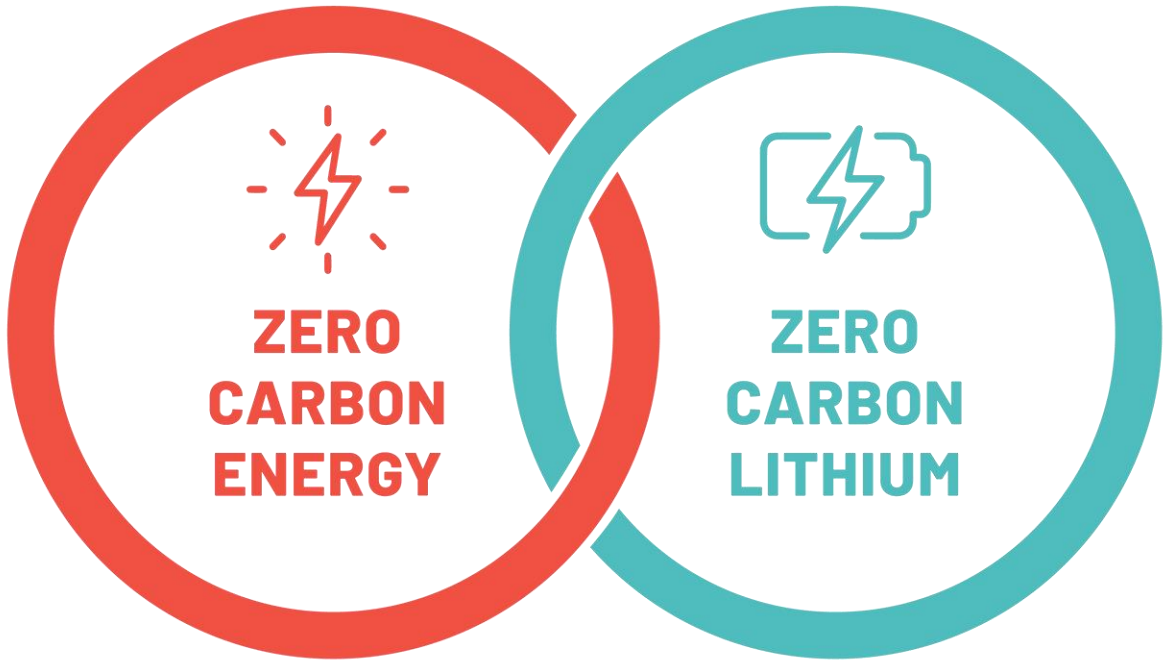
VULCAN ENERGY

ZERO CARBON LITHIUM™



ROSBERG X RACING

VULCAN ENERGY
ZERO CARBON LITHIUM™

OFFICIAL PARTNER

Disclaimer & Cautionary Statement

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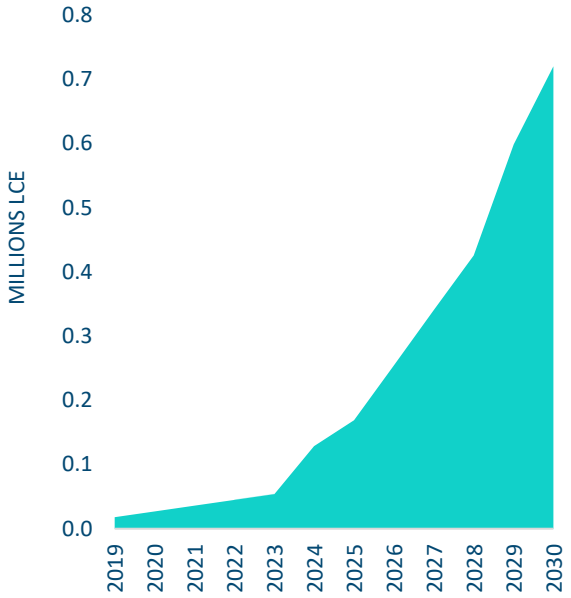
To achieve the outcomes of Vulcan's Pre-Feasibility Study, initial funding in the order of €700m (including contingency) will be required, and a further €1,138m will be required for Phase 2. It should be noted that, as with any project at this stage, the ability to develop the Project may depend on the future availability of funding and while the Company believes it has a reasonable basis to assume that future funding will be available and securable, this is not guaranteed. However, the Board believes that there is a "reasonable basis" to assume that future funding will be available and securable through a combination of syndicated senior debt, export credits, industry related hybrid debt, equity and forward sales at the Project level for a number of reasons, including the following; (a) Vulcan's Board has considerable project finance experience, and the Company recently appointed BNP Paribas, one of the largest financiers of renewable energy and resources projects in Europe, as its financial advisor towards financing the Project (b) the Company has significantly advanced discussions with traditional debt and equity financiers in Europe, including some of the largest European-Union backed, state-owned and private development banks in Europe; and (c) the Project benefits from being one of only two lithium projects financially and administratively supported by EU-backed group EIT InnoEnergy, which is the founder and steward of the European Battery Alliance, that counts among its members the most significant financiers of battery metals, battery and electric vehicle projects in Europe including the European Investment Bank.

Please refer to the ASX Announcements dated 15 December 2020 and 15 January 2021 which refer to the Company's Mineral Resources and Ore Reserve respectively, 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 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.

How to support 30 million EVs by 2030 in the EU?

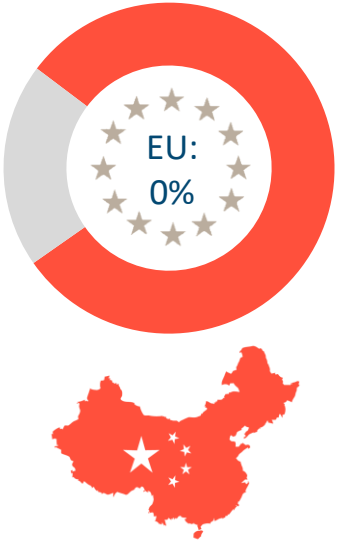
1,000GWh Lithium-ion Battery Capacity By 2030

EU: Fastest Growing Lithium Market In The World



Source: Benchmark Minerals

Zero Local Supply Of Lithium Hydroxide



CHINA: 80%

Source: Benchmark Minerals

Full map available in Appendix 3

Auto and battery-makers committing to carbon neutrality

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'

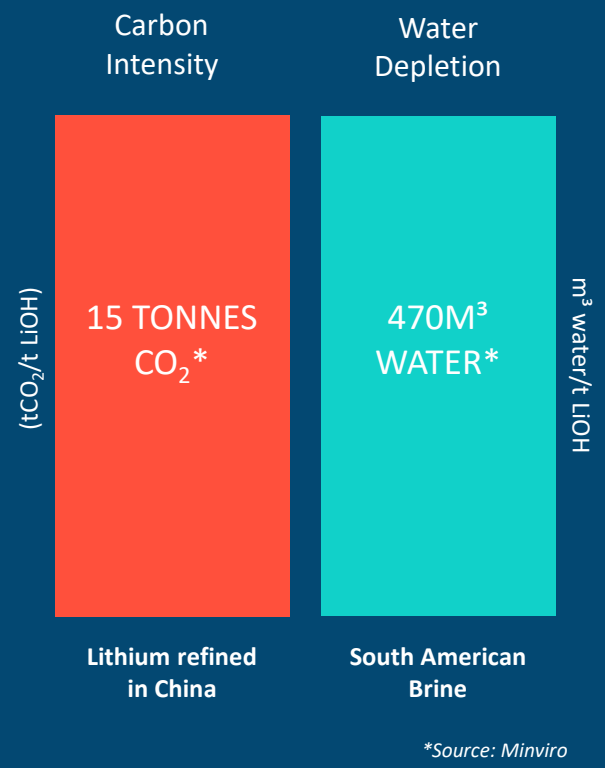
STELLANTIS

'Road to carbon neutrality: With our suppliers, we work in partnership to implement responsible procurement practices, to ensure sustainable progress throughout the entire supply chain, with specific emphasis wise use of natural resources and reduced environmental impacts'

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'

Lithium production emits more CO_2 per tonne than Nickel and Cobalt:



Source: Minviro

The EU stepping in to support and regulate the industry

Green Supply Chain

- New EU Battery Regulation
- Carbon Border Adjustment Mechanism
- Battery Passport
- ISO/TC 333 Lithium

Local Supply Chain

- European Battery Alliance
- Critical Raw Materials List
- EIB new energy lending policy
- European Raw Materials Alliance

"We are 100% dependent on lithium imports. The EU, if finding the right environmental approach, will be self-sufficient in a few years, using its resources. - **Thierry Breton - EU commissioner**

