

SUPPORTING THE CONNECTION OF MORE GENERATION AND STORAGE



NORTHERN POWERGRID CONSULTATION ON ADDRESSING NETWORK CONSTRAINTS

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Respond to: ICE@northernpowergrid.com

www.northernpowergrid.com



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Summary

Northern Powergrid is committed to supporting the connection of more generation and storage. As part of our connections service improvement plans for 2016/17 we said we would work with customers to better understand any issues they have experienced with constrained networks in the Northern Powergrid region. Where necessary, we will continue to develop new solutions that address curtailment of output; consortium connections; constrained connections; communicating investment plans and any other additional activities to facilitate grid connections.

Ofgem published a consultation on 4 March 2016¹ seeking responses from interested parties on the matter of constrained networks. Although Ofgem received a number of responses that spoke about the issues faced generally across all distribution network operators (DNOs) operating areas, there were few comments specifically directed at Northern Powergrid. We are therefore seeking to expand on that piece of work and understand what, if any, improvements to our current processes and approaches are needed to resolve the issues faced by Northern Powergrid customers.

This consultation is therefore seeking our customers' views on any issues they are experiencing regarding constrained networks within Northern Powergrid. As a recipient of this consultation we recognise you to be an important generation or storage customer who has sought to develop projects within the Northern Powergrid area in the past and whom may therefore have been affected by network constraint issues.

We would ask you to review this document and feed back to us your views by answering the questions we have posed. The closing date for responses is 22 February 2017. Interested stakeholders will then be invited to take part in a roundtable discussion at the Principal (Royal Station Hotel) in York, where they will have the opportunity to explore the issues identified further and help to shape any necessary improvements or outcomes.

Following the close of the consultation and subsequent roundtable discussion we will review your comments, understand better the issues identified and propose any necessary improvements to our existing processes that we feel are appropriate.

¹ <https://www.ofgem.gov.uk/publications-and-updates/consultation-getting-electricity-connection-when-network-constrained>

