VULCAN ENERGY
ZERO CARBON LITHIUM™

Vulcan Energy Resources

September - October 2022

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OUR TARGET: 1 MILLION

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 batteries, from the same deep brine source in the Upper Rhine Valley, Germany.

Renewable energy

Renewable heat production for more than **1 million** people by 2030

Lithium chemicals

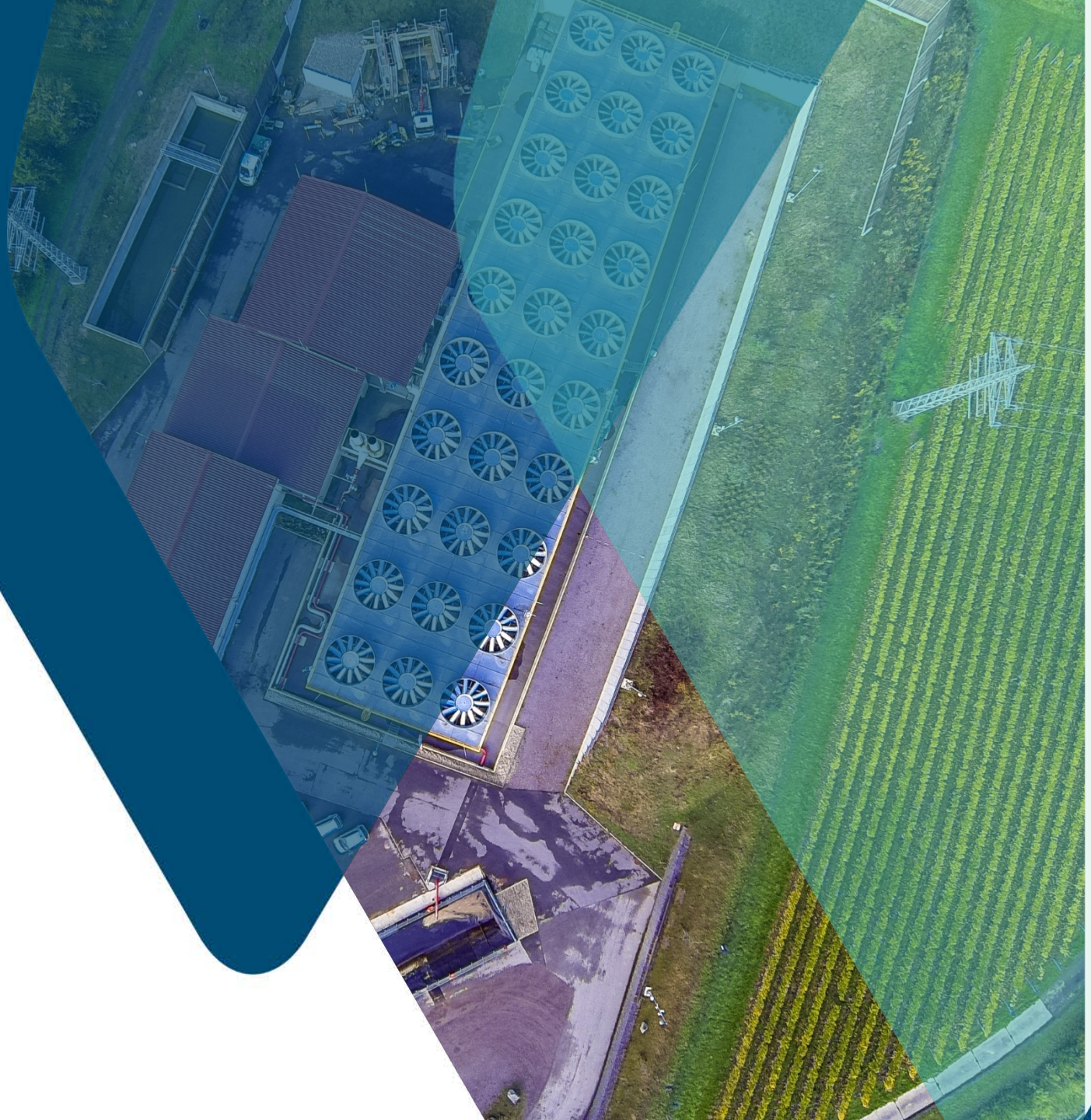
Enough lithium hydroxide production to produce **1 million** EVs per annum

Carbon neutrality

1 million tonnes of CO_2 emissions avoided per annum

RIGHT TIME

Rapidly advancing the
Zero Carbon Lithium™ Project
to ensure timely market entry



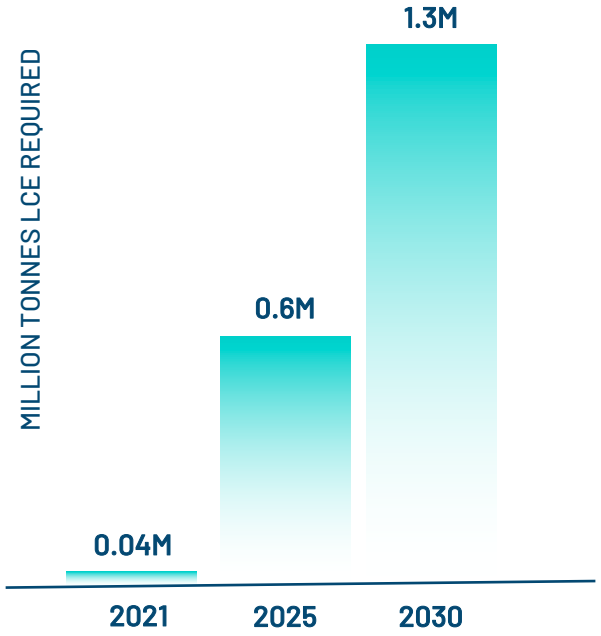
ZERO CARBON LITHIUM™ PROJECT

30 MILLION EVS BY 2030 IN EUROPE NEEDS UNPRECEDENTED LI SUPPLY

1,300GWh lithium-ion battery capacity by 2030[1]

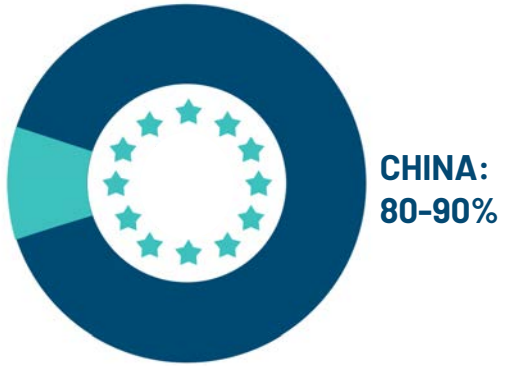
Source: Public announcements

EU: fastest growing lithium market in the world[2]



Source: Based on LiB capacity, S&P Global[3]

Zero local supply of lithium hydroxide



Source: Bloomberg

Note 1: Refer to Appendix 5 for further details on EU lithium-ion battery capacity
Note 2: Based on electric vehicle sales and lithium-ion battery production growth; https://www.reuters.com/article/us-climate-change-eu-transport-idUSKBN28E2KM)
Bloomberg - https://www.bloomberg.com/news/articles/2020-12-03/eu-aims-to-have-30-million-electric-cars-on-the-road-by-2030
Note 3: https://www.spglobal.com/marketintelligence/en/news-insights/research/investment-in-lithium-ion-batteries-could-deliver-5-point-9-twh-capacity-by-2030

AUTO BATTERY AND CATHODE-MAKERS NEED CARBON NEUTRAL BATTERY METALS

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'.

STELLANTIS

'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.

VOLKSWAGEN GROUP

'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 CO_2 neutral'.

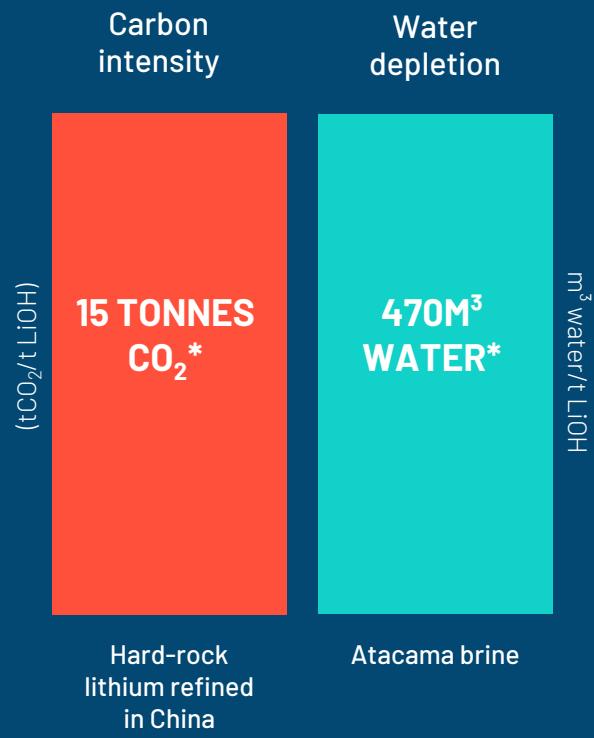
umicore

'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'.

LG Energy Solution

'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'.

However, current lithium production has a significant environmental footprint:



Source: Minviro

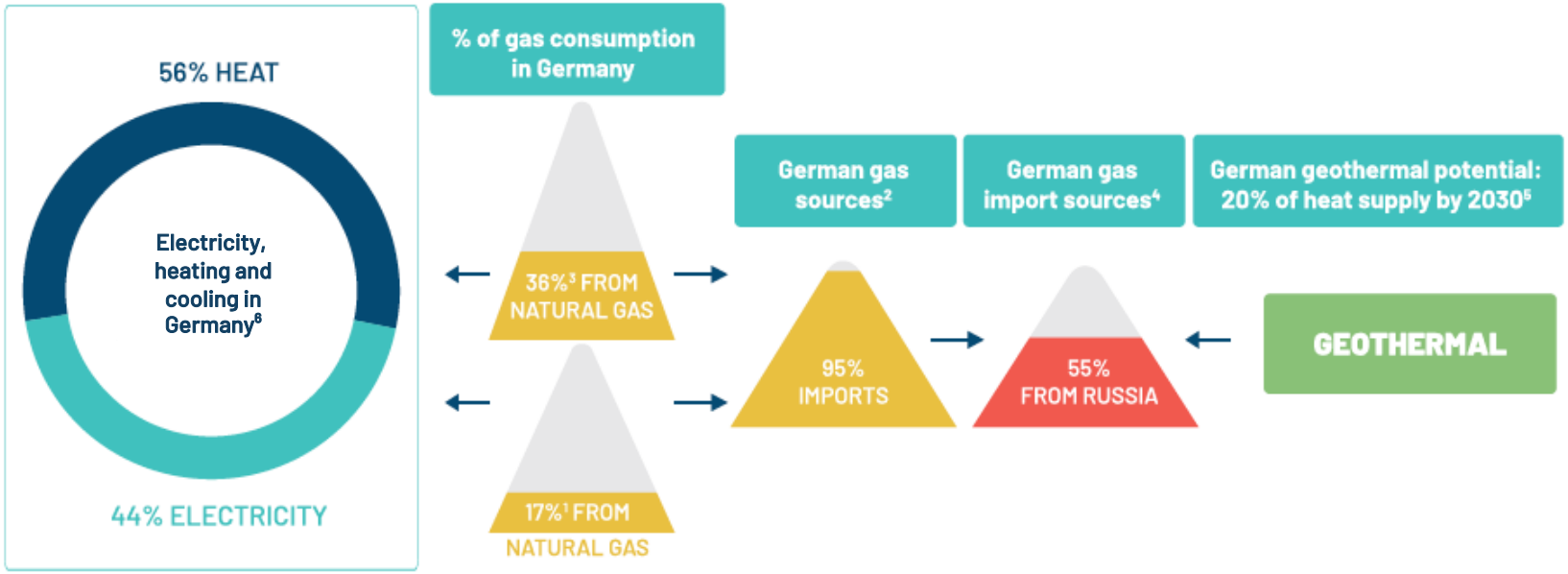
ZERO CARBON LITHIUM™ PROJECT

GERMANY NEEDS RENEWABLE ENERGY ON AN EXTRAORDINARY SCALE

German Coalition Agreement includes **order to secure the goal of climate neutrality**

- Generate almost all the country's electricity from renewable sources by 2035
- Generate 50% of heat in a climate-neutral way by 2030

Geothermal energy can help fulfill this goal.



Fraunhofer geothermal roadmap[7]

- Installation of 70GWh of capacity, deep geothermal energy could cover more than a quarter of Germany's annual heat requirements
- Mobilisation of government assistance and the national economy, to enable the drilling of deep 2,000 geothermal wells by 2030, and at least 7,000 to 10,000 more by 2050
- Billion-Euro federal level funding to support the development

Federal Funding for Efficient Heating Networks

- Targeting investment to increase the share of renewable and climate-neutral heat sources in the heating networks to 25% by 2025 and 30% by 2030

Note 1: https://www.iea.org/countries/germany
Note 2: https://www.cleanenergywire.org/factsheets/germanys-dependence-imported-fossil-fuels#:~:text=Germany%20%2D%20GAS,imports%2C%20according%20to%20the%20BGR.
Note 3: https://iea.blob.core.windows.net/assets/60434f12-7891-4469-b3e4-1e82ff898212/Germany_2020_Energy_Policy_Review.pdf
Note 4: https://www.economist.com/europe/2022/01/29/how-will-europe-cope-if-russia-cuts-off-its-gas?gclid=Cj0KCQiAmpyRBhC-ARIsABs2EArS9KC3GxzZtyldzOtrnOVJQS6W2LviP1EVXk6IrunwxMQ40avYzHoaAl6MEALw_wcB&gclsrc=aw.ds
Note 5: Klimaneutrale Wärme aus Geothermie 2030 / 2050 - Mai 2021 - Bundesverband Geothermie e. V. | www.geothermie.de.
Note 6: https://heatroadmap.eu/wp-content/uploads/2018/09/HRE4-Country_presentation-Germany-1.pdf
Note 7: Roadmap deep geothermal energy for Germany – recommendations for action for politics, business and science for a successful heat transition.

EUROPEAN MACRO POLICY TAILWINDS IN VULCAN'S FAVOUR

European Commission President, Ursula von der Leyen

"Lithium and rare earths will soon be more important than oil and gas. Our demand for rare earths alone will increase fivefold by 2030. ... We must avoid becoming dependent again, as we did with oil and gas. ... We will identify strategic projects all along the supply chain, from extraction to refining, from processing to recycling. And we will build up strategic reserves where supply is at risk. This is why today I am announcing a European Critical Raw Materials Act."

Lithium production for EVs

- New EU Battery Regulation
- Carbon Border Adjustment Mechanism
- Battery Passport
- ISO/TC 333 Lithium
- European Battery Alliance
- Critical Raw Materials List
- EIB new energy lending policy
- European Raw Materials Alliance

EU Commissioner Thierry Breton

"It is therefore high time to act. It is time to enshrine in legislation which raw materials are critical or strategic for Europe. This list will be our compass and will provide a stable, agile and predictable legal framework in order - for example - to identify projects, facilitate investments, guide our international partnerships and direct the innovation agenda. This includes mining in Europe."

