C. An Overview of Getting Connected

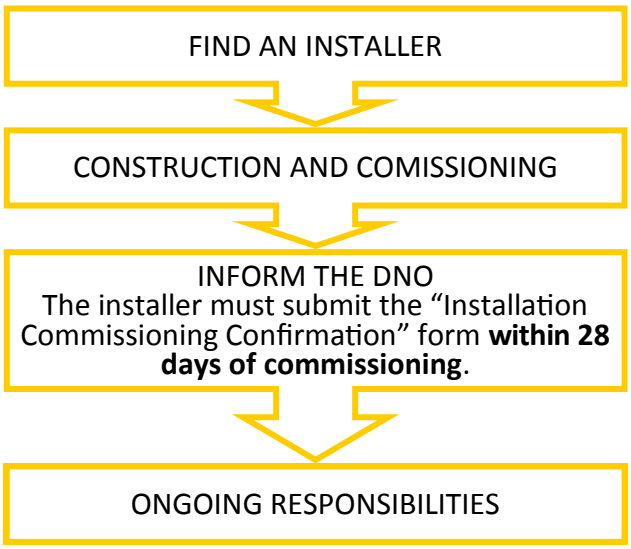
In this section:

- An introduction to getting connected
- The main tasks in the process of connecting one or more units within a single customer's installation, and who can help you
- Guidance on where to find more information

Introduction

In most cases, the installation of small generating units into a single premises will have very little affect on the network. Therefore the connection process is relatively simple, and can be summarised as "fit and inform".

The diagram opposite presents the key actions that you have to complete to connect one or more units of small-scale generation in a single premises. These tasks are based on the requirements set out in EREC G83, and are described in more detail in this section.



Note that this document covers the process for connecting generation to the distribution networks in Great Britain. Northern Ireland has different connection arrangements, for example different versions of Engineering Recommendations G83 and G59 are in use. See www.nie.co.uk

Supply Issues

Your DNO is obligated to maintain the power quality on their network within a set of defined limits. These include maintaining voltage at the required levels. This is so that customer equipment is not damaged. If you have a voltage complaint you should contact your DNO. Your DNO should respond to your complaint within 5 working days, or visit within 7 working days. If work is required to correct the issue, the DNO should complete this within 6 months.

In rare cases, such as where there are many generating units in a small area, the DNO may feel it is necessary to for you to disconnect your generating unit in order to maintain the power quality on the network. This will be a temporary measure until the problem is resolved. As long as your equipment and its installation complies with G83, then the DNO will be responsible for resolving the problem at their own expense. The timescales for this will depend on the nature and complexity of work to be done.

Getting Connected — Main Tasks

Finding an installer

The first task is to find a competent installer, who is using type tested equipment (see note in "Is this the right Guide for my project?"). There are companies who design, install and commission domestic generation. They can fully certify and sign off installations. Certified generation products and installers can be found on the following website: www.microgenerationcertification.org

The Microgeneration Certification Scheme is operated by the Department for Business, Energy and Industrial Strategy (BEIS). Your installer must be certified in order for you to claim Feed-in Tariffs, with the exception of hydro and anaerobic digestion projects, which have to go through the ROO-FIT process. There is more information about this in Section F: Selling Electricity - Feed-in Tariffs (FITs).

Construction and Commissioning

Your installer should be aware of the requirements to ensure that construction and commissioning is in line with EREC G83. These requirements are described in Section 7 of EREC G83, which states that the equipment must be installed within the manufacturers' instructions, and that no modifications should be made.

During the commissioning, your installer will check that your equipment is working as it should. EREC G83 specifies that the installation must act as required in the event of your mains power being interrupted.

Informing the DNO

Once your installation and commissioning is complete, the DNO needs to be made aware of your generating unit(s). This is so that the DNO can take this into account when operating and designing the network.

Your installer must notify the DNO **within 28 days** of commissioning the generating unit, and provide them with information on the installation. This is a legal requirement.

The information is captured on an "**installation commissioning confirmation**" form, which is given in Appendix 3 of EREC G83. This is available free of charge on the Energy Networks Association website.

Note: DNOs may have their own installation commissioning confirmation forms on their websites—a web search should help you locate the forms you need, or try telephoning your DNO.

Ongoing responsibilities

Although the focus of this Guide is to inform you about the process of connecting your generation to the distribution network, you should be aware that once it is connected you have some responsibilities. This includes the responsibility to keep it maintained by someone who is competent to do so.

Dealing with disputes

If you are not satisfied with a particular aspect of service during the process of connecting your generation, your first port of call should be the party with whom the issue lies, e.g. the DNO, supplier, etc. DNOs have their complaints process set out on their websites. If you still cannot resolve the issue you can contact the Energy Ombudsman:

www.ombudsman-services.org/energy.html

If you are still unable to resolve the matter, as a last resort it can be referred to Ofgem.

Getting Connected — IDNO's Networks

The process for connecting your Distributed Generation to an IDNO's network follows EREC G83 or G59, and is therefore similar to connecting to a DNO's network. IDNOs are licensed entities and are bound by some of the same licence conditions as DNOs, including certain performance standards such as timescales for responding to requests for quotes. The majority of what is included in this guide applies to both DNO and IDNO connections.

However, there are a few key differences for a Distributed Generation connection to an IDNO network. The most significant of these is that the IDNO has a relationship with their DNO. This relationship will not involve you directly, but may restrict what the IDNO can readily allow to connect to their network. This is not likely to affect a generation project that is compliant with G83.

To determine whether you are connected to a DNO or IDNO network, refer to the guidance on page 11.

