Community Energy Projects

Our guide to getting a connection
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Welcome

At Northern Powergrid, we want to make sure that connecting to our electricity network is an activity that can be undertaken by all our customers, regardless of their prior knowledge.

This guide is aimed at providing community energy groups with the information necessary to help make the experience of getting a connection to our electricity distribution network simple and easy.

We aim to support community energy groups as much as possible, to help them make their projects a reality.
This guide is for community energy groups whose projects need to get a connection to the electricity distribution network. It introduces the reader to the electricity distribution network, and to Northern Powergrid. It also explains the process that groups will need to follow to obtain a connection.

Most projects that are trying to generate electricity will need to connect to the network, and this guide provides a summary of the connection application process for different types of new energy generation likely to be used by community energy groups.

If you are not sure where to start with getting your project connected, are puzzled by the difference between the G83 and G59 processes and which one works for you, or are in the early days of your project and are beginning to think through the tasks ahead, this guide will provide you with information about what is possible and how to secure a grid connection.

We've also included a Jargon Buster on page 22 to help explain some of the terms used in this guide.

Join our LinkedIn groups:

These on-line groups are a regional information network where members share relevant knowledge and experiences. They are open to anyone involved in community energy and are called North East Community Energy Network and Yorkshire and Humber Community Energy Network.

If you want to know more about our work with communities, get in touch: community.energy@northernpowergrid.com
What is Community energy?

The term ‘Community energy’ describes the activity of groups of people coming together to deliver projects to make energy more accessible and affordable for their community. Projects range from energy conservation and generation, to collective purchasing and switching schemes. The community of individuals may have formed around the energy project, or may be formed around other common interests (sports, location, etc.) adding energy to their collective undertaking. Motivations include financial savings, preservation of the environment, or the desire to become more self-sufficient.

Northern Powergrid encourages the growth of Community energy:

- Held local community energy events bringing together 170 stakeholders.
- Maintains a local network of participants in this market.
- Runs a £50,000 annual seed fund to support projects in the initial stages.
- Supports a national pilot, seeking European funding to scale up community energy activity.

Community energy schemes, as with any successful community project, rely on strong local roots, collective action, knowledge, and good leadership. They’re becoming more widespread, as communities are recognising the benefits of generating their own energy or helping their communities cut the cost or amount of energy they use.

There are many examples of community energy projects across the UK and it’s a sector that is growing each year, as more and more communities become interested in the potential that projects can bring.

For more information, visit Community Energy England’s web page at: http://communityenergyengland.org/

Localisation of energy production and use is a growing feature of the low carbon economy. Northern Powergrid has a significant role in helping those involved in community energy projects take their ideas forward.

Community generation projects usually fall into one of two categories:

1. Those that are creating the infrastructure for many households and businesses to install micro generation on their premises through bulk-buying and connecting schemes. These may be solar schemes, utilising community members roofs.

2. A single larger scheme, usually funded by a combination of grants, share offers or other significant funders. These are often projects such as wind or hydro projects that have a higher capital requirement.
"Our job is to help customers get connected to the electricity distribution network."

Northern Powergrid runs the electricity distribution network that provides power to customers in the Northeast, Yorkshire and north Lincolnshire.

We move electricity to and from homes and businesses over our network – we don’t sell electricity, nor do we generate it.

We take electricity from National Grid’s transmission network (which connects the larger power stations) and from smaller generators (such as wind farms) that are directly connected to our network.

Our network consists of 61,000 substations, and around 91,000 km of overhead wires and cables. We distribute power to some 3.9 million properties.

We operate as one company but we are regulated by the energy regulator, Ofgem (the Office of Gas and Electricity Markets), as two licensed businesses: Northern Powergrid (Northeast) Ltd and Northern Powergrid (Yorkshire) plc.

We are amongst the larger businesses in our region. We directly employ over 2,200 people, and also engage contractors and their staff who work with us to keep the lights on in our part of the country.

Where we fit into the industry

Our power network transports electricity between the national grid and the connection to your home or business, operating at voltages from 132,000 volts down to 230 volts at our connection to domestic premises.
You have a choice when it comes to your new connection . . .

