Yorkshire Infrastructure Adaptation Forum

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11 June 2021

Northern Gas Networks

we are the network

Who are NGN and what do we do?

2.7m customers served, transport gas not sell it

37,000km of pipes providing >70,000Gwh of energy every year

1400 staff and 700 contractors across 13 offices and depots

Regulated business, five year funding cycle 2021-2026

25,000km^2 network, including large cities and National Parks

365 days a year service, attending c.90,000 reported escapes per year, >99% within 1hr.

Replace >500km of pipes every year

What are NGN doing to adapt?

Understanding future climate risks

Collaborative project with gas and electricity transmission and distribution networks and Met Office during 2020:

1. Identification and prioritisation of weather/climate hazards to energy networks.
2. Review differences between 2009 and 2018 UK climate projections.
3. Analysis of 12 prioritized hazards and how they might change over time. Including interdependencies / interconnections with other utilities / infrastructure.

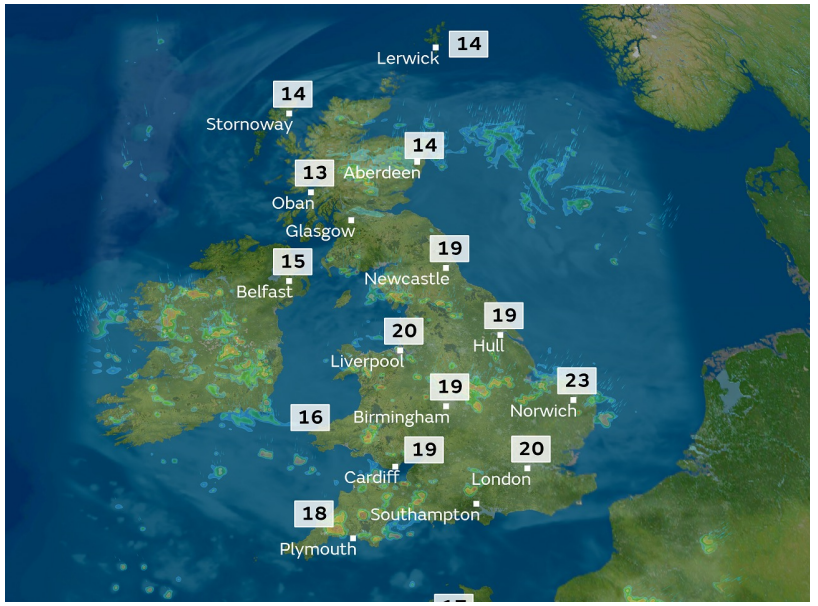

Image source: https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/about

Used to update climate change risk assessments and Round 3 adaptation reporting.

What are NGN doing to adapt?

Pipeline Resilience

- NGN offtakes gas from high pressure National Transmission System (NTS).
- Gas is transported at high pressure (7-38 bar) via 1300km across NGN region via Local Transmission System (LTS) of steel pipes.
- Pressure then reduced to medium and low pressure for distribution of domestic and commercial customers.
- LTS is critical to network operation – provides energy storage capacity via ‘linepack’.
- LTS predominantly built 1960s – 1980 and now oldest operational asset.
- Potentially at risk from river bank / bed erosion, landslip and soil cover loss – risks increase over time as climate changes.
- Safe and reliable operation is critical.

What are NGN doing to adapt?

Example Pipeline Remediation, North Yorkshire

- Land instability identified along route of single feed 19 bar LTS pipeline.
- Detailed engineering assessment undertaken of current and future risks.
- To ensure pipeline integrity 400m local diversion and upgrade of 6” pipe undertaken costing >£2m.

On-going Risk Management

- Assessments of erosion, landslip and flood risks to assets to be repeated at regular intervals.
- New pro-active non-intrusive LTS surveillance programme, inc depth of soil cover (most cost-effective option).
- Regular visual inspection of high risk sections of river erosion.
- Innovation projects into use of drones and satellite imagery for digital assessment.
- 2021-2026 business plan included allowances for pipeline remedial works. Learnt that ‘quick fixes’ often don’t last.

Main barriers / opportunities

- Keeping customer bills down – can be difficult to justify proactive expenditure to address future climate change risks to regulators. Is it better / cheaper to respond instead?
- What is the future of the gas network? Will it still be in use in 2050? How much protection should we give it in the meantime?
- A change of use of the gas networks, eg to hydrogen, provides opportunity to build new assets with greater resilience.
- CCA reporting provides opportunities for UK energy networks to collaborate, identify key risks and initiatives – now started a separate UK energy networks climate change adaptation group

Northern Gas Networks

Want to know more about NGN, our business plan and company performance?

https://www.northerngasnetworks.co.uk/

If you smell gas or are worried about gas safety, call 0800 111 999 at any time of the day or night.

we are the network