Learn more in Appendix 4, 5 & 6

Vulcan: a Zero Carbon Lithium™ & Renewable Energy Development Company

ZERO CARBON FOOTPRINT

World-first Zero Carbon Lithium™ Company

Geothermal & DLE in Germany

Dual revenue Green energy & lithium

In the heart of the fastest growing lithium market in the world

Largest JORC lithium Resource in Europe

Potential for very low OPEX operation

Strong cash position

Team of world leading experts

Project supported by the EU

ENERGY BUSINESS

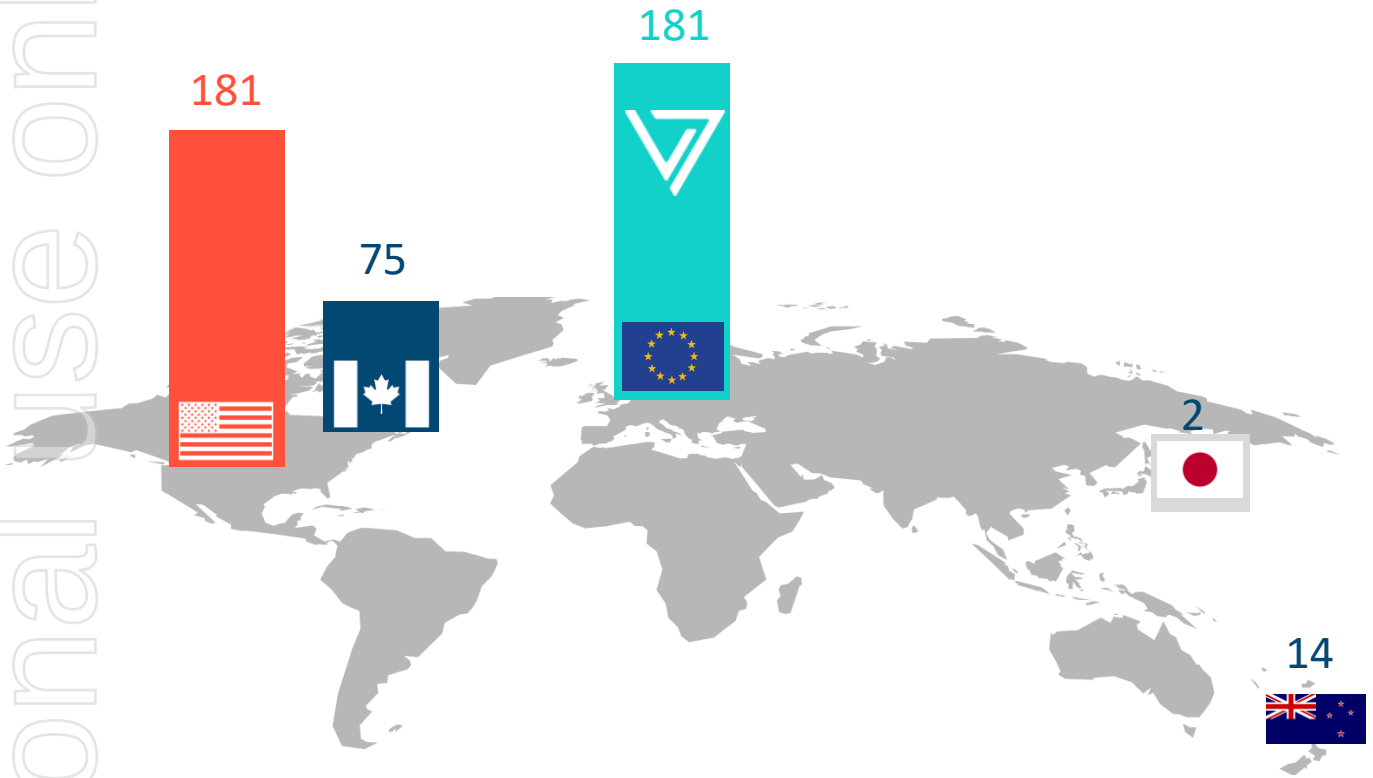
74MW Renewable Electricity

LITHIUM BUSINESS

40,000 tonnes per year Lithium hydroxide

We scoured the globe to find the right conditions for our Zero Carbon Lithium™ development

Lithium concentration
In brine (mg/L Lithium)



We had the lithium and geothermal expertise to know that a Zero Carbon Lithium™ Project 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**

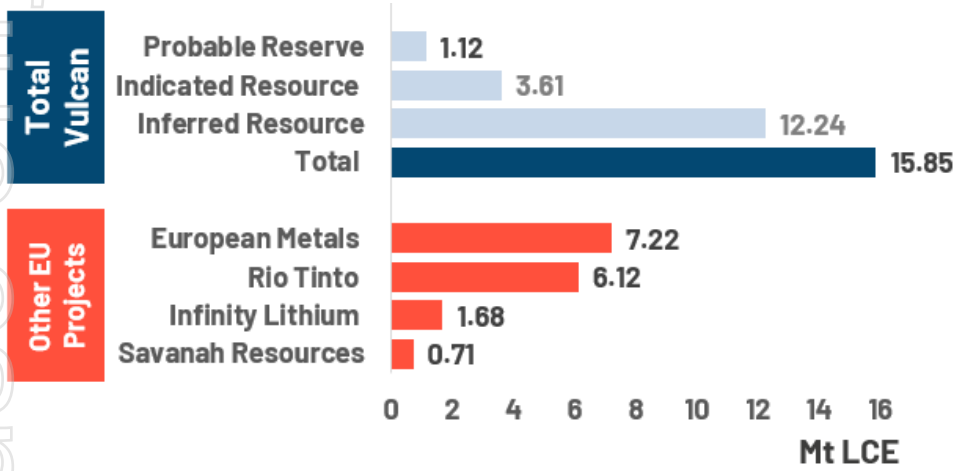
Our initial research showed that this could be done in just two places:

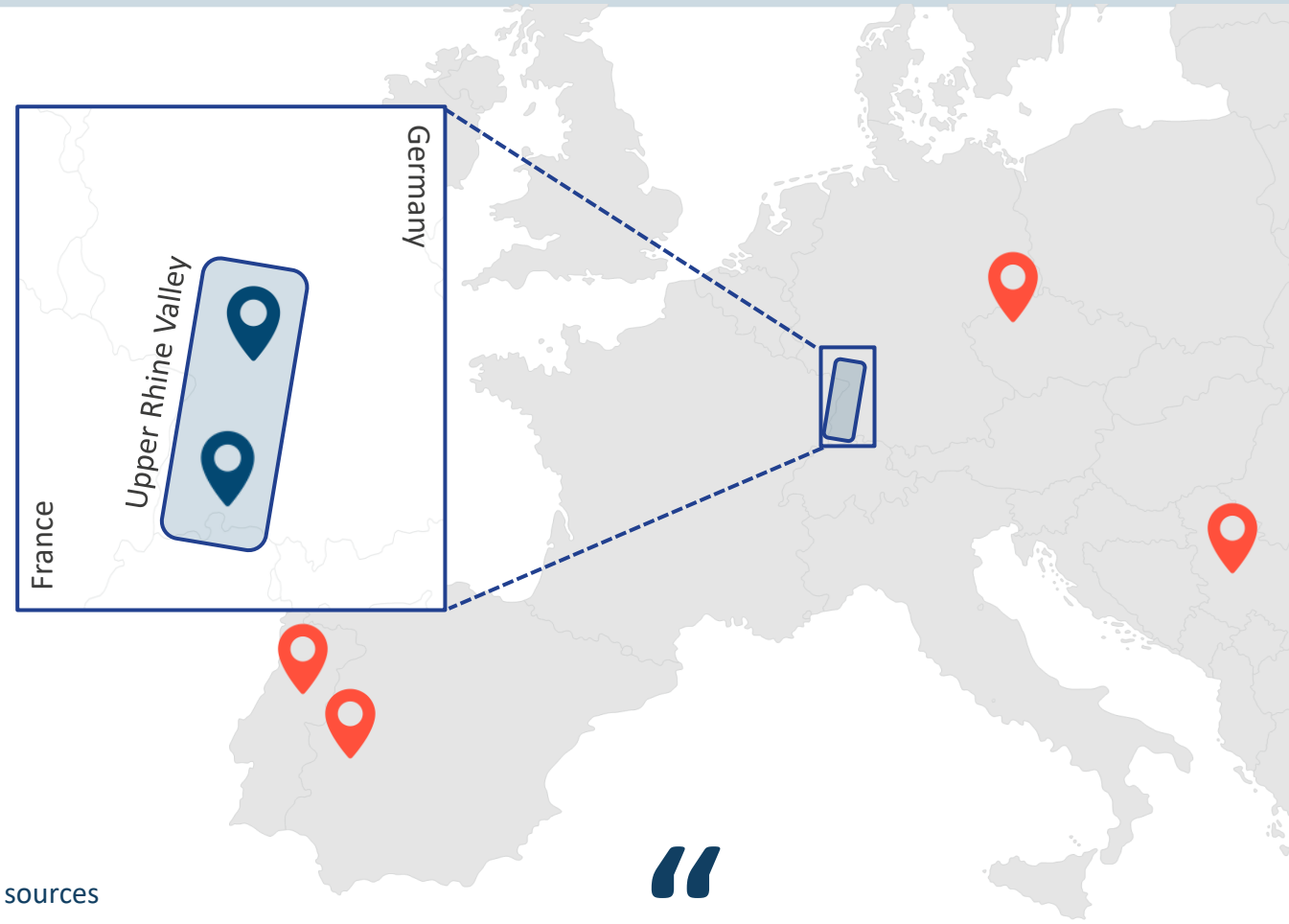
1. **The Upper Rhine Valley in Germany**
2. **The Salton Sea in California**

We chose Germany and Europe.

Brine composition comparison in Appendix 8

We've defined the largest lithium resource in Europe



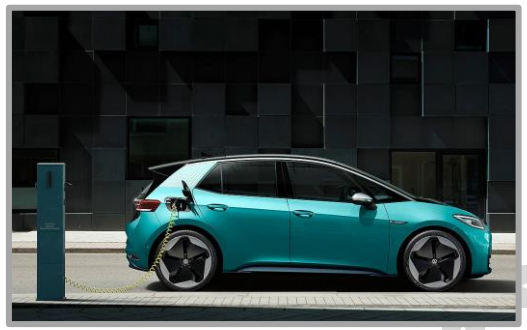


- Very large license package
- Largest lithium resource in Europe by far: 15.85Mt LCE
- Significant ability to scale up production as market grows: advantage over mined sources

"Large enough to supply millions of EVs as the market scales up

Details on the lithium resources in Appendix 12

Vulcan's renewable energy & lithium chemicals project



Electric Mobility

Lithium hydroxide distributed to the EU market

6

Central Lithium Plant

LITHIUM BUSINESS

Renewable electricity sold to the grid

2

Lithium chloride transported to the central lithium plant

5

ENERGY BUSINESS

Geothermal Plant

Renewable heat, electricity and brine transferred to the DLE plant

3

Direct Lithium Extraction

Reservoir

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

1

VULCAN ENERGY
ZERO CARBON LITHIUM™

4

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

Commercially available technologies combined & adapted to be fossil-free

Our process incorporates technologies with commercial analogues across the world.
What is unique about us is the 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 successful geothermal operations

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

Vulcan Group
GeoThermal ENGINEERING
gec-co

2. Direct Lithium Extraction Plant

DLE commercially **used for decades & Vulcan has unique expertise.**

Adsorbent-type DLE technologies **commercially available** from several suppliers

