Ford Enters a ‘Brave New World’ in Securing Lithium for Battery Gigafactories to Drive EV Production Surge

written by InvestorNews | May 24, 2023

Ford Motor Company (NYSE: F) hosted its investor event on Monday and it would appear that in a single investor day presentation the Company has gone from worst to first when it comes to securing battery-grade lithium supplies to scale up its electric vehicle production. I’m pretty sure all these deals didn’t come to fruition over the weekend, but they sure made a splash when they were presented on Monday.

In total, Ford announced deals with five separate companies sourcing lithium from all over the world, including Quebec, Chile, Argentina, Australia, and a few U.S. locations sprinkled in for good measure. These latest supply deals announced by Ford complement the ioneer Ltd (ASX: INR | NASDAQ: IONR) contract signed in July 2002.

Ford Investor Day Lithium Announcements

According to the Ford Investor/Analyst Day presentation transcript (yes I scanned most of the 78 pages and know way more about Ford than I ever wanted to know), they’ve now sourced about 90% of the nickel and the lithium to meet their future capacity targets, including producing 2 million electric vehicles (EVs) by 2026. On Monday, the Company announced lithium agreements with 3 of the top producing major global suppliers –

Albemarle Corporation (NYSE: ALB), Chile's Sociedad Química y Minera de Chile S.A. (aka "SQM")(NYSE: SQM), and Nemaska Lithium.

Nemaska is a joint venture backed by Livent Corporation (NYSE: LTHM) and the investment arm of the Province of Quebec. According to Ford, these are some of the largest lithium producers in the world with the best quality, existing capacity, and IRA compliance (although Albemarle does have plenty of Chinese processing capacity but we'll assume Ford knows that).

US-Based Lithium Development Deals

Coupled with these deals with major players to provide stability to its plants, Ford is also investing in U.S.-based development projects through agreements with Compass Minerals International, Inc. (NYSE: CMP), EnergySource Minerals LLC (*private*), and the previously announced deal with ioneer.

The interesting thing about these investments is that Ford is basically pursuing promising technology that has yet to be proven at scale. Ford claims they are developing extraction technologies to further diversify the industry, but if they are betting on the right horse, it could certainly give them a leg up on the competition.

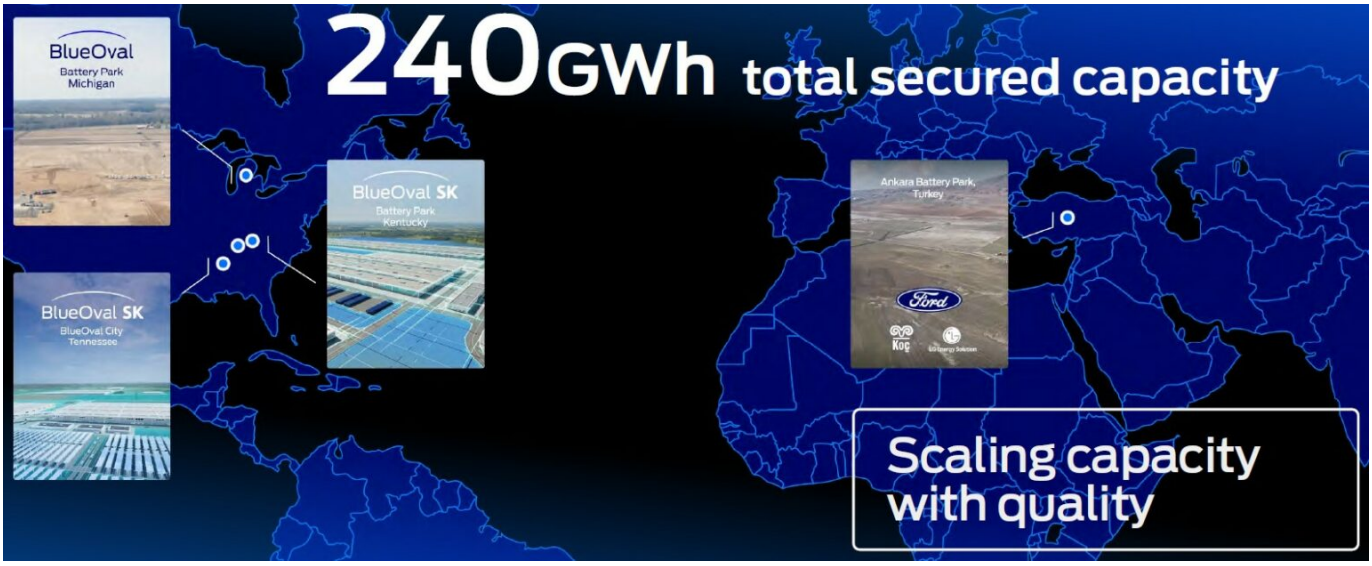
A Bet on Direct Lithium Extraction Technology

