

# Information for Local Resilience Partners and Emergency Responders



*Keeping the network running safely, reliably and efficiently is our business. We are open for business every hour of every day of the year – no matter what the circumstances.*



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Power cut updates:  
[northernpowergrid.com/power-cuts](http://northernpowergrid.com/power-cuts)

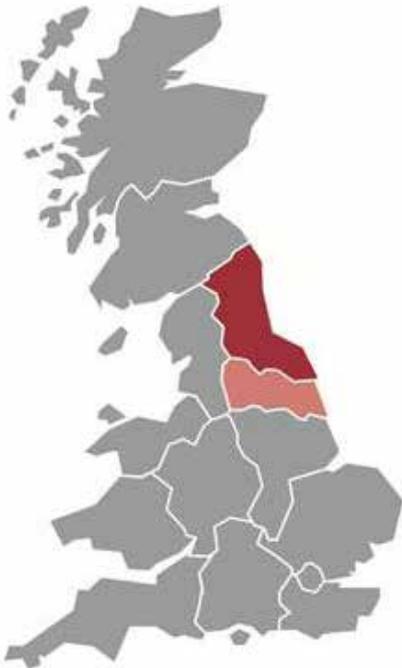


## Introduction

This guide is intended to provide information to Local Resilience Forums (LRFs) and emergency responders. It details our approach to emergency planning and response to incidents affecting the local electricity distribution system. It is primarily aimed at incident leads and civil commanders responding to an incident at tactical (silver) and strategic (gold) level. It also aims to provide an overview of the electricity industry and what should reasonably be expected during a supply interruption.

Northern Powergrid is an electricity distribution business, delivering electricity to 3.8 million domestic and business customers. Covering an area of 25,000 square kilometres, our network extends from north Northumberland, south to the Humber and northern Lincolnshire, and from the east coast to the Pennines. The network consists of more than 31,000 substations and around 91,000 kilometres of overhead line and underground cables.

We also have advice published on our website for customers about how to prepare for a power cut, what to do in a power cut and how to stay safe in an emergency.



Find out more at  
[Northernpowergrid.com](http://Northernpowergrid.com)

# The electricity industry

The electricity industry comprises four main stakeholder groups:

## Generators

Generation is the production of electricity. Electricity is produced either in power stations that burn coal, gas, oil or biomass or use nuclear fuel, or from renewable sources such as wind, solar and water.

## The Transmission System Operator (TSO) - National Grid

National Grid owns and maintains the high-voltage electricity transmission network in England and Wales, balancing supply with demand on a minute-by-minute basis. The network carries electricity from the generators via overhead lines and underground cables to substations where the voltage is lowered ready for distribution.

## Distribution Network Operators (DNO)

Distribution is the transport of electricity at gradually reducing voltages from national grid supply points to final customers, both commercial and domestic. Northern Powergrid holds the licenses for North East England and Yorkshire.

