Hazelwood power station & mine

The Hazelwood power station and mine are located in Victoria's Latrobe Valley, 150km east of Melbourne. The 1,542 MW brown coal-fired power station is supplied with brown coal from the adjacent mine.

The power station directly employs more than 500 staff plus an average of 300 contractors, with hundreds more employed during major outages.

Hazelwood supplies up to 25 per cent of Victoria's energy requirements and more than 5 per cent of Australia's total energy demand.

Hazelwood is jointly owned by ENGIE (72 per cent) and Mitsui & Co Ltd (28 per cent).

Since 1996, more than $1 billion has been invested in operational and environmental initiatives at Hazelwood, resulting in significant efficiency and reliability improvements, as well as improved environmental performance.

The business gained government approval in 2005 to move local road and river infrastructure to access the coal in the Hazelwood mine's West Field, which will fuel Hazelwood for the expected life of the business.

The $350 million Rivers and Roads Relocation project saw the construction of a new 7.5km section of the Strzelecki Highway and a 10km diversion of the Morwell River.

The river was taken out of a concrete pipe and into a natural meandering river course which was fed into extensive wetlands also constructed by Hazelwood.

ENGIE, in conjunction with technology and research partners, is investing in new low emission technology projects to demonstrate the potential for reducing carbon emissions at Hazelwood and other coal-fired plants.

Australia's biggest carbon capture pilot plant has been built at Hazelwood to test the capture and storage of CO_2 in a form available for future commercial applications.

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Hazelwood's technical specifications at a glance

OWNERSHIP
Hazelwood is jointly owned by ENGIE (72 per cent) and Mitsui & Co Ltd (28 per cent).

POWER STATION TYPE
Hazelwood is a thermal brown coal (lignite) fired power station.

OUTPUT
Hazelwood power station comprises eight generating units providing a nominal output of 1,542 MW. Annual generated electricity output is approximately 12,000 GWh, meeting up to 25 per cent of Victoria's electricity needs.

TURBINES
Stage 1 (units 1 and 2): The turbines on this stage consist of a high pressure cylinder and a combined intermediate pressure/low pressure cylinder.

- Manufacturer: Alstom Power Limited.
- Stages 2-4 (units 3-8): The turbines on these stages consist of a high pressure cylinder and double flow low pressure cylinder.
- High pressure turbine manufacturer: Alstom Power.
- Low pressure turbine manufacturer: Siemens Power Generation.

GENERATORS
The generators at Hazelwood are two-pole synchronous machines, direct coupled to the associated turbine. All use a combination of water and hydrogen cooling. Two generators were manufactured by Associated Electrical Industries (AEI). The other six were manufactured by Parsons.

BOILERS
Hazelwood has eight Babcock and Wilcox manufactured natural circulation water tube boilers. The 63 metre high boilers are of semi-outdoor construction, with water walls, superheaters, economisers and boiler casing freely suspended as integral units.

CHIMNEY STACKS
The eight concrete chimneys at Hazelwood are each 137 metres high.

WATER SOURCE
Water for the thermal cooling process is provided from Moondarra Reservoir, supplemented by artesian water extracted to ensure mine stability.

COOLING
Hazelwood uses the adjacent man-made Hazelwood Cooling Pondage (volume 30,000 Ml) to circulate and cool water for reuse in the power station's thermal water cycle.

FUEL SOURCE
Hazelwood power station uses lignite or brown coal sourced from the Hazelwood mine. It is around 62 per cent moisture at extraction and is delivered to the power station via an extensive network of conveyors and concrete storage bunkers.

DREDGERS
Hazelwood mine excavates coal using bucket-wheel dredgers. The mine has four coal digging dredgers with another dredger removing topsoil material called overburden.

There are currently three C-frame dredgers and two hydraulic ram dredgers operating in the mine.

PRODUCTION
Up to 15.3 million tonnes of coal is extracted annually to fuel Hazelwood power station. Around 3.26 million bcm (bank cubic metres) of overburden is removed each year to ensure access to coal reserves.

LAND
Hazelwood occupies 3,554 hectares and has a perimeter boundary of 39km.

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