European Commission, Vice-President Maroš Šefčovič

"As a global power, we should not shy away from the responsibility to lead by example and start developing domestic projects according to the highest sustainability standards, including environmental, social and governance performance. This is especially true as Europe holds reserves of critical raw materials, that could be extracted and processed sustainably and in full respect of relevant standards."

https://www.ieg.fraunhofer.de/content/dam/ieg/documents/Roadmap%20Tiefe%20Geothermie%20in%20Deutschland%20FhG%20HGF%2002022022.pdf

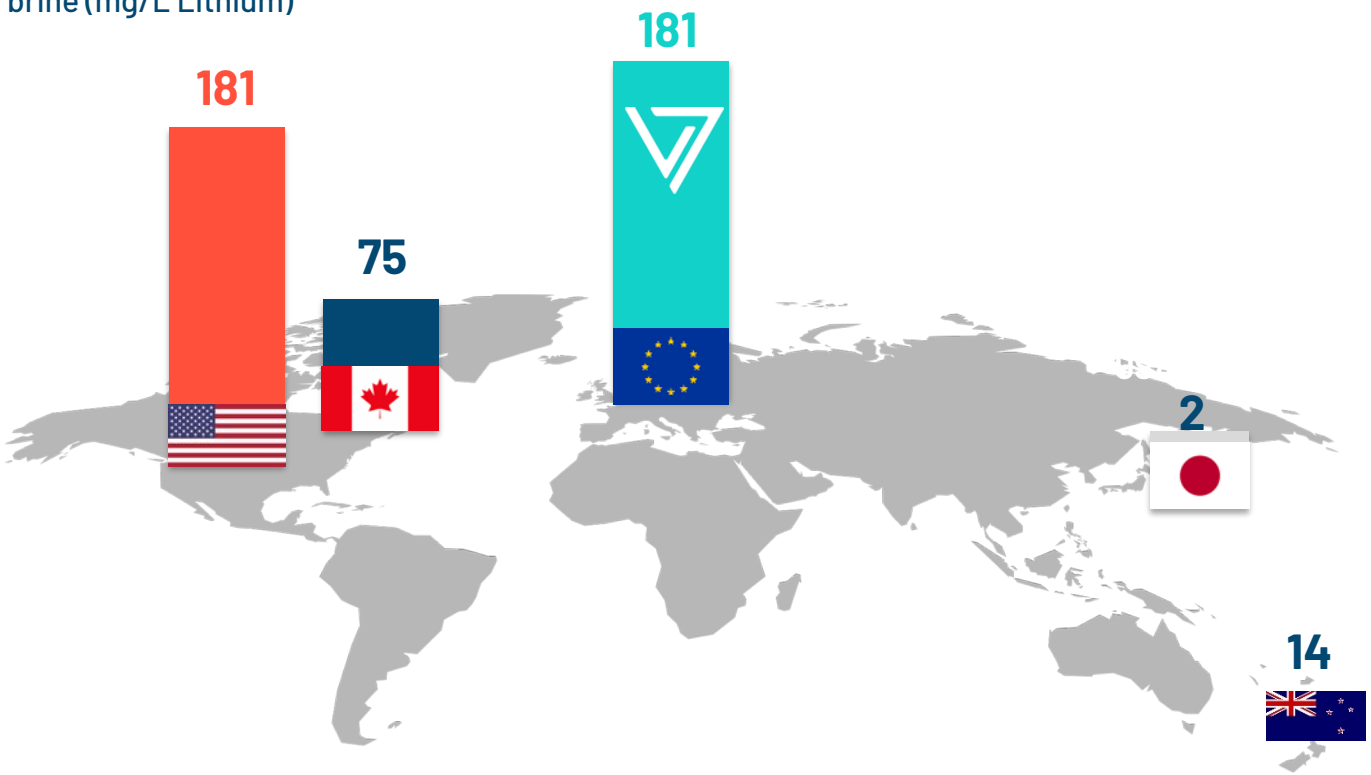
RIGHT PLACE

Strategically placed in the heart of the European EV market to decarbonise the supply chain

ZERO CARBON LITHIUM™ PROJECT

WE SCOURED THE GLOBE TO FIND THE RIGHT CONDITIONS FOR OUR ZERO CARBON LITHIUM™ DEVELOPMENT

Lithium concentration
In brine (mg/L Lithium)



Note 1: Appendix 8: Brine composition comparison

We had the lithium and geothermal expertise to know that our Zero Carbon Lithium™ strategy was possible using modern extraction methods, provided a geothermal brine reservoir could be found that had the following conditions:

1. **Renewable heat**
2. **High lithium grades**
3. **High brine flow rate potential**

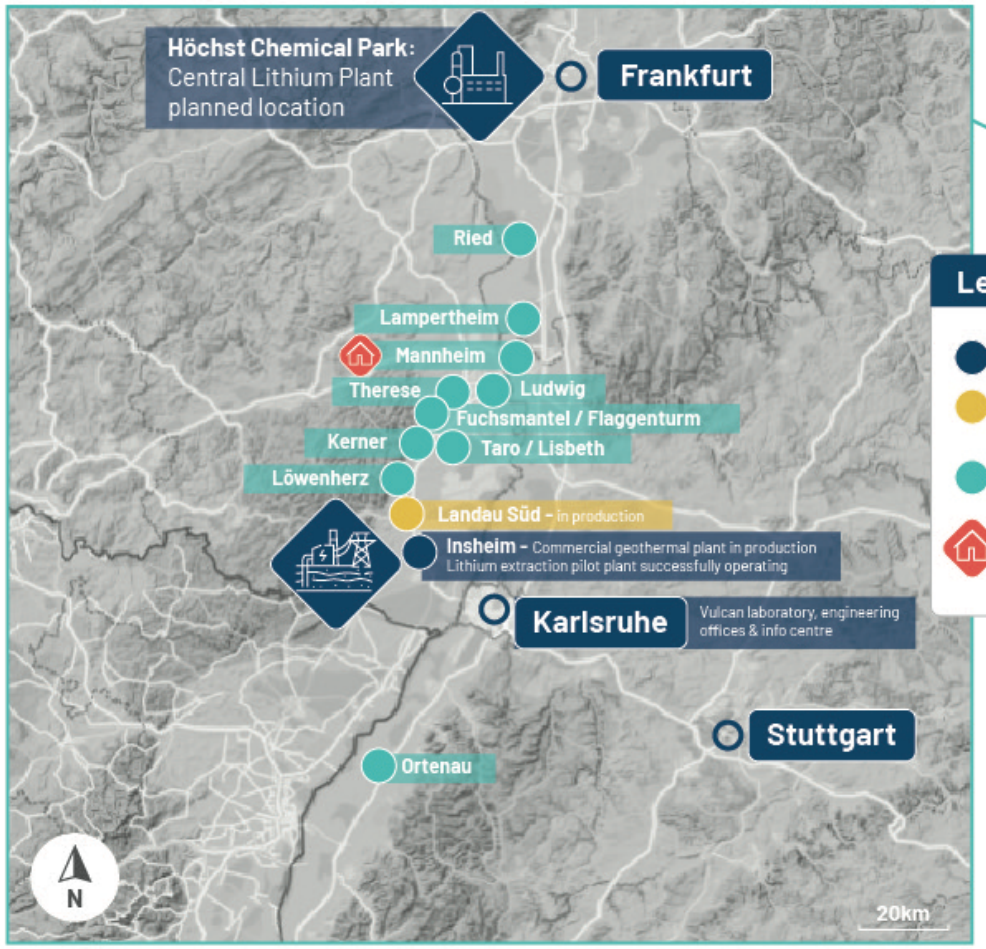
Our initial research showed that this could be done in just two places:

1. The Upper Rhine Valley Brine Field
2. The Salton Sea in California

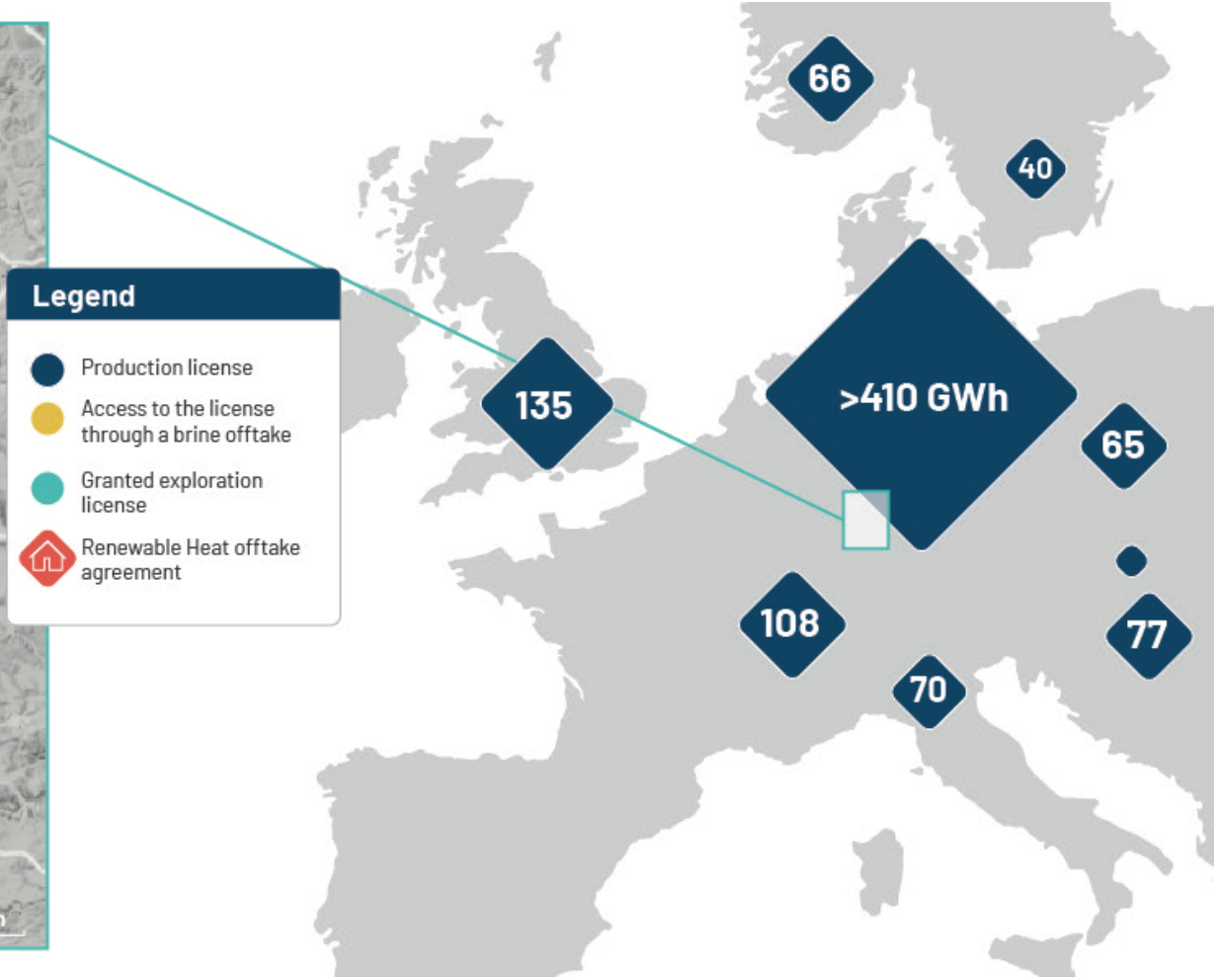
We chose the Upper Rhine Valley Brine field, in Germany and Europe.

LARGEST LITHIUM RESOURCE AT THE CENTRE OF THE FASTEST GROWING MARKET IN THE WORLD, IN A MATURE GEOTHERMAL BRINE FIELD

Largest lithium resource in Europe: 15.85Mt LCE[1]



Planned European battery manufacturing projects in GWh capacity – 11/2021



Note 1: Appendix 2: Largest JORC lithium resource in Europe; Appendix 3: Europe-focused and DLE Lithium Projects peer comparison references,

Source: Batterynews.de

ZERO CARBON LITHIUM™ PROJECT

THE PROCESS

Delivering a fully integrated renewable energy and sustainable lithium chemicals business in Europe

VULCAN'S RENEWABLE ENERGY AND LITHIUM CHEMICALS PROJECT

Electric mobility

Lithium hydroxide distributed to the EU market

6

Central Lithium Plant

LITHIUM BUSINESS

Renewable electricity and/or heat sold to the grid

2

5

Lithium chloride transported to the central lithium plant

ENERGY BUSINESS

Geothermal Plant

Renewable heat, electricity and brine transferred to the sorption plant

3

Sorption Plant

Reservoir

Wells are drilled into the deep, hot, lithium-rich brine resource, which is pumped to the surface

1

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ZERO CARBON LITHIUM™

4

Re-injection of brine. A closed loop, circular system

COMMERCIALLY AVAILABLE TECHNOLOGIES COMBINED AND ADAPTED TO BE FOSSIL-FREE

Our process incorporates technologies with commercial analogues across the world.
What is unique about us is the proposed combination of these different steps, and our **strict exclusion of fossil fuels to power our process.**

1. Binary cycle geothermal plant

Hundreds of geothermal energy plants running **globally**

37 deep geothermal energy plants in operation in **Germany***

Upper Rhine Valley well-known area for geothermal operations

Team of **leading in-house experts** in developing and permitting geothermal plants

Natür[3]Lich Insheim **geothermal plant acquired**

Vulcan Group
VERCANA
Natür[3]Lich Insheim
VULCAN ENERGY SUBSURFACE SOLUTIONS
VULCAN ENERGY ENGINEERING

2. Sorption plant

Sorption commercially **used for decades & Vulcan has unique expertise**

Sorption technologies **commercially available** from several suppliers

Lithium recoveries averaging >90%

Ongoing **piloting on live brine**, operating 24/7 for the last 15 months

Demo plant planned for Q4 2022

Vulcan Group
In-house team of experts

3. Central lithium plant

Conversion of lithium chloride to lithium hydroxide using an **electrolysis process**

Electrolysis has been used by the **chlor-alkali industry** in a similar process for more than 100 years

Joint project for the development, construction and operation of the CLP

NOBIAN

Site selected near Frankfurt[2]

CLP-demo plant starting H1 2023

Vulcan Group
In-house team of experts

4. End product

First **samples** of battery quality lithium hydroxide produced

Binding offtake contracts signed[1]:

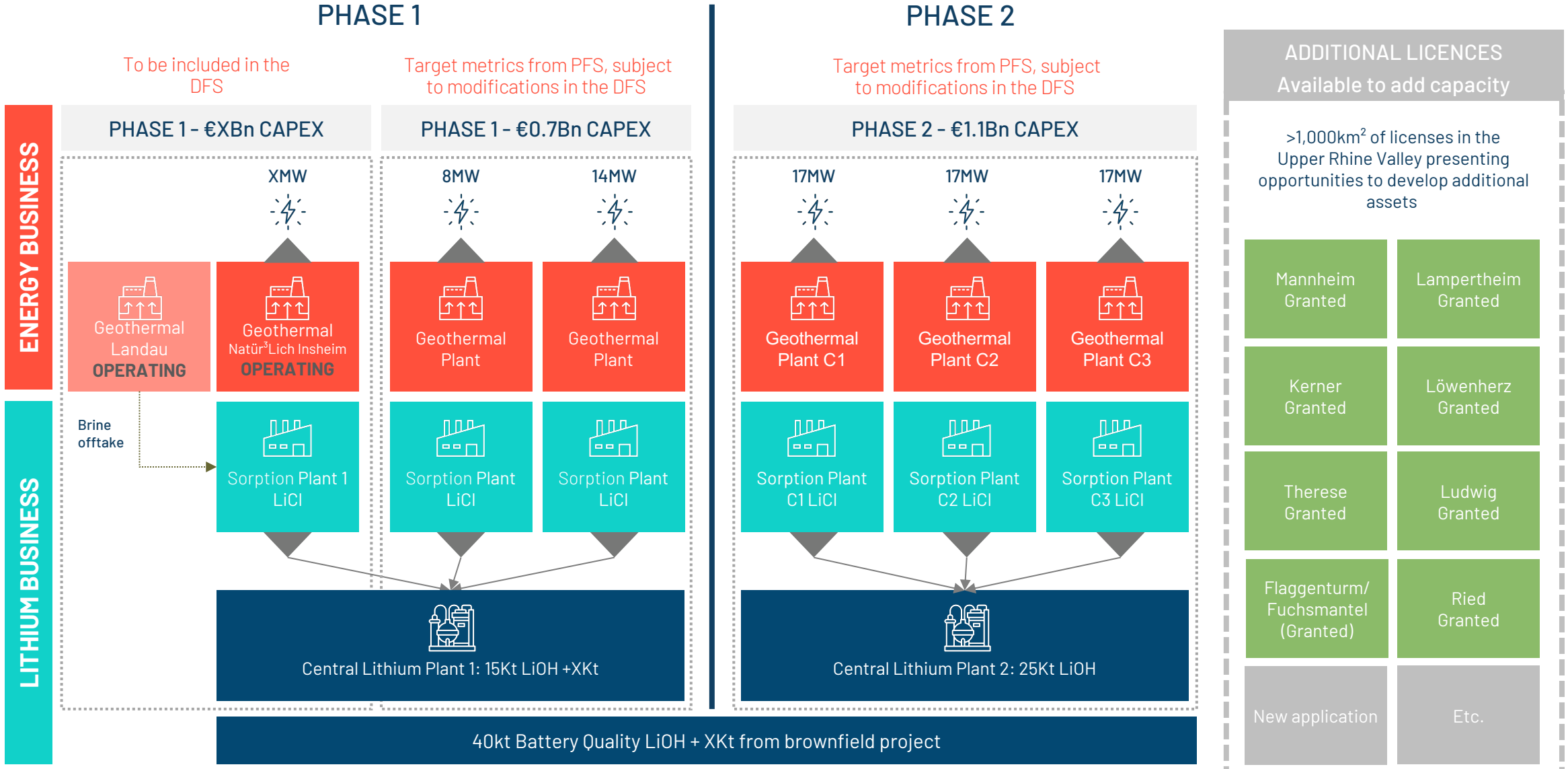
VOLKSWAGEN GROUP
STELLANTIS
RENAULT GROUP
umicore
LG Energy Solution

