Coolimba Power
Powering the Mid West and delivering energy security for Western Australia

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Overview

1. Coolimba Power: The Project
2. WA Electricity Market Outlook: New Power Sources Needed
3. Eneabba: The New Mid West Energy Hub
4. Coolimba: A New Environmental Benchmark
5. Community Benefits and Consultation
6. Project Milestones
About Coolimba Power

• Coolimba is a $1 billion investment based on a 400MW coal fired power station, located in the Mid West region of WA, 270km north of Perth (20km south of Eneabba).

• Two 200MW units fuelled by the Central West Coal deposit.

• Approval sought for 330MW gas fired generation creating a Mid West energy hub.

• The Coolimba power station will provide up to 8% of the power for the SWIS network.

• Power, highway, water, rail, gas and township within 10-20km.

• Leading circulating fluidised bed technology for reducing emissions of SO₂ and NOₓ.

• Location of the Coolimba Power Project.
Coolimba Power Station

- 3D visualisation of the power station layout.
WA energy diversity and security

- Coolimba adds diversity in geography and fuel, and will provide a competitive source of power for the State.
- It will enhance the capacity of the 330kV Perth to Geraldton transmission line to provide much needed extra and reliable power to both the local region and the SWIS network.
- Transmission losses from SWIS to the Mid West will be reduced.
- It will ensure Eneabba becomes the Mid West’s energy hub, balancing Collie in the South West and Kwinana in the metropolitan area.
SWIS supply-demand balance

• Economic growth of 4.9% per annum through to 2017/18.
• Electricity consumption and maximum demand both forecast to grow at 3.9% per annum.
• 1500MW of new capacity needed by 2017/18.
• Domestic gas supply constraints in same period until new sources come onshore.
• Renewables offer some new capacity, however the State will be short of base load power from about 2012/13 – and particularly for the new Mid West iron ore projects.
Eneabba: the new Mid West energy hub

- Coolimba Power has ready access to a secure long term coal source, and is located close to established and prospective gas reservoirs, gas storage and gas pipeline infrastructure.

- Located at the heart of the Mid West, close to the Eneabba sub-station which will form part of the new 330kV transmission network in the region.

- Aviva is seeking approval for over 700MW of generating capacity at its Eneabba site – both coal and gas fired, providing diversity and flexibility.

- Best placed to meet energy needs of emerging iron ore and other resource projects – potentially an additional 400MW of demand.
Coolimba: a new environmental benchmark

A first for Western Australia.

The Coolimba Power Station is the new benchmark in thermal power generation for a low emissions future.

**Carbon capture ready**

- Designed so that 90% of future carbon emissions can be captured and stored.
- The project will be built from the outset to be capable of rapid conversion to capture CO2 produced during the combustion of coal.

**Water-cooled**

- Uses water for cooling, which will be sourced from dewatering the mine.

**Low emission technology**

- Circulating fluidised bed technology for reducing SO2 and NOx.
Coolimba: carbon capture ready

Aviva’s strategy for a low emissions future

- Minimise emissions with known technology – current best practice.
- Identify partners in carbon capture and storage – leading experts.
- Identify potential equipment suppliers providing carbon capture ready plant.
- Progress research on identifying sequestration sites in North Perth Basin.
- Monitor pilot projects and latest technology on carbon capture and sequestration.
- Determine program of work for Coolimba carbon capture and storage project.
- Seek Government (and community) support where appropriate.
A low emissions future

Mid West CO₂ sequestration study commissioned

• CO₂CRC Technologies have been engaged by Aviva in conjunction with ARC Energy to study the potential for sequestration of CO₂ from the Coolimba Power Station in depleted oil and gas reservoirs in the North Perth Basin.

• The study is the first stage of the project to capture, transport and store CO₂ from the Coolimba Power Station.

• Peter Cook (CO₂CRC CEO), Francis Logan (Minister for Energy, Industry and Resources) and Lindsay Reed (Aviva MD) at the launch of the sequestration study (February 2008).
A low emissions future

- Commercialisation of carbon capture and storage will depend on a suitable emissions trading regime and regulatory framework for sequestration.

- Aviva supports an emission trading scheme which encourages investment in new technologies such as carbon capture and storage.

- Coolimba Power has the opportunity to become Australia’s first and largest commercial “carbon capture” project.

- Overview of the geosequestration process. Image courtesy of CO2CRC
Aviva/ARC Energy partnership

Boost for sequestration study in North Perth Basin

• June 2008: Aviva, ARC Energy and CO₂CRC agree to joint study.
• North Perth Basin – proven gas reservoirs.
• Real geological data provided to CO₂CRC.
• Seeking storage for approximately 3Mt/a of CO₂ – for up to 30 years.
• Opportunity for enhanced recovery of hydrocarbons using CO₂ from Coolimba.
Potential Coolimba sequestration sites

- Coolimba close to a number of prospective sites.
- Depleted gas reservoirs are best options for long term CO$_2$ storage.
- Aviva’s partnership with ARC Energy provides access to detailed geological data of the area around Coolimba.
Coolimba Power has been designed to have a low impact on the environment, including the local area.

- Project is based on an existing mine site so it will have minimal impact on native flora and fauna in the area.

- The entire project area is encompassed by a mining lease and freehold title and is currently being used for either agricultural or mining purposes.

- Minimising the impact on the local aquifer by using the dewatering from the local coal mine for the power station’s operations.

- Low impact mining operations – not like an “open pit” mine. Progressive back-fill will be undertaken as the coal seam is mined and rehabilitated continuously.
Community benefits

As well as reliable and low cost power, the Coolimba Power Station will provide a further boost for economic development in the region.

Coolimba at least 600 jobs during construction;

In the long term:

• Contribute g-term, host 100 permanent jobs for locally housed employees when commercial operation commences in 2012;

• Be a reliable, secure and competitive power supply for the Mid West and the SWIS;

• Inject one billion dollars in the region, with indirect and flow-on benefits from the project creating as many as three times more jobs within the local communities in the longer term;

• Encourage the expansion of local commerce for retail, services and light industrial activities, all of which will provide multiple benefits to the local community; and

• Unlock the vast potential of the Mid West region.
Community consultation

Coolimba Power is committed to involving the Mid West community by consulting them about the development and construction of the power station.

- Consultation with members of the local community is already underway and will continue through processes such as community information sessions, one-to-one meetings, open days and newsletters.

- Coolimba is also consulting with the wider Mid West community including industry, small business and community organisations.

- Students from Eneabba Primary School at an open day about the Coolimba Power project.
**Milestones**

**2ND HALF 2008**
- Execute JDA with global IPP partner for development of Coolimba Power Project
- CO₂CRC interim report to Aviva and ARC Energy on geosequestration sites (already underway)
- Public Environmental Review released
- Aviva approves program of work for carbon capture and storage
- Public consultation already underway

**END OF 2008**
- Off-take agreements
- Conditional certification by IMO

**1ST HALF 2009**
- Regulatory approvals
- Financial commitment decision
- Continuing to work on carbon capture and storage project

**2ND HALF 2009**
- Construction commences

**2012**
- Coolimba Power Station operational

**2012 - 2020**
- Completion of feasibility study for conversion to carbon capture and storage for Coolimba Power Station
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