Zero Carbon Lithium™

VULCAN ENERGY RESOURCES
Zero Carbon Lithium™

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COMPETENT PERSON STATEMENT

The information in this report that relates to Mineral Resources is extracted from the ASX announcement made by Vulcan on the 20th of January 2020, which is available on **www.v-er.com**. The information in this presentation that relates to the Scoping Study for the Vulcan Lithium Project is extracted from the ASX announcement “Positive Scoping Study – Vulcan Zero Carbon Lithium Project”, released on the 21st of February 2020 which is available on www.v-er.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.

Why Vulcan?

We exist to decarbonise the currently high carbon production footprint of lithium-ion batteries used in electric vehicles by producing a world-first **Zero Carbon Lithium**™ hydroxide product from our geothermal lithium brine project in the Upper Rhine Valley, Germany. Lithium is a critical resource for batteries and electric vehicles.

To fully electrify our cars with lithium-ion batteries, we need lithium. **Using the current main source of producing and refining lithium, from hard-rock mines, will emit approximately 1.05 billion tonnes* of CO_2.**

CO_2

1.05 Billion Tonnes

Approximate emissions from producing and refining lithium from hard-rock mines

=

That's equivalent to the **annual emissions** of the **UK, France** and **Italy combined**

*See Appendices for calculations

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Zero Carbon Lithium™

Why Vulcan?

The other current alternative source of lithium is in South America via evaporation ponds, which taxes our planet's most precious resource: water. It also has a significant impact on the Indigenous communities in those areas.

Atacama Desert in Chile

"Lithium exploitation is drying out the world's driest desert"

The Acatama Desert in Chile, the world's driest desert, is gradually losing its last water resources. Indigenous communities have been sounding the alarm for several years and are now being strengthened by scientific research and environmental organisations. Cause of this dehydration? Lithium mining.

https://catapa.be/en/lithium-exploitation-is-drying-out-the-worlds-driest-desert/

Why Vulcan?

Europe is undergoing a once-in-a-lifetime switch to electric vehicles.

This has made it the **fastest growing** lithium-ion battery production centre in the **world**.

It has **ZERO local supply** of lithium hydroxide to feed this demand.

80% of global supply is controlled by China.

The EU will tax lithium-ion batteries based on their carbon footprint: a "CO_2 Passport".

European auto-manufacturers want to produce Zero Carbon EVs.

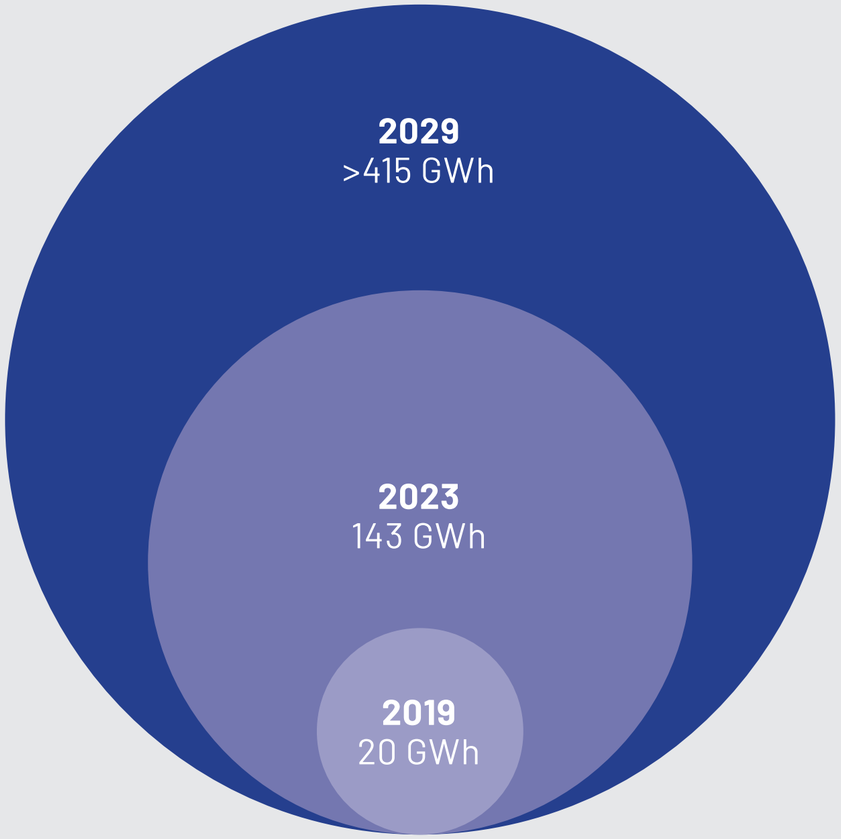
No low-carbon or low-water source of lithium currently exists.

go TO zero

"Volkswagen's delivery promise:
CO_2-neutral production including supply chain"

Volkswagen Presentation, ID. Insights, Sustainable Mobility, 2019

EUROPEAN LITHIUM-ION BATTERY CELL PRODUCTION FORECAST TO 2029



Adapted from Benchmark Mineral Intelligence

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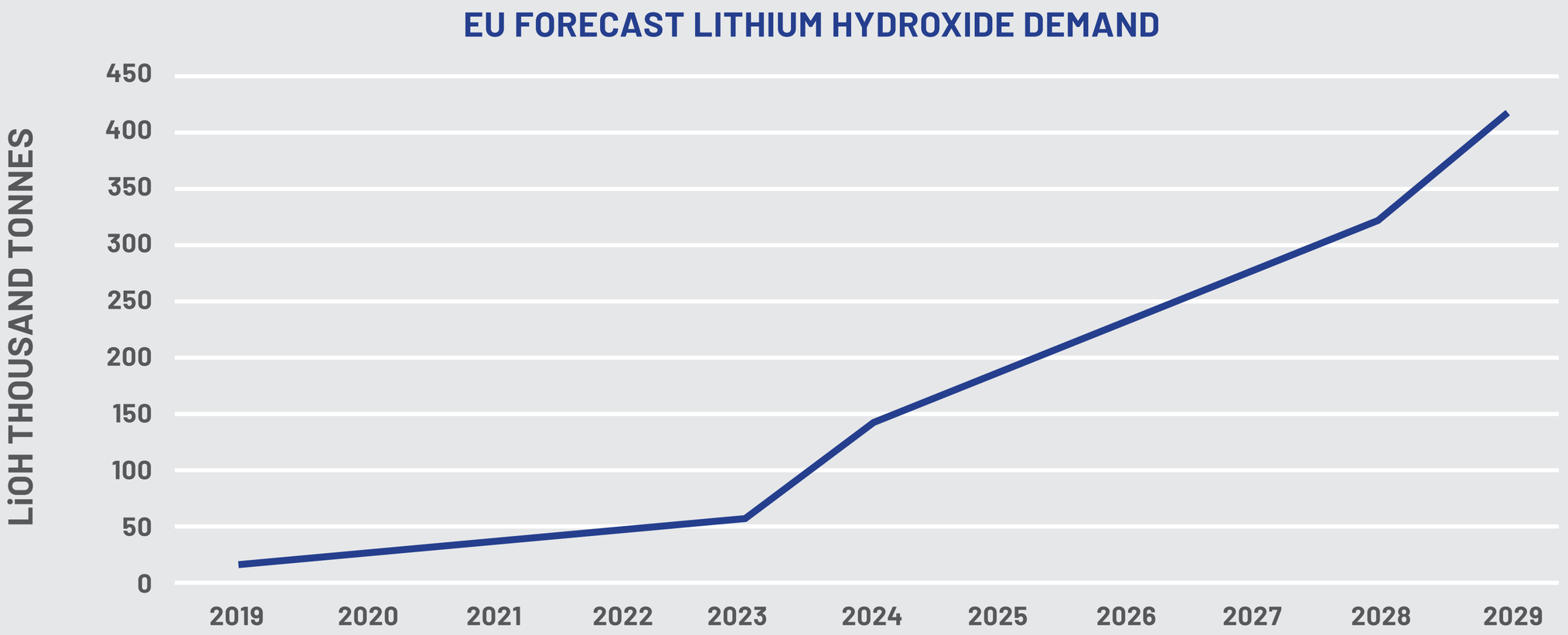
Forecast Demand



Compiled industry data based on cell and cathode production forecasts

VULCAN ENERGY RESOURCES
Zero Carbon Lithium™

The Vulcan Zero Carbon Lithium™ team: Board

Lithium, Renewable Energy & Project Finance Experience

Dr. Francis Wedin

MANAGING DIRECTOR & FOUNDER-CEO

- Founder of Vulcan Zero Carbon Lithium™ Project. Lithium industry executive since 2014. Previously Executive Director of ASX-listed Exore Resources Ltd.
- Three discoveries of JORC Lithium Resources on two continents including Lynas Find, now part of Pilbara Minerals' Pilgangoora Project in production (ASX:PLS).
- Management & Executive experience in resources sector on four continents; bilingual; dual Swedish & Australian nationality.
- PhD & BSc (Hons) in Exploration Geology & MBA in Renewable Energy.