Vulcan Group
In-house team of experts

Source: Clean Energy Wire

Note 1: Refer to slide 23 for further details regarding the Company's offtake arrangements
Note 2: Refer to Appendix 9 for more information on the location of the CLP

OUR PROPOSED EXPANSION PLAN ACROSS THE UPPER RHINE VALLEY BRINE FIELD



ADDITIONAL LICENCES
Available to add capacity

>1,000km² of licenses in the Upper Rhine Valley presenting opportunities to develop additional assets

Mannheim Granted	Lampertheim Granted
Kerner Granted	Löwenherz Granted
Therese Granted	Ludwig Granted
Flaggenturm/ Fuchsmantel (Granted)	Ried Granted
New application	Etc.

Note 1: Refer to Appendix 10-11 for further details regarding Project economics and production capacity

ZERO CARBON LITHIUM™ PROJECT

TAKING ADVANTAGE OF AND EXPANDING FROM EXISTING INFRASTRUCTURE IN THE FIELD

To be included in the DFS

PHASE 1 - €XBn CAPEX

Geothermal Plant Natürlich Insheim (A1)

- Vulcan acquired Natür[3]Lich Insheim in Dec 2021
- Current technical ability to produce up to 4.8MW power or 28.5MW thermal energy
- Aiming to upgrade capacity and increase brine flow rate
- Indicated Mineral Resource of 0.7Mt Lithium Carbonate Equivalent @181 mg/l Li
- Generated €1.7 million in revenue in March Quarter 2022
- Feed-in Tariff in place

5km

Currently assessing the feasibility of integrating lithium extraction

Brine

Brine offtake

Sorption Plant A1 LiCl

Central Lithium Plant 1

Geothermal Plant - Landau

- Vulcan executed a 20-year brine offtake agreement with geox GmbH
- Expected additional brine volume to complement Vulcan's planned expanded developments at Insheim
- Existing production well at Landau has the tested ability to produce at a rate of over 100 l/s, but an additional re-injection well is planned to help accommodate this flow

Note 1: Refer to Appendix 10-11 for further details regarding Project economics and production capacity

The information in this report that relates to Insheim's Mineral Resources is extracted from the ASX announcement made by Vulcan on 20 January 2020 ("Maiden Indicated Resource Insheim Vulcan Zero Carbon Lithium"), which is available on www.v-er.eu. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

ZERO CARBON LITHIUM™ PROJECT

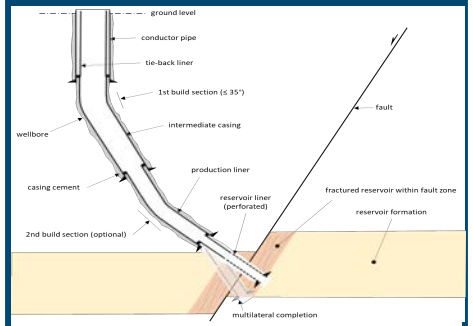
GEOTHERMAL DIVISION UPDATE

Sub-surface development

VULCAN ENERGY SUBSURFACE SOLUTIONS

- Vulcan Energy Sub-Surface (VESS) team is continuing to gather data, including seismic and drilling data, to incorporate in a planned resource update in H2 2022
- Vulcan's current resource covers 3 of its 12 licenses, and it is aiming to incorporate more of its license areas into the updated resource for the Upper Rhine Valley Brine Field that forms the basis of its project

Drilling preparation



VULCAN ENERGY SUBSURFACE SOLUTIONS

- First positive community decisions in Lionheart area
- Political and community work ongoing in Vulcan's license areas
- Land acquisition for drilling and geothermal plant site started for Phase 1 areas
- First preliminary EIA granted for development drilling in Taro area

Drilling equipment

VERCANA

- Vulcan acquired two electric drill rigs in November 2021
- Specialised rigs can drill to the target depth required for deep geothermal energy wells
- Experienced in-house drilling team established
- Refurbishment of the drill rigs is ongoing to ensure optimal safety and efficiency during operation
- The rigs will be operation-ready in early 2023

Geothermal plant design

VULCAN ENERGY ENGINEERING

- Pre-design of DLE and geothermal plant in Landau completed
- Joint development work with municipality of Landau ongoing about planned land area
- The VEE team is also working on the DFS for the surface piping and geothermal plant design
- Permitting works ongoing

Renewable energy operations

Natür^{3}Lich Insheim

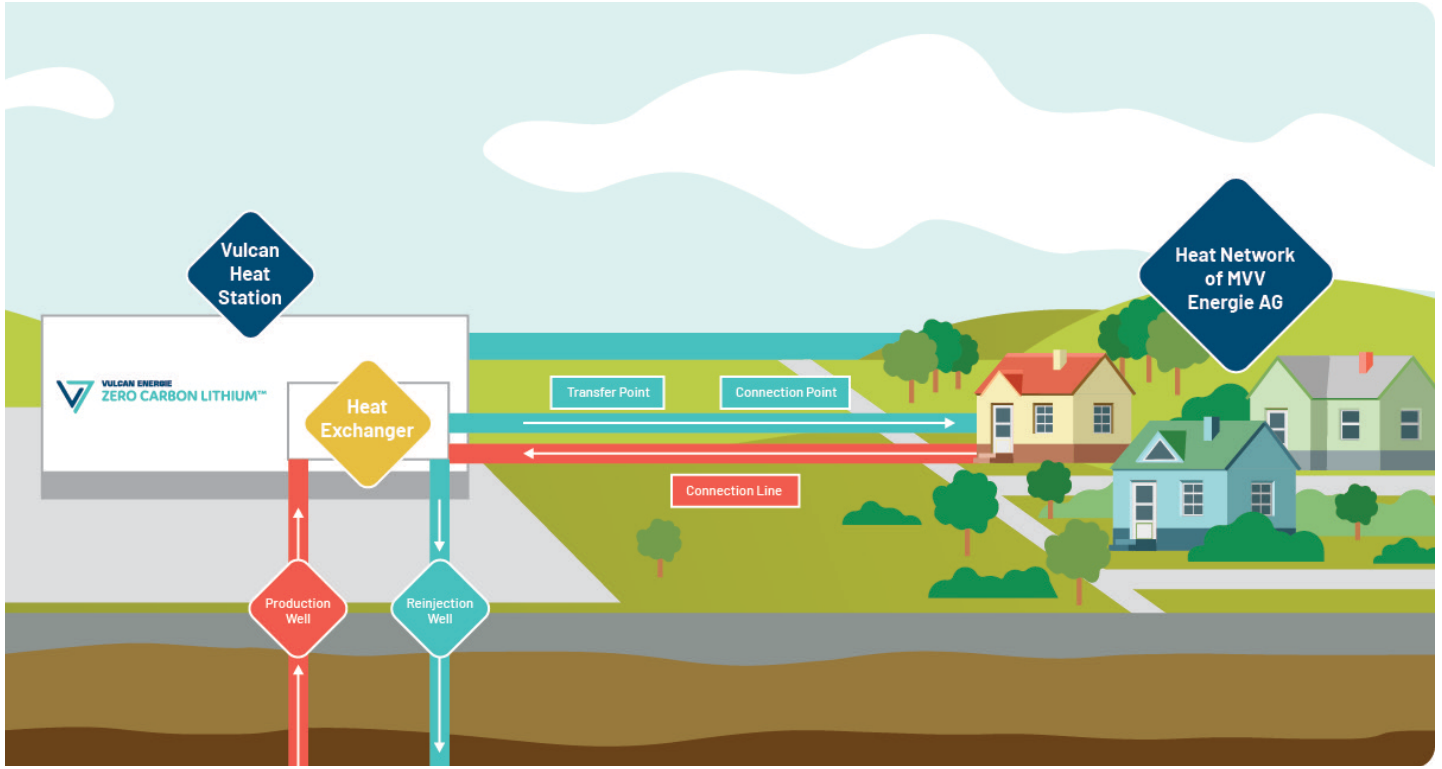
- Vulcan acquired the Insheim geothermal power plant in January 2022
- Natür^{3}Lich Insheim generated €1.7m in revenue in the March 2022 Quarter
- The plant currently has the technical ability to produce a maximum of 4.8MW renewable power, equivalent to the power usage of approximately 8,000 households, with an additional ability to produce heating

ZERO CARBON LITHIUM™ PROJECT

VULCAN TO SUPPLY GERMAN ENERGY COMPANY WITH RENEWABLE, ZERO CARBON HEAT FROM 2025

The first of a number of planned district heating arrangements from geothermal energy to help combat Germany's energy crisis.

- Vulcan and MVV Energie AG (MVV) have executed a binding purchase agreement for 240 gigawatt hours per year of renewable heat, a first for Germany
- 20-year, long-term agreement commences in 2025
- Includes the supply of a minimum of 240,000MWh per year to a maximum of 350,000MWh per year
- The heat will be supplied from Vulcan's planned geothermal wells in the area surrounding the City of Mannheim
- Vulcan is developing its Mannheim licence as part of a planned larger Phase 2 of the Zero Carbon Lithium™ Project



Heat will be transferred via heating grids and a series of underground pipes that deliver hot water or steam to buildings in the local community

LITHIUM DIVISION UPDATE

Laboratory work

- Lab and pilot studies active since April 2021, generating data for DFS
- Expanded laboratory opened Feb 2022, extending the company's analytical capability and expertise
- Acquisition of new instruments including an ICP-OES and an IC, enhance the team's efficiency and reduces analysis waiting time

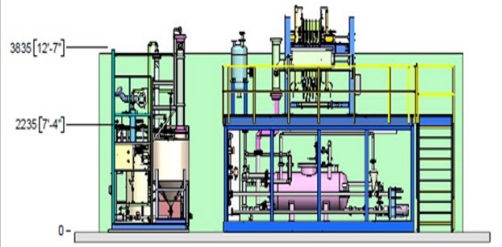
Pilot plant

- Pilot Plant 1, located at an operational geothermal plant, with "live" geothermal brine
- Consistent lithium concentration and low level of impurities
- Lithium recovery rates are averaging >90%
- Multiple sorbents from commercial providers have been successfully tested, providing optionality
- Scale-up of piloting continuing during 2021-22

Sorption-Demo plant

- Demo Plant fully integrated with all process steps including electrolysis
- Sorption at site with "live" geothermal brine
- All recycles to be included
- 80% of the equipment has been ordered and design-work has been finalised
- Onsite construction commenced September 2022
- Start of cold commissioning expected late Q4 2022
- Approximately 1:200 scale of the first commercial plant
- Commercial scale-up factor of 1:50 in terms of column size

CLP-Demo plant



- Experts from Nobian, Vulcan and external engineering teams have been assembled to adapt Vulcan's CLP – Demo Plant design to Nobian's site at the Höchst Chemical Park
- The CLP-Demo Plant will represent an approximately 1:200 scale of the first commercial plant
- Commercial CLP electrolysis cells won't have a scale up factor (i.e., 1:1) but a multiplication factor, as electrolysis cells are not scaled up further but multiplied

SORPTION-TYPE DLE: A COMMERCIAL TECHNOLOGY ADAPTED TO OUR LOCAL RESOURCE

- **Direct lithium extraction (DLE)** using sorption has a fifty-year development and implementation history
- **Sorption-type DLE practiced commercially** in South America for 26 years by Livent. More recently sorption-type DLE has been commercially deployed in China
- **Large investment into DLE projects** have recently been made in Argentina by Rio Tinto (Rincon project[1]) and Eramet (Eramine project[2])

Livent eraMET RioTinto

Sorption-type DLE includes several key advantages compared to traditional brine evaporation:

- Higher lithium recovery
- Lower water and chemicals consumption
- Shorter lead time to production
- Minimal footprint

Sorption-type DLE associated with geothermal brine adds:

- No need to heat the brine with natural gas
- Potential for no carbon emissions
- Additional revenue stream from energy

For more information, see our DLE presentation here: https://bit.ly/3x0eWp2

Refer to Appendix 6 & 7: DLE Projects and Assets – References
Note 1: https://www.riotinto.com/news/releases/2021/Rio-Tinto-to-acquire-Rincon-Mining-lithium-project
Note 2: https://www.eramet.com/en/eramine-world-class-lithium-production-project

DLE offers "significant promise of increasing supply, reducing the industry's environmental, social, and governance (ESG) footprint, and lowering costs"

-MCKINSEY, APRIL 2022

Livent's Fenix plant, Argentina

LONG TERM LITHIUM SUPPLY CONTRACTS SECURED

Vulcan Energy signed a binging lithium offtake agreement with Umicore Group in October 2021. Vulcan's Chief Commercial Officer, Vincent Ledoux Pedailles, with representatives from Umicore.

