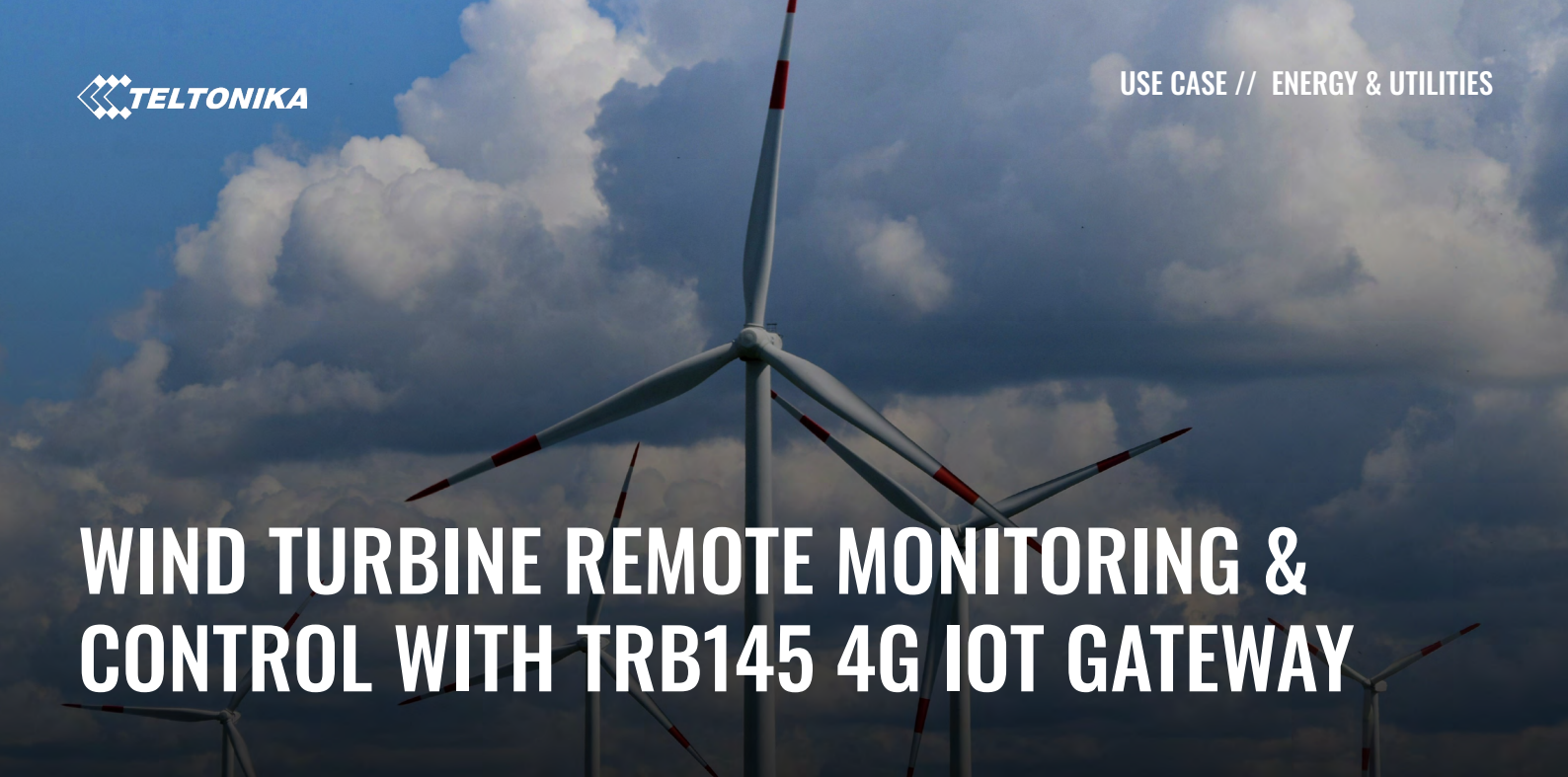




WIND TURBINE REMOTE MONITORING & CONTROL WITH TRB145 4G IOT GATEWAY

HIGHLIGHTS

- ✓ Wind farms are often located in remote, harsh environments where reliable industrial-grade connectivity is critical for continuous operations.
- ✓ Without a stable connection to turbine controllers, operators cannot perform wind turbine remote monitoring, predictive maintenance, or real-time parameter adjustments.
- ✓ [Teltonika TRB145 4G IoT gateway](#) provides a secure, low-power connection between wind turbine PLCs and the central control centre.
- ✓ Paired with Teltonika RMS, operators can remotely manage, monitor, and receive alerts across an entire wind farm fleet from a single platform.

