



**CONNECTING LARGE
-SCALE GENERATION
(ABOVE 3.68kW)
&/Or Energy
Storage System
(ESS) HV & EHV
APPLICATION FORM**

Please submit your completed application form to:

**Northern Powergrid, Network Connections, Alix House,
Falcon Court, Stockton-on-Tees, TS18 3TU**

If you need any help to complete this form please contact us:

getconnected@northernpowergrid.com

0800 011 3433

Opening hours:

Monday - Friday

8:00am - 8:00pm

Saturday

9:00am - 5:00pm

APPLYING TO CONNECT LARGE SCALE GENERATION

HELPING YOU FILL IN THIS FORM

Help with completing the form and getting your generation connected. If you need any more help with completing this form, please go to our help and information guidance at the back of the application form or call us on **0800 011 3433**.

HELP WITH SECTION 1 YOUR DETAILS

Please provide your full correspondence address including any street number and your full postcode. It is often easier to contact you by email or mobile phone. Please provide these details if you are happy for us to contact you via these methods.

HELP WITH SECTION 2 YOUR CONNECTION

For each application, we will provide you with a unique Northern Powergrid reference number. If you have multiple applications with us, you may want to provide a different reference for each. This will help with identifying each one if we need to discuss them with you. If the site address is different to the address provided in section 1 then please provide us with the full address including street number and full postcode.

HELP WITH SECTION 3 EXISTING GENERATION

If you already have any generation equipment installed at your property, i.e. PV cells, wind turbines, then we need to know. The connections process can change depending on the size of generation equipment installed.

HELP WITH SECTION 4 NEW GENERATION

If the generation is for standby purposes or won't run for more than five minutes a month then please move to **section 6 'site plans'** once you have confirmed this on questions **4a** or **4b**. We will contact you if we require any further information on your proposed generator.

If your generation is not for standby purposes, or will run for more than five minutes per month we need you to answer the remaining questions in the section. We will need the details of the type of generation you will be installing and for question **4f** we will need further detail on each generation set. If you have more than one set and/or are different sizes, please duplicate the 'generation set' form for each type of generation.

HELP WITH SECTION 5 EQUIPMENT CAUSING HARMONIC DISTORTION

Some types of electronic equipment can cause harmonic currents that can cause a variety of problems that are sometimes difficult to attribute and eliminate. If your equipment is likely to cause harmonic distortion, we need details of the equipment.

HELP WITH SECTION 6 SITE PLANS

For us to be able to provide you with an estimate you only need to provide us with a site location plan showing the site boundary/ownership, you can use an ordnance survey or a land registry plan. If you don't have a site plan we may have one on record, please contact our connections team on **0800 011 3433**. For us to be able to provide you with a quotation you will need to provide us with:

- a site location plan showing the site boundary, you can use an ordnance survey or a land registry plan. If you don't have a site plan we may have one on record, please contact our connections team on **0800 011 3433**
- a plan, at an appropriate scale (preferably scaled 1:500) which indicates the layout of buildings, roads and proposed metering points and for a larger site such as industrial units, then you may require a substation installed on your site, if you do we will contact you to request a plan showing the proposed location.

HELP WITH SECTION 7 YOUR CONNECTION DATE

Please provide us with the date you would like us to carry out your connection and the date you expect to complete the work on site. We will use these dates as a guide but we will contact you on acceptance of a quotation to arrange and confirm a suitable connection date.

HELPING YOU FILL IN THIS FORM

HELP WITH SECTION 8 SITE INFORMATION

The questions in this section will help us assess if there are any environmental issues that we will need to consider while completing your connection. We recognise that a proportion of our activities have an effect on the environment and we, are therefore committed to complying with relevant environmental legislation, other important environmental obligations and a policy of pollution prevention.