Note 1: Refer to Vulcan Investor Centre for ASX announcements relating to each offtake agreement, including the Conditions Precedent terms for each agreement; https://v-er.eu/investor-centre/

Cathodes

umicore

- **Binding lithium hydroxide offtake agreement**
- Initial **5-year term**, starting in **2025,** which can be extended by further 5 years
- Minimum of **28,000t** and a maximum of **42,000t** of battery grade lithium hydroxide

Lithium-ion batteries

LG Energy Solution

- **Binding lithium hydroxide offtake agreement**
- Initial **5-year term**, starting in **2025**, which can be extended by further 5 years
- Minimum of **41,000t -50,000t** of battery grade lithium hydroxide

Electric vehicles

RENAULT GROUP

- Binding lithium hydroxide offtake agreement
- Initial **6-year term**, starting in **2025,** which can be extended by further 5 years
- Minimum of **29,000t** and a maximum of **49,000t** of battery grade lithium hydroxide

STELLANTIS

- **Binding lithium hydroxide offtake agreement**
- **10-year term**, starting in **2026**
- Min. of **81,000t** and a max. of **99 ,000t** of battery grade lithium hydroxide for the first 5 years

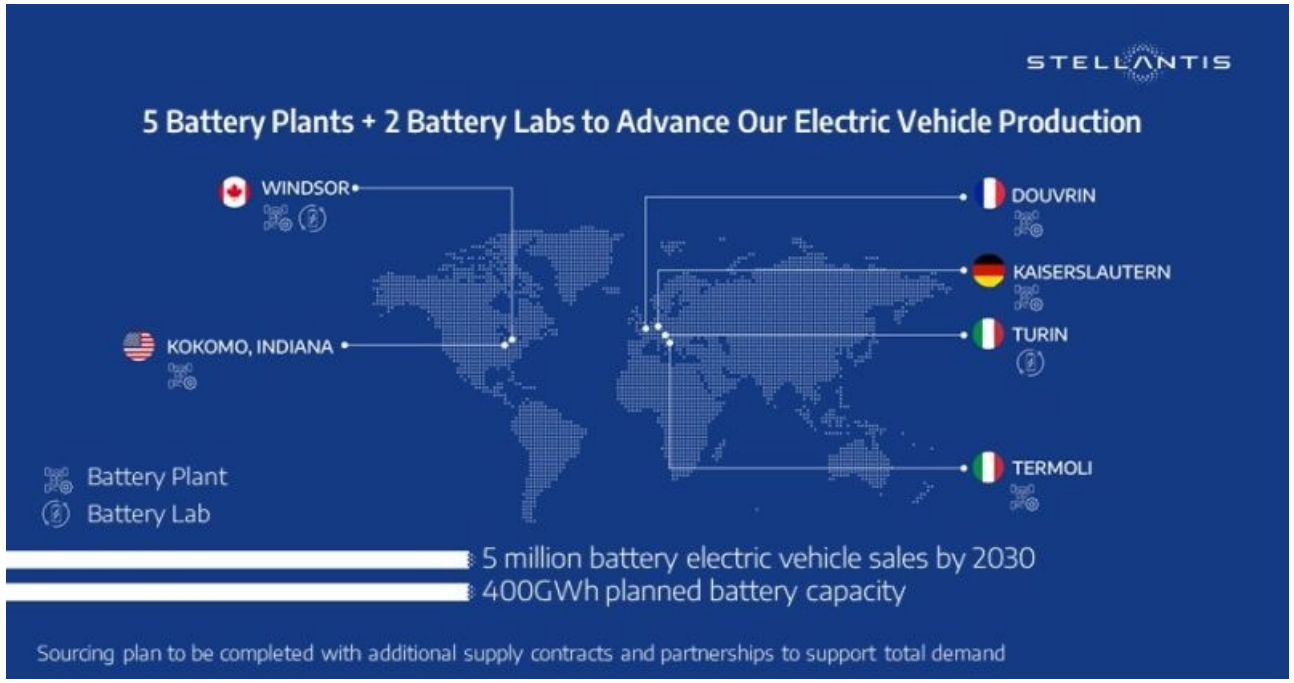
VOLKSWAGEN GROUP

- **Binding lithium hydroxide offtake agreement**
- Initial **5-year term**, starting in **2026**
- Between **34,000t and 42,000t** of battery grade lithium hydroxide

STRATEGIC PARTNERSHIP WITH STELLANTIS

This represents the world's first upstream investment in a listed lithium company by a top tier automaker.

- A$76M (€50M) equity investment from Stellantis
- Proceeds will go towards Vulcan's planned production expansion drilling
- Binding lithium hydroxide offtake agreement extended by five years, to 2035.
- Stellantis is now Vulcan's second largest shareholder with 8% shareholding
- Stellantis is one of the world's leading automakers and mobility providers
- Stellantis targeting 100% of passenger car battery electric vehicle sales mix in Europe by 2030



Stellantis also increased planned battery capacity by 140 GWh to approximately 400 GWh, to be supported by five battery manufacturing plants in Europe and North America, together with additional supply contracts.

(see ASX release 29/11/2021)

DUAL REVENUES: ENERGY AND LITHIUM

ENERGY BUSINESS

Decarbonising the grid

Grid

Coal phase-out in Germany

Industries

Bans for fossil heating systems

Cities

Renewable Electricity: Geothermal energy in the form of electricity is sold to the grid

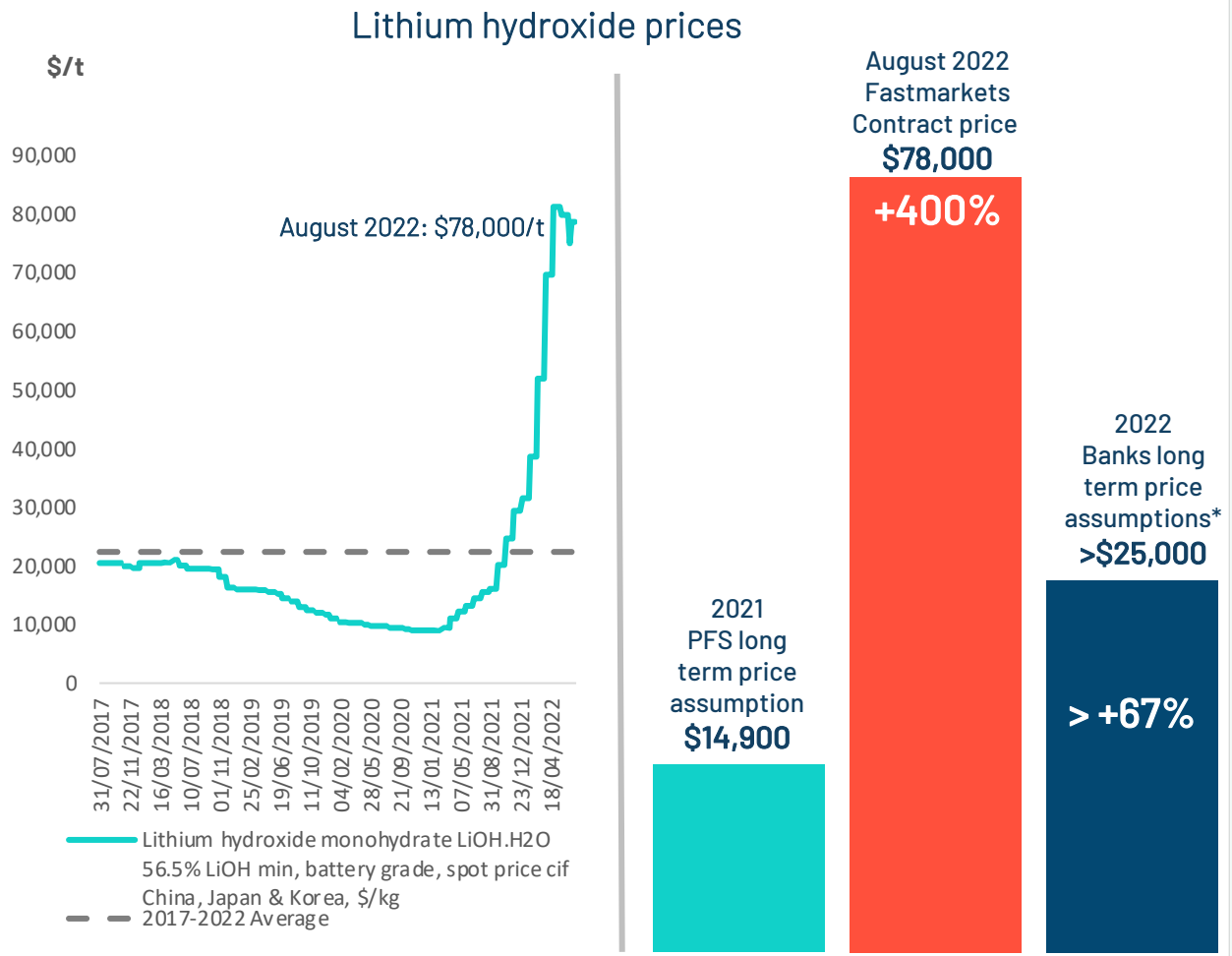
Feed-in Tariff: €0.252 /KWh Guaranteed for 20 years for new projects

Renewable Heat: Energy in the form of heat can be sold to several public and private customers via pipes, proximity is a requirement

One heat offtake has been concluded and negotiations for additional offtakes with local stakeholders are under way

Vulcan Energy's 100% owned Natür[3]Lich Insheim, an operational geothermal renewable energy power plant in the Upper Rhine Valley, Germany.

LITHIUM BUSINESS



Source: Fastmarkets

ZERO CARBON LITHIUM™ PROJECT

POTENTIAL FOR VERY LOW OPEX OPERATION

Select South American brine and Australian/Chinese mineral conversion vs Vulcan's process

LiOH VIA HARD-ROCK PROCESSING

US$51,212/t LiOH
€50,700/t LiOH

Mineral Cost → 7-8 tonnes of spodumene per tonne of LiOH produced

Conversion Cost → Energy intensive and large volume of chemicals needed (i.e. Sulfuric acid)

LiOH VIA BRINE PROCESSING

US$5,360/t LiOH
€4,502/t LiOH

Processing Cost to Carbonate → High reagent cost (i.e. Sodium Carbonate)

Processing Cost to Hydroxide → High reagent cost (i.e. lime)

VULCAN'S PROCESS[5]

US$3,142/t LiOH
€2,640/t LiOH

Currently being updated as part of DFS

Sorption | Electrolysis

Feedstock

Vulcan's "feedstock" is expected to be low cost and have a dual purpose: lithium extraction and energy production in the form of renewable electricity.

Processing

Vulcan plans to use sorption to isolate lithium as opposed to using large volumes of chemicals such as sulfuric acid to dissolve a rock feedstock or soda ash for brine. Vulcan intends to use low-cost energy coming from its geothermal operation.

Upgrading

Vulcan plans to use electrolysis to upgrade chloride into a high purity hydroxide using renewable energy. No heavy reagent usage such as sodium hydroxide or lime.

ZERO CARBON LITHIUM™ PROJECT

ZERO CARBON FOOTPRINT

Note 1: Fastmarkets Spodumene min 6% Li2O, spot price, cif China, $/tonne 11 July 2022
Note 2: Kidman Resources PFS announcement, October 2018, contingency on Refinery OPEX of 15%. Cash operating cost including royalties.
Note 3: Cash operating costs lithium carbonate, Orocobre 2021 Annual report
Note 4: Orocobre 2020 Corporate Presentation – Naraha Lithium Hydroxide plant, Japan
Note 5: Refer to Appendix 10-11 for further details regarding Project economics and production capacity

Note 6: Figures in this slide assume an exchange rate of €0.84/US$1.00
Note 7: Vulcan notes that the comparison operating cost figures above are actual results from lithium hydroxide projects that are currently in production, whereas the above data for Vulcan's process is based on estimates in the PFS. As the Project is still at an early exploration and development stage, there is a high level of inherent uncertainty associated with the Project. A comprehensive list of risks is flagged in the PFS under "Project Risks and Opportunities"

ROBUST TARGET PROJECT FINANCIALS AND PRODUCTION METRICS FROM PFS

ENERGY BUSINESS

74MW Power*

* Renewable heat sales to also be examined in DFS

€0.7Bn NPV Pre-tax

16% IRR Pre-tax

€226M CAPEX Phase I

Payback: 6 years

€0.5Bn NPV Post-tax

13% IRR Post-tax

€0.066/KWh OPEX

LITHIUM BUSINESS

40,000tpy LiOH

€2.8Bn NPV Pre-tax

31% IRR Pre-tax

€2,681/t LiOH OPEX

Payback: 4 years

€1.9Bn NPV Post-tax

26% IRR Post-tax

€474M CAPEX Phase I

Based on 2021 PFS long term price assumption $14,900

Numbers are based on the PFS published in 2021 and are subject to change in DFS

BNP PARIBAS appointed as Financial Advisor toward financing the Zero Carbon Lithium™ Project

Note 1: Refer to Appendix 10-11 for further details regarding Project economics and production capacity

WORKING HARD TO DE-RISK THE PROJECT FURTHER AND ADDRESS ALL IDENTIFIED RISKS

Risk		Mitigation
Availability of key equipment	Drill rigs that can reach the deep geothermal reservoirs are in short supply in Germany. With Germany phasing out fossil fuels, rigs will likely be in short supply as there is a sharp increase in geothermal project development for heating.	Vulcan has agreed to acquire two electric drill rigs, re-purposed from the oil and gas industry, which can reach the target depths required to reach the deep geothermal reservoir in the Upper Rhine Valley. Vulcan is developing its own in-house drilling unit, VERCANA, which will provide approximately 30 jobs locally. This will be a strategic asset, as decarbonisation efforts in Germany and Europe continue to accelerate, and demand for renewable heat increases.
Brine flow rates	The amount of renewable energy and lithium that can be extracted will depend on the brine flow rate achieved at each site. The flow rate from each well will be verified once the well has been drilled.	Vulcan uses modern geothermal industry best practice by incorporating 3D seismic data and analysis into its geological modelling to target high-flow fault zones, and factors in state-of-the-art techniques to increase flow, such as double completion of wells and multi-reservoir completion, using the experience of its technical team.
Resources/ Reserves	Lithium resources and reserves indicated must be considered as estimates only until such reserves are actually extracted and processed. Vulcan's resources are based on limited data points because the reservoir is deep.	Vulcan utilises the considerable local geological expertise of its team, as well as state-of-the-art 3D seismic data, to construct the most accurate models it can. Vulcan reports on its estimates of Mineral Resources and Ore Reserves in compliance with the JORC Code, the ASX Listing Rules and applicable regulation. Vulcan's resource estimates and reserves are signed off by independent external consultants APEX Geoscience Ltd. and GLJ Ltd. respectively.
Sorption	Lithium extraction from brine using sorption is used commercially, but each brine chemistry is different, and risks remain when adapting to each brine.	We are testing multiple alumina-based sorbents at our pilot plant to find the best fit. Similar approaches are used at multiple locations around the world with existing lithium production. This and other types of similar DLE techniques are being used in numerous new lithium developments worldwide. We are adapting this technology to fit with our geothermal brine, in collaboration with companies such as Dupont, and with the experience of our team. Critically, we are testing on "live" geothermal brine, which so far has produced encouraging results.
Permitting	The project may be affected by delays in receiving the necessary approvals from all relevant authorities and parties.	We will continue to keep our stakeholders updated on the timetable, and if anything changes, we will inform the market. We have a team of experts in geothermal development who have developed numerous projects in the past. We have received encouragement from state and federal governments that renewable energy project permitting times will be reduced as a priority, and domestic production of strategic raw materials will also be prioritised.
Social acceptance	As with virtually any sort of new development especially for infrastructure projects, we expect some opposition - as has and has been seen with wind and solar in Germany.	This is normal and we will work to address these concerns. Vulcan has an experienced public relations team. We use geothermal industry best practice, and we are commencing community engagement in the various areas where we intend to develop projects. We think that by clearly and transparently explaining our process to develop renewable heat and power, combined with sustainable lithium extraction, we will achieve stakeholder acceptance.

