



Committee Secretary
Department of the Senate
PO Box 6100
Parliament House
Canberra ACT 2600

26/07/2018

Dear Honourable Members of the Select Committee on Electric Vehicles,

I am an Executive Director and I write to you on behalf of the board from Pilbara Metals Group Pty Ltd (PMG).

Background on Pilbara Metals Group

Pilbara Metals Group was founded in 2014 by a group of Manganese industry specialists, with a view of pursuing value-add, downstream processing opportunities. In early 2018 these downstream processing opportunities were realised as a viable and exciting opportunity that was now achievable. Our current board, management & shareholders have over 10 years' experience in the Manganese sector having previously been founding directors & shareholders of Auvex Resources Limited, a manganese miner & producer, now part of the Mineral Resources Group.

PMG's mission is to supply the highest purity of Manganese Sulphate by utilising proven technology up to the purification stage and our own Intellectual Property for the purification stage to ensure we meet our quality goals. PMG also has the technology to produce the highest quality of NMC (Nickel Manganese Cobalt Oxide) and LMO (Lithium Manganese Oxide). These two cathode structures are some of the most used due to manganese's lower cost and effects on reliability in batteries. Pilbara Metals Group is backed by Dr Yatendra Sharma who is arguably one of the world's best Chemical Engineers who has devoted his career to the development of Lithium-Ion Batteries.

We aim to reduce our carbon footprint by making our process as clean as possible by utilising other companies waste products in our local area and ensuring our by-products are usable and sale-able. Our plant, to be located in the East Rockingham Strategic Industrial Area, will produce 40,000 tonnes of MnSO₄ at various graded qualities for world markets by the end of the first quarter of 2020.

PMG is on track to be Australia's first MnSO₄ producer servicing a rapidly growing international market. PMG has industry leading consultancy teams supporting the continual business and technology growth that will take PMG into the next phase of the battery industry's evolution.

PMG are members of the International Manganese Institute, the Future Battery Industries Cooperative Research Centre bid and part of the WA State Government Lithium & Energy Metals Industry Consortium.

Opportunities for the Electric Vehicle Supply Value Chain

Australia is a country rich in minerals which are essential to the production of Electric Vehicle batteries. Traditionally we have been a country who mines minerals and exports our ore for other countries to produce components for various items. Pilbara Metals Group has seen an opportunity to utilise the growth of a new industry in Australia and made the decision to take significant action to become part of the supply value train for the Electric Vehicle market.

In previous experience with other companies, we have done various exploration, mining and processing of Manganese Metal which was sold to China. We understand the Pilbara region with its high manganese and high iron ore bodies, we also understand that due to the two not being easily separated it is considered a waste product or is highly discounted due to its impurities. Our process takes >35% Mn grade with any impurities and creates a high purity >99.99% Manganese Sulphate which is then used in the cathode structure of a Lithium-Ion battery and can be utilised as a trace nutrient in fertilisers for our agriculture industry.

Being able to take previously uneconomical ore and transport it down to Rockingham to process into a high purity product means we can now utilise an abundance of already stockpiled ore in the Pilbara. Manganese being a relatively low-cost commodity also allows the value of the cathode to be much economical than previously used structures.

Supporting Acceleration of Electric Vehicle Uptake in Australia

With the world's attention now drawn to minerals such as Lithium, Nickel, Cobalt, Vanadium and Graphite, Western Australia is at the forefront of producing the necessary products for battery manufactures. This has allowed companies to precede with planning and engineering studies to produce various components of batteries in Australia.

The Nickel Manganese Cobalt Oxide and Lithium Manganese Oxide are two types of common cathodes in a Lithium-Ion battery. Specifically Nickel Manganese Cobalt Oxide will be a major component to Electric Vehicles. Currently feasibility studies and construction has been undertaken for Nickel Sulphate, Cobalt Sulphate and Lithium Hydroxide processing plants. With these being a local product, it allows businesses such as ourselves to buy local supplies to produce the cathodes for battery manufacturing to support the acceleration of Electric Vehicle uptake within Australia.

Governments Working Together

To help accelerate this industry the country needs to work together. Western Australia has the support of our current State Government who are putting together special tasks forces such as the Lithium Valley Task Force and also supporting bids to aid research in the Future Battery Industry Cooperative Research Centre which has been submitted to the Federal Government. The Federal Government can support our local Government by accepting the bid to ensure we are continuing to research and develop to lead this world wide evolving industry.

Regional Developments WA recently released it's "Lithium Valley - Establishing the Case for Energy Metals and Battery Manufacturing in Western Australia" Report. PMG recommend the committee reads this report (Full Report: https://www.rdaperth.org/wp-content/uploads/2018/05/RDA4491-LITHIUM-REPORT-2018_LOWRES.pdf Summary: <https://www.rdaperth.org/wp-content/uploads/2018/05/Lithium-Valley-Summary-Document-May-2018.pdf>).

The report establishes a strong case for the acceleration of this industry as it forecasts 13,559 new direct jobs created by 2025 and 100,698 of indirect and direct jobs in 2025 in the energy metals space. This growth has forecasted employee wages to be \$3.33B, and payroll taxes to be \$183M by 2025.

Conclusion

As an organisation we must learn to adapt and benefit from climate change, we also must make a stance and share in the growing global market for environmental goods and services. It would benefit our country if the Federal Government stood up and helped organisations grow and adapt so our country can benefit and improve our GDP.

Australia has a unique opportunity to become a strong force in the Electric Vehicle space. With Western Australia already mining commodities needed and currently about to become downstream processes we have a chance to be able to be making high quality, low cost materials for batteries specific to Electric Vehicles.

Pilbara Metals Group hopes that the information presented in this submission helps the Select Committee in understanding the unique opportunity in front of our country.

Kind regards,
Annette Crabbe
Executive Director