Your local Distribution Network Operator (DNO), Northern Powergrid, is not the only company who can carry out the works to get you connected to the electricity distribution network.

There are many independent Connections Providers (ICP’s) that are also able to carry out the design and installation works to get you connected. The works to get you connected can be done by a wide range of properly qualified companies and are referred to as ‘contestable’ works.

Northern Powergrid might still be involved. For example, we might need to carry out the final connection to the distribution network, the diversion or reinforcement of our existing assets. This work is known as non-contestable work.

For any type of connection you are free to approach Northern Powergrid as well as ICP’s for a quotation for all of the works. If you ask an ICP they would need to approach us for a quotation for any non-contestable work but they would then give you a single quotation.

Asking for quotations from different companies enables you to ‘shop around’ and find the cheapest overall connection price.

For the contestable elements, the design specification we provide will show how we would undertake the connection if you want us to carry out the work.

If you chose to use a third party to undertake the connection, they do not have to use our proposed design; however, the overall scheme will have to meet our design standards and we may need to approve or review this design before you start work. Once approved, your ICP can carry out the contestable elements of the works which Northern Powergrid will then adopt.

For further information on contestability:
www.northernpowergrid.com/competition-in-connections

To find an Independent Connections Provider who is active in our area, you can use our alternative connections providers register:
www.northernpowergrid.com/alternative-providers

Or visit the Lloyd’s Register NERS website:
www.lloydsregister.co.uk/schemes/NERS/providers-list.aspx
Other useful community energy resources

Getting access to specialists who can help with your project . . .

**Community Energy England:**
It is the representative body for community energy organisations developing renewable energy and energy efficiency projects and those that support and work with them. Its monthly newsletter will keep you up-to-speed with many topics that you may wish to know about, including changes to government policy, or events taking place near you.

[www.communityenergyengland.org/](http://www.communityenergyengland.org/)

**Department of Energy and Climate Change:**
DECC publishes an online guide aimed at local groups who are interested in setting up a community energy project.

[www.gov.uk/community-energy](http://www.gov.uk/community-energy)

**PlanLocal:**
This resource centre was developed by the Centre for Sustainable Energy and gives you access to practical information on running an energy project.

[www.planlocal.org.uk/pages/renewable-energy](http://www.planlocal.org.uk/pages/renewable-energy)

**Join our LinkedIn groups:**
These on-line groups are a regional information network where members share relevant knowledge and experiences.

They are open to anyone involved in community energy and are called: North East Community Energy Network and Yorkshire and Humber Community Energy Network.

If you want to know more about our work with communities, get in touch: communityenergy@northernpowergrid.com
What is Distributed Generation?

The term ‘Distributed Generation’ refers to the installation of generation plant, embedded and dispersed across a Distribution Network Operator’s (DNO) network.

Environmental issues, technological innovation and new Government policy are the three main drivers behind the introduction and increasing levels of Distributed Generation.

The increase in Distributed Generation is changing the way we design and manage distribution networks.

Until recently, the design and operation of most electricity distribution networks in the UK has been based on the key assumption that power flows from higher voltage systems to lower voltage systems and to the customer; this has now changed and as a result we now face new challenges in operating the distribution network.

The electricity distribution network has a limited ability to accept fault level, thermal capacity and voltage change. These are determined by the rating of the network equipment.

Connecting large-scale generators to the network increases these so there are potential constraints on the ability of our network to connect generation.

Whether or not you are planning to export any of the electricity you generate, your generator will need to be connected to the electricity distribution network, either through your existing electricity supply or via a new dedicated connection.

As your generator can affect our ability to maintain a safe and reliable electricity supply to customers, we have established a simple set of rules to help you get connected, which are displayed on page 12 of this guide.

There are also additional external factors to consider when developing a community energy project, these can include things such as planning permission, and therefore we strongly recommend speaking to your local planning authority at an early stage in your project.

If you need help understanding these rules, please email your questions to: askourexpert@northernpowergrid.com

For further information on the process, and access to the full connection guide developed by our industry group the Energy Network Association (ENA), visit: www.northernpowergrid.com/generation-connection-guide
Types of Distributed Generation range from:
- small-scale generators for single domestic premises (such as solar panels) to;
- large-scale generation schemes such as wind farms.
Simple rule for connecting your generator to the electricity distribution network

Which application form do I need?