HELP WITH SECTION 9 ADDITIONAL INFORMATION

It is often easier to contact you by email or mobile phone, but it is your choice. Please tell us how you would like us to contact you if we have a query and how you would like to receive your quotation. We would like to know if you are ready to accept our quotation and proceed with the work or if you are just at the stage where you would like to understand what the cost of your connection might be.

HELP WITH SECTION 10 SIGNATURE

Please provide your signature to confirm your application along with the date. If you are applying on behalf of a company please include your position within the company.

If you need any assistance completing this form, please refer to the Help and Information guidance at the back of this form or call us on **0800 011 3433**.

SECTION 1 YOUR DETAILS

* Signifies mandatory fields

Name*

Address*

Email*

Phone*

Postcode*

SECTION 2 YOUR CONNECTION

2a. How do you want us to refer to your project? *E.g. Project 123*

2b. Site Address - *If different to above**

Postcode*

SECTION 3

EXISTING GENERATION

How do I know if I have any existing generation?

If you have the following installed on your premises then you have existing generation:

- Wind turbines
- Solar panels (otherwise known as Photovoltaic or PV)
- Combined heat and power plants (CHP)

3a. Does this site already have generation connected?

Yes No - go to question 4 'New Generation'

For this generation what is the:

Max Export (kW)*	Rated Current (amps)*	Rated Voltage (volts)*	Type of generation*
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

SECTION 4

NEW GENERATION

4a. Is this generation for standby purposes?*

Yes - Go to **Section 5 'Equipment causing harmonic distortion'** No

4b. Will your generation run for more than 5 minutes per month?

Yes No - Go to **Section 5 'Equipment causing harmonic distortion'**

4c. Would you like to apply in kilowatts (kW) or megawatts (MW)?

kW MW

Please tell us about the generator sets that you intend to install. If you are installing multiple generator sets which differ in type or size, simply duplicate this page and provide details per generator set.

4d. How many generator sets are you installing?

Are all the generator sets the same size?

Yes

No - provide details per generator set

4e. Which type of generator set are you planning to install?

Generation type

Generation set #

E.g. Photovoltaic (PV) panels. | Hydro - including water wheels, underground hydroelectric plant. | Wind turbines - including small garden turbines. | Biomass - including wood, slurry and biofuel burners. | Combined Heat & Power (CHP) - including gas turbines.

4f. What type of generation set will this be?

Synchronous generator

Series converter / inverter connected generator

Fixed speed induction generator

Other / I don't know **please specify*

Double fed induction generator

Please complete one of the following:

What is the sub-transient (X''_d) - unsaturated/saturated? (Per unit)

What is the maximum fault level contribution? (MVA)

Generation set Active Power capability

Rated terminal voltage (generator) (volts)

Rated terminal current (generator) (amps)

Generation set registered capacity (net) (MW/kW)

What will be the maximum active power export? (MW/kW)

Generation set apparent power rating (to be used as a base for generator parameters) (MVA)

Generation set rated active power (gross at generator terminals) (MW/kW)

Generation set Reactive Power capability at rated Active Power (gross, at generator terminals).

Max reactive power export (lagging) (MVAr)

Max reactive power import (leading) (MVAr)

4g. What security is required for your connection?

- | | |
|---|---|
| <input type="checkbox"/> Single circuit connection | <input type="checkbox"/> Manually switched alternative connection |
| <input type="checkbox"/> Automatically switched alternative connection | <input type="checkbox"/> Firm connection (secure for first circuit outage) |

4h. Will the generation plant supply the electricity to on-site premises?

- Yes**

 No

4i. What will be the maximum active power import (kW)?

4j. Please provide us with your on-site operational diagrams.

4k. Are you installing an interface transformer?

