

Guidance Note - Exiting an ANM Flexible Connection Contract

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1. Introduction

About ENA

Energy Networks Association (ENA) represents the owners and operators of licenses for the transmission and/or distribution of energy in the UK and Ireland. Our members control and maintain the critical national infrastructure that delivers these vital services into customers' homes and businesses.

About Open Networks

Britain's energy landscape is changing, and new smart technologies are changing the way we interact with the energy system. Our Open Networks project is transforming the way our energy networks operate. New smart technologies are challenging the traditional way we generate, consume, and manage electricity, and the energy networks are making sure that these changes benefit everyone.

ENA's Open Networks project is key to enabling the delivery of Net Zero by:

- a) opening local flexibility markets to demand response, renewable energy and new low-carbon technology and removing barriers to participation
- b) providing opportunities for these flexible resources to connect to our networks faster
- c) opening data to allow these flexible resources to identify the best locations to invest
- d) delivering efficiencies between the network companies to plan and operate secure efficient networks

2. Overview

All GB DNOs offer flexible connection options. These can provide faster, cheaper access arrangements for customers that allow their export or import to be managed (often through real-time, automated DNO controls) based upon contracted and agreed principles of availability of network capacity. Two (non-Intertrip) examples of flexible connections are "Timed Connections" and "Flexible ANM Connections" where the latter is enabled through Active Network Management (ANM) schemes. There are other forms of flexible connections which DNOs offer information of which can be found on the DNOs websites.

This guide has been written, predominantly, for owners of generators with flexible connections which are managed with the assistance of an Active Network Management system (ANM). Many of the principles also apply to owners of demand connections who are managed utilising an ANM system so if you would like to discuss your demand connection, please speak to your local DNO.

Generators contemplating exiting their current ANM Flexible Connection should also consider the potential opportunities and cost reductions afforded by the proposals contained in Ofgem's Access and Forward-Looking Charges Significant Code Review in their decision making. More information can be found in Section 4.0 [here](#)

ANM Flexible Connections enable owners of distributed generation to connect cheaper and faster by removing the upfront cost and time of network reinforcement. In return, generators accept a flexible connection agreement where they may be required to reduce electricity exports temporarily to keep the network within its operational limits. In the majority of cases, an ANM Flexible Connection will have been offered to avoid network reinforcement costs at the request of the original applicant. An ANM Flexible Connection's connection agreement (and degree of curtailment risk) is often fixed at the point of connection. However, the value generators place on network access can vary over time and as the distribution network evolves, and constraints change, the curtailment requirements and windows determined at connection may also need revisions.

DNOs utilise ANM systems to manage and operate their networks, to drive efficiency, improve fault restoration times, improve supply security, and to enable the connection of more distributed energy resource assets to the network. Flexible Connections which are managed utilising the ANM systems can vary in the level of security of supply offered to customers. Customers can discuss with their DNO the level of security of supply they wish to guarantee to receive and the scenarios that they are willing to be curtailed, and it may be possible to vary the terms of the agreement rather than completely exiting a contract.

Currently the use of Flexible Connections (ANM) is accommodating the growth in distribution connected generation, largely renewables and storage, and is a prerequisite for the GB transition to net zero carbon. The role of Flexible Connections (ANM) longer term will be dependent on the Ofgem's final decision on the Access and Forward-Looking Charges SCR. In the meantime, the ENA Open Networks Programme (Workstream 1A) has been looking at ways of reducing reliance on Flexible Connections (ANM), exploring the sharing or trading of capacity; and improving availability of information to facilitate revenue stacking and create additional services for Flexibility Service Providers.

DNOs are committed to market testing flexibility solutions as an alternative to reinforcement and opening local markets for flexibility services remains a major focus of the Open Networks Programme. The DNOs have committed to using the Common Evaluation Methodology (CEM) which enables a common and transparent methodology for assessing flexibility across GB making it clear when and why they dispatch different flexibility service types.

