

openreach

Upgrading the UK to Digital Phone Lines

The Energy Industry

The energy industry is fundamental to any modern society. So much of what we do – from cooking our meals and heating our homes, to using the internet for work and leisure – is made possible by electricity or gas.

Both gas and electricity companies rely on the telephone network for telemetry operations. They use over 43,000 telephone lines to monitor their services, assess network visibility, and operate circuit breakers. The lines are also used to safely monitor and control the national gas network, and for the remote management of compressors and critical control sites.

The Electricity System Restoration – a vital failsafe in the event of a total or partial shutdown of the National Electricity Transmission System – also relies on the telephone network, as does the visibility and control of Distributed Energy Resources (DERs).

The smooth running of the nationwide energy system relies on the connection between network operators, the hardware within the network, control rooms, and field sites, many of which are in remote areas with no mobile coverage. It's the telephone network which allows them to send and receive data back and forth.

Essentially, all businesses within the energy industry – whether their area is generation, transmission, or distribution – use the telephone network in some way. The challenge, as the industry moves towards Digital Phonelines, will be to ensure that all existing hardware is able to work through the routers provided by the individual CPs.

Potential issues with moving to Digital Phone Lines

- The new router will require a battery back up
- The provision of an Analogue Telephone Adapter (ATA) port on the router will be up to individual CPs
- Data flows may be affected, limiting rapid responses to issues, and a loss in telemtery capacity means fault monitoring will be reduced
- Some gas sites are so remote that they have no mobile coverage
- A loss of support for high speed Dual Tone Multi Frequency (DTMF) signalling
- Remote operation will be affected and may not be possible in crucial areas
- Currently traditional phone lines are critical when direct site control is needed to communicate with control rooms
- Regulatory funding periods may restrict when the energy industry is able to impelment the upgrade

Supply Chain

Energy companies buy hardware and then plug directly into Openreach master sockets on-site.

This is largely for telemetric monitoring and control of things like gas pressure, electricity supply, and network resilience processes, except at substations where it's also used for operational purposes.

Key Stakeholders

In terms of gas, the key stakeholders include

- Cadent
- SGN
- National Grid [Gas Transmission]
- Wales and West Utilities

In terms of electricity, the key stakeholders include

- Scottish and Southern Electricity Networks
- Scottish Power Energy
- Northern Ireland Electricity
- Electricity Northwest
- Northern Powergrid
- Western Power Distribution
- UK Power Networks
- National Grid

For more information, visit www.energynetworks.org, www.energy-uk.org.uk, www.ofgem.gov.uk or www.gov.uk/government/organisations/department-for-business-energy-and-industrial-strategy