Modernise aging energy and utilities infrastructure with Microsoft

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Aging infrastructure is driving up maintenance costs and forcing utilities into reactive repairs that strain budgets. Unplanned outages erode customer trust and regulatory compliance, while fragmented systems limit visibility and make forecasting difficult. At the same time, a shrinking skilled workforce and safety-critical environments add pressure, and modernisation efforts must balance the need for upgrades with the risk of service disruption and vendor lock-in.

What ideal looks like_

- **Predictable reliability:** Move from break-fix to condition- and risk-based maintenance.
- **Unified data fabric:** OT/IT data in one secure, query-ready layer for faster insight.
- **AI at the edge and cloud:** Real-time detection, forecasting and optimisation.
- **Workforce productivity:** Right technician, right parts, first-time fix.
- **Secure-by-design:** OT security aligned to NIS/NERC/ISO frameworks.

Outcomes you can expect_

- **Fewer unplanned outages:** Predict failures days/weeks in advance to cut downtime.
- **Improved asset life and ROI:** Condition-based maintenance defers capex with evidence.
- **Increased field efficiency:** Higher first-time fix rates, fewer truck rolls, safer work.
- **Regulatory confidence:** Traceable inspections, auditable data, streamlined reporting.
- **Cyber resilience:** Continuous monitoring and faster incident response across OT/IT.

Why Microsoft_

- **End-to-end, hybrid-ready** platform that meets you on-prem, at the edge or in the cloud.
- **Built-in security** for critical infrastructure, aligned to industry standards.
- **AI with governance:** Responsible AI, data residency options, auditability.

And with years of expertise, accreditation and industry experience, Infinity Group support effective implementation of your Microsoft solutions.

The Microsoft approach_

1. Ingest

- **Azure IoT/IoT Edge** connects sensors, SCADA/EMS/DMS, meters, DERs - even over low-bandwidth links.
- **Microsoft Fabric** for high-velocity time-series and telemetry at scale.

2. Model

- **Azure Digital Twins** creates living models of networks, substations, pumps, turbines and lines.
- **Common Data Model + Power Platform** standardises asset/incident/work order data for consistency.

3. Predict

- **Azure AI & Machine Learning** forecast failures, optimise maintenance intervals and detect anomalies.
- **Computer vision at the edge** (e.g. camera/drone inspections) to spot corrosion, vegetation encroachment or leaks.
- **Copilot** accelerates analysis and natural-language insight.

4. Orchestrate

- **Dynamics 365 Field Service** automates scheduling, skills-based dispatch, inventory and SLAs.
- **Power Apps and Power Automate** digitise inspections, permits and switching procedures.
- **Power BI** puts health, risk and performance KPIs in one pane of glass.

5. Secure

- **Microsoft Defender for IoT** protects OT/ICS with agentless asset discovery, anomaly detection and segmentation guidance.
- **Microsoft Sentinel** correlates OT/IT threats for unified SOC visibility.
- **Entra ID (Azure AD)** enables least privilege and conditional access across tools and sites.

Ready to modernise aging infrastructure without disrupting service?

Let's build your modernisation roadmap and a pilot that proves value in weeks

Get in touch