

# Pioneering microgrid solution for offshore platform

## Supporting Woodside's efforts to optimize costs



The first time in the world that a microgrid solution will provide spinning reserve from a battery energy storage system for an offshore platform.

### About the Woodside project

#### Woodside's Goodwyn A Platform

Goodwyn A is an offshore production platform in Commonwealth waters about 135 km North-West of Karratha in Western Australia and has been operating since 1995 and produces dry gas and condensate from the Goodwyn, Perseus and Searipple area reservoirs. Gas and condensate from these reservoirs is transported via a network of pipelines to Goodwyn A and then on-shore to the Karratha Gas Plant for processing.

The Goodwyn A is more than 290 metres tall and stands in a water depth of 131 metres. The platform combines production, re-injection, utilities and accommodation facilities. The 55,000 ton production facility is secured to the seabed by 36 piles, which allow the structure to support its operating load and withstand cyclone conditions.

Goodwyn A is designed for up to 30 production wells, including five re-injection wells, and has a daily production capacity of up to 36,000 tons of gas and 11,000 tons of condensate.

#### Temporary remote operation

Temporary remote operation of the production facilities may be required in the event of demanning the platform for severe cyclones. In this mode of operation production is controlled from a remote operating station located onshore at the Karratha Gas Plant.

### Benefits



#### World's first offshore microgrid installation of a 1MWh PowerStore Battery energy storage system

Reducing spinning reserve and fuel gas use, providing incremental Liquefied Natural Gas production.



#### Lowered costs for operations and maintenance

A microgrid with a 1MWh battery system will reduce the 3.2MW gas turbine generators required for a spinning reserve on Goodwyn A to 3 from the original 6. The generators would then operate at a lower cost and higher efficiency. Maintenance cost can also be reduced by decommissioning 1 gas turbine generator.



#### 2,000 tons per year lower fuel gas consumption

Delivering positive ROI and 5% lower CO<sub>2</sub> emissions.

# Reliable power wherever and whenever it is required

## PowerStore™



PowerStore™ ensure reliable power availability, grid stability, highest possible penetration of renewable energy into existing grid together with intelligent control system for both grid connected and off-grid systems

— 02 PowerStore™

### PowerStore™ Battery acts as a virtual generator

The battery used includes state-of-the-art inverters and virtual generator control software that work in concert to stabilize power systems.

— 03 PowerStore™ helps decrease dependency on fossil fuels, enabling a greener grid

### Microgrid Plus Control System

With the Microgrid Plus dedicated control system; PowerStore™ Battery maximizes fossil fuel savings by being able to optimize the control and dispatch between the existing gas turbines and PowerStore

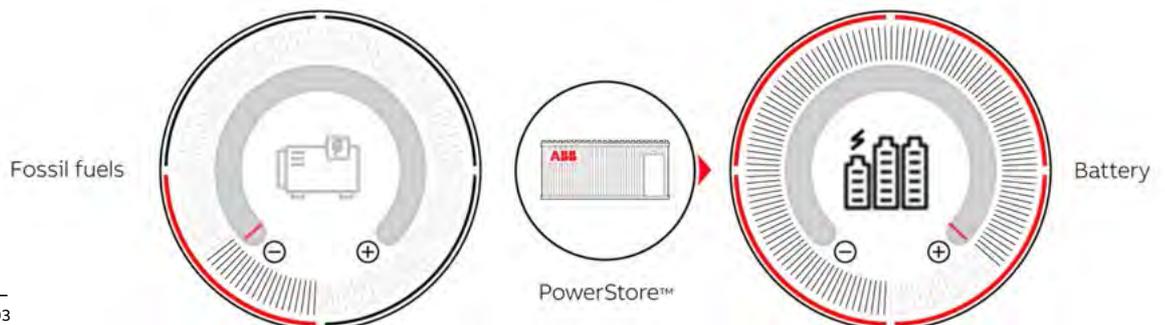
battery system. This further decreases dependency on fossil fuels and reduced carbon emissions.

### Remote Operation

ABB's cloud based remote operation and monitoring tool offers a comprehensive solution to increase productivity, improve energy efficiency and reduce operational costs and provides an alternative way to access the system in the event of extreme weather events.

#### Facility details

Location	135 km north-west of Karratha, Western Australia
Facility type	Fixed platform
No. of wells	19 currently, 30 maximum
Production capacity	36,000 tons of gas, 11,000 tons of condensate
Commissioned	1995
Coordinates	Latitude 19° 39' 12" South, Longitude 115° 55' 42" East
Water depth	131 m



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