



PREVENTIVE MAINTENANCE



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POWER COMPANIES REDUCE OUTAGES AND LOWER COSTS WITH SENSOR-BACKED PREVENTIVE MAINTENANCE



The last thing a power company wants is a forced outage caused by malfunctioning equipment. Yet, power cycles are increasing at the same time the number of trained operators available for specialized maintenance and repairs is decreasing. Automated temperature monitoring helps companies prioritize work and take action when needed.

Maintenance at Scale

Power companies have hundreds of thousands of assets to monitor and maintain to avoid damage to the power grid. They include generators, generator circuit breakers, line disconnect switches, step-up and step-down transformers, segregated and non-segregated bus ducts, potential transformer cabinets, medium voltage switchgears, and motors, among others.

Systems are subject to excessive loads, normal wear and tear, and challenging environmental conditions which can cause thermal or electrical breakdown. When equipment wears out or cables split due to overheating, they can cause fires.

Accurate, Cost-Efficient Data Collection

In addition to unhappy customers and lost revenue, power companies have the potential to lose an average of \$1.26 M in revenue over a 7-day period if a 500MW generator goes down due to a forced outage.^[1]

Utilities typically rely on employees to check cable conditions by hand. Most rely on thermal cameras and perform spot checks. Though resource intensive, data collection is not always accurate and at best, irregular. In contrast, smart sensors can check a greater number of locations and report back every few minutes.

Detect Abnormalities Immediately

When sensors detect a temperature change on a critical asset, operators see a spike in their dashboard. They can react quickly to rebalance or replace the asset before any damage is done. Instead of employees descending underground to perform tasks or shut down systems, utilities can identify issues before they cause problems. Instead of emergency response units arriving to avert a catastrophe, systems remain online and running smoothly.

[1] <https://www.eia.gov/electricity/annual/secrev-map2015.php>

By employing preventive strategies like temperature sensing, “operators reduce their costs by 10% in medium-voltage distribution grids, 15% in high- and medium-voltage overhead lines and underground cables, and 20% in high and medium-voltage substations, while improving asset reliability,” McKinsey reports.^[ii]

How It Works

Disruptive Technologies’ wireless, mini-sensors stick on assets such as cables, pipes and high voltage fuses, even in difficult-to-reach places with small surface areas. You won’t need to shut down all or part of a substation to install Disruptive sensors. They’re easy to install and easy to maintain.

Sensors connect securely through Cloud Connectors with built-in cellular M2M and Ethernet and stream data through open APIs into any analytics platform. The Cloud Connectors relay traffic between all sensors in range and the Disruptive Technologies Cloud without the need for any user configuration or intervention.

Disruptive Technologies provides the secure sensor-to-cloud solution, while our partners provide the final application software and services. Disruptive partners are highly skilled teams of experts that provide all levels of support throughout the entire installation, configuration, and analysis process.

Why Disruptive Sensors

First-generation sensors were bulky, complex and often inaccurate. We’ve completely rethought sensor design to enable data collection anywhere and everywhere. There’s no need to “rip and replace” legacy systems to turn them into “smart” equipment.

- Mini-sensors are the size of a postage stamp
- Low power consumption = long battery life
- Direct connections provide maximum accuracy
- Supports next-gen internet of things (IoT) networks
- Industrial-grade connectivity and built-in redundancy
- End-to-end security built into the design
- Extensible platform to integrate into your systems
- Robust construction
- Cost efficient



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