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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.
Vulcan Energy Resources seeks to decarbonize the currently high carbon footprint of lithium-ion batteries used in electric vehicles, by producing a unique, world-first Zero Carbon Lithium™ product from its Vulcan Project, which is the largest lithium project in Europe, and located in the heart of the EU’s rapidly growing battery “Mega-Factories”.

Vulcan will disrupt and lead the resource industry towards a Zero Carbon future.
**Vulcan Summary: Best-in-Class for the 2020s**

1. **World’s 1st & Only Zero-Carbon Lithium™ Process**
   - Purpose-built process to be uniquely Zero Carbon
   - Co-generation of geothermal energy from production wells will power lithium extraction
   - Negative CO₂/t LiOH H₂O, decarbonising the grid while producing lithium, compared with ~15 tonnes CO₂ for hard-rock

2. **Positive Scoping Study**
   - World-leading industry experts in lithium extraction and geothermal behind first of its kind study
   - Provides solid basis for feasibility studies to commence shortly

3. **Dual Revenue Potential**
   - Dual Lithium Hydroxide & Renewables Project
   - Principal revenue potential from selling battery-quality LiOH H₂O chemicals into the European market
   - Secondary revenue potential from planned renewable geothermal power generation, which benefits from Feed-in-Tariff.

4. **Size & Quality: Europe’s Largest Lithium Resource**
   - JORC Mineral Resource Estimate¹ 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

5. **Location: Centre of Fastest Growing Market**
   - 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 Raw Material

6. **Local Partners & Infrastructure Access**
   - 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 infrastructure

7. **The Right Team For The Job**
   - 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

8. **World’s Most Rapidly Advancing Lithium Project**
   - Maiden Resource & Scoping Study completed in just five months
   - Targeting short-term production start, in line with lithium supply-demand inflection point

---

¹See VUL announcement 20/01/2020
EV raw material supply chains have a carbon footprint problem.

Volkswagen is placing great importance on having a CO₂-neutral production supply chain for its new EV line-up, with sustainability metric for suppliers on par with price.

Other European OEMs following suit.

The European Commission has flagged “CO₂ Passports” for electric vehicles, which will detail their full CO₂ impacts.

EU has declared a climate emergency and aims to cut 55% of emissions by 2030, net zero by 2050.

The world’s conventional lithium supply chains are not geared towards low carbon intensity production, so Europe will need to build its own.

“Volkswagen’s delivery promise: CO₂-neutral production including supply chain”
“Sustainability as selection criteria on par with quality and price”
1. Independently-Verified Zero CO₂ Credentials: World-First

Europe’s Choice:

“No need for high energy mining, crushing, grinding and roasting processes used in hard-rock lithium deposits.”

Hard-rock spodumene in Australia/Portugal with downstream fossil-fuel fired processing: roasting rocks in China: **13-15 tonnes CO₂/t LiOH•H₂O**

Salar-type lithium brine in South America: **5 tonnes CO₂/t LiOH•H₂O with heavy water impact** on a dry environment

Vulcan geothermal-type brine project: **negative CO₂/t LiOH•H₂O** decarbonizing both the European grid and lithium supply chain simultaneously.

Vulcan Energy Independent ISO 14044 Study

Zero Carbon Lithium™ Products: Premium, Peerless and Disruptive

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2. Positive Scoping Study

Zero Carbon Lithium™ Process

Electric Transport to Nearby EU Cathode Plants

Lithium Hydroxide Production Plant

Direct Lithium Extraction (DLE)

Pre-Treatment

Impurity Removal

Insheim Plant

Geothermal Energy Plant 1

Geothermal Energy Plant 2

ORC

Geothermal Waste Brine (65°C)

Current Wells

Spent Brine to Re-Injection Well

Revenue from Power Generated

Planned Production & Re-Injection Wells

Spent Brine for Re-Injection Without Lithium

Spent Brine for Re-Injection Without Lithium

Spent Brine for Re-Injection Without Lithium

Fault Zones

Geothermal Brine Extraction (165°C)

Geothermal Brine Extraction (165°C)

