



Standby power

> Case History

HEZ Power Station, NSW

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Where:

Kurri Kurri, Hunter Economic Zone (HEZ),
Hunter Valley, NSW

What:

Design and build of low-emissions diesel-fired power station.

A 26 MW peaking plant featuring 16 Cummins QSK60 generator sets with Selective Catalytic Reduction (SCR) technology, housed in sound-attenuated buildings.

Purpose:

The unmanned peaking plant is designed to support the Australian power grid during times of high peak demand and power outages.

Primary choice factors:

- Cummins Power Generation's proven track record of expertise established through previous design and build of two power stations for the same customer.
- Established best global practice for emissions reduction using Cummins SCR technology.

Cummins Power Generation sets the benchmark for low-emissions diesel power stations in Australia

NEW SOUTH WALES, AUSTRALIA – Cummins Power Generation's proven track record of expertise in the design and build of low emission diesel-fired power stations resulted in the company being awarded a third prestigious project by Infratil Energy Australia.

The latest example, a 26 MW peaking plant at Kurri Kurri in the NSW Hunter Valley matches two other power stations built by Cummins. The first, at Lonsdale in Adelaide, won a prestigious Institution of Engineers Australia award for environmental excellence; and the second at Angaston in Barossa Valley, South Australia's largest low emission diesel power station.

The plant at Kurri Kurri was built on a turnkey basis for Infratil, an electricity market participant through national grid system operator NEMMCO (Natural Electricity Market Management Co). The unmanned peaking plant is designed to support the Australian power grid during times of high peak demand and power outages.



Inside one of the three buildings that houses the diesel generator sets

Cummins Power Generation was once again able to rise to the complex set of development and environmental challenges posed by this project. The New South Wales EPA (Environmental Protection Authority) required best global practice in terms of emissions reductions. Also, because the plant is built on a greenfield site located in the Hunter Economic Zone, in addition to the technical aspects of building the power station, the project required a cultural heritage assessment to be carried out, a study of the impact on flora and fauna and also a commitment to extensive landscaping.

The three power stations use Cummins Selective Catalytic Reduction (SCR) technology to deliver near zero emissions of nitrogen oxides (NOx), a smog-causing pollutant and greenhouse gas.

“We were able to meet the EPA’s stringent emission requirements at the peaking plant in Kurri Kurri through SCR technology and achieve NOx emissions reduction of more than 98 per cent,” says Anthony Mitchell, project and technical manager for Cummins Power Generation’s Energy Solutions Business, who headed up the team of engineers. “As part of the SCR process, urea is injected into the exhaust stream to convert NOx emissions into nitrogen and water vapour – two harmless and natural components of the air we breathe.”

Featuring 16 Cummins QSK60 generators –each rated at 1.62 MW, the unmanned plant operates only when market demand or pricing is very high.

All 16 generator sets start up, synchronise and within two minutes are generating 26 MW. Start up can be achieved simply by sending an SMS text message to master control.

The generators, which operate at 415V and step up to 33 kV via 16 transformers, are housed in acoustic buildings that restrict noise level to only 65 dBA at the boundary fence, which is four metres away at the nearest point.

Cummins Power Generation operates and maintains the power station under a five-year contract and continues to operate and maintain the previous two Infratil owned power stations.

“This is a high efficiency power station with very low environmental impact,” says Tony Bergmeier, operations manager for Infratil Energy Australia. “Cummins now has a well established design and construct process for this type of power station,” he continues.

“The Kurri Kurri plant involved a lot of development challenges in relation to the environment, but these were successfully handled by Cummins.”

For more information about peaking power systems or other energy solutions, contact your local Cummins Power Generation distributor or visit www.cumminspower.com

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