

Grid Solutions



GE VERNOVA

GRID SOLUTIONS AT GE VERNOVA

DELIVERS CRITICAL INFRASTRUCTURE IN THE DEVELOPMENT OF A **HYPERSCALE **DATA CENTER** IN AUSTRALIA**



Project Overview

PROJECT	Delivery of a substation to power the data center from a 132 kV grid.
COUNTRY	Australia
CUSTOMER	Confidential
TECHNOLOGY	Complete 132/22 kV AIS substation comprising incoming underground cables, AIS bays, power transformers, switchboards, and prefabricated control rooms, as well as full protection, metering, SCADA, and auxiliary power systems.
SCOPE	The customer successfully installed a new data center with Grid Solutions providing the integral 132/22 kV substation on a turnkey basis. We were responsible for the substation design including associated studies, equipment supply, construction, installation, testing and commissioning.

The Customer Challenge

The customer is a large-scale developer and operator of hyperscale data centers that serves clients in the Asia-Pacific region with a focus on cloud, content, and enterprise data. To serve its increasing number of clients, it needed to develop and construct this new data center in a short timeframe despite site constraints.

An additional challenge was the requirement to include an under-frequency load shedding (UFLS) scheme in accordance with the 132 kV grid connection agreement. Under-frequency load shedding typically occurs if there is a sudden loss of power generation due to a trip on the network whereby the utility will automatically cut zones of customers to balance the system and prevent further outages.

The Solution

Grid Solutions worked collaboratively with the end customer and its construction and installation contractor on the delivery of the 132/22 kV substation, and also provided advisory and consultancy services.

The 132/22 kV substation designed by Grid Solutions comprises two 132 kV incoming underground cables; two 132 kV AIS bays with dead tank circuit breakers (DTCBs), disconnectors, current transformers (CTs), and voltage transformers (VTs); two 132/22 kV 80 MVA power transformers; two 22 kV 2500 A AIS switchboards each with 21 panels; three pre-fabricated control rooms (one utility interface and two with 22 kV switchboards supplying the data center); redundant protection & SCADA systems; UFLS scheme; revenue and power quality metering; and auxiliary power systems.

The project was fast-tracked and successfully delivered on time.

The Benefits

Grid Solutions at GE Vernova delivers timely and reliable power supply and equipment solutions to the data center ecosystem with global industry knowledge, early engagement and consultancy services, and a focus on the energy transition. We help our customers work through their individual requirements while addressing common needs such as maximizing profitability, ensuring safety and reliability, delivering on growing demand, and prioritizing sustainability objectives.



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