

## **Vulcan executes agreement to supply German energy company, MVV, with renewable, zero carbon heat**

### **First of a number of planned district heating agreements from Geothermal energy to help combat Germany's Energy Crisis**

Vulcan Energy Resources Limited (Vulcan; ASX: VUL, FSE: VUL, the Company) is aiming to become the world's first integrated lithium chemicals and renewable energy producer with net zero greenhouse gas emissions. Vulcan's unique Zero Carbon Lithium™ Project aims to produce both renewable geothermal energy and lithium hydroxide for electric vehicle batteries from the same deep brine source in the Upper Rhine Valley, Germany.

#### **Highlights**

- Vulcan and MVV Energie AG (MVV) have executed a binding purchase agreement for 240 gigawatt hours per year of renewable heat.
- The 20-year, long-term agreement commences in 2025 and includes the supply of a minimum of 240,000MWh per year to a maximum of 350,000MWh per year to households in Mannheim, outside of Frankfurt, Germany.
- MVV, the largest municipal energy supplier in Germany, generates an annual revenue of €4.1 billion and employs more than 6,500 people. The energy provider is a valuable community asset, with the City of Mannheim owning 50.10 % of the company<sup>1</sup>.
- The heat will be supplied from Vulcan's planned geothermal wells in the area surrounding the City of Mannheim. Heat will be transferred via heating grids and a series of underground pipes that deliver hot water or steam to buildings in the local community.
- The agreement is in line with MVV's strategy to become climate neutral by 2040 and then one of the first energy companies in Germany to be climate positive.
- Vulcan is developing its Mannheim licence as part of a planned larger Phase 2 of the Zero Carbon Lithium™ Project.

Vulcan's Managing Director, Dr Francis Wedin commented: *"Vulcan is committed to playing a leading role in Germany's "Wärmewende", or heat transition as the country looks to reduce its reliance on Russian energy. This agreement represents a real and immediate step taken by a German energy utility to achieve energy security whilst not compromising on climate goals.*

*"We believe that Geothermal renewable energy on a mass scale, combined with lithium extraction from the same deep geothermal source, can and will play an important part in achieving Europe and Germany's energy security and independence. We are proud to partner with MVV, a leader in German energy supply, dedicated to making a lasting and sustainable contribution to the local community through the provision of renewable energy and heat. Our binding offtake agreement for regional geothermal energy positions MVV to deliver secure, sustainable, economical and environmentally friendly heating for its industrial, commercial and private household customers. Vulcan intends to build several further distributed geothermal renewable energy plants across the Upper Rhine Valley region and we are in discussions with other regional communities regarding additional heat offtake agreements."*

---

<sup>1</sup> [https://www.mvv.de/fileadmin/user\\_upload/Investoren/en/geschaeftsjahr\\_2021/Berichte/MVV\\_Geschaeftsbericht\\_GJ\\_2021\\_engl.pdf](https://www.mvv.de/fileadmin/user_upload/Investoren/en/geschaeftsjahr_2021/Berichte/MVV_Geschaeftsbericht_GJ_2021_engl.pdf)

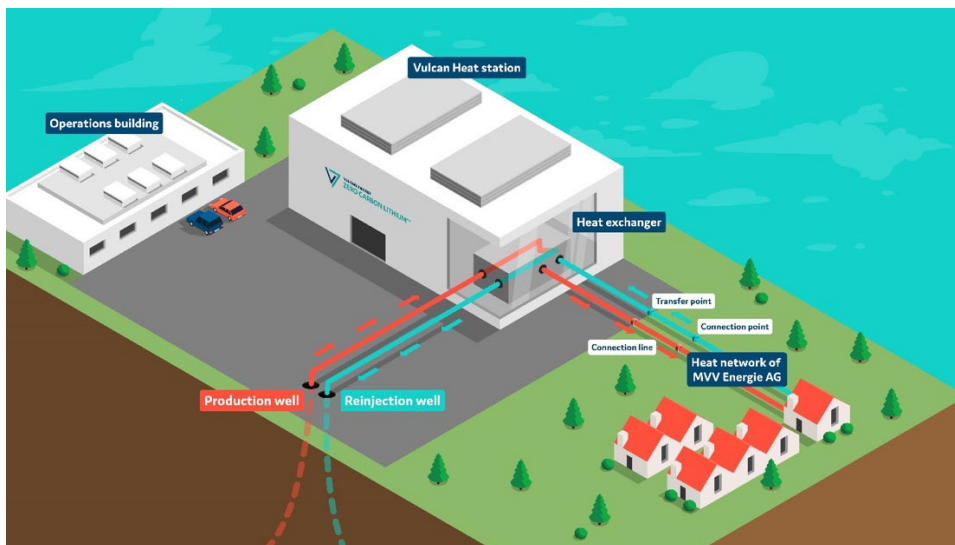
#### **Contact**

Level 11, Brookfield Place  
125 St Georges Terrace  
Perth WA 6000 Australia  
08 6189 8767

