

Medical Centre – Commercial Case Study using SoNick batteries

The medical centre was to be refurbished and part of the upgrade was to install a PV system with battery storage. The difficulty was allocating the space for battery storage that was safe for patients as well as staff. As is usual in a medical centre space is a premium and is used for medical related purposes as a priority.

A space was identified under the stairwell as the only realistic place to house the batteries and inverters. This limited the type of battery storage due to both space and safety requirements.

Lead acid wasn't suitable as there was no ventilation to allow for off gassing and being a medical centre lead based batteries weren't considered suitable due to toxicity. To provide 15+kWh of useable battery storage would have also meant a larger installation than the space provided.

Lithium ion batteries weren't considered suitable due to their fire risk and their being no suitable outside area to house the batteries.

Aquion saltwater batteries were considered due to their safety and non-toxicity but they would have taken up more space than was available in order to be able to provide the required power.

Sodium Nickel Chloride (SoNick) batteries were selected as they have the highest energy density of any batteries and are completely safe with no off-gassing or fire risk, meaning there are no safety issues with installing the batteries inside underneath the stairs. As the SoNick batteries operate with no temperature effects and no degradation from -20°C to +60°C there are no issues if the room gets hot and the batteries don't require air conditioning to keep them cool.



The medical centre also installed a 30 kW PV solar array. Due to the roof angles and space this was installed on an east - west array. The PV array is supported by 2 x Fronius inverters, one for the east array and one for the west array. The SoNick batteries are supported by 3 x Victron inverters with an inverter on each phase.

The medical centre is now supported by a 30Kw solar system with battery back-up. This enables the medical centre to provide services during occasional blackouts, but more importantly, as the medical centre is the nominated medical centre in the local District Disaster Plan the electricity supply will be protected during a major disaster, like a bushfire. This is now a shared opportunity between the Medical Centre and the local Community to increase Community Security and Resilience.



Application – Medical Centre to provide backup supply

System Objective – Provide backup power supply to provide services during occasional blackouts, and provide electricity supply during a major disaster, like a bushfire.

Commissioned – April, 2017

Installed PV – 30 kW

Useable battery storage – 15.36 kWh

Designed and installed by – Ian Conibeer, Energy Connections