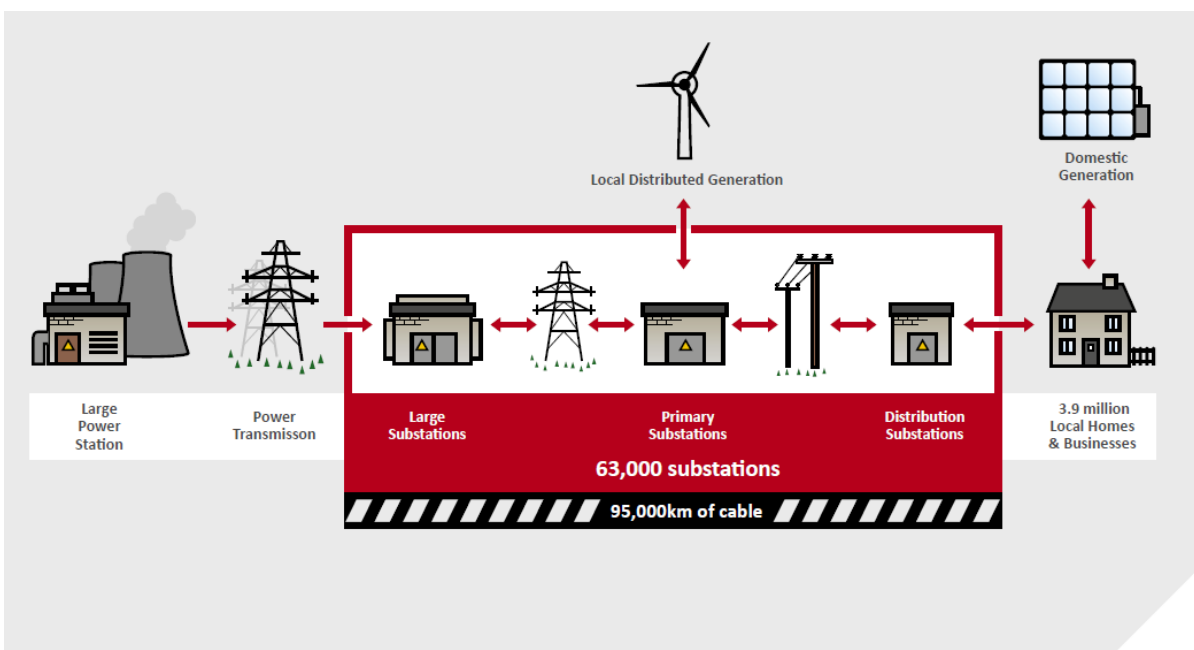
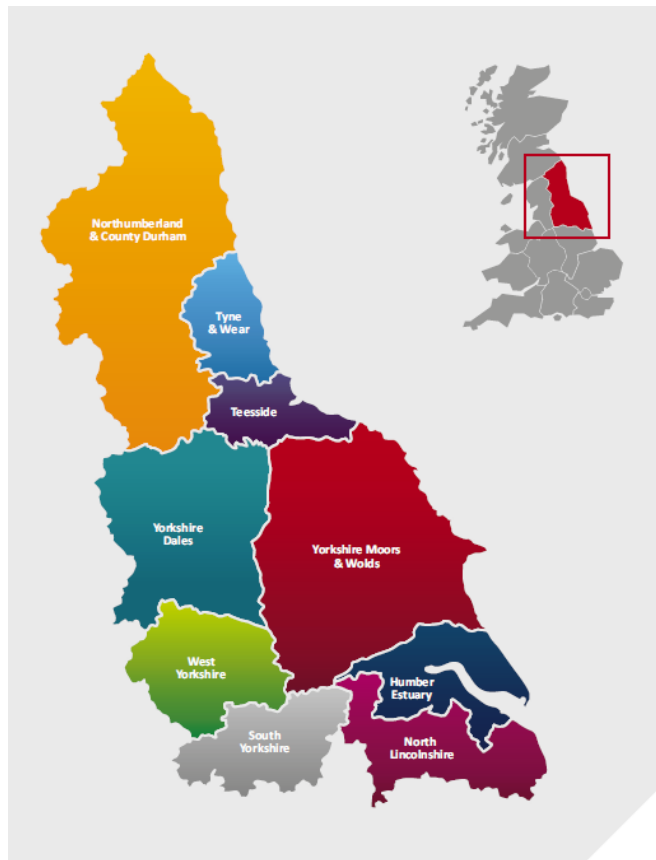
Who we are and what we do

Northern Powergrid delivers electricity to 3.9 million homes and businesses in the Northeast, Yorkshire and north Lincolnshire, taking power from the national transmission network and distributing it through our regional network, comprising more than 63,000 substations and 94,000 kilometres of overhead lines and underground cables, to 8 million customers throughout the region.

We don't generate electricity, neither do we sell electricity.

Keeping our electricity network running safely, reliably and efficiently is our priority and we operate 24 hours a day, 365 days a year – no matter what the circumstances.

We are responsible for the connection of customers' premises to our electricity network. We also facilitate the export of locally-generated electricity. We operate as one company but are regulated by the energy regulator, Ofgem, as two licensed businesses; Northern Powergrid (Northeast) Ltd and Northern Powergrid (Yorkshire) plc.



Background

As well as operating the network to provide customers with a safe and reliable supply of electricity, we also meet the needs of customers who want a new or changed connection to our network. A detailed guide to electricity connections is available from the industry regulator Ofgem² but in broad terms, network operators design connections and issue quotations to customers to carry out the work needed to connect them to the distribution network. The price of the quotation includes the cost of making the connection together with a proportion of the cost of any network reinforcement required to accommodate the new connection if there is insufficient capacity on that part of the distribution network. Certain elements of new connections work are open to competition and this is called competition in connections³.

The Government's financial support of renewable energy generation as a means of reducing the country's carbon emissions has led in recent years to a significant growth in applications for distributed generation connections to the electricity network. When the network has spare capacity, the connections process should be reasonably straightforward and timescales and costs should be minimised. However, when there is limited capacity on the network, it can be much harder to get connected. Furthermore, storage has generated significant interest as customers have sought to introduce more sources of flexibility into the system.

