



Future-charged: The case for battery technology

Climate change and how best to combat it is a major global concern. In 2021, we are finally seeing governments globally take action, with many announcing sizable projects and pipelines to transition to renewable energy. Investors concerned about the environment might consider the forgotten key to renewables and electric vehicles – reliable and efficient power storage enabled by developments in battery technology.

Batteries may be an older form of technology but innovation over time has made them an essential store of larger-scale energy, able to support intermittent renewable power sources like solar or wind and to broaden the viability of electric vehicles.

The development of lithium-ion batteries has transformed the industry, making batteries smaller, lighter, rechargeable and increasingly, more affordable. Lithium accounts for 85% of commissioned, utility scale battery storage worldwide although new electro-chemical technologies, such as lead-carbon or flow batteries¹, continue

to be developed.

The value chain for battery technology ranges from mining companies, mining for metals like lithium, to manufacturers of battery storage and storage technology providers. All are potential beneficiaries of the anticipated growth across this industry.

A growing market for battery technology

Demand for battery technology has long been expected to rise substantially in coming years, however the recent election of Joe Biden as US President is likely to accelerate activity.

The Biden administration has been vocal about recommitting the US to the Paris Agreement and many nations, including Australia, have similarly stepped up their own plans. For example, the Victorian government announced plans to build a new 300 megawatt (MW) battery this year² and the NSW government announced a AU\$32 billion

renewable energy plan³.

Energy companies are also refocusing their efforts on transitioning to clean energy and ensuring their own long-term viability. Origin Energy recently announced plans build a 700 MW battery storage facility near its existing coal plant at Eraring as part of a transition away from coal by 2032⁴. It is not alone in its efforts.

A further sign of the global focus and interest in this area is reflected in broader levels of business activity. Corporate funding (including venture capital, public money and debt financing) has jumped substantially. A report from Mercom Capital Group found that funding for the battery storage sector increased 136% in 2020 compared to 2019⁵. This is likely to grow further off the back of growing demand as well as increasing efficiency and cost-effectiveness.

Beyond this, the infrastructure required to support the transition to renewable energy may be a beneficiary of stimulus packages aiding recovery efforts from the COVID-19 pandemic.

The Australian Clean Energy Council has estimated, prior to recent announcements, that the pipeline for renewables is likely to generate 50,000 new jobs, lower power prices and inject over AU\$50 billion of investment⁶.

Similarly, the International Renewable Energy Agency (IRENA) believes that renewables could be essential to economic recoveries and generate global GDP gains of almost US\$100 trillion between now and 2050⁷.

The global lockdown has heightened the disparity in energy access across the world, and it is likely many nations will be looking for a solution in the form of greater investment in renewables⁸.

Future storage needs

Industrial and personal battery storage demands are anticipated to pick up this decade as prices drop. It helps to look at the bigger picture to understand how and why.

Wind and solar energy are forecast to supply around 48% of world electricity needs by 2050,

with battery technology, gas peakers (turbines or engines that burn natural gas) and dynamic demand anticipated to drive market penetration of solar and wind by more than 80% according to BloombergNEF⁹. The same report also suggests the costs of renewable energy will undercut coal and gas in most parts of the world by 2030 – a compelling reason for countries to focus on it.

While the concept may sound alien to much of coal-dependent Australia, the truth is, parts of Australia are already leading the way. Wind and solar generation are responsible for 50.5% of South Australian energy needs¹⁰, supported by the Tesla-built Hornsdale Power Reserve which has a storage capacity of 150MW/193.5MWh¹¹ and previously mentioned projects in NSW and Victoria will aim to continue in this vein.

Estimates suggest that the amount of battery storage needs to expand 300 times its existing capacity to meet requirements in 2050 (excluding electric vehicles)¹². By 2022, utility scale battery energy storage capacity is expected to be more than double¹³, while the market for battery technology is anticipated to reach US\$ 90 billion by 2025, growing at more than 12% annually¹⁴.

Energy storage deployment is expected to increase by over 40% each year until 2025 and Australia is targeting 1m 'Behind the meter' battery installations by this point¹⁵. Behind the meter refers to being on the energy user's side of the electric meter, such as solar panels on a residential home, compared to being on the electric grid side.

Driving a cleaner future

Growth in electric vehicle use is similarly likely to fuel demand for battery storage in the coming years. BloombergNEF predicts sales to rapidly increase from 2.7% of new cars sold representing 1.7 million cars in 2020, to over half of all passenger vehicles sold by 2040 representing 54 million cars¹⁶. Even through the COVID-19 pandemic where sales of new cars dropped overall, the UK recorded its best year for electric vehicle sales with more than 108,000 sold¹⁷.

China is likely to represent the lion's share of sales and development of electric vehicles. More than

55% of all electric cars sold in the world are Chinese sales¹⁸ and the market there has been supported by government subsidies and quotas. Chinese company BYD Auto Co, a manufacturer of vehicles and battery technology, is responsible for the greatest number of electric vehicles sold in the world¹⁹.

The activity and demand for electric vehicles is also supported by government policy in many countries. In recent weeks, Japan announced that all new vehicles must be hybrid or fully electric from 2035²⁰ while the European Union plans for 30 million electric cars by 2030, with bans on diesel and petrol car sales in coming years and already strict emission restrictions on carmaker²¹.

Why invest in battery technology

Battery technology is central to the uptake of renewable energy and electric vehicles so investors may consider this as an investment in environmental sustainability. It is an established technology with continued innovation and clear growth prospects into both the near- and long-term.

Ways to invest in battery technology

Investors can access battery technology exposure in a range of ways looking across the battery technology value chain.

This may mean focusing on components such as lithium by using mining companies like Pilbara Minerals or looking at battery manufacturers like EnerSys. Investors could also look at companies with more diversified capabilities not purely restricted to battery technology such as Tesla or Panasonic.

Investors could alternatively, focus on managed options, whether this is active funds or ETFs like the ETFS Battery Tech & Lithium ETF (ASX Code: **ACDC**) which offer exposure across the battery technology supply chain globally.

For more information on ETFS Battery Tech & Lithium ETF (ASX Code: **ACDC), please speak to ETF Securities.**

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