Case Study

Future-proofing local councils

energy renaissance HCB SOLAR

City of Newcastle

Energy Renaissance, in collaboration with HCB Solar, has successfully implemented a pioneering clean energy project for the City of Newcastle (CN), featuring our Renaissance superRack™ outdoor battery system. This installation supports the growing demand for electric vehicle (EV) charging across CN's assets, particularly in car parks where substantial electrical infrastructure is typically lacking. The project aligns with CN's ambitious Climate Action Plan, which supports a transition to 100% renewable energy for Newcastle by 2030, and its commitment to expanding public EV charging networks as part of its broader sustainability goals.

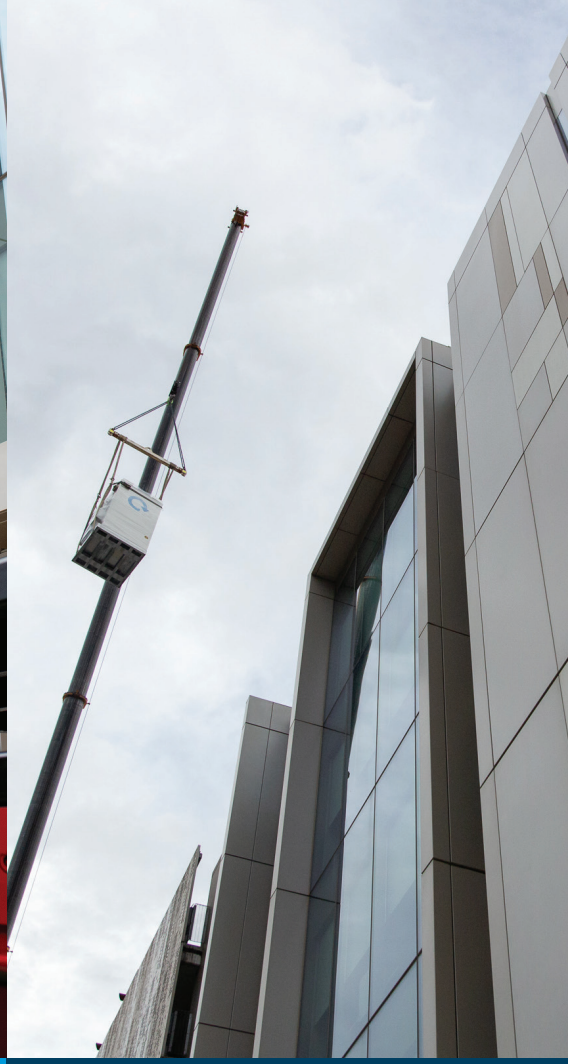
The Journey

Implementing energy storage systems in inner-city commercial settings can be challenging due to limited space for large-scale installations. With dense building layouts and high land costs, traditional ground-level solutions are often impractical. However, Knight Frank, the building owner, collaborated with the City of Newcastle (CN), who leases part of the property, to overcome these challenges. By supporting the integration of the battery within the building's electrical network and utilising the rooftop car park, they transformed an underused space into a productive energy hub. This innovative approach maximises available space, seamlessly integrates into the urban environment, and helps CN meet its sustainable energy goals without disrupting business operations.

The Solution

The comprehensive system design by HCB Solar, featuring a climate-controlled Renaissance superRack™ outdoor enclosure, was pivotal in utilising the rooftop location. This lightweight solution was seamlessly craned onto the rooftop, fully populated, simplifying the installation process. The superRack™ outdoor's weight is within the tolerance of a typical car, eliminating the need for additional structural support, making it ideal for such installations. This system streamlines the management of solar inverters and generators, ensuring a reliable, continuous power supply essential for supporting public EV charging infrastructure without heavy reliance on traditional power sources.

*Based on 365 discharges per year



Battery Storage

123kWh Renaissance superRack™ outdoor battery system equipped with a 50kW Sungrow inverter, integrated fire suppression and pressure relief vent

Solar Power

75kWp of rooftop solar panels paired with 3 x 25kW SolarEdge commercial solar inverters

