



MAGELLAN POWER CASE STUDY

Sydney Waste Water Treatment

Sydney Water or formally, Sydney Water Corporation, is a New South Wales Government-owned statutory corporation that provides potable drinking water, wastewater and some stormwater services to Greater Metropolitan Sydney, the Illawarra and the Blue Mountains region



Client

Sydney Waste Water Treatment Plant

Date

June 2020

Location

Sydney, NSW

Scope of Project

Manufacture of 100KWh, 600V DC UPS using Lithium batteries.



Client Requirement

Each 33kWh battery bank consists of 14 x Magellan 40V, 2.3kWh Lithium battery modules. This module consists of 12 cells of 60Ah Lithium Iron Phosphate battery cells and a Magellan Australian designed and manufactured Battery Management System (BMS). The 14 series connected battery modules make a 600V, 33kWh battery rack.



Magellan Solution

Magellan Power manufactured and supplied the 100kWh, 600V DC UPS using Lithium batteries to Sydney Water for a Waste Water Treatment Plant. The equipment consists of a Magellan MCR11 600V charger programmed for Lithium batteries and three parallel banks of 33kWh, 600V Lithium Iron Phosphate batteries. Lithium Iron Phosphate batteries were chosen because of its excellent energy and power density, its exceptional safety characteristics, its high temperature tolerance and its longevity (20 years in standby applications).

The DC UPS is the most efficient and reliable back up power for this application as it connects directly to the DC BUS of the Variable Speed Drive and will provide up to 180A (100kW) of power and 100KWh of energy to the waste water pump in the event of power failure. The conventional method of backup power is to use AC UPS. This method is less efficient and less reliable as the power has to go through two conversions (AC to DC and DC to AC) before it is used by the VSD.

The Lithium based DC UPS can be used in all DC back up applications and many others as it offers small size, enhanced battery monitoring through BMS, increased safety, high temperature tolerance and longer life.