Getting Connected — Energy Storage

Storage devices for electrical energy are becoming more prevalent, and can be used as part of Distributed Generation schemes to allow generated electricity to be stored within the premises rather than exported to the distribution network. DNOs treat storage as generation, and need to be aware of storage because of the potential impact on their networks. Therefore storage needs to meet the relevant connection requirements (EREC G83 or G59).

If you are planning to use storage in conjunction with PV to offset consumption in your home, the total connected generation is likely to be above 16A / phase and G59 should apply. However by Autumn 2017 the ENA expects to have implemented a fast track application process, for domestic scale storage. This will take the form of an online tool and is expected to reduce the connection time from 45 days to 10 days or less. If the storage is intended to be operated in island mode (during a power outage) the fast track process is not applicable and G59 applies.

Health and Safety considerations

Safety is very important in the design of generation connections. Some of the safety requirements for Distributed Generation connections are set out in EREC G83. This document references the Regulation that informs these requirements, the Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002, and also lists the relevant British Standards.

You can find out more about Health and Safety aspects of Distributed Generation connections on the following websites:

- The Electrical Safety Council (ESC): www.esc.org.uk
- The Energy Networks Association—Safety, health and environment: www.energynetworks.org/electricity/she/overview.html

Where to Find More Information

If you want to find out more, these documents are particularly relevant:

- **Engineering Recommendation G83**: Recommendations for the Connection of Type Tested Small-scale Embedded Generators (Up to 16 A per Phase) in Parallel with Low-Voltage Distribution Systems — a technical document, with references to other relevant sources of detailed technical information. Key appendices of G83 are available free of charge on the ENA's Website
- **Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002, Section 22**: Statutory Instrument Number 2665, available free of charge.
- Ofgem's information about how to get an electricity connection for a new building or site.

Some DNOs have produced their own guidance notes for small scale Distributed Generation connections - check your DNO's website.

D. The Connection Application: Connection Notification

In this section:

- What the installer of your generating unit needs to do to notify the DNO that your generation has been installed and commissioned in accordance with EREC G83
- Details of the information that you will need to provide to the DNO.

Introduction

Under the provisions of the Electricity Safety, Quality and Continuity regulations (ESQCR) you only need to inform the DNO that you have installed your generating unit. You do not need to contact the DNO in advance if the total capacity of all your generating units combined is 16 Amps or less per phase at low voltage.

This section of the Guide summarises the information which you will need to provide to your DNO and gives information about the forms that are used for providing the necessary technical details.

The Commissioning Pro-forma

You do not need to talk to your DNO before your generation equipment is up and running. Your installer must inform the DNO and provide a number of pieces of information **within 28 days of the date of commissioning**. This information is defined in a Commissioning Pro-forma, which is provided in Appendix 3 of EREC G83, available free of charge on the Energy Networks Association website.

Your installer should prepare all of the details requested in the Commissioning Pro-forma and submit all this with the form to confirm that your equipment has been commissioned.

The information required includes:

- details about the **site** where you are connecting your generating unit, including metering information;
- **contact details** for the owner of the generating unit;
- **technical information** about the generating unit itself, including the generating capacity, type test reference and primary energy source;
- details of the **installer** of the generating unit, including the party's accreditation and qualifications;
- **supporting information**, e.g. circuit diagrams; and
- a **signed declaration** as to the compliance of the generating unit with the requirements of EREC G83.

Other Requirements

The declaration that your installer signs on the Commissioning Pro-forma requires them to confirm that they've installed your generating unit in accordance with EREC G83. It's important that you use an installer who is familiar with the requirements of these standards. If you appoint a competent installer (see Section C: An Overview of Getting Connected), they should know about these standards and make sure that your installation meets with all the relevant standards. You should check that your installer is aware of all these requirements.

E. Cost and Charges

Use of System Charges

Use of System charges are levied by the DNO to the supplier, so as a generator you will not be charged these directly. However, this section is included for your information, as Use of System charges may appear as an item on your bill.

What are Use of System charges?

Use of System charges cover the development, operation, maintenance and repair of the distribution network. DNOs make Use of System charges to suppliers. Suppliers may reflect these charges to their customers as either:

- a 'pass-through' item so that the customer can clearly see the Use of System element; or
- 'wrapped-up' in a total electricity supply tariff where the customer may not be able to clearly see the Use of System element.

DNOs are obliged to publish documents about their Use of System charges. These cover their Use of System charging methodology and a statement of what the charges are for both generation and demand customers. You can find these on DNOs' websites.

All generators connected at Low Voltage are subject to Generation Distribution Use of System charges under the Common Distribution Charging Methodology (CDCM). These charges may be negative (i.e. credits). You can find out more about the Common Distribution Charging Methodology (CDCM) by looking at Distribution Charging on the Ofgem website, Distribution Charges Overview on the Energy Networks Association website and some DNOs' websites.

Categories of Use of System charges

UoS charges are categorised by:

- the voltage level your equipment is connected to and;
- the type of meter you have.

The boxes below define the voltage level that will apply to EREC G83 compliant equipment (Low Voltage) and the metering arrangements that are likely to apply to this equipment (Non-Half Hourly meters). With the Common Distribution Charging Methodology charges for LV generation customers with NHH meters are in the form of a single unit rate (p/kWh).

Non-Half Hourly Meters (NHH)

NHH meters record total energy passing through the meter, but do not record the times the energy is transferred. Typically the recorded data would be collected a few times a year, e.g. every quarter. Most domestic and small commercial properties have NHH meters. You can contact your current electricity supplier to discuss the provision of NHH meters, or other meter suppliers.

LV (Low Voltage)	400/230 V in practice, less than 1 kV in general.