The DNOs recognise that, as requirements change, some generators may want to exit their Flexible Connection or adjust the terms of their connection agreements. If a generator wants to exit their flexible connection contract for an unconstrained export it will need to apply for a connection with a greater security of supply (i.e. an unconstrained connection or one with less constraint exposure) following the existing G99 connection process.

3. Exiting an ANM Flexible Connection Agreement

Generators can request changes to their connection agreement using existing DNO connection processes, which are chargeable, and re-apply for a connection with a greater security of supply or request changes to the size of their connection. This will be treated as a new connection and subject to standard application processes and queues. Whilst the individual DNO processes currently vary, all incorporate the Engineering Recommendation G99 which sets out the requirements for the connection of generation to distribution networks and the application process.

If a generator requests an adjustment to the terms of its Flexible Connection agreement, the DNO will need to carry out a Connections Study to assess the impact on the network of accommodating the request; the generator / requestor will be charged for these studies in accordance with the Common Connection Charging Methodology.

If network changes are required to accommodate the request, e.g. reinforcements or the procurement of flexibility services, these will also incur costs for the generator / requestor. Depending on the scale of any network constraints identified, there may also be restrictions on when these changes can be made, resulting in potential delays to accommodating the revised connection request.

3.1 Pre-Application

Before making a formal application, and incurring the Connections Study costs, generators / requestors are encouraged to consider the following steps:

- **Use the DNOs' Network mapping (heatmap) tools:** these show which parts of the network are currently constrained according to technology type. The degree of constraint in the generator's location will provide an indication of the potential reinforcement requirement / procurement of flexibility services to accommodate the change request.
- **Speak to the DNO experts directly:** all the DNOs offer surgeries and / or 1-2-1 appointments. These provide useful opportunities for generators / requestors to discuss their concerns with their current connection arrangements and / or their proposed changes to their connection agreement. For the latter, it also provides an opportunity to discuss the potential scale of network impacts / timescales etc. with the DNO before applying and incurring costs for a Connections Study.
- **Request a budget estimate:** the DNOs can provide an estimated cost for the proposed connection. This is intended as a guide only to help generators / requestors with their decision-making processes. Note that the budget estimate is usually a desktop exercise based on a preliminary assessment. It is not a formal connection offer, and the final formal connections costs may vary considerably from an initial budget estimate. Some DNOs can also offer a "Feasibility Study" which is a more in-depth study with more accurate costs than a budget estimate.

3.2 Formal Application Process

All the DNO connection processes incorporate the Engineering Recommendation G99 which sets out the application process in the G99 Form. This form enables generators to request a change to their current connection, with a view to obtaining a revised connection arrangement.

The generator / requestor is required to pay the normal G99 Application Fees, in line with the DNO standard Connection Offer Expenses (also known as Assessment & Design or A&D fees), and in return the DNO provides the current connection options for the site including the revised connection charges for any required reinforcement works, or procurement of flexibility services, to facilitate a revised connection. The fees differ by DNO and also by voltage and capacity; more information can be found on the individual DNO websites.

In order to modify the terms of the connection agreement, it is generally necessary for the DNO to carry out a connections study to determine the impacts of the revised connection request on the network. This study may include looking further up the system at higher voltage levels, at the direction of flow of energy from the generation, and at the impact on fault levels. Accommodating the revised connection request may result in reinforcement costs for the generator and there may be restrictions on when the changes can be made, depending upon the scale of any network constraints identified. The latter may result in delays to accommodating the revised connection request.

Annex A provides the specific details for individual DNOs such as access to Surgeries, arranging 1-2-1s, and links to the DNO heatmaps.

4. Future Changes – Impact of Ofgem’s Access and Forward-Looking Charges (A&FLC) Significant Code Review (SCR).

The A&FLC SCR creates a number of key uncertainties. Ofgem is concerned that the current distribution network access arrangements may create barriers to investment or push generators to accept un-firm Flexible Connections. To address this the A&FLC SCR proposes a “shallower connection boundary”. This means the amount a generator pays for reinforcement is becoming “shallower”; currently generators pay for reinforcements triggered on their connection voltage and the one above. This change means that generators should no longer have to pay for reinforcements at the higher voltage, where the highest costs are generally incurred. Connection charges will continue to be applied for “sole use” or “extension” assets needed to connect to the existing network. In summary, the A&FLC SCR current proposals will reduce a generator’s contribution to reinforcement costs and facilitate quicker or cheaper access to the network. It also proposes to introduce new un-firm distribution access options to give generators more connection choices.