Dr. Horst Kreuter

CO-FOUNDER & EXECUTIVE DIRECTOR – GEOTHERMAL EXPERT

- 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.

Gavin Rezos

CHAIR – INVESTMENT BANKING EXPERT

- Executive Chair/CEO positions of two 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 and principal of Viaticus Capital.
- Previously Non-Executive Director of Iluka Resources, Alexium International Group and Rowing Australia.

Ranya Alkadamani

NON-EXECUTIVE DIRECTOR – COMMUNICATIONS EXPERT

- 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 then Foreign Minister and former Prime Minister, Kevin Rudd.
- Was personally behind the global launches of the Walk Free Global Slavery Index, which reached more than 1 billion people.

Dr. Katharina Gerber

NON-EXECUTIVE DIRECTOR – GEOTHERMAL LITHIUM CHEMISTRY EXPERT

- Awarded her PhD on lithium chemistry magna cum laude (with great distinction) at the University of Bonn.
- Most recently focussed on lithium extraction from geothermal brine at the California Energy Commission (CEC). Participates in "California Lithium Valley" initiative.
- Prior to joining the CEC, she conducted research developing and characterizing new electrode materials for lithium-ion batteries.
- Unique combination of expertise in lithium chemistry and lithium extraction from geothermal brine.

Technical team & consultants

World-Renowned Geological & Engineering Expertise

APEX Geoscience Ltd. GeoThermal ENGINEERING HATCH gec-co GLOBAL ENGINEERING & CONSULTING

Alex Grant **CTO DIRECT LITHIUM EXTRACTION**

Co-founded Lilac Solutions, one of the world's leading direct lithium extraction technology companies, which raised $20M from Bill Gates's Breakthrough Energy Ventures

Thorsten Weimann **GEOTHERMAL PLANT ENGINEERING**

Expert in geothermal and drilling technology, with more than 25 years of professional experience

Dr. Michael Kraml **SENIOR GEOCHEMIST**

Dr. Jens Grimmer **SENIOR GEOLOGIST**

Tobias Hochschild **SENIOR GEOLOGIST**

Dr. John Reinecker **SENIOR GEOLOGIST**

Prof. Dr. Gerald Ziegenbalg **CHEMICAL PROCESSING EXPERT**

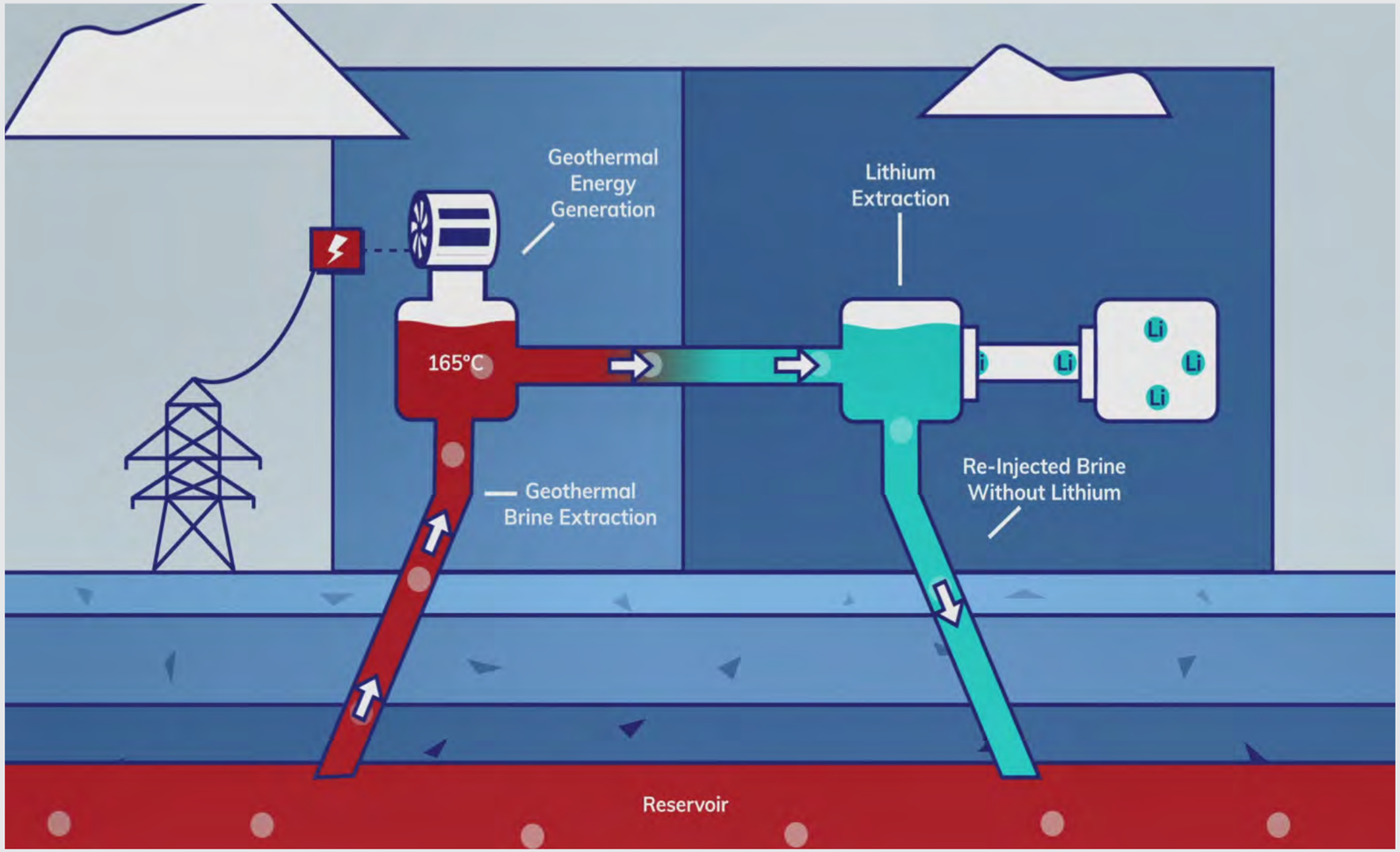
Summary

We exist to decarbonize the currently high carbon production footprint of lithium-ion batteries used in electric vehicles.

We plan to produce a world-first **Zero Carbon Lithium™** hydroxide product from our Vulcan geothermal lithium brine project. It is the largest lithium resource in Europe and located in the heart of the EU.

We will use our proprietary **Zero Carbon Lithium™** process, married with our unique and very large lithium resource, to pump up hot lithium-rich brine to the surface, then use the renewable heat to drive lithium extraction, with renewable energy as a saleable by-product.

We will **disrupt and lead** the resources industry towards a Zero Carbon future.



