

Darling Downs Power Station

Overview

In June 2007, Origin Energy committed to build a 630mega watt gas-fired base load combined cycle gas turbine (CCGT) power station worth \$780 million on the Darling Downs region near Braemar, 40km west of Dalby. Operational since July 2010, it is the biggest combined cycle power station in Australia and produces enough power to supply the equivalent of 400,000 Queensland homes.

Construction began in August 2007 and the plant reached full scale commercial operation in July 2010. The total investment is approximately \$1.3 billion including the power station, local coal seam gas development and construction of a gas supply pipeline.

Darling Downs Power Station is powered by natural gas from the rich source of coal seam gas (CSG) reserves held by Origin in south west Queensland, predominantly in the areas around Roma and Chinchilla. As part of the power station's development, Origin constructed a 205 kilometre domestic gas pipeline linking Darling Downs to the CSG fields in the region owned by Australia Pacific LNG – Origin's 50:50 joint venture with ConocoPhillips.

Location	Status	Timeframe	Capital Exp \$	Workforce
40km west Dalby	Commissioned July 2010	Construction began August 2007 Operational since July 2010	Total investment \$1.3b	300 construction 35 operational

History

February 2007 – Origin acquired the development and regulatory approvals for the power station, as a result of the acquisition of Sun Retail from the Queensland Government.

12 June 2007 – Origin committed to constructing the 630 MW gas-fired power station.

August 2007 – Construction work began.

1 July 2010 –The power station became fully operational.

Key Facts

- Australia's largest combined cycle power station.
- One of Australia's cleanest baseload power stations in terms of carbon emissions.
- 35 full-time employees.
- Powered by natural gas and steam.
- Produces enough electricity to power 400,000 Queensland homes.



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Technology

The plant design consists of three gas turbine generators with the energy in the hot exhaust gases recovered as steam to drive one steam turbine generator. This is known as a combined cycle configuration as it combines the gas turbine thermal cycle with the steam turbine thermal cycle. The combination of the two cycles results in a highly efficient overall conversion of fuel to electricity.

These efficiencies result in lower emissions of carbon dioxide per megawatt hour of electricity produced, leading to lower greenhouse gas emissions than an equivalent sized coal-fired power station. This saves 2.5 million tonnes of greenhouse gases a year, comparable to removing 600,000 cars annually from our roads. The power station is air cooled and uses about 200 mega litres of the water compared to a conventional water cooled coal-fired power station that would use 8000 mega litres a year.