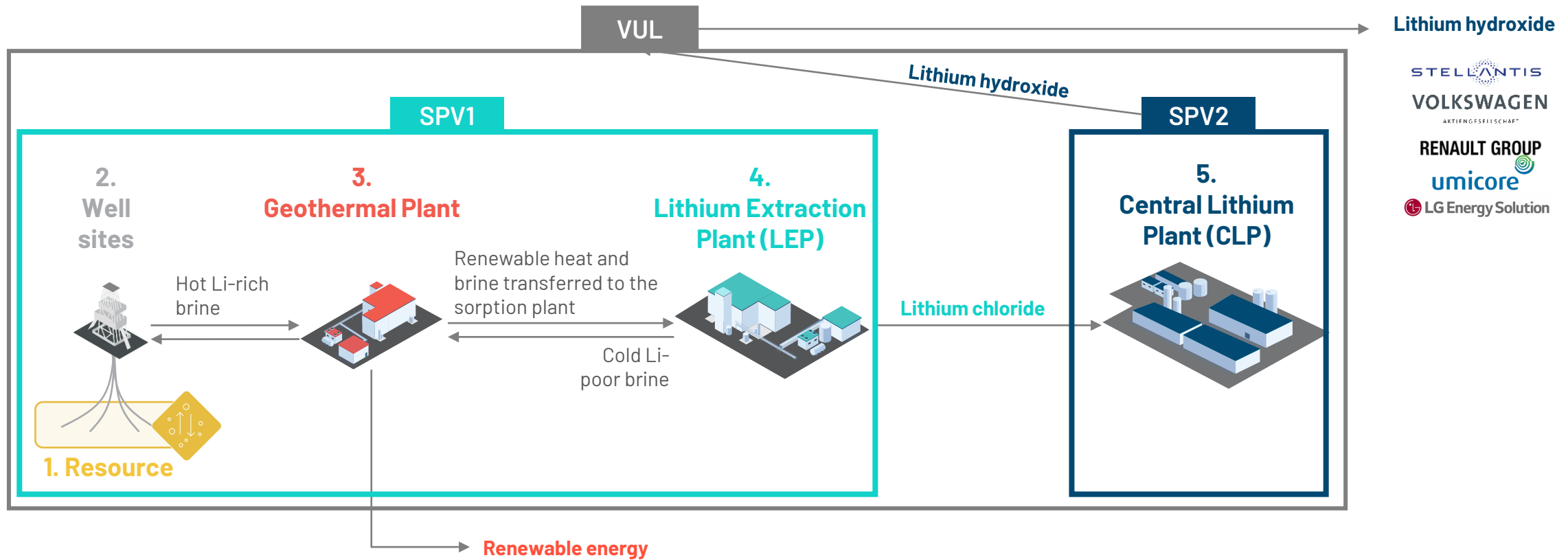


VULCAN ENERGY
ZERO CARBON LITHIUM™

IV. ECONOMICS AND FINANCING



1. PHASE ONE PROJECT VALUE FLOWS



SPV1 includes the plant and infrastructure associated with the production of renewable energy and lithium chloride (LiCl) and includes land, wells, pipelines, geothermal and lithium extraction plants. SPV1's output includes renewable energy and LiCl, the latter which is sold to SPV2.

SPV2 includes the CLP which converts LiCl into LHM, with a by-product of HCl. LHM will be sold to the Vulcan parent company which will then distribute it to Vulcan's off-takers.

2. CAPEX BREAKDOWN¹

VUL

Phase 1 estimated CAPEX: €1,496M

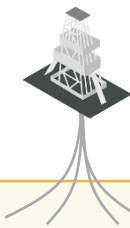
€1,174M

SPV1

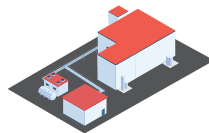
€322M

SPV2

2.
Well
sites

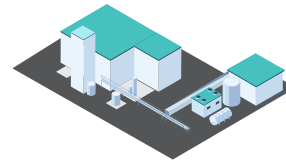


3.
Geothermal Plant



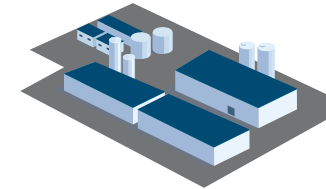
€657M

4.
**Lithium Extraction
Plant (LEP)**



€517M

5.
**Central Lithium
Plant (CLP)**



€322M

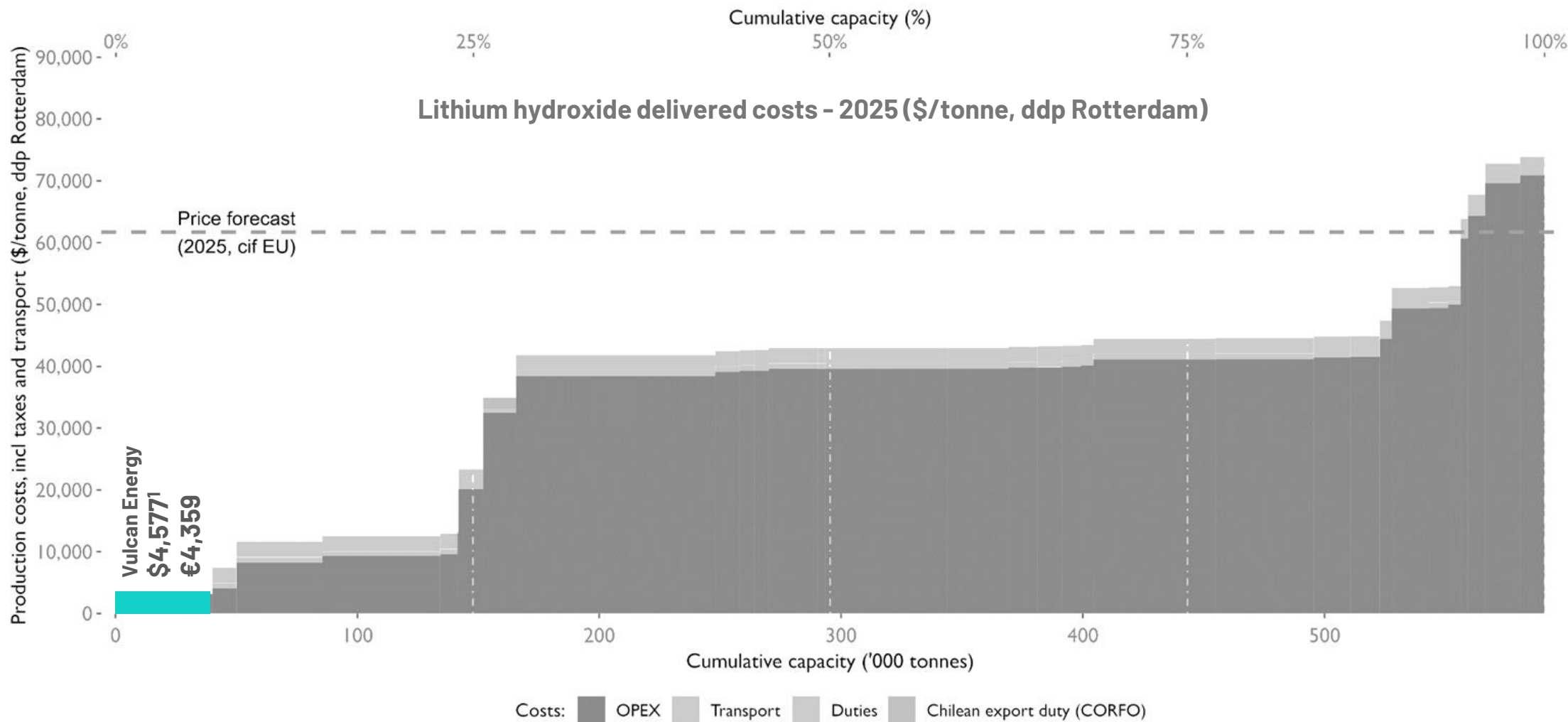
1. Resource

- CAPEX includes renewable energy generation, lithium extraction and lithium processing plant and infrastructure.
- Value improvement opportunities being assessed as part of bridging engineering phase.

¹ Based on Vulcan Energy's DFS. These are targets and may not be achieved. Please refer to the Forward-Looking Statement disclaimer. Estimate Accuracy Based on Design Maturity: SPV Geothermal Est at +/-20%, SPV Lithium Est at +20/-15%. SPV Lithium planned to have the original DFS estimate at Class 3 accuracy (+/-15%), however several value improvements opportunities were identified late in the DFS and sufficient engineering was not able to be completed to achieve Class 3, therefore these opportunities have a lower accuracy than the original estimate, therefore giving an approximate DFS Phase accuracy of (+20/-15%). These opportunities are planned to be developed to the same detail and accuracy as the original estimate in the next phase

3. GLOBAL COST CURVE LHM – PROJECTED 2025

Vulcan’s Zero Carbon Lithium™ Project has the potential to be one of **the lowest cost integrated LHM projects** in the world.



¹Projected cost curve provided by Fastmarkets and Vulcan’s OPEX estimate provided by the Company. Vulcan’s OPEX converted from € to \$ using 1.05 EUR/USD FX. Vulcan has used a projected cost curve by Fastmarkets as it is the Price Reporting Agency (PRA) for lithium for the London Metals Exchange, and as in Vulcan’s view it would be invalid to compare Vulcan’s future projected costs with current costs from other companies. Fastmarkets’ estimate of a project’s costs uses a bottom-up approach based on assumptions about the operations. On top of this, costs for transport to a common location and any duties that would be applied are added to allow comparison from different sources.

4. STRATEGIC SUPPLY PARTNER CONTRACTS

- High quality of European-focused offtake partners.
- Average EUR 30,283/t price used by Vulcan over 20 year period, from a basket of fixed, floor-ceiling and fully floating price mechanisms in current offtake agreements, and using future forecast from Fastmarkets.
- Provides assurance to lenders during payback period.



€50M Equity investment
Binding lithium hydroxide offtake agreement, initial 10-year term.



Binding lithium hydroxide offtake agreement, initial 5-year term.



Binding lithium hydroxide offtake agreement, initial 5-year term.

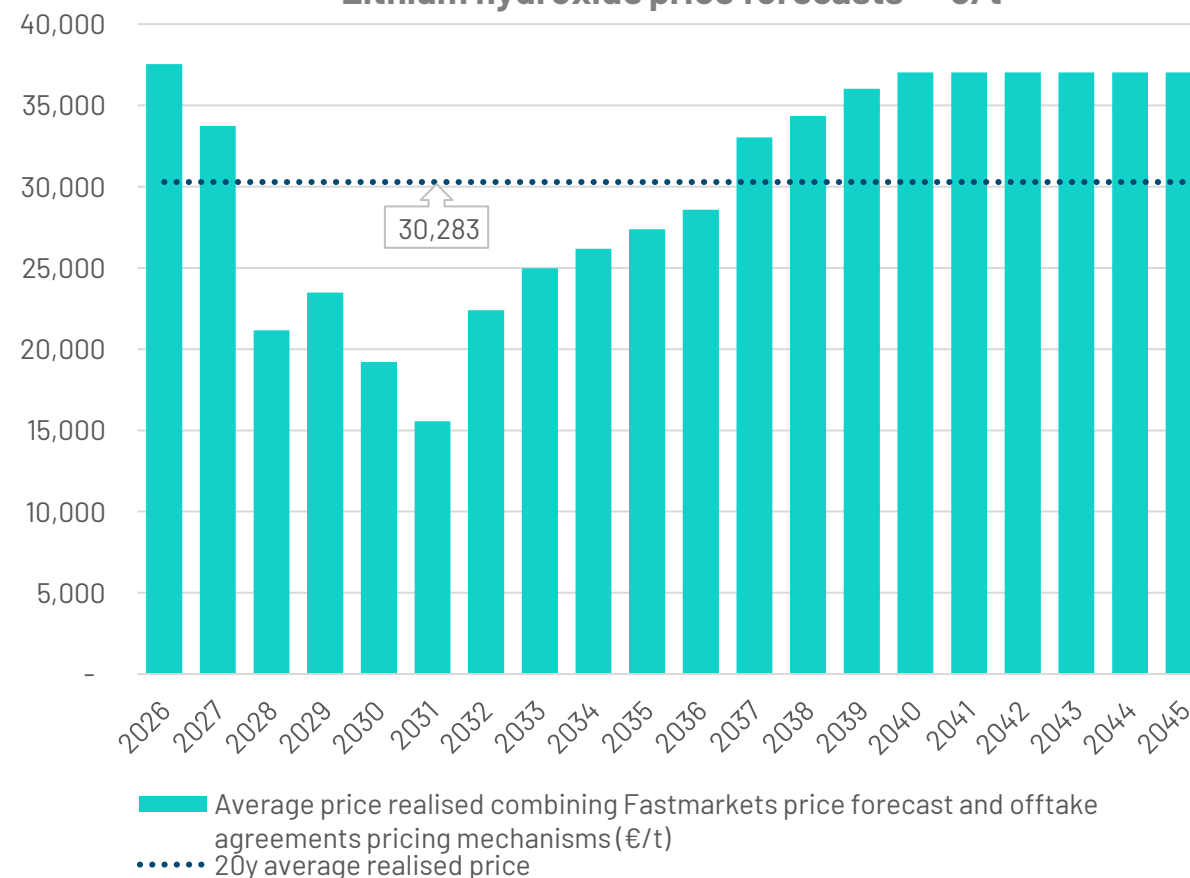


Binding lithium hydroxide offtake agreement, initial 5-year term.



