

**Electricity  
Distribution**

# Climate change adaptation and resilience

**Will Nightingale**

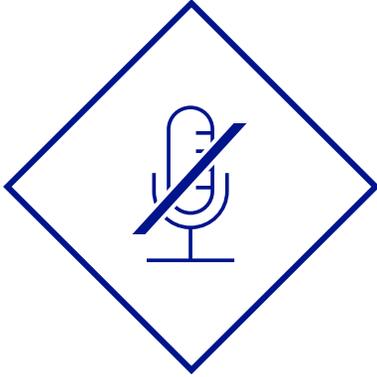
Regional Decarbonisation Manager

February 2026

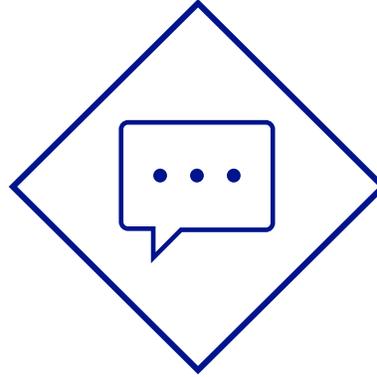
nationalgrid ▶ DSO



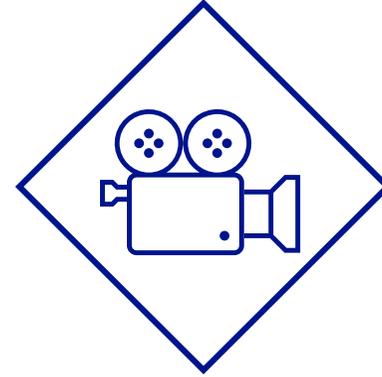
# Housekeeping



**Please make sure your microphone is muted when not speaking**



**For questions or feedback, please raise your hand or use the Q&A/chat box**



**We may record this session for those that could not attend today**

# Why we have set this webinar up

You have asked for clearer information about how we're strengthening the electricity network to withstand future climate risk.

## We want to:

- Provide transparency and assurance on the actions NGED is taking to protect critical energy infrastructure across all four licence areas.
- Support local planning and resilience duties by sharing the data, approaches and evidence authorities need for their own climate adaptation and risk assessments.
- Strengthening partnership working by creating a space for questions, technical discussion and shared understanding of climate-related challenges.



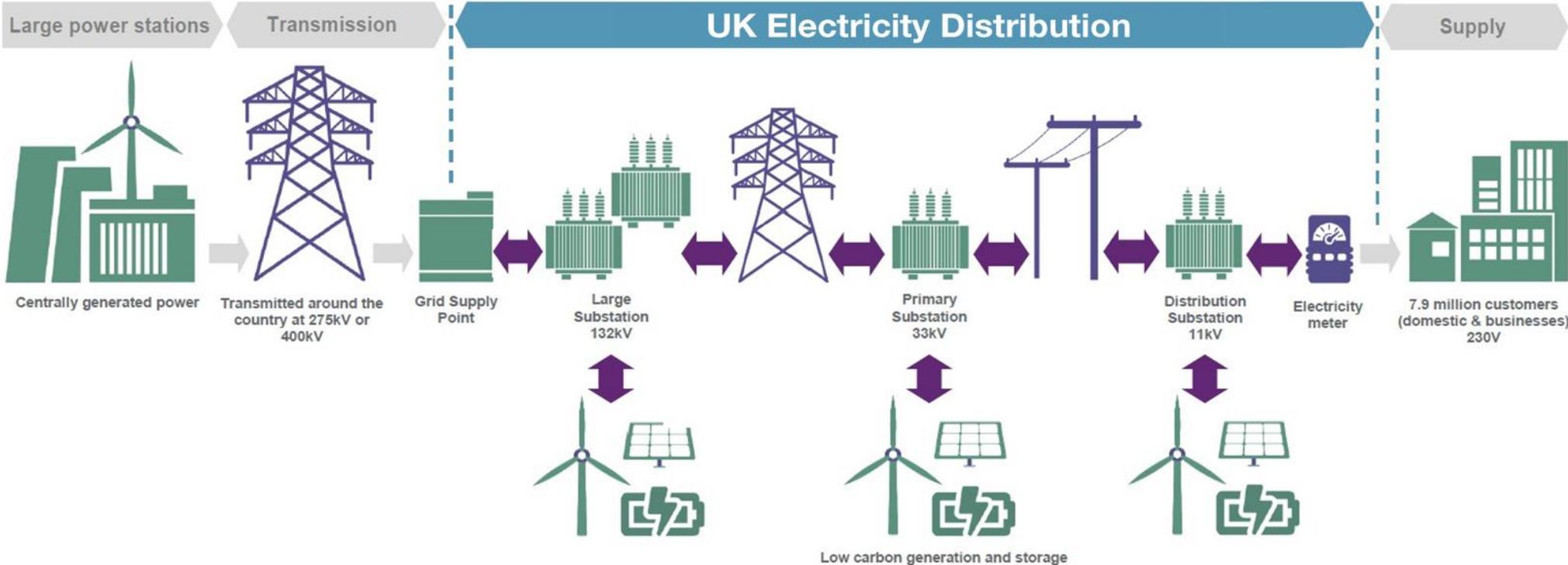
# NGED and NGET.....

