

Invitation for Expression of Interest to provide Flexible Services

3 April 2018



VERSION HISTORY

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1.0	23 March 2018	S Brooke	Draft	Updated with review comments
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REVIEW

Name	Role	Date
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APPROVAL

Name	Role	Date
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CONTENTS

CONTENTS	3
1 INTRODUCTION	4
1.1 Local flexibility needs	4
1.2 Looking to the future	4
1.3 Registering your interest	4
2 WHO IS ELECTRICITY NORTH WEST	5
2.1 About us	5
2.2 Our vision	5
3 PURPOSE OF THIS DOCUMENT	5
4 SERVICE REQUIREMENTS	6
4.1 Service definition	6
4.2 Network requirements	7
4.3 Conditions precedent	8
4.4 Assessing responses	8
5 NETWORK REQUIREMENTS BY LOCATION	9
5.1 Alston, Cumbria	9
5.2 Blackfriars, Salford and Central Manchester	10
5.3 Cheetham Hill, North Manchester	11
5.4 Coniston, Cumbria	12
5.5 Easton, Cumbria	13
5.6 Stuart Street, Central and East Manchester	14
5.7 Nelson, East Lancashire	18
6 PROCUREMENT TIMELINE	21
7 GLOSSARY	21

1 INTRODUCTION

The UK is committed to delivering ambitious targets for reductions in carbon emissions which is revolutionising the way we produce, distribute and consume electricity. Distribution network operators, like Electricity North West, have a unique role to play as both facilitators and participants in creating open markets which enable early adoption and implementation of new technologies and commercial opportunities.

1.1 Local flexibility needs

Distributed Energy Resources (DERs) are companies or individual customers capable of adjusting how much they consume or generate electricity and can support the local distribution network at times of high electricity demand when the network is operating abnormally, and receive payment from Electricity North West in return. These DERs can be generators, consumers, and electricity storage connected to our networks that can increase exports (generate more) or reduce imports (consume less) when instructed.

As the distribution network operator in the North West of England, we are looking to use this flexibility to support how we operate the local networks, as an alternative to traditional approaches. The aim is to reduce the cost for electricity distribution networks in customer energy bills while ensuring that our network remains resilient, reliable and meets our customers' needs.

1.2 Looking to the future

This is the first Expression of Interest (EoI) issued by Electricity North West for the provision of flexible services and it is highlighting that we are seeking support from DERs across several locations for this coming winter 2018/19 and potentially subsequent winters up to the end of the current price control period in 2022/23. At the moment our requirements are limited to the provision of support for times when there is high electricity demand on the local distribution due to the network operating abnormally ie generally referred to as the post-fault condition.

In subsequent years, we expect to issue, on an annual basis, similar EoIs outlining our future requirements; this is likely to include a range of support requirements covering normal or post-fault operating conditions.

1.3 Registering your interest

This Expression of Interest (EoI) document identifies seven network locations where flexibility could potentially be of benefit to the network. For each of these locations, we provide indicative requirements including the total capability forecast to be required over the next five years, and at what times of day and year.

The responses we receive will help us understand the number and type of flexible resources available in each network location and their technical and commercial characteristics. Where there is sufficient interest and availability we will run a competitive tender during summer 2018 for contract delivery in:

- Winter 2018/19 (starting November 2018), and
- Winter 2019/20.

The exact months vary by each location. We are keen to hear from any provider that is unable to participate in winter 2018/19 but could participate in future years. There will be future opportunities for providers to tender, which will be communicated in subsequent EoIs. This might include the same locations as announced in this document as well as additional locations.

To express interest in this tender round please download and send your completed questionnaire to flexible.contracts@enwl.co.uk by 5pm on Tuesday 29 May 2018.

2 WHO IS ELECTRICITY NORTH WEST

2.1 About us

Electricity North West is one of 14 distribution network operators in the UK regulated by Ofgem. We operate the local electricity network and distribute electricity, mainly from the National Grid, to 2.4 million homes and businesses in the North West.

We are responsible for maintaining and upgrading 13,000 km of overhead power lines and more than 44,000 km of underground electricity cables and much more.

Our network in the North West is one of the most reliable in the country and we are investing £1.9bn by 2023 to ensure we continue to deliver an excellent, safe and affordable service to all our customers.

