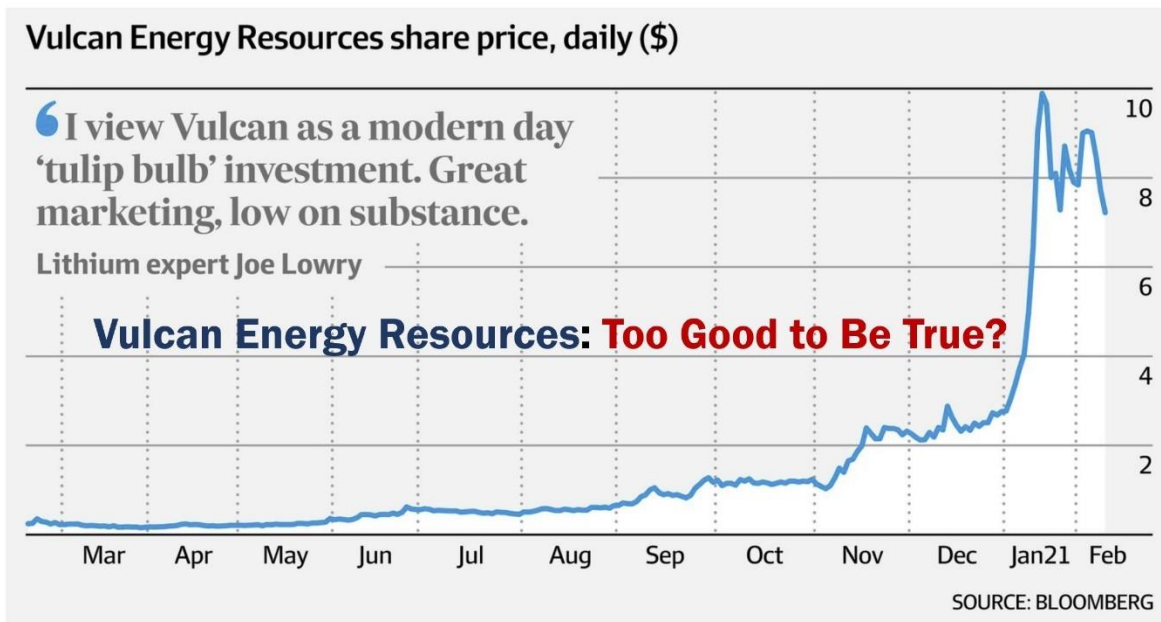


**Note: This article is an opinion piece not investing advice. Do Your Own Research**



It seems my “tulip bulb” quote in the [Australian Financial Review](#) made a lot of [Vulcan Energy Resources](#) investors unhappy using words like: “potentially libelous” and saying I need to “justify” my opinion by providing details. Actually, I don’t but “ok – here you go”.

It should be noted that **Vulcan will fail or succeed based on what they DO not what I SAY.**

However, my 2015/16 calls on [Nemaska](#) and [Orocobre's](#) project execution problems proved to be solid despite all the shareholder howling from Perth to Toronto that I was “distorting reality” and had an undeclared agenda. No, I was just giving my opinion. Time proved me correct. I believe that in 2026 my Vulcan comments will prove that I made another reasonable call.