## NGET

National Grid Electricity  
**TRANSMISSION**  
(400kV / 275kV)

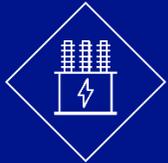
## NGED

National Grid Electricity  
**DISTRIBUTION**  
(132kV / 33kV / 11kV / LV (230V))



# Electricity Distribution

We are the **Distribution Network Operator**.



We design, install and maintain the cables, wires, transformers and substations that make up the distribution network in the Midlands, South-Wales and South-West.



We support customers to get **new electricity connections** by building new network assets.



Our Control Room **switches our network assets in real time** to make sure power is always safe and reliable for our customers.

**nationalgrid**

**nationalgrid** ► **DSO**

We are the **Distribution System Operator**.



We **operate today's distribution system and plan the system of tomorrow**, all based on the priorities of the local communities and businesses that we serve.



We help customers to **connect faster** or make smarter use of their connections through being flexible in their energy use.



Our Energy Management Centre **coordinates and schedules customer assets** to help them make the best use of our network.

# **OFGEM ED2 and ED3**

**OFGEM dictate the price control periods for DNO**

**Revenue determined by incentives, innovation and outputs**

**We are in ED2 (2023-2028), prepping for ED3**

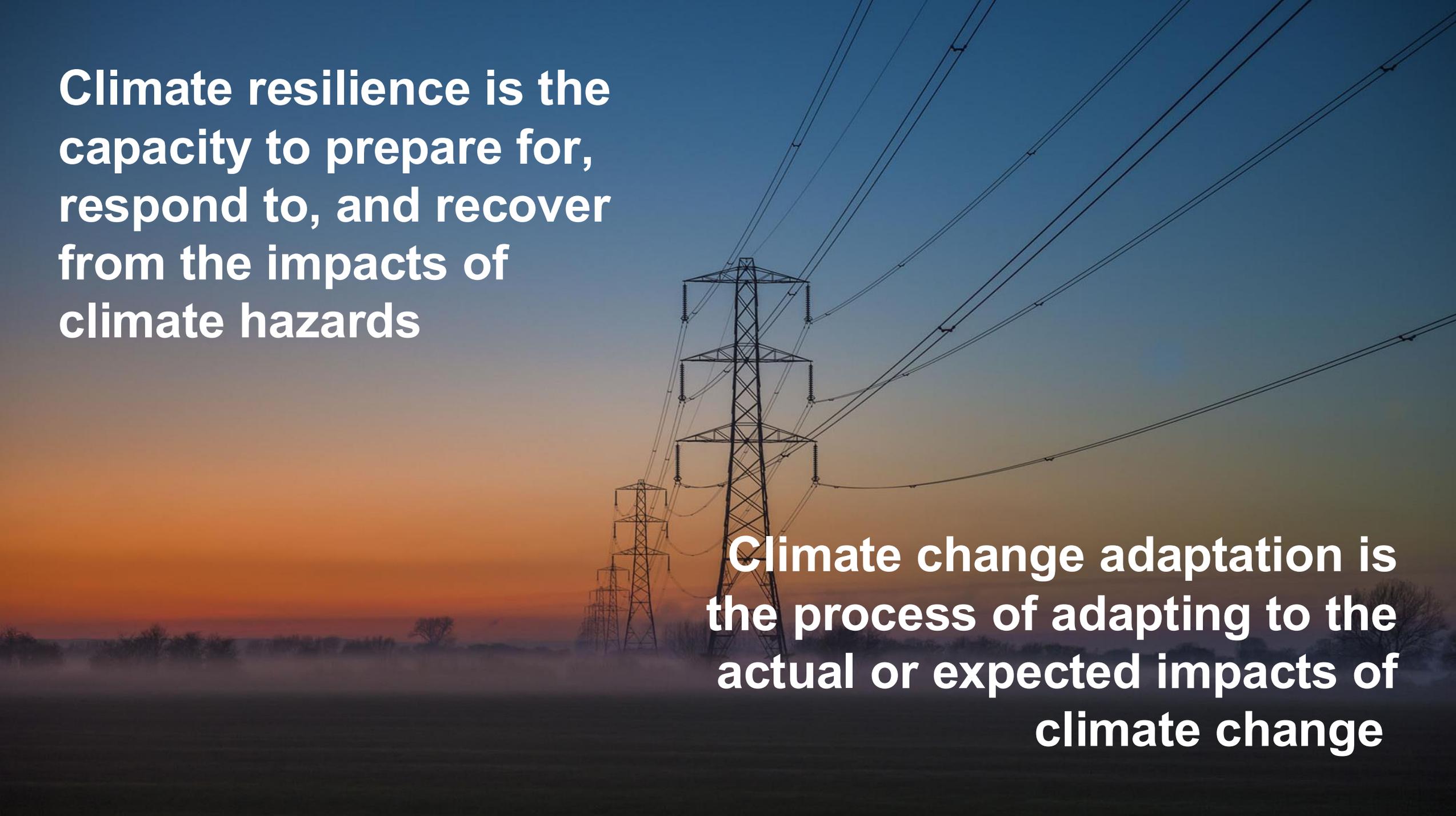
**Electricity  
Distribution**

**NGED's  
approach to  
climate change  
adaptation and  
resilience**

**Georgina Clegg**

Policy Engineer (Climate Change)