Specifically, we are talking about direct lithium extraction (DLE) technology. The Holy Grail for lithium extraction as it seeks to extract the white metal from brine using filters, membranes, ceramic beads, or other equipment that can typically be housed in a small warehouse. It would enable miners to boost

global lithium production with a footprint far smaller than open-pit mines and/or evaporation ponds, which are often the size of multiple football fields.

Compass and ESM are using ESM's proprietary ILiAD™ adsorption technology, which is a DLE technology that competes with what ioneer and Lithium Americas Corp. (TSX: LAC | NYSE: LAC) are pursuing at their respective projects. The pursuit and potential success of DLE technology is easily an article in itself, and probably well above my pay grade to do it justice.

FIGURE 1: Giga Factory Locations



Source: Ford Investor Day Presentation (May 22, 2023)

Ford to Build 5 New EV Battery Giga Factories

So we'll circle back to the Ford story and talk about why they've locked in several large, multi-year lithium supply contracts. Ford is building 5 new giga factories to produce batteries, with the first two, located in Kentucky and Tennessee, on track to open in 2025. Another plant, in Marshall, Michigan, will be dedicated to producing battery cells using LFP

(lithium iron phosphate) technology.

With respect to the LFP facility, it helps explain one of the lithium announcements noted above, the SQM deal which supplies lithium carbonate. Lithium carbonate is required for LFP batteries versus lithium hydroxide, which is the primary component for the current generation of lithium-ion batteries. Ford now feels it has control of its value chain. Instead of relying on a cell supplier, Ford can now move material around where they need it, so If they wanted to flex more into LFP and use more lithium carbonate, no problem. If the Company wants to swing more towards hydroxide, it can also do that.

Final Thoughts

Granted this isn't original thinking as Elon Musk was the first one out of the gates lining up sources of lithium (and other critical materials) for Tesla, Inc. (Nasdaq: TSLA), and in January, General Motors Company (NYSE: GM) signed a deal with the aforementioned Lithium Americas.

Nevertheless, it seems now that virtually all North American automakers are securing supplies of battery materials to boost EV output as demand for EVs continues to grow, and to take advantage of U.S. tax credits.

It would appear automakers are entering a '*Brave New World*'. Which, ironically is a dystopian novel written in 1931 by Aldous Huxley, where the citizens of the World State substitute the name of (Henry) Ford, founder of the Ford Motor Company, wherever people in our own world would say Lord. We shall see if the Ford Motor Company of 2023 will become the messiah of EV production.

Which Metals will benefit from the EV Boom in 2022 and after?

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2021 has been a triumphant year for electric vehicle (EV) metal miner stocks. This is because EV sales are on track to grow ~100% on 2020 sales, which has led to surging demand for the EV metals lithium, cobalt, graphite, nickel, neodymium-praseodymium (NdPr), and dysprosium (Dy).

China lithium carbonate prices led the way rising from CNY 43,750 (US$6,859/t) to CNY 232,500 (US$36,452/t) in 2021, for a 5.3x gain. Cobalt prices have risen from US$14.51/lb to US$31.42/lb in 2021, for a 2.2x gain.

All of this demand for EV metals has also led to a surge in takeovers and strategic buy-ins in 2021. The Chinese have again led the charge leaving the Western world asleep at the wheel, as I discuss below.

China lithium carbonate prices have risen 5.3x so far in 2021

Source: Trading Economics

China leads the lithium takeover charge as the Western world is left asleep at the wheel

The same theme of the past several years continued in 2021. While the West talked about acting, China and even Russia acted, with China making some big moves.

Take a look at the lithium takeovers and buy-ins during 2021 summarized below.