Geothermal Brine Extraction (165°C)

Surface

Revenue from Power Generated

Revenue from Power Generated

Revenue from Power Generated

Surface

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Geothermal Brine Resource

Vulcan Project

Vulcan Project (incl. Insheim MoU Area)

13.95 Mt LCE @ 181mg/l Li Indicated & Inferred
2. Direct Lithium Extraction: Commercial Future of Lithium

DLE Plants: Commercially Operating Now

Multiple operational, commercial plants world-wide, including:

- DLE used at Livent’s Hombre Muerto operation in Argentina for 25 years producing consistent product: 25ktpa LCE production
- Zangge DLE Lithium Project is fully operational in Qinghai, China with a capacity of 10ktpa LCE. Sunresin supplied equipment.
- Lanke DLE Lithium plant also in Qinghai, China: 20ktpa production in 2019, expanding to 30ktpa in 2020.

The Vulcan Project will utilize a 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 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.
3. Dual Revenue Potential

- Potential to split project funding into renewables & lithium project with separate investors.
- When combined, the project is underpinned by favourable Feed-in-Tariff rates for geothermal energy produced.
- Exposure to upside of lithium price environment, widely forecast to improve in 2020s.
- Combined project revenue streams de-risk overall operation.

Funding flexibility & project de-risking from multiple revenue streams

Geothermal Revenue Potential from German Feed-in-Tariff (Stage 2)

Lithium Revenue Potential (Stage 1 & 2)

Renewable Geothermal Energy Production

Zero Carbon Lithium™ Hydroxide Production
4. Size: Vulcan Project Resource is World-Class

Chart compares resources 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. Market capitalisations converted to A$m as at 23 January 2020.
4. Size: Upper Rhine, Germany, is Europe’s “Lithium Valley”

Germany: Largest JORC Lithium Mineral Resource Endowment in Europe

<table>
<thead>
<tr>
<th>Country</th>
<th>JORC Lithium Mineral Resource Endowment (Mt LCE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany (Vulcan Project)</td>
<td>13.95</td>
</tr>
<tr>
<td>Czechia</td>
<td>7.17</td>
</tr>
<tr>
<td>Serbia</td>
<td>6.24</td>
</tr>
<tr>
<td>Spain</td>
<td>1.68</td>
</tr>
<tr>
<td>Portugal</td>
<td>0.71</td>
</tr>
</tbody>
</table>

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.
4. Size: Large, Strategic Project Area in the “Lithium Valley”

- Most well-explored graben system in the world: large quantities of existing 2D and 3D seismic data to **shortcut development timeline**.
- **Dominant** license landholding in lithium-rich brine field - ~ 800 km² of license area.
- Thousands of historical wells and multiple operating geothermal wells in the region provide a **wealth of data** and **readily accessible brine**.
- Geothermal brine production socially & environmentally accepted in region with vineyards and communities next to existing operations.

Legend

- Granted Licence (Vulcan)
- Licence Under Application (Vulcan)
- Granted Licence (Other Licence Holders)
- Extraction Licence Indenheim
- Extraction Licence Lendau
- Geothermal Projects

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Vulcan geothermal brine field exhibits Li values one to two orders of magnitude greater than typical geothermal brines\(^1\): average of 181 mg/L Li.

Typical geothermal brine fields have lithium values in the order of 1-10 mg/L Li\(^1\).

Only other known geothermal field with similar lithium grades & flow rate is Salton Sea, California\(^1\).

Sept 2019, Livent invested $5.5M in E3 Metals to produce LiOH•H2O from a brine with grades of 75 mg/L Li (less than half Vulcan’s grade).

Areas with heated brines are common, but the fluids are rarely also both lithium-rich & high flow rate.

Processing advantage of readily available heat & power versus South American Li salar brines.