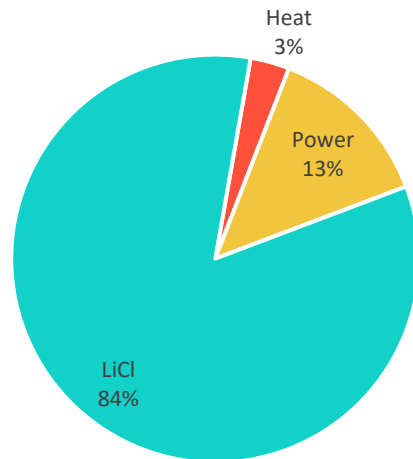
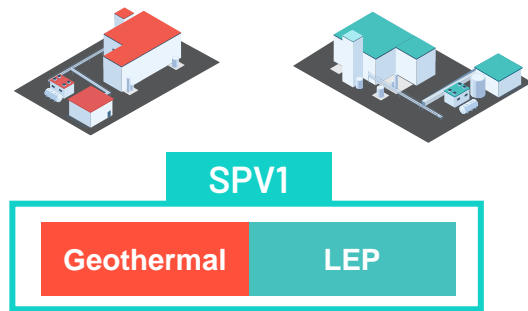
Binding lithium hydroxide offtake agreement, initial 6-year term.

Lithium hydroxide price forecasts¹ - €/t

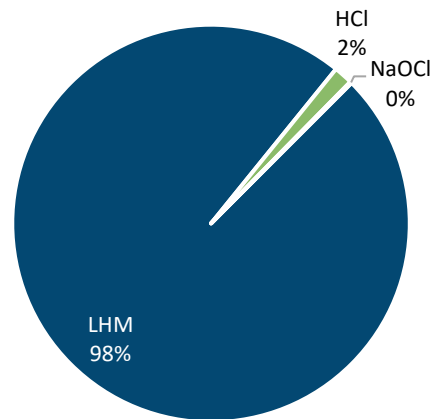
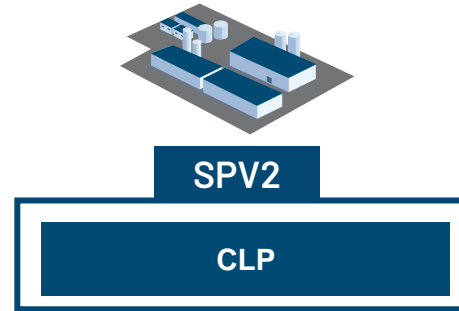


¹The average forecast realised price per tonne of LHM is taking into consideration Fastmarkets long term price forecast (min 57.5% LiOH) (\$/kg, EU & US) and combining it with Vulcan's pricing concluded in offtake agreements which includes price floors and ceilings, fix prices, and price indexed on indexes like Fastmarkets. Therefore, the average realised price forecast varies from the Fastmarkets long term price forecast. The average realised price forecast is taken into consideration in our financial model and is used to underpin forecast revenues. Lithium prices are subject to unpredictable fluctuations, driven in part by changes in the balance of global supply and demand as well as international, economic and geopolitical trends and developments. Any decrease or significant volatility in the price of or demand for lithium could have a detrimental effect on Vulcan Group's business.

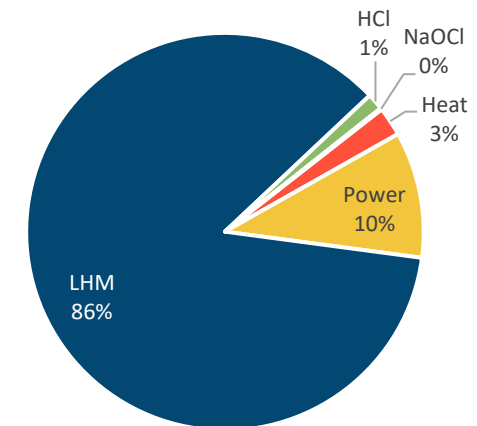
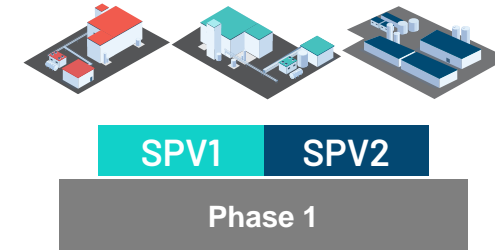
5. TARGET REVENUES – 20Y AVERAGE¹



€537M/a



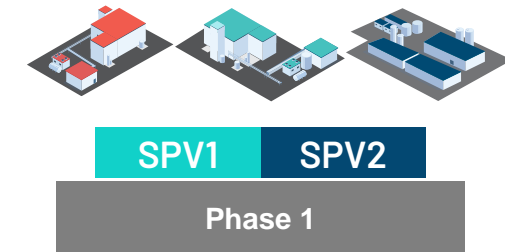
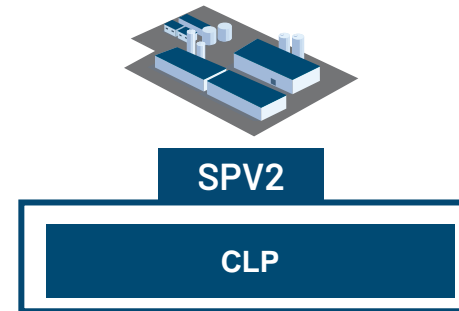
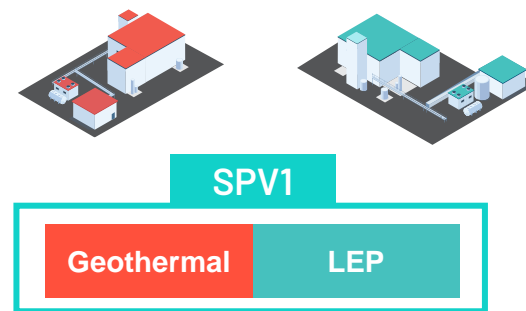
€616M/a



€709M/a*

¹ Vulcan Energy's Phase One DFS, 13 February 2023.

* Consolidated revenue.

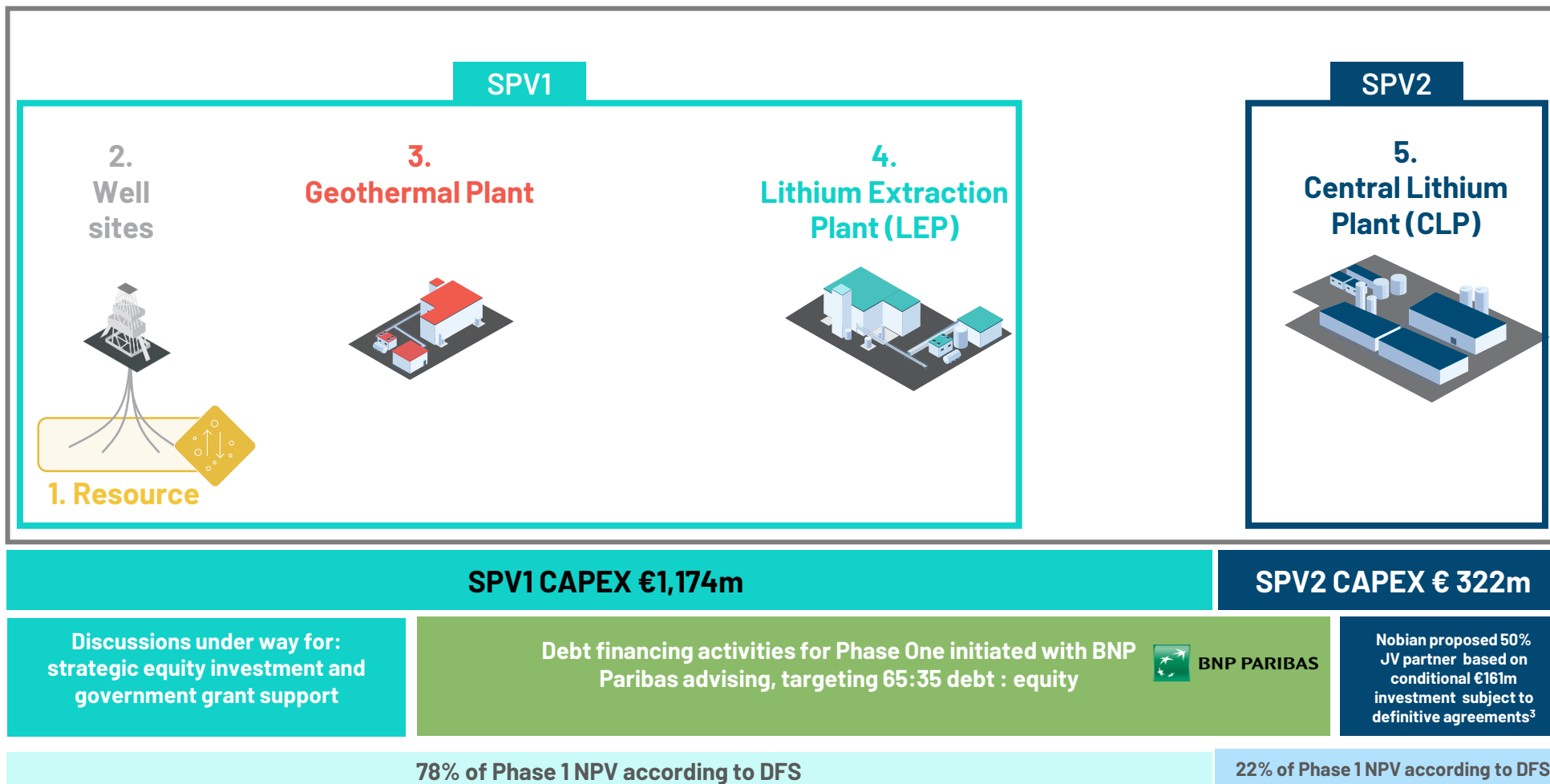
6. TARGET PROJECT ECONOMICS¹

Revenues €/a	538	622	709
Net Op. Cash Flow €/a	339	96	436
NPV pre-tax m€	3,026	886	3,912
NPV post-tax m€	1,996	566	2,561
IRR before Tax	34.0%	35.2%	34.2%
IRR after Tax	25.9%	25.9%	25.9%
Payback in years	3.5	3.3	3.5
Total Capex m€	1,174	322	1,496
Geothermal	657		657
LEP	517		517
CLP		322	322
Avg Opex €/t LiOH	2,656	1,704	4,359

¹ Vulcan Energy's DFS. These are targets and may not be achieved. Please refer to the Forward-Looking Statement disclaimer. Notes: Lithium Hydroxide Battery Quality at €30,283/t

IV. ECONOMICS & FINANCING

7. PHASE ONE PROPOSED FINANCING STRATEGY AND PROGRESS UPDATE



- Debt market sounding exercise completed with positive feedback from banks and ECAs.
- Government backed ECAs from France, Italy and Canada have indicated strong support, including “untied” strategic financing from the French ECA, bpifrance.
- Term sheet for proposed strategic partnership envisages 161m EUR cash equity contribution by Nobian into the CLP SPV2 at a project level, to fund CLP CAPEX in return for 50% of the shares in SPV2, subject to definitive agreements.²
- Vulcan is targeting a 65:35 debt equity funding split across Phase One.
- Project-level equity investment, and EU government-backed debt financing, is consistent with Vulcan’s stated funding strategy.

¹There are no guarantees that Vulcan will be able to raise the funding required for the further implementation of its Zero Carbon Lithium™ Project. For further information please see the risk factors contained in the International Offering Circular released to the ASX on 4 May 2023. ² Equity investment subject to execution of definitive agreements, see announcement of 27 April 2023 for further information. ³ Subject to definitive documentation and other conditions precedent. Refer to announcement of 27 April 2023 for further information.