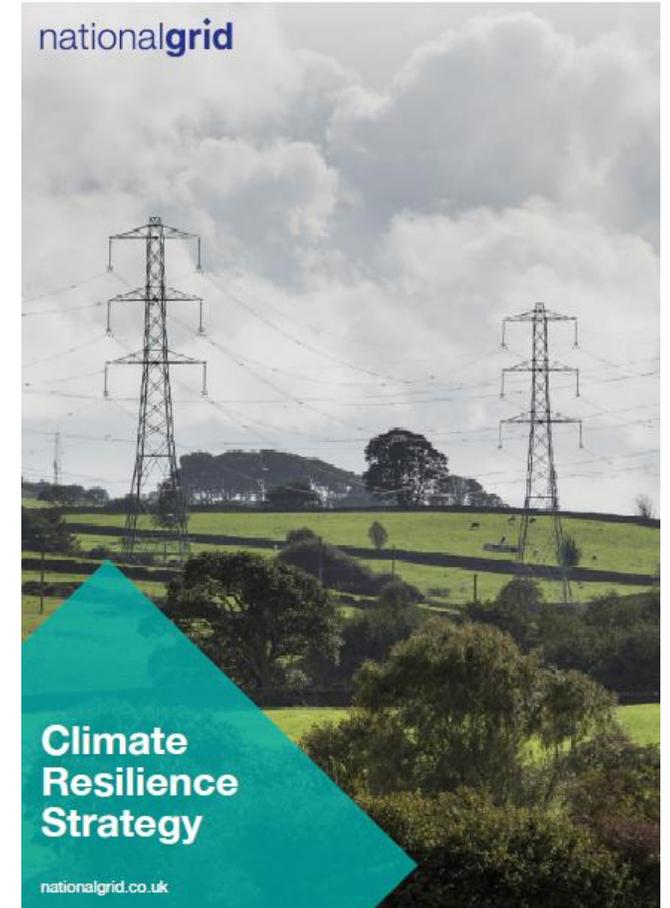


**Climate resilience is the capacity to prepare for, respond to, and recover from the impacts of climate hazards**

**Climate change adaptation is the process of adapting to the actual or expected impacts of climate change**

# Climate Resilience Strategy (2021): Five Pillars

1. **Improve our understanding** of the likely effects of climate change including the ongoing support of a cross-industry climate resilience working group.
2. Continue to **assess risks and impacts** to our network associated with climate change.
3. Further **develop our adaptation pathways** to represent short-, medium- and long-term climate change projections, and challenges across the four licence areas.
4. Develop and implement **cost effective and impactful** climate resilience initiatives in conjunction with other business activities and investment plans.
5. **Review** climate resilience initiatives and strategy to ensure progress and value for customers.



**Electricity  
Distribution**

# **Additional ongoing projects and activities**

We are currently developing a **new set of policies** which will guide how we adapt to climate change, including climate risk assessment and adaptation pathways.

Climate embedded in the **Enterprise Risk Management** process.

## **Wider reporting:**

- National Adaptation Programme
- International Financial Reporting Standards (IFRS / TCFD).

# Ofgem and ED3

ED3 is our next 5 year business plan from April 2028 – March 2033.



Work to establish a long-term resilience goal that electricity networks (DNOs) can work towards (e.g. maintain current levels of resilience by 2080).



To support the goal, there is ongoing work to develop climate resilience metrics and indicators, to better measure and track resilience.



Development of stress testing approaches to help inform climate resilience investment decisions.

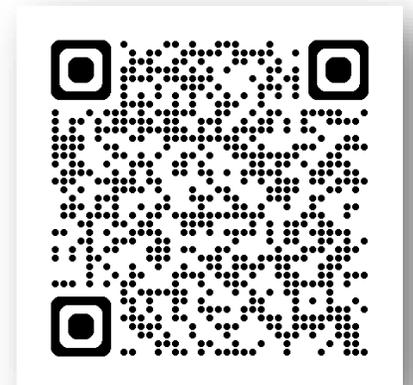
## **Ofgem and ED3**

**‘Resilient networks’ is a key element of the ED3 programme, which includes climate resilience**

**In ED2 we submitted our Climate Resilience Strategy.  
For ED3, we will be providing an updated strategy.**

**We are working on developing our climate resilience investment justifications for ED3.**

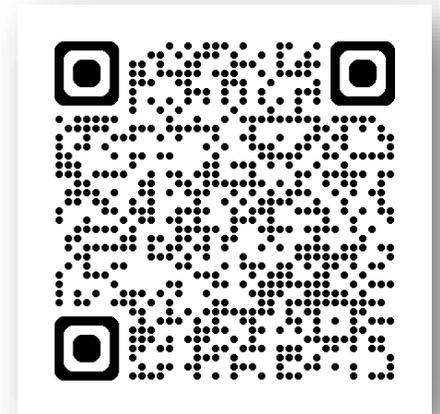
**Climate Resilience  
Strategy (2021)**



# Adaptation report

Adaptation report produced under the Adaptation Reporting Power for the National Adaptation Programme.