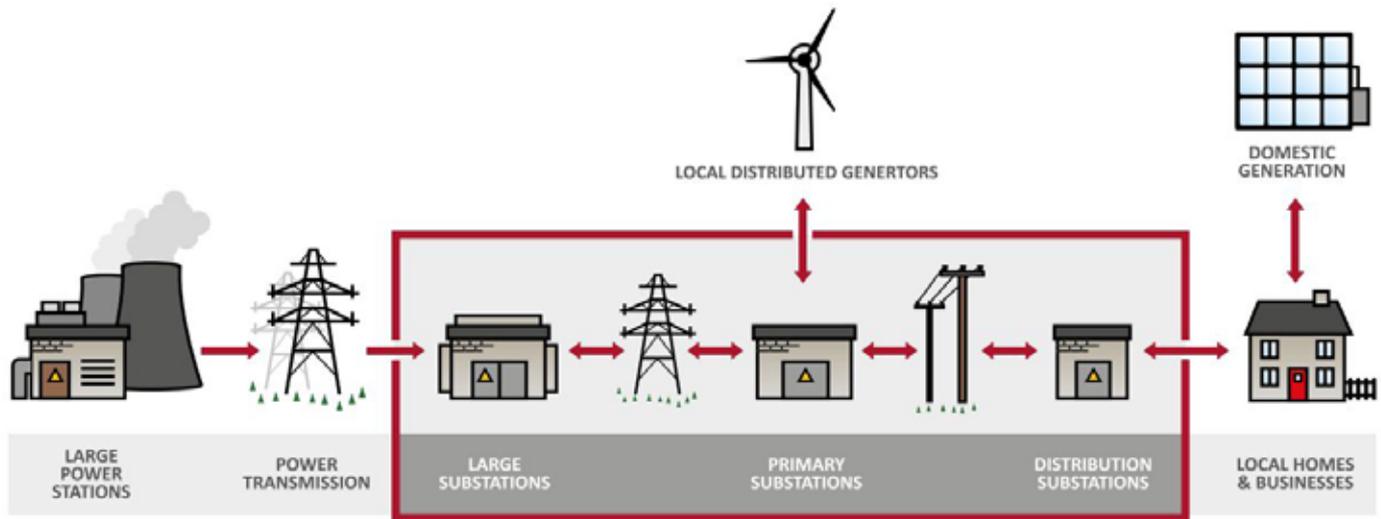
## Electricity Suppliers

Supply is the process of buying electricity in bulk and selling it on to the final customer. Suppliers pay for their electricity to be transported across the national grid and the local distribution network to their customers. Electricity Suppliers also use Meter Operator companies to manage the meters that measure the amount of electricity used.

**Other stakeholders include:**

## Independent Network Operators (IDNOs)

IDNOs (Independent Distribution Network Operators) are operating within our Licensed Area. IDNOs have been granted a licence to operate existing or newly built distribution networks, such as housing estates. Northern Powergrid is not responsible for these networks although we will endeavour to provide partners with relevant contact details wherever we can.



## Internal Installation

The customer or property owner is responsible for all work on the internal electrical installation, including the fuse box and / or main switch. Such work should only be carried out by a qualified electrician.

**Emergency planners should keep a record of the contact details of all electricity companies operating in their area**

## Network Resilience

Although on average, electricity supply is available to customers for 99.98% of the time, it is not possible to guarantee a continuous supply of electricity. Network resilience standards are set at a national level and specify the availability of alternative circuits at varying levels of customer load.

Although the standards are complex, typically in the event of a single failure:

- Equipment supplying tens of thousands of customers or more will be at least duplicated so that the duplicate circuit(s) will maintain supply
- Equipment supplying several thousand customers will have an alternative which may take a few minutes to re-configure remotely or a few hours to re-configure on site
- Equipment supplying a single customer up to several hundred properties will typically be of a single circuit and need to be repaired, which may take many hours depending upon the level of work required. Reconfiguring the network or temporary repairs will typically restore supplies within 12 hours and although a full repair can take longer, supplies will normally be restored within 24 hours
- When a major incident or a complex fault occurs, full supply restoration can take longer than 12 hours depending upon the volume of faults, weather and site conditions, plus the nature of the work.

Customers who rely on electricity, typically larger or more critical installations may have paid for additional connection resilience, although their power supply may still be interrupted in a major incident.

We invest millions of pounds in improving network resilience every year and further information for the whole energy sector can be found in the Sector Resilience Plans for Critical Infrastructure available at

**[www.gov.uk/government/policies/emergency-planning](http://www.gov.uk/government/policies/emergency-planning)**



## Emergency response

We have 24/7 processes to enable a response to any incident affecting the network. This response includes automatic monitoring of the wide area distribution network from our Control Centres and our Customer Operations team are available 24/7 for customers to report power cuts.

- Parts of the network can be reconfigured remotely to restore supplies very quickly from the Control Centre and a full fault response service is available to ensure that field staff can be despatched to site where necessary.
- First line response teams can investigate, reconfigure or reset equipment as necessary and have round the clock access to repair teams fully equipped to carry out all temporary or permanent repairs in order to restore supplies.
- Although the restoration strategy will consider critical services and vulnerable customers, the most effective and equitable method of supply restoration is to restore supplies to all customers as quickly as possible.
- All options for supply restoration will be considered including the use of temporary repairs and the provision of temporary mobile generators. The best option is often permanent repair or replacement to avoid the need for further supply interruptions later in the process.
- As well as reporting a power cut, customers contacting our emergency telephone numbers or the national emergency number (105) will be provided with information updates and the closest estimated supply restoration time.
- Automated messaging and contact logging systems are used in conjunction with call handling agents to maximise the number of customers receiving a response when the incident affects supplies to a large number of customers. Arrangements are in place to provide regular feedback, particularly to Priority Services Customers.
- Information updates on large incidents will be provided by our communications team through national and local TV, radio, newspapers and e-bulletins.
- We use our website and social media to alert customers about power cuts and to respond to customer enquiries.