2.2 Our vision

Britain's energy mix is changing and the way we manage our electricity network needs to change too. As the region's network operator it's our responsibility to plan for the future and help reduce the impact of fossil fuels like gas and oil on the environment.

As we use fewer fossil fuels, we will start to need more electricity for low carbon technologies such as electric heating and electric vehicles. This means that demand for electricity will rise significantly, placing a strain on our network. The cost of upgrading the network to meet this increased demand will mean higher bills for customers. So we are trialling smarter, more affordable techniques to use the existing network more efficiently, which will reduce costs for all our electricity customers in the future.

One aspect of our strategy is to look at areas of the network which are likely to need expensive reinforcement to meet increasing demand and look at other, more flexible solutions to meet that demand.

3 PURPOSE OF THIS DOCUMENT

This document invites expressions of interest from providers that can offer flexible services to Electricity North West. It contains supporting information to help providers identify whether their resource is suitable and is in the right location.

- **Network locations:** These are network locations in Electricity North West's licensed area with a potential need for flexible services. Maps and postcode sectors are included to help potential providers identify suitable sites from their portfolio. A more detailed postcode list is also available on the flexible services webpage at www.enwl.co.uk/flexible-services.
- **Network requirements:** These are indicative requirements for flexibility by location, including total capability required and when, along with a projection of our requirements over the next five years.
- **Questionnaire:** We provide high-level conditions that service providers need to meet. Providers that can participate in this year's tender should register their interest by downloading and completing the questionnaire. This should be returned to flexible.contracts@enwl.co.uk by 5pm on Tuesday 29 May 2018. We are also very interested in hearing from any provider that is unable to participate in winter 2018/19

but could participate in future years, so please complete the questionnaire indicating when you believe you are available to participate.

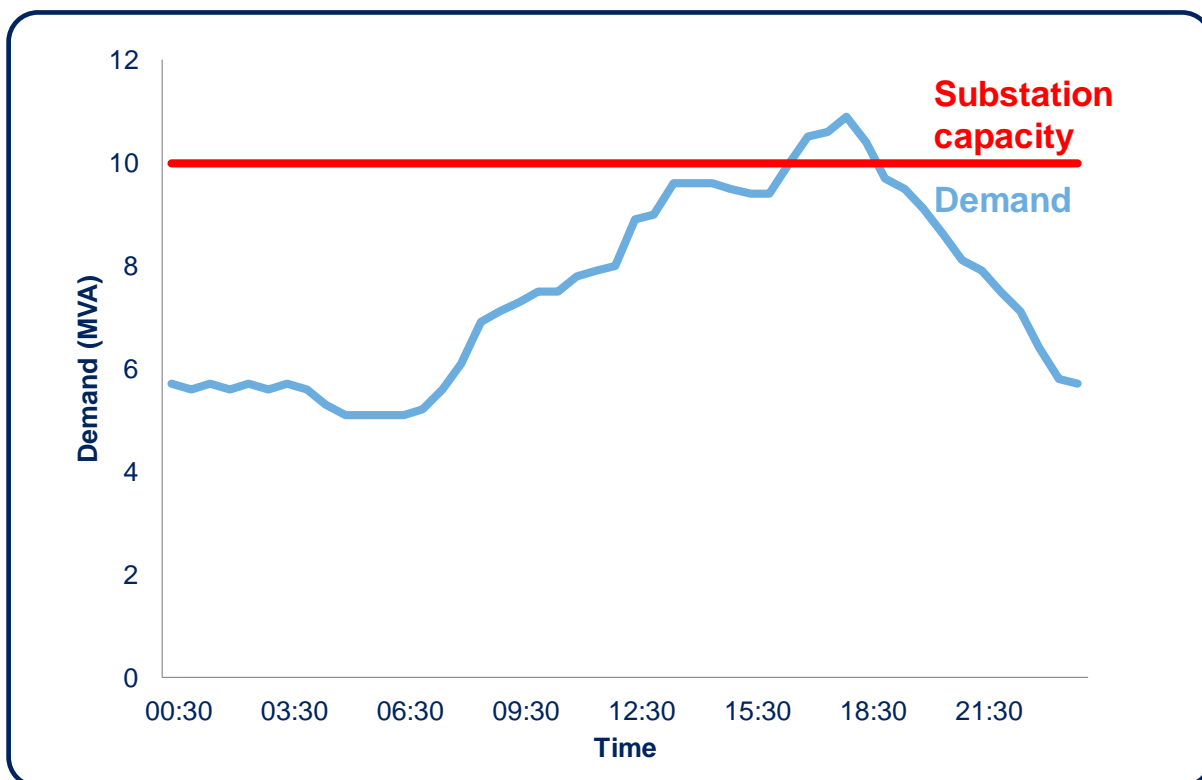
- **Next steps:** Electricity North West will use the responses to:
 - Understand what flexibility resources are available, or could be available, in each location. We will use this to evaluate the viability for deployment of flexible services in each location,
 - Understand the needs, capabilities, and any restrictions of those resources, using it to inform the service requirements and design, and
 - Using the characteristics of the resources available, based on the expressions of interest we receive, we shall develop and communicate service requirements and procurement processes in the following invitation to tender.

