Elon, “Salt”, Piedmont and Lithium Dreams – Part 1

This is part 1 of a multi part series that will be written between now and 2023. I will follow both Tesla’s and Piedmont’s lithium journeys with interest. If I am wrong, it will be my pleasure to write a mea culpa as I have done before.

Since being a guest on TC and Georgia’s Podcast a few weeks ago, I have been exposed to the anti Tesla crowd for the first time. I made it clear before agreeing to participate that I have no axe to grind with Tesla or Elon Musk other than the nonsensical statements about lithium made on Battery Day.

Episode #46: Joe Lowry

The Chartcast with TC & Georgia

Business

The hosts of Chartcast were absolutely professional with me and have been on all the episodes I have listened to. I would not hesitate to be a guest again in the future. What I was not prepared for was the small percentage of what appear to be slightly unhinged Chartcast listeners that decided I needed to hear their “Elon rants”. That is no fault of the podcast hosts. At some level Tesla seems a cult on par with the best on them.

We live in a celebrity culture driven largely by social media and increasingly shorter “news cycles”. A world where facts are often hard to come by and comments, no matter how far off base, by someone like Elon Musk will be taken as “gospel” by a significant percentage of his ~ 40 million twitter followers.

Elon along with “sidekick of the moment” Drew Baglino shared the Battery Day stage to declare their latest magic trick - creating “instant lithium”.

Instead of “salting his salad” it seemed Elon wanted to “salt” Nevada clay and revolutionize the industry until a few days later when he tweeted that Tesla will only mine lithium if and when they “need to”. Unlike his tweets about Tesla features that don’t really exist (can you say, “fully self-driving” Teslas?), producing battery quality lithium chemicals will require more than 280 characters of hubris.

The Elon faithful are certain that Tesla’s lithium production is not only possible but a virtual certainty – I agree with the virtual part. The logic varies by Tesla sycophant but normally has to do with a completely unrelated accomplishment: the fact Space-X has had success or how fast the Shanghai Gigafactory came into production.

Most who comment are certain "Elon can do anything" and caution "he is dangerous to bet against". Less than 5% of the strident protests to my podcast and published comments that Tesla is unlikely to actually produce lithium from clay with the "table salt" process in the next seven years even mentioned the process or chemistry involved in their protests. Elon, it seems, inspires blind faith.

There is little doubt that Mr. Musk is one of the brightest minds of the era, but he is also a promoter in the vein of PT Barnum. Probably the better comparison for Elon Musk with respect to his lithium plans is Marjoe Gortner – most readers will probably need to use Google to understand my meaning. Mr. Gortner was a child evangelist.

Tesla fans don't like to be reminded of Elon's lithium record signing contracts with juniors. After the failed attempt to acquire Simbol Materials a few years ago, Tesla signed supply agreements with Pure Energy (who?), Bacanora (yet to produce), Kidman (who?) and Piedmont whose mine is currently as virtual as a Zoom call. In case you are wondering that makes Elon 0 for 4 thus far.

Tesla has only recently signed lithium contracts with actual suppliers like Ganfeng. For well over a decade, lithium for their batteries was purchased by their cathode producer, Sumitomo Metal Mining and later cell maker - Panasonic. For more than half the life of the company, Tesla was blissfully ignorant of where the lithium for battery cells came from. In 2014, prior to the abortive attempt of Elon to acquire Simbol Materials, I explained the basics of lithium to some of the newly minted Gigafactory team.

In recent years both Albemarle and Livent seem to fall prey to Tesla's significant demand and Elon's star power by signing agreements at well below market price. When I had the business, the price I negotiated was at a $3,000/MT premium to the competition. This was possible then because FMC/Livent used to have a clear quality advantage in hydroxide which for the record is made from brine based feedstock.

The major producers that Elon invited to Battery Day so he could diss them by revealing his salt shaker "extraction" technology weren't likely any more impressed with Tesla's plans than I was. Like Livent, Albemarle post the acquisition of a Chinese converter, can now produce high quality lithium hydroxide. The two US companies along with Ganfeng are the current key suppliers to Tesla's supply chain. Since Elon can't get them to supply Tesla at cost plus a micro margin; he is now pretending he can "change the game" with a salt shaker.

Mr. Musk needs to get over his lithium blind spot. If his 2030 battery production plans even come half true, he is going to need multiple additional suppliers. His Battery Day performance only made it harder for junior miners to get financed given Elon said lithium is "everywhere" and you only need to "add salt" to Nevada clay to power all the cars in the US assuming they are electric. Abject nonsense.