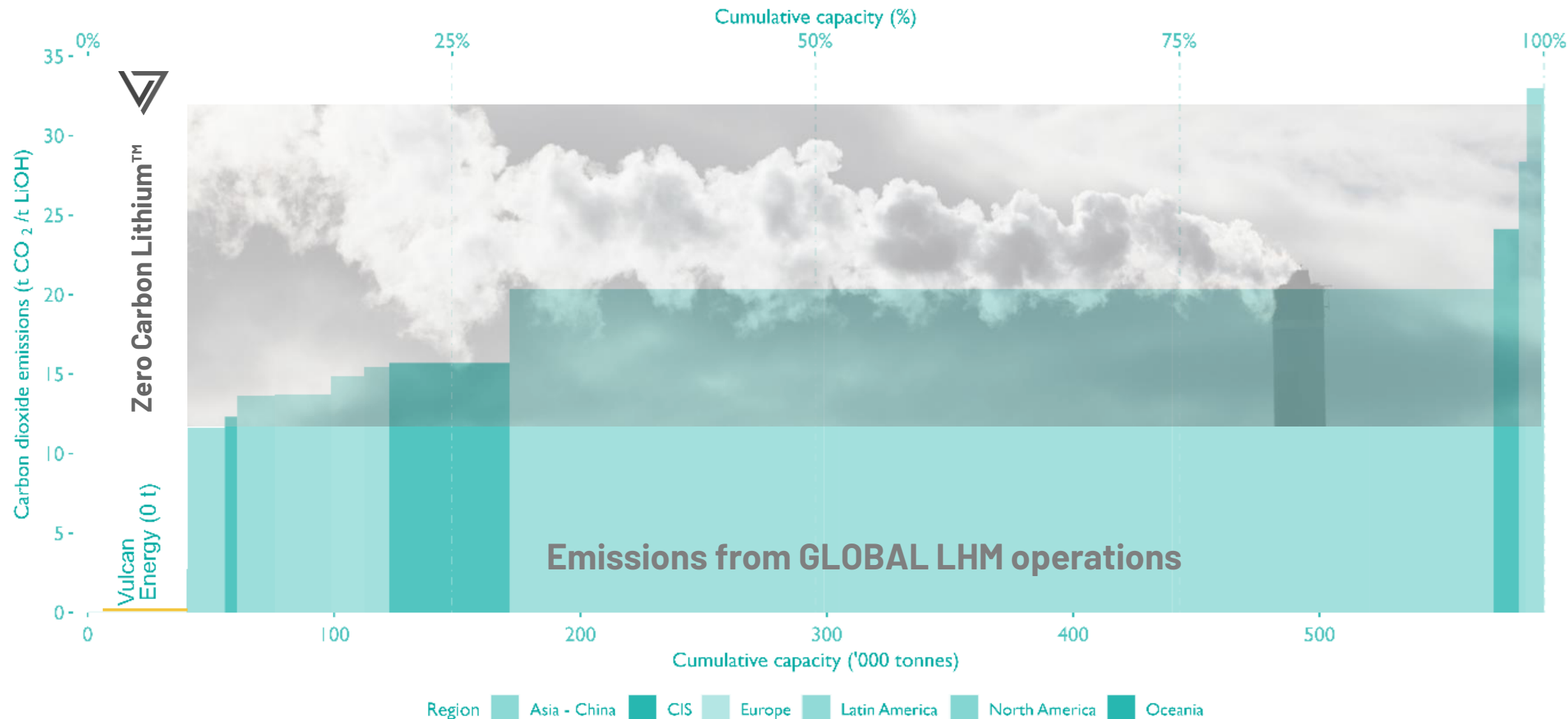
VULCAN ENERGY
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V. ENVIRONMENT, SOCIAL, GOVERNANCE



1. AIMING FOR LOWEST CO₂ FOOTPRINT IN THE LITHIUM INDUSTRY

- Vulcan is developing the first and only net zero carbon, zero fossil fuels lithium project in the world¹
- Globally significant decarbonisation opportunity through Vulcan's Zero Carbon Lithium™ Project



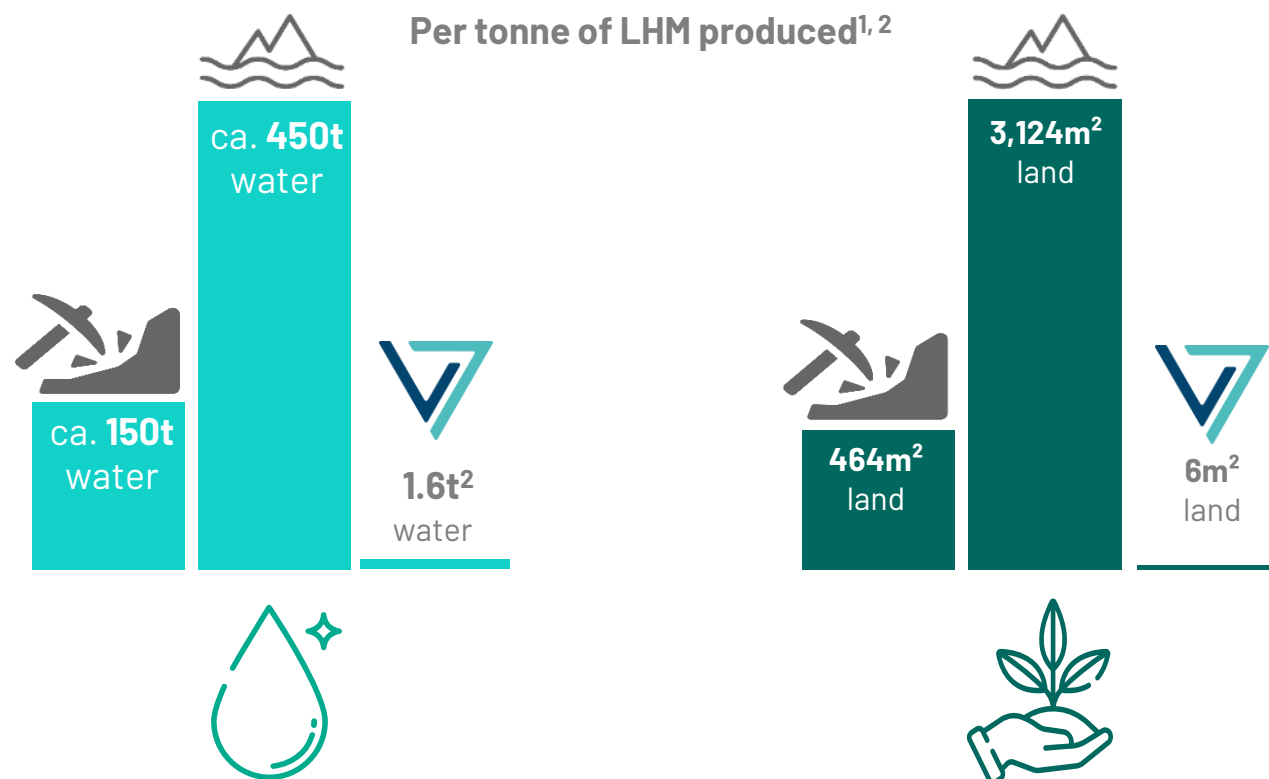
¹Sources: Fastmarkets projection for industry. Vulcan CO₂ value provided by Minviro. The CO₂ assessment is a cradle-to-gate study. It starts with the cradle: extraction of geothermal brine. Thermal energy of the brine is extracted and used for electricity and steam generation. Generated electricity is assumed to be exported to the German electrical grid. Part of the heat is exported for district heating, substituting natural gas use, and the rest of the heat is used for internal processes. It is assumed that of the electricity used throughout all processes 50% is sourced from the German grid and 50% is procured from additional wind generated electricity, on top of wind-based electricity that is already present in the German grid mix. Electricity, steam, hydrochloric acid (30% concentration) and sodium hypochlorite (15.8% concentration) are co-products of the lithium hydroxide monohydrate product. All co-products are accounted for using system expansion, meaning no allocation is required. The climate change impact for the lithium hydroxide monohydrate product for the assumptions described above is -1.7 kg CO₂ eq. per kg LiOH·H₂O using ISO-compliant methods for LCAs. Vulcan has amended to net zero for the purposes of the presentation, to clarify that this is not a carbon removal project. Vulcan is not aware of any other net zero carbon, zero fossil fuels lithium projects either in operation or development.

2. AIMING FOR LOWEST WATER AND LAND FOOTPRINT IN LITHIUM INDUSTRY

Engineered to have industry-leading environmental performance: our core mission

-  **Hard rock mining**
~60% of world lithium production
-  **Evaporation ponds**
~40% of world lithium production
-  **Zero Carbon Lithium™**

Vulcan draws on naturally occurring, renewable geothermal energy to power the lithium extraction process and create a renewable energy by-product. This uses **no fossil fuels** in the process, requires **very little water** and has a **tiny land footprint**.



¹ Industry peer data generated from Minviro Life Cycle Assessment (see Vulcan ASX announcement, 4 August, 2021)

² Vulcan Energy's DFS, 13 February 2023

The Company's environmental credentials set out in this slide (and elsewhere in this Presentation) are based on the Company's Studies. There is no guarantee that the Company will be able to achieve the targeted metrics.

V. ESG

3. OTHER LEADING ESG CREDENTIALS



Low ESG Risk Rating from Sustainalytics (01/2023)
First amongst peers and in the 2nd quartile Chemicals Industry



9,5kT CO₂ avoided from renewable energy generated at NatürLich Insheim in 2022.



ESG linked KPIs including individual and shared targets



Partnership with Karlsruhe Zoo Foundation supporting local biodiversity projects



Voluntary TCFD reporting company since 2021



Certified Carbon Neutral International Organisation from 2021¹



4 InfoCentres opened in Insheim, Landau, Karlsruhe, Mannheim and 1 mobile Infocentre for local community engagement

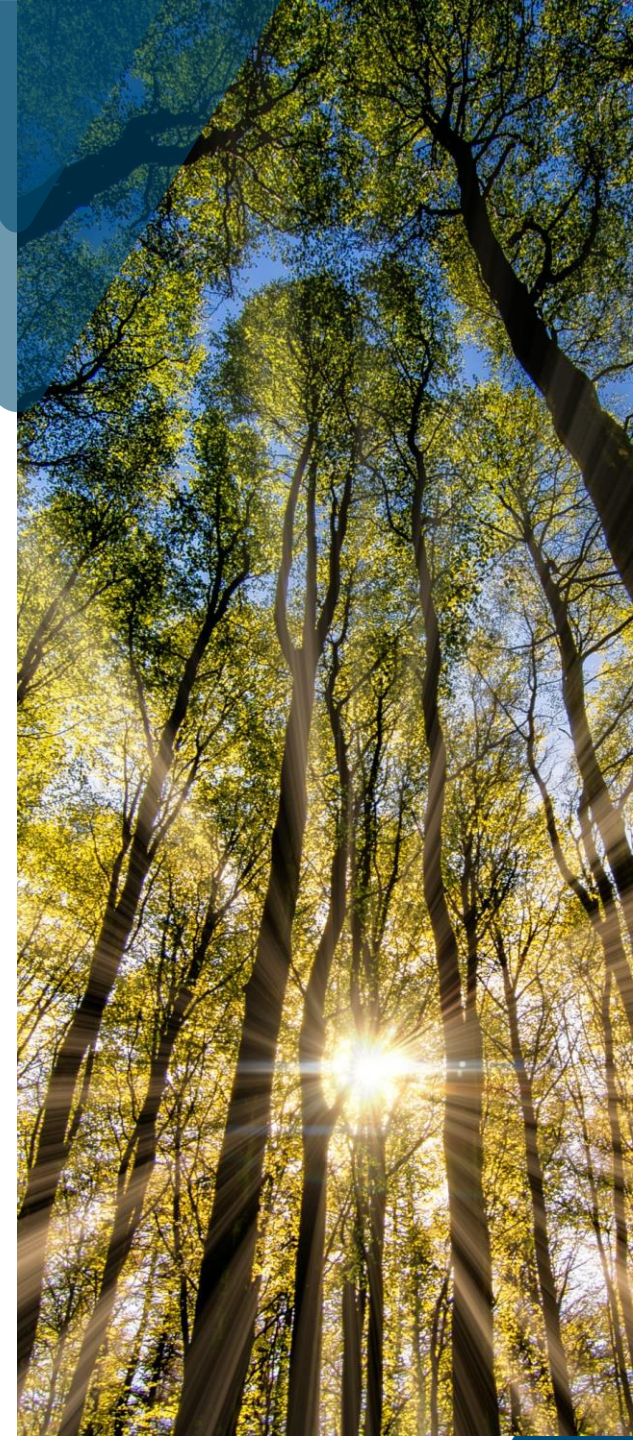


TNFD Forum Member assisting with framework development.



UNGC Member (Since February 2022)

¹Vulcan Group is certified as a carbon neutral organisation for 2021 under the Climate Active and South Pole certifications. 2022 certification ongoing.



4. PERMITTING PROGRESS ON TRACK

Rhineland-Palatinate	Mining authority	Licenses	Exploration license	1
			Production license	2
		Production/Re-injection wells	Pre-EIA	3
			Main operation plan (one well site, all wells)	
			Special operating plan: Well pad	
			Special operating plan: Drilling	
			Secure land	4
			Drilling start	
	Regional authority	Pipeline	Pre-EIA	
			Secure land	
			Special Operating Plan: Pipeline	
			Pipeline construction	
	Mining authority	ORC	Pre-EIA	
			Land acquisition	
			Building permit	
			ORC construction	
Hessen	Regional authority	LEOP	Operation plan	5
		LEP	Pre-EIA	
			Land acquisition	
			Building permit	
	Mining authority	CLP	Special Operating Plan	
			LEP construction	
			Bimsch	
			Building permit	
			CLP construction	

- Permitting progress
- 1 Multiple exploration licenses granted
- 2 Insheim geothermal production license acquired
- 3 Multiple pre-EIAs granted in Taro sector, negates need for full EIA for Phase One in this sector
- 4 Land acquired for Vulcan’s first expansion drilling
- 5 LEP Optimisation Plant operation plan approved

¹Vulcan notes that the permitting process for a geothermal project in Germany is continuous throughout integrated development, right up until the final permission to operate after the plants are built. Vulcan has initial approvals in place, and the permitting is progressing with finalisation expected within the planned development timeline. There is no guarantee that Vulcan will receive all of its permits within the planned time period or at all.
EIA = Environmental Impact Assessment

5. SOCIETAL ACCEPTANCE

1

→ The Project is developed in cooperation with local communities, as Vulcan directly engages with them to understand and meet their needs.

2

→ Vulcan is doing a substantial amount of work to consult as well as educate the public through: 4 Info-Centres have been set up across the region, information meetings held regularly, thematic stalls organised in public spaces.

3

→ Majority of local city councils have been voting in favour of Vulcan's work programme for Phase I.

4

→ The project generally enjoys widespread support from the public, in favour of the tangible benefits of the renewable heat and local climate job creation, with limited opposition so far.