4.1 Potential Reductions in Generator Contribution to Reinforcement Costs

The A&FLC SCR proposals are due to be implemented from April 2023 and could offer improved access options and / or result in material reductions in the costs of connections:

- A shallower connection boundary will reduce the amount of reinforcement cost exposure for generators and could result in a cheaper, quicker connection.
- Generators may choose the percentage of time their connection is at risk of curtailment; a higher percentage would likely result in quicker or cheaper network access.
- Generators may choose time-profiled access (e.g. either no access or non-firm access during peak periods) and select the percentage of their access rights captured; a higher percentage of the connection being time-profiled would likely result in quicker or cheaper access to the network.

These proposals are Ofgem’s current “minded-to position”, as consulted on in the summer of 2021. A final decision is expected before the end of March 2022.

Generators contemplating exiting their current ANM Flexible Connection using the current processes should consider the potential opportunities and cost reductions afforded by these proposals in their decision making.

4.2 Common Connection Process

It is recognised that whilst the G99 Form is common, the wider connection processes / approaches taken by each DNO can vary due to differences in ANM technologies, legacy arrangements and charging methodologies etc. This has also been raised by a number of stakeholders.

With material changes to network access and charging proposed in the Ofgem A&FLC SCR and following the Open Networks Programme “least regrets” principles, activities to improve consistency, designing and implementing a common approach to connection requests that also deliver the A&FLC SCR requirements, will be undertaken in 2022 by the ENA SCR Implementation Working Group. Open Networks will continue to support the Implementation WG as and when required.

Annex A.1 DNO Information Links (UKPN, ENWL and WPD)

DNO	UKPN	ENWL	WPD
Weblink	Flexible Connections	Flexible Connections	Get Connected
Generation Connections Contact Email	connections.gateway@ukpowernetworks.co.uk	connectionapplications@enwl.co.uk	getconnected@northernpowergrid.com
Overview	<p>If a generator wants to adjust the terms of its flexible connection agreement, it is generally necessary to carry out a connections study to determine the impacts of the change to the network. These changes may incur costs and there may be restrictions on when the changes can be made, depending upon the scale of any network constraints identified. Before making a formal application, generators are asked to consider the following steps to guide them through their flexible connection journey.</p> <p>Use the UKPN DG mapping tool: The UKPN DG mapping tool shows which parts of the network are currently constrained according to technology type. It can also give an indication on how much curtailment to expect with a flexible connection.</p> <p>Speak to the UKPN experts directly: Generators can join one of UKPN's digital DER surgeries, which provide an opportunity for customers to discuss their project with UKPN before submitting an application.</p> <p>Get a budget estimate: UKPN can send an estimated cost for a flexible connection. This is intended as a guide only to help generators through the decision-making process. A budget estimate can be requested by emailing via the Flexible Connections link above. Note that the budget estimate is a desktop exercise based on a preliminary assessment. It is not a formal flexible connection offer, and the final formal connections costs may vary considerably from an initial budget estimate.</p>	<p>ENWL understand that flexible connections are not suitable for all customers' requirements and that sometimes people may want to adjust the terms of their agreements. In the majority of cases a flexible connection will have been offered in order to prevent network reinforcement or at the request of the original applicant.</p> <p>In order to modify the terms of the agreement it is generally necessary to carry out a connections study to determine the impacts of the change to the network. These changes may incur costs and there may be restrictions on when the changes can be made, depending upon the scale of any network constraints identified.</p> <p>The main webpage for connections can be found here: ENWL Connections Link</p> <p>More information on how to modify or upgrade a connection can be found here</p> <p>If you would like to speak to ENWL about modifying an existing generation connection please contact: connectionapplications@enwl.co.uk</p>	<p>Should a generator wish to exit their ANM contract for an unconstrained export/import it will need to follow the existing G99 connection process for any such connection modification.</p> <p>A connection surgery appointment can also be requested to discuss available options ahead of completing the G99 form.</p>
Heatmap	UKPN Heatmap	ENWL Heatmap	WPD Heatmap