Few seem capable of having a balanced view of Tesla – my position has always been Tesla is "a story" not "the story" when it comes to the growth of e-transport. I am confident the coming few years will prove me correct as more and better non-Tesla EV choices appear across the globe and the market for electric two and three wheelers grows in places like India.

Unfortunately, many in the lithium world still put too much emphasis on Tesla. This week at the Fast Markets virtual lithium conference there was a clear example of this when Tesla's contract with Piedmont was discussed. The presenter, well known for hyping his favorite junior of the moment and hopefully getting his options "in the money", incorrectly characterized the importance of the agreement to Tesla which was announced shortly after Battery Day.

The more realistic rendering of the recent announcement of Piedmont's agreement with Tesla is that it was part of Tesla's long running campaign to convince the lithium industry to bend to Elon's will. Piedmont signed a laughably small "binding" agreement *with conditions.* Tesla is well aware Piedmont is unlikely to meet said conditions since they don't actually have an operating mine/concentrator, adequate financing to build it or anything beyond a plan that in May was not even definite about having the mine.

Desperate times call for desperate measures.

Can Piedmont succeed? No question it is possible. I began my lithium career selling FMC's hard rock-based hydroxide from the North Carolina. We had both high quality and high costs along with decades of experience. A gentle reminder: both Albemarle and FMC/Livent stopped hard rock production in North Carolina for a reason.

Will Piedmont be, as they claim, the world's low-cost integrated hydroxide producer? Only in their dreams and published estimates. In reality, producing hydroxide is quite a bit more challenging than getting a consultant to "sign off" on unrealistic cost estimates.

Since ALB and Livent have both done hard rock production in this area of NC in the distant past, don't you think they would be jumping in if Piedmont's plan was really the low-cost option? Piedmont had hoped one of the majors would buy them out before they needed to execute but, unfortunately, that was not the case.

The larger question on cost is, even if they successfully execute a hydroxide project, will they be in the 2nd or 3rd quartile on the cost curve? Unfortunately, they won't even be the low-cost producer in metro Charlotte, NC.

Livent, the Tesla supply chain's original hydroxide supplier and still a significant part of Tesla's supply chain will still be lower cost using carbonate feedstock from their Argentina brine operation. The myth that hard rock hydroxide is always lower cost than brine has been repeated by those with a vested interest for so long many are unaware it is nonsense. On the other hand, the currently operating South American brine projects that produce carbonate are ALL lower cost than all carbonate converted from hard rock. An inconvenient truth.

Like many lithium juniors, the estimated costs of the new North Carolina project are fanciful feedstock for convincing potential investors to jump on board.

Am I anti Piedmont? No, but I am "anti BS". If Piedmont had said they will potentially be a middle of the pack cost hydroxide producer as well as part of developing a strategic US battery materials supply chain; I would be a "home team" cheerleader rather than a critic.

As far as US projects, I rank Piedmont third behind LAC's Thacker Pass and Standard Lithium's special situation DLE project in Arkansas. Both LAC and Standard have significant partners with deep chemical experience. If Tesla was really serious about having Piedmont as a strategic supplier they would have locked in a larger volume given the amount they committed to can't feed a commercial size plant – do the math. Approximately one third of 160K MT spodumene doesn't give Tesla enough to produce even 8K MT LCE. Hardly the stuff of a company with a 3-terawatt hour ambition.

The agreement also holds the risk of Tesla's execution in building a hydroxide plant. Remember that agreement is conditional on "the development schedules of both parties".

I went on the record early with Nemaska and was ultimately proven correct after being told by many a howling shareholder that I was wrong because Nemaska signed agreements with Softbank and FMC Lithium/Livent.

Out of respect for the "home team" in NC I said little until a consistent narrative of nonsense began to flow from one of their most vocal supporters who was touting Nemaska not too long ago. Many people listening to the recent Piedmont "puff" by their unofficial "hypemeister" asked me to comment – and now I have. Not investing advice.

I wish Tesla continued success (I am a shareholder) and would also like to see Piedmont get financed and move forward. The lithium industry continues to be hurt in the eyes of both large and small investors because of a track record of junior companies "over promising" and "under delivering". Piedmont has zero chance of being the world's low-cost hydroxide producer. People in the industry know that because they understand the potential mine asset and other process realities.

I will get the normal abuse from haters after posting this. Nobody that makes calls in the lithium market is always correct, but I am not worried about Elon being a lithium production disruptor and if I am wrong – good for him and Tesla.