



Smart solutions for energy and utilities

Alcatel-Lucent Enterprise is tackling today's energy and utilities sector challenges with a three-pillar approach focused on enhancing safety and security, increasing operations efficiency and improving customer engagement.

The energy and utilities industries provide extremely diverse essential services and are unique in many ways. However, despite their many differences, they face a common set of global challenges that have led to a collective need to accelerate their transformation by investing in innovation and technology. Today's energy and utilities operators are facing three types of challenges:

- **At the global level**, they need to increase their operations safety and security, reduce their carbon footprint, protect against cyberattacks and address new regulations
- **On the technology front**, they will have to deal with migration plans, technology obsolescence, interworking between the new and old technology and the management of very large-scale networks
- **On the customer side**, organisations need to develop new customer relationship strategies and services to address new types of customer, meet their expectations, consumption demand and usages



1. Enhance safety and security

As cybersecurity breaches, vandalism and terrorist attacks become pervasive, the energy and utilities sector must be prepared to deal with the threats. They must create a strong and safe mission-critical infrastructure for networking and communications.

People safety

Operational staff security is paramount for energy and utilities operators because it can directly impact the continuity of service. The following solutions can help field workers performing critical and dangerous tasks, work safely:

Staying connected with isolated workers is essential. The solution provides a complete set of Isolated Worker Protection services, including man-down, no movement, pull cord functions and emergency button. The notification server helps increase responsibility and safety for operational staff across facilities, in indoor and outdoor environments.

Remote Visual Assistance (RVA) offers communication services comprised of voice, video sessions and documents sharing (photos and videos). RVA is combined with a wearable kit composed of an Android smartphone cradle, an open earphone set, an elastic harness and a Bluetooth® button bracelet for control.

Asset protection

A good physical security system is much more than the sum of its parts. Access controls are core elements to protect facilities from crime and attacks, but energy and utilities facilities are large and remote, which often makes them difficult to monitor.

CCTV cameras provide a global view of entry and exits. Intelligent video analytics offer a new way to see more with less operators, using AI and analytics to identify suspicious movements. Also, intrusion protection sensors are now being connected to the data network, replacing proprietary protocols and dedicated communications systems with easy to integrate IP systems.

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Secure alarm processes and workflows allows operations to connect and monitor alarms from a large range of sensors (such as fire detection, gas leaks, temperature, high pressure) and IIoT sensors to streamline the flow of operational staff alarms notifications.

Industrial switches and Access Points (APs) bring industrial-grade capabilities with highly secure, superior performance to mission-critical applications running in harsh environments and extreme temperatures.

Cybersecurity

A zero trust network can protect against cybersecurity threats to maintain the integrity of energy and utilities systems while delivering full operational capabilities. It protects the organisation's resources, rather than just the network, with a focus on protecting access to resources. The zero trust network architecture is effective, easy to manage and extremely scalable. It assumes attackers are already present and ready to strike. The same high levels of security protection are applied equally to every internal and external person, system, subsystem, application, and device that attempts to access the network. Alcatel-Lucent Enterprise is ISO 27001 certified for information security management.

Communications systems must also integrate all the cybersecurity policies with:

- Security elements built into the architecture
- Native encryption to maintain the integrity of the system
- Best practices including internal and external authentication, regular system audits and password policies
- Software support capabilities that update the code in response to attack and vulnerability detected



2. Increase operations efficiency

Energy and utilities operations typically cover large geographic areas in complex environments, with limited human and technical resources. Technology and innovation will enable agile operational models to match those requirements.

Operations Control Centre (OCC): manages the day-to-day monitoring, directing and coordinating of energy and utilities operational activities to ensure quality of services. A smart OCC relies on connectivity, digitalisation, and real-time communications and collaboration.

- It provides an efficient digital workplace for OCC agents to manage call taking/dispatch tasks, and for staff in the field or in the back office to facilitate their day-to-day work
- It enables end-to-end personnel and asset protection through recording capabilities and emergency management solutions

Network management: This tool provides centralised management of the WLAN and LAN, and simplifies operations.