- Yes**

 No

If yes, for this transformer, what will be the:

- | | | | |
|---|---|---------------------------|---|
| Rated (apparent) power (MVA) | <input style="width: 100%; height: 28px;" type="text"/> | Maximum ratio tap (%) | <input style="width: 100%; height: 28px;" type="text"/> |
| Rated voltage ratio (on principal tap) (kV/kVA) | <input style="width: 100%; height: 28px;" type="text"/> | Minimum ratio tap (%) | <input style="width: 100%; height: 28px;" type="text"/> |
| Positive sequence resistance (per unit) | <input style="width: 100%; height: 28px;" type="text"/> | Method of voltage control | <input style="width: 100%; height: 28px;" type="text"/> |
| Positive sequence reactants at principal tap (per unit) | <input style="width: 100%; height: 28px;" type="text"/> | | |

4l. Do you require an export Meter Point Administration Number (MPAN)?

- Yes**

 No

 Don't know

4m. Please provide an electrical configuration of the overall system including any generation and storage, showing any individual inverter or generator units (based on current model). This should be included as an attachment.

Is this request for storage only or storage combined with another technology? Storage only/combined with another technology
(delete as appropriate)

Please confirm the storage technology? (e.g. Lithium Ion (LI-ION), Nickel-Cadmium (NI-CD), Sodium Sulphur (NAS) batteries, fly wheel, micro pump hydro, CAES etc) [Redacted]

If combined with another technology please confirm the other technology/ies (e.g. Solar, Wind, Biomass, Diesel/CHP) [Redacted]

Nameplate power rating of storage(MW): [Redacted]

Registered energy storage capacity (MWh) [Redacted]

4n. For the storage element of your installation please confirm the following:

Security of Supply required		Restate the Authorised Supply Capacity (ASC) required		
Export	Firm	[Redacted] MW	[Redacted] +MVA _r	[Redacted] -MVA _r
	Non-firm	[Redacted] MW	[Redacted] +MVA _r	[Redacted] -MVA _r
	Total	[Redacted] MW	[Redacted] +MVA _r	[Redacted] -MVA _r
Import	Firm	[Redacted] MW	[Redacted] +MVA _r	[Redacted] -MVA _r
	Non-firm ¹	[Redacted] MW	[Redacted] +MVA _r	[Redacted] -MVA _r
	Total	[Redacted] MW	[Redacted] +MVA _r	[Redacted] -MVA _r

4o. Details of operating modes/commercial service

Please complete section 4q. (and copies of) for each commercial service or mode of operation required^{2,3}.

No. of operating modes/services described [Redacted]

4p. Other operational details

Is the ESS to operate in conjunction with another generation source or load on the customer private network?

Yes

No

If yes please provide further details on a separate sheet.

Please provide any other supporting information in the space below. If attaching any datasheets or commercial service details please also state relevant section page numbers here :

- 1 The customer will be contacted at a later date for written confirmation of derogation from P2/6.
- 2 The most onerous operating requirements will be used to design the connection to the network and will also be stated in the Connection Offer and any Connection Agreement.
- 3 Changing your operating modes / commercial services could require an amendment to the connection design and any associated upstream network reinforcement.

4q. Description of required operation

Commercial Service

Name of Commercial service and company name:

Contact details for service operator :

Is this a service which involves co-ordinated response with other storage devices either on the Distribution System, Transmission System, Private Network or aggregator?

No or Yes If yes please provide further details on a separate sheet.

If not a commercial service please describe the operational mode (e.g. float charge)

Description of Dynamic Requirements (Active Power)

Export	Power ramp rate (Positive)	<input style="width: 80px;" type="text"/>	MW/sec
	Power ramp rate (Negative)	<input style="width: 80px;" type="text"/>	MW/sec
Import	Power ramp rate (Positive)	<input style="width: 80px;" type="text"/>	MW/sec
	Power ramp rate (Negative)	<input style="width: 80px;" type="text"/>	MW/sec

