Critical Minerals Research, Development and Demonstration Capability Assessment

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# ABSTRACT

With a rich endowment of critical minerals and a strategic priority to build sovereign processing capabilities, Australia is poised to be at the forefront of the energy transition, but robust RD&D investment and international collaboration is essential in driving innovation and ensuring that Australia realises the opportunity of developing integrated supply chains.

A limited understanding of existing Australian capabilities and the available technology mix required for establishing a domestic supply chain may hinder Australia’s progression within the sector. To inform these investments, decision makers need to understand what capability Australia can leverage, and where there are gaps that require collaborative efforts.

To improve this understanding, the *Critical Energy Minerals Research, Development and Demonstration Capability Assessment* provides an updated overview of the capabilities and technologies necessary to engage in mid-stream processing across four key supply chains: lithium-ion batteries (LIBs), solar photovoltaic (PV), wind, and electric vehicles.

The report series addresses the following objectives:

* Communicate key mid-stream processing technologies, mature and emerging, that underpin the production of value-added products. This includes the production of intermediary products and advanced materials that are inputs into energy technology supply chains. Recycling of solar PV and LIBs is also included due to their importance and the overlapping capabilities with mid-stream processing.
* Showcase Australian capabilities across key technology areas, namely fundamental and applied research, IP development, and demonstration projects.
* Summarise international capabilities across key technologies, and strategic objectives in upstream and downstream activities.
* Synthesise opportunities for Australia to grow domestic capability and to collaborate with international partners.

The report, due for release in July 2024, provides a blend of data driven insights and comprehensive technology analysis. Together with extensive industry consultation, this analysis identifies strengths and potential opportunities for critical minerals capability development in line with Australia’s mineral resources and energy technology manufacturing priorities.