4 SERVICE REQUIREMENTS

4.1 Service definition

Electricity North West will contract with DERs, that are connected to a specific network asset such as a substation, that can increase exports (generate) or reduce imports (consume less) at times of high electricity demand, when the network is operating abnormally. This has the effect of reducing the net demand seen by that network asset, and therefore keeping it below the local limit. This requirement is generally referred to as post-fault demand response.

Figure 4.1: Flexibility capability contracted to cover demand above firm network capacity



To ensure that there are enough flexible resources available when needed, we will contract with the required capability for the required time ahead of need by running competitive tenders. DERs will receive payments for their flexible service provision. We are open to discussion on the structure of these payments ie whether through an availability and/or utilisation amount.

4.2 Network requirements

The map in Figure 4.2 shows network locations with a potential need for flexible services. These are substation feeding areas, across locations within Electricity North West's licensed area.

Figure 4.2: Map of locations with a potential need for flexibility



Figure 4.3 summarises our network requirements per network location. Please refer to Section 5 for more detailed maps and future requirements.

Figure 4.3: Summary of indicative requirements by location for 2018/19

Network location	Voltage of connection	Total flexible service requirement 2018/19 (MW)	Availability window					Utilisation rate
			Months	Earliest start date	Latest end date	Times	Days	
Alston	LV or HV	0.5	Nov - Mar	Nov-18	Mar-19	06:30 to 21:30	All week	Up to 40 hrs pa
Coniston	LV or HV	1.0	Nov - Mar	Nov-18	Mar-19	All day	All week	Up to 40 hrs pa
Easton	LV or HV	2.0	Nov - Mar	Nov-18	Mar-19	All day	All week	Up to 40 hrs pa
Nelson	HV or 33kV	20.0	Oct - Mar	Oct-18	Mar-19	06:30 to 21:30	All week	Up to 40 hrs pa

Network location	Voltage of connection	Total flexible service requirement 2018/19 (MW)	Availability window					Utilisation rate
			Months	Earliest start date	Latest end date	Times	Days	
Blackfriars	LV or HV	0.5	Jan - Feb	Jan-19	Feb-19	16:30 to 21:30	Weekdays	Up to 40 hrs pa
Cheetham Hill	LV or HV	2.5	Nov - Mar	Nov-18	Mar-19	11:30 to 21:30	All week	Up to 40 hrs pa
Stuart Street	HV or 33kV	9.5	Nov - Feb	Nov-18	Mar-19	06:30 to 21:30	Weekdays	Up to 40 hrs pa

4.3 Conditions precedent

The provider will need to meet the following high level conditions in order to provide a flexible service to Electricity North West:

- The flexible resource has to be connected to the network asset being supported. Providers should use the postcode list to check that the resource is in the right geographic location. Electricity North West will verify that the electrical connection is suitable using the submitted meter point administration numbers (MPANs).
- There are no restrictions on the size of sub-sites of aggregated portfolios, but the total portfolio size needs to be at least 200kW (flexibility capability and not capacity). Similarly, the minimum size for directly contracted resources should also be at least 100kW.
- The provider should be able to deliver and manage, upon Electricity North West's request, a net reduction in the load or an increase in the export, as seen by the distribution network.
- The flexible resource should have the ability to act (provide a response) reliably and consistently, in both magnitude and duration, throughout the contracted windows.
- We are open to all technology types that can meet our requirements. Flexible service providers may represent any existing or new industry sectors and any type of response mechanisms, such as demand reduction, demand offset, generation export, or electrical storage discharge.
- Generators and storage, greater than 16A per phase, looking to export to the network will need to have a long-term parallel connection and be compliant with the requirements of EREC G59/3-3.
- Flexible providers should be able to deliver the service during winter 2018/19 (starting November 2018) and/or next winter (2019/20).

4.4 Assessing responses

Electricity North West will assess the information provided against the conditions as set out in Section 4.3. If the location is deemed suitable for flexible service provision, including but not limited to having sufficient flexible resources available, we will shortlist suitable providers to participate in this year's tender. If the providers are unable to meet these conditions, they will

be considered as interested parties for our future requirements at those locations to be communicated in subsequent Eols.

5 NETWORK REQUIREMENTS BY LOCATION

The maps in this section illustrate the boundaries of the feeding area of each substation or on specific feeders. The postcode sectors listed below are approximations of the physical boundaries of the electrical networks. A more detailed list of postcodes is available on the flexible services webpage at www.enwl.co.uk/flexible-services.

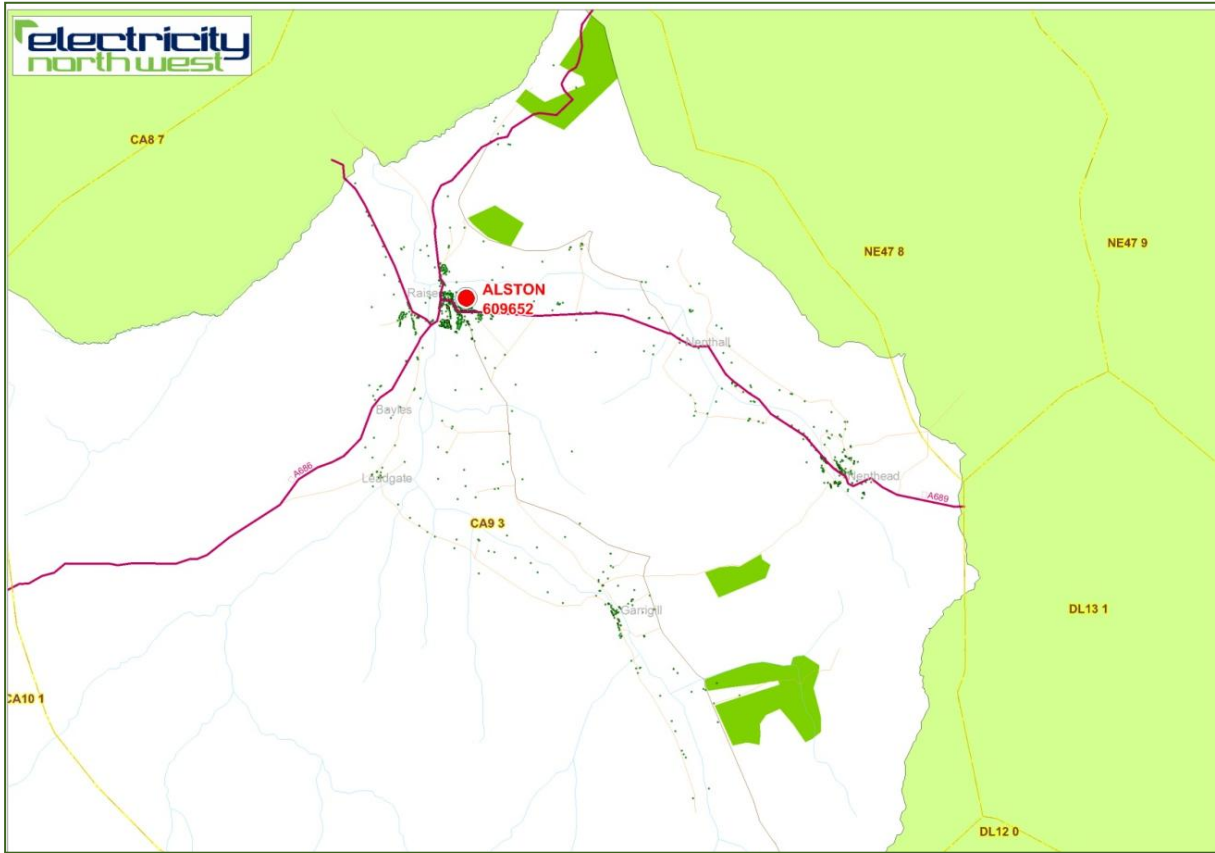
We also provide a forecast of our requirements over the next five years.