We scoured the globe to find the right project

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

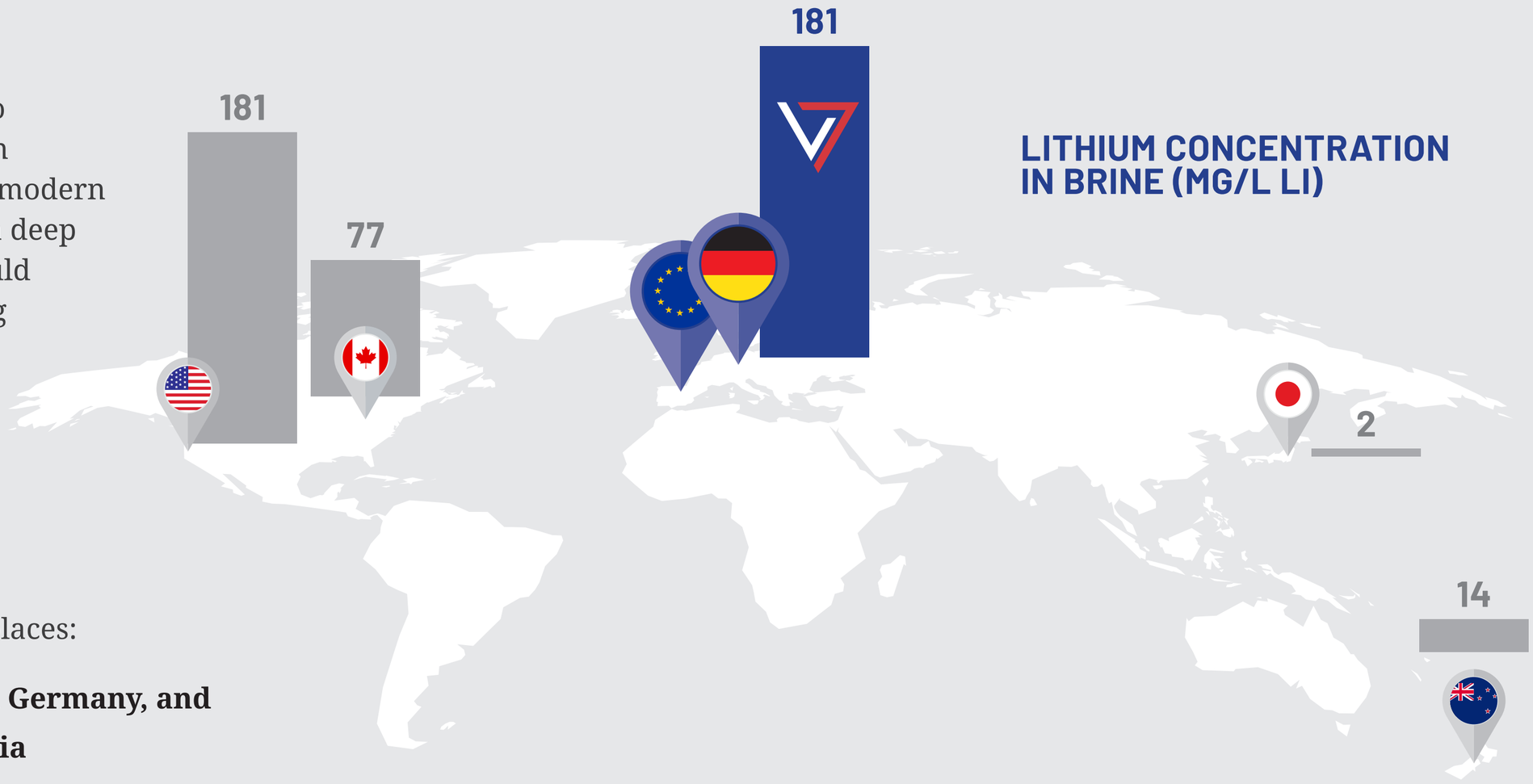
1. **Renewable heat;**
2. **High lithium grades;**
3. **High brine flow rate.**

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

1. **The Upper Rhine Valley in Germany, and**
2. **The Salton Sea in California**

We chose Germany and Europe.

For details on lithium grades, see Appendices

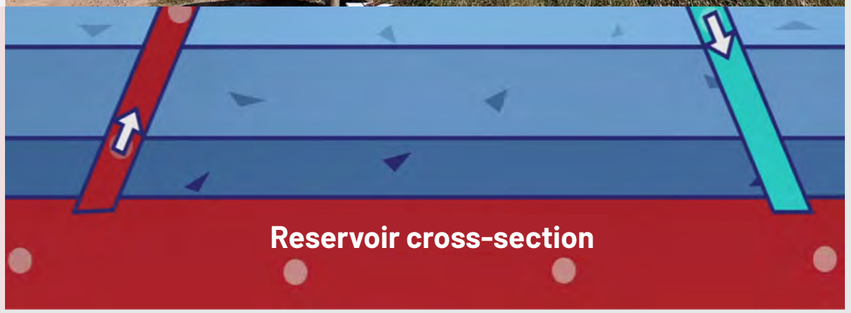


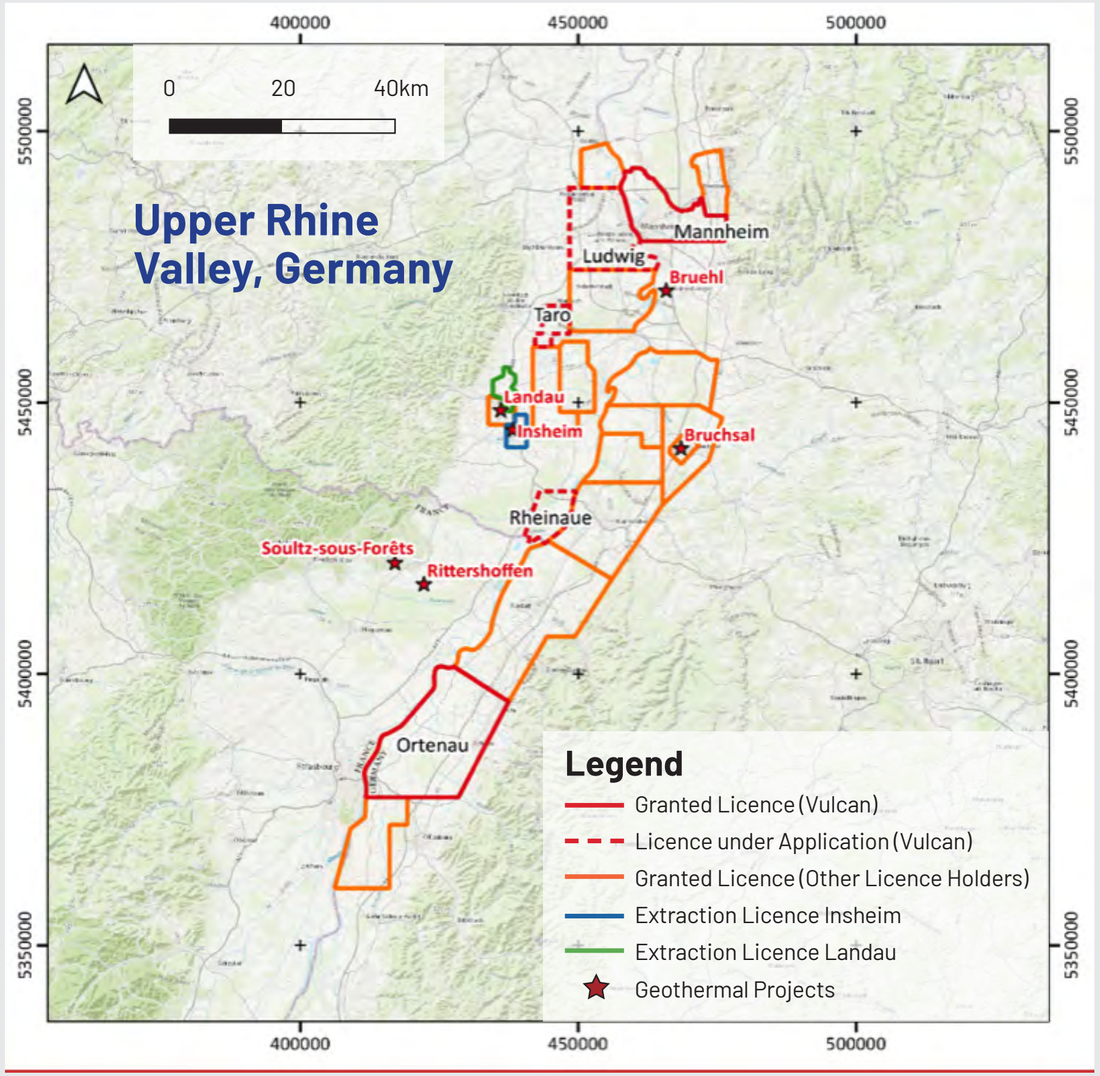
Birth of the Vulcan project

We used our geological expertise to pick out the best areas in the Upper Rhine Valley for sub-surface lithium grade and potential flow rate.

We secured exclusive rights to these areas: a very large license package hundreds of square kilometres in size.

Underneath is the lithium, stored in the hot geothermal reservoir.