Additional Features

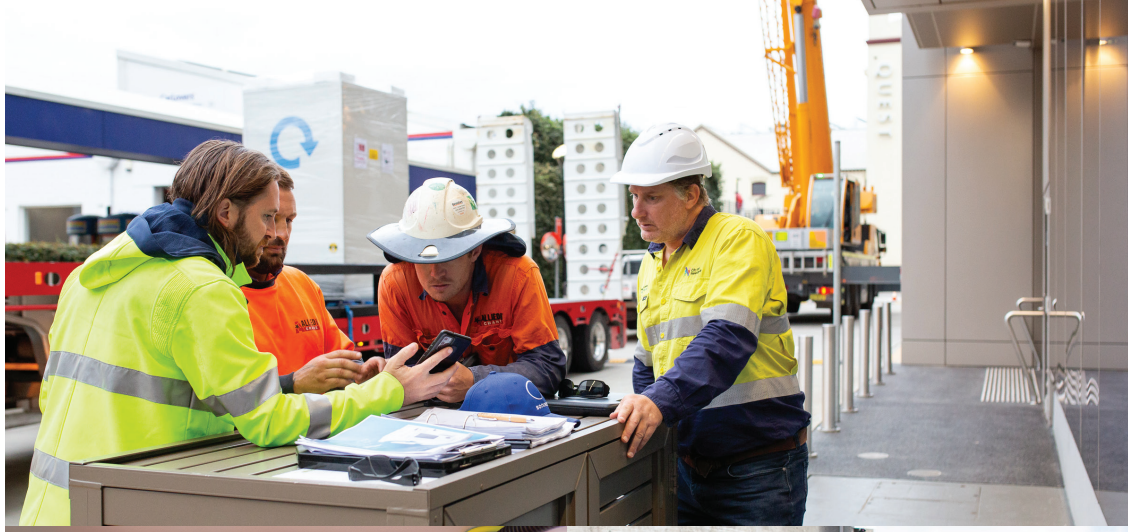
Integration with Renaissance superEMS™ for enhanced energy management

Energy Generation

Potential annual energy generation of 44.9MWh*

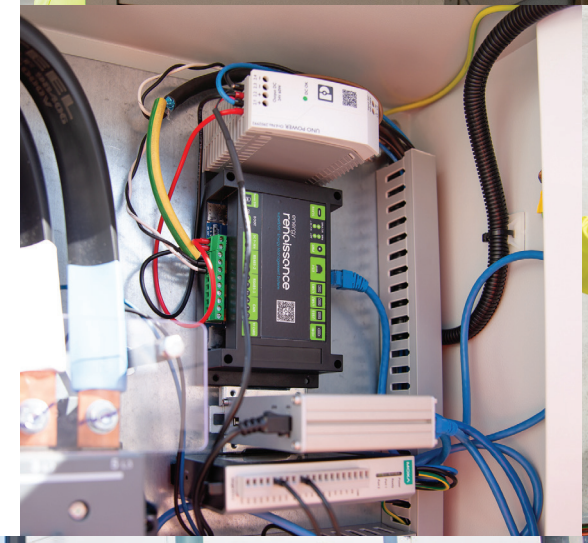
Outcome

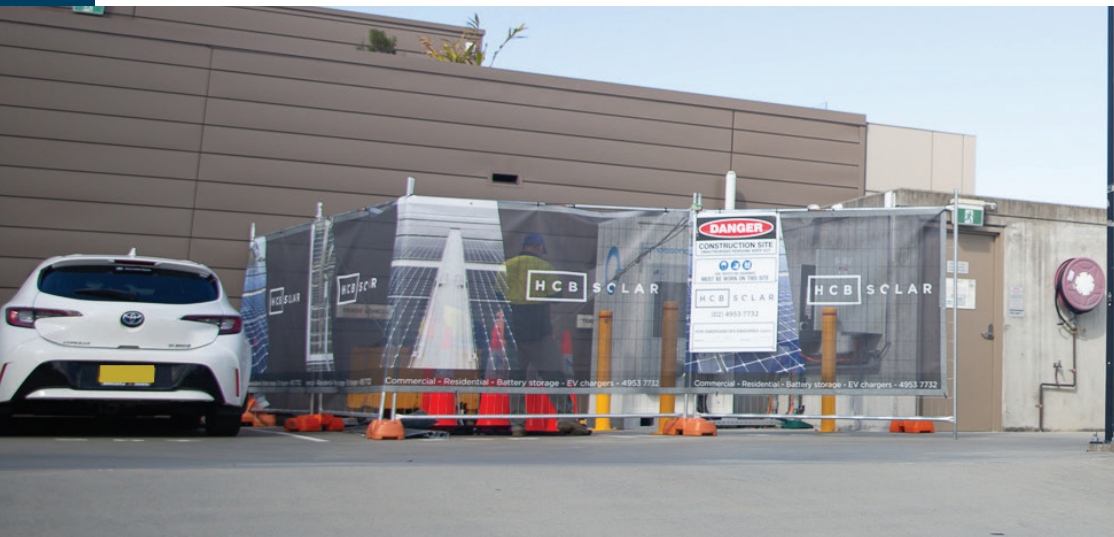
This energy storage system is designed to efficiently manage the increased loads from EV charging, allowing for optimised charge scheduling and strategic battery discharge to support network demand constraints. By optimising weekend solar exports when energy consumption is typically low, the system significantly reduces demand during peak times on the network. This approach not only alleviates grid stress but also enhances the financial performance of the solar system, maximising returns and ensuring sustainable energy use in line with CN's Climate Action Plan.