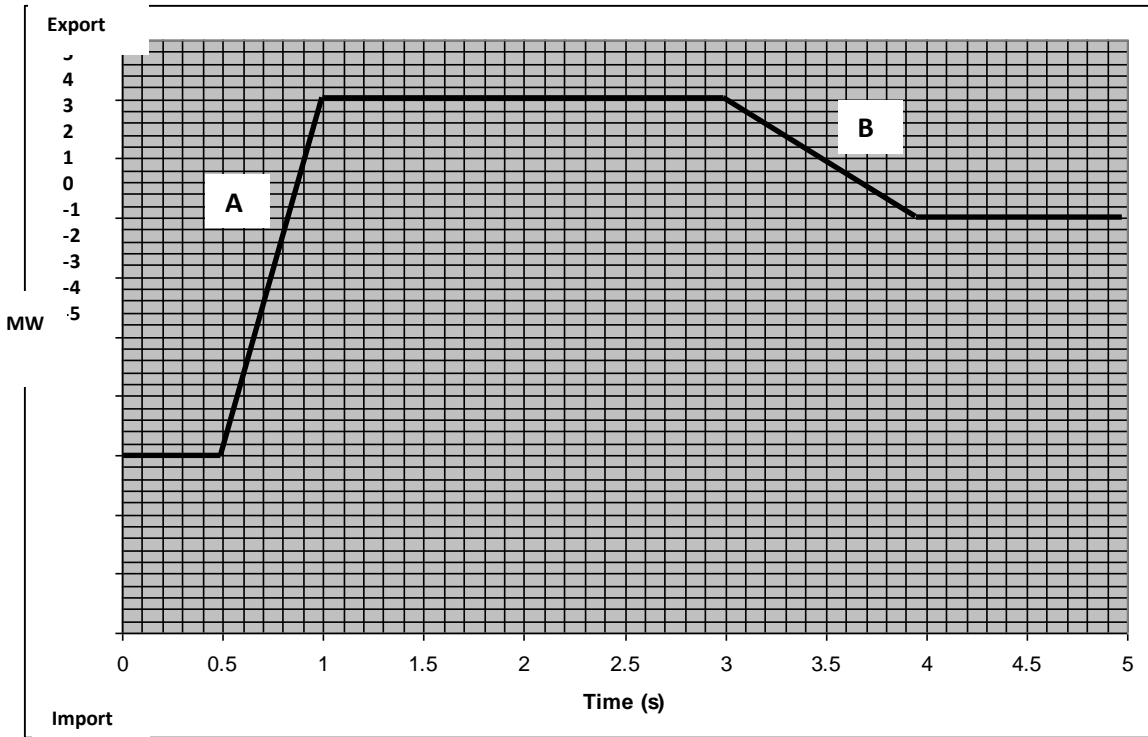
If the power swing will transition from import to export or vice-versa please state the total magnitude of the power swing. MW Up Down Both

Description of Dynamic Requirements

For this control mode or commercial service, are there any known requirements (other than those which may be imposed by the Transmission System Operator) for the scheme to operate at non-unity Power Factor as measured at the POC?

No or Yes If yes please provide further details on a separate sheet.

Example of Ramp Rate / Total Power Swing



- A -** Example of ramp which transitions from import to export
 Ramp rate (Positive) = $(2+4) \text{ MW} / 0.5\text{sec}$ = 12 MW per sec
 Total power swing = $(2+4) \text{ MW}$ = 6 MW
- B -** Example of ramp during export
 Ramp rate (Negative) = $(4-2) \text{ MW} / 1 \text{ sec}$ = 2 MW per sec
 Total power swing = $(4-2) \text{ MW}$ = 2 MW

SECTION 5

EQUIPMENT CAUSING HARMONIC DISTORTION?

Please provide details of the equipment that will effect the harmonics of the supply.

Please note your equipment must be G5/4 compliant.

Please include any plans or documentation with this form.

SECTION 6

SITE PLANS

Please include a plan that clearly indicates your site boundary and proposed meter position, it should be on an **ordnance survey** or **land registry** background. Failure to provide a site location plan and builders/developers plans may result in a delay.

