HCLTech | Supercharging Progress™

Networks that keep Energy & Utilities safe, reliable and ready for the future

Intelligent. Secure. Resilient

Smarter Energy & Utilities — the network becomes the foundation for resilience, safety and sustainability

Power, water and oil & gas are entering a spend-and-scale decade. As grids decentralize, control rooms turn intelligent and sustainability becomes the mandate, the network shifts from infrastructure to the foundation of the enterprise — sensing, securing and coordinating every asset, site and decision in real time. Resilience, safety and the energy transition now run through it.

$3.3 Tn

(Investments in E&U, 5% Y-o-Y increase 2024-2025)

#4

The most attacked industry in 2025

Renewable energy and smart grid

(Investments in E&U, 5% Y-o-Y increase 2024-2025)

80%

vulnerabilities were classified as critical or high severity)

1.5x

Technology spend double in five years by 2031, CAGR of 20%)

Strategic objectives driving the C-Suite agenda

Secure the critical core

Shrink attack surface by adopting Zero Trust and Micro-segmentation for critical infrastructure

Power a profitable energy transition

Enable renewable and DER integration at scale. Smart, connected grids are the infrastructure backbone of decarbonization goals.

Keep critical services reliable and resilient

Zero unplanned outages across all sites, substations and remote assets. Always-on connectivity is non-negotiable for reliability.

Enable cost and opex efficiency

Automate operations to do more with constrained budgets and talent.

Given the objectives – What industry must do

Modernize and digitize the Infra

Make the **infra more connected, observable and software-driven**

Harden cyber and evidence compliance

Adopt **Zero Trust, Micro-segmentation for critical infrastructure**; prove it to regulators

Integrate DER at scale

Onboard distributed and renewable resources fast — and securely

How the industry is transforming – The shift in operating and business model the imperative forces

Reactive, asset-heavy operations	→	Predictive, nearly zero-ops driven operations
Commodity supplier	→	E&U services and flexibility orchestrator
Implicit-trust, perimeter security	→	Trust-by-design, critical infrastructure
Siloed OT, IT and field networks	→	One converged, intent network fabric

How technology and network aid the transformation – the network becomes the digital spine for E&U

Key technologies that will be driving the transformation

Zero trust and security

Continuous verification, micro-segmentation and policy as code.

AI and AIOps/ orchestration

Predictive analytics and autonomous remediation.

Edge and intelligence

Sensing and decisions at the grid, close to substations and field assets.

Cloud and data platform

Surging telemetry demands intelligence at scale — making cloud and data platforms the essential backbone.

The networks that makes it possible – HCLTech NextGen Networks – One secure digital spine for E&U driving desired outcomes for CXOs

Technology	Network as secure digital spine	Outcomes - CXOs
Zero Trust and security	SASE, Micro-segmentation, identity-aware access	Contained risk, evidenced compliance
Edge and intelligence	Resilient-high performance heterogeneous connectivity	Seamless, always available connectivity
AI/AIOps/ Automation	AI-native operations, AIOps, closed-loop automation/NRE	Reduced opex, faster MTTR, better experience
Cloud and data platform	Network fabric for edge, cloud and data sovereignty	Observable, software-defined, improved business cycle

Network use cases for Energy & Utilities

Campus/Branch/ Substation Modernization

- Wi-Fi 6/7 for indoors
- Private 5G/outdoors/ back up links, micro-segmentation
- SD-LAN, AIOps, observability

Intelligent Control Centers

- Detereministic-low latency secure campus networks
- Full observability – engineered with agentic AI
- Digital twin, Zero Trust networks

Field Force Enablement

- Private 5G, Wi-Fi 6, Satellite backhaul connectivity for mission critical communication
- Monitoring and visibility via IT/OT
- SASE/ZTNA for secure app access

Renewable/SER Site Connectivity/Remote/Harsh areas

- Telemetry from remote sites, IT/OT segmentation
- Secure edge, identity based Micro-segmentation
- Heterogeneous connectivity (satellite/private 5G/Wi-Fi7)

Core Network & security Enablement

- AI-Powered NoC/SoC
- Identity aware segmentation, secure access between industrial and enterprise NWs
- OT aware security and monitoring

Data Center and Multi-Cloud Connectivity & security

- Cloud-on ramp/DC micro-segmentation
- DC Interconnect/Software driven connectivity

The digital spine brought to action – HCLTech AI, use cases, and the impact they deliver

CIO/Transformation Lead

Grid regulation and M&A demand a secure network across every substation and site —new sites shall be deployed fast via a twin-validated and zero-touch rollout.

Assess, Plan and Design

Mandate lands

Board approves modernization and security mandate; of a brownfield/greenfield site

1

Network Assessment baselines the reality

AI based inventory analysis, traffic patterns, flag drift, anomalies and high -risk paths

2

Consulting sets the plan

Priorities become a target architecture with security built in (IT/OT zoning, Micro segmentation)

3

Digital twin proves it

Design is simulated and security tested in twin

4

Deploy and Run

Rollout at scale

Approved design must go live across hundreds of sites with secure provisioning

1

Zero-Touch Deployment

Golden reference designs, AI to roll out the sites, with no drift

2

Digital twin validates

Every change is checked in twin including security before it go-live

3

Live & observable

Live with SLOs & guardrails, ready for monitoring

4

Remote pipelines and substations

Remote connectivity faults are E&U's most frequent and most expensive networks problem — slow to diagnose, manual to fix and dependent on costly site visits.