DUPONT

>90% lithium recoveries from initial test work

Ongoing **piloting, demo plant** planned for H2 2021

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** for more than 100 years

First **samples** of battery quality lithium hydroxide expected shortly

First offtake agreements signed

LG Energy Solution
RENAULT GROUP

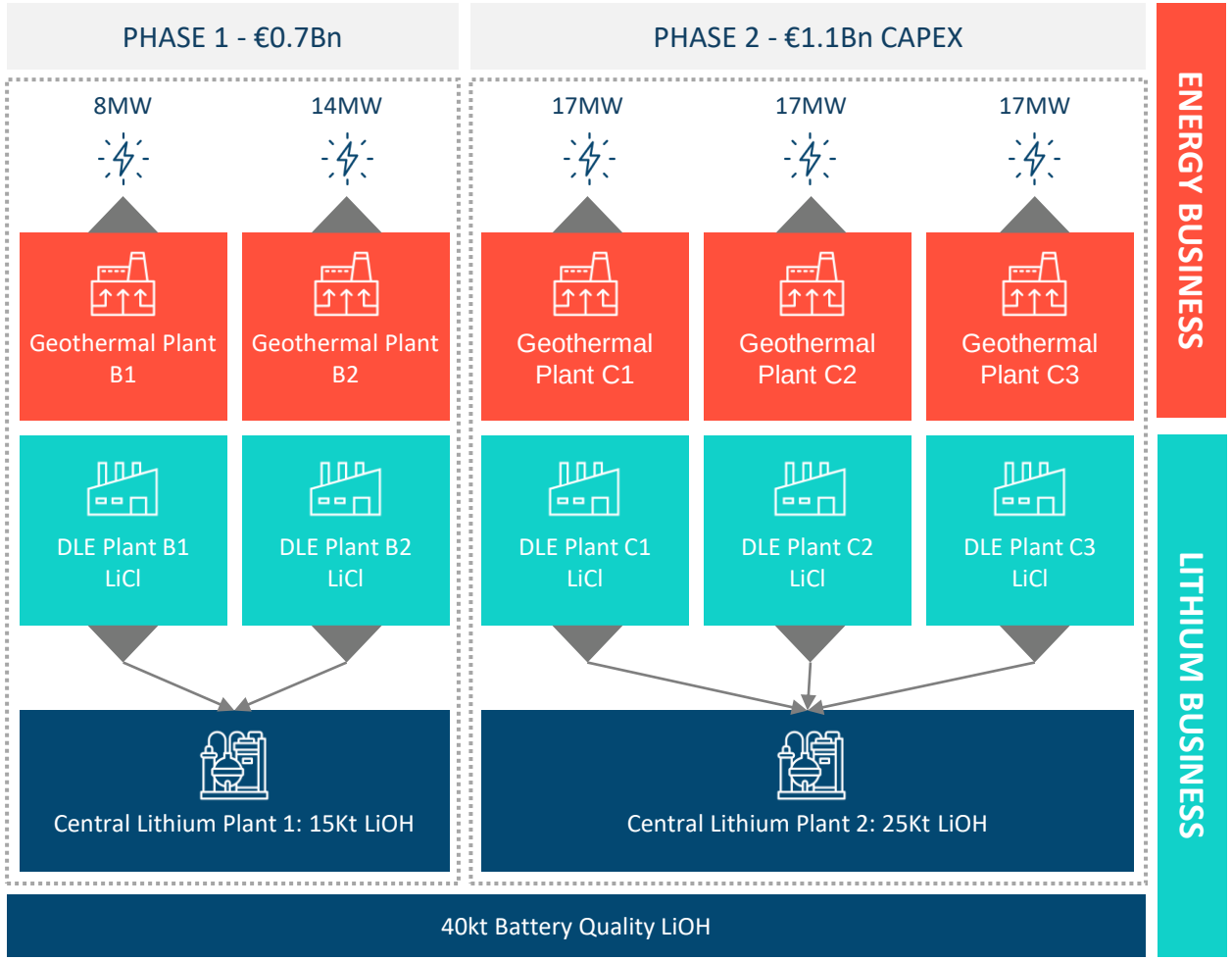
Vulcan Group
In-house team of experts

Dual purpose renewable energy and battery chemicals project

Energy Business, Zero Carbon Lithium™ Business:

1. **Binary Cycle Geothermal Plant**
2. Direct Lithium Extraction Plant
3. Central Lithium Plant

Target metrics from Pre-Feasibility Study:



CAPEX breakdown in Appendix 9

Dual revenues: energy and lithium

ENERGY BUSINESS

Grid
Decarbonizing the grid

Industries
Coal phase-out in Germany

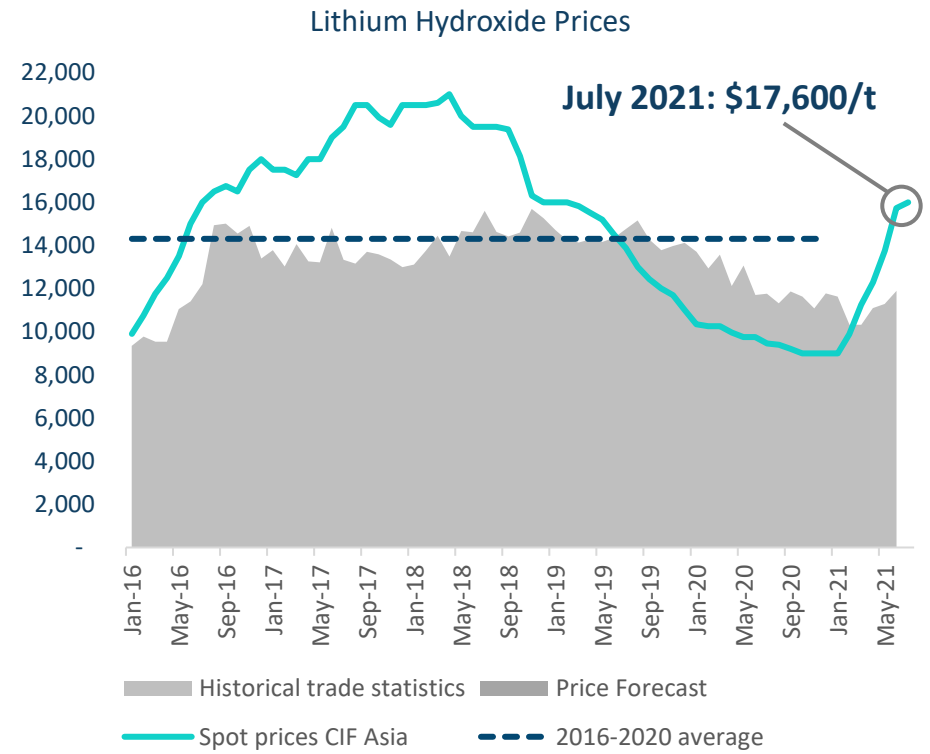
Cities
Bans for fossil heating systems

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

Feed-in Tariff	Guaranteed
€25.2c /KWh	for 20 years

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

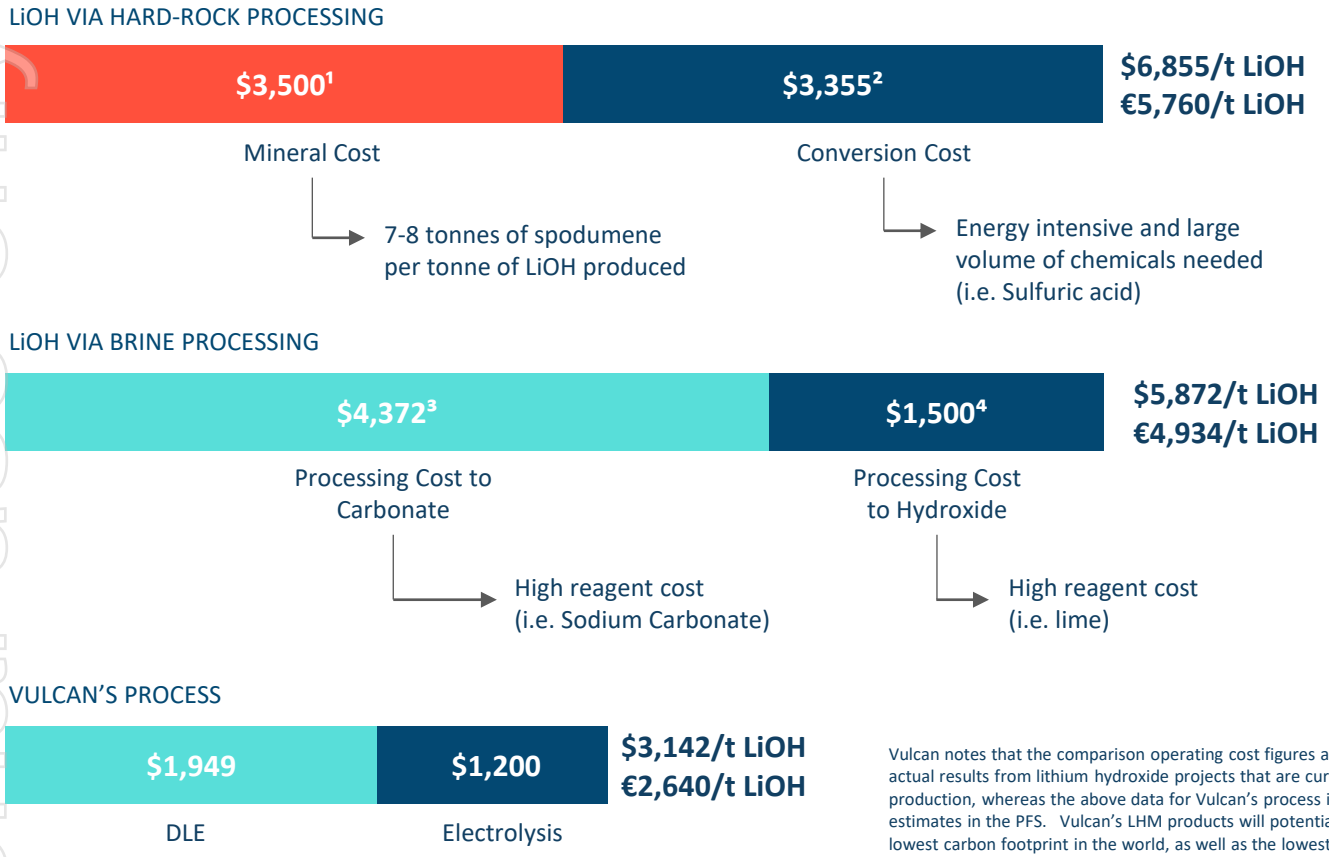
LITHIUM BUSINESS



Source: Trade statistics compiled from Global Trade Atlas®, Benchmark Minerals (2016-2017), Fastmarkets (2017-2021), Canaccord Genuity (Forecast)

Potential for very low OPEX operation

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



[1] Galaxy Resources Annual Report FY 2020, $502/dmt spodumene FY 2019
[2] Kidman Resources PFS announcement, October 2018, contingency on Refinery OPEX of 15%. Cash operating cost including royalties.
[3] Cash operating costs lithium carbonate, Orocobre 2020 Annual report
[4] Orocobre 2020 Corporate Presentation – Naraha Lithium Hydroxide plant, Japan

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. Vulcan's LHM products will potentially have the lowest carbon footprint in the world, as well as the lowest operating costs per tonne of LHM based on current global operations. This is a unique differentiator for the Vulcan project. Vulcan considers that it is appropriate to compare the estimates from the PFS to actual results from projects currently in production because Vulcan's process is unique and a comparison to other processes for producing lithium hydroxide is important to enable investors to contextualise the PFS results; and actual data from projects currently in production is the best available guide to benchmark the PFS results.