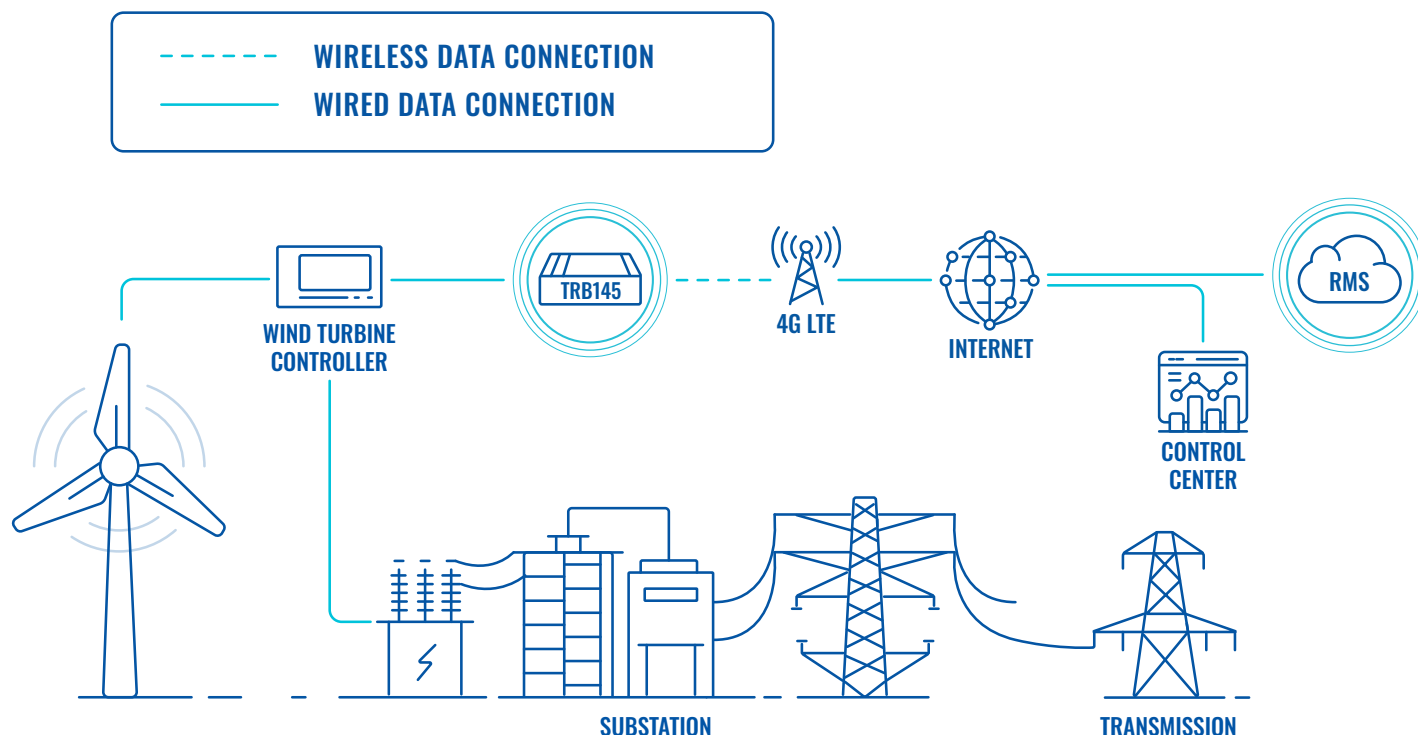
WHY REMOTE CONNECTIVITY IS ESSENTIAL FOR MODERN WIND FARM OPERATIONS

Wind energy is one of the fastest-growing renewable energy sources globally, and for good reason – wind farms can generate clean electricity at scale with minimal environmental impact. According to the [World Wind Energy Association \(WWEA\)](#), global installed wind power capacity now meets well over 10% of the world's electricity demand, with total capacity surpassing 1,170 Gigawatts in 2024.

However, deploying and maintaining wind turbines comes with a unique operational challenge. These installations are typically located in remote, hard-to-reach areas such as open hillsides, coastal zones, and offshore platforms, precisely because those locations offer the strongest and most consistent wind conditions year-round. This means that sending technicians on-site for every maintenance check or configuration change is not only costly and time-consuming, but often impractical.

To keep wind turbines running efficiently and safely, operators need reliable, secure, and always-on wind turbine connectivity solution – enabling real-time monitoring, energy generation reporting, and predictive maintenance from a centralised control centre.

TOPOLOGY



TRB145: INDUSTRIAL 4G GATEWAY FOR REMOTE WIND FARM DEPLOYMENTS

Teltonika TRB145 is a compact 4G IoT gateway designed specifically for demanding environments like wind turbine installations. It connects directly to the wind turbine controller – typically a PLC – via its [RS485 Serial interface](#), acting as a [Modbus](#) RTU gateway that bridges the turbine's control system with the operator's remote management infrastructure.

This makes it possible to monitor wind turbines, push configuration updates, and respond to faults remotely – no physical presence on-site needed. The device also consumes just 2W of power during data transfer, making it well-suited for energy-conscious deployments where every watt counts.

Security is built in from the ground up: the TRB145 runs [RutOS](#), Teltonika's proprietary operating system, which includes enterprise-grade features such as OpenVPN, IPsec tunnelling, and a configurable [firewall](#) – ensuring that all data transmission between the turbine and the control centre is encrypted and protected.

Its rugged housing supports an operating temperature range of -40°C to 75°C, meaning it can withstand the extreme weather conditions typical of wind farm sites without compromising performance.

And because wind farms often consist of dozens or even hundreds of turbines, the TRB145 integrates seamlessly with [Teltonika RMS](#) – a cloud-based Remote Management System that allows operators to configure, monitor, and receive SMS or email alerts from an unlimited number of devices, all from a single dashboard.

From secure data transmission to rugged field deployment and scalable fleet management, the TRB145 brings together everything wind farm operators need in a single compact device – making it one of the most practical and reliable industrial IoT connectivity solutions available for wind energy infrastructure today.

Ready to get started? Order the TRB145 or reach out to our team – we'll help you find the right solution.

