

Panasonic



Staying Connected with Mobile Devices
in the Power Sector

TOUGHBOOK®

Introduction



A variety of factors contribute to power utilities feeling the pinch, and mobile solutions offer one way to cut costs by improving operations while extending service capabilities to customers. Mobile tech can increase front-line operator and field tech utilization, improve real-time communication with dispatchers, and connect faster with customers. Field technicians also can respond proactively to operational events with access to data such as asset information, maps and diagrams, and customer information. Because utilities typically have assets spread across a wide geographical area, none of that can happen without strong, reliable connectivity. Loss of connectivity can severely impact field work functions.

When it comes to connectivity, the device matters. Panasonic Toughbook® mobile computers deliver two critical components: reliability and reach. This paper will touch briefly on how utility workers use mobile devices. It will also describe advantages of rugged models over consumer-grade models with a focus on connectivity and highlight how Toughbook devices deliver connectivity, even in the most remote areas.

The Power Sector's Move to Mobility

While paper-based data collection and reporting has been the norm at power plants for decades, power companies are gradually adopting mobile technology to help them increase operational efficiency and better connect with customers. This is being driven by the evolution of mobile-based software solutions, communication technologies, and computing hardware platforms, as well as more powerful and sophisticated devices. A younger tech-savvy industry workforce is emerging, armed with the right skills to use mobile computers to get work done.

According to the Electric Power Research Institute (EPRI), the age of the “digital worker” has arrived. Citing results from a 2016 survey to evaluate the role of mobile technology in the power sector, EPRI notes that mobile technology is increasingly being used for generation operations and maintenance (O&M) applications.¹ About 90% of respondents felt that mobile technology should be an integral part of the O&M worker's tool kit.

In another recent survey of 150 North American utilities conducted by Zpryme², 88% said they expect to see growth in the mobile workforce over the next one to three years. Nearly all (96%) said they plan to increase the digitalization of their mobile workforces through fast, rugged, and reliable mobile devices, expanding their use from mobile phones and consumer laptops to wearables and augmented reality to exploit new opportunities for connectivity.

¹ Matthew Buck, [“EPRI: Using mobile technology in the energy generation sector.”](#) Energy-Tech Magazine [June 6, 2017]

² [Mobility Redefined: The Utility Mobility Workforce in the Connected Grid.](#) Panasonic [2017].

How Mobile Technology Could Benefit Power Company Operations

Among mobile technology capabilities that EPRI survey respondents deemed the most promising was access to real-time data for tasks such as work package guidance and procedures, lockout-tagout (LOTO) status, and equipment operating data. Data capture and communication capabilities were also important, especially as they facilitate and share information about inspections, readings, and equipment condition reports.

Workers are using mobile tech for these applications at power plants and beyond-the-fence power assets:



Condition documentation. To enter real-time inspection readings and equipment conditions.



Procedures and resources. To provide real-time access to facility and equipment resources, business processes, regulatory standards, and best practices.



Location-specific asset information. To pinpoint anomalies and model physical or spatial components, locate workers, provide rapid emergency service, and enforce security using geographic information systems (GIS) data and interactive maps.



Asset life-cycle management. To coordinate and manage the asset life-cycle, track inventory and monitor resources.



Supply chain management. To organize or refine processes, provide access and analysis, and simplify reporting at central warehouses.



Access to expertise. To remotely access subject matter experts across plant geographies via voice, camera images, or video.



Team communication. To connect leaders and managers to work teams in the field.



Work management. To manage work flows, including equipment repairs, LOTO procedures and resource utilization.

Mobile Device Reliability and Connectivity Are Crucial

While the benefits of mobile technology are recognized, power companies face cost hurdles as well as technical challenges around integrating mobile solutions into existing corporate systems. To overcome both, a mobile device must be reliable. For power companies, that means:

The device is rugged and reliable. Power company workers face difficult and harsh conditions and need durable mobile devices that can function inside power plants and outside in all kinds of weather. These mobile computers must be able to stand up to cold, heat, rain, and accidental drops. Consumer-grade devices fail more often, requiring repairs and leaving workers without the tools to stay productive.

It provides always-on connectivity. Wireless connectivity, Wi-Fi or 4G LTE, is non-negotiable. Reliable connectivity depends on the quality of network, but it also depends on the mobile device. According to the Zpryme study, 88% of utilities surveyed plan to increase their use of cellular connectivity for mobile devices—with 35% planning for significant increases.

