



# Submission to:

Battery Industry Opportunities for  
Queensland: Discussion Paper

31 March 2023

## The Advanced Materials and Battery Council's submission to the Battery Industry Opportunities for Queensland Discussion Paper

The Advanced Materials and Battery Council (AMBC) has recently been established to support companies to develop multiple battery chemistry value chains to meet global demand for energy storage in the global transition to net zero emissions. This requires a focus on facilitating the extraction of critical minerals and processing the minerals to the requisite purity for battery precursor materials, and the commercialisation of nanotechnologies for the manufacture of batteries, packs and management systems. This submission provides feedback from the AMBC to the Battery Industry Opportunities for Queensland Discussion Paper.

### *Part 1: Markets for a Queensland battery industry*

#### **1.9. Do you agree with the market opportunities identified in the discussion paper?**

All projections for market size forecast a very large increase in investment in all battery applications over the next decade. The Discussion Paper reflects these large increases. It is likely that current forecasts understate the market size as consumers become more comfortable with EVs, electricity network operators deploy battery energy storage to stabilise supply, new battery chemistries facilitate deployment in new applications like air transport, and cost of storage declines as global manufacturing capacity increases to meet demand.

#### **1.10. What do you consider to be the key challenges in securing these markets by 2030?**

Challenges for supplying to local and global markets by 2030 include:

- fragmented battery supply chains make it difficult to source component parts and be visible to potential off-takers;
- immature research-industry-government networks within the Australian ecosystem make it difficult to collaborate to fast-track commercialisation, grow the ecosystem, and develop supportive industry policy frameworks;
- geopolitical shifts provide an opportunity for Queensland in that the European Union, North America and Japan are seeking to diversify supply chains to be less reliant on China, but conversely a tight trade relationship between the European Union and the USA, reduces Queensland's opportunity to break into those markets;
- Australia's lack of ambition shown at the UNFCCC's 26<sup>th</sup> Conference of Parties [damaged Australia's relationship/brand with European countries](#). Much of the policy framework in



Europe is characterised by economic development through climate, energy and industry policy which has resulted OEMs in Europe and North America looking to each other for support and not Australia;

- policies like the US's Inflation Reduction Act reduce access to the North American market and divert global investment away from Queensland; and
- slow permitting in Queensland impacts on ability to supply to the dynamic global market, as demand increases.

### 1.11. Are there any additional opportunities that Queensland's battery industry could target?

Queensland is home to companies commercialising new battery chemistries with higher energy density which will apply to new segments like drones and vertical take-off and landing vehicles. There is also a significant opportunity to supply batteries to neighbouring island nations. In fact, Powerwells, a Brisbane company, repurposes li-ion batteries for application in remote island locations in the Pacific. This model could be adapted to evolve to greater application.

## *Part 2: Building out supply chains through industry partnerships and collaborative investment*

### 2.12. Where in the supply chain do you consider partnerships and collaborative investment to be most critical?

It is not possible to predict accurately how Queensland's strengths within the global battery industry will develop. For this reason partnerships and collaboration are required throughout the supply chain, and across the battery chemistries, to avoid attempting to pick winners. In particular, the following actions can be considered:

- Support the Advanced Materials and Battery Council (AMBC) to become a national body representing the Australian battery ecosystem. Queensland needs to be recognised as part of, if not the leading state in, the Australian battery eco-system. Because of its dominance in deposits of lithium and nickel, Western Australia has historically played a dominant role in representing battery metals. However, for Queensland to be successful in developing a battery manufacturing ecosystem, the conversation in Australia needs to be steered away from producing and processing ore to highlighting its credentials for manufacturing battery chemistries, packs and management systems. The AMBC is already articulating this narrative.
- The Commonwealth Government has promised to fund a Powering Australia Growth Centre (GC). The GC will have a broad scope including the manufacture of renewable energy, hydrogen and energy storage. This large scope will dilute the GC's influence and impact. The Queensland Government should collaborate with the Commonwealth Government to:
  - Reduce the scope of the GC to be focussed on building out battery supply chains through industry partnerships and public-private investment;



- Ensure that the governance of the GC reflects knowledge of states' capacities for manufacture of battery components, understanding of different battery chemistries and is transparent and equitable in its award of funding; and
- The GC is tasked with collaboration with industry such that the GC reflects industry expectations.
- The Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC) have been successful at supporting deployment of renewable energy in Queensland. The Queensland Government should collaborate with the Commonwealth Government to extend and focus ARENA and CEFC to target assistance to battery supply chain build-out.
- Collaboration requirements can be summarised as the four 'P's':
  - **P**ilot: work with industry and universities to provide wet benches (capacity) for pilot runs and a front-end for access to all Queensland university lab capacity
  - **P**recinct: engage with industry to prioritise permitting, power installation and project status
  - **SuP**ply Chain: facilitate knowledge about, investment in, and access to locally manufactured components in the battery supply chain
  - **P**ersonnel: work with industry, the vocational sector and universities to develop packages for skills development through apprenticeships, interns, graduate programs in electrical, chemical and process engineering as soon as possible.

### *Part 3: Develop specialist cell manufacturing capabilities in Queensland*

#### **3.13. How could Queensland carve out a niche in cell manufacturing? What do you see as the biggest opportunities?**

Queensland cell manufacturing niches can be:

- Flow batteries for export to India;
- high-density cell chemistries for new applications;
- collaboration with Department of Defence;
- advanced battery cell technology for deployment in extreme operating and storage conditions such as, mining operations (mining trucks/vehicles) etc.
- supply to neighbouring island nations like Indonesia and Philippines; and
- repurposing LiBs for local application and for export.

### *Part 4: Queensland's ESG and renewable energy credentials*

#### **4.14. How could Queensland collectively market our commitments to developing a sustainable battery industry?**

Being successful at rolling out Queensland's Energy and Jobs Plan will offer evidence of Queensland's commitment to the global climate ambition. For the purposes of communicating this to European and North American customers and investors the following options are available:

- Certification of manufactured product based on embedded carbon and Australian standards;
- host IEA conference on transitioning to net zero emissions;



- Queensland trade missions to connect ESG compliant product manufacturers with OEMs;
- Queensland Government presence at trade conferences;
- develop government-to-government networks in North America and Europe

## Conclusion

The AMBC members thank Minister Miles for providing the opportunity for feedback to the Opportunities for the Battery Industry in Queensland Discussion Paper. If the Department of State Development has any further questions or detail, we are happy to be contacted either through the AMBC website ([ambc.au](http://ambc.au)) or to the members listed below.

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