Size of your generating unit within any single premises
Is your generation unit less than: 16 amps per phase
OR 3,68 KW for single phase OR 11,04 KW for 3-phase?

YES

Voltage level of connection
Is your generating unit connected at 230 V for a single phase
OR connected at 400 V for a 3-phase system?

YES

Number of generating units
Are you planning to install more than one unit in a single premises?

NO

Number of premises
In how many premises are you planning to install generating units?

1

Small scale generation
G83 Projects on a single premises

You'll need a *G83 Single Premise Connections application form...
Your installer should complete an Installation Commissioning Confirmation Form at: https://myservices.northernpowergrid.com/g83/single

Small scale generation
G83 Projects on multiple premises

You'll need a *G83 Multiple Premises Connections application form...
You can make a new application online at: www.northernpowergrid.com/connections

Large scale generation
G59 Projects

You can apply for a *G59 Connection in our license area at: www.northernpowergrid.com/get-connected

*Please refer to the Jargon Buster on pages 22 & 23 for explanations of G83 & G59 connections.
G83 & G59 connections

G3 small-scale generation refers to installations rated at less than 3.68 kilowatts. Installers should complete an Installation Commissioning Confirmation Form on your behalf.

G59 large-scale generation is the term given to any installation rated greater than 16 amps. You will need to make an application to us before connecting your equipment.

Extra High Voltage (EHV), 33kV/66kV or 132kV connections are bespoke and designed individually.

Small-scale generation
If the rating of your installation is less than 3.68 kilowatts, and only at a single premises, your installer should complete an Installation Commissioning Confirmation Form, notifying us so that we know you are using generation equipment. They can do this after you have connected your equipment but they are legally obliged to notify us of the equipment you are connecting.

Notify us through our website at:
https://myservices.northernpowergrid.com/g83/single

If you are connecting small-scale generation to more than one premises, you will need to notify us in advance of connecting your equipment. This applies even if all units are no more than 16 amps per phase. We may have to carry out work on our network before you make your connection, to enable your generation to work properly.

Notify us through our website by making a new connections application online at: www.northernpowergrid.com/connections

Large-scale generation at HV and LV
For any electricity generation projects connected at High Voltage (HV), 11kV/20kV, or Low Voltage (LV), 400V/230V that produce more than 3.68 kilowatts of electricity (16 amps per phase), we will need to agree with you technically how to best connect your generator to the network. We may need to make modifications to our network to accommodate your connection. Substantial work could be required to get you connected and the costs can be considerable – so always consult us before purchasing generation equipment. You can complete our online application process and our connections team will work with you to provide a quotation for the necessary work.

Apply online: www.northernpowergrid.com/get-connected

Large-scale generation at EHV
In preparing your quotation for your connection, we will send you a design that will include a functional specification, describing the proposed connection, and differentiating between the contestable and non-contestable elements.

If you are considering or planning a major project then we would be more than happy to get involved to help you understand your connection options as early as possible. We would welcome you contacting us by giving us your details and one of our team will contact you to arrange a meeting.

Email us at: majorworksform@northernpowergrid.com

For further information, regarding G83, G59 and technical queries please contact our Connections Enquiries Team on 0845 070 2703 or view our Jargon Buster on pages 22 & 23.

You can also email your enquiry to: getconnected@northernpowergrid.com

Or visit our website: www.northernpowergrid.com/get-connected
Before you apply for a connection, why not consider the following . . .

Budget estimates

Before submitting a formal quotation request, a free of charge estimate is ideal for projects where you want us to provide you with the likely costs you may incur to connect your generator. We calculate our estimates by making assumptions about the work we will need to do and base these on similar work we have carried out in the past.

We will send you an estimate within 10 or 20 working days, depending on the capacity that you want to generate. In doing this, we will not have visited the site, analysed the electricity distribution network in the area or carried out any technical studies.

The quickest way for you to get an estimate is to apply online using the electronic application process at: www.northernpowergrid.com/get-connected

To provide you with an estimate you will need to supply us with:

1. Your name and address;
2. Site address;
3. A site location plan showing the site boundary and connection point;
4. Maximum capacity (kW) requirement;
5. Summary of the electricity generation;
6. Summary of any equipment which is likely to cause disturbance to the electricity supply.