\(^1\)See Appendix 3
5. Location: Centre of Fastest Growing Lithium Market

- **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

- **Skellefteå, 2021**
  - 7.5 GWh, later 23.5 GWh

- **Komarom 1 + 2, 2020**
  - 3 GWh, later 23.5 GWh

- **Bitterfeld, 2022**
  - 10 GWh

- **Wroclaw, 2018**
  - 6 GWh, later 70 GWh

- **Mo I Rana, 2023**
  - Ramp up to 32 GWh

- **Nysa 2021**
  - Cathode Materials

- **Nysa 2020**
  - Cathode Materials

- **Brandenburg 2021**
  - Ramp up to 8-12 GWh

- **Erfurt, 2022**
  - 14 GWh later 100 GWh

- **Wroclaw, 2018**
  - 6 GWh, later 70 GWh

- **Nysa 2021**
  - Cathode Materials

- **Nysa 2020**
  - Cathode Materials

- **Komarom 1 + 2, 2020**
  - 3 GWh, later 23.5 GWh

- **Göd, 2018**
  - 3 GWh, later 15 GWh

- **Europe, 202X**
  - Capacity unknown

*Vulcan’s negligible distance to markets is a cost advantage as well as carbon advantage.*
5. Location: Unprecedented Growth in Demand for Li in EU

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.

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

Vulcan Energy Resources Target Market

Vulcan will capitalize on the fastest growing lithium market in the world, which has zero local supply.
6. German Utility Partnership: Shortcut to Development

- MoU agreement signed Nov 2019 with subsidiary of German utility Pfalzwerke Group – Pfalzwerke geofuture, for JV at operational Insheim geothermal plant to produce lithium hydroxide.

- Transformational agreement for Vulcan, gives access to lithium-rich, producing brine operations neighbouring Vulcan’s existing project area.

- Vulcan to earn up to 80% of lithium rights at Insheim (subject to completion of formal JV agreement) by completing Pre-Feasibility (PFS) and Definitive Feasibility (DFS) Studies.

- Pfalzwerke Gruppe is a German and international energy provider with annual revenue (2018) in excess of €1.3 billion.

- Insheim geothermal plant (shown) a shining example of geothermal best-practice, operating in harmony with local community and environment since 2012.

- Potential for Stage One Zero Carbon Lithium™ hydroxide production at existing plant and infrastructure.
Dr. Francis Wedin – Managing Director & CEO
Founder of Vulcan Zero Carbon Lithium™ Project. Previously Executive Director of ASX-listed Exore Resources Ltd. Management experience in resources sector on four continents; bilingual; dual Swedish/EU & Australian nationality. Lithium industry executive since 2014. Three discoveries of JORC Lithium Resources on two continents including Lynas Find, now part of Pilbara Minerals’ Pilgangoora Project in production supplying the Chinese market (ASX:PLS). PhD & BSc (Hons) in Mineral Exploration & MBA in Renewables.

Dr. Horst Kreuter – CTO Geothermal
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.

World-Renowned Independent Geological & Engineering Expertise:

- Alex Grant
  CTO Direct Lithium Extraction
- Dr. Jens Grimmer
  Senior Geologist, Lithium Expert
- Dr. Michael Kraml
  Senior Geochemist
- Thorsten Weimann
  Geothermal Plant Engineering Expert
- Tobias Hochschild
  Senior Geologist

Strong Lithium Industry, Geothermal & Project Finance Experience
8. World’s Most Rapidly Advancing Lithium Project

- **Maiden JORC Resource & MoU Agreement with German Plant Operator**
- **Scoping Study & LCA Completion**
- **Pilot Plant & PFS**
- **Permitting, Demo Plant, DFS**
- **Permitting, Financing, Construction**
- **Staged Commercial Operation**

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Summary | Vulcan: A Unique Investment Proposition

2. Positive Scoping Study
3. Diversified Revenue Potential
4. Size & Quality: Europe’s Largest JORC Lithium Resource
5. Location: Centre of Fastest Growing Market
6. Respected Local Partners & Infrastructure Access
7. The Right Team For The Job
8. Rapidly Advancing Lithium Project
**Vendor Performance Milestone payments to be made on:**

- **Class A**: completion of Scoping Study (4.4M Shares) within 12 months
- **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