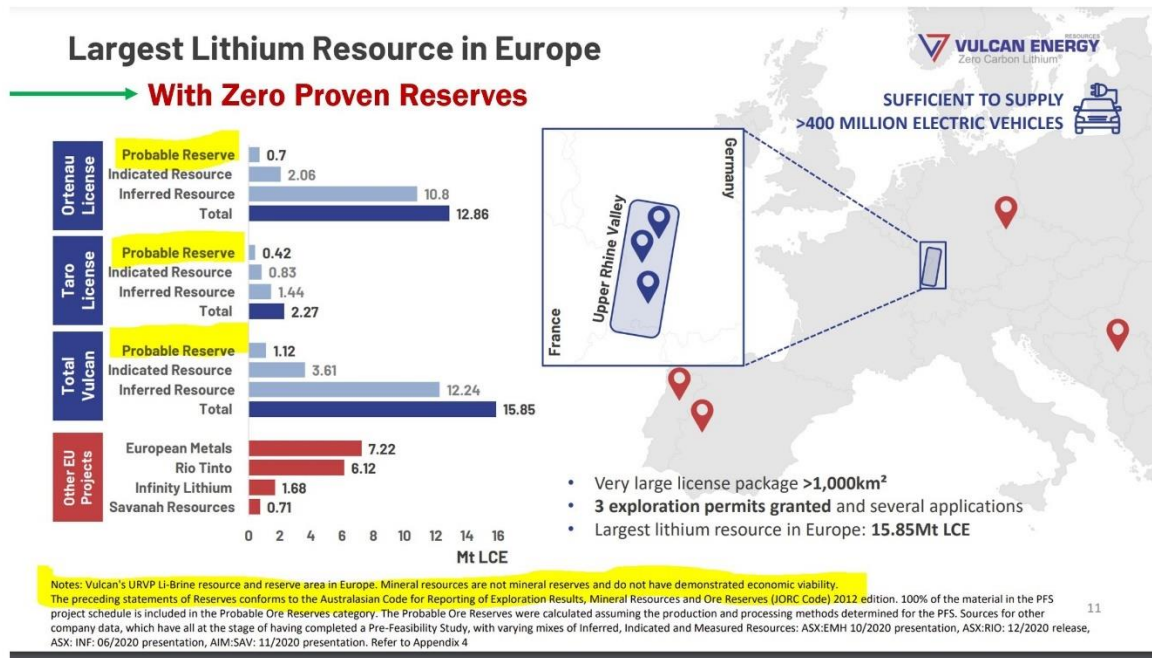
My comments are based on 30 plus years’ experience in the lithium industry as well as having direct working experience with two projects Vulcan references in their promotional materials – projects in Argentina and the Salton Sea of Southern California.

Take a look at the stock chart at the top of the article. An upward trajectory like that should either have a lot of facts and details justifying the investor confidence OR maybe the rise is a product of [FOMO](#) and [Group Think](#). People with little lithium knowledge falling in love with a wonderfully crafted story line. Which is it? You decide. Read on.

Vulcan and their [Zero Carbon Lithium](#) project is in a nascent stage that doesn’t justify the optimism or the valuation. If an Aussie billionaire wants to throw expendable cash at

a science project that should NOT give investors the Pavlovian response to click buy on VUL unless it is a clearly thought-out speculative move. Why?

- 1) Vulcan has no proven lithium reserves. This could/should change in time but as of today there are no proven reserves. I am not sure if they could have found a smaller font for the highlighted disclaimer to that fact at the bottom of the slide.



- 2) The company claims they will use **DLE lithium extraction that has been used commercially "for decades"**. In fact, the DLE lithium extraction in Argentina is a hybrid DLE and would not be suitable for the brine they will be using. Battery quality lithium chemicals have never been produced on a commercial basis from a geothermal DLE lithium process. I am not saying it will never happen but Vulcan has twisted the facts to their liking.