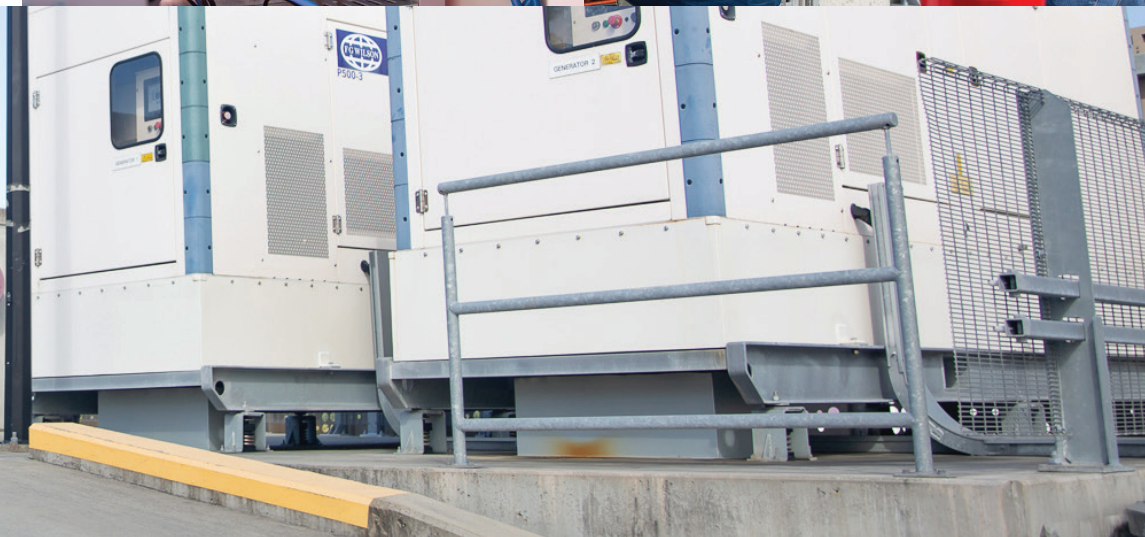


> "Our partnership with Energy Renaissance and the City of Newcastle highlights the power of effective collaboration and innovative technology. The integration of Energy Renaissance's robust superRack™ outdoor enclosure was pivotal to the project's success, leveraging their advanced battery technology to elevate urban energy management.

Grant Fleming, Project Manager, HCB Solar







> City of Newcastle (CN) has proudly been powered by 100% renewable electricity for its operations since 2019 through the installation of a 5MW solar farm and a renewable energy power purchase agreement with the 270MW Sapphire wind farm in the New England region of New South Wales. We've also installed 818KW of solar and 326kWh of battery storage at 13 of our sites, generating 1GWh each year to reduce our reliance on the grid and cut energy costs. The addition of Energy Renaissance's battery energy storage system at our main administration building further optimises our energy use by managing demand more efficiently and bringing down our energy costs.
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> **Marnie Kikken, Executive Manager Environment & Sustainability, City of Newcastle**

Conclusion

The City of Newcastle project exemplifies the significant benefits of innovative, custom energy solutions in addressing the unique challenges of urban environments and peak electricity demands. By integrating sustainable battery storage systems, the initiative supports the city's ambitious environmental goals and demonstrates the economic viability of managing energy in densely populated areas. The successful collaboration between HCB Solar and Energy Renaissance sets a new benchmark for future renewable energy deployments, particularly in advancing infrastructure for electric vehicles and promoting green energy in public spaces, as envisioned in CN's Climate Action Plan.

For more information

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