Feedstock

Vulcan's "feedstock" is low cost and has dual purpose: lithium extraction and energy production in the form of renewable electricity.

Processing

Vulcan uses DLE 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 also uses low-cost energy coming from its geothermal operation.

Upgrading

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

"It doesn't need to cost more to be green

Robust project financials

ENERGY BUSINESS

74MW Power

€0.7Bn NPV Pre-tax

€0.5Bn NPV Post-tax

16% IRR Pre-tax

13% IRR Post-tax

€226M CAPEX Phase I

€0.066/KWh OPEX

Payback: 6 years

LITHIUM BUSINESS

40,000tpy LiOH

€2.8Bn NPV Pre-tax

€1.9Bn NPV Post-tax

31% IRR Pre-tax

26% IRR Post-tax

€2,640/t LiOH OPEX

€474M CAPEX Phase I

Payback: 4 years

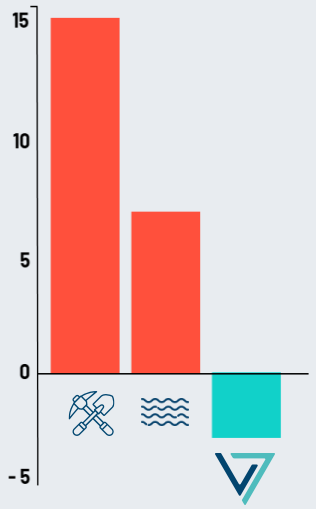
BNP PARIBAS appointed as Financial Advisor toward financing the Zero Carbon Lithium™ Project

Full project economics in Appendix 10 & 11

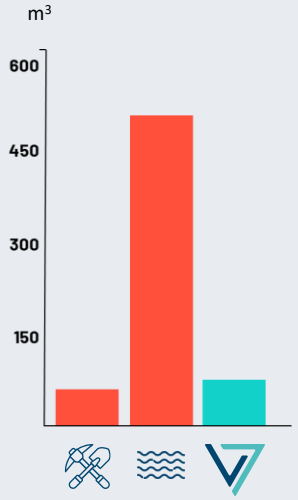
Peerless environmental credentials

Per tonne of lithium hydroxide produced

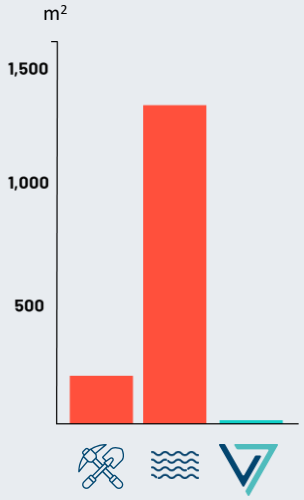
CARBON EMISSIONS (Scope 1,2,3)



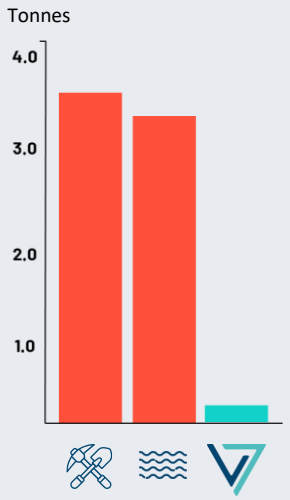
WATER CONSUMPTION



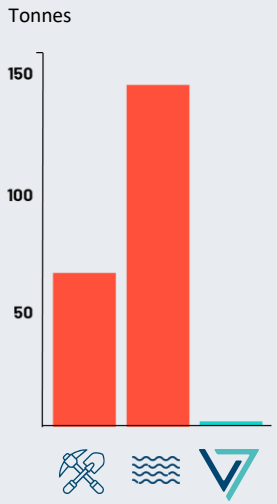
LAND USE



REAGENTS CONSUMPTION



WASTE GENERATION



Hard rock mining
60% of world lithium production

Evaporation ponds
40% of world lithium production

VULCAN ENERGIE
ZERO CARBON LITHIUM™

Intentionally designed to have the lowest environmental footprint of any lithium project globally

Source: Minviro Life Cycle Analysis 2021 & Vulcan Energy's Pre-Feasibility Study

Materially improving the global battery chemicals supply chain

ENVIRONMENT
Strict Zero Carbon focus

GOVERNANCE
Oversight, Ethics, Compliance, TCFD

Energising the Green Future of Extraction

SUPPLY CHAIN
Traceability & CO_2 Measurement

INNOVATION
R&D Fuelling Zero Carbon

PEOPLE
Powering Jobs & Education

Process development and R&D development of world-first lithium and renewable energy co-production process in Pre- Feasibility Study: Zero Carbon Lithium™.

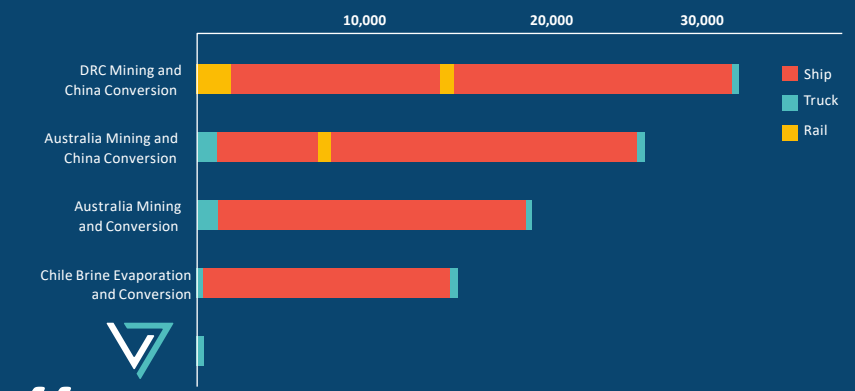
Life cycle assessment shows peerless environmental credentials including negative carbon footprint (Scope 1, 2, 3) for planned lithium production, a world first.

Working with Circulor to achieve world-first lithium traceability and dynamic CO_2 measurement across supply chain.

Admission to Global Battery Alliance toward advancing battery materials traceability and transparency.

CARBON NEUTRAL NOW, NOT IN THE FUTURE.

Transport Distances for Different Lithium Chemicals

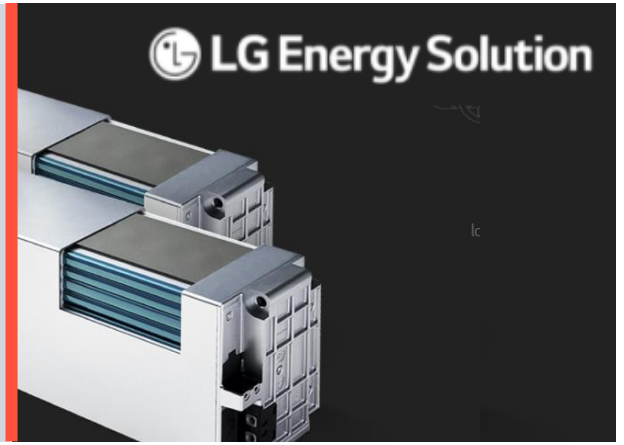


"As well as having a carbon neutral process, the Vulcan Zero Carbon Lithium™ Project also intends to reduce the transport distance of lithium chemicals into Europe to almost zero, compared with Europe's current options which are geopolitically undesirable and/or have a large carbon footprint of transport.

Securing long term lithium supply contracts

LG ENERGY SOLUTION 19TH JULY 2021

- **Binding lithium hydroxide** offtake term sheet signed with LG Energy Solution
- Initial **5-year term** which can be extended by further 5 years
- Start of commercial delivery set for **2025**
- LGES to purchase **up to 10,000tpy** of battery grade lithium hydroxide
- LGES is the largest producer of lithium-ion batteries for EVs in the world
- LGES is operating a **6GWh LIB factory in Poland**, and planning to increase this capacity to 65GWh



RENAULT GROUP: 1ST AUGUST 2021

- Binding lithium hydroxide offtake term sheet signed with Renault Group
- Initial **5-year term** which can be extended if mutually agreed
- Start of commercial delivery set for **2026**
- Renault to purchase between **6,000 and 17,000tpy** of battery grade lithium chemicals
- In line with Renault Group's strategy to offer competitive, sustainable and '**made in Europe'** EVs
- Renault Group will be able to **avoid from 300 to 700 kg of CO_2** for a 50-kWh battery.

"Further offtake agreements expected in the coming months

Lithium Market Dynamics

Technology & Costs

Fitch Solutions

'We expect **DLE technology to dominate** the future lithium mining sector. Fitch posits **geothermal lithium extraction** techniques to rise in popularity among Western consumers'[1]

Bloomberg NEW ENERGY FINANCE

'We could have a European producer [Vulcan] producing at **one of the lowest costs globally**. These are the kind of initiatives we expect Europe to take in order to compete on raw material globally'[2]

Deutsche Bank

'DLE could offer many benefits including faster speed to market, as well as lower material costs and water usage. In Germany, Vulcan is pursuing this capability in the Upper Rhine Valley, Europe's largest lithium resource'[3]

Sustainability

Fitch Solutions

"Geothermal lithium extraction has a much lower carbon footprint than both hard rock and brine extraction methods, as well as reduced water usage" [1]

Deutsche Bank

"The more **sustainable lithium producers will become the suppliers of choice** and be seen as less risky by customers and lenders. Country specific sustainability regulation is increasing and will likely lead to restrictions and higher production costs for producers that are less environmentally friendly" [3]

FT FINANCIAL TIMES

"The drive for **greener cars must be matched by cleaner lithium**"[5]

Market Balance

MACQUARIE

"Incorporating the stronger demand outlook combined with limitations on the supply response due to rising product quality requirements is expected to see the lithium market shift from a small surplus in 2021 to a **deficit in 2022 and remain in tight for 2023-2025**, deficits widening each year"[6]

cg Canaccord Genuity

"Beyond 2025, we continue to forecast **significant market deficits**, noting a ~7x increase is required to meet our 2030 demand forecast"[7]

Prices

Fitch Solutions

"Lithium prices are likely to be impacted by **green premiums** due to heightened **priority of sustainable lithium** extraction techniques"[1]

MACQUARIE

"Long term Lithium Hydroxide Prices are expected to be around **$16,000 per ton**"[1]

[1]Fitch Ratings, Fitch Solutions Country Risk & Industry Research, 21 May 2021 [2]BNEF, BNEF Summit, Europe's Formula for Winning the Lithium Battery Value-chain [3]Deutsche Bank, Sustainability Tracker, 17 May 2021 [5]Financial Time, 9 September 2020 [6]Macquarie, Lithium Market Outlook, 12 April 2021 [7]Canaccord Genuity – 10 February 2021 [8]HSBC – 9 February 2021

Vulcan – Zero Carbon Lithium™ Board

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. 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 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, principal of Viaticus Capital and Non-Executive Director of Kuniko Limited.