**3,750,000 Performance Rights to Viaticus Capital comprising Class D, E and F rights (1.25m each), which vest on the same conditions as 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

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**Appendix 1: Capital Structure**

<table>
<thead>
<tr>
<th>ASX : VUL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shares on Issue</td>
</tr>
<tr>
<td>Options (28.5c expiring in December 2020)</td>
</tr>
<tr>
<td>Performance Milestone Shares*</td>
</tr>
<tr>
<td>Performance Rights**</td>
</tr>
<tr>
<td>Market Capitalization at 25c (undiluted)</td>
</tr>
<tr>
<td>Enterprise Value at 25c (undiluted)</td>
</tr>
<tr>
<td>Cash Position</td>
</tr>
<tr>
<td>Top 20 Shareholders</td>
</tr>
<tr>
<td>Management (undiluted)</td>
</tr>
</tbody>
</table>

*Vendor Performance Milestone payments to be made on:*

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Refer ASX Announcement 10 July 2019 for further details
Appendix 2: Proud Members of a Leading-Edge Industry
### Appendix 3: Information for Slide 10, 11 and 13

<table>
<thead>
<tr>
<th>Company</th>
<th>Code</th>
<th>Project</th>
<th>Stage</th>
<th>Resource Category</th>
<th>Brine M³</th>
<th>Resource Grade (mg/l Li)</th>
<th>Contained LCE Tonnes</th>
<th>Information Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orocobre</td>
<td>ASX:ORE</td>
<td>Salar de Olaroz</td>
<td>Production</td>
<td>Measured &amp; Indicated</td>
<td>1.8 x 10⁹</td>
<td>690</td>
<td>6.4</td>
<td>Company Presentation 5 May 2014</td>
</tr>
<tr>
<td>Lithium Americas</td>
<td>NYSE: LAC</td>
<td>Cauchari-Olaroz, Chile (50% ownership. Thacker Pass not Included)</td>
<td>DFS Complete, Construction Underway</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>7.8 x 10⁹</td>
<td>592</td>
<td>24.6</td>
<td>Resource Statement 7 May 2019</td>
</tr>
<tr>
<td>Millennial Lithium</td>
<td>CVE: ML</td>
<td>Pastos Grandes, Argentina</td>
<td>FS Complete</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>2.2 x 10⁹</td>
<td>428</td>
<td>4.9</td>
<td>Resource Statement 31 May 2019</td>
</tr>
<tr>
<td>European Metals</td>
<td>ASX: EMH</td>
<td>Cinovec</td>
<td>PFS Complete</td>
<td>Indicated &amp; Inferred</td>
<td>695.9</td>
<td>0.42</td>
<td>7.17</td>
<td>Corporate Presentation Released 20 November 2018</td>
</tr>
<tr>
<td>Rio Tinto</td>
<td>ASX: RIO</td>
<td>Jadar</td>
<td>PFS Underway</td>
<td>Indicated &amp; Inferred</td>
<td>135.7</td>
<td>1.86</td>
<td>6.24</td>
<td>Corporate Presentation Released 21 March 2018</td>
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<tr>
<td>Infinity Lithium</td>
<td>ASX: INF</td>
<td>San Jose</td>
<td>PFS Complete</td>
<td>Indicated &amp; Inferred</td>
<td>111.3</td>
<td>0.61</td>
<td>1.68</td>
<td>ASX Announcement Released 22 August 2019</td>
</tr>
<tr>
<td>Savannah Resources</td>
<td>AIM: SAV</td>
<td>Barroso</td>
<td>DFS Underway</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>27.0</td>
<td>1.00</td>
<td>0.71</td>
<td>Corporate Presentation Released May 2019</td>
</tr>
<tr>
<td>European Lithium</td>
<td>ASX: EUR</td>
<td>Wolfsburg</td>
<td>PFS Complete</td>
<td>Measured, Indicated &amp; Inferred</td>
<td>10.98</td>
<td>1.00%</td>
<td>0.27</td>
<td>Corporate Presentation Released 22 March 2019</td>
</tr>
</tbody>
</table>

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.

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Thank You.

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