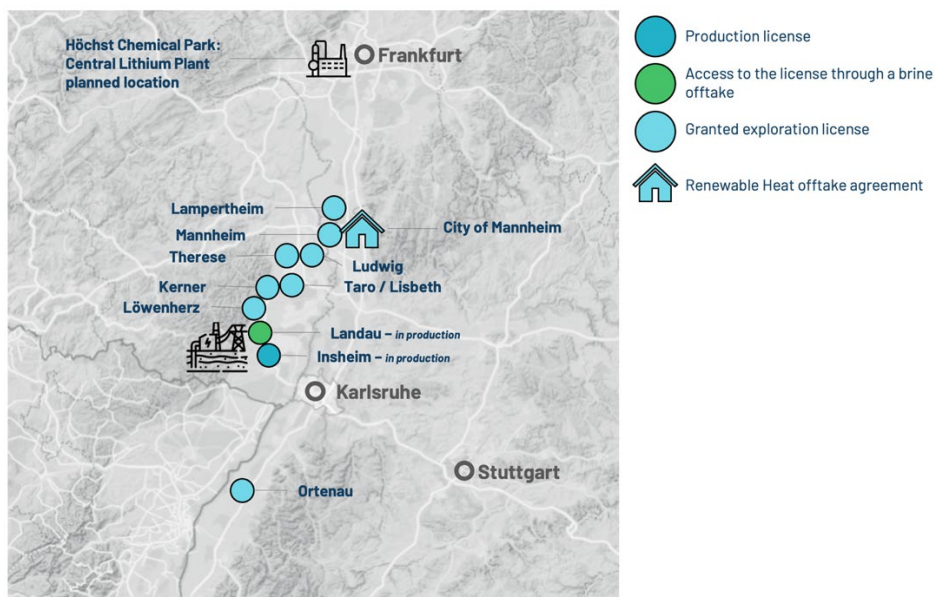
Vulcan Energie Ressourcen GmbH  
Baischstr. 8  
76133 Karlsruhe

Dr. Hansjörg Roll, Member of the Executive Board for Technology at MVV Energie AG said, "Our goal is to be one of the first energy companies in Germany to be climate positive. From 2040 onwards, our motto will be "Beyond Carbon Zero". In Mannheim and the region, we will therefore convert our district heating supply to 100 % green energy sources by 2030 at the latest. This long-term agreement with Vulcan secures us substantial volumes of heat from renewable sources – for the good of our climate and for greater security of supply."

### Heat transfer from geothermal renewable energy plant to heat network



### Location of Vulcan Zero Carbon Lithium™ Project, Germany



### About Mannheim

Mannheim is the second-largest city in the German state of Baden-Württemberg after the state capital of Stuttgart, with a 2020 population of over 300,000 inhabitants. The city is the cultural and economic centre of the Rhine-Neckar Metropolitan Region, Germany's seventh-largest metropolitan region with nearly 2.4 million inhabitants and over 900,000 employees. Apart from MVV, the city also hosts a number of other prominent companies, some with factories, including Daimler AG, Hoffmann-La Roche, ABB, IBM, Alstom, BASF and Siemens, among others.

### About MVV

With around 6,500 employees and annual sales of around Euro 4.1 billion, MVV is one of Germany's leading energy companies. MVV's activities focus on providing a reliable, economical and environmentally-friendly supply of energy to their industrial, commercial and private household customers. Here, they cover all stages of the energy value chain: from energy generation, energy trading and energy distribution to operating distribution grids through to our sales activities and environmental energy and energy-related service businesses. They are also investing in future grid capability, modernising generation plants and innovative green technologies.

MVV are pioneers of the energy turnaround and have committed to a strategic course which will make them climate neutral by 2040 and, as one of the first energy companies in Germany, climate positive from then on. MVV are consistently promoting the heat turnaround, the electricity turnaround and the associated expansion in renewable energies, as well as green products and solutions for our customers. As certified by the international "Science Based Targets initiative" (SBTi), MVV's climate targets are consistent with the 1.5-degree trajectory. According to the prestigious rating agency ISS, they are also one of the world's four best energy companies when it comes to sustainability.