Note1 : A comprehensive list of risks is flagged in the PFS under "Project Risks and Opportunities" and in the Risk Factors section of our presentation from September 2021 and in the Prospectus released on the ASX on 14 February 2022.
Refer to Appendix 12: Project development timeline: example for one project area; Appendix 13: Brine flow rates

SUSTAINABILITY

ZERO CARBON LITHIUM™ PROJECT

OUR APPROACH TO SUSTAINABILITY

PURPOSE
To empower a net zero-carbon future

STRATEGY
To be global leaders in the production of zero fossil fuel, carbon neutral lithium whilst being nature positive

MISSION
To decarbonise the EV supply chain

ZERO CARBON RENEWABLE HEAT & ENERGY

ZERO CARBON LITHIUM™

TEAM
A world-leading scientific & commercial team in the fields of lithium & geothermal energy

INNOVATION
Adapting existing technologies to efficiently extract lithium from geothermal brine

SUPPLY CHAIN
Strategically placed in the heart of the European EV market to decarbonise the supply chain

VULCAN VALUES

INTEGRITY

LEADERSHIP

FUTURE-FOCUSED

SUSTAINABILITY

SUSTAINABILITY HIGHLIGHTS

Certified Carbon Neutral International Organisation from 2021

129 FTE equivalent Vulcan team members, up from 9 in 2021

ESG linked KPIs for Executive team

5 Binding Lithium Offtakes and 1 Binding Heat Purchase Agreement

Gender balanced Majority Independent Board of Directors

UNGC member (since February 2022)

Supporting the Just Transition by employing a number of ex-Oil and Gas industry experts

Beneficiary of first upstream investment in lithium company by top tier automaker, Stellantis

89% of Employees like the working culture in their team following first satisfaction survey

Between January and June 2022, 5kT CO_2 avoided from renewable energy generated at Natür[3]Lich Insheim

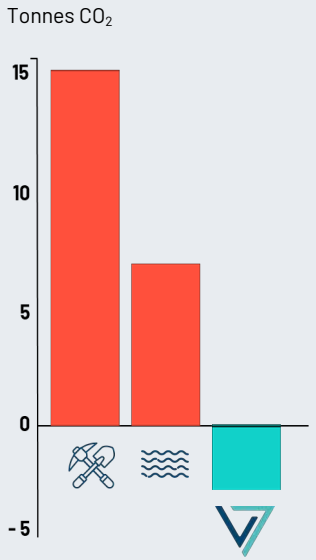
21 roadshows and 2 information events for local community engagement and education completed during the year

TNFD Forum Member assisting with framework development. Funds allocated for a biodiversity project

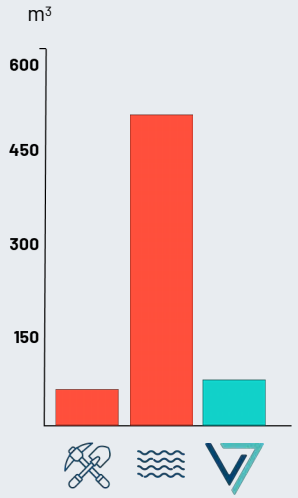
LEADING ENVIRONMENTAL CREDENTIALS

Per tonne of lithium hydroxide produced

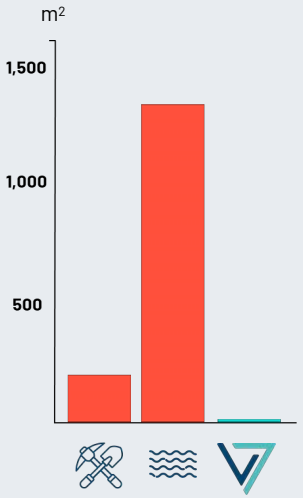
CARBON EMISSIONS (Scope 1,2,3)



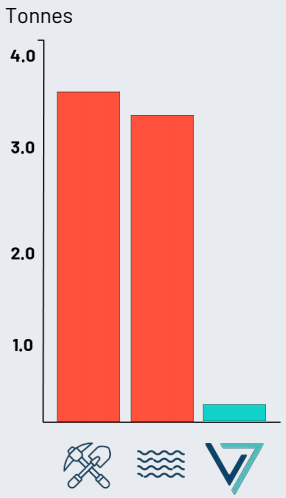
WATER CONSUMPTION



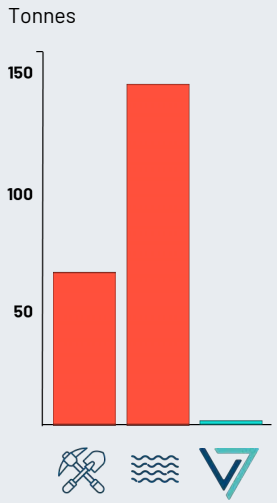
LAND USE



REAGENTS CONSUMPTION



WASTE GENERATION



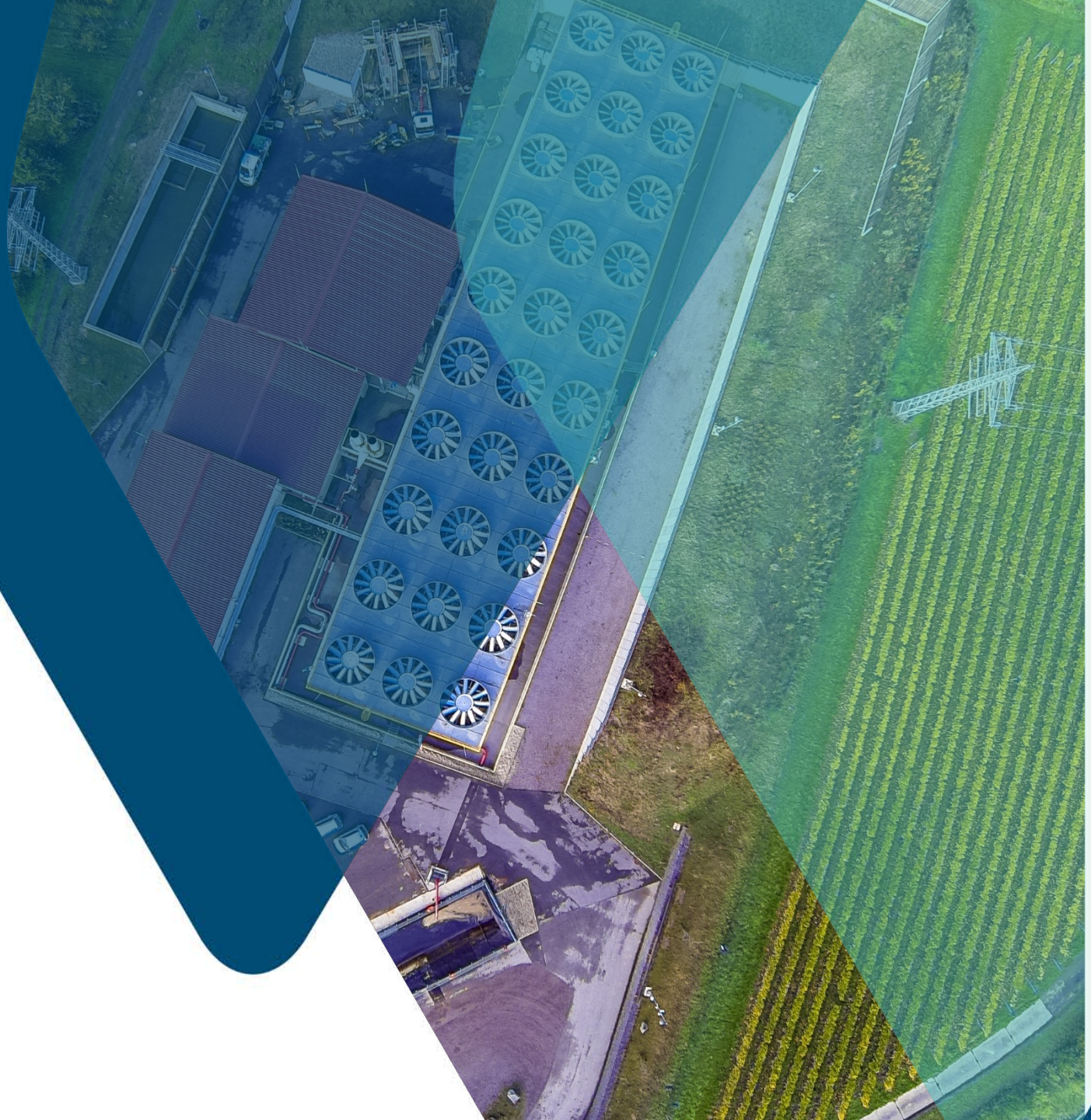
Hard rock mining
60% of world lithium production

Evaporation ponds
40% of world lithium production

VULCAN ENERGIE
ZERO CARBON LITHIUM™

Source: Minviro Life Cycle Analysis 2021 & Vulcan Energy's Pre-Feasibility Study
Note 1: The Company's environmental credentials set out in this slide (and elsewhere in this Presentation) are based on the Company's Pre-Feasibility Study. There is no guarantee that the Company will be able to achieve the targeted metrics.

STRONG FINANCIAL POSITION



ZERO CARBON LITHIUM™ PROJECT

FY22 FINANCIAL HIGHLIGHTS

A$200 million capital raise

STELLANTIS

A$76 million equity investment
8% shareholding

Acquisition of 2 electric drill rigs

Acquisition of Insheim geothermal power plant

Completed acquisition of GeoT and Gec-co businesses

Deconsolidation of Norway assets through spin off of Kuniko Limited
(Vulcan retains 24% share)

FY22 FINANCIAL RESULTS (€'000'S)

€ 4,344

GROUP REVENUE

Approx. +1000%

Includes revenue from continuing operations, govt grants and interest income

€ 18,851

GROUP LOSS AFTER TAX

~180% increase YoY

€ 247,323

NET ASSETS

~203% increaseYoY

€ 175,416

CASH AND CASH EQUIVALENTS

~142% increase YoY

SPEND/DEVELOPMENT

The cash outflows are consistent with Vulcan's strategy to advance the Zero Carbon Lithium™ Project at pace and scale.

Notable cash outlays during the year related to:

- DFS engineering
- Construction of the Sorption Demo-Plant
- Initial refurbishment costs relating to recently acquired electric drill rigs
- Corporate costs.

ZERO CARBON LITHIUM™ PROJECT

KEY FINANCIAL HIGHLIGHTS(€'000'S)

BALANCE SHEET AND CASH FLOW

CASH	**€ 175,416**	↑ 142% on FY21
WORKING CAPITAL	**€ 169,930**	↑ 137% on FY21
OPERATING CASH OUTFLOW	**€ 11,347**	↑ 538% on FY21
INVESTING CASH OUTFLOW	**€ 64,358**	↑ 1,339% on FY21

PROFIT AND LOSS

GROUP REVENUE	**€ 4,344**	↑ 1,000% on FY21
LOSS BEFORE TAX	**€ 18,486**	↑ 175% on FY21

HIGHLIGHTS

- Strengthen Balance Sheet through $200m capital raise and strategic investment from Stellantis
- Aggressive investment in Tangible and Intangible Assets, including acquisition of Insheim geothermal plant, two electric drill rigs, DFS, exploration
- Transition to renewable energy producer from Insheim electricity sales

THE RIGHT TEAM FOR THE JOB

ZERO CARBON LITHIUM™ PROJECT

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

Former Tesla Head of Battery and Energy Supply Chain. Led and managed Tesla's multi-billion-dollar strategic partnerships and sourcing portfolios that support Tesla's Energy and Battery business units including Battery, Battery Raw Material, Energy Storage, Solar and Solar Glass, including raw materials sourcing efforts such as lithium for battery cells. 20 years' experience with Tesla and Microsoft.

Dr. Heidi Grön

Non-Executive Director

Dr. Grön is a chemical engineer by background with 20 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.

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) as Project Director, and Director of Projects. 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.

Dr. Horst Kreuter

Executive Director Germany

Ex-CEO of Geothermal Group Germany GmbH and GeoThermal Engineering GmbH (GeoT). Co- Founder of Vulcan Zero Carbon Lithium™ Project. Successful geothermal project development & permitting in Germany and worldwide. Widespread political, investor and industry network in Germany and Europe. Based in Karlsruhe, local to the project area in the Upper Rhine Valley.

LEADERSHIP TEAM

Cris Moreno
Deputy Chief Executive Officer (from 1 November)

Thorsten Weimann
Chief Operating Officer

Vincent Ledoux-Pedailles
Chief Commercial Officer

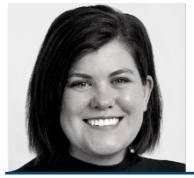
Dr Stephen Harrison
Chief Technical Officer

Rob Ierace
Chief Financial Officer (Australia)

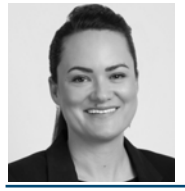
Markus Ritzauer
Chief Financial Officer (Germany)

Daniel Tydde
CoSec & In-House Legal Counsel (Australia)

Dr. Meinhard Grodde
In-House Legal Counsel (Germany)



Jessica Bukowski
Public & Investor Relations Manager (Australia)



Storm Taylor
ESG Lead

Renewable Energy Business

Tobias Hochschild
CEO
Vulcan Energy Subsurface Solutions

Markus Ruff
CEO
Vulcan Energy Engineering

Lithium Chemicals Business

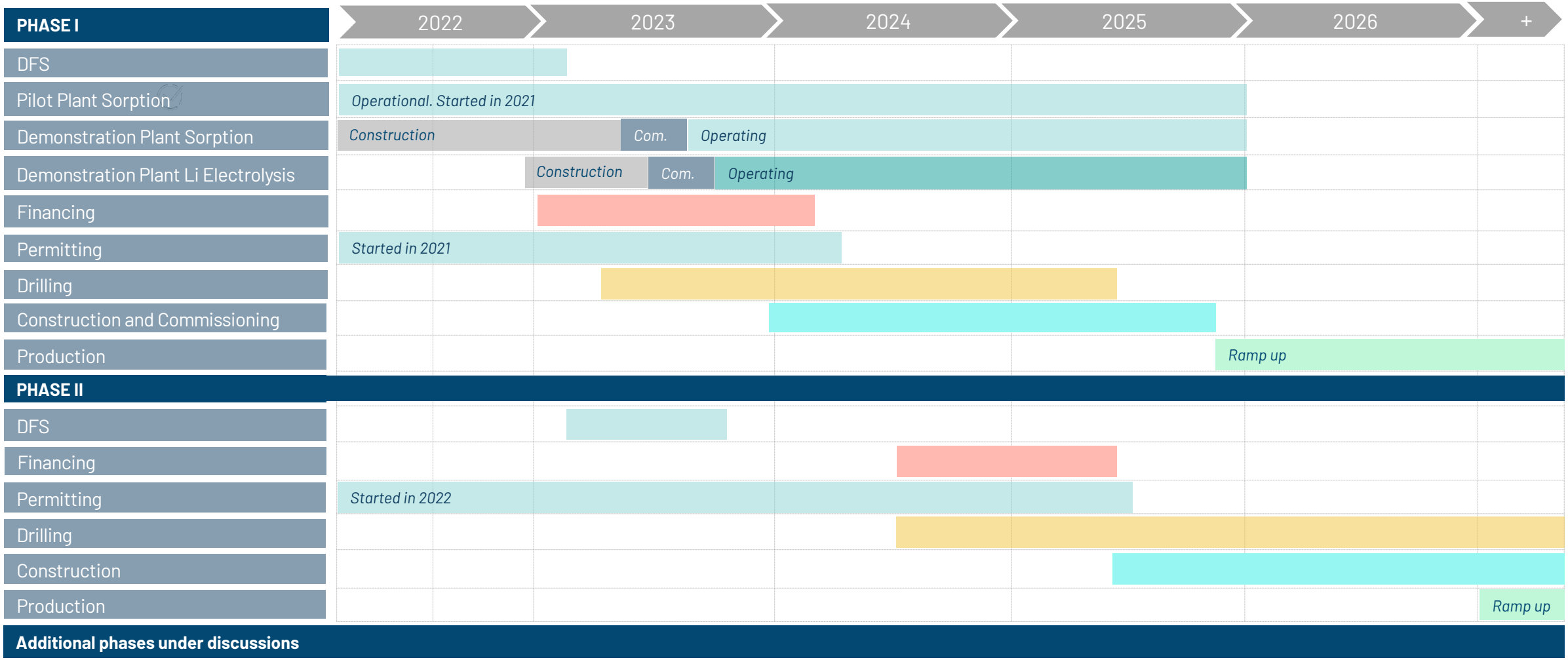
Dr Thomas Aicher
Lead Chemical Engineer

Dr Angela Digennaro
Lab Manager

Benoit Girard
Pilot Plant Manager

ZERO CARBON LITHIUM™ PROJECT

TARGET PROJECT TIMELINE



SHARE PRICE AND CAPITAL STRUCTURE

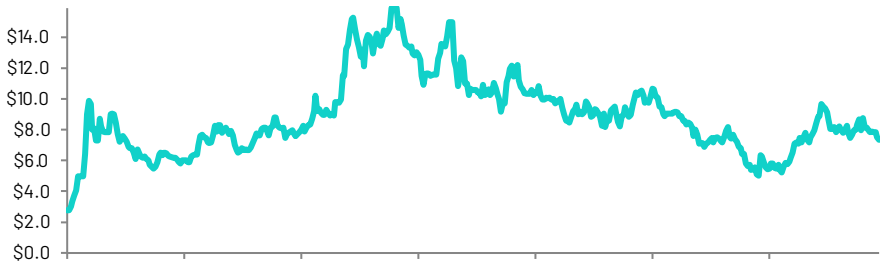
ASX : VUL

Shares on Issue	143,335,301
Performance Shares*	91,174
Performance Rights	8,627,427
Market Capitalisation at $7.50 (undiluted)	~$1.075B
Cash Position (as at 30 June 2022)	€175M
Top 20 Stakeholders	~59.10%
Management (undiluted)	~17%
Frankfurt: VUL	