DNO	UKPN	ENWL	WPD
Surgery / Contact	<p>UKPN's DER surgery provides an opportunity for customers to discuss a project's viability before submitting an application. UKPN Connection Surgery</p>	<p>ENWL host Connection Surgery appointments for HV / EHV and Micro-Generation for customers to speak to Connection Experts about current or future projects, complex schemes, or a list of possible sites before submitting an application. Request form can be found here: ENWL Surgeries</p> <p>If a customer would like to speak to ENWL about modifying an existing generation connection please contact: connectionapplications@enwl.co.uk.</p>	<p>WPD's surgeries provide an opportunity for customers to discuss their plans at an early stage. They can help provide a better insight into any potential network reinforcement and complexity issues that may arise and help establish the viability of an individual scheme before committing to a formal application and incurring associated costs (including assessment and design fees). More information about WPD's Connection Surgeries appointment with a design engineer can be found here:</p> <p>WPD Connection Surgery</p> <ul style="list-style-type: none"> • South West & Wales: 0800 028 6229 • Midlands: 0800 121 4909
G Form	UKPN G99 Link	ENWL G99 Link	WPD G99 Link
OTHER	Flexible Connection Application Process		
Fees	<p>Costs will depend on the type and capacity of the connection. UKPN publish a connection charging statement for customer reference here:</p>	<p>Costs will depend on the type and capacity of the connection. ENWL publish a connection charging statement for customer reference here.</p>	<p>Costs will depend on the type and capacity of the connection. WPD publish a connection charging statement for customer reference here: Western Power Distribution - Connections charging statements</p>

Annex A.2 DNO Information Links (SPEN, SSEN and NPG)			
DNO	SPEN	SSEN	NPG
Weblink	Getting Connected	Generation Flexible Connections	Get Connected
Generation Connections Contact Email	SPEN Regional Contacts	flexible.connections@sse.com	getconnected@northernpowergrid.com
Overview	<p>If a customer would like to exit the ANM connection they will have to apply for a firm generation connection which will be the same process as a new connection application and pay for any reinforcement required.</p> <p>SPEN design team will review any further generation connection application and provide reinforcement costs to an area that has network constraints. If the customer accepts the offer and pays, a new connection agreement will replace any existing ANM connection agreement.</p> <p>For smaller projects (smaller than or equal to 50kW) looking to connect there is normally no need to worry about the capacity of the SP network but for larger projects SPEN may need to carry out some work to connect the generator.</p> <p>SPEN recommend that customers engage at an early stage as it's important that they are aware of the timescales and costs involved before they begin their project.</p> <p>In advance of this SPEN has a series of heatmaps that will give an indication of the network's capability and a better understanding of potential opportunities to connect generation to the electricity network.</p>	<p>If a generator wants to exit its ANM connection, it will have to apply for a firm generation connection and pay for any reinforcement required.</p> <p>If the overall proposed generation is greater than or equal to 50kW it is worth checking SSEN's thermal network capacity map (heatmap) to understand if there are any constraints in the area as this means reinforcement is likely to be required for the connection.</p> <p>There are limits to the amount of generation a transformer can handle and this constraint affects not only small local transformers but can also affect larger transformers in substations. Any further generation connection to an area that is significantly constrained would trigger reinforcement costs of new equipment which can be very high.</p> <p>Once the customer applies, accepts the offer and pays the generator is given a connection date and a new connection agreement that will supersede any existing ANM connection agreement.</p>	<p>Customers who wish to modify an existing ANM connection arrangement should engage with NPg early in the process. In the first instance, they can talk to an NPg engineer to understand the options in terms of cost, timescales, and overall feasibility. Customers can contact NPg's commercial and design engineers direct or book a connections' surgery to do this.</p> <p>Following this initial, pre-application discussion, should the customer wish to proceed, they will be required to submit an application for a new generation connection which will be processed in line with NPg's Guaranteed Standards of Performance. The customer will be issued with an NPg single point of contact to guide them through the process.</p> <p>Upon receipt of the application and all the required information, NPg will carry out a detailed design assessment and issue the customer with a formal connection offer. The new offer will be subject to NPg Connection Offer Expenses.</p> <p>Payment terms, NPg will progress with the design and build programme and seek to align with the customer's required connection date. The customer's new connection arrangement and agreements will supersede any previous ANM arrangements.</p>
Heatmap	SPEN Heatmap	SSEN Heatmap	NPg Heatmap