MVV is a company in the Rhine-Neckar Metropolitan Region. The MVV Group has operations worldwide.

MVV will invest a further Euro 3 billion in the years ahead and thus uphold their contribution to the successful implementation of the energy turnaround.



### About Vulcan

Vulcan is aiming to become the world's first lithium producer with net zero greenhouse gas emissions. Its Zero Carbon Lithium™ Project intends to produce a battery-quality lithium hydroxide chemical product from its combined geothermal energy and lithium resource, which is Europe's largest lithium resource, in Germany. Vulcan's unique, Zero Carbon Lithium™ Project aims to produce both renewable geothermal energy, and lithium hydroxide, from the same deep brine source. In doing so, Vulcan intends to address lithium's EU market requirements by reducing the high carbon and water footprint of production, and total reliance on imports. Vulcan aims to supply the lithium-ion battery and electric vehicle market in Europe, which is the fastest growing in the world. The Vulcan Zero Carbon Lithium™ Project has a resource which could satisfy Europe's needs for the electric vehicle transition, from a source with net zero greenhouse gas emissions, for many years to come.



### Material terms of the agreement

**Term:** 20 year agreement from start of delivery

**Volume:** 240 gigawatt hours per year of renewable heat, / 320GW of heat.

**Pricing:** Indexed pricing mechanism

**Conditions Precedent:** Stage-gate project development milestones

### Corporate Directory

Managing Director	Dr Francis Wedin
Chairman	Gavin Rezos
Non-Executive Director	Ranya Alkadamani
Non-Executive Director	Annie Liu
Non-Executive Director	Dr Heidi Grön
Non-Executive Director	Josephine Bush
Non-Executive Director	Dr Günter Hilken
Executive Director, Germany	Dr Horst Kreuter
Company Secretary	Daniel Tydde

### For and on behalf of the Board

Daniel Tydde | Company Secretary

### Media and Investor Relations contact

Germany:

Beate Holzwarth, Chief Communications Officer | [bholzwarth@v-er.eu](mailto:bholzwarth@v-er.eu) | + 49 (0) 171 440 7844

Australia:

Jessica Bukowski, PR & IR Manager | [jbukowski@v-er.eu](mailto:jbukowski@v-er.eu) | +61 (0) 420 528 355

## Disclaimer

Some of the statements appearing in this announcement may be in the nature of forward-looking statements. You should be aware that such statements are only predictions and are subject to inherent risks and uncertainties. Those risks and uncertainties include factors and risks specific to the industries in which Vulcan operates and proposes to operate as well as general economic conditions, prevailing exchange rates and interest rates and conditions in the financial markets, among other things. Actual events or results may differ materially from the events or results expressed or implied in any forward-looking statement. No forward-looking statement is a guarantee or representation as to future performance or any other future matters, which will be influenced by a number of factors and subject to various uncertainties and contingencies, many of which will be outside Vulcan's control.

Vulcan does not undertake any obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness or correctness of the information, opinions or conclusions contained in this announcement. To the maximum extent permitted by law, none of Vulcan, its Directors, employees, advisors or agents, nor any other person, accepts any liability for any loss arising from the use of the information contained in this announcement. You are cautioned not to place undue reliance on any forward-looking statement. The forward-looking statements in this announcement reflect views held only as at the date of this announcement.

This announcement is not an offer, invitation or recommendation to subscribe for, or purchase securities by Vulcan. Nor does this announcement constitute investment or financial product advice (nor tax, accounting or legal advice) and is not intended to be used for the basis of making an investment decision. Investors should obtain their own advice before making any investment decision.

## Competent Person Statement:

The information in this report that relates to Mineral Resources and Ore Reserves (respectively) of the Company's Zero Carbon Lithium™ is extracted from the ASX announcements made by Vulcan on 15 December 2020 ("Updated Ortenau Indicated and Inferred Resource") and 15 January 2021 ("Positive Pre-Feasibility Study"), which are available on [www.v-er.eu](http://www.v-er.eu). The information in this report that relates to Insheim's Mineral Resources is extracted from the ASX announcement made by Vulcan on 20 January 2020 ("Maiden Indicated Resource Insheim Vulcan Zero Carbon Lithium"), which is available on [www.v-er.eu](http://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.