Case Study

Telstra deploys first fuel cell system as backup power at base station exchange site in Australia

Background

Telstra is Australia's leading telecommunications company providing over 9.2 million fixed line services and 9.7 million mobile services with 5.2 million 3G customers. Telstra's major strength is providing integrated telecommunications services in a vast geographical coverage with an extensive network infrastructure. Making certain that its cell towers operate reliably with no disruption in service is a critical concern. Telstra decided to test alternative power sources and use fuel cells to provide clean and reliable extended backup power reducing the number of battery strings and diesel generators at its sites.

Challenge

Telstra's base station sites are in remote locations that contain critical telecommunications equipment requiring backup power with over 8 hours of autonomy. Their standard backup power supply consists of 5 strings of batteries and a diesel powered generator in case of extended power failure. However, both can be unreliable and are costly to maintain. Telstra needed to find a solution that reduced carbon emissions and provided reliable extended run backup power for its remote sites.

Solution

In July 2009, Telstra chose IdaTech's ElectraGen™ XTi System from KD Fisher, IdaTech's international distribution partner in Australia. The initial testing of the ElectraGen™ XTi system was performed in Melbourne over several days. After successfully completing extensive technical field test requirements, the unit was then moved to Dixons Creek, Victoria, for installation.

IdaTech's ElectraGen™ XTi fuel cell system was developed specifically to provide critical backup power for the telecom market. The ElectraGen™ XTi system includes a fuel processor that converts methanol and water liquid fuel into hydrogen gas to power the unit. By generating its own hydrogen as needed, the requirement for delivery and storage of bottled hydrogen is eliminated. The ElectraGen™ XTi fuel cell is ideal for extended run backup power in Australia's remote geographic location, where fuel delivery is difficult and expensive.

Overview

Site: Dixons Creek, Victoria, Australia

Application: Backup power for telecom exchange

Product: ElectraGen™ XTi System

Configuration: 5 kW, 48 Vdc

Fuel: HydroPlus (methanol/water) (220 liter tank)

Customer Motivations: Reduced carbon emission, virtually maintenance-free and energy efficient

Results

Within 24 hours of the installation at the test site, a power failure occurred and the fuel cell system responded, generating 1.5 hours of backup power. The test site supports a 3G node, fiber optics transmission and telephony services. Telstra recently reported that the ElectraGen™ XTi system has been working flawlessly since its site installation.