- **Bacanora Lithium PLC** (AIM: BCN) – Taken over recently by China's Ganfeng Lithium.
- **International Lithium Corp.** (TSXV: ILC) – Mariana Project final project share buyout by China's Ganfeng Lithium.
- **Ioneer Ltd (ASX: INR)** – South Africa's Sibanye-Stillwater invested US$490 million for a 50% interest in the Rhyolite Ridge Lithium-Boron Project.
- **Millennial Lithium Corp.** (TSXV: ML | OTCQX: MLNLF) – Bidding war (Ganfeng, CATL, LAC) eventually won by Canada's Lithium Americas Corp. (TSX: LAC | NYSE: LAC) with a 100% company buyout offer for C$4.70 per share.
- **Neo Lithium Corp.** (TSXV: NLC | OTCQX: NTTHF) – 100% company buyout by China's Zijin Mining at C$6.50 per share.
- **Arena Minerals Inc.** (TSXV: AN) – China's Ganfeng Lithium project and equity stake, Lithium Americas initially equity stake then increased equity stake.
- **North America Lithium Inc.** ("NAL") – Australia's Sayona Mining (ASX: SYA) (75%) & Piedmont Lithium Inc. (Nasdaq: PLL | ASX: PLL) (25%) acquire NAL.
- **AVZ Minerals Limited** (ASX: AVZ) – Sold 24% of the Manono lithium and tin project JV to China's Suzhou CATH Energy Technologies (jointly owned by Chinese battery maker CATL) for US240 million.
- **Global Lithium Resources** (ASX: GL1) – China's Yibin Tianyi (owned by CATL, the world's largest battery manufacturer) to invest $6.2 million for a 9.9% equity interest in Global Lithium Resources.
- **Alpha Lithium Corporation** (TSX.V: ALLI) – Russia State backed Uranium One (TSX: UUU) agrees to buy 15% of the Tollilar salar for US$30 million, option/right to buy a

further 35% for US$185 million.

Of the ten mentioned above, six of the ten buyers are Chinese companies, one is Russian, one is South African, one is Canadian, and one is Australian. What is also interesting is that with the Alpha Lithium Tolillar salar deal the buyer is a Russian 'state backed' company with significant plans to acquire more global lithium assets.

2022 will see Tesla dramatically ramp up production and require significantly more EV metals

In 2022 Tesla is likely to exceed 1.5 million electric car sales, up from around what should be about 900,000 in 2021 (a 2/3rds production increase estimate for 2022). Tesla has their Texas gigafactory and their Berlin gigafactory about to open and officially start production, will be expanding giga Shanghai, and will see huge sales of Model Y, some Tesla Semis, and finally the start of production of their Cybertruck in late 2022. All of this will require a dramatic increase in EV metals demand from Tesla in 2022, potentially about a 66% increase based only on the 2/3rds increase in production forecast.

Chinese EV companies such as leader BYD Co with their own huge expansion plans, look set to chase Tesla again in 2022. They will also require significant additional volumes of lithium in 2022.

Global electric car sales look set to rise from 3.24 million in 2020 to exceed 6 million in 2021. My forecast for 2022 is 10 million.

Tesla is set for a huge increase in production in 2022 (Texas gigafactory as of August 31, 2021, set to open very soon)

Source: iStockphoto

Closing remarks

2021 saw the world wake up to the fact that electric vehicles are taking off and will largely replace conventional cars this decade, at least in most parts of the world. The ~100% surge in electric car sales during 2021 has caused an immediate impact on the EV metals supply chain, with a resulting huge 5.3x price increase in lithium, and large increases also in cobalt, nickel and NdPr prices. Graphite looks likely to follow next.

Meanwhile, the Chinese pounced yet again, buying up or into 6 of the 10 major lithium acquisitions in 2021. The other four were made up with one each from Russia, South Africa, Canada, and Australia. Sadly again the Americans were absent!

Will 2022, under Biden's lead, finally see the US awaken. I think it is possible, after all Tesla is massively ramping up their production in 2022.

I hope 2022 will be the year the US wakes up and starts to secure their EV metals supply chain. Because if they don't, the Chinese will continue to dominate EV supply chains globally leaving the US auto industry at their mercy.