- Prioritises climate risks
- Identifies current actions and adaptations



**Electricity  
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**Climate  
hazards that  
impact the  
distribution  
network**



# Substation flooding

Substation flood protection programme: 102 substations were identified for works in the ED2 business plan.

For new sites, flood protection is embedded in the design process.

We follow industry-wide guidance on substation flood protection (ETR 138).

Response actions: All 33kv and higher substations are registered for flood warnings from the Environment Agency/Natural Resources Wales.

# Electricity Distribution

## Flooding at distribution substation, Worcester

- Distribution substation
- Affected by flooding in past
- Raised plinth implemented for flood protection



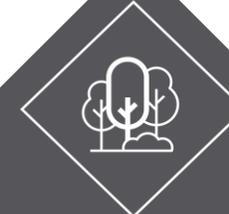
# Windstorms



**Network is designed to be resilient to windstorms**



**Recent mitigations include updates to overhead HV network design to include larger aluminium conductors which have better strength and resilience.**



**We follow ETR132 on vegetation management for resilience (often a large proportion of faults during a storm are due to trees, and windborne material).**

# Storm Arwen

26-27th November 2021

Impacts across the UK

Resilience initiatives, such as:

- Undergrounding of HV overhead lines
- Technology for fault detection
- More resilient alternatives to LV open wire overhead lines