DNO	SPEN	SSEN	NPG
Surgery / Contact	<p>SP Energy Networks has dedicated account managers to guide generators through the connections process for Distributed Generation.</p> <p>For more contact information SPEN DG Contacts</p>	<p>The Flexible Solutions Team (Page 9 in the linked document) are responsible for rolling out Active Network Management and other types of flexible connections across both SSEN's distribution areas, north and south, for the benefits of generation connection and to the UK customer in general. For any queries with regard to Flexible Connections, please contact: flexible.connections@sse.com or the Flexible Connections Team above.</p>	<p>NPg hosts monthly connections surgeries which are an opportunity to talk to NPg experts about any current or future connections projects. Customers can explore their options ahead of making a formal application or discuss an existing offer and benefit from the local network knowledge of NPg's engineers when making informed decisions about how and where to connect. For more information and to book an appointment visit www.northernpowergrid.com/customer-events-and-surgeries</p>
G Form	SPEN G99	SSEN G99	NPg G99
OTHER		SSEN G99 Flow Diagram	NPg generation connections guide
Fees	<p>SPEN have an indicative range of what a connection could cost along with all of the individual design fees in the charging methodology. An electronic copy of this charging methodology is available at: http://www.scottishpower.com/pages/connections_use_of_system_and_metering_services.aspx</p>	<p>Customers applying for a large Generation or Demand project will be charged for the costs associated with issuing the Connection Quotation in accordance with the Electricity (Connection Offer Expenses) Regulations 2018. Customers will need to pay a Connection Offer Expense whether or not they decide to accept their Quotation. SSEN will invoice the customer shortly after the quotation is issued and payment is due 30 days from receiving the invoice. The amount charged will vary depending on the requirements of the connection.</p> <p>Connections Offer Expenses (ssen.co.uk)</p> <p>SSEN's key connection services are subject to The Connection Guaranteed Standards of Performance. These set out the level of service customers can expect and, where SSEN is unable to achieve these standards, the compensation that the customer is entitled to. The detail is included in this document. Performance Standards (ssen.co.uk)</p>	<p>NPg publish guide prices and indicative timescales for different types of connections, including generation, to help customers to plan and budget for their next project www.northernpowergrid.com/guide-prices-and-timescales/generation-connection</p> <p>If a customer wishes to modify their existing ANM arrangement, NPg will need to carry out a detailed study to determine the impact on the network. NPg charge a fee for all budget estimates, feasibility studies and connection offers produced. For more information on NPg's Connection Offer Expenses visit www.northernpowergrid.com/connection-offer-expenses</p>

Common Information	
Timescales	<p>Industry regulations require all DNOs to provide you with a quote within the following guaranteed timescales:</p> <ol style="list-style-type: none"> 1. S16 Applications (DNO carries out all the work) <ul style="list-style-type: none"> • 45 working days for LV1 generation • 65 working days for HV2 and EH 2. Competition in Connection Applications (DNO carries out non-contestable work only): <ul style="list-style-type: none"> • 30 working days for LV <1kV • 50 working days for HV <22kV • 65 working days for EHV
G99 Forms	<p>https://www.energynetworks.org/assets/images/Resource%20library/G99_Amd%208%20(2021).zip</p>

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