The increase in demand for generation and storage connections has led to some DNOs experiencing a shortage of available capacity, resulting in network connections being constrained. This issue has been most prevalent in the network serving the South West and South East of England where some areas are becoming heavily congested with generation connections.

DNOs have identified generation capacity constraints to differing degrees. It is incumbent on us to provide customers with as much information as necessary to clearly identify where networks are constrained; to work with them to understand their requirements and explore and make available flexible ways of connecting to constrained networks that will maximise the use of the existing capacity.

² <https://www.ofgem.gov.uk/ofgem-publications/87259/guideelectricitydistributionconnectionsolicy.pdf>

³ <http://www.northernpowergrid.com/competition-in-connections>

Network constraints within Northern Powergrid



Within Northern Powergrid we have not experienced the same level of network constraints as DNOs in some other parts of the country. The bulk of our larger substations have spare capacity, with two thirds of higher voltage circuits having material capacity available to connect new generators and storage. 91% of larger substations are able to accept up to 25MW of new generation capacity at each location.

In four network locations we have experienced some capacity issues and generators have accepted more flexible and innovative connection offers instead of paying for upstream reinforcement. These areas are:

- Blyth – constraint on National Grid (NGT) equipment
- Seal Sands – constraint on Northern Powergrid equipment
- Driffield – constraint on Northern Powergrid equipment (at Driffield and Beverley)
- Hull East to Roos – single customer constraint on the circuit

In 2013, we reached the point on our network at Driffield in the East Riding of Yorkshire where no more generation could be connected at the higher voltage levels without us having to constrain generators at peak times or provide expensive connection offers. Having discussed the issue with customers to better understand their requirements, we developed a new replicable Active Network Management (ANM) solution that builds upon the bespoke schemes installed in our other

constrained areas. This means that we now offer a standard solution that avoids the need for network reinforcement by controlling the output from a customer's installation at times of peak generation and low network demand, or when the network is operating abnormally and the amount of generation needs to be reduced.

Since April 2016, customers who have applied to connect generation on our network in Driffield have been given the opportunity to join the ANM scheme and the opportunity to benefit from lower overall connections costs.

If customers can offer the flexibility to be constrained at certain times, then they can often obtain a significantly cheaper quote from us. Customers operating a wind or solar installation can expect to see a reduction in overall utilisation by about 0.5% when compared with the utilisation level of an unconstrained connection offer (e.g. from 23% to 22.5%).

When making an ANM offer, we provide customers a curtailment assessment detailing the level of curtailment that they can expect based on historical network loads. Customers will then undertake their own due diligence and conduct their own assessment of potential curtailment, associated constraints and risks and ultimately, the financial viability of their connection.

Small works customers connected at low voltage are not required to join the ANM scheme and will receive connection offers without any wide area reinforcement costs. However, as with any such connection offer, the cost will depend on the distance from the customer's site to our network and whether there is any spare capacity on our local network.

Customers who are eligible for an ANM offer do not need to do anything differently when applying for a connection. A member of Northern Powergrid team will assess the application and contact the customer to discuss their requirements and the way forward.

Why are we consulting with you?

We recognise you as an important generation or storage customer who has sought to develop projects within the Northern Powergrid area in the past and whom may therefore have been affected by network constraint issues.

We have already done a lot. Our generation⁴ and demand⁵ availability heat maps are maintained in order to provide customers with all the necessary information to understand the capacity available on our network and quotation queues. ANM flexible connection offers have already gone a considerable way to addressing customers' issues regarding constrained networks.

However, we want to make sure that we continue to engage with our stakeholders to understand how their views on these issues are changing with time, and as a result of the work already undertaken so that we can ensure we continue to meet our customers' needs.

⁴ <https://www.northernpowergrid.com/generation-availability-map>

⁵ <https://www.northernpowergrid.com/demand-availability-map>

This consultation allows you the opportunity to have your say about how Northern Powergrid are managing constrained networks and what you would like to see us do more of or do differently in the future.