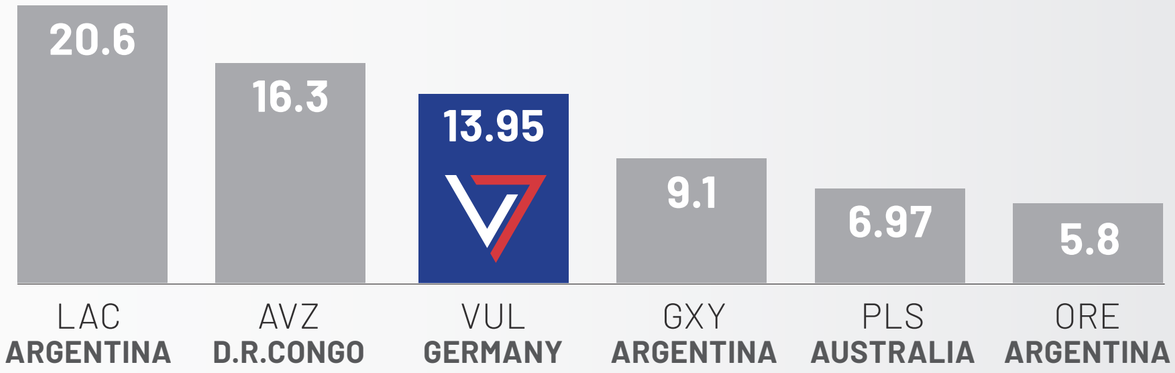


Largest in Europe

Growth to the largest lithium resource in Europe
and the largest, in a low-risk jurisdiction, in the world.

- Top 20 Best Countries for Business (Forbes)
- Top 10 Corruption Perceptions Index (Transparency International)
- AAA Credit Rating (S&P)

CONTAINED LITHIUM (JORC RESOURCE, MT LCE)



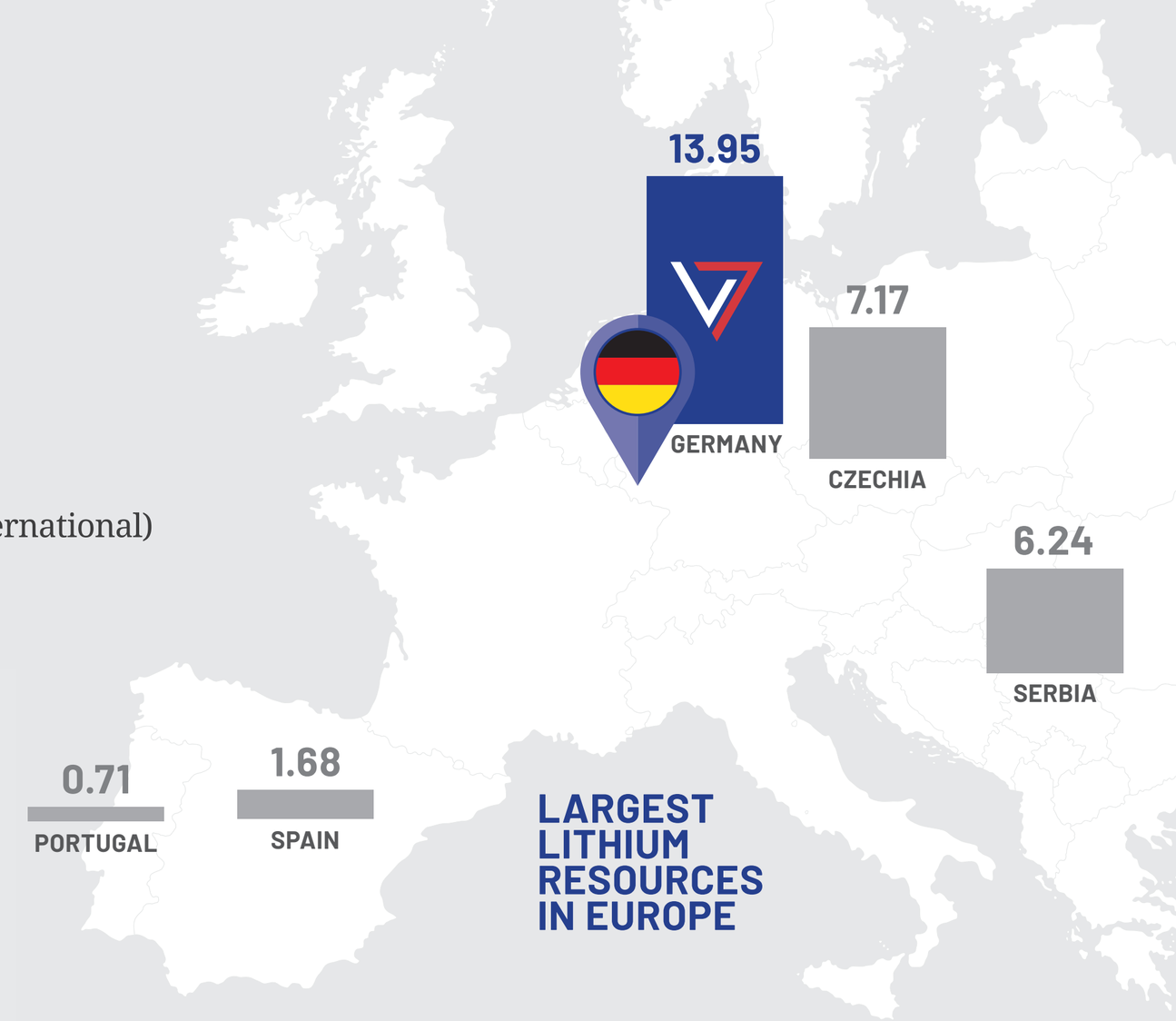


Image shows resources collated from companies at different stages of development as detailed in Appendix 3, with Vulcan Lithium Project which is a mixture of Indicated and Inferred Mineral Resources as per VUL ASX announcement 20/01/2020. The Company is not aware of any new information or data that materially affects the information included in the announcement. All material assumptions and technical parameters underpinning the Mineral Resource in the relevant announcement continue to apply and have not materially changed.

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Zero Carbon Lithium™

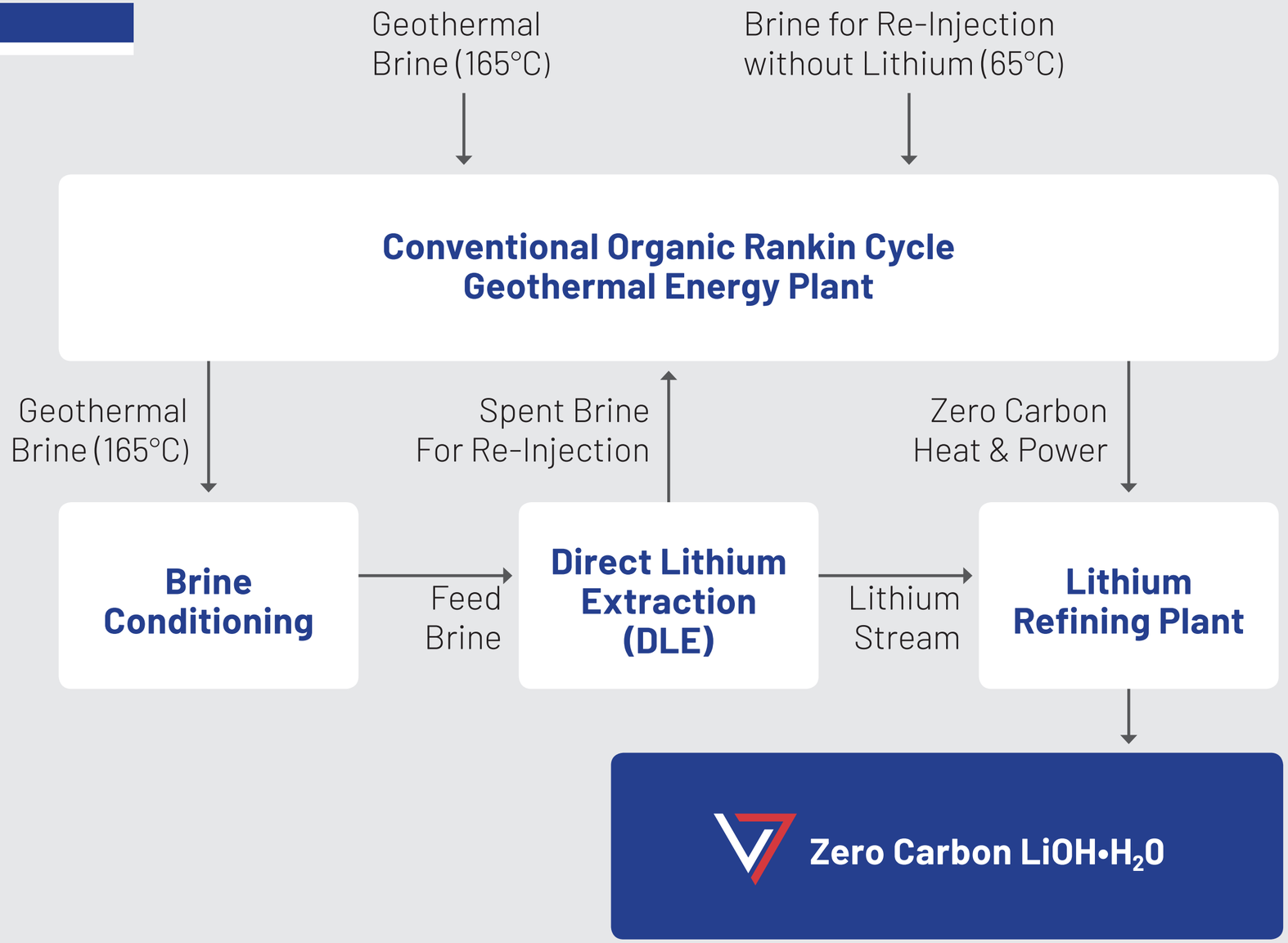
Our Zero Carbon Lithium™ process

We will use **renewable heat** derived from the geothermal brine to drive the lithium extraction process, with **no fossil fuel consumption**.