Dr. Horst Kreuter

Co-Founder, Board Advisor & Exec 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.

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.

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.

Julia Poliscanova

Special Advisor

Senior Director with the EU's Transport and Environment. Instrumental in shaping policies around EU vehicle CO_2 standards & sustainable batteries. On the steering committee for the Battery CO_2 Passport program of the Global Battery Alliance. Previously worked for the Mayor of London and in the European Parliament following EU legislation on renewables, energy efficiency and sustainable transport.

"Vulcan is leading the way with a 67% female Board composition

Vulcan – Zero Carbon Lithium™ Team – Australia and International

Vincent Ledoux-Pedailles

Vice President – Business Development

Vincent was previously Executive Director – Corporate Strategy at Infinity Lithium Corporation, where Vincent led the project to become the first to secure EU funding. Vincent was also appointed as a Lithium Expert by the European Commission. He previously worked at IHS Markit where he led the lithium and battery materials research team covering the entire industry's supply chain from raw materials to E-mobility. Vincent holds a Business Masters in Risk Management and International Purchasing from ESDES Business School in France.

Daniel Tydde

Company Secretary & In-House Legal Counsel

Daniel is an experienced corporate lawyer with over 15 years' experience across a wide range of corporate, commercial and finance areas including initial public offerings; equity and debt capital raisings; corporate regulatory compliance; asset and share sales and purchases; corporate governance; corporate restructuring and re-organisations; and litigation. Most recently, Daniel held a senior position at Steinepreis Paganin and prior to that, worked at Clayton Utz and Phillips Fox (now DLA Piper).

Rob Ierace

Chief Financial Officer - Australia

Robert is a Chartered Accountant and Chartered Secretary with over 20 years experience, predominately with ASX and AIM listed resource and oil and gas exploration and production companies. He has extensive experience in financial and commercial management including experience in corporate governance, debt and capital raising, tax planning, risk management, treasury management, insurance, corporate acquisitions and divestment and farm in/farm out transactions. Robert holds a Bachelor of Commerce degree from Curtin University, a Graduate Diploma in Applied Corporate Governance and a Graduate Certificate of Applied Finance and Investment.

Jess Bukowski

Public & Investor Relations Manager

Jess has extensive experience advising top 20 ASX companies on communications, media and investor relations including six years with Fortescue Metals Group as Senior Media and Corporate Affairs Specialist. Jess was previously an adviser to Prime Minister Kevin Rudd working across government and international organisations. She brings academic qualifications in social policy and community development from the University of Queensland and post-graduate qualifications in public relations and investor relations.

"Our team of world-renowned experts in geology, chemistry and engineering is supported by a Board with decades of leadership and expertise in renewable energy, project finance, chemicals and the lithium-ion battery industry.

Vulcan – Zero Carbon Lithium™ Team - Germany

Thorsten Weimann
Chief Operating Officer

Expert in geothermal and drilling technology, with more than 25 years of professional experience.Thorsten is Technical Manager of the German Geothermal Association (Bundesverband Geothermie e.V.) and he is well connected in the German geothermal industry. Diploma in Engineering (Technical University of Munich) and an MBA (Universities of Augsburg and Pittsburgh).

Markus Ritzauer
Chief Financial Officer - Germany

Markus has over 20 years' experience in finance roles within the chemicals industry. His previous role was as Head of Finance at Currenta, a chemical park service provider in Germany formerly part of Bayer, with ~EUR 1.7bn turnover, ~5,300 emoployees and ~EUR 250m EBITDA. Markus was also CFO of the Bayer Group of companies in South Korea and Head of Corporate M&A in the APAC region for Bayer.

Dr Stephen Harrison
Chief Technical Officer

CTO of Simbol Materials for seven years (2008-2015), where he led the scientific and engineering teams through a rapid process development, taking less than one year to develop a process to extract lithium from geothermal brine. As CEO of Rakehill Technology LLC, Dr. Harrison has since consulted to the lithium industry on various lithium extraction technologies including sorbents.

Renewable Energy Business

Markus Ruff
CEO Global Engineering & Consulting Company

Tobias Hochschild
CEO GeoThermal Engineering GmbH

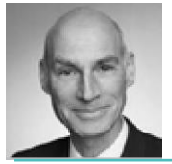
gec-co

Engineering company focused on deep geothermal projects at surface: power plant, heat stations, drill pads, and permitting. More than 300 years engineering knowledge of Gec-Co's team. Created in 2012.

GeoThermal ENGINEERING

Planning and Engineering company for deep geothermal energy projects, based in the Upper Rhine Valley, Germany. Highly credentialed scientific team with >100 years of combined worldleading expertise. Created in 2005.

Lithium Chemicals Business



Dr Thomas Aicher
Lead Chemical Engineer

Laboratory Team

Chemical Engineering & Piloting Team

VULCAN ENERGIE
ZERO CARBON LITHIUM™

Project Development team based in Germany. World-leading experts in the fields of lithium chemistry, DLE and chemical engineering.

70+ People

World Leading Engineering Team

40% Female Workforce

"We have developed a success-driven culture orientated towards delivering our Zero Carbon Lithium™ Project utilising the best technologies and world leading experts.

The story so far: progress to date

2019

Full Year

- **Acquisition** of EU focused Vulcan Lithium Project
- Agreement with major German utility to **access operational geothermal plant**
- **Largest JORC lithium resource** in Europe identified

2020

Full Year

- Positive Scoping Study published
- Start of lithium extraction test work
- $4.8m institutional and ESG investor equity placement
- Investment agreement signed with EU-backed EIT InnoEnergy
- New exploration license granted
- Increased lithium resource, reaching 15.85 Mt LCE

2021

Q1

- Positive Pre-Feasibility Study published
- Goldman Sachs $120 million placement
- Acquisition of world-class geothermal sub-surface development team - GeoT
- Agreement with DuPont to advance Direct Lithium Extraction
- High lithium grades from bulk brine sampling

Q2

- EU sustainable battery & CO_2 policy expert, Former Tesla Head of Battery Supply Chain, Former senior EY Global Renewables Partner and Evonik Senior executive join Board
- Agreement with Circulor to develop world-first lithium traceability & product CO_2 measurement
- Vulcan pilot plant for DLE on Upper Rhine Valley brine operational
- Vulcan doubles size of technical team with acquisition of world-leading German geothermal engineering business
- Lithium process expert Dr Stephen Harrison appointed as Chief Technical Officer

Q3

- New exploration license granted
- Vulcan signs binding lithium offtake term sheet with LG Energy Solutions

  LG Energy Solution
- Renault Group and Vulcan Energy: five-year strategic partnership and binding lithium offtake term sheet

  RENAULT GROUP
- Life Cycle Assessment updated: negative 2.9t of CO_2 emitted per tonne of LHM, lowest in the world
- Vulcan to apply to dual list on the Frankfurt Stock Exchange
- BNP Paribas appointed as Financial Advisor toward project financing

Q4

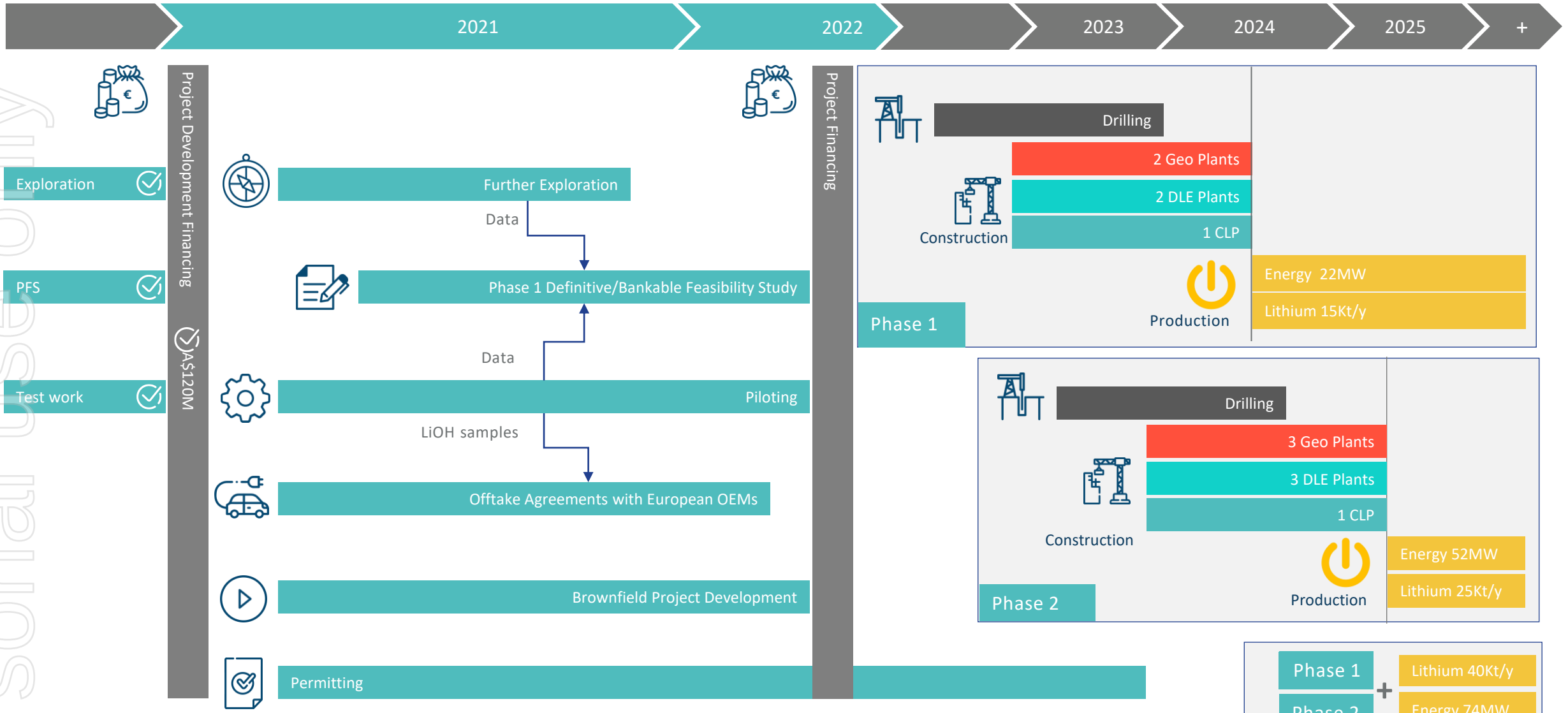
"I am from Syria and I have been living in Germany for 6 years. I finished my education as a chemical lab technician in Germany. My hobbies are painting, sports and reading.

