

CASE STUDY:

HOW IBERDROLA AUSTRALIA IMPLEMENTED TOUCHLESS™ THERMAL & VISUAL SENSORS

Iberdrola Australia is a leading renewable energy provider that generates and contracts electricity from wind turbines, solar photovoltaic, and other low-emission energy sources. With over 1,100 MW of installed capacity and more than 2,500 MW of planned capacity, the company provides clean and sustainable electricity to individuals, households, and businesses throughout Australia.

Previously, Iberdrola Australia conducted physical inspections of wind farms and substations using thermal sensors and other handheld monitoring tools. This process was time-consuming and expensive, and it increased the risk that an undetected issue could grow into a more severe failure.

To reduce maintenance costs while enhancing reliability and safety, Iberdrola Australia needed 24/7 monitoring and alerting for high-value substation and wind farm assets.

THE REQUIREMENTS

Iberdrola Australia planned to implement asset monitoring and a condition-based maintenance program using data from thermal & visual sensors. The Project Delivery team identified several requirements.

- Utility-grade sensors rated for use in high-voltage environments
- High-quality and rated to withstand harsh outdoor conditions
- Ability to integrate with existing SCADA and alarming systems
- Able to meet cybersecurity regulations
- Experienced team with knowledgeable and responsive support



The same system that monitors the substation can also monitor the surrounding area for wildfires.

THE ENGAGEMENT

After an extensive search, Iberdrola selected Touchless® Monitoring Solutions from Systems With Intelligence. Five sites were chosen for the initial phase of the project based on the age of the assets, the condition of the surrounding region, and the strategic priorities and investments of the business.

Systems With Intelligence designed, manufactured, and delivered the sensors to the Project Delivery team in Australia. Systems With Intelligence also provided remote commissioning and support services throughout the project. Iberdrola Australia partnered with locally certified contractors for the physical installation of the sensors at each site.

The quality of the product, the capabilities of the sensors, and the proven experience of the team were all factors that led Iberdrola Australia to choose Systems With Intelligence.

THE BENEFITS

The system immediately proved its value when it detected a previously unseen hotspot on the first day of operation. Thermal data allowed the Operations & Maintenance team to determine that a high-voltage cable was too short, resulting in high temperatures at the connection point. The team was able to schedule a repair before the issue caused a serious failure.

With continuous, 24/7 asset monitoring, technicians automatically receive alerts and alarms on their



It is critical to monitor the substation to 1) detect temperature anomalies on equipment and 2) keep trespassers out of dangerous high voltage areas.

phone, even when away from the office or outside of regular business hours. Once an alert is received, they can log on to SCADA, point the camera to the issue, and diagnose the cause remotely without getting in their truck and driving hours to the remote site.

The visual camera also improves physical security at each site by allowing teams to detect possible threats, vandalism, or other safety concerns and take action from a central location.

Finally, an unexpected benefit emerged early in the project. Cameras mounted on top of the wind turbines offered a wide-angle view of the surrounding landscape. Video from these sensors could be used by first responders in case of emergency, providing an early warning and detection system to local communities.

THE RESULTS

Following the initial implementation of the sensors, Iberdrola Australia has been able to reduce maintenance costs and transition toward a Condition-Based Maintenance program that enhances reliability, improves safety, and better utilizes scarce technical resources.

About Systems With Intelligence Inc.

Systems With Intelligence™ Inc. is a global provider of Touchless™ Monitoring Solutions for electric utility applications. SWI systems collect and analyze the data that allows utilities to increase safety and reliability while reducing operating costs. Coupling thermal monitoring and visual imaging technology with advanced analytic algorithms, Systems With Intelligence™ solutions automate remote site monitoring.

Systems With Intelligence™ products are engineered to operate in the harshest environments, withstand high levels of electromagnetic interference, static discharge and voltage surges found in industrial applications to ensure uninterrupted operation. Providing a monitoring system that operates reliably and connects seamlessly allows customers to remain focussed on their operations.

The Systems With Intelligence™ management and technical teams are comprised of professionals with extensive experience in advanced technology for mission critical applications in harsh environments. With domain expertise in substation and industrial automation, communications and utility operations our team is uniquely positioned to deliver effective and intelligent monitoring solutions.