We will produce a surplus of renewable energy, **decarbonising** the grid.

We will produce a unique, premium, battery-quality **Zero Carbon Lithium™** hydroxide product for EVs. That will fix **Lithium's carbon problem** which we showed in our **world-first Life Cycle Analysis** for lithium hydroxide production.

The spent brine then gets re-injected.



Carbon intensity

Hard-Rock Spodumene

High CO_2

High OPEX

Salar-Type Brines

Significant CO_2

High water consumption

Vulcan Geothermal Brine

ZERO CARBON FOOTPRINT

MINVIRO

**See Minviro LCA Study, The CO2 Impact of the 2020s Battery Quality Lithium Hydroxide Supply Chain*

No evaporation, mining or fossil fuels

Lithium extraction in South America **evaporates** large quantities of water in one of the driest places on earth. This stresses the environment and local communities.

Hard rock mines for lithium in Europe are unpopular.
Once you mine it, the rock has to be **roasted with fossil fuels** to produce lithium hydroxide. This is very CO_2-intensive.

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Our way: Zero Carbon Lithium™

And this is our solution:
lithium from geothermal plants
in the Upper Rhine Valley.

In harmony with the environment.

Lithium production from,
and powered by, a renewable
energy source: the **Zero Carbon Lithium**™ process.

No evaporation, mining or fossil
fuels required.

Plant shown is Insheim, neighbouring Vulcan's own licenses, where Vulcan has an MoU agreement with operator Pfalzwerke geofuture, for a Joint Venture at the geothermal plant to produce lithium hydroxide.

The Insheim renewable energy plant is a shining example of geothermal best-practice, operating in harmony with local community and environment since 2012.

What's our target market like?

China lithium-ion battery cell production to 2018

In the 2010s, China experienced the world's highest growth in lithium-ion battery production for electric vehicles. It caused a lithium supply shortage & 300% lithium price spike.

2018
>415 GWh

2017
30 GWh

2016
20 GWh

European lithium-ion battery cell production forecast to 2029

In the 2020s, the same is forecast to happen in Europe, on a much larger scale.

2029
>415 GWh

2023
143 GWh

2019
20 GWh

Vulcan Energy Resources target market

Vulcan will capitalise on the fastest growing lithium market in the world, which has zero local supply.

2029
>415ktpa
$LiOH.H_2O$
Total EU market size

Future growth possible for Vulcan: not resource constrained

Sources:
Above left: Adapted from Ministry of Industry & Information Technology of China
Above centre: Adapted from Benchmark Mineral Intelligence & individual company announcements on battery capacity
Above right: Adapted from Benchmark Mineral Intelligence & individual company announcements on battery capacity. Assumes 0.9kg LCE/kWh for average EV battery. 1 kg LCE = 1.1 kg LiOH

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Location: centre of fastest growing lithium market

Vulcan's negligible distance to markets is a cost advantage as well as carbon advantage

Brandenburg, 2021
CAPACITY UNKNOWN

Salzgitter, 2024
16 GWh, LATER 24 GWh

Erfurt, 2022
14 GWh, LATER 100 GWh

Sunderland, 2010
2.5 GWh

Willstät, 2020
1 GWh

Germany & France, 2022
16 GWh, LATER 64 GWh

Germany, 2023
20 GWh, LATER 24 GWh

Germany, 202X
4 GWh, LATER 8 GWh

Mo I Rana, 2023
RAMP UP TO 32 GWh

Skellefteå, 2021
32 GWh, LATER 40 GWh

Brandenburg 2021
RAMP UP TO 8-12 GWh

Bitterfeld, 2022
10 GWh

Wroclaw, 2018
6 GWh, LATER 70 GWh

Nysa 2021
CATHODE MATERIALS

Nysa 2020
CATHODE MATERIALS

Komarom 1 + 2, 2020
7.5 GWh, LATER 23.5 GWh

Göd, 2018
3 GWh, LATER 15 GWh

Europe, 202X
CAPACITY UNKNOWN

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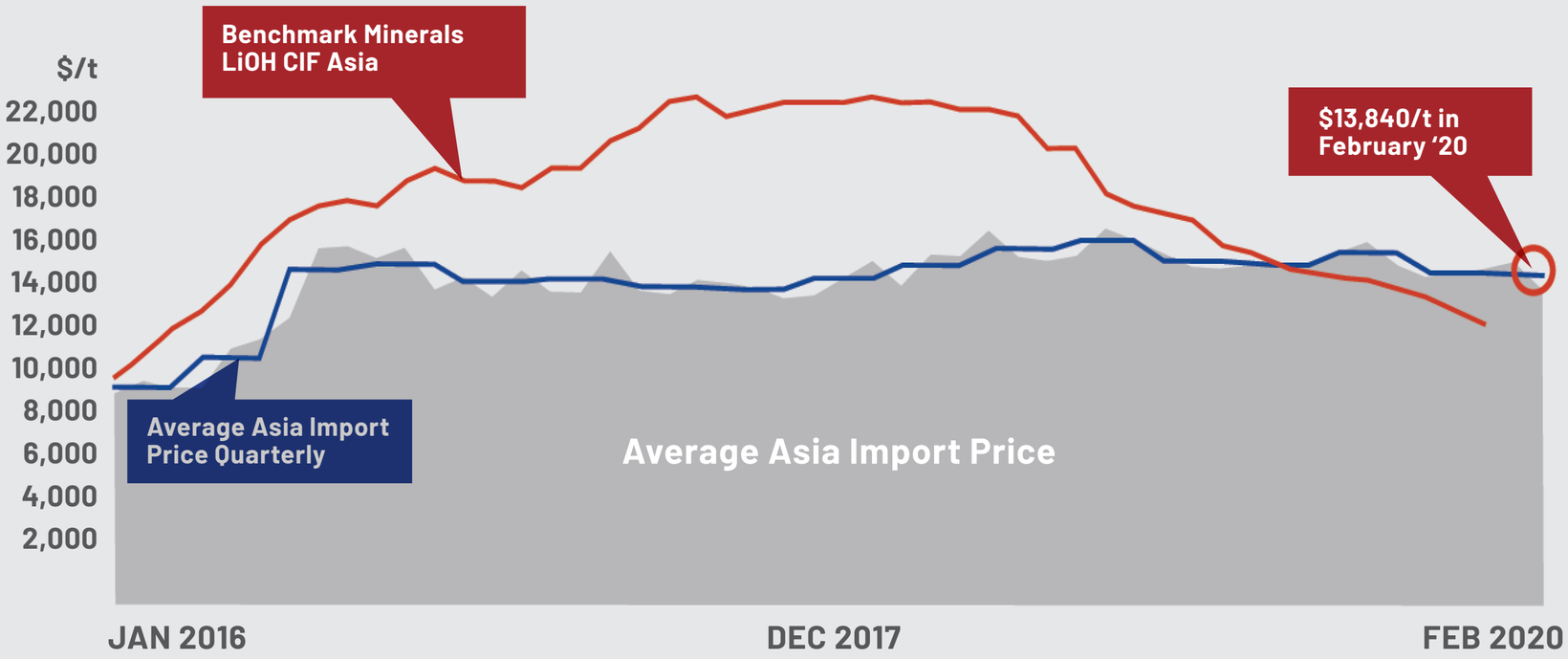
Cost advantage of geothermal lithium brines

If you're producing battery-quality lithium hydroxide chemicals, the price environment is strong. Lithium hydroxide is currently selling for around US$13,000/t. It is widely tipped to rise even from here due to looming deficits.

LiOH Asia Weighted Average Price



Brine projects are the lowest cost method of lithium hydroxide production, typically around US$5-7,000/t. *(Source: Canaccord).*

We have the added advantages of free heat to drive our process, short distance to market, a premium product, and most importantly, we also sell energy.