As a chemical technical assistant in Vulcan's laboratory, I am working with lithium extraction and ICP-OES instruments. I am a part of the Vulcan team because I like new challenges: exploring how to extract and produce lithium optimally so that in the future we can supply many European countries with lithium and reduce our climate and land of as much CO_2 as possible.

Aziz Mohadeen | Technician

"**Next steps will be stepwise project execution, whilst examining ways to further grow our business**

Target project timeline



Share price and capital structure

ASX : VUL	
Shares on Issue	108,791,364
Performance Milestone Shares*	4,491,174
Performance Rights*	11,238,688
Market Capitalization at $13.43 (undiluted)	~$1.46B
Enterprise Value at $13.43 (undiluted)	~$1.35M
Cash Position	~$111M
Top 20 Shareholders	~52%
Management (undiluted)	~19%

Frankfurt: 6KO

Key Shareholders	
Dr. Francis Wedin	11.20%
Hancock Prospecting Pty Ltd	6.66%
Mr. Gavin Rezos	5.58%

*Refer ASX Announcement 10 July 2019 for further details.

Conclusion

VULCAN ENERGY
ZERO CARBON LITHIUM™

World's 1st & only Zero Carbon Lithium™ Company

Europe's largest lithium Resource

Location centre of fastest growing market

Supported By EU funding, regulation & initiatives

Low cost & resilient financials

Strong cash position

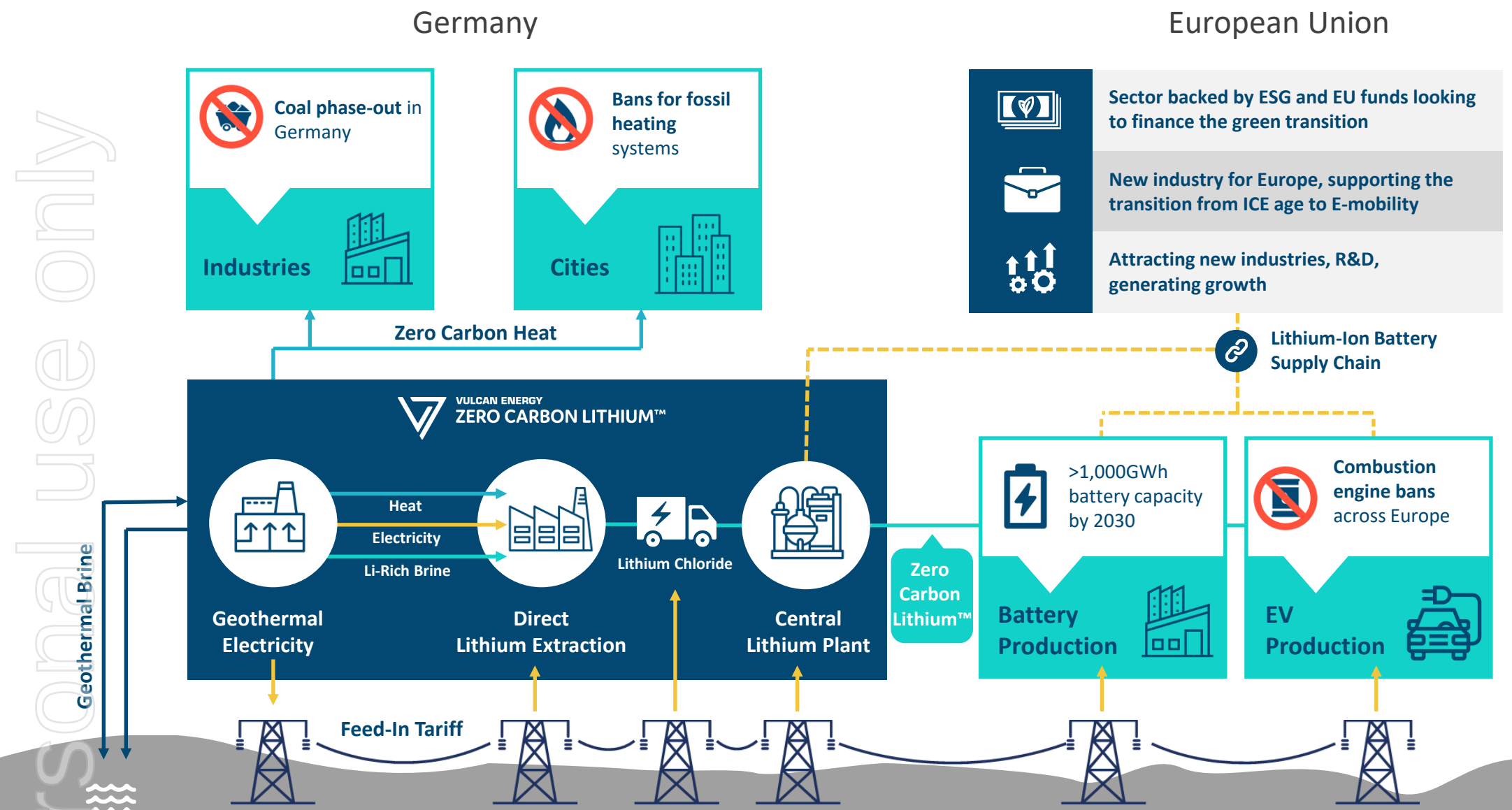
The right team for the job

Rapidly advancing lithium project

VULCAN ENERGY
ZERO CARBON LITHIUM™

Appendices

Appendix 1: Vulcan's Renewable Project Description

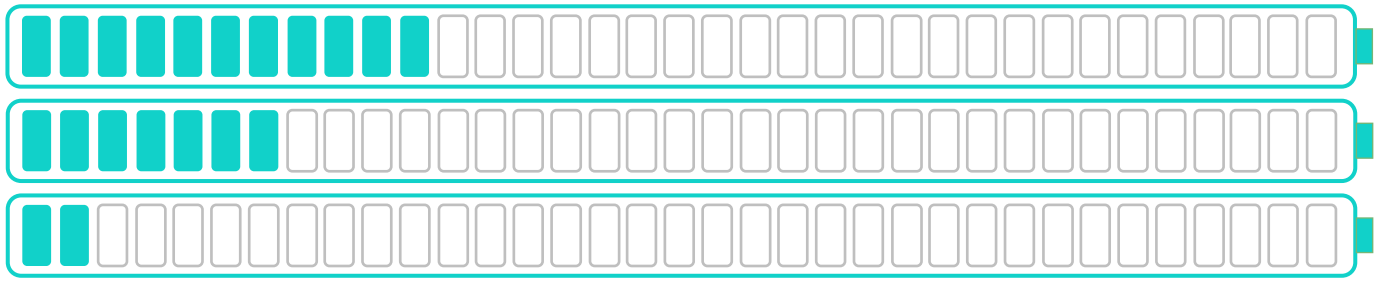


Appendix 2: The fossil-nuclear era in Europe is coming to an end

2020 → 2030 → 2040 → 2050

Europe is aiming for carbon neutrality, but the EU's energy transition is far from being complete:

Renewable Energy (RE)



- **30.7% RE in Power**
- **19.5% RE in Heat**
- **7.6% RE in Transport**

Oil	• Combustion engine bans in France, Belgium, Ireland and the Netherlands. • Diesel bans and low emission zones in over 260 cities in more than 20 member states.	Combustion engine phase-out in UK	**Demand for low-carbon solutions in transport sector**	**EVs and Lithium-Ion Batteries**
Nuclear	• Nuclear phase-out in Germany, Spain and Belgium, reduction of nuclear capacities in France.			
Coal	• Coal phase-out by 75% of European member states, among them Spain, France, UK and Italy.	Coal phase-out in Germany	**Demand for low-carbon dispatchable generation capacity** **Demand for low-carbon heat**	**Geothermal Energy**
Gas	• Bans for fossil heating systems + incentive schemes for low carbon heating across EU Member States.			