KEY SHAREHOLDERS

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

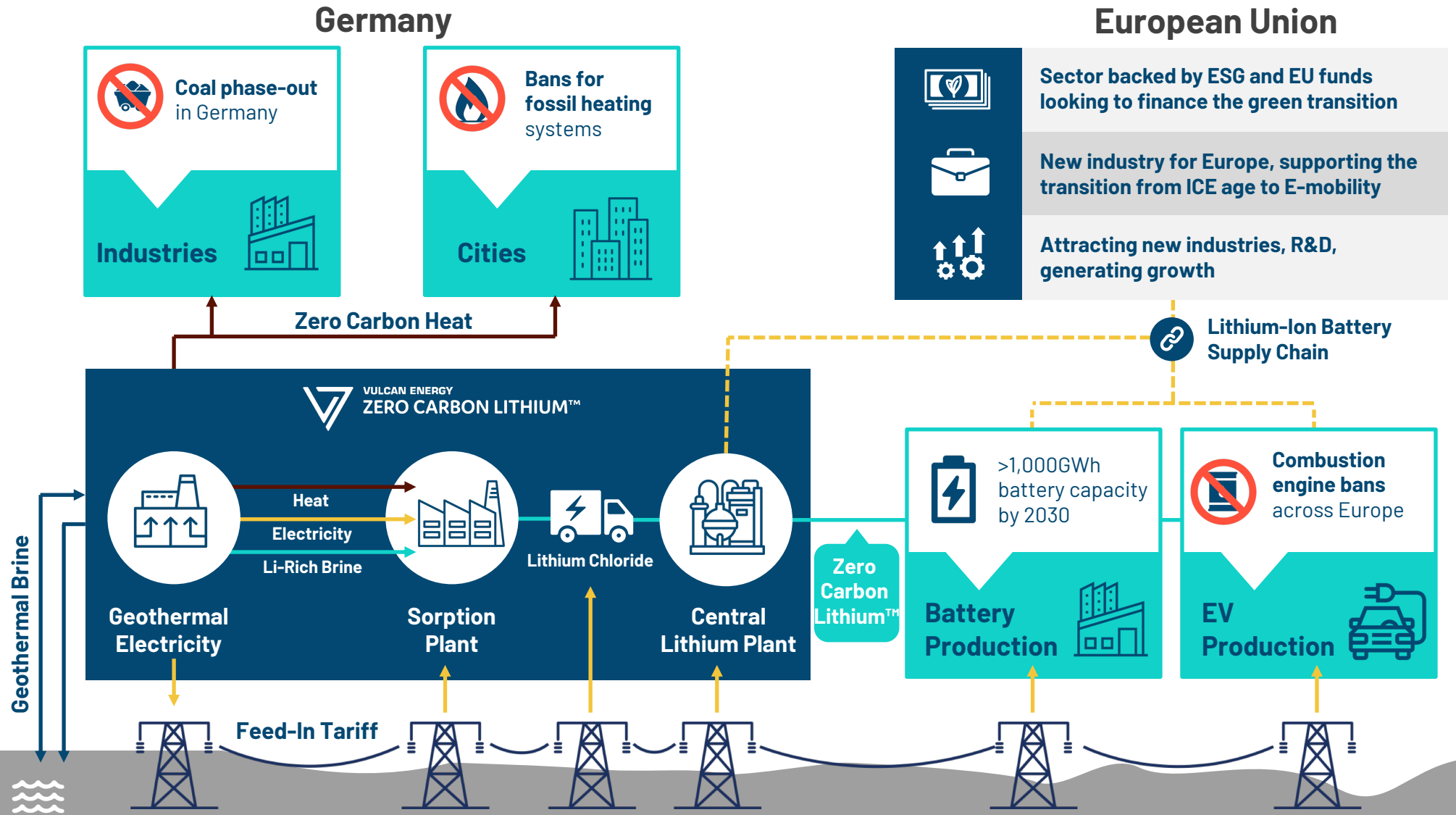
VUL SHARE PRICE (AUD) (1 JANUARY 2021 – 26 SEPTEMBER 2022)



ZERO CARBON LITHIUM™ PROJECT

APPENDICES

APPENDIX 1: VULCAN'S INTEGRATED RENEWABLE ENERGY AND LITHIUM PROJECT DESCRIPTION



Regulations & Initiatives

EU New Battery regulation

European Battery Alliance

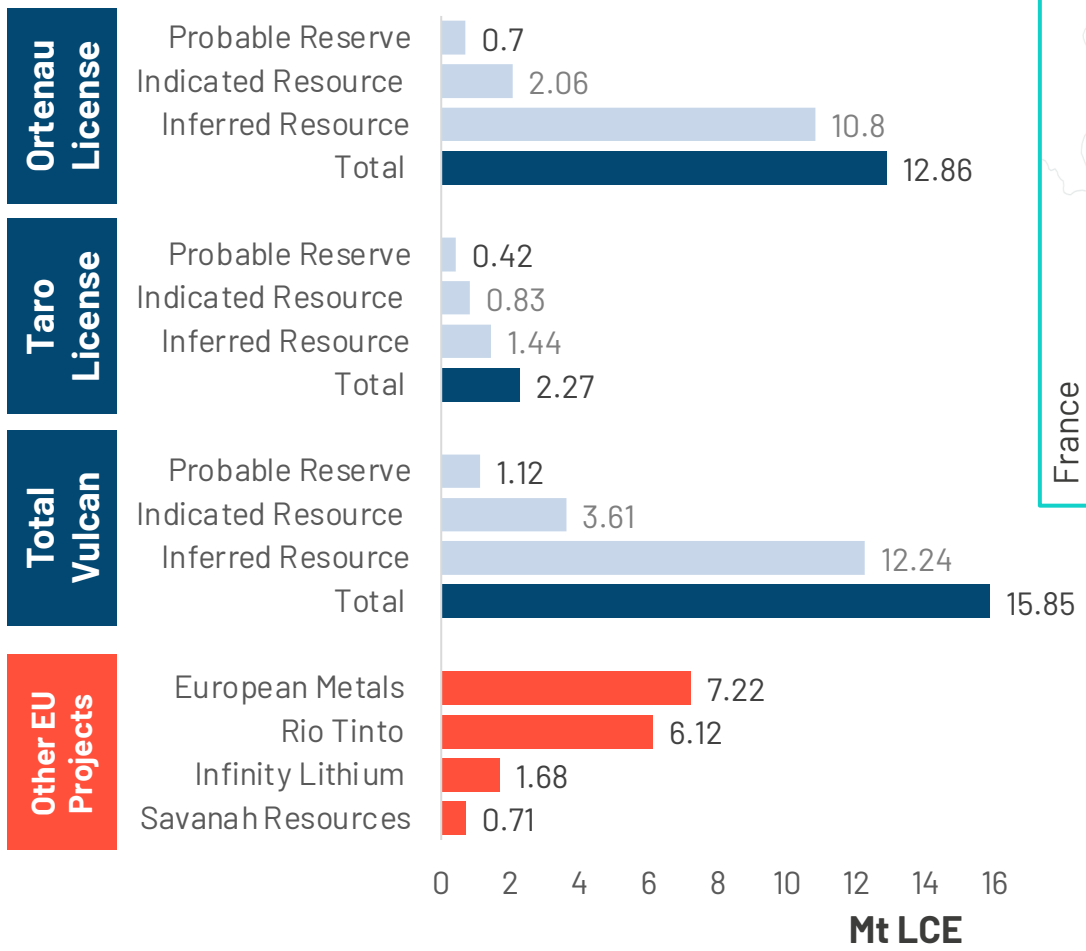
EU Recovery Plan

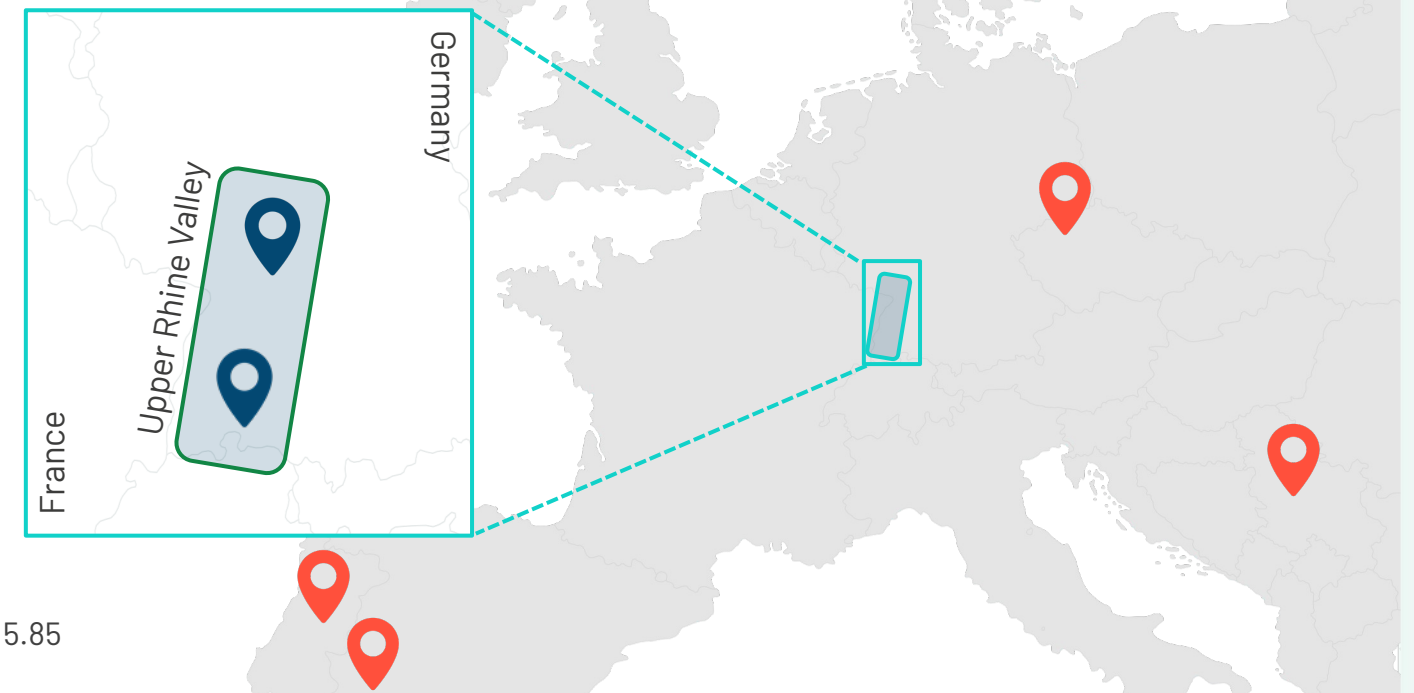
EU Green Deal

Europe is aiming for carbon neutrality by 2050

ZERO CARBON LITHIUM™ PROJECT

APPENDIX 2: LARGEST JORC LITHIUM RESOURCE IN EUROPE





- **1 exploitation permit granted**
- **11 exploration permits granted** and several applications
- Largest lithium resource in Europe: **15.85Mt LCE**

Note 1: Vulcan's URVP Li-Brine resource and reserve area in Europe. Mineral resources are not ore reserves and do not have demonstrated economic viability. Refer to the ASX Announcement entitled "Updated Ortenau Indicated and Inferred Resource" dated 15 December 2020 and the ASX Announcement entitled "Positive Pre-Feasibility Study" dated 15 January 2021, which refer to the Company's Mineral Resources and Ore Reserves (respectively) included in this Presentation, available on the Company's website and www.asx.com. The Company confirms that it is not aware of any new information or data that materially affects the information including in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented in this Presentation have not been materially modified from the original market announcements

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APPENDIX 3: EUROPE-FOCUSED AND DLE LITHIUM PROJECTS PEER COMPARISON REFERENCES

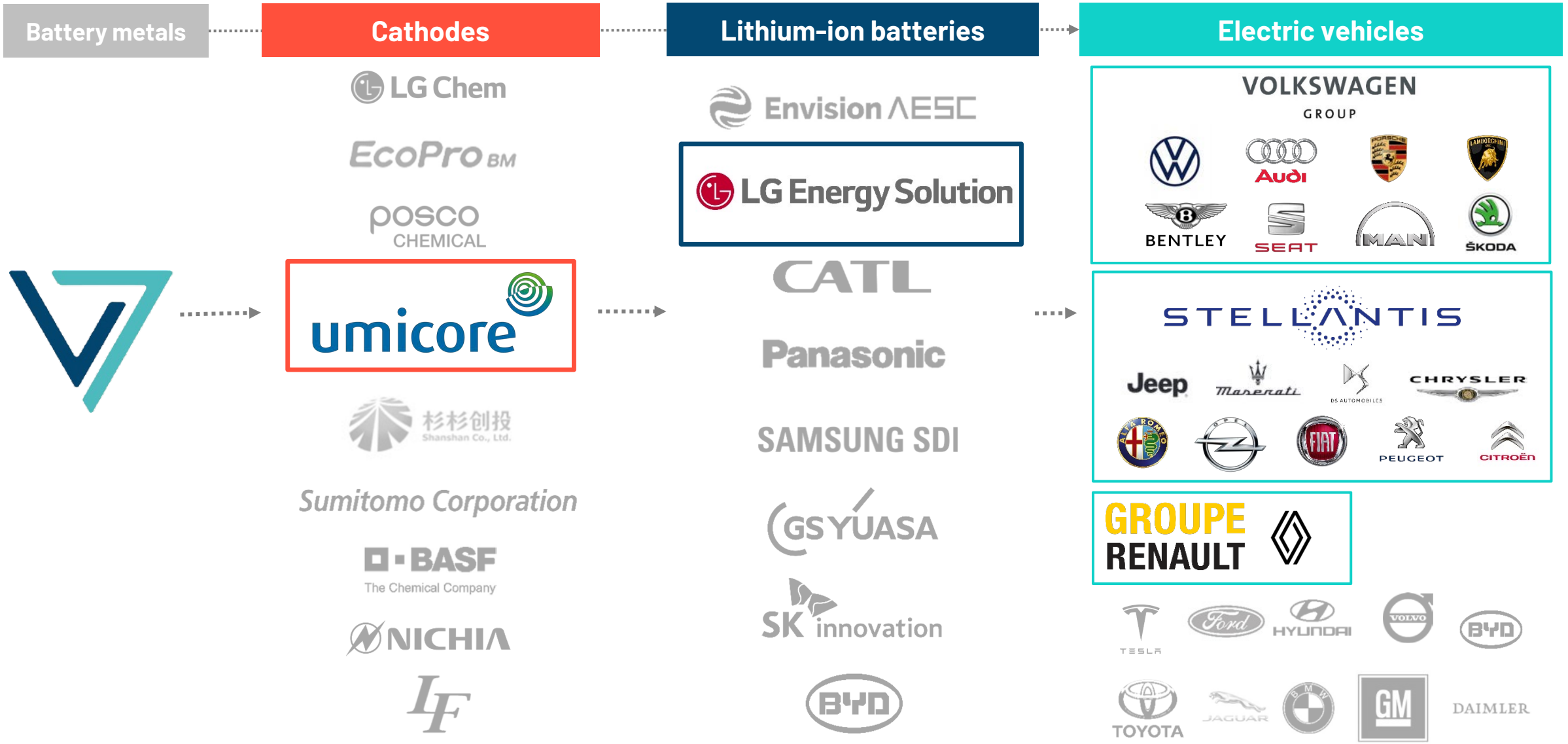
COMPANY[1]	CODE	PROJECT	STAGE	RESOURCE CATEGORY	RESOURCES M TONNES	RESOURCE GRADE (LI2O)	CONTAINED MT LCE TONNES	INFORMATION SOURCE
European Metals	ASX: EMH	Cinovec	PFS Complete	Indicated & Inferred	695.9	0.42	7.22	Corporate Presentation July 2021 - Company Website
Rio Tinto	ASX: RIO	Jadar	PFS Complete	Indicated & Inferred	139.3	1.78	6.12	ASX Announcement Released 10 December 2020
Infinity Lithium	ASX: INF	San Jose	PFS Complete	Indicated & Inferred	111.3	0.61	1.68	Company Presentation Released to ASX 16 February 2021
Savannah Resources	AIM: SAV	Barroso	DFS Underway	Measured, Indicated & Inferred	27.0	1.00	0.71	Corporate Presentation September 2021 – Company Website