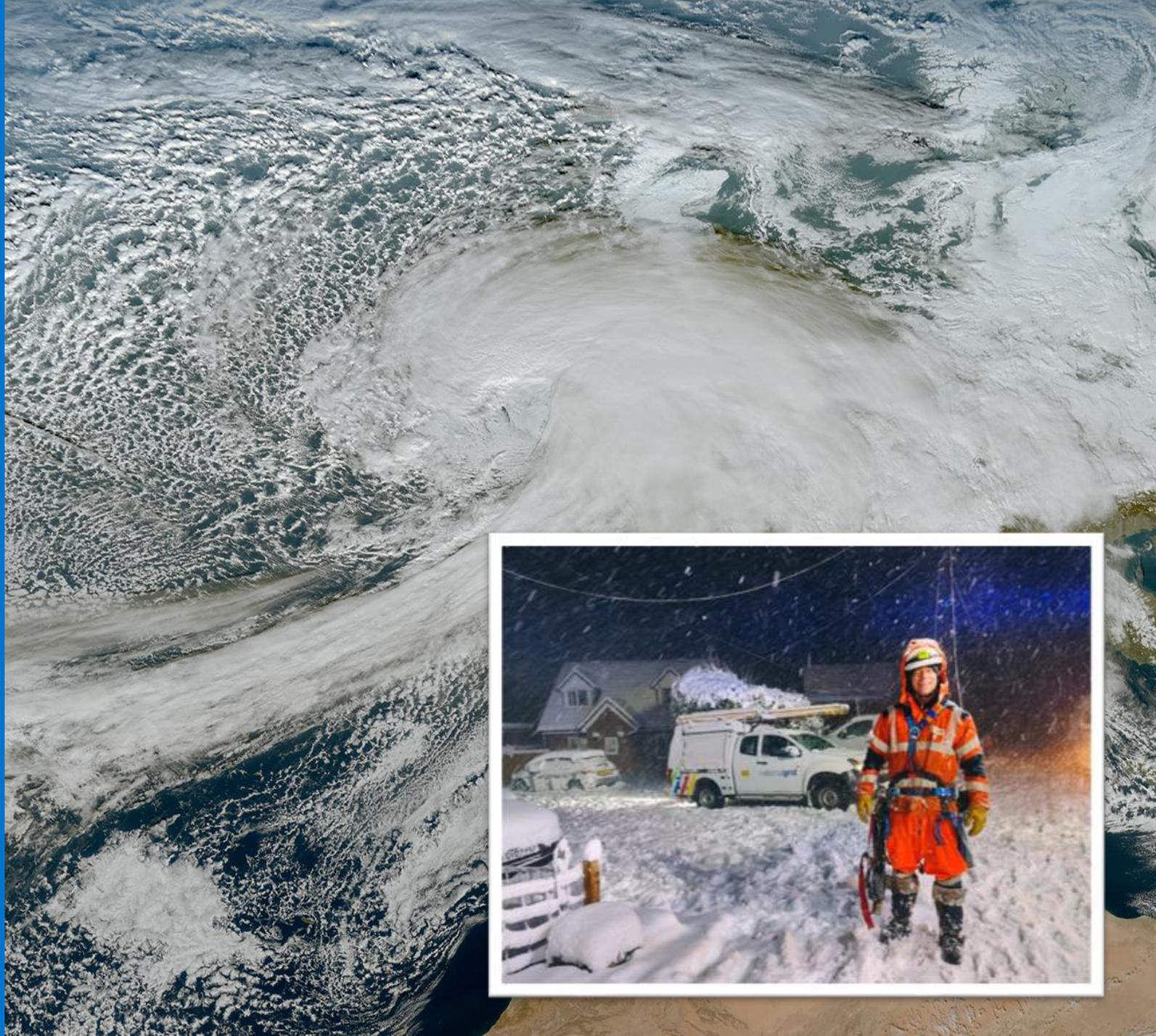
# Storm Goretti

8-9th January 2026

Multi-hazard storm (strong winds,  
snow, rain)

Strongest gusts: 99mph, Isles of Scilly

- Around 120,000 customers were without power at the height of the storm, primarily in the South West.
- Extra engineers, call handlers and control room colleagues were put on standby
- Welfare – 800 customers provided with hot food and drinks.



# Heatwaves are an emerging risk for the distribution network

Extreme high temperatures have the possibility to cause deterioration of some assets over time if they exceed their operating temperature. High temperatures can cause sagging on overhead lines so that they exceed their safety clearance.

We have temperature sensors on some substations, and we are working on developing monitoring, and using it to improve understanding of how heat impacts the network.



# Consumer Research

## **Collaborative consumer research on climate resilience (2026, ongoing).**

- Investigating consumer views on climate resilience with other Distribution Network Operators across the UK
- Seeks to understand views across customer types
- To inform climate resilience plans

# Innovation

## **ACCELERATED (Assessment of climate change event likelihood embedded in risk assessment targeting electricity distribution) (2022)**

- The project aimed to understand how climate risk to electricity distribution networks may change in the future.
- Examined historic fault data, established relationships between weather and impacts, and calculated how this may change in the future using climate projections.

# Collaboration

## **Energy Networks Association Climate Change Resilience Working Group (ENA CCRWG)**

A working group of DNOs across the UK for collaboration on climate change resilience.

## **Infrastructure Operators Adaptation Forum (IOAF)**

Cross-sector forum for infrastructure operators in the UK working on climate change adaptation. For sharing of best practice and latest climate science etc.

## **West Midlands Regional Adaptation Network (WM-RAN)**

NGED is a partner organisation in the network. It is a network of organisations from the West Midlands working on climate adaptation.

# Upcoming climate resilience and adaptation webpage

**New web page dedicated to climate resilience and adaptation.**

It will provide:

- Information on our climate resilience strategy
- Access to our recent adaptation report
- A home for the latest updates

*Coming soon:*

Keep up to date in the quarterly newsletter.

# Questions and Answers

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**Thank you for listening**

Keep up to date in the DSO Local Authority  
Newsletter: please  
email [nged.energyplanning@nationalgrid.co.uk](mailto:nged.energyplanning@nationalgrid.co.uk) to  
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