Rugged and Sophisticated: The Toughbook 33

The Toughbook 33 is a 2-in-1 laptop, purpose-built for power companies, delivering maximum performance whether used as a laptop or a 12-inch tablet with its detachable keyboard. Some of the features workers can put to use:

- ❑ An infrared camera for Windows Hello support, which enables facial recognition access.
- ❑ 3:2 display for easier viewing of complicated software such as business applications with less vertical scrolling.
- ❑ Optional long-life battery configuration lasts up to 20 hours.



Considerations for Reliable and Secure Connectivity

Power companies looking to ensure reliable, consistent connectivity and communication should consider the following when choosing mobile computing devices:

- ❑ **Internal and external interference protection.** Slow transmission of data, caused by internal and external interference, can make a device frustrating to use. The design of a device as well as the quality of its internal wireless components affect the amount of interference a mobile device user experiences. Device manufacturers should test advanced integrated wireless technology and embedded antennas to minimize interference problems.
- ❑ **Wireless reliability.** Device reliability should be proven. Consider a manufacturer that performs rigorous testing of core internal components, including embedded antennae modules—and is transparent about testing results.
- ❑ **Security.** Secure connections are critical in power plant settings and breaches can be costly and catastrophic. Evaluate companies that enable safe access to data through secure connections on Wi-Fi, Bluetooth®, and mobile broadband.
- ❑ **Global connectivity.** Power companies whose operations extend globally should consider selecting mobile devices that can provide seamless global connectivity.
- ❑ **Cost-effectiveness.** Reliability means a lower failure rate and fewer repairs, translating into a lower cost of ownership and greater return on investment.
- ❑ **Strong warranties.** Look at service levels and guidelines for repairs and replacement parts. Also evaluate technical support capabilities and resources, such as a hotline and field services.
- ❑ **Future wireless and device innovation.** Because next-generation wireless technologies are constantly evolving, mobile device investments should take into account developing technologies. Does the device manufacturer have plans for integrating network services like 5G, FirstNet, and other new technologies into their product roadmap?

Panasonic Toughbook Mobile Devices: A Comprehensive Solution

Panasonic Toughbook mobile devices deliver on all these requirements. The company offers a line of rugged mobile computers that includes laptops, 2-in-1s, tablets, and handhelds, purpose-built for power company applications and some of the world's toughest users. Panasonic manufactures all its components except for the CPU entirely in-house to control quality and consistency every step of the way, from design to delivery. Devices undergo rigorous testing with more than 500 checks to ensure durability and reliability.

A Smart Investment

Designed to withstand bangs, bumps, spills, accidental drops, and outdoor elements, Toughbook mobile computers have a proven record of long-lasting performance, fewer repair expenses, and lower failure rates than average devices. Panasonic Toughbook laptops have an average failure rate of 2.2%, far outpacing the average 11% industry average failure rate of consumer devices, and two to three times more dependable than the 4% to 6% failure rate of all rugged devices.

Panasonic reliability and durability go beyond the device, providing peace of mind through comprehensive warranty plans and technical support. The company's standard warranty protects customers' Toughbook laptops, 2-in-1s, tablets, and handhelds from manufacturing defects for three years. Warranties also include a priority parts exchange program and repair service at no cost.

Powerful Connectivity Where Others Fail

Toughbook devices also deliver high-speed connectivity. Panasonic is the only wireless mobile computer manufacturer that designs and manufactures its own antenna modules and tests them for performance against interference in the industry's largest privately owned anechoic chamber. The innovative module design, placement, and wiring path in Panasonic mobile devices fully optimizes performance which meets—or exceeds—leading carriers' wireless network requirements.

Panasonic Toughbook has a 20-plus-year-legacy of redefining mobility trends, and the company is acutely aware of technology and power industry developments likely to influence functionality—especially as it concerns connectivity and communications. From hardware to software, connectivity, and services, Panasonic mobile solutions built on Toughbook devices can help power companies—at the plant or in the field—increase their operational efficiency and connect with customers more easily.

Find out more at <http://toughbook.com>

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Global Connectivity

Panasonic recently introduced P.180, a seamless, end-to-end connectivity platform purpose-built for today's global mobile workforce. The Panasonic P.180 platform:

- ❑ Enables seamless Tier 1 connectivity in 180 countries, including 60 full LTE networks, under a single service umbrella
- ❑ Provides pricing predictability and no roaming fees.
- ❑ Offers companies the power to take advantage of global scalability, with local connectivity.

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