

More Viruses and Car Sales and Battery Materials

In this issue we discuss:

- **Prices Hanging in On Low Volume** Prices for chemicals, all of lithium, nickel and cobalt, are still doing ok things. None of them are moving in any spectacular way, unlike our stock markets, but there isn't much volume to move the prices around. The good news is that China has now moved the right foot over to the accelerator, again, but there is a lot of economic mass to get up to speed.
- **New Energy and Light-Duty Vehicle Sales are Hibernating** Both new energy vehicle and general light-duty vehicle sales in China in February were spectacularly depressing. There were a whopping 12,908 new energy vehicles sold in all of China in February. Let's all hope that doesn't become a regularized monthly rate.
- **Is There Light at the End of the Tunnel?** Speculation only, but maybe the most recent signs of life in the Chinese economy are reasons for some hope in an otherwise pretty dark time.

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As a Matter of Introduction...

This is our eighth monthly newsletter! Time flies when you are having fun. While we never produced a newsletter filled with cautions about the “best cure for high prices being high prices “ during the recent lithium heyday that extended through the middle of 2017, those who sat in on Stormcrow talks at conferences know that we were out there saying it. But we feel even more strongly that the old maxim about the “best cure for low prices being low prices” is every bit as true, and given some pessimism around the battery materials market now, we believe that realism is required.

First, for those who don’t know, Stormcrow deals with the markets for critical materials. Generally speaking, what amounts to a critical material is in the eye of the beholder, but we think of them as materials that are essential to making a product with the properties intended by its designers, even if those materials are not anything like the highest-cost item on a bill of materials. As an example, think about lithium in the battery of your cell phone. That lithium costs pennies as a raw material, but if your cell phone manufacturer was forced to do without it then the resulting cell phone would bring with it a very, very different operating experience than it currently does.

Over the coming months, we are going to deal with our views of the market prospects for some critical materials, and interesting facts about others. We will talk a little about technology and the impact, both good and bad, that it can have on demand for critical materials. We hope you find this interesting and worthwhile! Note that when not writing newsletters like this one, Stormcrow Capital functions as a corporate adviser (capital markets / financing / M&A) in the critical materials sector. We are registered as an Exempt Market Dealer in Canada (*additional disclosures included at the end of this note*).



Prices are Hanging In

Prices in February were more stable than they have been. Perhaps this is a function of both Lunar New Year and the COVID-19 outbreak tamping down volumes, more than anything else. Some prices actually did well:

Battery-grade $\text{LiOH} \cdot \text{H}_2\text{O}$ UP 0.5%

Battery-grade Li_2CO_3 down 0.4%

Battery-grade $\text{CoSO}_4 \cdot 7 \text{H}_2\text{O}$ UP 10.7%

Battery-grade $\text{NiSO}_4 \cdot 6 \text{H}_2\text{O}$ down 0.5%

Since the end of February (as of 16 March), there has been no major change in lithium chemical prices, but both cobalt sulfate and nickel sulfate have retreated. This is probably a case of low volumes coupled to really low demand for NMC batteries as sales of new energy vehicles have suffered. Meanwhile, demand for batteries in consumer electronics and the like has not checked back. We will stay tuned and try and fine-tune the rationale for these types of movements.

Outbreaks and Car Sales

There is no good news to be had in the sales numbers for new energy vehicles, which is a blanket term that covers both battery electric vehicles (BEVs) and plug-in hybrid vehicles (PHEVs), in February. The CAAM reported that BEV and PHEV sales totalled 12,908 units for February 2020, down more than 75% from the levels of February 2019. This is the largest drop ever seen in this growing market.

To put this in perspective, the CAAM-reported official sales of new energy vehicles in February 2019 were 52,805 units. This means that 39,897 fewer BEVs and PHEVs were sold. We have been bombarded with what we think are somewhat questionable “analyses” about how many new tera-/giga-/mega-factories we will need to satisfy the demand for all the new BEVs and PHEVs to be sold in the coming years. The average battery size installed in a new energy vehicle in China is about 40 kWh. That decline in new energy vehicle sales from February 2020 to February 2019, then, might represent something like a lost 1.6 GWh of battery sales.



The original production capacity at the Tesla Gigafactory in Nevada was 35 GWh. So I suppose there is a way to look at this that says that the glass is half full, another that says it is half empty. On the one hand, that loss in sales represents only the equivalent of about 5% of the output from just one major battery plant. On the other hand, it also represents a decline that is the equivalent of 5% of the output from THE major global battery plant, and it happened in just one month.

We remain convinced that electrification is an unstoppable trend. That is because it is entirely possible to build a light-duty vehicle that combines a small battery and a small range extender that can be made less expensively, have far lower operating costs than conventional internal combustion vehicles (ICVs) and result in fewer operational compromises than the current crop of BEVs. The goal should be to produce a vehicle fleet that not only lowers global CO₂ and other emissions but can also be made by the global automobile manufacturers at not just a profit but a better profit than they would generate selling ICVs. Otherwise, frankly, what's the point?

Does That Look Like Light to You?

For the first time since the original reports of the COVID-19 outbreak, I have been receiving invitations and announcements regarding conferences and meetings to be held in China. These conferences and the like are happening in May. There is no guarantee that I would be able to attend, even if I wanted to, without spending weeks in quarantine in China, so I am not rushing to confirm my attendance. But I will say that, at minimum, some of these conferences are sponsored by large enough entities that for them to issue the invitations at all, approval from very high levels must have been received. If that is true, then the Chinese authorities are signaling that they are moving toward getting things back to normal, and they are confident, to the point of a willingness to risk a very public black eye if things take a turn for the worse. This might be the best news of the whole COVID-19 story, yet.

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