## 2 Direct Lithium Extraction Plant ✓

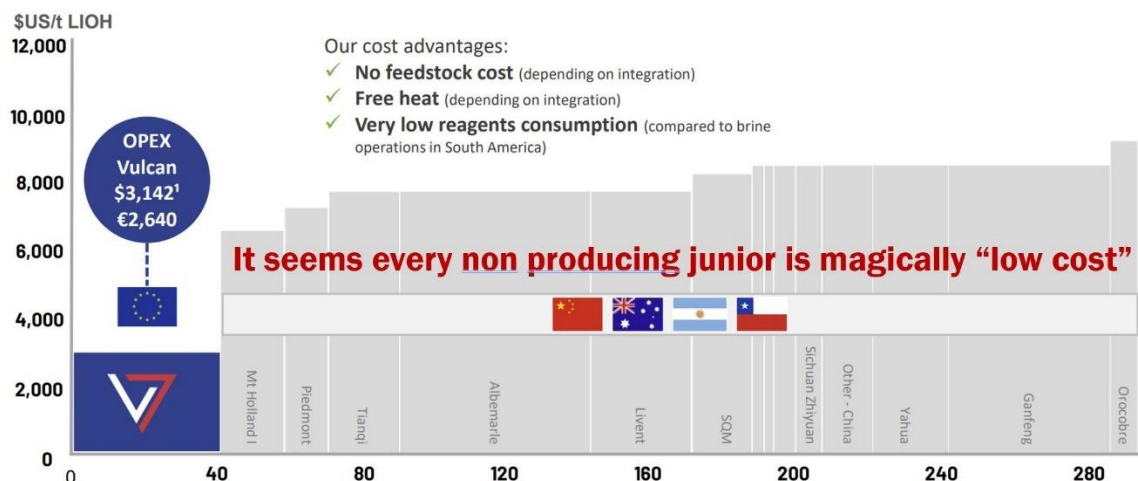
- Direct Lithium Extraction commercially **used for decades**.
- Now operating in **China & Argentina** → accounting for **>10% of global lithium production**
- Adsorbent-type DLE technologies **commercially available** from several suppliers
- We've achieved **>90% lithium recoveries** from initial test work

- 3) On slide 9 of Vulcan’s pre-feasibility study presentation, they state they will use “production wells successfully implemented for decades on salars”. This gives the impression that the wells Vulcan needs are in some way similar to the wells in the Atacama (Chile) or Argentina salars. On lithium salar operations in South America wells can be from a few meters to a few hundred meters deep and are relatively inexpensive to drill vs the geothermal wells. Geothermal drilling is more like drilling an oil well from a cost, technology and complexity perspective. Well depth is in the thousands not hundreds of meters and the probability of a successful outcome is much lower. If you want more information of Geothermal drilling costs go to: [OSTI.Gov](http://OSTI.Gov)
  
- 4) Slide 19 of the pre-feasibility study uses a hard rock lithium hydroxide cost for comparison that is approximately double the cost of world class operations like [Albemarle](#) but is in-line with the high end on the cost curve. However, the real issue is Vulcan’s cost estimate which is based on a process that has never been used on a commercial basis with lithium. My opinion is that, like Nemaska, costs are not achievable and should Vulcan actually produce lithium chemicals they will be on the right-hand side of the cost curve. The Vulcan cost estimate is rife with extremely optimistic assumptions.

## Project Economics: OPEX - Position on the Cost Curve



Lithium Hydroxide cost curve (2025, US\$/t)



- 5) The “dual project structure” adds complexity and execution risk. What Vulcan may feel is a positive, I see as a negative that makes their timeline even more unrealistic.

There are several more issues I could discuss but I have written this only to show that my AFR comment was not made without consideration.

At this point I view Vulcan Energy Resources as a marketing company that aspires to capitalize on the EV, ESG and EU battery supply chain themes on the way to financing a high-risk project that hits all the current “green themes” almost perfectly.

While I admire people and companies with big aspirations for me there is too much hype and unclear, if not, potentially deceptive claims.

The recent stock run up and resulting market cap makes the **Tulip analogy** apropos in my opinion especially when juxtaposed with the irrational exuberance of many investors that want nicely packaged stories that don't require delving into the details. The recent hype over Dogecoin also comes to mind.

Of course, there is a possibility that the myriad of positive assumptions that Vulcan Energy is making could work out..... but you could also win the lottery.

So, this is my response to the denizens of the incestuous echo chamber / feedback loop that exists on Hot Copper and to a lesser extent Twitter.