Who is likely to have an interest?

This consultation will primarily be of interest to professional generation and storage developers; owners and engineering consultants. However, the issues covered are also likely to be of interest to community energy groups, particularly those planning generation projects and we would welcome comments from such stakeholders.

What are we consulting on?

Flexible connection offers

We would like to understand whether or not the flexible connection offers that we make available are sufficient to meet your requirements and whether there is any additional work you would like us to undertake to further improve our flexible connection offers and address concerns about the uncertainty of curtailment levels.

Consortium connections

In anticipation of customers wanting to use consortia to make requests for connections, there is information on the Northern Powergrid website that explains what a consortium is and how it might operate⁶. There is also information on how to make a consortium connection application and contact details to put customers in direct contact with commercial experts who can discuss consortium approach and help customers to make an application.

To date this information and process has helped customers who have been considering this approach. However, we need to make sure that where customers are considering new, innovative ways of funding and forming such entities, we understand their requirements, continue to offer the correct information and have a process that remains relevant to any new thinking in the development and operation of consortia. To that end we are interested to hear from customers who are developing their thinking in this area that reflects new and emerging changes.

Providing information about flexible connections

One of the key aspects of helping customers make informed decisions about where they might locate generation projects is the level of detailed network information that a DNO is able to make available to customers.

Northern Powergrid has invested considerably in developing its heat maps to provide relevant network information that is readily accessible and easy to understand. We would still like to engage with stakeholders however to understand more how much this information is used, how useful it is,

⁶ <https://www.northernpowergrid.com/help-and-information/getconnected/what-is-a-consortia-or-joint-venture>

how relevant it remains into the future and what other information customers require to assist the connections application and quotation process.

Connecting storage

The interest in connecting storage has increased significantly in recent times. Many of the changes we have made to assist more long-established generation and demand customers, assist those seeking to connect storage (for example the introduction of our interactive demand heat map to work alongside the generation tool)⁷. However, we would be interested to hear from stakeholders about what more we can do to assist storage developers to connect to our network.

Your response

We would like to hear the views of interested parties about the issues discussed in this consultation. When formulating your response please consider your experience and what Northern Powergrid can do to address any issues you have identified. We would especially welcome responses to the specific questions that follow; a word doc. template is provided to make it easier for you to respond.

Responses should be sent, preferably by email, by 22 February 2017 to

ICE@northernpowergrid.com

Next steps: Following the close of the open consultation on 22 February 2017, we will consider all responses and invite interested stakeholders to take part in a roundtable discussion on 1 March 2017 at the Principal Hotel in York. The feedback we receive will be used to inform any future actions or improvements we deem necessary to address network constraints in the Northern Powergrid region.

If you have any questions on this document or the roundtable event please contact:

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⁷ There is a page on the Northern Powergrid website devoted to helping customers making storage connection applications <http://www.northernpowergrid.com/energy-storage-projects>



Northern Powergrid

Consultation on addressing network constraints

Name:			
Organisation:			
Contact details:			
Can we contact you to discuss your response?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	

Question 1: Constrained connection offers
Do you consider that Northern Powergrid sufficiently addresses your concerns about levels of constraints on its network and from your experience of its processes what could it do differently to improve constrained network offers?
Your response:

Question 2: Consortium connections

Do you consider that Northern Powergrid provides adequate information about consortium connections and from your experience what could it do to improve the process of delivering consortium connection offers?

Your response:

Question 3. The provision of information on network constraints

Is the information provided by Northern Powergrid on constrained networks contained within its heat maps and connection offers adequate and does it fulfil your requirements? From your experience is there any other information which you would wish to be provided with and how would it benefit you?

Your response:

Question 4. Connecting storage

What can we do to help you connect storage projects? Are there any changes to processes, additional information requirements or technical aspects that we need to consider further?

Your response:

Question 5. Additional activities

From your experience do you think that there are any additional activities or outputs regarding constrained networks that Northern Powergrid do not currently undertake or provide that you would benefit from?

Your response: