

# Bespoke Solar Development

## Monitoring Solar Farm Performance

### 01 THE CHALLENGE

Renewable energy sources have become a staple of the energy industry. The world is becoming increasingly dependant on them for energy provision.

Voltalia has, since 2005, been a major renewable energy producer, using renewables like solar, wind, hydro, and biomass to provide a range of services to their customers, including storage solutions.

Beginning in 2013, Critical Software has assisted Voltalia in establishing a worldwide control centre for their geographically-diverse operations and maintenance activities. As part of this work, Voltalia required software solutions supporting the development of their solar operations, increasing productivity and efficiency, as well as introducing real-time fault detection to minimise plant losses and increase client revenues.

### 02 THE SOLUTION

Critical's solution incorporated an integrated remote supervision function of Voltalia's solar production portfolio, meeting the unique requirements for this project.

Engineers from Critical built a single control centre solution monitoring hundreds of solar farms simultaneously across 20 different geographies. The system also measured hundreds of megawatts of installed power across these sites.

The solution enables the extraction of business data to make technical reporting easier for energy producers. Its data analysis capabilities allow for performance scrutiny of the solar farms, which is complemented by an easily adaptable Key Performance Indicator (KPI) calculation engine.

### 03 THE RESULTS

Our work has given Voltalia complete control over their assets and allowed them to increase their availability. It has boosted the efficiency of their solar energy production, enhancing their critical business performance significantly.

The solution brought with it several tangible cost benefits, including a reduction in HR costs thanks to the implementation of system automation.

### 04 THE TECHNOLOGY

- HTML
- CSS
- JavaScript
- ASP .NET Web Forms
- DevExpress
- Microsoft .NET
- Microsoft IIS
- Microsoft SQL Server 2008 R2
- NHibernate

### ABOUT CRITICAL SOFTWARE

Critical Software provides systems and software services for safety, mission and business-critical applications. We work closely with our clients, helping them to meet the most demanding standards for performance and reliability.

We were founded in 1998, with NASA our very first client. Today, we work across many international industries and have offices across the globe.

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