COMPANY	PROJECT	STAGE	RESOURCE CATEGORY	BRINE VOLUME	RESOURCE GRADE	CONTAINED MT LCE TONNES	INFORMATION SOURCE
Controlled Thermal Resources	Hell's Kitchen	PEA Completed	Inferred	Unknown	181mg/l Li	2.7	Company Website
E3 Metals	Clearwater, Rocky and Exshaw	PEA Completed	Inferred	5.5 billion m^3	74.6mg/l Li	2.2	PEA released in December 2020

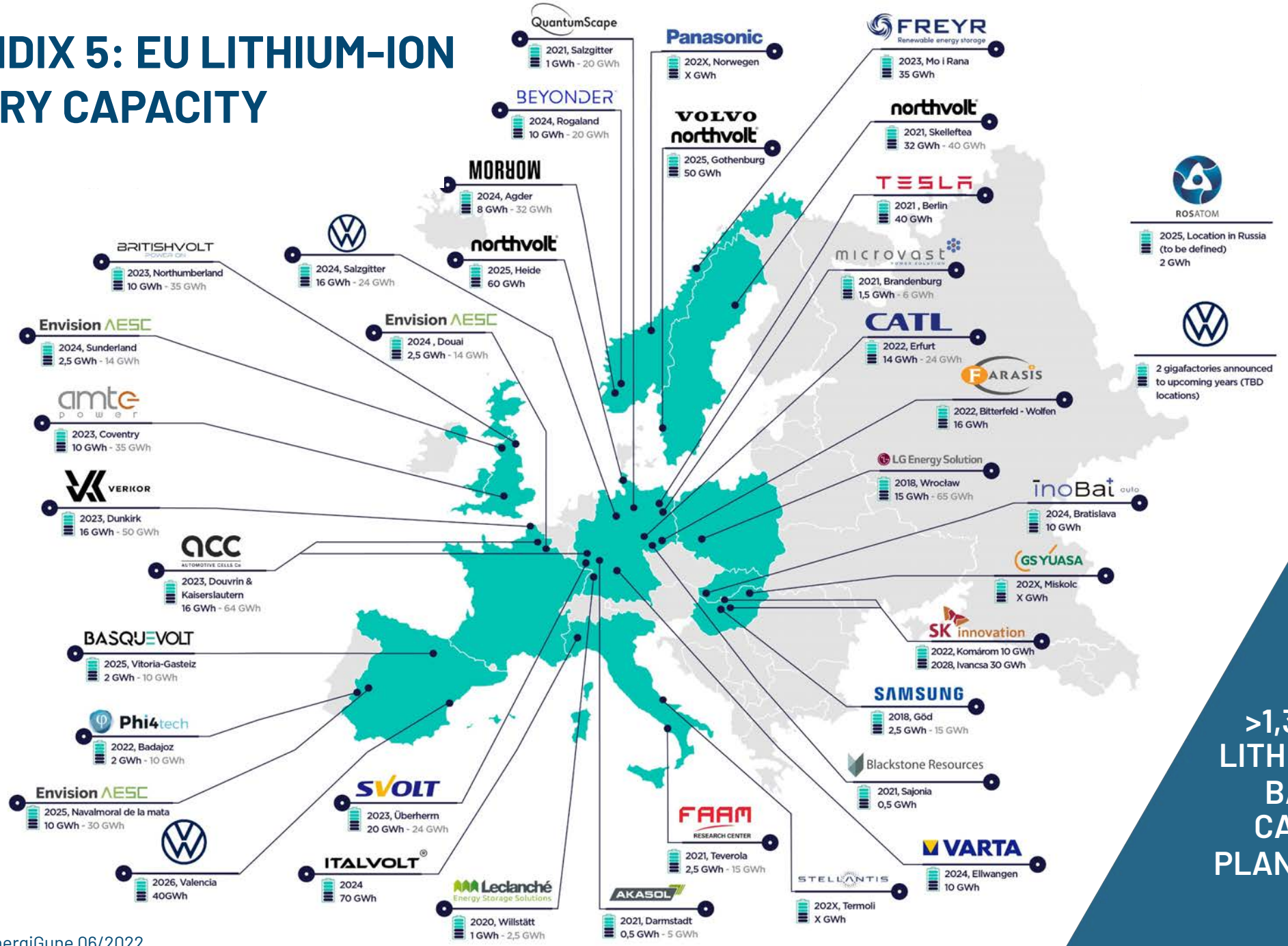
Elders, W., Cohen, L., (1983) The Salton Sea Geothermal Field, California, Technical Report. Institute of Geophysics and Planetary Physics, University of California
GeORG (2013) Projektteam Geopotenziale des tieferen Untergrundes im Oberrheingraben Fachlich-Technischer Abschlussbericht des INTERREG-Projekts GeORG. Teil 2: Geologische Ergebnisse und Nutzungsmöglichkeiten
Pauwels, H., Fouillac, C., Brach M. (1989) Secondary production from geothermal fluids processes for Lithium recovery 2nd progress report. Bureau de Recherches Geologiques et Minieres Service Geologique National
Pauwels, H. and Fouillac, C. (1993) Chemistry and isotopes of deep geothermal saline fluids in the Upper Rhine Graben: Origin of compounds and water-rock interactions. Geochimica et Cosmochimica Acro Vol. 51, pp. 2737-2749
Sanjuan, B., Millot, R., Innocent, C., Dezayes, C., Scheiber, J., Brach, M., (2016) Major geochemical characteristics of geothermal brines from the Upper Rhine Graben granitic basement with constraints on temperature and circulation. Chemical Geology 428 (2016) 27–47

Note 1: Data provided for lithium focused peers with comparable project size and stage and published resource information
Note 2: The Company is not aware of any new information or data that materially affects the information contained in the above sources or the data contained in this Presentation

APPENDIX 4: VULCAN WILL SUPPLY LEADING ACTORS ACROSS THE LITHIUM-ION BATTERY SUPPLY CHAIN



APPENDIX 5: EU LITHIUM-ION BATTERY CAPACITY



>1,300GWh LITHIUM-ION BATTERY CAPACITY PLANNED BY 2030

Source: CIC energiGune 06/2022

APPENDIX 6: GLOBAL DLE ASSETS AND PROJECTS

Company	Livent	Lanke Lithium	Zangge Lithium	Jintai Lithium	Eramet/ Tsingshan	Standard Lithium	Vulcan Energy	Rio Tinto	CTR	Energy Source Minerals	Berkshire Hathaway	Lake Resources/ Lilac	Compass Minerals	E3 Metals
Asset name	Hombre Muerto	Qinghai	Qinghai	Qinghai	Centenario-Ratones	Smackover	Zero Carbon Lithium™	Rincon	Hell's Kitchen	ATLiS	Salton Sea	Kachi	Great Salt Lake	Clearwater Lithium
Country														
DLE technology	Sorption	Sorption	Sorption	Sorption	Sorption	IX	Sorption	Sorption	IX	Sorption	IX	IX	IX	Ion Exchange
DLE provider	Proprietary	Undisclosed	Undisclosed	Undisclosed	Proprietary	Proprietary LiSTR	Undisclosed	Axion	Lilac	Proprietary ILiAD	Proprietary	Lilac	Undisclosed	Proprietary
Stage	Production	Production	Production	Production	Construction	Demo	Pilot	Pilot	Offsite pilot	Pilot	Pilot	Offsite pilot	Pilot	Pilot
Resource (Mt LCE)	Undisclosed	Undisclosed	Undisclosed	Undisclosed	10	3	16	12	3	Undisclosed	Undisclosed	4	2	7
Geothermal	✗	✗	✗	✗	✗	✗	✓	✗	✓	✓	✓	✗	✗	✗
Start date	1998	2017	2018	2019	2024	tbc	2024	2025	2024	2024	tbc	2024	tbc	2025
Capacity (ktpa LCE)	20	20	20	7	24	21	40	50	20	20	90	25	20-25	20
Ownership	Public	-	-	-	Public	Public	Public	Public	Private	Private	Public	Public	Public	Public
Significant Investments					Tsingshan $375M 11/2021	Koch $100M 11/2021	Institutional Investors $320M 2021 Stellantis A$76m	Rio Tinto $825M 12/2021	GM $?M 07/2021			Lilac Up to $50M 09/2021		
Offtakes (announced publicly)	TESLA, BMW	✗	✗	✗	✗	✗	VOLKSWAGEN GROUP, STELLANTIS, GROUPE RENAULT, umicore, LG Energy Solution	✗	gm	✗	✗	✗	✗	✗

Note 1: Resources are rounded to 0p.
Refer to Appendix 7: DLE Projects and Assets - References

APPENDIX 7: DLE PROJECTS AND ASSETS - REFERENCES

Livent	https://s22.q4cdn.com/453302215/files/doc_presentations/2021/11/Livent-Investor-Presentation_for-website.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/2021-11/IR%20presentation_Lithium_VF.pdf
Standard Lithium	https://www.standardlithium.com/projects/arkansas-smackover
Vulcan Energy	https://v-er.eu/wp-content/uploads/2021/12/2021-AGM-MD-presentation.pdf
Rio Tinto	https://www.rinconmining.com/wp-content/uploads/2021/10/Rincon-FINAL-E-210921-FINAL.pdf
CTR	CTR's NI 43 101 inferred mineral resource estimate contains ~2.7 million
Berkshire Hathaway	https://www.ft.com/content/c9760a4e-1a76-11e9-9e64-d150b3105d21
Lake Resources/Lilac	https://lakeresources.com.au/wp-content/uploads/2021/11/lke_noosa-presentation_12-nov-21.pdf http://lilacsolutions.com/2021/09/lake-resources-partners-with-lilac-solutions-for-technology-and-funding-to-develop-the-kachi-lithium-brine-project-in-argentina/
Compass Minerals	https://investors.compassminerals.com/investors-relations/investor-news/press-release-details/2021/Compass-Minerals-Identifies-Approximately-2.4-Million-Metric-Ton-Sustainable-Lithium-Resource/default.aspx
E3 Metals	https://www.*e3metalscorp*.com/_resources/presentations/corporate-presentation.pdf?v=0.084

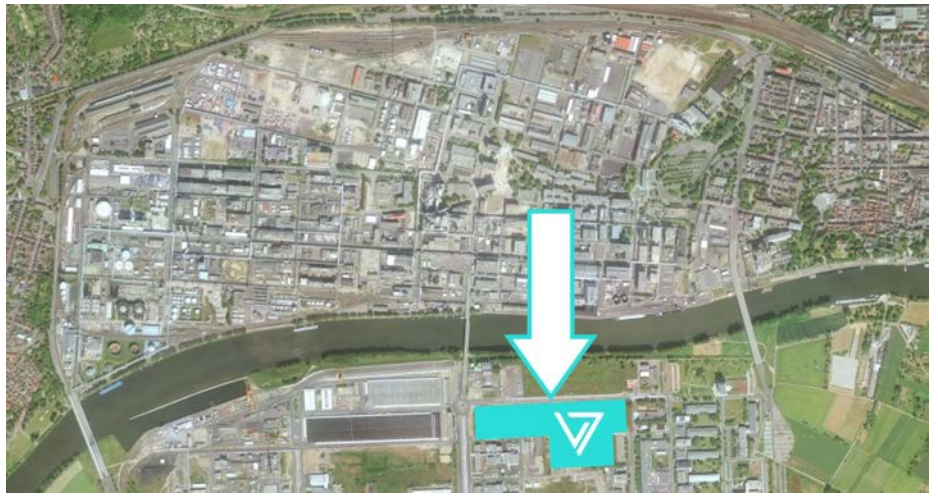
APPENDIX 8: GEOTHERMAL BRINE COMPOSITION COMPARISON

		Upper Rhine Valley Brine	Salton Sea Brine	URV vs SS
Salts (Cations)	Analyte	Mg/kg Value	Mg/kg Value	%
Lithium: Source of revenue	Li	214	213	+1%
	Na	22,231	59,600	-63%
	K	4,878	18,126	-73%
	Rb	30.0	-	
	Cs	16.0	-	
	Mg	99	54	+83%
	Ca	5,195	31,714	-84%
	Sr	276	475	-42%
	Ba	14.4	139	-90%
Anions				
	Cl	60,567	145,000	-58%
	SO4	172	127	+35%
	F	4.7	24	-81%
	Br	288	-	
Metals (Cations)				
Requires additional purification step if high	B	47	401	-88%
	Be	0.0207	0.2	-91%
Can negatively affect DLE if high	Si	67.2	550	-88%
Can negatively affect DLE if high	As	20.3	8.8	+131%
Can negatively affect DLE if high	Mn	24.5	1,563	-98%
Can negatively affect DLE if high	Fe	37.4	664	-94%
Can negatively affect DLE if high	Zn	5.2	492	-99%
	Pb	0.156	108	-100%
Can negatively affect DLE if high	Al	0.014	16	-100%
	Ni	0.188	0.5	-61%
Can negatively affect DLE if high	Co	0.015	8	-100%
	Sb	0.717	6.5	-89%
	Ti	<0.1	-	
	V	0.165	0.6	-71%
	Cr	0.181	2	-89%
	Cd	0.0205	3	-99%
	Mo	0.0124	8	-100%
	Tl	0.328	2	-86%
pH		5.828	4.9	

Note: Refer to ASX announcement of 10 March 2021 "High grade lithium, low impurity results from Vulcan's 2021 Upper Rhine Valley bulk brine sampling". Comparison of Vulcan's January 2021 Upper Rhine Valley sample result analysed at KIT (n=1), compared to Salton Sea brine results (n=unknown) as recorded in publicly available literature (https://gdr.openei.org/submissions/499 for all multi-element results except silica; US Patent 4429535 for pre-flash silica values). Salton Sea values adjusted by the density 1.25 -> from mg/kg to mg/l.