Average project costs and timescales

A number of key factors influence the cost of getting connected or upgrading an existing connection if needed;

- The electrical capacity you need and the nearest place to plug into our network (‘point of connection’) at the voltage level required;
- Whether the connection to your site is overhead, underground, or a combination;
- A substation or suitable point at your site to site our equipment;
- If network reinforcement is needed to accommodate for the power output from your scheme, under current legislation the cost of any reinforcement will be apportioned to you depending upon the size of the connection you require.

Our online guide is designed to help you understand the costs and time-scales involved with getting your generator connected. The information is based on current average time to quote, average price and average time-to connect. Please visit: www.northernpowergrid.com/get-connected
Connection guide prices

Shown below is an indication of our distributed generation average timescales and costs over the previous year. A full list including updates can be found on the following link:

<table>
<thead>
<tr>
<th>Connection Type</th>
<th>Guaranteed Standard</th>
<th>Average Time to Receive a Quotation</th>
<th>Prices from Ex. VAT</th>
<th>Average Price Ex. VAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small scale generation for a single property (G83 Projects on a single premises)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple small scale generation connections (G83 Projects on multiple premises)</td>
<td>45 days</td>
<td>35 days</td>
<td>£1,131</td>
<td></td>
</tr>
<tr>
<td>Low voltage generation connection</td>
<td>45 days</td>
<td>35 days</td>
<td>£938</td>
<td>£13,165</td>
</tr>
<tr>
<td>High voltage generation (G59)</td>
<td>65 days</td>
<td>60 days</td>
<td>£54,100</td>
<td>£202,690</td>
</tr>
<tr>
<td>Extra high voltage generation (G59)</td>
<td>65 days</td>
<td>60 days</td>
<td>Price on application</td>
<td>Price on application</td>
</tr>
</tbody>
</table>

We don’t make any changes relating to this work, but we need you to notify us that you’ve installed the generating units.

Prices are dependent on the number of premises you want to connect generation to.

For further details about Guaranteed Standards see page 19.
Tools and information to help you develop projects

Generation Availability Heat Maps
We have created capacity maps based on fault level headroom, which show our capability to connect large-scale generators to our existing network without expensive reinforcement work, or via dedicated circuits to major substations, operating at 33kV.

If you are thinking of connecting a generator these maps will give you an indication of how easy it might be to get connected. There may be circumstances where we cannot connect you at your preferred point; however we will discuss all of the technical options or possible points of connection with you during the quotation process.

The maps cover 11kV and 20kV supplies (not the low voltage network), and display the relevant information when a postcode is entered. Each primary substation has been given an overall classification based on the known constraints for that area.

Connections to the primary substations with an overall amber/red classification are still possible, however there might be a requirement for significant network reinforcement to overcome the impact on the network constraints.

Please visit: www.northernpowergrid.com/generation-availability-map

Attend our monthly customer surgeries
At our customer connections surgeries we will have experts on hand to help you with advice and planning, finding potential solutions for your project needs and answering any other queries you have on current or future projects, some of which could include:

- How close your proposed project is to the network and whether there is any ‘spare’ capacity
- The process of applying and connecting to our network
- The choices you have about who will carry out any connection works and the type of connection you need.

You are welcome to attend a surgery prior to submitting a formal quotation request. For a list of our surgeries and to register to attend, please visit: www.northernpowergrid.com/customer-events-and-surgeries
The seven major process steps of getting you connected are as follows . . .

1. **Apply for your connection**
2. We will send you an estimate or a quotation, which is valid for 90 days.
3. Return your signed acceptance and payment.
4. We will assign you a project manager who will contact you to arrange your work.
5. We will send you a new Meter Point Administration Number (MPAN) which you will need to give to your chosen supplier so that you can arrange to have your meter fitted.
6. We’ll complete your work.
7. Your supplier will then arrange your meter installation.

You are now connected and generating
A quotation is a formal offer to provide you with an electricity connection. This is our price to provide the connection you require, there is no charge for quotation.