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ZERO CARBON LITHIUM™

VI. CONCLUSION



1. SHORT TERM OBJECTIVES: AN EXCITING YEAR AHEAD



Operational readiness

Optimisation plants to commence for operational readiness in 2025

Permits

Relevant permits in line with development timeline

Increase brine production

Start drilling of new production/re-injection wells in Phase One area

Funding

Secure funding: equity for Phase One, public funding and substantially advance debt funding process

Execution

Build and deliver project execution model: organisation in place, award key packages & contracts for Phase One

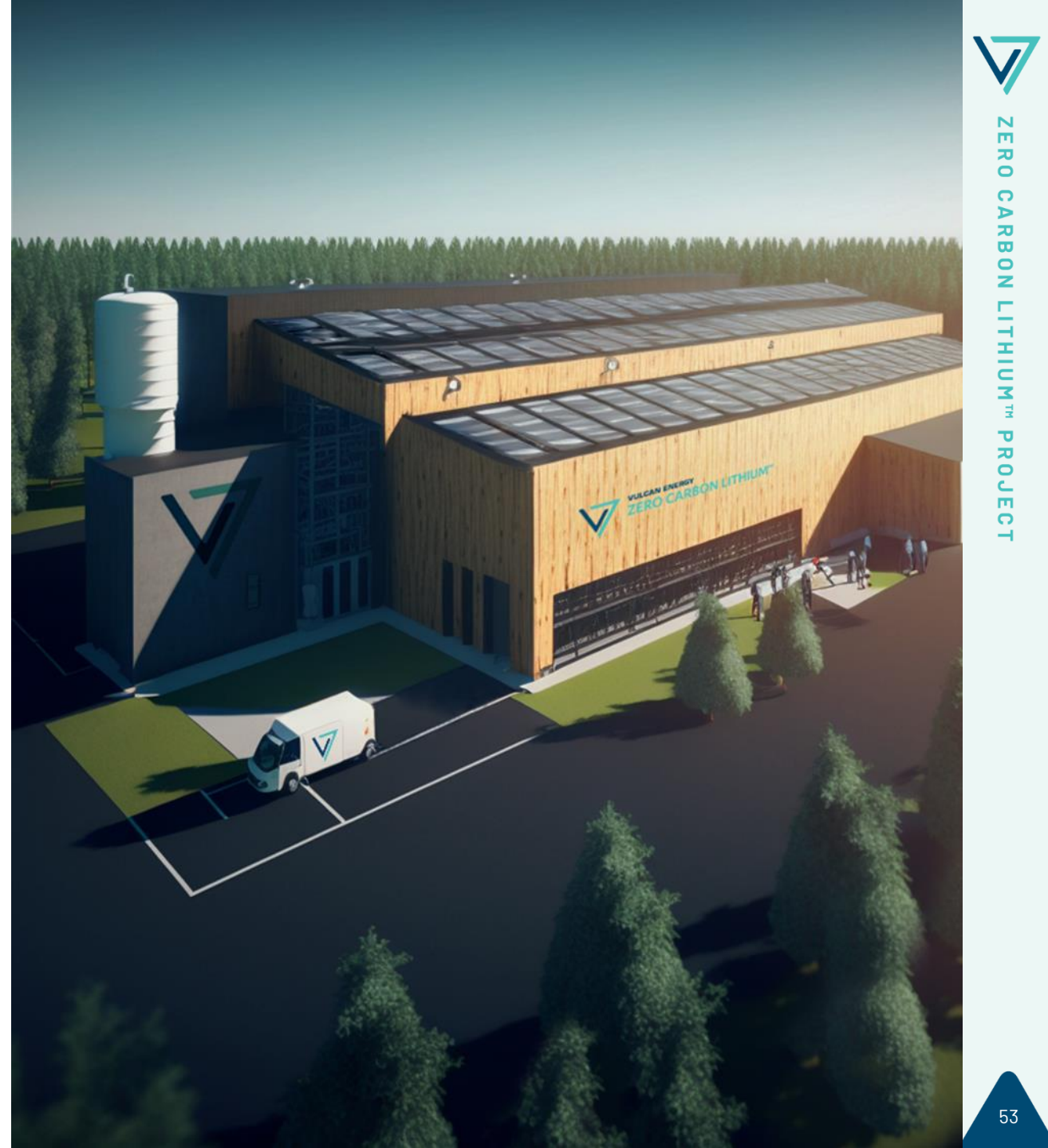
Phase+

Complete Phase Two feasibility study

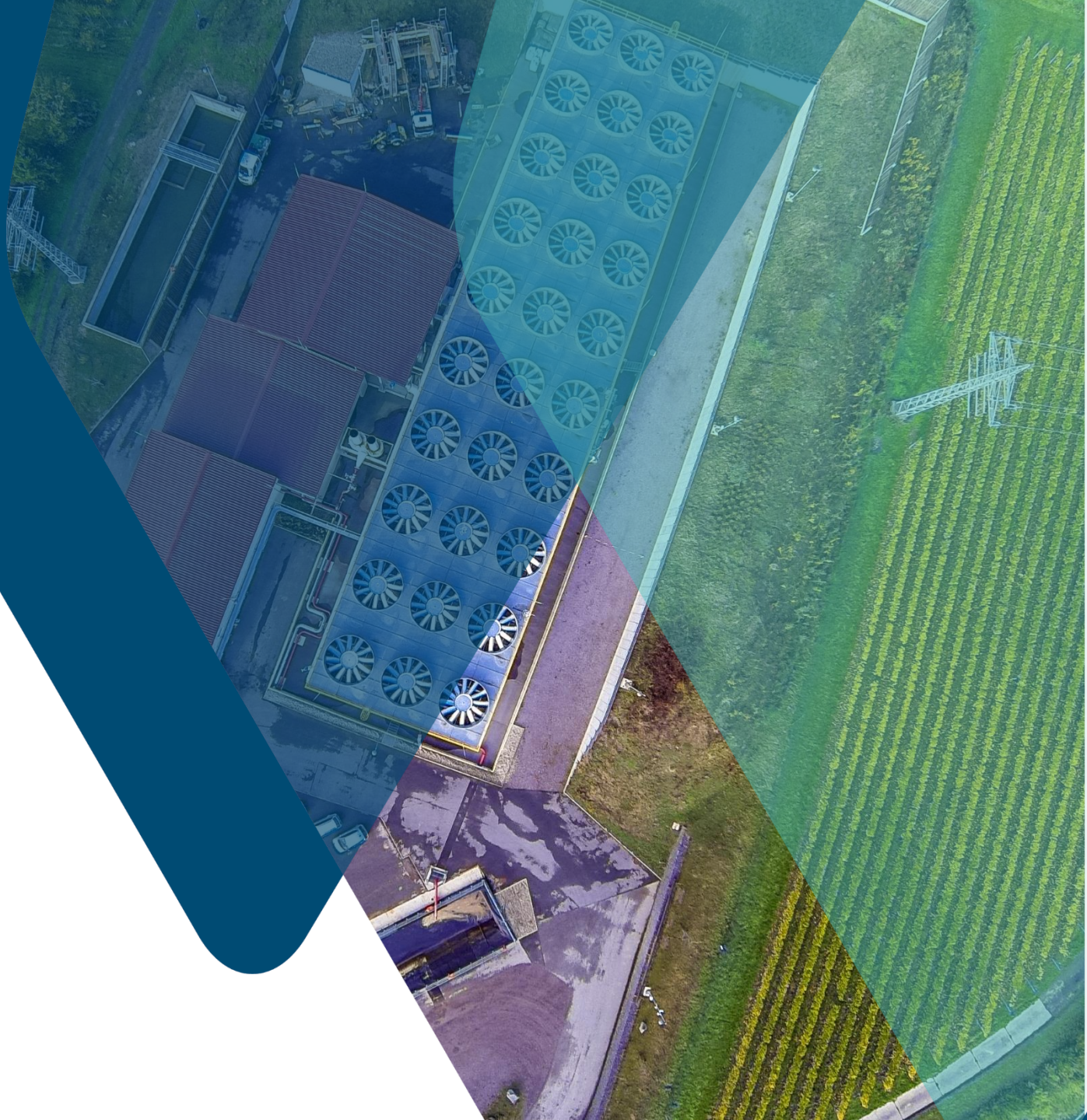
VI. CONCLUSION

2. KEY TAKEAWAYS

- The **first integrated renewable energy, lithium extraction and lithium hydroxide refining project** development, seeking to supply the battery electric vehicle industry from Europe, for Europe.
- **World-leading sustainability credentials:** engineered specifically to be world-first zero Scope 1 fossil fuels, net zero GHG emissions, very low water consumption project.
- **Compelling financial model** from DFS.
- Company moving Phase One Project into **bridging engineering** phase, assisted by Hatch Ltd.
- Focus going forward on **transitioning to project execution** and operations company.
- Optimisation Plant to assist with **building operational readiness**.
- Team focused on **further de-risking** during project development, particularly during permitting process.
- Targeted **start of production end-2025**.
- **Financing process for Phase One has commenced**, working with BNP Paribas as debt advisor. Equity financing at a project level, as well as parent level, being viewed as an option. Term sheet for proposed joint venture partnership signed with Nobian, subject to definitive agreements.



APPENDICES



APPENDIX 1: BOARD OF DIRECTORS



Dr. Francis Wedin
Managing Director & CEO

Founder of Vulcan Zero Carbon Lithium™ Project. Lithium industry executive since 2014. Previously Executive Director of ASX-listed Exore Resources Ltd. Track record of success in lithium industry as an executive since 2014, including the discovery of three resources on two continents. PhD in Geology, MBA in Renewable Energy, global experience in battery metals sector.



Gavin Rezos
Chair

Executive Chair/CEO positions of three companies that grew from start-ups to the ASX 300. Extensive international investment banking experience. Investment banking Director of HSBC with senior multi-regional roles in investment banking, legal and compliance functions. Currently Chair of Resource and Energy Group, principal of Viaticus Capital, Non-Executive Director of Kuniko Limited and Non-Executive Chair Resources & Energy Group Limited.



Ranya Alkadamani
Non-Executive Director

Founder of Impact Group International. A communications strategist, focused on amplifying the work of companies that have a positive social or environmental impact. Experience in working across media markets and for high profile people, including one of Australia's leading philanthropists, Andrew Forrest and Australia's former Foreign Minister and former Prime Minister, Kevin Rudd.



Annie Liu
Non-Executive Director

Annie was the Executive Director of Purchasing for the Ford Model e Line, for all electric products and technology. Annie started her 20+ year career as an engineer at Microsoft before moving to Tesla where she progressed to Head of Supply Chain, Battery and Energy at Tesla. Annie is experienced in building and leading teams from product incubation stage to scale up and mature market bringing a unique blend of entrepreneurial initiative and ability to meet organisation and market growth needs.



Dr. Heidi Grön
Non-Executive Director

Dr. Grön is a chemical engineer by background and an accomplished business leader with over 22 years' experience in the chemicals industry. Since 2007, Dr. Grön has been a senior executive with Evonik, one of the largest specialty chemicals companies in the world, with a market capitalization of €14B and 32,000 employees.



Josephine Bush
Non-Executive Director

Member of the EY Power and Utilities Board. Led and delivered the EY Global Renewables and Sustainable Business Plan and spearheaded a series of major Renewable Market Transactions. Successfully advised on the first environmental yieldco London Stock Exchange listing, Greencoat UK Wind PLC. Ms. Bush is a Chartered Tax Advisor, holds an MA Law degree from St Catharine's College, Cambridge, and brings a wealth of experience in ESG strategic advisory.

A wealth of multi-disciplinary experience across the span of industries that we cover



Gender-balanced, majority-independent Board of Directors



Dr. Günter Hilken
Non-Executive Director

Dr. Hilken has over 35 years' experience in and a deep understanding of the German chemicals, renewables and infrastructure investment sectors and, through leading industry advocacy associations, the German Government at the State and Federal level. Dr. Hilken is a Senior Advisor to Macquarie Asset Management, Director of Currenta and President and Chairman of the Board of the German Federation of Industrial Energy Consumers (VIK).



Mark Skelton
Non-Executive Director

Mr Skelton has more than 35 years' experience including a 29-year tenure at BP and then at Fortescue Metals Group (Fortescue) in Project Development and general management. A senior leader and advisor with a proven record in delivering major projects, business transformation and developing organisational capability within the mining, energy and oil and gas industries, Mr Skelton has extensive project experience in Australia and internationally.