# Priority Services Customers



We understand that a power cut can be extremely inconvenient to our customers, but for some people it is so much more than that. In order for us to provide additional support to those who need it the most, we have a Priority Services Register for our domestic customers.

- Our customers can choose to register themselves, a family member or friend, if they feel they need extra support in a power cut.
- We are always trying to find new ways to tailor the services we provide to customers' individual needs, as we understand that a one-size-fits-all approach is not appropriate for customers needing additional support.
- Our contact centre will be able to offer additional information, advice and regular updates over the phone. We may be able to arrange for our partner, the British Red Cross, to provide emotional and practical support to you as needed.
- We also have a fleet of Customer Support Vehicles, which may be sent out during power cuts to provide refreshments, blankets and the chance to talk to one of our team face-to-face.
- It's a priority for us to make sure that we know who needs this extra support and so we actively seek to promote our Priority Services Register. We work with care professionals and businesses to make sure that we are reaching our customers who need us the most.
- Our partners can help us to promote our register, improve our service and help us to identify those who will benefit from being on our register. Please get in touch to help us to provide the best support for our customers.
- **During a major incident we can share details from our Priority Service Register with emergency responders. For more details read our Information Sharing page.**



**For more information about our Priority Services Register**

- Call us 24 hours a day on: 0800 169 2996
- Email us at: [priorityservices@northernpowergrid.com](mailto:priorityservices@northernpowergrid.com)
- Visit our website at: [northernpowergrid.com/priority](http://northernpowergrid.com/priority)

## Major incident response

We have robust and well-practised emergency plans in place to respond to any major incident affecting the local electricity distribution network. We are aware of the risks and have trigger levels in place to escalate our response. The plan includes the establishment of an internal operational (bronze), tactical (silver) and strategic (gold) structure and arrangements for coordination of all available staff including electricity industry mutual aid where appropriate.

We operate a three tier response process: an awareness stage where all front line staff are forewarned of an anticipated event and standard response steps are taken including checking on call and duty shift rotas; a preparation stage where additional steps are taken as required; a response stage when the full major incident plan is activated.

We may request partner assistance for support to customers, particularly the vulnerable, where supplies cannot be restored due to incident numbers or site conditions.

### National industry events

The electricity industry has coordinated plans to respond to any national incident. These include the Downstream Gas and Electricity Emergency Plan and the establishment of a Joint Response Team for government and industry. As the response is coordinated at a national level, all strategic and operational decisions are likely to be set nationally.

**Sign up for our interactive map that updates every five minutes to show planned and unplanned power cuts in your area at [yourpowergrid@northernpowergrid.com](mailto:yourpowergrid@northernpowergrid.com)**

## **Severe Weather, including strong winds, lightning, snow and ice accretion**

The most common weather threats to our network are wind storms, lightning and, to a lesser extent, snow and ice accretion. Wind storms and ice accretion have the potential to cause widespread damage. Lightning damage tends to be more localised. Although this type of incident can be very disruptive, unless sites cannot be accessed, most supplies are usually restored within 24 hours by network reconfiguration and repair, apart from in the more remote rural areas.

As well as all public Severe Weather Warnings, we receive a detailed five day forecast from the Met Office enabling us to identify and escalate our response to severe weather.

## **Threats, including metal theft, cyber-attack and terrorism**

We are actively involved in preparation and response planning at a national and local level for all types of threats which may affect the electricity distribution network, including steps to protect those elements of the critical national infrastructure owned and operated by us. This information is subject to security restrictions but can be obtained where appropriate from our emergency planning team or the police CTSA's.

## **Other events, including Road Fuel Disruption and Pandemic Flu**

We have response plans prepared for and experience in dealing with other civil emergencies. We work closely with our Lead Government Department and local partners to mitigate the impact on the electricity distribution network as far as possible. Examples include:

- We hold emergency bunkered fuel to maintain our critical services for at least 10 days
- We have identified all of our staff who have the necessary skills to replace those normally involved in critical services who may be off sick during a flu pandemic
- We have plans to minimise farmland access and disinfect our vehicles involved in critical services in the event of a foot and mouth outbreak.