Germany has a fixed price of €0.25/kWh for the renewable electricity we can produce. We plan to have **two revenue streams**: lithium and energy.

They de-risk and complement each other.

The Vulcan advantage: size, grade, heat, & jurisdiction

	Vulcan	Controlled Thermal Resources	Standard Lithium	E3 Metals	Lake Resources
Size (Mt LCE)	**13.95**	2.7	3.1	6.7	4.4
Grade (mgLi/L)	**181**	181	168	73	211
Renewable Heat Source?	**Yes**	Yes	No	Yes	No
Jurisdiction Risk	**Low**	Low	Low	Low	High

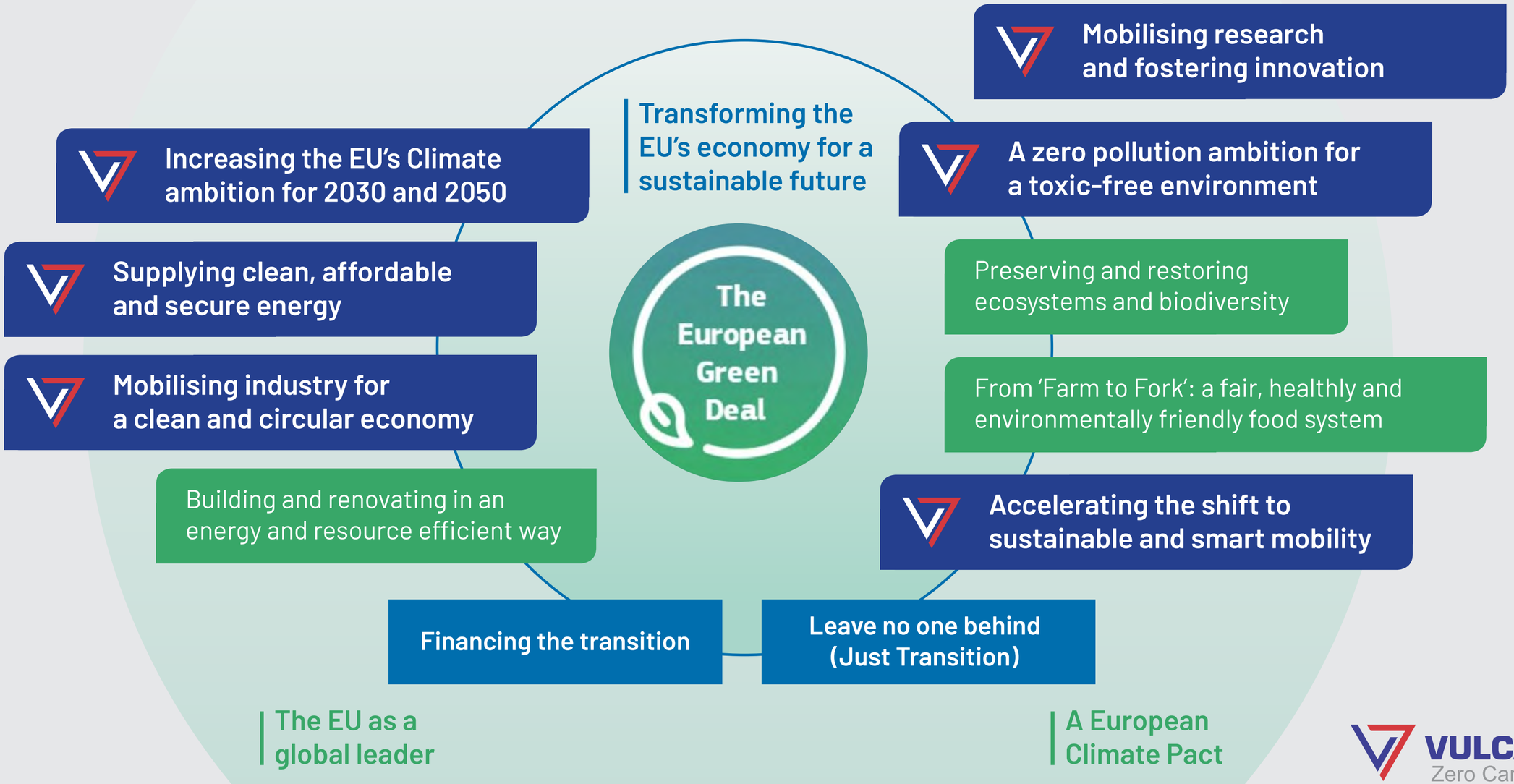
Chart compares resources from companies at different stages of development as detailed in the table shown, with the Vulcan Lithium Project which is a mixture of Indicated and Inferred Mineral Resources as per VUL ASX announcement 20/01/2020. The Company is not aware of any new information or data that materially affects the information included in the announcement. All material assumptions and technical parameters underpinning the Mineral Resource in the relevant announcement continue to apply and have not materially changed. 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 chart. See Appendix 4 for details.

May ‘20: Agreement signed with EU-backed body to launch Vulcan Zero Carbon Lithium™ Project

EIT InnoEnergy will marshal its ecosystem and significant EU-wide resources to launch the Zero Carbom Lithium™ Project forward:

- ✓ **Securing project funding,** including the use of applicable **EU, national or regional grant schemes**, and liaising with EU project finance and development banks.
- ✓ Driving relationships with European lithium offtakers, aimed at entering into of binding offtake agreements.
- ✓ **Obtaining and fast-tracking necessary licenses.**
- ✓ All services are entirely success-based, with no upfront cost to Vulcan.

A perfect fit for the European Green Deal



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Where to from here?

SCOPING STUDY

We just completed our Scoping Study in just six months, using our in-house team and world-renowned consultants.
It was **highly positive.**

PRE-FEASIBILITY STUDY

We have commenced our Pre-Feasibility Study (PFS).
We've just started bench-scale processing test work as part of this.

PILOT PLANT

We'll be **constructing our own pilot plant** to demonstrate and de-risk our flowsheet.
We expect to maintain our rapid momentum and get this done this year.

DEFINITIVE FEASIBILITY STUDY

In 2021 we want to complete our **Definitive Feasibility Study (DFS)**. We can take that to the bank.

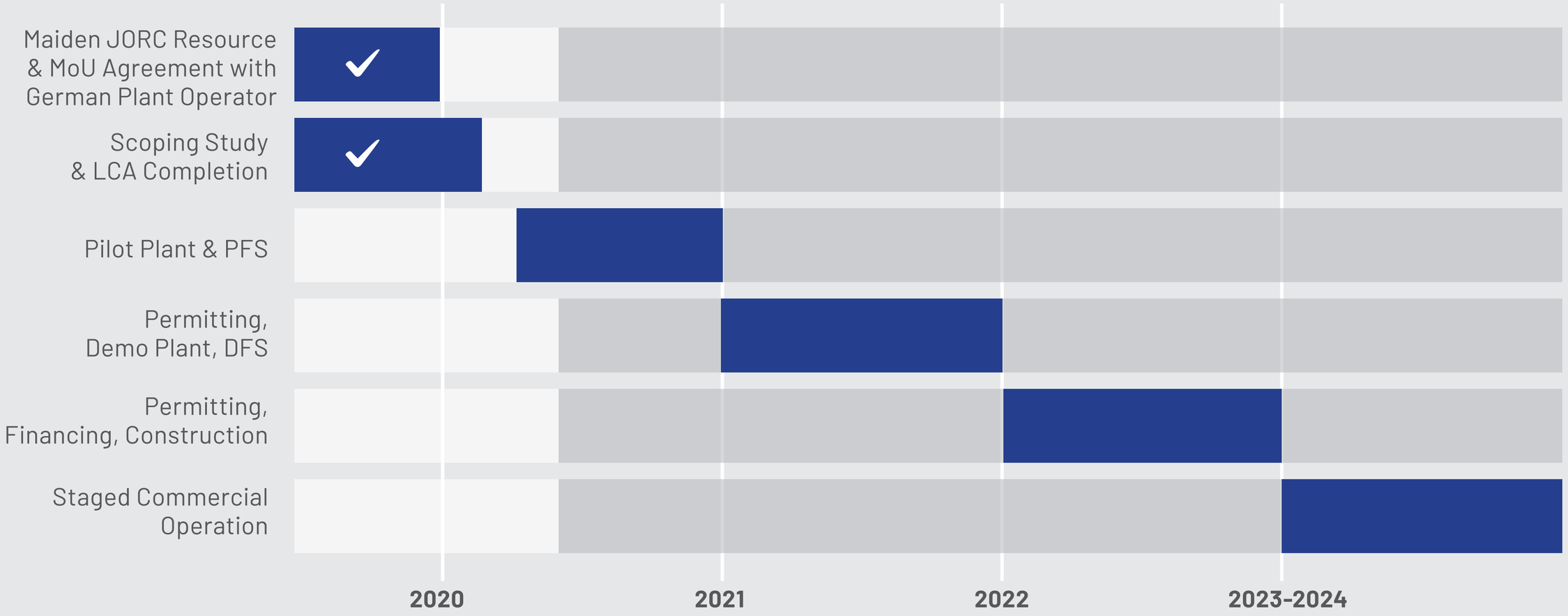
SCALE-UP

We then plan a sensible scale-up, with our first, small **commercial plant** to be built at an existing geothermal operation, saving CAPEX: **Stage 1**.
Stage 2 will be much larger and would involve our own wells and geothermal plant construction.