APPENDIX 2: SHARE PRICE AND CAPITAL STRUCTURE

ASX : VUL

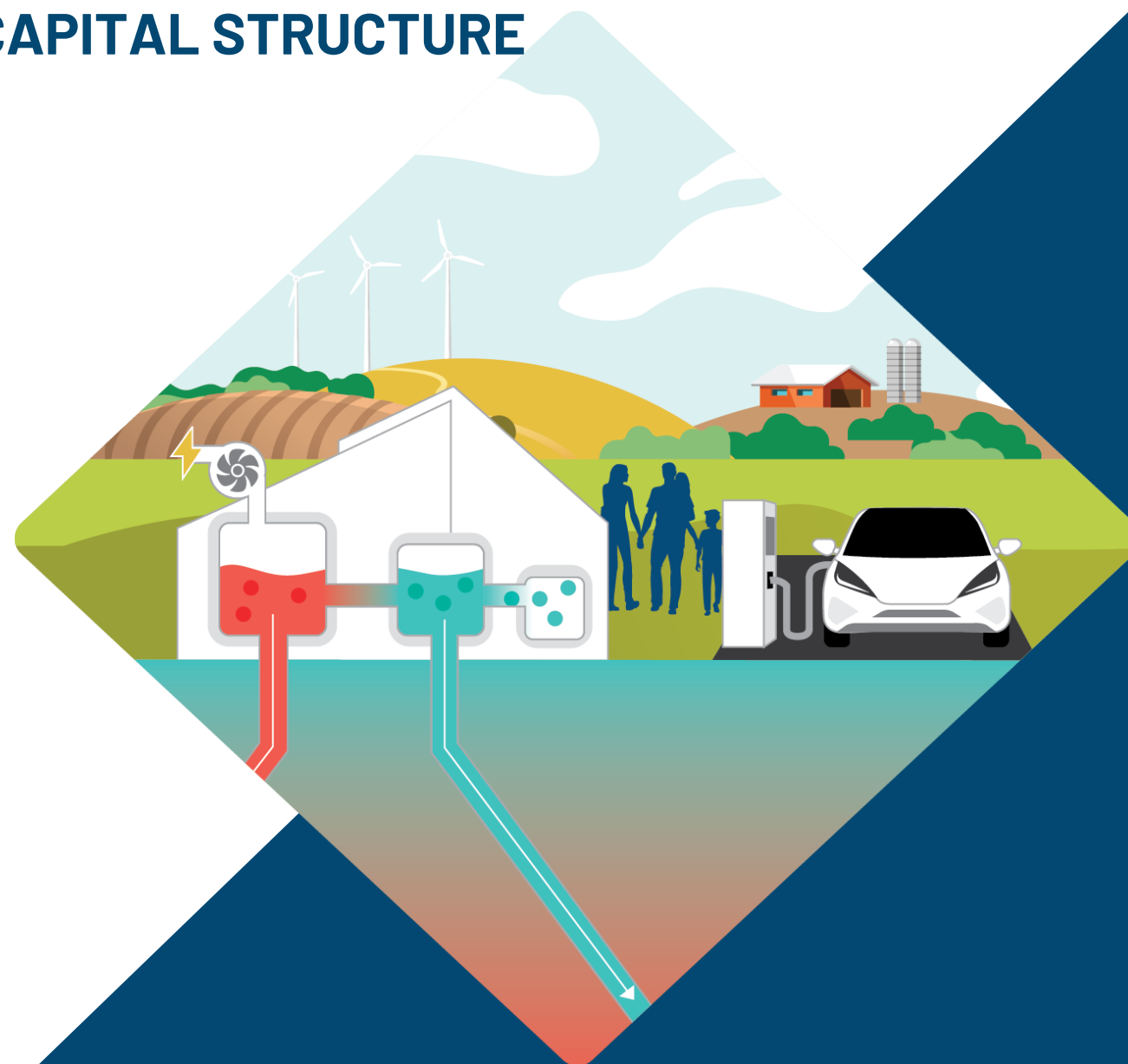
Shares on Issue	143,435,301
Performance Shares	91,174
Performance Rights	8,382,801
Market Capitalisation at \$6.16 (undiluted as at 3 May 2023)	~\$884m
Cash Position (as at 31 Mar 2023)	€112M
Top 20 Shareholders	~61%
Management (undiluted)	~17%

Frankfurt: VUL

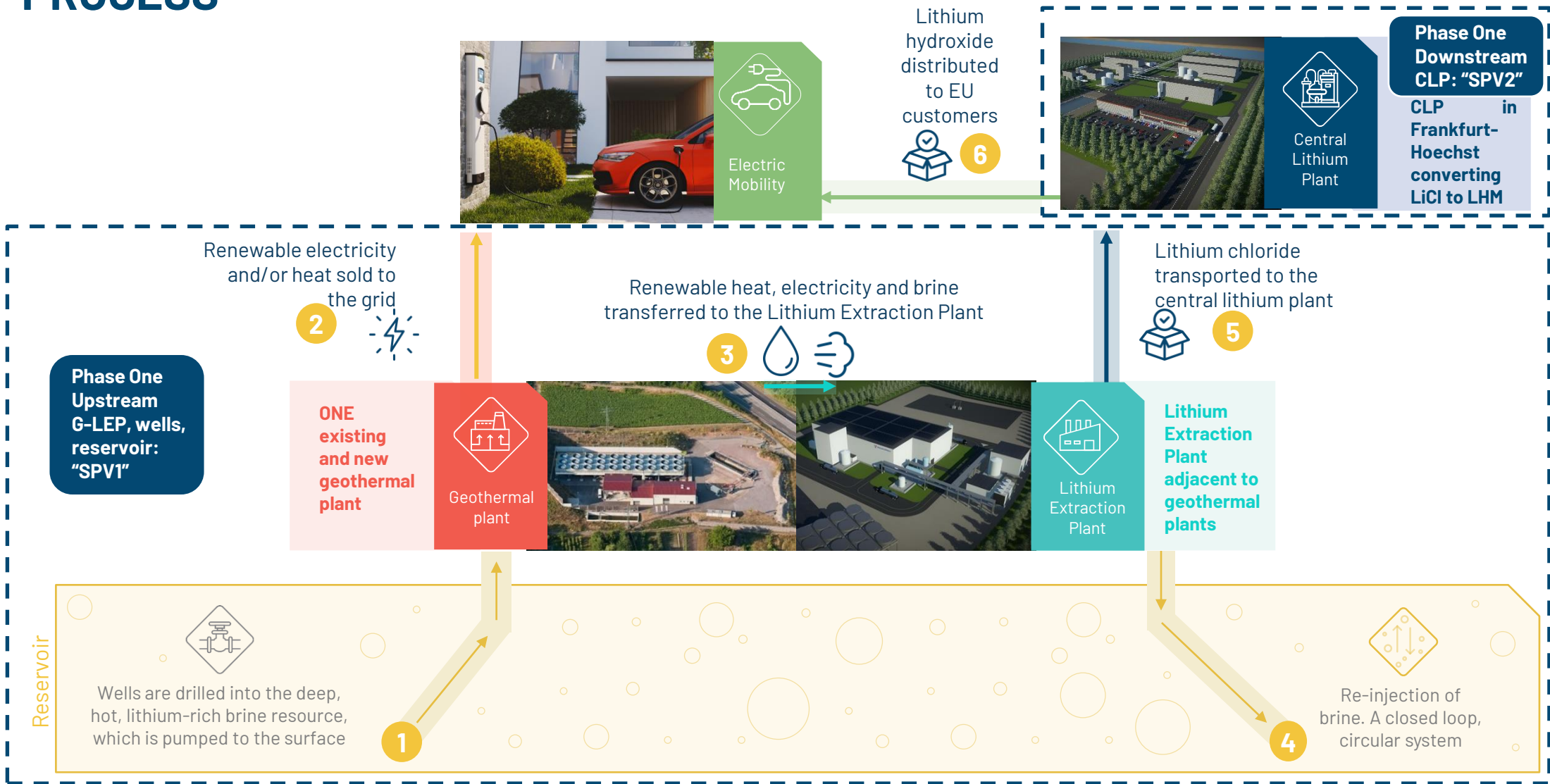
KEY SHAREHOLDERS

Dr. Francis Wedin (10.91%) and Dr Wedin and Katy Wedin (0.57%)	11.50%
Stellantis Group (PSA Automobiles)	8.00%
Vivien Enterprises Pte Ltd	5.77%
Hancock Prospecting Pty Ltd	5.64%

VUL SHARE PRICE (AUD) (1 JAN 2021 – 3 MAY 2023)

