

POWER PROFILE

Customer: Roy Hill Iron Ore Facility

Location:

Pilbara, Australia

Customer Business Issue:

Temporary power source for an expanding mine site and port facility under construction in a remote area of Australia

Solution:

30 Cat® XQ2000 rental power modules

Cat® Dealer:

Energy Power Systems Australia



Roy Hill is leading the development of a new generation of integrated iron ore mining, rail and port operations in the Pilbara region of Western Australia.

POWER NEED

Roy Hill is an iron ore mining facility in the Chichester Range in the Pilbara region of Western Australia.

As the country's largest mining construction facility, Roy Hill is home to the world-class, low-phosphorus Marra Mamba iron ore deposit, expected to sustain a mine life of more than 20 years. It also has the potential to produce 55 million tonnes a year and its first ore was mined at the end of April 2014, with exports beginning in May 2015. This project includes a mine, a mine process plant, a heavy haul railway system from mine to port and port facilities.

Under a fully integrated Build, Own and Operate (BOO) agreement, Energy Power Systems Australia (EPSA) was contracted to supply temporary power generation to the purpose-built port facility, which required continuous and reliable power up to a maximum demand of 35 MW.

SOLUTION

EPSA supplied a fully operational power station incorporating 30 Cat XQ2000 power modules each containing a Cat 3516B diesel generator set installed in a 40-foot container. In addition, the installation design included all balance of plant including 15 transformers, two 33 kV switchrooms and associated diesel fuel supply and reticulation systems all managed through an integrated control and SCADA system.

"Under the contract, we designed, constructed, connected and commissioned the temporary power generation facility. We will also own, operate and maintain it for a minimum two-year period, with options to extend thereafter up to 10 years," said Bill Thomson, EPSA's general manager, Project Services. "The power station currently supplies the entire power needs for the port facility. It is termed temporary because the long-term planning intention was to establish a grid connection."

Thomson says EPSA's ability to understand Roy Hill's unique requirements and customize a purpose-designed facility for this demanding and desolate environment differentiated them from the competition.

With rental power generation equipment, a fixed rental period is typically agreed upon between the end user and the dealer, but EPSA and Caterpillar regularly and uniquely offers rental solutions that contain beneficial purchase options offering the client flexibility and customized services.

"Through our Cat dealers, customers can rent our equipment for a defined time period and are also welcome to seamlessly convert it to a permanent installation. This flexibility ensures our customers can easily adjust to the most cost-effective and reliable power solution as business demands change," said Scott Heppner, Asia-Pacific sales manager with Caterpillar.

RESULTS

Following the finalization of the Roy Hill Port Facility power generation and operating agreement, EPSA extended its relationship with Roy Hill through the negotiation of a separate contract to design and build the enabling infrastructure for a standby power station at the mine site capable of deploying up to 80 MW of power through 56 standby generator bays ready and able to take Cat XQ2000 power modules.

This contract drew on the established designs developed for the Port Facility and presented a range of cost synergies through concurrent procurement and construction phases.

The company then mobilized to the sites in July 2014 and immediately assembled construction resources involving 20+ EPSA staff, along with subcontractors and trades. Generators were built in the U.S, shipped to Fremantle and on-transported to the site over 1,200 kilometres away. The first eight Port Facility generators and four transformers were installed in October

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2014 with the entire power station installation and commissioning completed in May 2015.

“There was no standard blueprint for the required power generation facility to meet demanding site and design requirements, especially in this geographical landscape.

EPSA and Caterpillar worked together to offer customized design, generation technology and delivery solutions that aimed to benefit the end customers,” said Thomson.

For more information, please visit cat.com/powergeneration



30 Cat® XQ2000 power modules supply 35 MW of power to the Roy Hill Iron Ore Facility.