

ATCO Power: Bringing environmental excellence to the Pilbara

The Pilbara North West Interconnected System (NWIS) in Western Australia will soon have its most efficient and environmentally friendly power generation station. ATCO Power's Karratha Power Station is on-track to produce its first power by February with the station operating at full capacity in April. The station will be constructed, owned, and operated by Canadian-based ATCO Power.

The state-of-the-art 86 megawatt (MW) gas-fired power station will use less gas but will generate the same amount of electricity as a similar station its size and constitution. With 35 per cent less gas used, 35 per cent less carbon dioxide will be emitted. At the same time, with the advanced technology being installed, other pollutants such as nitrous oxide and sulphur dioxide will be even further reduced. Pollution prevention, energy efficiency and waste minimization are integral components of an ATCO power plant.

The design of the new power station incorporates an inter-cooled engine which combines the best simple-cycle heat rate of any gas turbine in its class today. It significantly increases the airflow by cooling the air during the compression process. The result is more power, a better heat rate and a gas turbine without any increase in maintenance costs.

Comprised of two 43 MW high-efficiency General Electric gas turbines, the station can be augmented with a heat recovery steam generator (HRSG) that would generate electricity from waste heat. Adding HRSG's (or similar technology) and a steam turbine, also known as "closing the cycle", increases output without the need to burn any more gas fuel. ATCO Power currently uses this technology at other facilities around the world.

The station, approximately 1,600 kilometres north of Perth, will ensure added security to the NWIS. With rapid growth and unprecedented demand for power from major resource companies and the growing communities of Karratha and Port Hedland, the station will be extremely important in maintaining a reliable power system in the region. The Pilbara region could grow to significantly rival or exceed the South West Interconnected System – the only other significant network in Western Australia – providing it could all be connected through high-voltage transmission.

The station will supply electricity to residential and business consumers under a long-term contract with state-owned energy company Horizon Power. It will be adjacent to Horizon's 132 kilovolt substation giving it a direct link into the local network.

"With the increasing energy demands of consumers in the Pilbara, the Karratha Power Station will play a vital role in maintaining a secure and reliable power system," says Geoff Walshe, ATCO Power's Managing Director

in Australia. "The station will meet Karratha's future energy needs for the next few years."

ATCO Power's new power station, its 20th throughout the world, will be built to an initial capacity of 86 MW but will be designed to allow for expansion to meet the growing needs of the region. Walshe states, "We want to be positioned to add another gas turbine and steam turbine when conditions are right for growth in demand in the region."

Walshe is positive about the opportunity for growth. ATCO Power is currently looking at various opportunities to expand their operations across Australia.

"In spite of challenging economic times around the world, Australia has such a strong growth market. With the experience we have had to date, it is a logical fit for our company to look at other prospective projects," said Walshe.

"This is the third power project for ATCO Power in Australia. Our company is committed to providing additional clean, efficient, reliable power in Australia. We currently own and operate a 180 MW cogeneration station in Adelaide and a 33 MW cogeneration station in Brisbane. Both stations provide environmentally friendly power to support businesses and consumers in their respective areas."

Canadian-based ATCO Power is a world-class developer, construction manager, owner and operator of technologically advanced and environmentally progressive independent power generation plants. The company operates power plants in Canada, the United Kingdom, and Australia with a combined capacity of approximately 4,885 MW. ATCO Power has had operations in Australia for more than 10 years.

Horizon Power is the state-owned energy company created by the Government of Western Australia in 2006 to meet the needs of residential and commercial electricity customers in regional Western Australia.