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# SUBMISSION TO LOW- EMISSIONS TECHNOLOGY STRATEGY 2022

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**Advanced Materials and Battery Council<sup>1</sup>**

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<sup>1</sup> The Advanced Materials and Battery Council is not yet incorporated but is in process to be established through the Ai Group.

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## Advanced Materials and Battery sector not mentioned in LETS2020 or LETS 2021

Global investment in batteries is projected by the IEA to average US\$450 billion per annum over the next decade if the world is to keep carbon dioxide emissions to levels that avoid economically destructive levels of climate change. The IEA warns that supply of metals and battery precursor materials will have to increase by around 30% per annum to meet these targets (International Energy Agency, 2021). Consequently, countries from Europe to the Americas and the Asia Pacific have recognised the economic opportunities associated with batteries and are actively supporting investment to benefit from the ensuing economic development.

Unlike other countries attempting to benefit from this opportunity, **Australia is host to globally significant critical mineral deposits, and Queensland currently hosts a fledgeling but impressive, multi-chemistry battery industry value chain.** This embryonic sector will, however, struggle to grow into a comprehensive ecosystem without investment from all levels of government and the private sector to commercialise the multi-chemistry technologies. Industry proponents in this Advanced Materials and Battery (AMB) value chain recognise the imperative for collaboration between industry, research institutes and government. Consequently, industry proponents in Queensland are in process to establish an association called the Advanced Materials and Battery Council (AMBC) to represent not only the sector but also universities and governments that will participate to advance the sector to become globally competitive. The Queensland Government has also recognised the significance of this sector and has indicated support for the AMBC and is committed to develop a battery industry strategy as a key action item in its Resources Industry Development Plan.

LETS2021's goal is to drive down the cost of a portfolio of low emissions technologies. In so doing it offers to focus on hydrogen, solar, steel, aluminium, carbon capture and storage (CCS), soil carbon, and energy storage (batteries). Investment commitments of \$1.9 bn in LETS2020 and \$1.7 bn in LETS2021 concentrate investment on hydrogen (\$1.2 bn), CCS (\$0.3 bn), and ARENA to commercialise hydrogen and low emission metals, scale CCS, optimise renewable electricity supply, and reduce cost of soil carbon measurement (\$1.6 bn).

**Portfolio theory indicates that investment in a greater diversity of technologies should be pursued if secure outcomes are to be achieved.**

LETS2020 and LETS2021 do not address nor integrate the multiple state-based strategies in Australia which seek to benefit from fast-growing global demand for batteries to stabilise grids and to power electric vehicles (EV). Australian investment in technologies to advance manufacturing up and down the battery value chain will not only create opportunities for

regional economic development, but also new export opportunities to global supply chains and, by **creating globally competitive batteries and battery components, make batteries cheaper for domestic application and emission reduction in electricity generation and transportation.**

## How LETS2022 should address the role of energy storage in achieving economic stretch goals

The role of batteries in achieving economic stretch goals in LETS2021 is limited to bring the cost of electricity from storage for firming to under \$100 per MWh. It states that *“The cost of battery cells is mainly driven by overseas developments. However, domestic engineering, procurement and construction costs depend on local demand. Australia can reduce these costs by supporting scale up of battery installations and learning by doing.”* (Australian Department of Industry Science Energy and Resources, 2021, P74).

This statement conflicts with the stated objective of the Commonwealth Government’s investment in the Future Battery Industries Co-operative Research Centre (FBICRC). It is also a dismissal of early commercialisation of battery chemistry technologies underway by companies in the AMB sector like Graphene Manufacturing Group (TSX.V: GMG.V), Li-S Energy (ASX:LIS), Queensland Pacific Metals (ASX: QPM), VSPC (owned by Lithium Australia (ASX:LIT), Magnis Energy Technologies (ASX: MNS), Australian Mines (ASX:AUZ), Novonix (ASX:NVX), Redflow (ASX: RFX), QEM Ltd (ASX:QEM), Alpha HPA (ASX:A4N) and a number of unlisted privately owned companies including Pure Battery Technologies, Lava Blue, Vecco Group and Multicom Resources. Failing to support this embryonic sector which seeks to manufacture products developed from Australian Low-Emissions Technologies reflects an **omission in LETS2021 in identifying the domestic benefit to be gained from Australian technology advancing the global battery opportunity.** If the companies in the AMBC are supported by Australian government investment to become competitive in the global supply chain, then emissions reductions in Australia will be cheaper than investing only in learning by doing.

As highlighted by the IEA, *“At over 60% of the total, batteries account for the lion’s share of the estimated market for clean energy technology equipment in 2050”* (International Energy Agency, 2021, P30). Australian mineral deposits and advanced materials and battery technologies can play a significant role in this very large opportunity from a transition to Net Zero Emissions by 2050 (NZE2050).

LETS2022 should commit to investing in commercialising the battery technologies already available to participate on the world stage and drive down costs of the technologies and the cost for Australia to achieve NZE2050.

## References

- Australian Department of Industry Science Energy and Resources. (2021). Technology Investment Roadmap: Low Emissions Technology Statement 2021. Retrieved from <https://www.industry.gov.au/data-and-publications/technology-investment-roadmap-low-emissions-technology-statement-2021>
- International Energy Agency. (2021). World Energy Outlook. Oct 2021. Retrieved from <https://www.iea.org/reports/world-energy-outlook-2021>