Centralised analytics also helps with proactive and preventive decisions to maintain network health and improve operational time. Interoperability and an open architecture (APIs) with other systems (SCADA for example) enables quality of service, security and scalability and provides a foundation for IT/OT convergence.

Predictive maintenance: An AI-based network operation companion can provide real-time network monitoring, alerts of potential risks and resolution for network issues, maximising the Quality of Experience (QoE) by being on top of fixes, catching problems before they appear and proactive care of the network.

3. Improve customer engagement

The evolving market has permitted new players to emerge, creating intensified competition among energy and utilities companies. Energy and utilities organisations need to digitise their processes to boost their customer service, ensure their customers' needs are a top priority and reduce response times.

Automated welcome: A Visual Automated Attendant provides a professional image with a virtual receptionist available 24/7. Automated attendant advanced capabilities offer endless opportunities for a personalised routing and greeting experience for customers and supports a sustainable and recurring business relationship.

Multimedia contact centre: A multimedia contact centre enables customer services to optimise omnichannel interactions through voice and digital channels, with the quality, availability and efficiency expected by today's customers, citizens, and consumers. The solution is based on a Contact Centre as a

Service (CCaaS) that enables organisations to harness the power of the cloud while leveraging their communication equipment investments. It also offers AI-based assistance for fast and accurate responses.

Cloud-based connectors and apps: Enhance customer interactions by integrating communications into existing business apps such as Customer Relationship Management (CRM) and IT service management tools. CPaaS integration on an operator website or mobile application enables interaction with agents through chatbot, text messages, voice and video communications.

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Services

Alcatel-Lucent Enterprise services are offered at every step of the deployment lifecycle. Our services, including professional services, training services, managed services, 24/7 support services, customisation services and success management services are available off-the-shelf or tailored to specific needs, delivered on premises or remotely.

Technologies for today and tomorrow

ALE solutions provide increased efficiency and minimised environmental impact before, during, and after deployment, with:

- Energy-conscious product designs that require less power, manage power better and reduce heat dissipation
- Reduced hardware size, miniaturised components and densified ports
- Virtualisation technologies to eliminate the need for some hardware altogether
- Cloud solutions to reduce space and energy requirements
- Architectures and product life cycles optimised for maximum longevity
- Eco-friendly packaging materials
- Compliance to environmental directives for product end-of-life and disposal. Our Go Green program combines our efforts with those of our suppliers, partners and customers to reduce digital pollution, improve waste management and decrease energy consumption across the entire value chain.

ALE solutions to address energy and utilities challenges

1. Connectivity through our network solutions:

- Robust [mission-critical networks](#) and communication infrastructure
- High protection [industrial switches](#) for harsh environments
- [Video surveillance](#) and [IoT sensors](#) connected through a comprehensive workflow to protect people and assets
- [Zero trust security](#) to reduce the cyberthreats vulnerabilities
- [Predictive maintenance](#) platforms using AI-based integration
- [Centralised management](#) connecting all management subsystems as well as SCADA system and other hypervisors through open APIs or O2G
- Openness to interwork with other functional applications
- ANSI and DOD validated
- Zero emissions: Certification and Corporate Social Responsibility (CSR) compliance
- 10+ years support services

2. Communications and collaboration solutions:

- Smart [operations control centres](#) empowered with rich communications (conferencing, chat, video)
- [Remote visual assistance](#) between on-site technician and remote experts
- [Visual automated attendant](#) and [multimedia contact center](#) for improved interactions with users

3. Cloud solutions:

- [Rainbow API connectors](#) and CPaaS to integrate communications into business processes and applications
- Rainbow cloud solution can be deployed on premises with Rainbow Edge
- API and SDK for cloud deployments

[Learn more about Alcatel-Lucent Enterprise solutions for the energy and utilities sector.](#)