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Productivity Commission
4 National Circuit
Barton ACT 2600

Submitted via web portal

OPPORTUNITIES IN THE CIRCULAR ECONOMY

Lithium Australia welcomes the Productivity Commission's (the Commission) inquiry into opportunities in the circular economy and thanks you for your important work in this burgeoning space.

As an ASX-listed technology company with over 15 years of expertise spanning the breadth of the battery materials supply chain, we are the essential link between Australia's mining sector and a future local battery manufacturing industry. Lithium Australia is also the first licenced lithium-ion battery recycler in Australia. We focus on:

- producing more sustainable sources of battery precursor materials;
- enabling manufacture of safer batteries at a lower cost (LFP batteries); and
- improving efficiency in the recycling of old batteries and enabling the circular economy.

With global demand for lithium-ion batteries expected to grow 571% by 2030, batteries of all sizes and formats are certain to play a central role in powering our nation in the years to come. This rapid growth in demand poses significant opportunities for Australia as we currently account for almost half of global lithium production. But the opportunities extend far beyond simple resource extraction, Australia has a prime opportunity to capture significant value throughout the critical minerals chain by embracing circular economy principles.

Lithium Australia is pioneering a range of novel techniques and methods across the critical minerals and battery manufacturing industries. By way of example, we are currently piloting our new our new LieNA[®] technology, which has the potential to enhance lithium extraction yields by up to 50% over current market performance. The patented LieNA[®] extraction technology is underpinned by recovering lithium from fine and low-grade spodumene, which is usually disposed of as waste streams, improving mining efficiency, sustainability and potential profitability.

Additionally, through our Envirosteam battery recycling facilities, we divert over 1 million kilograms of batteries from landfill each year, significantly minimising environmental impact and extending the useful life of critical minerals. Despite the rapid growth in demand of lithium-ion batteries, Envirostream is currently only operating at approximately 50% capacity. Without any additional investment we could dramatically increase our impact in protecting the environment and efficiently utilising our resources.

Divisions of Lithium Australia

What prevents us from achieving these goals is, primarily, an unwillingness from industry to accept the costs associated with recycling batteries in Australia, and the ease in which alternative methods can be used. Such methods include stockpiling, disposal in landfill, and offshore exporting, all of which represent significant hazards to human health and the environment.

Unfortunately, regulations still allow batteries to be disposed in landfills in New South Wales, Queensland, the Northern Territory, and Tasmania. Whilst also being a waste of valuable resources, disposal of batteries via landfill is a significant hazard as batteries can easily be crushed or ruptured leading to thermal runaway and eventually ignition. These types of fires inside a landfill site can be extremely difficult to extinguish and there is evidence of subsurface landfill fires burning for years, releasing harmful pollutants into the air.

Furthermore, it is currently far too easy for major international and domestic corporations to stockpile or export batteries offshore for processing in countries such as India and China, where lenient regulations permit cheap and dirty disposal methods. The Federal Government and the Department of Climate Change, Energy, the Environment and Water often seek to prioritise onshore processing, but without stricter regulations they have limited enforcement mechanisms.

To help Australia continue to develop novel methods of waste management and embracement of circular economy principles, all jurisdictions should at the bare minimum ban batteries from landfill and offshore exporting. This would additionally ensure a feedstock of product is available for processing by Australia's growing battery recycling sector and underpin its future viability.

Further harmonisation of regulations regarding classifications of batteries as hazardous materials can also assist with closing waste loops. A united action is needed to harmonise dangerous goods regulations and guidelines, with a common approach for lithium-ion batteries across all jurisdictions. This will ensure a best practise approach in the movement and storage of end-of-life batteries across Australia – reducing environmental and exposure risks, preventing fires, and making doing business in this growing sector easier for Australian companies.

I would like to again thank the Commission for their efforts in researching and inquiring into this pressing issue, should you wish to discuss the details of this submission further, please feel free to contact me via email:

Yours sincerely

Simon Linge
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Lithium Australia