Elcora order is just the beginning of its journey in the manganese market

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Manganese is becoming a key part of the lithium-ion battery market, traditionally used in nickel, manganese, cobalt ("NCM") batteries; but now it is also used in lithium manganese iron phosphate ("LMFP") batteries. This new battery type offers greater energy density (and hence EV range) than the standard LFP battery. Manganese is still largely used in steel, but the battery demand looks set to grow much faster. Overall the global manganese market is expected to grow at a CAGR of 5.5% from 2023 to 2027.

LMFP batteries containing manganese are the latest development to improve lithium-ion batteries

As announced last month Gotion High-tech Co Ltd. (SHE: 002074) has developed a breakthrough LMFP battery that offers a "range of up to 1,000kms for a single charge and could last two million kms". Their new battery pack will go into mass production in 2024.

In 2022 it was reported that "CATL will soon mass produce LMFP batteries". Contemporary Amperex Technology Co., Limited (SHE: 300750) ("CATL") is the world's largest lithium-ion battery manufacturer by far with 37% market share and is a leading supplier of Tesla Inc. (NASDAQ: TSLA). At Tesla Battery Day in 2020, Elon Musk pointed out that Tesla targets to use manganese

in its batteries for long-range electric cars.

At Tesla Battery Day 2020, Tesla targets to use nickel and ‘manganese’ batteries for long range vehicles where vehicle mass is not too large



Source: Tesla Battery Day video 2020

Note: Red oval done by the author to highlight manganese

Today’s company made a key announcement this week regarding commencement of manganese ore sales.

Elcora Advanced Materials Corp.

Elcora Advanced Materials Corp. (TSXV: ERA | OTCQB: ECORF) (“Elcora”) is working towards becoming a vertically integrated battery material company. Elcora has developed a cost-effective process to purify high-quality battery metals and minerals that are commercially scalable.

Elcora’s key projects have graphite, manganese, and vanadium. Elcora also has exposure to anode materials and graphene.

As announced on June 12 Elcora

> *“has received its first monthly order for 1000 metric tons of 37% + manganese ore. The delivery of the first part of the order is scheduled before the end of June 2023. The order was placed by a leading European customer looking for a long-term supply relationship and marks a significant milestone for Elcora’s mining division.“*

The order is not large but it marks the beginning of what can be a good business for Elcora if they can achieve large-scale

production. Manganese ore (37% Mn grade) currently trades at about US$3.13/ dmtu (Dry Metric Tonne Unit) FOB Port Elizabeth.

Elcora states:

> *"The recurrence of orders is expected to generate significant revenue for Elcora Advanced Materials Corp, further strengthening its position in the industry. With the increasing demand for manganese ore, the company is well-positioned to meet the needs of its customers...Elcora Advanced Materials Corp is well-positioned to benefit from this growing demand, and this order is just the beginning of its journey in the manganese market."*

Elcora's Atlas Fox Project in Morocco – Beni Mellal Manganese Deposit/Mine and the Ouarzazate Project (including the Omar Mine)

Elcora's Atlas Fox Project in Morocco is rich in manganese. It is comprised of the Beni Mellal Manganese Deposit/Mine and the Ouarzazate Project (including the Omar Mine).

At the Beni Mellal concessions, Elcora has a 10-year Exploitation License. This manganese concession contains a surface deposit mine that operated during French colonial times. Elcora plans to leverage on-site infrastructure with ore ready for processing. In Q4 2023 Elcora plan to build a gravimetric concentrator to upgrade raw ore content (30% Mn) to 50% Mn and increase mine production to 2,500 to 3,000 t/month of 50% Mn concentrate.

At the Ouarzazate Project Omar Mine, Elcora has acquired

exclusive mining rights and an option to purchase the 16 km² manganese mining concession. The concession contains both a surface deposit and underground mine. Elcora is leveraging on-site infrastructure and has existing manganese ore piles of approximately 6,000 tonnes that are ready for processing. Elcora plans to ramp up mining production to 2,500 tons per month at the Omar Mine.

Elcora's overall manganese ore production capacity is targeted to be more than 5,000 metric tonnes per month from the above concessions.

Atlas Lion Vanadium Project in Morocco

Elcora owns the Atlas Lion Vanadium Project (304 Km^2) concessions in Morocco. Elcora plans to further explore and develop these concessions with the goal of producing vanadium.

Elcora's next steps for mining manganese and vanadium in Morocco

Source: Elcora company presentation

Closing remarks

In total, Elcora currently owns seventeen polymetallic (vanadium, lead, other), one manganese (and one option to purchase) and one copper licences/concessions in Morocco.

Elcora is making strong progress on its goal to become an integrated battery metals producer. The Company already has the technology and facilities to purify high-quality battery metals (notably spherical graphite, graphene, and anode powder) and is

now working on the mining side with manganese and vanadium (noting they already have a graphite mine). The Atlas Fox Project in Morocco has commenced stockpiled manganese ore sales and plans to ramp up manganese ore production from its concessions to 5,000/t per month. Following this will be development work and potentially production from the Atlas Lion Vanadium Project, also in Morocco.

Elcora Advanced Materials Corp. trades on a market cap of only C$18 million, suggesting this may potentially be just the beginning for Elcora.