## Flooding

Overhead lines and underground cables are not normally affected, but substation and service apparatus within premises may be damaged if the water depth reaches critical levels. We contributed to the development of a national standard for substation flood resilience and most of our major substations in a flood warning area have had flood defences installed.

We receive Environment Agency flood guidance and flood warnings and we have a process in place to inspect and identify at risk apparatus and respond as necessary. Safety is the prime concern, forming the basis of any decision making. The danger associated with electrical equipment being subject to flood water ingress must be balanced against the hazards created by interrupting electricity supplies. Whilst every effort will be made to maintain electricity supplies, and to provide notice of any interruption, immediate disconnection may be necessary for safety reasons.

Isolated apparatus may supply premises not affected by flood water and although every effort will be made to restore supplies from alternate sources, it will be necessary to inspect, clean and possibly replace all the electrical equipment potentially damaged by flooding before we can restore supplies. This may take many hours and cannot commence until flood waters have receded.

We may request multi-agency partner assistance to enhance our own substation flood defences, typically military assistance for sand bag defences for larger substations. We may also request help in identifying premises that have been flooded to a depth that may have affected our electrical apparatus and we need to carry out remedial inspection, maintenance or replacement work. However, we are not entitled to work on the customer's internal installation. The customer would need to contact an approved electrical contractor for work on their installation if it is affected by flood water. Further advice is available on the Environment Agency website.

**Detailed information is available in our flood advice leaflet on our website at [northernpowergrid.com/help-and-information](http://northernpowergrid.com/help-and-information)**

## Information sharing

We understand that accurate and timely information is essential in dealing with the consequences of a power cut. During a major incident, the volume of faults on the network, the complexity of the work and the weather, travel and site conditions mean that we often do not have our normal level of detailed information.

We use automated messaging to provide an overview of the major incident and to explain why we are unable to offer our normal levels of service response. An online partner information map is available on request or partners can use the public map at [northernpowergrid.com/power-cuts](http://northernpowergrid.com/power-cuts).

During an electricity related major incident we provide updates to our lead government department and regulator, which can be made available to partners on request. We can also provide copies of media statements that we have issued, although due to the area we cover, we are unlikely to be able to contribute to a joint media statement with partners.

We will endeavour to provide partners with the following on request:

- A summary postcode listing of areas we know to be affected by faults
- A full list of addresses that we believe to be off supply at the time of request
- A separate list of addresses registered on our Priority Services Register that are known to be off supply and we are keeping updated as far as possible
- Wherever possible, we use “de-personalised” data to avoid any potential issues with the Data Protection Act, but we recognise that this information is being provided in the interests of individual safety and will release additional information following an appropriate request.

The level of information available depends upon the event, for example:

- Customers affected by specific incidents, where the extent of affected equipment is known early in the response, are relatively easy to identify
- Customers affected by multiple, widespread incidents are not easy to identify until a full understanding of the situation is available after initial site assessments and high level restorations are complete.

Information can be attained through the relevant liaison officer or single point of contact.

## Multi-agency partner engagement

Our Major Incident Management Plan includes roles to meet our obligations as a Category 2 responder under the Civil Contingencies Act 2004.

Partners can request assistance and advice with any electricity related emergency through our 24/7 Operations Centre, whether or not our internal Major Incident Plan is active. Although partners will normally deal with their normal emergency planning contact, we have additional trained liaison officers who can provide a direct point of contact for coordination and information sharing.

In order to ensure an effective and swift deployment of resource we would prefer to attend via teleconference where possible. This will also enable our liaison officer to be based at our Operations Centre and obtain the most up to date information. We will try to attend all levels of teleconference but will normally need to deploy the same individual as a single point of contact.

Where the situation requires it, or where partners specifically request, we will deploy a liaison officer to a local or regional command centre. Whilst we have sufficient resources to maintain a presence for the full duration of any incident, we are unlikely to be able to support more than one location at a time and would prefer to attend the most senior coordinating group in any one event.

We will proactively contact partners, normally through the Local Authority Emergency Planning Duty Officer, during large electricity related events. As described in the CCA guidance, this is typically where we expect to have 5,000 customers off supply for more than 12 hours. Depending upon the weather conditions and nature of the event, we may activate proactive contact for smaller events.

We will contact partners in a flood event primarily to ensure that we obtain information about premises where our assets may have been affected.