Appendix 3: EU lithium-ion battery capacity

Brandenburg, 2021
At least 20GWh

Salzgitter, 2025
40GWh

Spain, Eastern Europe, etc.
4x40GWh

Erfurt, 2022
14 GWh LATER 100 GWh

Sunderland, 2010
2.5 GWh

Willstätt, 2020
1 GWh

Germany & France, 2022
16 GWh, LATER 48 GWh

Überherrn, 2023
24 GWh

Germany, 202X
4 GWh, LATER 8 GWh

Schwarzheide, 2022
CATHODE MATERIALS

Bratislava, 2024
10GWh

St Athan Wales, 2023
10GWh, later 35Gwh

Skellefteå, 2021
32 GWh LATER 40 GWh

Hungary, TBC
CATHODE MATERIALS

Brandenburg, 2021
RAMP UP TO 8-12 GWh

Bitterfeld, 2022
16 GWh

Wroclaw, 2018
6 GWh, LATER 70 GWh

Konin, 2021
CATHODE MATERIALS

Nysa 2020
CATHODE MATERIALS

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

Göd, 2018
3 GWh, LATER 15 GWh

Mo I Rana, 2023
32+2GWh

Agder, 2024
8GWh, later 32GWh

Norway, TBC
Unknown

Europe, TBC
Unknown

Blyth, UK, TBC
Unknown

France, TBC
Unknown

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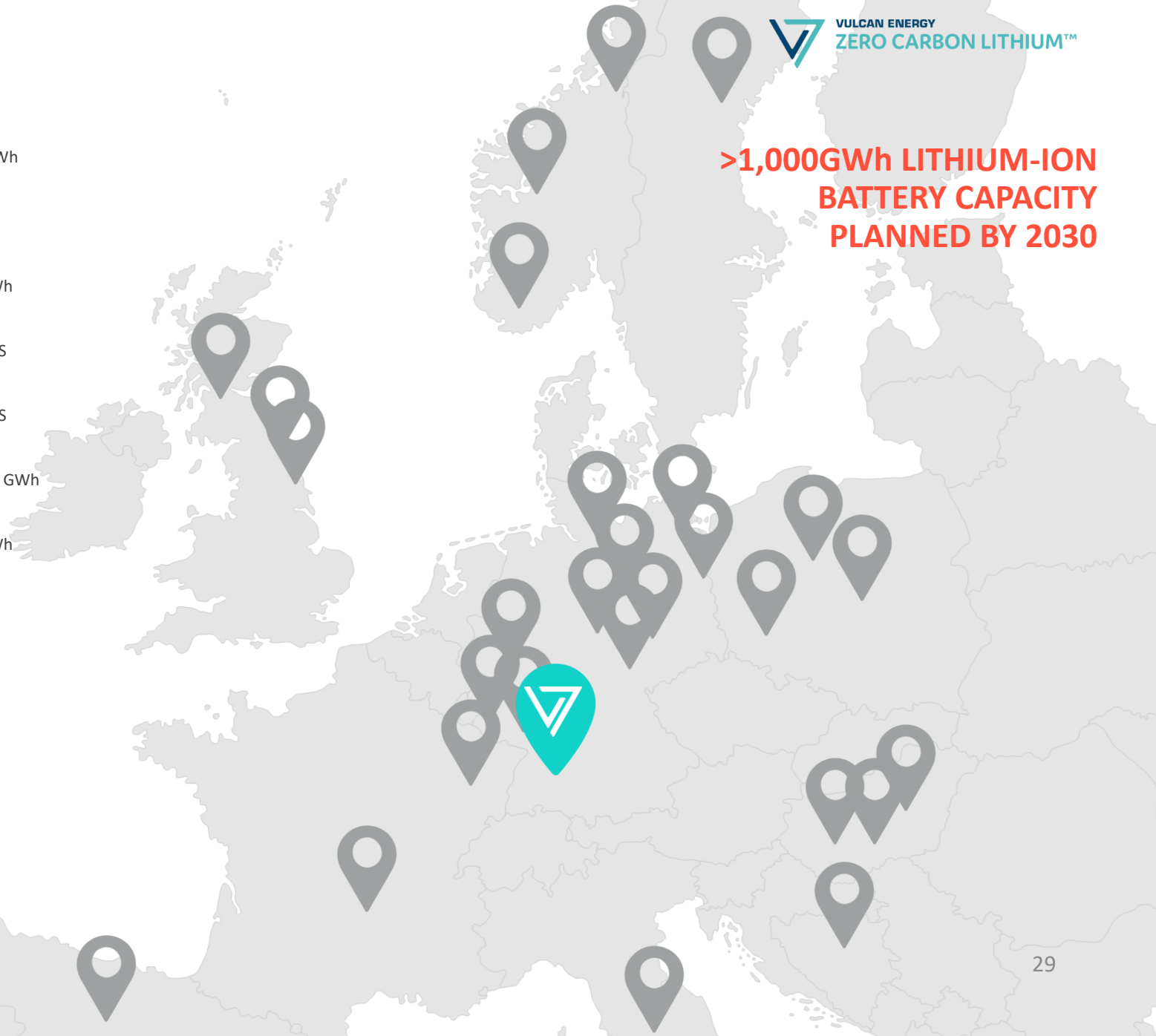
ZERO CARBON LITHIUM™

>1,000GWh LITHIUM-ION BATTERY CAPACITY PLANNED BY 2030



Appendix 4: The New EU Battery Regulation

New measures announced in December 2020 including:

1. Responsible sourcing : New mandatory procedures to ensure sustainable and ethical sourcing of raw materials such as lithium.

2. CO_2 footprint : All batteries sold in Europe must declare their carbon footprint. This will come in 3-step approach : 1/ Declaration (2024), 2/ Classification (2026), 3/ Threshold (2027). Batteries with the highest carbon footprint will be banned in Europe.

3. Traceability: All raw materials used in batteries to be procured according to OECD recognized guidelines for sustainable sourcing. Thanks to blockchain technology, each battery will have a digital passport tracking all components upstream.

Maroš Šefčovič – European Commission VP : *"The new EU battery CO2 regulation will have an immediate impact on the market, which up until now has been driven only by price".*

Thierry Breton - EU commissioner: "*We are 100% dependent on lithium imports. The EU, if finding the right environmental approach, will be self-sufficient in a few years, using its resources*".

Other EU measures and initiatives supporting lithium:

EU list of **Critical Raw Materials** & **European Raw Materials Alliance**

EIB new energy lending policy supporting projects relating to the supply of critical raw materials

European Battery Alliance

Appendix 5: Vulcan supported by EU-backed group

EIT InnoEnergy will marshal its ecosystem and significant EU-wide resources to launch the Zero Carbon 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.

Appendix 6: Vulcan & Circulor to establish world-first full lithium traceability & transparency across the EU supply chain

VULCAN ENERGY
ZERO CARBON LITHIUM™

Circulor

Circulor offers a software solution that enables customers to **track raw materials and CO_2 emissions** through supply chains to **demonstrate responsible sourcing and sustainability**.

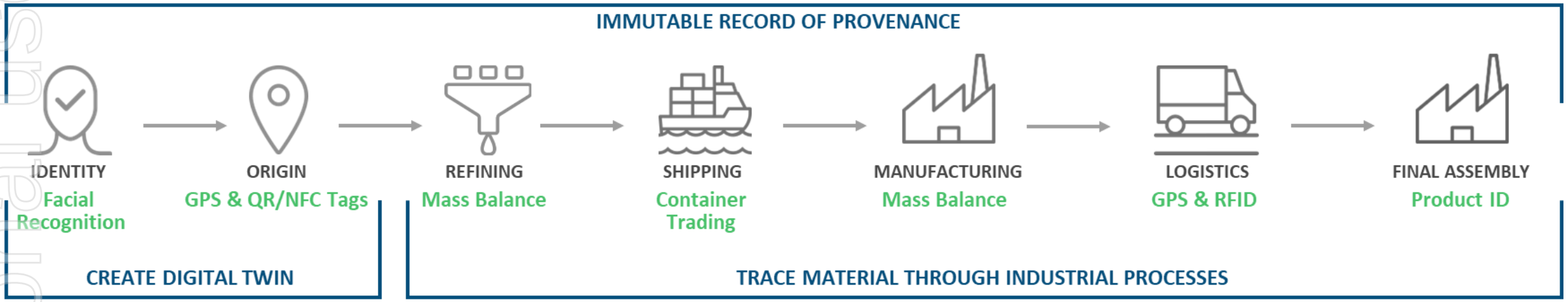
By applying blockchain, artificial intelligence, machine learning, facial recognition, mass balancing and other technologies Circulor makes sure that the digital twin is reliably linked to the physical resource through out its entire journey. This enables:

1. Reputational Protection

2. Proof of compliance with guidelines and regulations

3. Dynamic carbon tracking

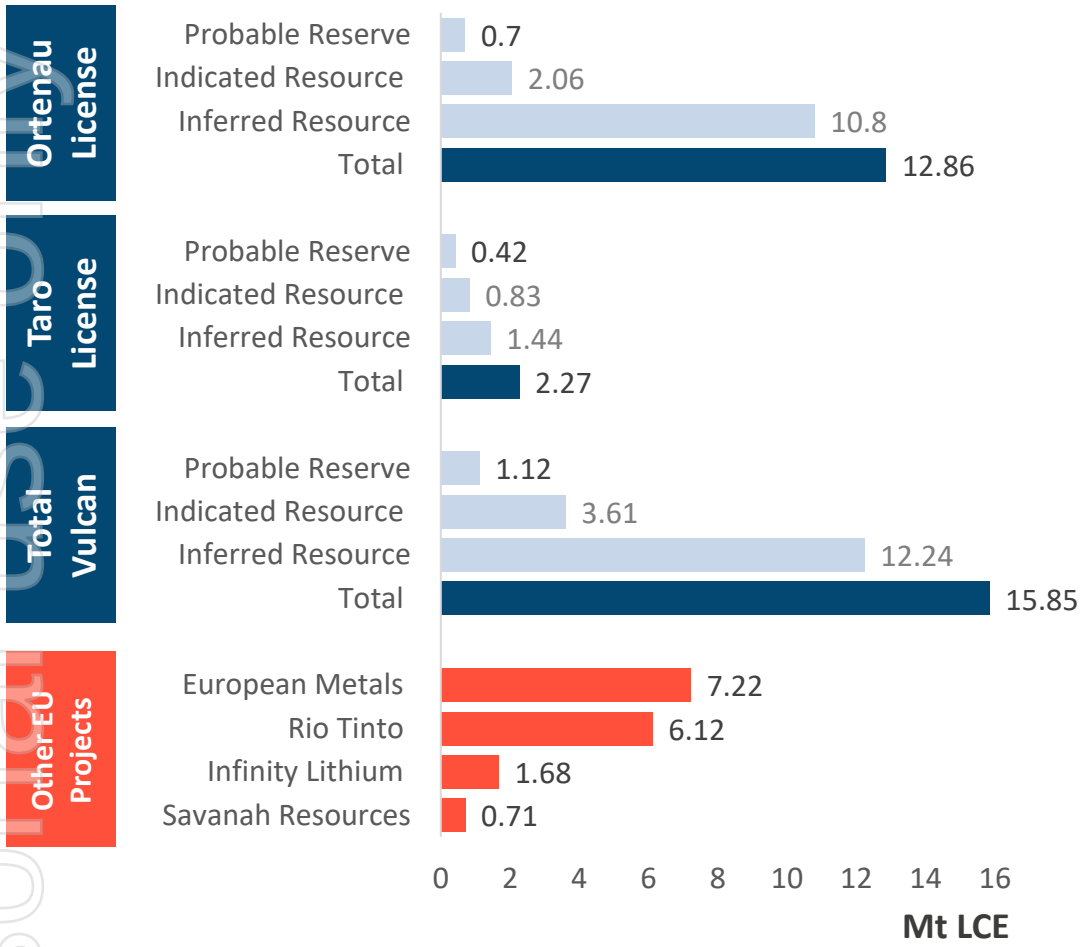
4. Reducing due diligence, audits and reporting costs