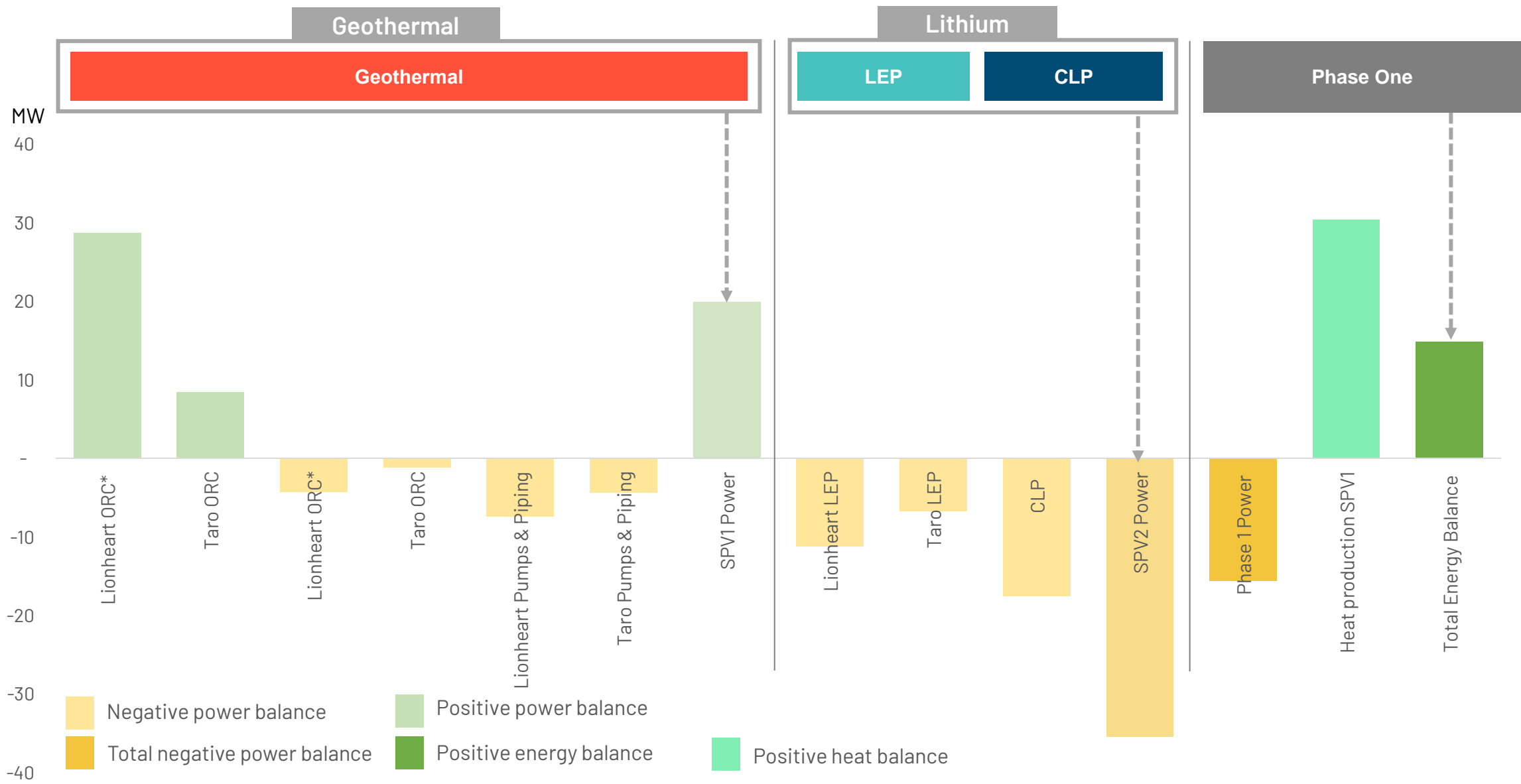


APPENDIX 3: THE ZERO CARBON LITHIUM™ PROJECT: A CIRCULAR PROCESS



Note: LEP = Lithium Extraction Plant, CLP = Central Lithium Plant

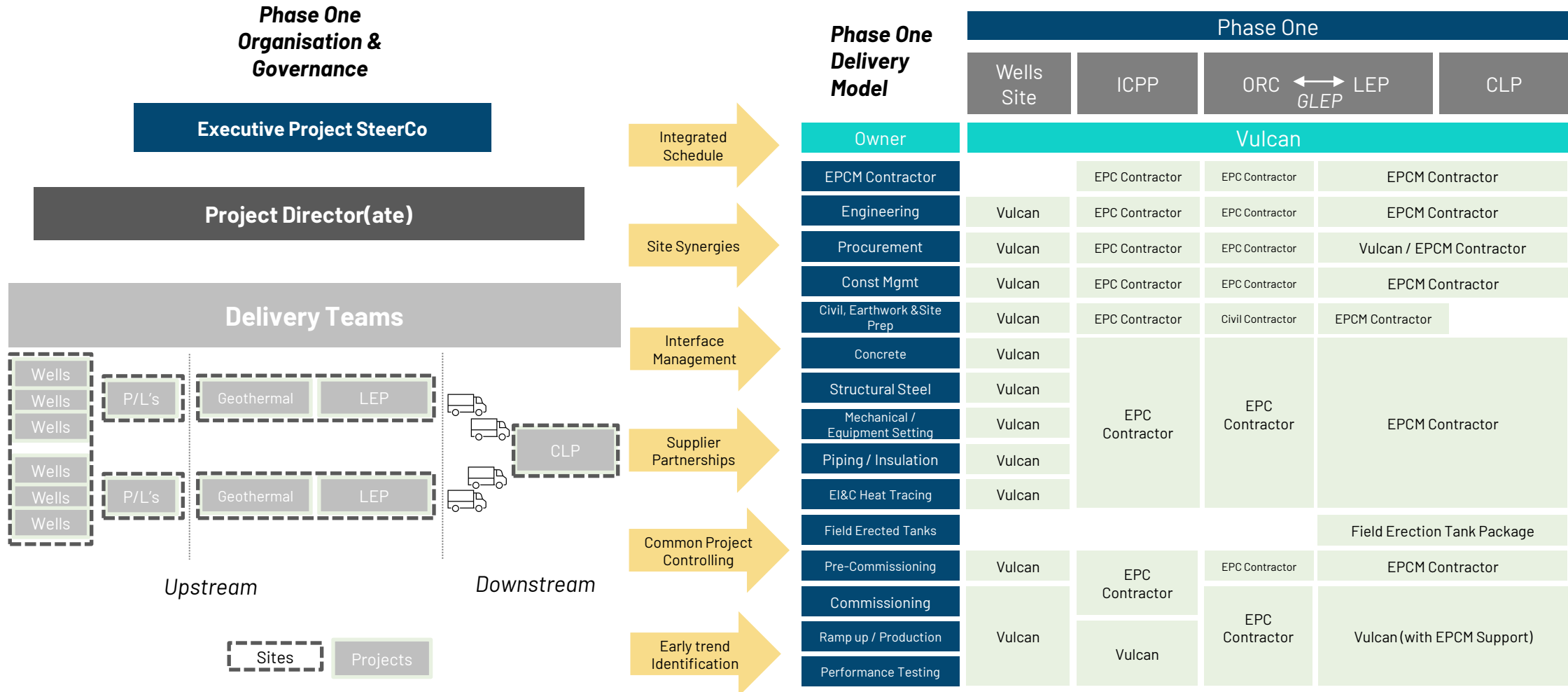
APPENDIX 4: ENERGY BALANCE: NET POSITIVE PRODUCER OF RENEWABLE ENERGY¹



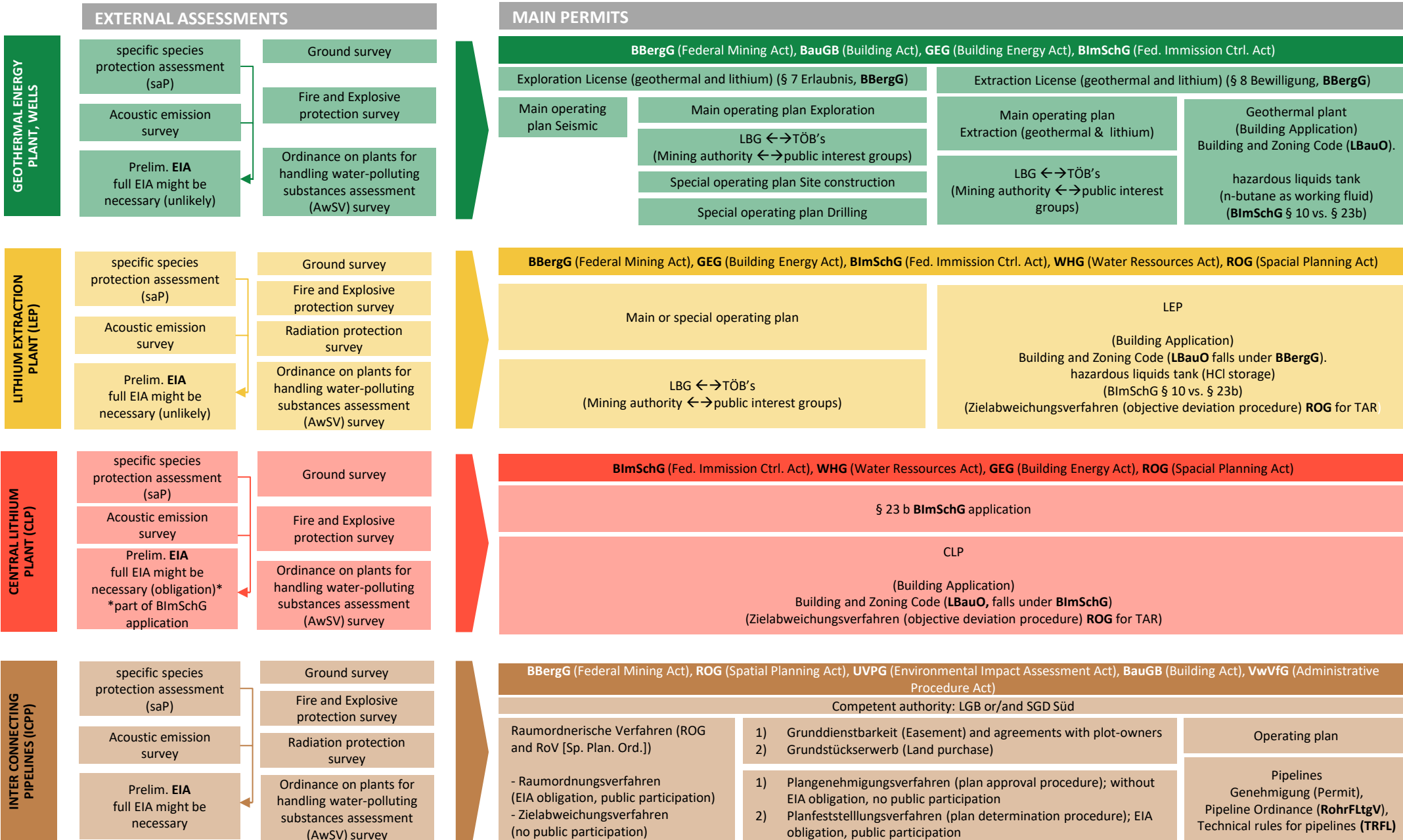
¹Vulcan's Phase One is a net consumer of power, and a net producer of heat. The overall positive energy balance is a net effect of these two different types of energy.

APPENDIX 5: INTEGRATED PROJECT DELIVERY MODEL

Strategy moving towards project execution and delivery model



APPENDIX 6: PERMITTING PROCESS



APPENDIX 7: PHASE ONE PRODUCTION STUDY AND RESERVES

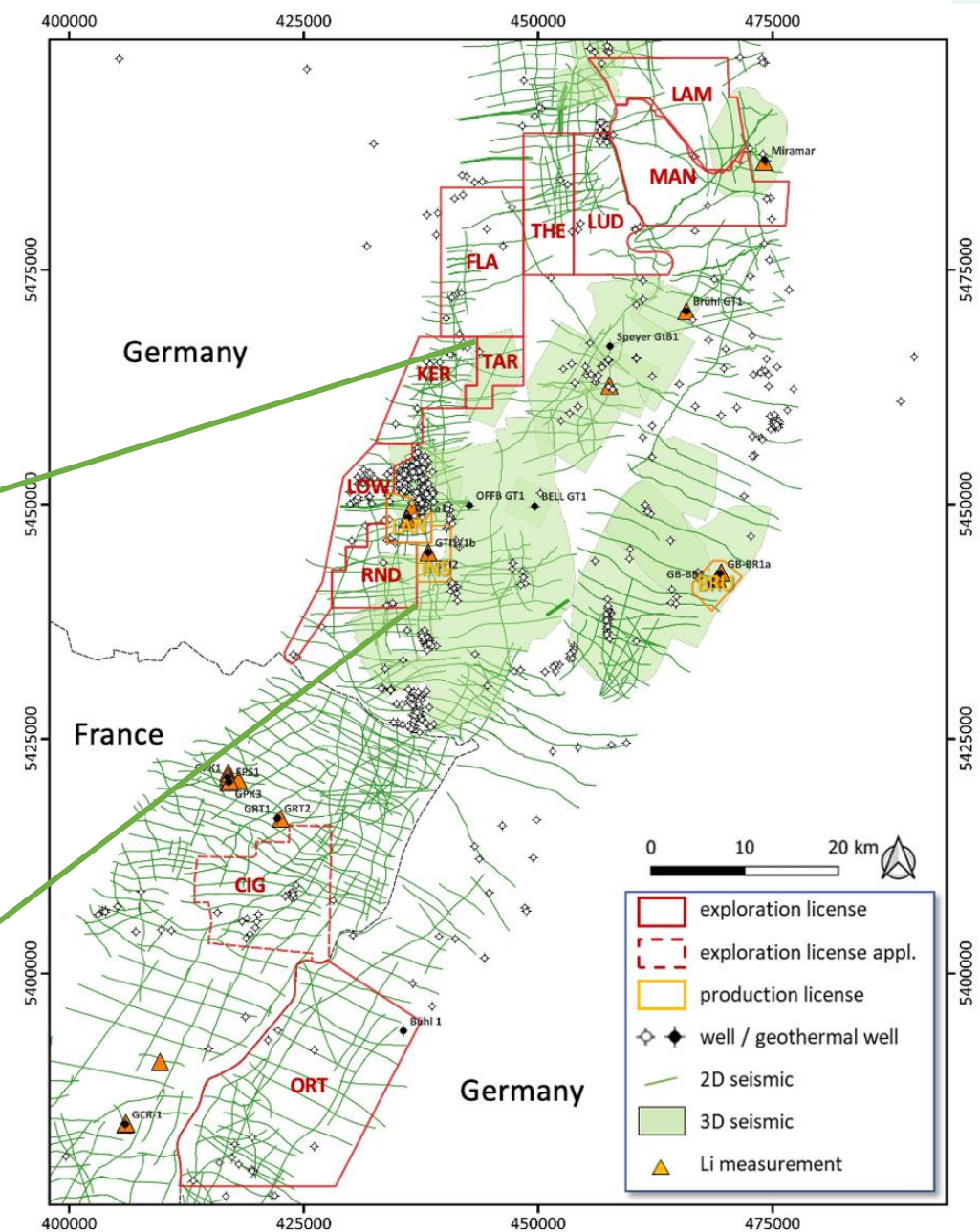
- Detailed reservoir engineering and production simulation study conducted to achieve maximum “sweep” of lithium across the field.
- Planned well placement and brine flow rates optimised for sustainable lithium production over a long project life.
- Production simulation includes existing production wells within Phase One area and incorporates large database of well and seismic data.
- Simulation reviewed and audited by independent lithium brine specialists and O&G industry reservoir engineering experts².
- Phase One: 0.54Mt LCE Proven and Probable Reserves centered around production wells in core of the URVBF field.

Lionheart: INS, LAN, RND		
Reserves Classification	Lithium grade	Economic Reserves Volume at Wellhead Reference Point
	mg/l Li	tonnes LCE
Proved	181	196,353
Probable	181	153,546
TAR-KER		
		tonnes LCE
Probable	181	189,070

Phase One¹Mineral Reserves Estimation

¹Phase 2 Reserves currently not updated since 2021 PFS, to be updated during current Phase 2 feasibility studies

²Refer to Competent Person Statement.



APPENDIX 8: UPPER RHINE VALLEY BRINE FIELD: MINERAL RESOURCE

Licence	Reservoir	Classification	GRV km ³	Avg. NTG %	Avg. Phie %	Avg. Li mg/L	Elemental Li t	LCE ³ kt
Mannheim	BST	Indicated	4	90	10	153	54,111	288
	BST	Inferred	32	65	9	153	290,312	1,545
Ludwig	BST	Indicated	7	90	10	153	93,220	496
	BST	Inferred	22	65	9	153	199,226	1,060
Therese	BST	Indicated	2	90	10	153	29,907	159
	BST	Inferred	22	65	9	153	200,708	1,068
Flaggenturm	BST	Indicated	7	90	10	181	115,215	613
	BST	Inferred	37	65	9	181	391,201	2,082
Kerner	BST	Indicated	5	90	10	181	76,242	406
	BST	Inferred	13	65	9	181	132,558	705
Kerner (East)	*MUS, BST, ROT	Indicated	4.3	73	8	181	66,708	355
Taro	*MUS, BST, ROT	Indicated	14.5	73	8	181	237,362	1,263
Landau (South)	*MUS, BST, ROT	Measured	7.4	73	8	181	102,383	545
	BST	Indicated	1.2	90	11	181	22,220	118
Insheim	*MUS, BST, ROT	Measured	9	73	8	181	127,779	680
Rift (north)	*MUS, BST, ROT	Measured	10.1	73	8	181	134,132	714
	*MUS, BST, ROT	Indicated	11.9	73	8	181	178,000	946
Ortenau	*MUS, BST, ROT	Indicated	57	73	8	181	659,013	3,507
	BST	Inferred	105	73	8	181	1,883,212	10,024
						mg/L	kt	
Total LCE		Measured				181		1,939
		Indicated				178		8,151
		Inferred				172		16,484

Total URVBF Resource: Inferred 16.5Mt LCE @ 172mg/l Li, Indicated 8.2 Mt LCE @ 178 mg/l Li, Measured 1.94 Mt LCE @ 181 mg/l Li.

Total Phase One Resource (Measured and Indicated): 4.6 Mt LCE @ 181 mg/l Li

Total Resource (all classifications): 26.6 Mt LCE @ 175 mg/l Li

Refer to Competent Person Statement.

Note 1: Mineral Resources are not Ore Reserves and do not have demonstrated economic viability.
 Note 2: The weights are reported in metric tonnes (1,000 kg or 2,204.6 lbs). Numbers may not add up due to rounding of the resource value percentages.

Note 3: Reservoir abbreviations: MUS – Muschelkalk Formation, BST – Buntsandstein Group; ROT – Rotliegend Group.

Note 4: To describe the resource in terms of industry standard, a conversion factor of 5.323 is used to convert elemental Li to Li₂CO₃, or lithium carbonate equivalent (LCE).

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 7: Mineral resources are considered to have reasonable prospects for eventual economic extraction under current and forecast lithium market pricing used in the DFS with application of Vulcan's DLS processing

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.