The quotation will specify:
- The total price including a breakdown of costs;
- A description of the works required to facilitate the connection;
- The terms and conditions of the offer;
- The estimated delivery timescale;
- Details of any interactivity. (How your offer is affected by other offers already made.)

Getting a quotation

The quickest way for you to submit an application is to apply online using the electronic application process at: www.northernpowergrid.com/connections

The forms you need to fill in are referred to in the industry as ‘G83, stage 2 application form’ or the ‘G59 application form’ (please refer to pages 12 & 13 and the Jargon Buster on pages 22 & 23 for an explanation of these classifications).

You will get the option to ask for a quotation on both contestable and non-contestable work or non-contestable only.

For further information on contestability download: A guide to Simplifying Competition in Connections at: www.northernpowergrid.com/competition-in-connections

Interactivity

When we have more than one application for a connection to the same part of our network, the applications become interactive with each other. If this occurs, we will advise you in writing along with your position in any queue along with the associated process for accepting interactive connection offers.
Quotation validity and Guaranteed Standards

It is our aim to provide the best possible service to our customers.

How long is a quotation valid for?

We understand that community-driven projects can take longer to develop and find it difficult to progress as quickly as commercial developers.

Here are some items to consider with regards to our quotations:

- A quotation is valid for 90 days. During this period we reserve the right to amend the terms and conditions of the quotation.

- If you don’t accept our quotation within 90 days and re-apply, often the costs will be similar. However, the costs could change due to increases in material and labour costs since your original application. There is also the possibility that other connections have been added to our network during this time and we no longer have the capacity to supply your development from our existing network. This could have a significant effect on the scope and cost of your development.

Guaranteed Standards

The Connections Guaranteed Standards are standards of service set by Ofgem, the industry regulator. These standards define the maximum number of days we can take to provide you with a quotation and deliver your connection when you apply to electricity distribution network operators throughout Great Britain. They are backed by a guarantee – you will receive a payment if they are not met. We believe that it is important for you to know what levels of service you can expect from us and that we work to the standards described in this section.

Regulated standards that apply to distributed generation connection applications . . .

<table>
<thead>
<tr>
<th>QUOTATION STANDARD</th>
<th>TYPE OF CONNECTION/ SERVICE</th>
<th>TIMESCALE</th>
<th>DAILY LATE PENALTY THAT WE INCUR</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECDGS3a</td>
<td>Provision of an LV generation quotation</td>
<td>45 working days</td>
<td>£50 to be paid to the customer</td>
</tr>
<tr>
<td>ECDGS3b</td>
<td>Provision of an HV generation quotation</td>
<td>65 working days</td>
<td>£100 to be paid to the customer</td>
</tr>
<tr>
<td>ECDGS3c</td>
<td>Provision of an EHV generation quotation</td>
<td>65 working days</td>
<td>£150 to be paid to the customer</td>
</tr>
</tbody>
</table>
The ‘second comer’ rule – national rules set out how costs are shared if more than one customer connects to a specific piece of our network within 5 years.

Under current government legislation in the case where a customer, the ‘first comer’, has paid for all the connection assets, should a ‘second comer’ seek also to connect to those assets then we are required to recover a portion of the ‘firstcomer’ costs from the ‘secondcomer’ and refund this to the first customer. This applies only if the ‘secondcomer’ connections within 5 years of the ‘firstcomer’ assets being installed.

An illustration of the ‘secondcomer’ rule

This amount varies on each job and is dependent on assets used, length of assets used and voltage utilised.

Sole Assets

New infrastructure required to connect your generation from the point of connection on our existing network to the point of supply on your site is classified as sole assets and is therefore paid by you in full.

Reinforcement Costs

Reinforcement of our existing network to increase the electrical capacity and enable the flow of electricity onto the network will be apportioned and therefore you will only pay a portion of these costs depending on the size of connection you require.
Legal considerations

There are a number of agreements and contracts that need to be in place prior to energisation of your connection. We recommend that you seek professional assistance if you are in any doubt.

Connection Agreements

You will be required to enter into a Connection Agreement with us. This is agreement for the connection once it is energised and includes rights and obligations for both parties, in Northern Powergrid providing you with a connection and you are using that connection.

