The Disruptive Discoveries Journal

Analysis of how disruption in commodities, geopolitics, and macroeconomics converge to create opportunities

May 31, 2016

By Chris Berry (@cberry1)

Lithium in Las Vegas: A Closer Look at the Lithium Bull

I'm just back and recovering from a week in Las Vegas where the 8th Annual Lithium Supply and Markets Conference hosted by Metal Bulletin took place. Sentiment in the industry is overwhelmingly positive as the ubiquity of technology and the cost deflation associated with that technology (EVs, consumer electronics) means that lithium ion battery chemistry will remain central to this growth. The event was attended by lithium industry participants including major producers Albemarle (ALB:NYSE), SQM (SQM:NYSE), and FMC (FMC:NYSE), cathode manufacturers, investment professionals, and junior mining companies, so coming away with a clear view of the market was facilitated.

It looks like my demand estimate of ~270,000 tonnes LCE by 2020 will be met. Supply, on the other hand, is always a wild card in the mining sector and our proprietary estimates indicate that the current tight lithium market will remain in place for longer than first anticipated.

I was fortunate to moderate a panel of industry executives from Lithium Americas (LAC:TSX), Li3 Energy (LIEG:OTCBB), Galaxy Resources (GXY:ASX), Global Lithium, LLC and Stormcrow Capital. The remainder of this note consists of observations from this panel and the conference overall.

First, lithium pricing lacks consensus and is likely to stay that way for some time. One of the main questions many in the lithium industry are wrestling with is just how high lithium prices can go and how long can they remain elevated? With lithium a minimal part of the overall cost of a lithium ion battery (around 2%), the recent increase in prices hasn't resulted in demand destruction and is unlikely to do so. Chinese conversion plants will continue to scramble for secure supply to feed existing (and growing) supply chains. This is clear based on the recent spodumene pricing in the \$600 per tonne range.

During the conference, the size and impact of the lithium spot market was discussed and it appears to be larger than originally thought. This presents a challenge to the thesis of permanently high lithium prices as speculators can rush out of a market just as quickly as they can rush in. Investors involved in the uranium, rare earths, or graphite businesses will understand this lesson all too well. The consensus was for "four digit" lithium prices over the next few years as supply races to catch up with

THE DISRUPTIVE DISCOVERIES JOURNAL1 OF 3

demand. This is really a debate over whether or not prices are cyclical in nature or this is more of a structural issue. We think EV and energy storage demand will clarify this question in the next 24 months. While other markets for lithium are growing, they are doing so more in-line with global GDP and aren't truly indicative of sustainable higher prices.

Each of the major producers including ALB, FMC, and SQM were present and have indicated plans for **capacity expansions in the near term** with ALB's La Negra expansion, FMC's announcing a tripling of lithium hydroxide capacity, and SQM's JV with LAC the most notable examples. Numerous junior mining companies were in attendance as well, but aren't likely to meaningfully add to supply before 2019 at the earliest.

This point really brings to bear a challenge in the lithium space – for investors it means differentiating between an "investment" and a "trade". I would submit that given the difficulties in bringing a mine into production, the juniors would likely be best viewed as "trades" in this environment while the majors, who stand to immediately benefit from higher lithium prices, higher volumes, and lower costs will see margin expansion and therefore are better "investments".

The market will remain an oligopoly for the foreseeable future, and it appears that **leveraging technology to lower costs** is a way forward for incumbent lithium producers. We have discussed this many times previously as an important part of a company's sustainability in the lithium sector. Our discussions with engineering and technology firms at the conference reinforced this. POSCO and Tenova Bateman offer two sound case studies in this regard.

A few final words on **what to watch for**: Will ALB, SQM, and the Chilean government resolve their various differences? Can Argentina capitalize on its newfound respect in the global capital markets? Will lithium prices stay elevated long enough for existing and new capacity to satisfy strong demand? Will a new processing technology turn the industry cost curve on its head?

I am tracking over 35 companies involved in lithium exploration and development that have raised well over \$200 M YTD and am surprised it's not higher. One fear I have is that these companies are leaving money on the table for fear of dilution. This fear is misplaced as if you raise equity and dilute by 10% and your share price increases by multiples of that in the coming months, what difference does it make? This is a philosophical and debatable question, but it is one that isn't asked enough.

I remain bullish on lithium over the next 18 months but risk management in an excited market is still the most prudent strategy.

DISCLAIMER AND INFORMATION ON FORWARD LOOKING STATEMENTS

The material herein is for informational purposes only and is not intended to, and does not constitute, the rendering of investment advice or the solicitation of an offer to buy securities. The foregoing discussion contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995 (The Act). In particular when used in the preceding discussion the words "plan," confident that, believe, scheduled, expect, or intend to, and similar conditional expressions are intended to identify forward-looking statements subject to the safe harbor created by the ACT. Such statements are subject to certain risks and uncertainties and actual results could differ materially from those expressed in any of the forward looking statements. Such risks and uncertainties include, but are not limited to future events and financial performance of the company which are inherently uncertain and actual events and / or results may differ materially. In addition we may review investments that are not registered in the U.S. We cannot attest to nor certify the correctness of any information in this note. Please consult your financial advisor and perform your own due diligence before considering any companies mentioned in this informational bulletin.

The information in this report is provided solely for users' general knowledge and is provided "as is". We make no warranties, expressed or implied, and disclaim and negate all other warranties, including without limitation, implied warranties or conditions of merchantability, fitness for a particular purpose or non-infringement of intellectual property or other violation of rights. Further, we do not warrant or make any representations concerning the use, validity, accuracy, completeness, likely results or reliability of any claims, statements or information in this research report or otherwise relating to such materials or on any websites linked to this report.

The content in this report is not intended to be a comprehensive review of all matters and developments, and we assume no responsibility as to its completeness or accuracy. Furthermore, the information in no way should be construed or interpreted as – or as part of – an offering or solicitation of securities. No securities commission or other regulatory authority has in any way passed upon this information and no representation or warranty is made by us to that effect. Chris Berry owns no shares in any of the companies mentioned in this report.

All statements in this research report, other than statements of historical fact should be considered forward-looking statements. Some of the statements contained herein, may be forward-looking information. Words such as "may", "will", "should", "could", "anticipate", "believe", "expect", "intend", "plan", "potential", "continue" and similar expressions have been used to identify the forward-looking information. These statements reflect our current beliefs and are based on information currently available. Forward-looking information involves significant risks and uncertainties, certain of which are beyond our control. A number of factors could cause actual results to differ materially from the results discussed in the forward-looking information including, but not limited to, changes in general economic and market conditions, industry conditions, volatility of commodity prices, risks associated with the uncertainty of exploration results and estimates, currency fluctuations, exclusivity and ownership rights of exploration permits, dependence on regulatory approvals, the uncertainty of obtaining additional financing, environmental risks and hazards, exploration, development and operating risks and other risk factors. Although the forward-looking information contained herein is based upon what we believe to be reasonable assumptions, we cannot assure that actual results will be consistent with this forward-looking information. Investors should not place undue reliance on forward-looking information. These forward-looking statements are made as of the date hereof and we assume no obligation to update or revise them to reflect new events or circumstances, except as required by securities laws. These statements relate to future events or future performance. These statements involve known and unknown risks, uncertainties and other factors that may cause actual results or events to differ materially from those anticipated in such forward-looking statements. For a more detailed disclaimer, please click here.