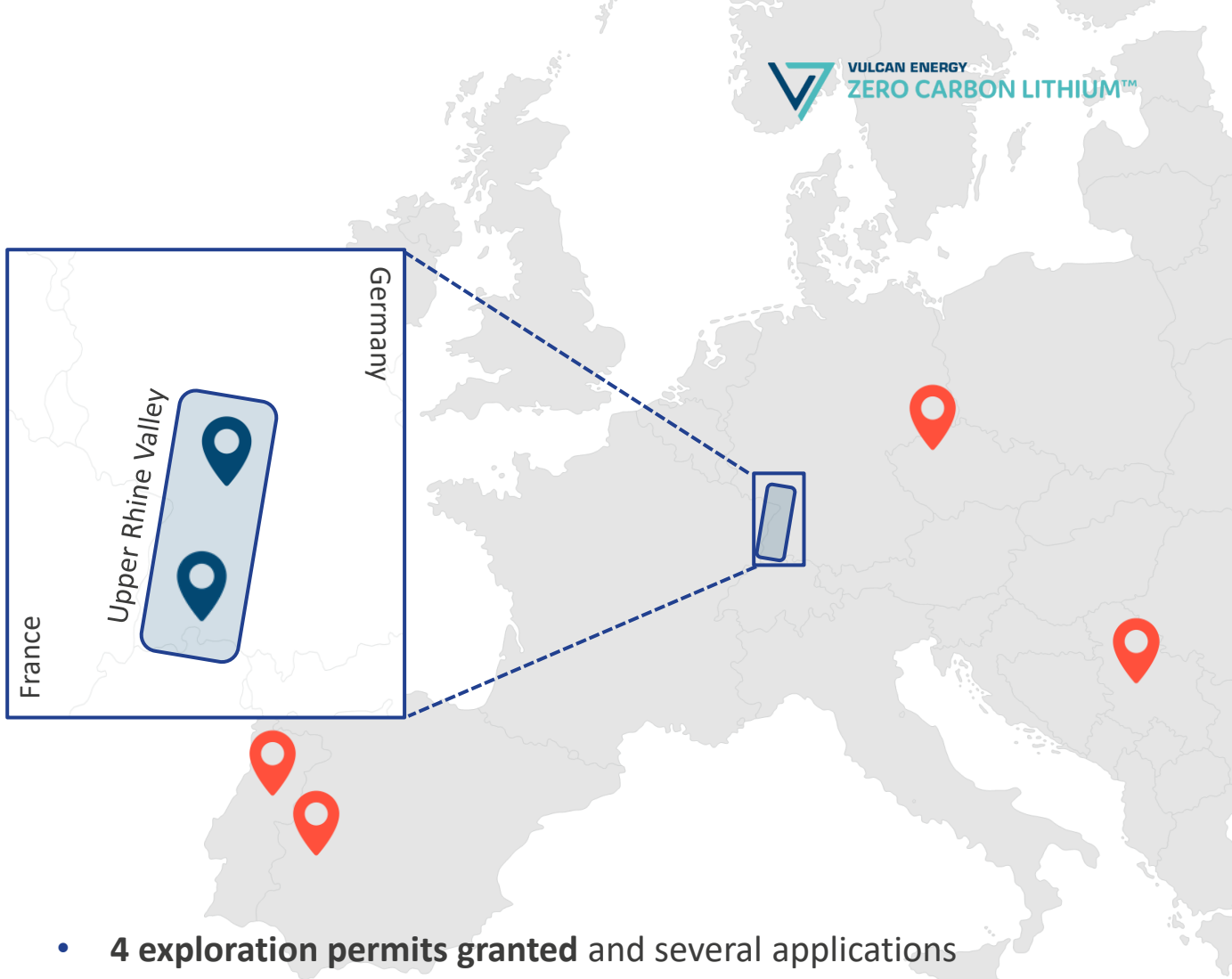


Example applied to the cobalt supply chain

Circulor's existing customers: VOLVO, CATL, LG Chem, POSCO CHEMICAL, polestar, JAGUAR LAND ROVER, TOTAL

Appendix 7: Largest Lithium Resource in Europe





- **4 exploration permits granted** and several applications
- Largest lithium resource in Europe: **15.85Mt LCE**

Notes: Vulcan's URVP Li-Brine resource and reserve area in Europe. Mineral resources are not mineral reserves and do not have demonstrated economic viability.
The preceding statements of Reserves conforms to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2012 edition. 100% of the material in the PFS project schedule is based on the Probable Ore Reserves category. The Probable Ore Reserves were calculated assuming the production and processing methods determined for the PFS. Sources for other company data, which have all at the stage of having completed a Pre-Feasibility Study, with varying mixes of Inferred, Indicated and Measured Resources: ASX:EMH 10/2020 presentation, ASX:RIO: 12/2020 release, ASX: INF: 06/2020 presentation, AIM:SAV: 11/2020 presentation.

Appendix 8: Brine Composition Comparison

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ZERO CARBON LITHIUM™

		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	

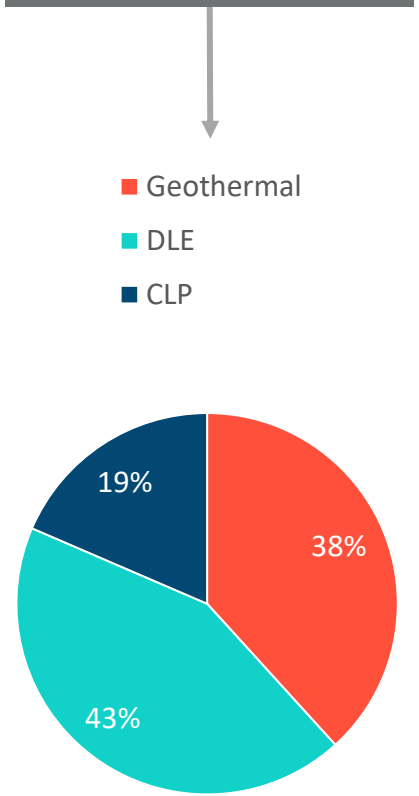
Note: Refer to ASX announcement of 10 March 2021 “High grade lithium, low impurity results from Vulcan’s 2021 Upper Rhine Valley bulk brine sampling”. Comparison of Vulcan’s January 2021 Upper Rhine Valley sample result analysed at KIT (n=1), compared to Salton Sea brine results (n=unknown) as recorded 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: Project Economics - CAPEX

VULCAN ENERGY
ZERO CARBON LITHIUM™

	ENERGY BUSINESS	LITHIUM BUSINESS		
	1 Geothermal Plant	2 DLE Plant	3 CLP	
PHASE 1 2024 Start	2 geothermal plants: • GB1 – 8MW • GB2 – 14MW **Capex: €226M**	2 DLE plants: • DB1 – 8kt LiOH • DB2 – 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 DLE plants: • DC1 – 8kt LiOH • DC2 – 8kt LiOH • DC3 – 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 DLE Plants** **Capex: €751M**	1 Central Lithium Plant • CLP – 40kt LiOH **Capex: €322M**	€1.1bn

FULL PROJECT



Equivalent per tonne of LiOH

Appendix 10: Project Economics - Possible Structures

VULCAN ENERGY
ZERO CARBON LITHIUM™

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
	DB1 DB2 DC1 DC2 DC3	DB1 DB2 DC1 DC2 DC3	DB1 DB2 DC1 DC2 DC3	DB1 DB2 DC1 DC2 DC3	DB1 DB2 DC1 DC2 DC3	DB1 DB2 DC1 DC2 DC3
	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 DLE		*751*		*291*		*460*
CAPEX CLP	**0.066**	*322*		*182*		*240*
OPEX €/KWh or LiOH€/t		**2,681**	**0.078**	**3,201**	**0.061**	**2,855**

Notes: Lithium Hydroxide Battery Quality at €12,542 or $14,925/t
Phase 1 relates to Taro license, Phase 2 to Ortenau license.
Ortenau license is 100% owned by Vulcan. Vulcan ahs a 51% interest in Taro, with the right to earn at least 80% interest.

Appendix 11: Project Economics - Possible Structures

	Full project developed at the **same time** and **integrated** under **one business**.	**Phase 1** developed first and is an **integrated business**	**Phase 2** developed second and is an **integrated business**
	FULL PROJECT **NO PHASING** **2024 Start**	**PHASE 1** **2024 Start**	**PHASE 2** **2025 Start**
	INTEGRATED BUSINESS	**INTEGRATED BUSINESS**	**INTEGRATED BUSINESS**
	GB1 GB2 GC1 GC2 GC3 DB1 DB2 DC1 DC2 DC3 CLP1 CLP2	GB1 GB2 GC1 GC2 GC3 DB1 DB2 DC1 DC2 DC3 CLP1 CLP2	GB1 GB2 GC1 GC2 GC3 DB1 DB2 DC1 DC2 DC3 CLP1 CLP2
	74MW & 40Ktpy LiOH	**21MW & 15Ktpy LiOH**	**52MW & 25Ktpy LiOH**
Revenues €M/y	652	232	420
Net Op. Cash Fl. €M/y	507	171	324
NPV Pre-tax €M	3,443	1,114	2,145
NPV Post-tax €M	**2,250**	**703**	**1,403**
IRR Pre-tax	26%	23%	27%
IRR Post-tax	**21%**	**18%**	**22%**
Payback (year)	**5**	**5**	**6**
CAPEX €M	1,738	700	1,138
CAPEX Geo	*665*	*226*	*438*
CAPEX DLE	*751*	*291*	*460*
CAPEX CLP	*322*	*182*	*240*
OPEX €/KWh or LiOH€/t	**2,640**	**3,139**	**2,792**

Appendix 12: information for slide 8 & 9

VULCAN ENERGY
ZERO CARBON LITHIUM™

Company	Code	Project	Stage	Resource Category	Resources M tonnes	Resource Grade (Li2O)	Contained LCE Tonnes	Information Source
European Metals	ASX: EMH	Cinovec	PFS Complete	Indicated & Inferred	695.9	0.42	7.22	Corporate Presentation Released October 2020
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	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 November 2020

Company	Project	Stage	Resource Category	Brine Volume	Resource Grade	Contained 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

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 13: Partnership with Nico Rosberg & Rosberg X Racing Extreme-E Team

- Vulcan Energy Resources Ltd. and Mr. Nico Rosberg and the Rosberg X Racing (RXR) electric racing team in the Extreme-E competition have signed a partnership and sponsorship agreement
- Mr. Rosberg, a German national who was Formula One World Champion in 2016, is a prominent sustainability entrepreneur, and founder of the popular Greentech Festival, as well as the RXR Extreme-E team.
- Extreme E's five-race global voyage, spanning four continents, was created to highlight the impact of climate change and human activity on some of the world's most remote locations while promoting sustainability and the adoption of electric vehicles to help protect the planet.
- Based in Neustadt, Germany, Team RXR is an evolution of Team Rosberg, founded in 1994 by Nico's father and 1982 F1 World Champion, Keke Rosberg. RXR has an Australian female driver, Molly Taylor, and a Swedish male driver, FIA World Rallycross Champion Johan Kristoffersson.
- Extreme E includes other top racing names include seven-time Formula One World Champion Lewis Hamilton's X44 team, 2009 Formula One World Champion Jenson Button and world-class drivers including rally legends Carlos Sainz Snr. and Sébastien Loeb.

ROSBERG X RACING

VULCAN ENERGY ZERO CARBON LITHIUM™

OFFICIAL PARTNER

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ASX:VUL
FRA:6KO

Thank You

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DWR eco
enabling eco innovation

Australia

CANNINGS