GROWTH WITH MARKET

We plan to grow with the European Electric Vehicle market in the 2020s. We have a very large resource. If we want to produce more lithium, we can drill more wells.

Time to market



VULCAN ENERGY RESOURCES
Zero Carbon Lithium™

Vulcan summary: best-in-class for the 2020s

WORLD'S 1ST & ONLY ZERO-CARBON LITHIUM™ PROCESS

1

- **Purpose-built** process to be **uniquely Zero Carbon.**
- Co-generation of geothermal energy from production wells will power lithium extraction.
- **Negative CO_2/t** LiOH H_2O, **decarbonising** the grid while producing lithium, compared with **~15 tonnes CO_2 for hard-rock**.

POSITIVE SCOPING STUDY: DUAL REVENUE POTENTIAL

2

- First of its kind study completed with international team of independent experts.
- Principal revenue potential from selling **battery-quality LiOH H_2O** chemicals into the European market.
- Secondary revenue potential from planned **renewable** geothermal power generation, which benefits from Feed-in-Tariff.

EU BACKING FOR PROJECT

3

- Agreement signed in May '20 with EU-backed EIT InnoEnergy
- EIT InnoEnergy will marshal its ecosystem and significant EU-wide resources to launch the Zero Carbon Lithium™ Project forward
- Assistance with securing funding and streamlining project permitting.

SIZE & QUALITY: EUROPE'S LARGEST LITHIUM RESOURCE

4

- JORC Mineral Resource Estimate[1] **13.95 Million Tonnes** LCE Indicated & Inferred.
- **One of the largest lithium resources in the world.**
- High Li grades for geothermal brine which has readily available heat & power.
- Large enough to be **Europe's primary source** of **battery-quality lithium hydroxide.**

LOCATION: CENTRE OF FASTEST GROWING MARKET

5

- EU fastest growing lithium market in the world. Unprecedented demand forecast from growth in EVs.
- Located in Germany, in the centre of the industry.
- Zero local supply of battery quality lithium hydroxide.
- Removes dependence on China for this designated Critical

LOCAL PARTNERS & INFRASTRUCTURE ACCESS

6

- MoU with German geothermal operator Pfalzwerke geofuture, part of large Pfalzwerke Group.
- Allows for access to producing wells to advance pilot processing.
- Potential for fast-track to production from existing

THE RIGHT TEAM FOR THE JOB

7

- Expert multi-disciplinary team local to project area in Germany.
- Decades of experience in developing & permitting geothermal brine projects.
- International project finance, lithium market & direct lithium extraction processing expertise

RAPIDLY ADVANCING LITHIUM PROJECT

8

- Maiden Resource & Scoping Study completed in **just five months.**
- **Pre-Feasibility Study Under Way.**
- **Targeting short-term production start**, in line with lithium supply-demand inflection point.

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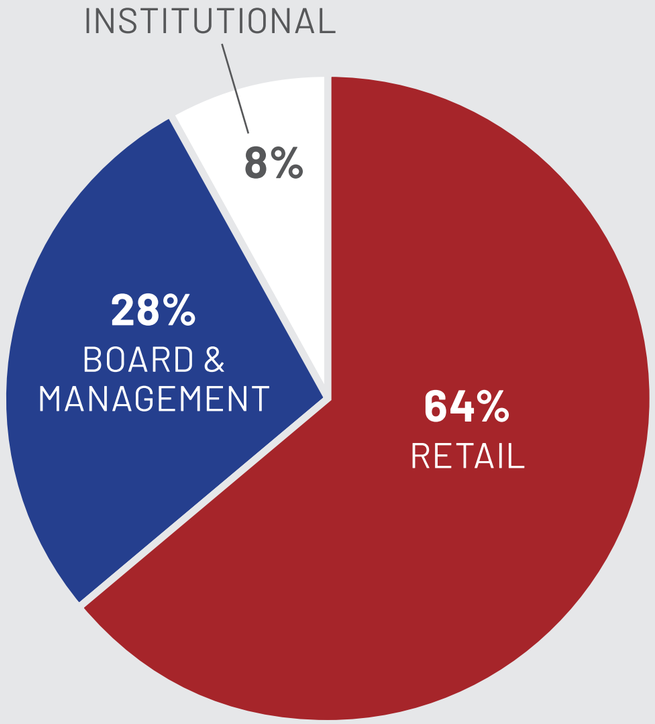
Appendix 1: capital structure

ASX : VUL	
Shares on Issue	53,670,002
Options (28.5c expiring in December 2020)	12,687,512
Performance Milestone Shares*	9,280,000
Performance Rights**	6,350,000
Market Capitalization at 36c (undiluted)	~$19.3M
Enterprise Value at 36c (undiluted)	~$16.8M
Cash Position (as at 31 March Quarterly)	~$2.5M
Top 20 Shareholders	~59%
Management (undiluted)	~28%



**Vendor Performance Milestone payments to be made on:*
Class A: completion of Scoping Study (0.48M Shares) within 12 months of Vulcan Project acquisition completion (vested but not issued).
Class B: completion of Pre-Feasibility Study (4.4M Shares) within 24 months.
Class C: securing an offtake or downstream JV partner (4.4M Shares) within 36 months.

*** 2,500,000 Performance Rights to Viaticus Capital comprising Class E and F rights (1.25m each), which vest on the same conditions as B and C above. 2,600,000 Performance Rights comprising 800,000 Class A, 800,000 Class B and 1,000,000 Class C which vest at VUL share price of $0.40, $0.75 and $1.10 respectively. Refer ASX Announcement 10 July 2019 for further details.*

1,250,000 Performance Rights comprising 250,000 Class G which vest on 6 months continuous employment with the Company and 500,000 Class H and 500,000 Class I which vest on same conditions as B and C above but with a different issue date. Refer ASX announcements 10 July 2019 and 21 May 2020.

Appendix 2: proud members of a leading-edge industry

CRMAlliance
Critical Raw Materials

Bundesverband Geothermie

KLiB
Kompetenznetzwerk Lithium Ionen Batterien

RUGGERO BERTANI
European Geothermal Innovation Award 2020
ENDORSED NOMINATION

EUROPEAN BATTERY ALLIANCE | EBA250
The industrial workstream of the European Battery Alliance

EGEC GEOTHERMAL

Appendix 3: information for slide 12

Company	Code	Project	Stage	Resource Category	Brine M3/Resource Tonnes	Resource Grade	Contained LCE Tonnes	Information Source
Lithium Americas	NYSE:LAC	Cauchari-Olaroz, Chile (50% ownership. Thacker Pass not Included)	Construction	Measured, Indicated & Inferred	7.8 x 109 M3	592 mg/l Li	24.6	Resource Statement 7 May 2019
AVZ Minerals Ltd.	ASX:AVZ	Manono (60% ownership)	Development	Measured, Indicated & Inferred	400 Mt	1.65% Li2O	16.3	Company Presentation "Australia 2020"
Galaxy Resources Ltd.	ASX:GXY	Sal de Vida (Mt Cattlin not included)	Development	Measured, Indicated & Inferred	18.1 x 108 M3	753 mg/l Li	7.2	Feasibility Study Report August 2016
Pilbara Minerals Ltd.	ASX:PLS	Pilgangoora	Production	Measured, Indicated & Inferred	223.2 Mt	1.27% Li2O	6.9	Resource Statement 30 June 2019
Orocobre Ltd.	ASX:ORE	Salar de Olaroz	Production	Measured & Indicated	1.8 x 109 M3	690 mg/l Li	6.4	Company Presentation 5 May 2014