Manage and Troubleshoot

User loses connectivity
A remote site or device loses its link or telemetry drops. No one is at site
1

The issue is reported
Monitoring tools catches the fault automatically, redundant backhaul keeps the path working
2

AI based diagnostics
RCA Agent checks confirm whether it's a device, policy, config, power, link issue
3

Agentic AI fixes it remotely
Agentic tool to restore the connection automatically — minimal human intervention.
4

Dispatch only if unresolved
What AI can't resolve, escalated to NOC/SOC experts
5

Services Restored and user informed
Connection is back; the incident is closed with RCA. Asset inventory updates itself
6

These actions are proven via outcomes which we have already delivered for leading Energy & Utilities customers

Demonstration via proven excellence

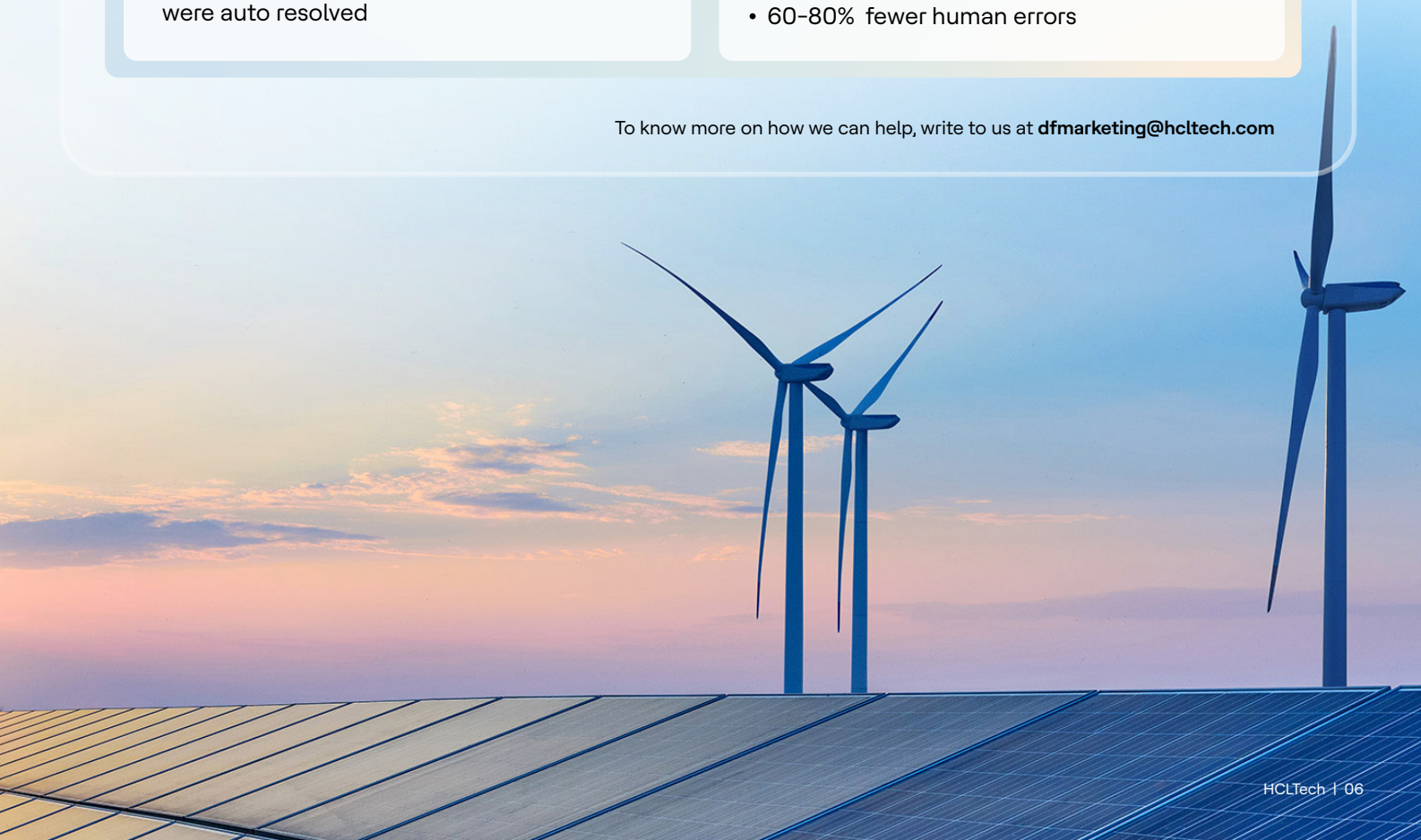
Fortune 200, Global energy and utility company

- MTTR cuts from hours to minutes
- 24*7 resilience , as majority of incidents were auto resolved

Leading Europe's Energy and Utility provider

- 50-70% faster network deployments
- 20-30% lower operating costs
- 60-80% fewer human errors

To know more on how we can help, write to us at **dfmarketing@hcltech.com**



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