APPENDIX 9: VULCAN SECURED SITE FOR ITS PLANNED COMMERCIAL LITHIUM HYDROXIDE PLANT

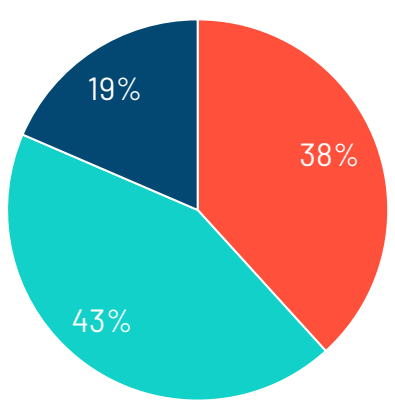
- Vulcan signed an agreement with chemical park management company Infraserv, to secure a site for its planned **Central Lithium Plant** (CLP) at the **Höchst Chemical Park**, located just outside of Frankfurt
- Höchst is **one of Europe's largest chemical sites** and hosts more than 22,000 personnel and 90 companies including Nobian, Clariant, Sanofi and Celanese
- The CLP is intended as a **processing hub**, processing lithium chloride from multiple combined geothermal and lithium sorption plants into lithium hydroxide monohydrate
- From the CLP, the lithium hydroxide monohydrate is intended to be transported to Vulcan's European customers in the battery and electric vehicle industry, dramatically **lowering the transport footprint** of the current lithium supply chain
- The Höchst site features **key advantages** for the project including:
    - proximity to Vulcan's project areas where the integrated geothermal and sorption operations are proposed to be built;
    - multiple low carbon transport modes available (barge, train);
    - availability of renewable power onsite; and
    - the required space and utilities for future phased expansion of the CLP.



APPENDIX 10: TARGET PROJECT ECONOMICS FROM PFS - CAPEX

	ENERGY BUSINESS	LITHIUM BUSINESS		
	1 Geothermal Plant	2 Sorption Plant	3 CLP	
PHASE 1 2024 Start	2 geothermal plants: • GB1 – 8MW • GB2 – 14MW Capex: €226M	2 Sorption plants: • SB1 – 8kt LiOH • SB2 – 7kt LiOH Capex: €291M	1 Central Lithium Plant • CLP1 - 15kt LiOH Capex: €182M	€473M
PHASE 2 2025 Start	3 geothermal plants: • GC1 – 17MW • GC2 – 17MW • GC3 – 17MW Capex: €438M	3 Sorption plants: • SC1 – 8kt LiOH • SC2 – 8kt LiOH • SC3 – 8kt LiOH Capex: €460M	1 Central Lithium Plant • CLP2 - 25kt LiOH Capex: €240M	€700M
FULL PROJECT NO PHASING 2024 Start	5 geothermal plants 74MW Capex: €665M	5 Sorption Plants Capex: €751M	1 Central Lithium Plant • CLP – 40kt LiOH Capex: €322M	€1.1bn

FULL PROJECT



Equivalent per tonne of LiOH

Note 1: Refer to the Company's ASX announcement entitled "Positive Pre-Feasibility Study" dated 15 January 2021, available on the Company's website and www.asx.com, for further details.
Refer to the Company's ASX announcement entitled "Positive Pre-Feasibility Study" dated 15 January 2021, available on the Company's website and www.asx.com, for further details. The Company confirms that all material assumptions underpinning the production targets, and the forecast financial information derived from such production targets, in this Presentation, continue to apply and have not materially changed.

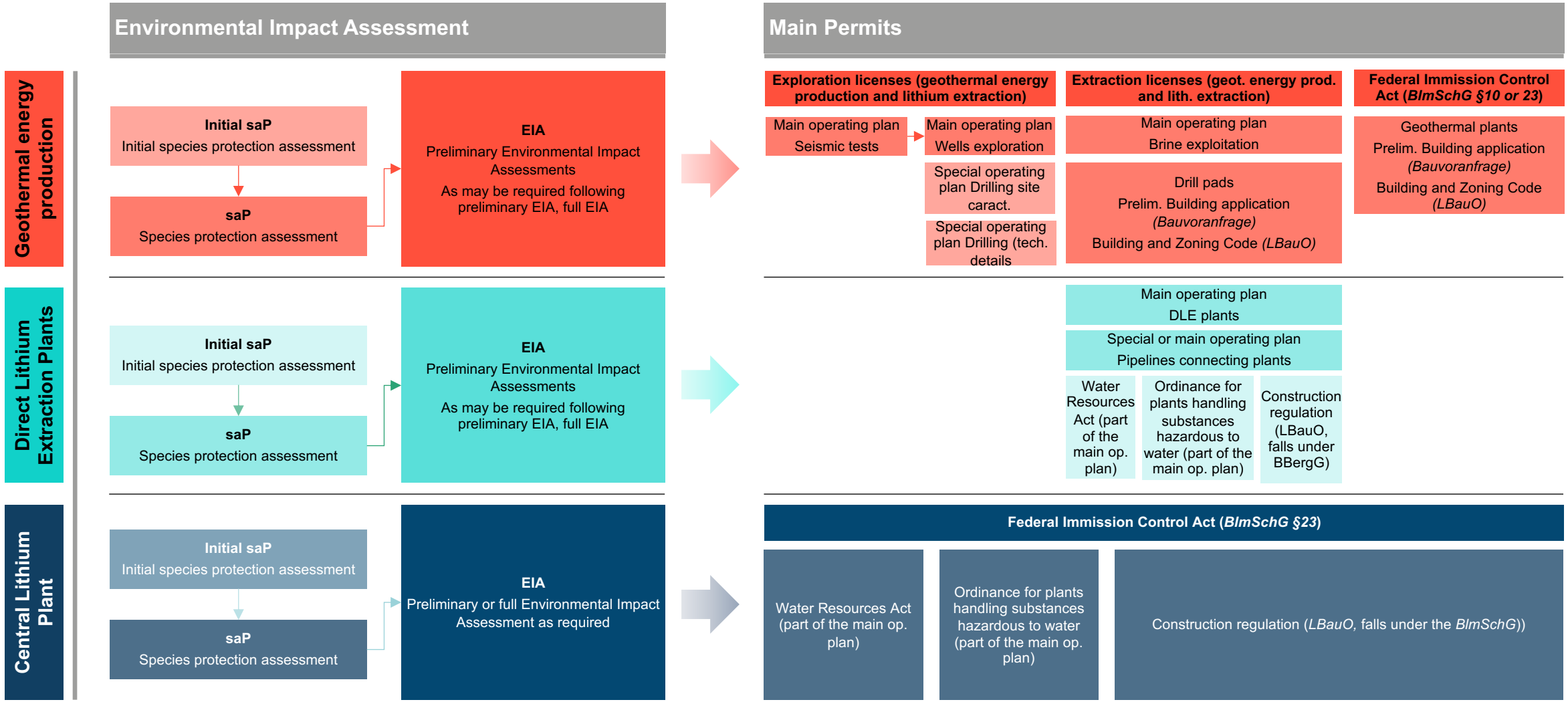
APPENDIX 11: TARGET PROJECT ECONOMICS – POSSIBLE STRUCTURES

Numbers are based on the PFS published in 2021 and are subject to change

	Full project developed at the same time but separated in two different businesses: Energy and Lithium.		Phase 1 developed first, separated in two different businesses: Energy and Lithium.		Phase 2 developed second, separated in two different businesses: Energy and Lithium.	
	FULL PROJECT – NO PHASING 2024 Start		**PHASE 1 2024 Start**		**PHASE 2 2025 Start**	
	ENERGY BUSINESS	LITHIUM BUSINESS	ENERGY BUSINESS	LITHIUM BUSINESS	ENERGY BUSINESS	LITHIUM BUSINESS
	GB1 GB2 GC1 GC2 GC3	GB1 GB2 GC1 GC2 GC3	GB1 GB2 GC1 GC2 GC3	GB1 GB2 GC1 GC2 GC3	GB1 GB2 GC1 GC2 GC3	GB1 GB2 GC1 GC2 GC3
	SB1 SB2 SC1 SC2 SC3	SB1 SB2 SC1 SC2 SC3	SB1 SB2 SC1 SC2 SC3	SB1 SB2 SC1 SC2 SC3	SB1 SB2 SC1 SC2 SC3	SB1 SB2 SC1 SC2 SC3
	CLP	CLP	CLP1 CLP2	CLP1 CLP2	CLP1 CLP2	CLP1 CLP2
	74MW	40Ktpy LiOH	22MW	15Ktpy LiOH	52MW	25Ktpy LiOH
Revenues €M/y	157	500	46	187	111	312
Net Op. Cash Fl. €M/y	114	394	31	140	83	242
NPV Pre-tax €M	685	2,802	155	971	530	1,647
NPV Post-tax €M	470	1,897	99	644	371	1,111
IRR Pre-tax	16%	31%	13%	27%	18%	32%
IRR Post-tax	13%	26%	11%	22%	15%	26%
Payback (year)	6	4	4	4	7	5
CAPEX €M	665	1,073	226	474	438	700
CAPEX Geo			*226*		*438*	
CAPEX Sorption		*751*		*291*		*460*
CAPEX CLP		*322*		*182*		*240*
OPEX €/KWh or LiOH€/t	0.066	2,681	0.078	3,201	0.061	2,855

Note 1: Lithium Hydroxide Battery Quality at €12,542 or US$14,925/t (assumes exchange rate of €0.84/US$1.00)
Note 2: Phase 1 relates to Taro license, Phase 2 to Ortenau license
Note 3: Ortenau license is 100% owned by Vulcan. Vulcan has a 100% interest in Taro
Note 4: Refer to the Company's ASX announcement entitled "Positive Pre-Feasibility Study" dated 15 January 2021, available on the Company's website and www.asx.com, for further details.

APPENDIX 12: PROJECT DEVELOPMENT TIMELINE: EXAMPLE FOR ONE PROJECT AREA



ZERO CARBON LITHIUM™ PROJECT

APPENDIX 13: BRINE FLOW RATES

Until we drill our first wells, risks around flow rate will remain. However, Vulcan believes it has an appropriate level of confidence around its flow rates assumptions, based on the experience of its team, and state-of-the-art scientific tools, data and studies

1. Vulcan is targeting high-flow fault zones within its sedimentary reservoir units, which are predominantly the Bunter Sandstone, using state-of-the-art seismic data. When exploration for geothermal brines first began in the Upper Rhine Valley, no seismic data was used, or the data was 2D seismic only, to get a picture of the sub-surface. The industry has seen a steady progression of understanding and improvements in exploration over time, including the use of 3D seismic, and a corresponding increase in flow rates, as would be expected. 3D seismic is now a standard for geothermal exploration in the Upper Rhine Valley and elsewhere

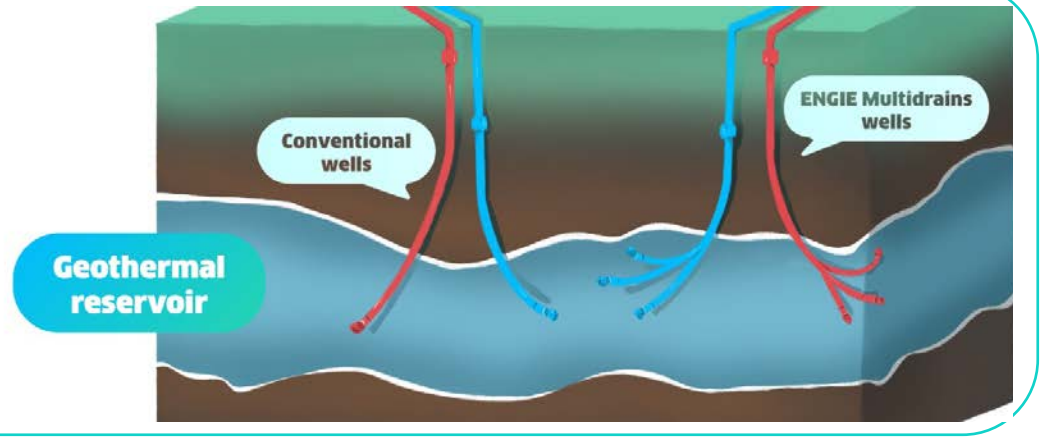
2. In our estimation of flow rates, we have conducted detailed studies using modelling information derived from seismic data in our areas. The Upper Rhine is a sedimentary graben system, geologically similar to hydrocarbon systems with permeable formations confined by impermeable rock. This differs to other types of geothermal plays, such as volcanic-hosted, where the systems are more complex, in general less permeable and seismic data is less useful

3. We also factor in techniques well known in the oil and gas industry to increase flow, such as double completion of wells and multi-reservoir completion as recently promoted by Schlumberger and Engie

Vulcan has, based on its detailed analysis and the various factors mentioned above, used between 100 and 120l/s as assumed flow rates for its projects in its PFS.

A **public list of flow rates** achieved at deep geothermal wells in and around Germany can be found in a 2014 report compiled for the German Federal Ministry of the Economy (BMWi) at the following link: https://www.grs.de/sites/default/files/pdf/grs-316_teilb.pdf.

Wells displaying flow rates at greater than 100l/s are common in the list, including at Brühl in the Upper Rhine Graben, with some projects reaching up to 150l/s.



Source: Engie

APPENDIX 14: POTENTIAL EUROPEAN EXPANSION IN ITALY

Vulcan and Enel Green Power have signed a binding collaboration agreement

- Vulcan and Enel Green Power have signed a binding collaboration agreement to explore and develop its Cesano license in Italy on a 50:50 basis
- The Parties aim to enter a Joint Venture agreement on completion of a joint positive Scoping Study
- Both companies also agreed to evaluate the opportunity to cooperate on other geothermal lithium projects in Italy
- Enel Green Power is part of the Enel Group and the largest geothermal energy producer in Italy
- Enel Green Power has already previously explored and drilled a number of wells in the Cesano area and gathered relevant data direct from local reservoirs

Figure 1: Location of A) Vulcan's Zero Carbon Lithium Project in the Upper Rhine Valley Brine Field, Germany, in relation to B) the Cesano license in Italy.

(See ASX announcements on 24 January 2022 and 8 July 2022 for more information).

VULCAN GROUP: INTEGRATED, IN-HOUSE CAPABILITY TO EXECUTE ON OUR STRATEGY

Vulcan's expertise and assets

Renewable energy

- **VEE** Above-surface geothermal engineering team
- **VES** Sub-surface geothermal & engineering team
- **Natür³Lich Insheim** geothermal renewable energy plant
- **VERCANA** Deep geothermal rigs & team
- Exploration data packages acquired
- Multiple geothermal-lithium brine licences
- Multiple renewable energy projects in development across multiple licences

Lithium

- Fully equipped in-house lab with team
- Operational pilot plant
- Chemical engineering team
- Demonstration plant under construction

Sustainability

- Carbon neutrality commitment during development and operations
- Life Cycle Assessment and global study on the environmental footprint of lithium hydroxide production
- Supply chain traceability and CO_2 measurement

Finance

- Strong cash position
- A$320 million capital raising in 2021
- Low cost and resilient financials

Customers

- Five definitive lithium offtake agreements
- One offtake agreement concluded and multiple additional heat offtakes in discussion

Independent expertise

GLJ
APEX Geoscience Ltd.
HATCH
DUPONT
NOBIAN
Circulor
MINVIRO
Carbon Neutral BUILDING

Capital raisings | Financing advisors | Listing advisors

cg Canaccord Genuity
BNP PARIBAS
Goldman Sachs
BERENBERG

Customers

VOLKSWAGEN GROUP
Renault Group
umicore
STELLANTIS
LG Energy Solution

Industrial ecosystem

Bundesverband Geothermie
AGENTUR FÜR ERNEUERBARE ENERGIEN
KLiB Kompetenznetzwerk Lithium Ionen Batterien
ISO
EGEC GEOTHERMAL
BVMW Bundesverband mittelständische Wirtschaft
eit InnoEnergy
WIRTSCHAFTSRAT Deutschland
EUROPEAN BATTERY ALLIANCE
GLOBAL BATTERY ALLIANCE
automotive · engineering · network aen

ZERO CARBON LITHIUM™ PROJECT

Thank you

Media and Investor Relations

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FSE:VUL

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