5.1 Alston, Cumbria

Figure 5.1: Alston – requirements

Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
CA9 area, sector 3 (ie CA9 3**)	0.5	0.5	0.5	0.5	1.0

Figure 5.2: Alston – feeding area

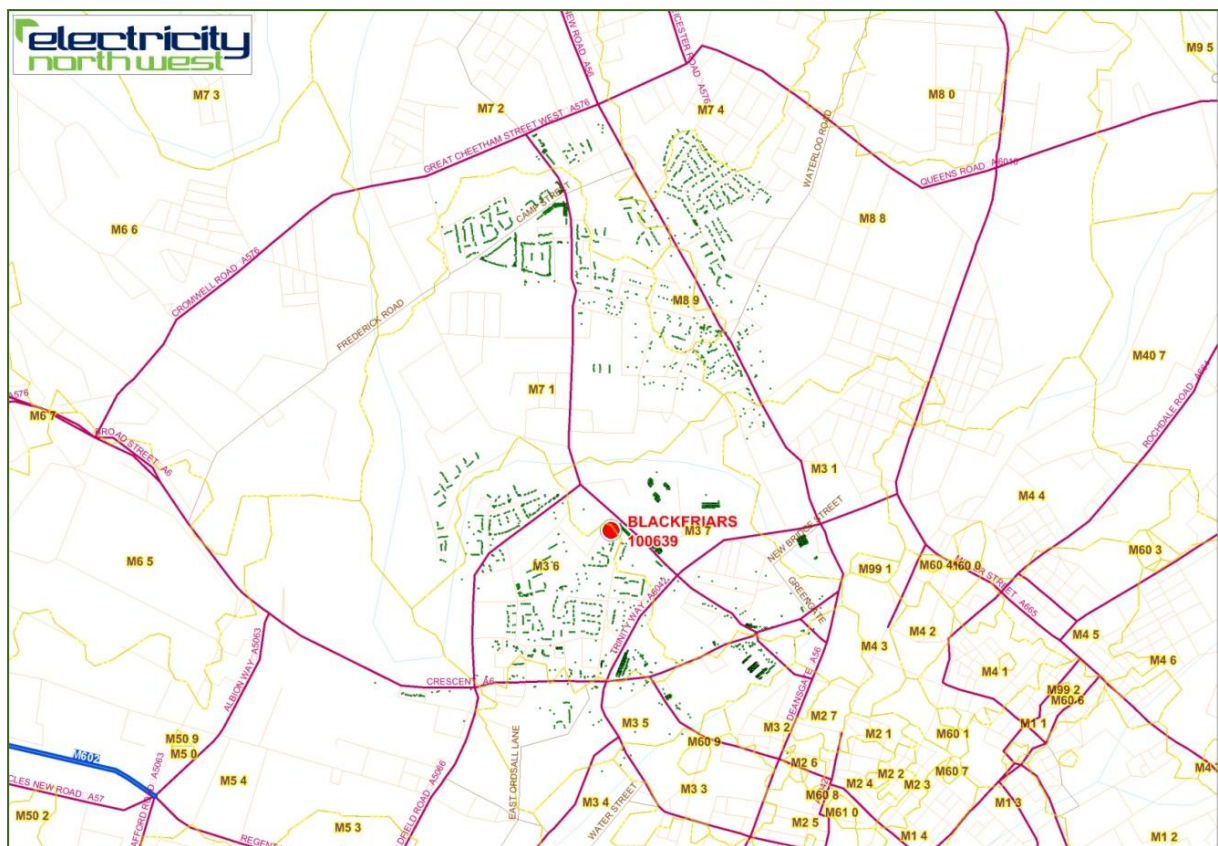


5.2 Blackfriars, Salford and Central Manchester

Figure 5.3: Blackfriars – requirements

Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
M3 area, sectors 1, and 3 to 7, (ie M3 1**) M7 area, sector 1 M8 area, sectors 8 & 9	0.5	1.0	1.0	1.5	1.5

