



ION future

The case for battery technology

Investors concerned about the environment and focused on investment options for renewable energy or electric cars might consider the broader supply chain for this trend, such as battery technology, as an alternative pathway to invest in and support change.

Consumers may generally think of batteries in terms of powering goods from clocks to mobile phones, but innovation over time has made them an essential store of larger-scale energy, particularly for that generated by intermittent renewable power sources like solar or wind, or to accommodate the growing market for electric vehicles.

Traditionally, consumers might associate batteries with older lead based or alkaline based batteries, but the use 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 electro-chemical technology, such as lead-carbon or flow batteries¹, continues 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 in this industry.

A growing market for battery technology

The demand for battery technology is expected to rise substantially in coming years, with personal storage demands anticipated to pick up later this decade as prices drop.

By 2022, utility scale battery energy storage capacity is expected to more than double², while the market for battery technology is anticipated to reach \$90bn by 2025, growing more than 12%³.

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 point⁴. Behind the

meter refers to being on the energy users side of the electric meter, such as solar panels on a residential home, compared to being on the electric grid side.

Looking at the bigger picture, the amount of battery storage needs to expand 300 times its existing capacity to meet requirements in 2050 (excluding electric vehicles)⁵.

Future-charged batteries: renewables and electric vehicles powering change

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 BloombergNEF⁶. 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 needs⁷, supported by the Tesla-built Hornsdale Power Reserve which has a storage capacity of 150MW/193.5MWh⁸.

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 cars⁹. China is likely to represent the lion's share of sales and development of electric vehicles, even as it has been forced to slow down activity during the COVID-19 pandemic. More than 55% of all electric cars sold in the world are Chinese sales¹⁰ and the market there has been supported by government subsidies and regulations around certain percentages of automotive sales required to be electric. Chinese company BYD, a manufacturer of vehicles and battery technology, is responsible for the greatest portion of electric vehicles sold in the world¹¹.

Though the COVID-19 pandemic may have forced temporary slowdown in the renewables and battery production trends, some organisations suggest it could end up accelerating the growth and not just due to volatility in oil and gas prices.

The Australian Clean Energy Council has estimated the existing pipeline for renewables as likely to generate 50,000 new jobs, lower power prices and inject over \$50bn of investment and have suggested that moving forward the pipeline could assist Australia in recovering from a COVID-19 recession¹².

Similarly, the International Renewable Energy Agency (IRENA) believes that renewables could be essential to recovery and generate global GDP gains of almost \$100tn between now and 2050¹³.

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 renewables¹⁴.

Many countries have seen dramatic changes to air and water quality as their populations have been forced into lockdown. Maintaining lower pollution levels may offer additional motivation for governments to focus on renewables, and not just for the environmental benefits. New research has indicated a link between air pollution and not only the spread of COVID-19, but also the risk of death from it¹⁵.

Why invest in battery technology?

Battery technology is central to the growth 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 is expected to aid the transition to clean energy.

Battery technology also represents a growth investment for many investors given the projected demand for storage in the coming years off the back of growth in renewables use and the electric vehicle industry.

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.

Interested in learning more about investing in battery technology? Contact us to find out more about ETFS Battery Tech & Lithium ETF (ASX code: **ACDC**)

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