Wayleaves and consents

When the equipment and assets required to connect your generation to our network are on a third party’s land, we will need to secure land rights through an Easement, Wayleave or Land Transfer for the asset prior to energisation. We may also require consents for overhead lines, environmental restrictions and planning.

Adoption Agreements

Where the connection works are carried out by an ICP, an Adoption Agreement is required to be put in place prior to energisation. This agreement sets out the terms under which we will adopt the new constructed assets installed by the ICP.

For further information regarding legal considerations when getting your connection, please contact our Connections Enquiries Team on 0845 070 2703.

You can also email your enquiry to: getconnected@northernpowergrid.com

Or visit our website: www.northernpowergrid.com/get-connected
Adoption agreement
An agreement which sets out the terms and conditions for the DNO to adopt assets which have been constructed by an ICP.

Connection agreement
An agreement between you and the DNO detailing terms and conditions for connecting to and remaining connected to the DNO’s network.

Contestable work
Work that is open to competition and can be carried out by Independent Connection Providers (ICPs).

Distribution network
A system of electricity including cables, lines and equipment that connects the transmission system and distributed generation to end users. In England and Wales the distribution systems are the lines with a voltage less than or equal to 132 kV.

Distributed Generation (DG)
An electricity generation scheme that is connected to the Distribution network. The term is used to differentiate from electricity generation schemes such as large coal power stations, that are connected to the electricity transmission network.

Distribution Network Operator (DNO)
The DNO owns, operates and maintains a Distribution Network and is responsible for confirming requirements for the connection of distributed generation to that network.

Easements
A right to cross or otherwise use someone else’s land for a specified purpose.

Extra High Voltage (EHV)
Networks operating above 20kV, i.e. 33kV, 66kV or 132kV.

Fault level headroom
The highest electric current that can exist in a particular electrical system under short-circuit conditions.

G83 Single Premise Connections
Connection where the rating of your installation is less than 3.68 kilowatts, (less than 16 amps per phase), and only at a single premise. If so, your installer should complete an Installation Commissioning Confirmation Form at: https://myservices.northernpowergrid.com/g83/single

G83 Multiple Premises Connections
Connection where the rating of your installation is less than 3.68 kilowatts, (less than 16 amps per phase), and is connected at more than one premise. You will need to notify us in advance of connecting your equipment. This applies even if all units are no more than 16 amps per phase. You can notify us through our website by making a new connections application online at: www.northernpowergrid.com/connections

G59 Connections
For any electricity generation projects connected at High Voltage (HV), 11kV/20kV, or Low Voltage (LV), 400V/230V that produce more than 3.68 kilowatts of electricity (16 amps per phase). We will need to agree with you technically how to best connect your generator to the network. You can apply for a G59 connection in our license area at: www.northernpowergrid.com/get-connected
High Voltage (HV)
Networks operating between 1 kV and 33kV, i.e. 11 kV or 20kV.

Independent Connections Provider (ICP)
An Independent Connection Provider (ICP) is a nationally accredited company that is permitted to build electricity distribution networks to the specification and quality required for them to be adopted by a Distribution Network Operator (DNO).

Independent Distribution Network Operator (IDNO)
IDNO’s design, install, own and operate inset distribution networks located within the areas covered by the DNO’s. An IDNO continues to own and operate the part of the network that it builds, carrying out any required maintenance and repair activities.

Interactive connection applications
When two or more applications for connection are made that make use of the same part of the existing or committed network, or otherwise have a material operational effect on that network.

Land Transfer
Transfer of ownership from the landowner to another party.

Low voltage (LV)
Networks less than 1 kV, i.e. 230/400 V.

Non-contestable work
Work that must be carried out by us and is not open to competition from ICP’s.

Thermal Capacity
The current carrying capacity of the cable determined by the heating effect caused by electrical losses.

Voltage Change
Deviations in system voltage.

Wayleaves
A right of way granted by a landowner.
How to contact us

For further information or to discuss your Community Energy project please contact our Connections Enquiries Team on 0845 070 2703.

You can also email your enquiry to: getconnected@northernpowergrid.com

Or visit our website: www.northernpowergrid.com/get-connected