Company	Code	Project	Stage	Resource Category	Brine M3/Resource Tonnes	Resource Grade (Li2O)	Contained LCE Tonnes	Information Source
European Metals	ASX: EMH	Cinovec	PFS Complete	Indicated & Inferred	695.9	0.42	7.17	Corporate Presentation Released 20 November 2018
Rio Tinto	ASX:RIO	Jadar	PFS Underway	Indicated & Inferred	135.7	1.86	6.24	Corporate Presentation Released 21 March 2018
Infinity Lithium	ASX:INF	San Jose	PFS Complete	Indicated & Inferred	111.3	0.61	1.68	ASX Announcement Released 22 August 2019
Savannah Resources	AIM: SAV	Barroso	DFS Underway	Measured, Indicated & Inferred	27.0	1.00	0.71	Corporate Presentation Released May 2019
European Lithium	ASX: EUR	Wolfsburg	PFS Complete	Measured, Indicated & Inferred	10.98	1.00	0.27	Corporate Presentation Released May 2019

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 announcement

Appendix 4: information for slides 10 & 19

Company	Project	Stage	Resource Category	Brine Volume (km3)	Resource Grade	Contained LCE Tonnes	Information Source
Controlled Thermal Resources	Hell's Kitchen	PEA Complete	Inferred	Unknown	181 mg/l Li	2.7	Company Website
Standard Lithium	LANXESS (Joint Venture)	PEA Complete	Indicated	3.5	168 mg/l Li	3.1	PEA 2019*
E3 Metals	Clearwater, Rocky and Exshaw	PEA Ongoing	Inferred	27.4	73 mg/l Li (weighted average)	6.7	Company Presentation January 2020
Lake Resources	Kachi	PFS Ongoing	Indicated & Inferred	3.8	211 mg/l Li (weighted average)	4.4	Resource Statement November 2018

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

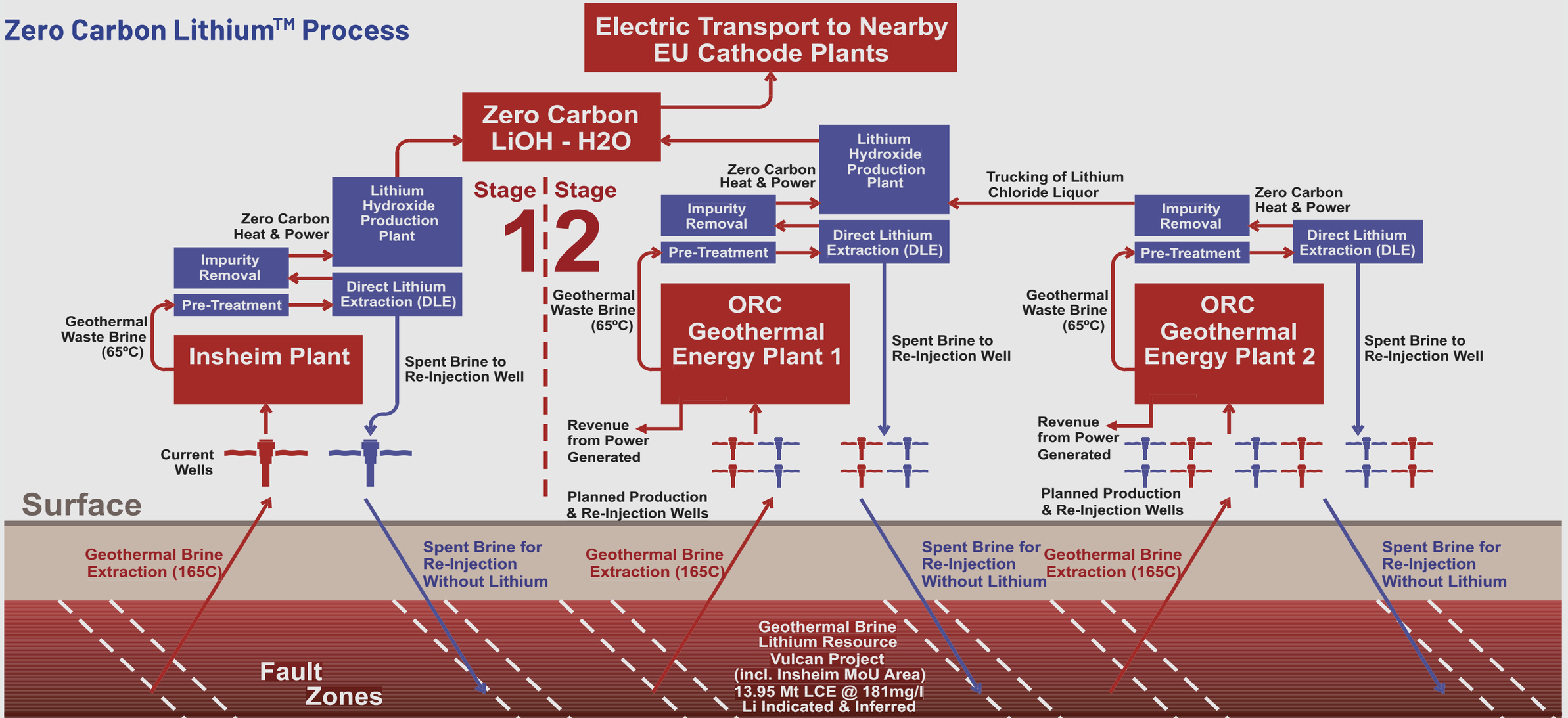
Sanjuan, B., Millot, R., Innocent, C., Dezayes, C., Scheiber, J., Brach, M., (2016) Major geochemical characteristics of geothermal brines from the Upper Rhine Graben granitic basement with constraints on temperature and circulation. Chemical Geology 428 (2016) 27-47

**Note: refers to LANXESS Indicated Resource only, 70/30 JV in favor of Lanxess AG with an option for Standard Lithium to achieve 40% subject to attaining certain milestones, does not include separate Tetra Project Inferred Resource.*

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 announcement

Appendix 5: positive Scoping Study

Zero Carbon Lithium™ Process



Appendix 6: DLE – commercial future of lithium

DLE plants: commercially operating now

- 4 commercially operating DLE plants operating at end of 2019 in Argentina and China
- DLE represented 19% of global lithium chemical supply in 2019.
- DLE is commercially mature and well understood.

DLE from brines used by multiple commercially operating projects. Lithium industry is shifting to DLE processes, because:

- Lithium extraction in hours instead of months.
- Not weather-dependent like evaporation, in increasingly unstable climate.
- Ability to produce consistent chemical product for battery industry.
- Spent brine re-injected into reservoir with no evaporation losses. No water stress unlike current South American projects.

SUNRESIN Livent

The Vulcan Project will adapt an existing Direct Lithium Extraction (DLE) process to extract lithium from the brine, driven by **readily-available heat & power** used to produce premium, battery quality **Zero Carbon Lithium™** hydroxide.

DLE plants: in development

AXIONIT
Anson Resources
LAKE RESOURCES
NRG METALS INC.
Cypress DEVELOPMENT CORP.
ENERGY SOURCE
STANDARD lithium
BHE RENEWABLES A Berkshire Hathaway Energy Business
CONTROLLED THERMAL RESOURCES
Lilac solutions

Appendix 7: decarbonisation potential calculations

Decarbonisation potential for Zero Carbon Lithium process: Based on 50 kWh average lithium-ion battery size, with average of 0.9 kg LCE/kWh across different cathode chemistries. Total 1.4B vehicles in use worldwide (carsguide.com.au), 308m vehicles in Europe (acea.be), and 415 GWh of lithium-ion battery cell production in Europe, mostly for EVs, by 2029 (Benchmark Mineral Intelligence). Carbon footprint per tonne of LiOH production from hard-rock mining calculated as 15t CO_2 per tonne LiOH (The CO_2 Impact of the 2020s Battery Quality Lithium Hydroxide Supply Chain, Minviro Ltd.)

CO_2

6 million tonnes

For EU lithium annual demand by 2028 – potential footprint of lithium production

Equivalent to annual emissions of Cyprus

CO_2

231 million tonnes

Full electrification of EU cars – potential footprint of lithium production

Equivalent to annual emissions of Spain

CO_2

1.05 billion tonnes

Full electrification of world cars – potential footprint of lithium production

Equivalent to annual emissions of France, Italy, UK combined.

Appendix 8: aligned with UN Sustainable Development Goals

SUSTAINABLE DEVELOPMENT GOALS

- ✓ Gender equality
- ✓ Affordable and clean energy
- ✓ Decent work and economic growth
- ✓ Industry, innovation and infrastructure
- ✓ Sustainable cities and communities
- ✓ Responsible consumption and production
- ✓ Climate action

RESOURCES

VULCAN ENERGY

Zero Carbon Lithium™

Thank you

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