Batteries

No discussion on the future of renewable energy mixes can be complete without discussing battery storage. Over 20,000 small scale batteries were installed in 2019. This means that the capacity of household batteries has now exceeded 1GWh within Australia. This distributed energy sourcing will be developed further over the next few years. These batteries combined with mobile batteries in electric vehicles, can be used as virtual power plants creating community energy. Regional governments are supporting this through time of use feed in tariffs schemes such as the distributed energy buyback scheme in WA.

Currently there are over 15 projects under construction, and the majority are being developed alongside major wind and solar farms. This will ensure the benefits and costs of development of these opportunities can be recouped as soon as possible. In addition, those retailers with ageing plants such as AGL's Liddell, which is due to close in 2023, have development plans for large scale renewable and batteries on the sites to support the transition to green technology.

This investment business case is being supported by the Australian Energy Market Operator's (AEMO) ISP. It is anticipated that 30GW of industrial scale generation will be needed over the next 20 years as ageing thermal fleets are retired. This will need the support of 21GW of dispatchable energy to support the intermittency of these new technologies.

The Australian research community is also investing in the development of these technologies. Research grants are being awarded to find ways that these technologies can operate in our hot climate. As our climate is not ideal for these types of technologies, it is important to research ways that the full life cycle can be achieved. Some Western Australian companies are successfully recycling up to 95-98% of old lithium batteries.