**There are a number of industry electrical safety advice leaflets for emergency responders. These are free to download at [www.energynetworks.org/electricity/she/safety/safety-advice](http://www.energynetworks.org/electricity/she/safety/safety-advice)**

# Northern Powergrid Major Incident Management Plan

Licensed electricity companies are required to have emergency plans. The Northern Powergrid Major Incident Management Plan covers the policies and procedures required to respond to any major incident which has the potential to affect the electricity distribution network. The plan incorporates coordination with other electricity companies and the government.

## National Coordination

Emergency planning issues of shared interest to the government, the Energy Networks Association and Ofgem are reviewed and managed through the Energy Emergencies Executive (E3). E3 is made up of a senior representative from Ofgem, and is supported by a committee (E3C) chaired by a Director of National Grid and comprising representatives from customer organisations, electricity companies, trade bodies and Ofgem. E3C meets every two months and has a number of active task groups meeting monthly and working on various issues, including electricity, gas, pandemic flu, customer communications, cyber and physical security.

Through the Energy Networks Association, network operator emergency planning managers also meet monthly to review resilience and response arrangements. All network companies share industry mutual aid through NEWSAC, which coordinates additional resource allocation across the country in an emergency.

## Regional & Local Coordination

We work closely with Local Authorities, the emergency services, other utilities and all other partner agencies. Activity includes; attending relevant Local Resilience Forum meetings, taking part in exercises and participating in response command groups as necessary.

As an organisation which covers two regions, we are an active member of regional Category 2 groups which aim to resolve common issues on a consistent regional basis.

## **Emergency Planning – Information Sharing & Exercise Attendance**

Partners may request information to assist them in developing multi-agency plans and carrying out local risk assessments through the appropriate Single Point of Contact. Response timescales will depend upon the complexity of the information requested.

Wherever possible, we would prefer to coordinate the provision of emergency planning information through the regional Category 2 responders group so that we provide common format information.

We support multi-agency exercises and events wherever possible. We find these events supplement the internal training offered to our multi-agency liaison officers and may ask exercise organisers to allow these officers to participate or observe.

Our operational systems work in real time. In order to provide meaningful information for electricity related multi-agency exercises, considerable “what if” scenario investigation is required. The resources required limit our ability to participate fully in multi-agency exercises and we may need to provide generic response information in some cases.

Wherever possible, we would like to coordinate participation in electricity related multi-agency exercises through the regional Category 2 responders group so that we can deploy our exercises resources in the most effective manner across all the Local Resilience Forums that we cover.

**Our website has advice for domestic, small business and large business customers, as well as care providers. We advise customers how to prepare for a power cut, what to do in a power cut and how to stay safe in an emergency**

## Risk Assessment

We have well developed emergency plans to ensure a coordinated response to a range of events. National ENA (Energy Networks Association) information leaflets on hazards affecting the electricity industry are available to ensure consistency.

These defined risks to the electricity network are classified as technical failures within the national risk register:

- **H38: Emergency Power Cuts** - The introduction of a national scheme of Emergency power cuts (EPC) to balance available capacity with demand. Power is shared equitably between all but essential users in the most effective way possible, typically involving a pattern of three hour interruptions.
- **H41: Total Shutdown** - A total shutdown of the electricity system has never happened in the UK but is known as a Black Start. There are national plans in place for all electricity companies to respond.
- **H45: Regional Shutdown** - Severe weather or coincident multiple equipment failure can cause widespread disruption of the distribution and transmission networks, causing wide spread customer power cuts. Although most supplies are restored within 24 hours, some customers in remote areas can be without supply for several days.
- **H56: Severe Solar Storm (Space Weather) leading to Industrial Technical Failure** - Solar super storms can cause detrimental effects to the electricity grid, satellites, avionics, air passengers, and signals from satellite navigation systems, mobile phones and more. This document covers the risks/impacts specifically relating to the electricity network.
- **H16, H17, H18, H19, H20, H21: Industrial Technical Failure Due to Flooding** – While network design standards generally ensure a very high level of service and allow for the loss of multiple circuits, they do not provide for certain low probability events including multiple failures or the total failure of a grid or primary substation. The potential flooding of a substation requires particular attention and in these circumstances, customers may be without supply until repairs or other work is carried out.

In an emergency you can call us 24 hours a day on:

**POWER CUT?  
CALL 105**



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