If you do not have a plan, please contact us on **0800 011 3433** and we will send you one that you can use.

SECTION 7

YOUR CONNECTION DATE

7a. When would you ideally like this connection to be made?

 DD/MM/YYYY

7b. When do you anticipate completing the works on-site?

 DD/MM/YYYY

All works shall start and finish within reasonable time scales, suspension of works at your request may mean we have to provide you with a revised quotation.

SECTION 8

SITE INFORMATION

8a. Is the site classed as a 'site of specific interest' or listed under any other classification e.g. Historical site, conservation area, listed building? *

 Yes - provide details below **No** **Don't know**

8b. Are there any trees or hedges on the site that are protected by preservation orders? *

 Yes - provide details below **No** **Don't know**

8c. Are there any existing water courses, culverts or drainage ditches on or adjacent to the site? *

 Yes - provide details below **No** **Don't know**

8d. Does the site contain any substances hazardous to health of the environment e.g. Asbestos, Hydrocarbons? *

 Yes - provide details below **No** **Don't know**

8e. Are you the landowner or occupier? *

- Yes** We may ask you to prove that you are the landowner and request a copy of your land registry documentation.
- No** We may ask you to prove that you have the owner's authority to act as sole agent and apply for a connection on their behalf. If you have this letter and a copy of the land registry documentation available please include it with this application to avoid delaying your application. Your application may not be valid if we request this information and you are unable to provide it. A template for this letter can be found in the help and information section of our website.

SECTION 9 ADDITIONAL INFORMATION

9a. If we have a query about the information you have provided, how would you like us to contact you?*

- Email** **Telephone**

9b. How would you prefer to receive your quotation information?*

- Email** **Post** **Both**

9c. This application is for:*

- Budget Cost*** **Quotation****

* If you have been unable to provide us with all the relevant information and you are not ready to accept a quote and proceed with the work on site then apply for a budget cost.

** If you have completed all the sections that are relevant to your application and are ready to accept the quote and proceed with the work on site then apply for a quotation.

SECTION 10 SIGNATURE

Signature of applicant *

Date *

Printname *

Position in company - *if applicable*

Data Protection

We will use the details you provide to process your connection request and to monitor the service we provide. Your details will be kept securely and will not be used for marketing purposes. We have an obligation to provide the results of customer satisfaction surveys on the services we provide to Ofgem, the electricity industry regulator. Therefore you may be contacted by our appointed Market Research Company to complete a brief satisfaction survey of our service delivery performance.

If you do not wish to be contacted as part of these surveys please tick

HELP AND GUIDANCE FOR - **SECTION 3. EXISTING GENERATION****• How do I know if I already have generation connected?**

If you have the following installed on your premises then you have existing generation:

- Wind turbines
- Solar panels (otherwise known as Photovoltaic or PV)
- Combined heat and power plants (CHP)

HELP AND GUIDANCE FOR - **SECTION 4. NEW GENERATION****• How does this information help?**

If you are planning to install a generator, or multiple generators, we will need the full technical details of the equipment and its location. The connections process can change depending on the size of generation equipment to be installed

HELP AND GUIDANCE FOR - **SECTION 6. SITE PLANS****• What plans must I send with my application?****Estimate**

For an estimate you only need to provide us with a site location plan showing the site boundary, you can use an ordnance survey or a land registry plan.

If you don't have a site plan we may have one on record, please contact our connections team on **0800 011 3433**

Quotation

For a quotation you need to provide us with a site location plan showing the site boundary, you can use an ordnance survey or a land registry plan.

If you don't have a site plan we may have one on record, please contact our connections team on **0800 011 3433**

A Plan, at an appropriate scale (preferably scaled 1:500) which indicates the layout of buildings, roads and proposed metering points and for a larger site such as industrial units, then you may require a substation installed on your site, if you do we will contact you to request a plan showing the proposed location.