



Digitizing Hazardous Area Operations with the Intrinsically Safe Tablet and Energy Solutions

Problem

Energy companies operating in hazardous zones, such as oil and gas facilities, petrochemical plants and gas processing plants, face a dual challenge: maintaining strict safety compliance while accelerating digital transformation. Traditional workflows rely on paper-based processes and uncertified devices, which can not be used safely in explosive environments. This results in inefficiencies, delayed data, and compliance risks.

Challenges

Energy operations in hazardous zones encounter several persistent obstacles:

- **Safety & Certification Risks**

Using non-intrinsically safe devices poses explosion hazards and limits digital tool adoption in volatile areas.

- **Disconnected Operational Workflows**

Paper-based inspections and isolated systems delay reporting and reduce visibility across teams.

- **Regulatory Compliance Pressures**

ATEX, IECEx, and UL913 standards require certified equipment and auditable data capture for safety and environmental reporting.

- **Data Silos & Limited Connectivity**

Remote locations and restricted wireless access make it difficult to obtain real-time operational data.

- **Sustainability & Cost Reduction Goals**

Companies seek to optimize asset performance, reduce downtime, and eliminate energy waste through predictive insights.

To address these challenges, the industry requires a certified intrinsically safe mobile device combined with an intelligent, cloud-enabled operational platform that enables real-time insights, digital workflows, and safe field operations, even in Zone 0/1 and Class I, II, III Division 1 environments.

Solution

The combined solution of the Intrinsically Safe Tablet and Energy Solutions delivers a fully integrated, secure, and rugged platform for hazardous-area digital transformation.

Safe Tablet

A Windows 11 IoT, intrinsically safe tablet certified for Zone 0/1 and Class I, II, III Division 1. It offers:

- Intel-based performance with 8GB RAM, 256GB storage (expandable to 2TB)
- 10.1" FHD+ glove-touch display
- IP65-rated, rugged construction
- Up to 8 hours of battery life
- Wi-Fi, Bluetooth, NFC, and optional 4G LTE
- Operational temperatures from -20 to 55°C

Energy Solutions (Microsoft-Powered)

A scalable cloud platform built on Azure, Dynamics 365, and Power Platform for energy-sector operations, enabling:

- Cloud-based asset management and scheduling
- Predictive maintenance powered by Azure IoT and analytics
- Digital inspection workflows through Power Apps
- Seamless ERP integration (SAP, Oracle, Microsoft 365)
- Full offline/online capability for remote sites

Key Advantages

• Intrinsic Safety + Digital Mobility

Full digital workflows directly inside hazardous zones:
no paper required.

• Unified Cloud-to-Field Platform

Real-time visibility from field worker to control room to cloud.

• Optimized Field Productivity

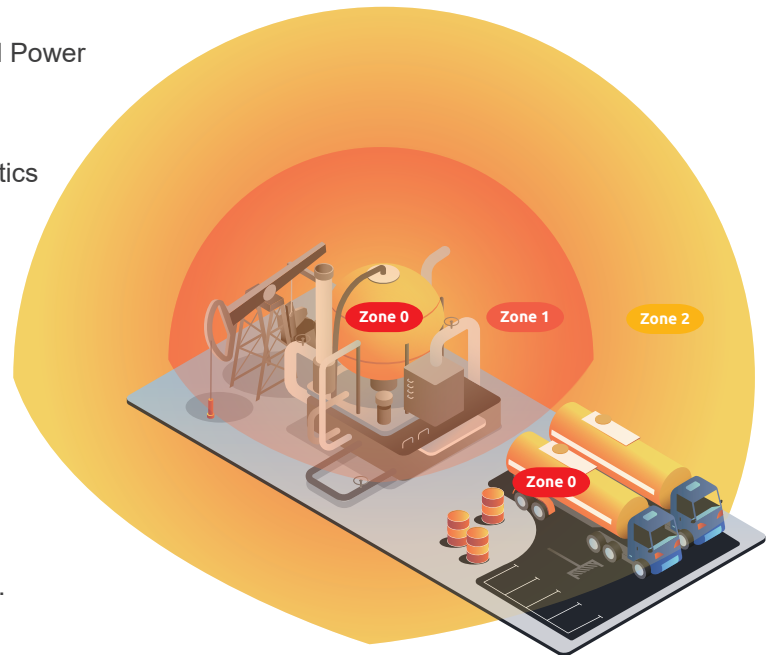
Faster inspections, automated data capture, and fewer operational delays.

• AI-Driven Equipment Reliability

Predictive maintenance minimizes failures, extends asset life, and reduces unplanned shutdowns.

• Scalable Architecture

Deployable across upstream, midstream, downstream, and renewable sectors.



Benefits

• Enhanced Safety

Use certified intrinsically safe devices that eliminate explosion risks.

• Higher Operational Efficiency

Digital workflows can reduce inspection and maintenance cycle times.

• Regulatory Compliance

Automatically generate audit-ready reports aligned with global safety standards.

• Lower Operational Costs

Predictive maintenance and integrated workflows reduce OPEX and manual rework.

• Real-Time Insights

Azure analytics deliver actionable intelligence on asset performance.

• Sustainability Gains

Reduce energy waste and emissions through early fault detection and optimized resource use.

Contact our team of experts today to learn how the Aegex100M can revolutionize your project.

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