

Port Hedland Solar and Battery Project

Factsheet

APA Group is currently commissioning the 45 MWac Port Hedland Solar Photovoltaic (PV) generation facility and 35 MW / 36.7 MWh Battery Energy Storage System (BESS), which supplies renewable energy to BHP.

These new assets will connect to the existing Port Hedland Power Station (PHPS), owned and operated by APA.

The project consists of:

- a new 45 MWAC fixed tilt solar PV generation facility
- a new 35 MW / 36.7 MWh BESS facility
- 33kV cables (approx. 1km in length) linking the Port Hedland solar farm to the existing Port Hedland Power Station switchyard (gas-fired power generation)
- an extension to the existing 66kV switchyard at Port Hedland Power Station for the new generation facilities

Storage System
capacity

36.7 MWh

Battery Energy
Storage System

35 MW (Max output)

Generating
capacity (solar)

45 MWAC



Overview

Owner, operator:
APA Group

Location:
Pilbara, Western Australia

Customer:
BHP, to power iron ore port
facilities

**BESS construction
commencement:** November
2023

**Solar construction
commencement:** July 2023

Project operational:
~January 2025

Generating capacity (solar):
45 MW (AC)

**Battery Energy Storage
System max output:**
35 MW (AC)

**Battery Energy Storage
System capacity at
beginning of life:**
36.7 MWh

**BESS and balance of plant
construction contractor:**
UGL Limited

**Solar construction
contractors:** Shanghai
Electric Power Design
Institute and Monford Group

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Innovation

The project demonstrates how utility scale solar generation can displace thermal generation while maintaining cost competitiveness and security of supply. The hybrid solar BESS project demonstrates how system security can be maintained in remote – or fringe of grid networks – providing mining customers confidence in security of supply as the region transitions.

The solar farm is designed to withstand sustained wind speeds of 80m/s (288km/hr), which we believe is a first in the world. While the installation of solar in the inland regions of the Pilbara is relatively straight forward, coastal solar deployment has remained stagnant due to the difficulty in designing renewable energy infrastructure capable of withstanding the extreme wind speeds associated with cyclones, which are prevalent in the region.

The project includes a BESS capable of responding to the unique intermittency of renewable energy in the Pilbara, and in particular cloud events, which can see solar output drop from 100% to under 20% in less than two minutes. An additional feature of the the large storage capacity of the BESS is that it allows APA to move excess solar energy from the middle of the day to the afternoon and evening.

Government support towards cleaner energy

The Western Australian Government has committed funding support of \$1.5 million for the BESS as part of its Clean Energy Future Fund (CEFF).

The BESS replaces spinning reserve provided by the gas-fired power station (via burning gas), with energy stored in the battery to provide instant support to the grid when needed.