APPENDIX 9: DLE/DLS PROJECTS AND ASSETS - REFERENCES

Livent	https://s22.q4cdn.com/453302215/files/doc_presentations/2022/2022.11-Livent-Investor-Presentation.pdf
LANKE Lithium	https://www.linkedin.com/pulse/from-catamarca-qinghai-commercial-scale-direct-lithium-alex-grant/ http://www.asianmetal.com/news/1665421/Lanke-lithium-plans-to-launch-commercial-production-of-battery-grade-lithium-carbonate
Zangge Lithium	https://www.linkedin.com/pulse/from-catamarca-qinghai-commercial-scale-direct-lithium-alex-grant/
Jintai Lithium	https://www.linkedin.com/pulse/from-catamarca-qinghai-commercial-scale-direct-lithium-alex-grant/
Eramet/Tsingshan	https://www.eramet.com/sites/default/files/2022-05/2022-05-Eramet%20Investor%20Presentation-May%202022.pdf
Standard Lithium	https://www.standardlithium.com/projects/arkansas-smackover
Rio Tinto	https://www.rinconmining.com/wp-content/uploads/2021/10/Rincon-FINAL-E-210921-FINAL.pdf
CTR	https://www.cthermal.com/projects
Berkshire Hathaway	https://www.ft.com/content/c9760a4e-1a76-11e9-9e64-d150b3105d21
Lake Resources/Lilac	https://lakeresources.com.au/wp-content/uploads/2023/01/lke_kachi-resource_11-jan-23.pdf
Compass Minerals	https://s22.q4cdn.com/834578860/files/doc_presentations/2022/12/DB-Lithium-Battery-Supply-Chain-Conf-v4-(12.02.22).pdf
E3 Metals	https://www.e3lithium.ca/_resources/presentations/corporate-presentation.pdf?v=0.084

APPENDIX 10: EUROPEAN LITHIUM PROJECTS PEER COMPARISON REFERENCES

COMPANY ¹	CODE	PROJECT	STAGE	RESOURCE CATEGORY	RESOURCES MILLION TONNES	RESOURCE GRADE (Li2O)	CONTAINED MILLION LCE TONNES	INFORMATION SOURCE
European Metals	ASX: EMH	Cinovec	PFS Complete	Indicated & Inferred	708.2	0.43	7.39	Annual Report June 22
Rio Tinto	ASX: RIO	Jadar	PFS Complete	Indicated & Inferred	144	1.80	6.12	Annual Report Dec 21
Infinity Lithium	ASX: INF	San Jose	PFS Complete	Indicated & Inferred	111.2	0.61	1.68	Annual Report June 22
Savannah Resources	AIM: SAV	Barroso	DFS Underway	Measured, Indicated & Inferred	27.0	1.06	0.71	Corporate Presentation December 2022 – Company Website

Note 1: Data provided for lithium focused peers with comparable project size and stage and published resource information

APPENDIX 11: FINANCIAL DEFINITIONS

- CAPEX = Capital Expenditure in tangible and intangible assets
- EBIT = Earnings before interest and taxes
- EBITDA = Earnings before interest, taxes, depreciation and amortisation
- IRR = Internal Rate of Return
- Net Income (EAT) = Earnings after tax
- NPV = Net Present Value
- NPV_8 = Net Present Value using a discount rate of 8%
- OPEX= Operating expenditure including reagents, operating supplies, maintenance supplies, water, steam, nitrogen, energy, labour, trucking, services and other costs. Operating expenditure excludes corporate overhead costs for DFS Phase One purposes.
- Operating Margin = Profit on sales after costs of production, expressed as a percentage
- Payback = Period of time required for the return on an investment to repay the total initial investment

Note: These financial definitions are alternative performance measures that are not defined or specified under IFRS or AASC standards and for which there are no generally accepted reporting formats

APPENDIX 12: DFS MODEL ASSUMPTIONS AND PARAMETERS

Key inputs and outputs of model

General	
General and economics	
FX EUR/USD	1.05
NPV discount rate	8% ¹
Tax rate	30%
Construction time	2.5 years
State royalty	0% ²
Brine royalty	Applied on 2 wells
Life of Mine	30 years
Life of Mine production target	0.54Mt LHM
LHM grade	57%
CO ₂ emissions/t of LHM ³	-1.6t CO ₂ /of LHM

Production ramp-up LEP and CLP (%)

	Q1 2026	Q2 2026	Q3 2026	Q4 2026	Q1 2027	Q2 2027	Q3 2027	Q4 2027
Ramp -up	25%	50%	65%	80%	90%	95%	99%	100%

¹WACC rate is 8% which is based on peer industry average. See DFS presentation from 13/02/2023 for details of WACC used by peers.

²Geothermal exempt from royalty. Lithium expected to also be exempt due under § 32 BBergG, since it is classified as a strategic raw material by the EU – to be confirmed with state authorities during ongoing permitting process. Up to 10% royalty would apply if it was not exempt.

³Vulcan CO₂ value provided by Minviro. The CO₂ assessment is a cradle-to-gate study. It starts with the cradle: extraction of geothermal brine. Thermal energy of the brine is extracted and used for electricity and steam generation. Generated electricity is assumed to be exported to the German electrical grid. Part of the heat is exported for district heating, substituting natural gas use, and the rest of the heat is used for internal processes. It is assumed that of the electricity used throughout all processes 50% is sourced from the German grid and 50% is procured from additional wind generated electricity, on top of wind based electricity that is already present in the German grid mix. Electricity, steam, hydrochloric acid (30% concentration) and sodium hypochlorite (15.8% concentration) are co-products of the lithium hydroxide monohydrate product. All co-products are accounted for using system expansion, meaning no allocation is required. The climate change impact for the lithium hydroxide monohydrate product for the assumptions described above is -1.6 kg CO₂ eq. per kg LiOH·H₂O.

Input	Lionheart			Taro	
Number of production wells per area	8			5	
Average Flow rate (l/s) per well	69				
Average Flow rate (l/s)	600			300	
Li grade (mg/l) at SOP	181			181	
Li grade (mg/l) after 10 years	150			160	
ORC run/to be run by Vulcan	Yes	Yes		Yes	
ORC Power Capacity (MW)	4.2	24.5		8.4	
ORC Operating rates	95%	95%		95%	
Ramp up	None (operating)	6 months		6 months	
Heat capacity (MW)	0.5	30		0	
Steam generation (MW)	0.0	3.3		2.6	
LEP		Yes		Yes	
LEP Lithium recovery		93.9%		93.9%	
LEP Stream factor		86%		86%	
Ramp up		2 years		2 years	
LEP production capacity (tpa LHM eq.)		16,000		8,000	
CLP Li recovery	98.6%				
CLP Utilisation	86%				
CLP production capacity (tpa)	24,755 LHM at SOP 67,500 HCl at SOP 2,975 NaOCl at SOP				

APPENDIX 13: INTERNATIONAL OFFER RESTRICTIONS

This document does not constitute an offer of New Shares in any jurisdiction in which it would be unlawful. In particular, this document may not be distributed to any person, and the New Shares may not be offered or sold, in any country outside Australia except to the extent permitted below (and within Australia, only to professional investors, sophisticated investors and/or experienced investors).

Canada (British Columbia, Ontario and Quebec provinces)

This document constitutes an offering of New Shares only in the Provinces of British Columbia, Ontario and Quebec (the “**Provinces**”), only to persons to whom New Shares may be lawfully distributed in the Provinces, and only by persons permitted to sell such securities. This document is not a prospectus, an advertisement or a public offering of securities in the Provinces. This document may only be distributed in the Provinces to persons who are “accredited investors” within the meaning of National Instrument 45-106 – Prospectus Exemptions, of the Canadian Securities Administrators.

No securities commission or authority in the Provinces has reviewed or in any way passed upon this document, the merits of the New Shares or the offering of the New Shares and any representation to the contrary is an offence.

No prospectus has been, or will be, filed in the Provinces with respect to the offering of New Shares or the resale of such securities. Any person in the Provinces lawfully participating in the offer will not receive the information, legal rights or protections that would be afforded had a prospectus been filed and receipted by the securities regulator in the applicable Province. Furthermore, any resale of the New Shares in the Provinces must be made in accordance with applicable Canadian securities laws. While such resale restrictions generally do not apply to a first trade in a security of a foreign, non-Canadian reporting issuer that is made through an exchange or market outside Canada, Canadian purchasers should seek legal advice prior to any resale of the New Shares.

The Company as well as its directors and officers may be located outside Canada and, as a result, it may not be possible for purchasers to effect service of process within Canada upon the Company or its directors or officers. All or a substantial portion of the assets of the Company and such persons may be located outside Canada and, as a result, it may not be possible to satisfy a judgment against the Company or such persons in Canada or to enforce a judgment obtained in Canadian courts against the Company or such persons outside Canada.

Any financial information contained in this document has been prepared in accordance with Australian Accounting Standards and also comply with International Financial Reporting Standards and interpretations issued by the International Accounting Standards Board. Unless stated otherwise, all dollar amounts contained in this document are in Australian dollars.

Statutory rights of action for damages and rescission. Securities legislation in certain Provinces may provide a purchaser with remedies for rescission or damages if an offering memorandum contains a misrepresentation, provided the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser’s Province. A purchaser may refer to any applicable provision of the securities legislation of the purchaser’s Province for particulars of these rights or consult with a legal adviser.

Certain Canadian income tax considerations. Prospective purchasers of the New Shares should consult their own tax adviser with respect to any taxes payable in connection with the acquisition, holding or disposition of the New Shares as there are Canadian tax implications for investors in the Provinces.

Language of documents in Canada. Upon receipt of this document, each investor in Canada hereby confirms that it has expressly requested that all documents evidencing or relating in any way to the sale of the New Shares (including for greater certainty any purchase confirmation or any notice) be drawn up in the English language only. *Par la réception de ce document, chaque investisseur canadien confirme par les présentes qu’il a expressément exigé que tous les documents faisant foi ou se rapportant de quelque manière que ce soit à la vente des valeurs mobilières décrites aux présentes (incluant, pour plus de certitude, toute confirmation d’achat ou tout avis) soient rédigés en anglais seulement.*

APPENDIX 13: INTERNATIONAL OFFER RESTRICTIONS

Cayman Islands

No offer or invitation to subscribe for New Shares may be made to the public in the Cayman Islands or in any manner that would constitute carrying on business in the Cayman Islands.

European Economic Area

This document has been prepared on the basis that all offers of New Shares within any member state of the European Economic Area (the "**Relevant States**") will be made pursuant to an exemption under Regulation (EU) 2017/1129 of the European Parliament and of the Council of June 14, 2017 on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market, as amended (the "**EU Prospectus Regulation**"). Accordingly, any person making or intending to make any offer of New Shares in any Relevant State should only do so in circumstances in which no obligation arises for the Company or the Joint Lead Managers to produce a prospectus for such offer. Neither the Company nor the Joint Lead Managers have authorized, nor do they authorize, the making of any offer of New Shares through any financial intermediary, other than offers made by the Joint Lead Managers, which constitute the final placement of the New Shares contemplated in this document.

No offer to the public of any New Shares which are the subject of this Placement has been and will be made in any Relevant State, except for any offers of New Shares in any Relevant State in accordance with the following exceptions under the EU Prospectus Regulation:

- 1.to any person or legal entity which is a qualified investor as defined under Article 2 of the EU Prospectus Regulation;
- 2.to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the EU Prospectus Regulation), subject to obtaining the prior consent of the Joint Lead Managers for any such offer; or
- 3.in any other circumstances falling within Article 1(4) of the EU Prospectus Regulation,

provided that no such offer of New Shares shall result in a requirement for the Company or the Joint Lead Managers to publish a prospectus pursuant to Article 3 of the EU Prospectus Regulation or a supplement to a prospectus pursuant to Article 23 of the EU Prospectus Regulation, and each person who initially acquires New Shares or to whom any offer is made will be deemed to have represented, warranted and agreed to and with the Company and the Joint Lead Managers that it is a qualified investor as defined in the EU Prospectus Regulation.

If any New Shares are offered to a financial intermediary as that term is defined in the EU Prospectus Regulation, each such financial intermediary will be deemed to have represented, acknowledged and agreed that the New Shares acquired by it in the Placement have not been acquired on a non discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer to the public, other than their offer or resale in any Relevant State to qualified investors as defined in the EU Prospectus Regulation or in circumstances in which the prior consent of the Company or the Joint Lead Managers has been obtained to each such proposed offer or resale.

For the purposes of this provision, the expression "offer to the public" in relation to any New Shares in any Relevant State means a communication to persons in any form and by any means, presenting sufficient information on the terms of the Placement and the New Shares, so as to enable an investor to decide to purchase or subscribe for New Shares, including any placing of New Shares through financial intermediaries, as set forth in the EU Prospectus Regulation.

APPENDIX 13: INTERNATIONAL OFFER RESTRICTIONS

Hong Kong

WARNING: This document has not been, and will not be, registered as a prospectus under the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong, nor has it been authorised by the Securities and Futures Commission in Hong Kong pursuant to the Securities and Futures Ordinance (Cap. 571) of the Laws of Hong Kong (the “SFO”). Accordingly, this document may not be distributed, and the New Shares may not be offered or sold, in Hong Kong other than to “professional investors” (as defined in the SFO and any rules made under that ordinance).

No advertisement, invitation or document relating to the New Shares has been or will be issued, or has been or will be in the possession of any person for the purpose of issue, in Hong Kong or elsewhere that is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to New Shares that are or are intended to be disposed of only to persons outside Hong Kong or only to professional investors. No person allotted New Shares may sell, or offer to sell, such securities in circumstances that amount to an offer to the public in Hong Kong within six months following the date of issue of such securities.

The contents of this document have not been reviewed by any Hong Kong regulatory authority. You are advised to exercise caution in relation to the offer. If you are in doubt about any contents of this document, you should obtain independent professional advice.

New Zealand

This document has not been registered, filed with or approved by any New Zealand regulatory authority under the Financial Markets Conduct Act 2013 (the “FMC Act”). This document does not constitute a product disclosure statement or other disclosure document under the FMC Act and does not purport to include the information required for a product disclosure statement or other disclosure document under the FMC Act. The New Shares are not being offered or sold in New Zealand, or allotted with a view to being offered for sale in New Zealand, other than to a person who:

1. is an “investment business” within the meaning of Clause 37 of Schedule 1 of the FMC Act; or
2. meets the investment activity criteria specified in Clause 38 of Schedule 1 of the FMC Act; or
3. is “large” within the meaning of Clause 39 of Schedule 1 of the FMC Act;
4. is a “government agency” within the meaning of Clause 40 of Schedule 1 of the FMC Act; or
5. is an “eligible investor” within the meaning of Clause 41 of Schedule 1 of the FMC Act.

APPENDIX 13: INTERNATIONAL OFFER RESTRICTIONS

Singapore

This document and any other materials relating to the New Shares have not been, and will not be, lodged or registered as a prospectus in Singapore with the Monetary Authority of Singapore. Accordingly, this document and any other document or materials in connection with the offer or sale, or invitation for subscription or purchase, of New Shares, may not be issued, circulated or distributed, nor may the New Shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore except pursuant to and in accordance with exemptions in Subdivision (4) Division 1, Part 13 of the Securities and Futures Act 2001 of Singapore (the “SFA”) or another exemption under the SFA.

This document has been given to you on the basis that you are an “institutional investor” or an “accredited investor” (as such terms are defined in the SFA). If you are not such an investor, please return this document immediately. You may not forward or circulate this document to any other person in Singapore.

Any offer is not made to you with a view to the New Shares being subsequently offered for sale to any other party in Singapore. On-sale restrictions in Singapore may be applicable to investors who acquire New Shares. As such, investors are advised to acquaint themselves with the SFA provisions relating to resale restrictions in Singapore and comply accordingly.

South Korea

The Company is not making any representation with respect to the eligibility of any recipients of this document to acquire the New Shares under the laws of Korea, including the Foreign Exchange Transaction Act and regulations thereunder. The New Shares have not been, and will not be, registered under the Financial Investment Services and Capital Markets Act of Korea (“FSCMA”) and therefore may not be offered or sold (directly or indirectly) in Korea or to any resident of Korea or to any persons for re-offering or resale in Korea or to any resident of Korea (as defined under the Foreign Exchange Transaction Act of Korea and its enforcement decree), except as permitted under the applicable laws and regulations of Korea.

Accordingly, the New Shares may not be offered or sold in Korea other than to “accredited investors” (as defined in the FSCMA).

Switzerland

The Placement in Switzerland is exempt from the requirement to prepare and publish a prospectus under the Swiss Federal Act on Financial Services Act (“FinSA”), because the New Shares are offered solely to professional clients within the meaning of article 4 para. 3 of the FinSA and the New Shares will not be admitted to trading on any trading venue (exchange or multilateral trading facility) in Switzerland. This document does not constitute a prospectus or a similar document pursuant to FinSA, and no such prospectus has been or will be prepared for or in connection with the offering of the New Shares. Each purchaser of the New Shares in Switzerland will be deemed to have represented and agreed that it qualifies as a “professional client” within the meaning of the FinSA.

APPENDIX 13: INTERNATIONAL OFFER RESTRICTIONS

UAE

This document does not constitute a public offer of securities in the United Arab Emirates and the New Shares may not be offered or sold, directly or indirectly, to the public in the UAE. Neither this document nor the New Shares have been approved by the Securities and Commodities Authority ("**SCA**") or any other authority in the UAE.

No marketing of the New Shares has been, or will be, made from within the UAE other than in compliance with the laws of the UAE and no subscription for any securities may be consummated within the UAE. This document may be distributed in the UAE only to "professional investors" (as defined in the SCA Board of Directors' Decision No.13/RM of 2021, as amended).

No offer of New Shares will be made to, and no subscription for New Shares will be permitted from, any person in the Abu Dhabi Global Market or the Dubai International Financial Centre.

United Kingdom

This document and any other materials in relation to the New Shares described herein is directed at, and for distribution in the United Kingdom only to, persons who are qualified investors within the meaning of Article 2 of the Prospectus Regulation as it forms part of retained EU law in the United Kingdom as defined in the European Union (Withdrawal) Act 2018 (as amended) (the "**UK Prospectus Regulation**") and who are also (i) persons who have professional experience in matters relating to investments falling within Article 19 para. 5 of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "**Order**"), (ii) high net worth entities falling within Article 49 para. 2 lit. (a) to (d) of the Order or (iii) other persons to whom it may otherwise lawfully be communicated (all such persons being together referred to as "**Relevant Persons**"). The New Shares are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire such New Shares will be engaged in only with, Relevant Persons. Any person in the United Kingdom who is not a Relevant Person should not act or rely on this document or any of its contents. Any investment or investment activity to which this document relates is only available to Relevant Persons and will only be engaged in with Relevant Persons.

No New Shares have been offered or will be offered to the public in the United Kingdom in the course of the Placement, except that the New Shares may be offered to the public in the United Kingdom at any time:

1. to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;
 2. to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the Joint Lead Managers for any such offer; or
 3. in any other circumstances falling within Section 86 of the Financial Services and Markets Act 2000, including any regulations made pursuant thereto (the "**FSMA**"),
- provided that no such offer of New Shares shall result in a requirement for the Company or the Joint Lead Managers to publish a prospectus pursuant to Section 85 of the FSMA, or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation.

For the purposes of this provision, the expression an "offer to the public" in relation to the New Shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any New Shares to be offered so as to enable an investor to decide to purchase or subscribe for any New Shares.

APPENDIX 13: INTERNATIONAL OFFER RESTRICTIONS

United States

This document is for informational purposes only and is not an offer of securities for sale in the United States of America, its territories or possessions, any state of the United States or the District of Columbia (collectively, the "**United States**"). This document is not for use in the United States (other than in presentations to a limited number of "qualified institutional buyers" as defined in Rule 144A under the US Securities Act of 1933, as amended (the "**US Securities Act**"), and/or institutional "accredited investors" as defined in Rule 501(a)(1), (2), (3) or (7) under the US Securities Act) and may not be retransmitted, published, released or otherwise redistributed in or into the United States by any recipient hereof. The securities referred to herein have not been and will not be registered under the US Securities Act, or under the securities laws of any state or other jurisdiction of the United States, and may not be offered or sold, directly or indirectly, in or into the United States absent registration except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the US Securities Act and in accordance with any applicable securities laws of any state or other jurisdiction of the United States. There will be no public offering of the securities referred to herein in the United States.



APPENDIX 14: SUMMARY OF PLACEMENT AGREEMENT

Vulcan has entered into a placement agreement with Merrill Lynch Equities (Australia) Limited (ABN 65 006 276 795) and Canaccord Genuity (Australia) Limited (ABN 19 075 071 466) (the "**Joint Lead Managers**"), under which the Joint Lead Managers have agreed to act as joint lead managers, bookrunners and underwriters in connection with the Placement ("**Placement Agreement**"), subject to the terms and conditions of the Placement Agreement. The Joint Lead Managers may terminate the Placement Agreement if certain conditions contemplated by the Placement Agreement are not satisfied or if certain events occur. The conditions and termination events in the Placement Agreement are not uncommon for an arrangement of this nature.

In summary, either Joint Lead Manager may terminate the Placement Agreement if any of the following events occur:

- in the bona fide opinion of the Joint Lead Managers, one or more of the following events have or are likely to (a) have a material adverse effect on the marketing, success or settlement of the Placement, the willingness of persons to subscribe for New Shares, the market price of Shares or the business, financial position or prospects of Vulcan and its related bodies corporate or (b) has given rise to or is likely to give rise to a contravention by a Joint Lead Manager or its affiliates incurring a liability under, or contravening, Vulcan's Constitution, the Corporations Act or the ASX Listing Rules, as applicable;
- an outbreak or escalation of hostilities or a state of emergency declaration involving any of Australia, the United States, the United Kingdom, Japan, Hong Kong, Ukraine, a member state of NATO or a member of the European Union is declared by any of those countries, or there is a major act of terrorism anywhere in the world;
- a general moratorium on commercial banking activities in Australia, the United States, Germany or the United Kingdom, is declared by the relevant banking authority in any of those countries, or there is a material disruption in commercial banking or security settlement or clearance services in any of those countries;
- trading in all securities quoted or listed on ASX, the London Stock Exchange, Frankfurt Stock Exchange or the New York Stock Exchange is suspended or limited in a material respect for one day on which that exchange is open for trading ("**Trading Day**"), or substantially all of a Trading Day, excluding any suspension or limitation of trading caused by or in connection with any technical or systems failure;
- an adverse change or disruption to the political conditions or financial markets of Australia, the United Kingdom, the United States, Hong Kong, Japan, Germany or the international financial markets or any change or development involving a prospective adverse change in national or international political, financial or economic conditions;
- Vulcan is in breach of any term, condition, undertaking, representation, warranty or agreement of the Placement Agreement or the Listing Agreement;
- a new or materially revised law is introduced in Australia or Germany or any new regulation is made under any law, or a government agency adopts a policy, or there is any official public announcement that such a law or regulation will be introduced or policy adopted (as the case may be);
- a change in the senior management of Vulcan or the board of directors of Vulcan is announced or occurs; or
- the certificate ("Certificate") required to be delivered by Vulcan under the Placement Agreement (certifying Vulcan's compliance with its obligations under the Placement Agreement, that Vulcan has not defaulted under the Placement Agreement, that the representations and warranties given by Vulcan are true and correct in all respects and not misleading or deceptive and no termination events under the Placement Agreement have occurred), is not true or correct;
- the S&P/ASX 200 Index is at any time during the period from 1.30 am on 4 May 2023 until the close of trading on 11 May 2023, at a level that is 10% or more below the level as at the close of trading on the day before the date of the Placement Agreement;
- a condition to the Placement Agreement is not satisfied or waived by its applicable deadline;

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- the listing agreement entered into between Vulcan and BofA Securities Europe SA dated on or about the date of the Placement Agreement (the "Listing Agreement"):
- has terminated (or an event has occurred which entitles a party to terminate the Listing Agreement) or is rescinded;
- has become void, illegal, invalid or unenforceable; or
- has been varied in any material respect without the prior written consent of the Joint Lead Managers; or
- a condition precedent to performance of the parties' material obligations under the Listing Agreement has not been satisfied (or waived, if capable of waiver, with such waiver being acceptable to the Joint Lead Managers in the case of waiver by Vulcan) by its due date (or becoming incapable of being satisfied by its due date);
- any event specified in the timetable in the Placement Agreement is delayed for more than two business days without the prior written approval of the Joint Lead Managers;
- the Certificate is not delivered to the Joint Lead Managers in accordance with the Placement Agreement;
- there is an event, occurrence or non-occurrence which makes it illegal or commercially impossible for the Joint Lead Managers to satisfy a material obligation under the Placement Agreement, or to market, promote or settle the Placement, or that causes the Joint Lead Managers to delay satisfying a material obligation under the Placement Agreement;
- Vulcan withdraws the Placement or indicates that it does not intend to or is unable to proceed with the Placement;
- there is an application to a government agency for an order, declaration or other remedy, or a government agency commences any investigation or hearing or announces its intention to do so, in each case in connection with the Placement or any agreement entered into in respect of the Placement;
- there is a material adverse change, or in the Joint Lead Managers' reasonable opinion, a development involving a potential material adverse change, in the condition, assets, liabilities, financial or trading position or performance, profits, losses, management or prospects of Vulcan or any of its related bodies corporate (in so far as the position in relation to related bodies corporate affects the overall position of Vulcan);
- proceedings are commenced or there is a public announcement of an intention to commence proceedings before a court or tribunal of competent jurisdiction in Australia seeking an injunction or other order in relation to the Placement;
- Vulcan breaches, or defaults under, any provision, undertaking, covenant or ratio of a material financing agreement which has a material adverse effect, or a lender or financier fails to agree a waiver or amendment to a material financing agreement in relation to any breach, default or review event under that material financing agreement and that failure to agree would, in the Joint Lead Managers' reasonable opinion, have a material adverse effect;
- Vulcan commits a material breach of the Corporations Act, its Constitution, the ASX Listing Rules or other applicable laws or has failed to comply with its continuous disclosure obligations under the Corporations Act or ASX Listing Rules;
- Vulcan alters its capital structure or its Constitution without the prior consent of the Joint Lead Managers;
- ASIC issues, or threatens to issue, proceedings in relation to the Placement, or commences any inquiry or investigation in relation to the Placement (or gives notice of its intention to do either of those things);

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- ASX makes any official statement to any person, or indicates to Vulcan or the Joint Lead Managers that (a) it will not grant official quotation of the New Shares before 9.30 am on 15 May 2023 or if such approval is granted, the approval is withdrawn or qualified (other than by customary conditions); (b) Shares will be suspended from quotation by ASX; or (c) Vulcan will be removed from the official list of ASX, or any of those things actually occurs;
- a director or officer (as that term is defined in the Corporations Act) of Vulcan is charged with an indictable offence or disqualified from managing a corporation under Part 2D.6 of the Corporations Act, or certain other actions are taken against a director in relation to any fraudulent conduct or activity (whether or not in connection with the Placement) or Vulcan engages in any fraudulent activity; or
- Vulcan or any of its related bodies corporate is, or becomes, insolvent.

Vulcan will pay the Joint Lead Managers, in their respective proportions (being 50% each), an underwriting and a management fee of 3.50% of the monies raised under the Placement. In addition, Canaccord Genuity (Australia) Limited will be entitled to a global coordinator fee equal to 0.30% of the monies raised under the Placement. Vulcan will also pay or reimburse the Joint Lead Managers for all their reasonable expenses incurred in connection with the Placement, including, without limitation, the fees and disbursements of the Joint Lead Managers' external legal counsel, travel expenses, incidental travel expenses, Netroadshow expenses and Deal Axis expenses, CHESS allocation interest DvP settlement service expenses and communications and printing costs incurred by the Joint Lead Managers.