Figure 5.4: Blackfriars – feeding area

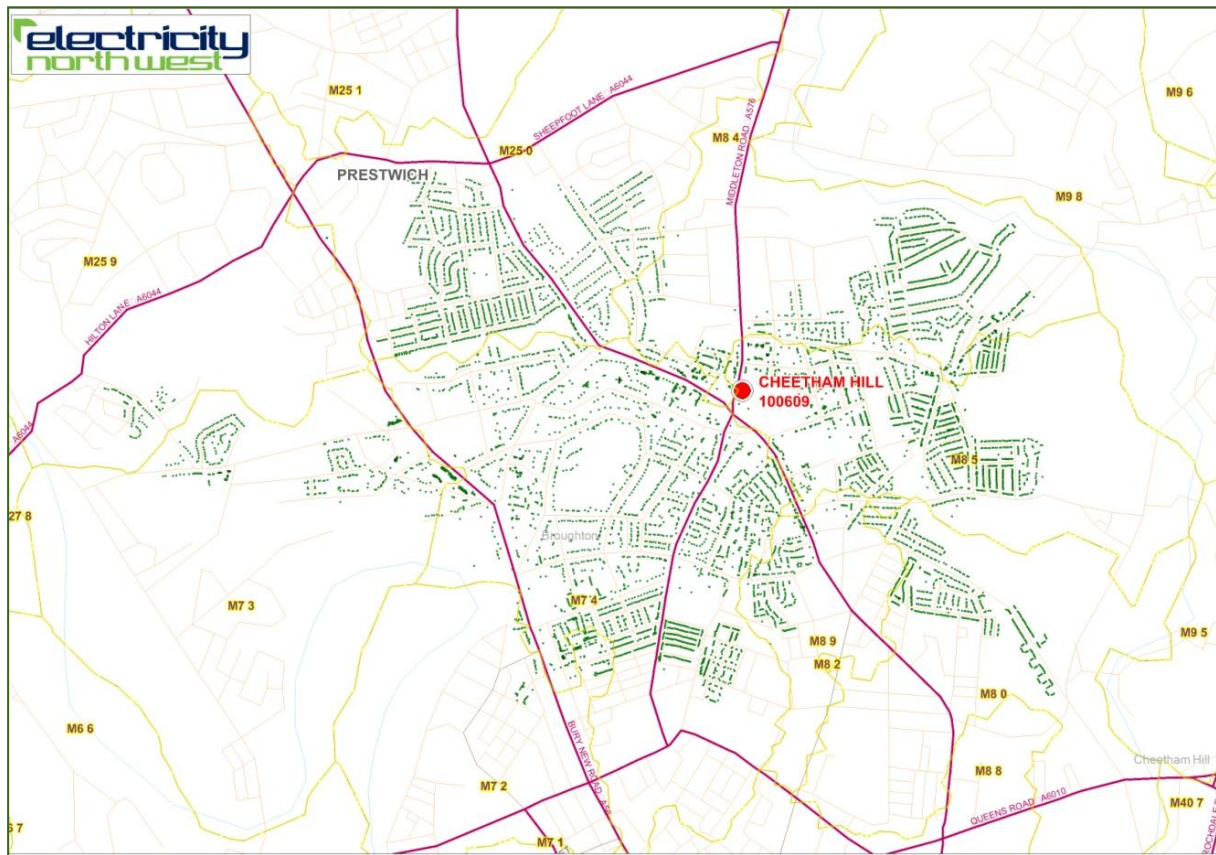


5.3 Cheetham Hill, North Manchester

Figure 5.3: Cheetham Hill – requirements

Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
M7 area, sectors 2 & 4 (ie M7 2**) M8 area, sectors 4 & 5 M25 area, sector 0	2.5	2.5	2.5	2.5	3.0

Figure 5.4: Cheetham Hill – feeding area

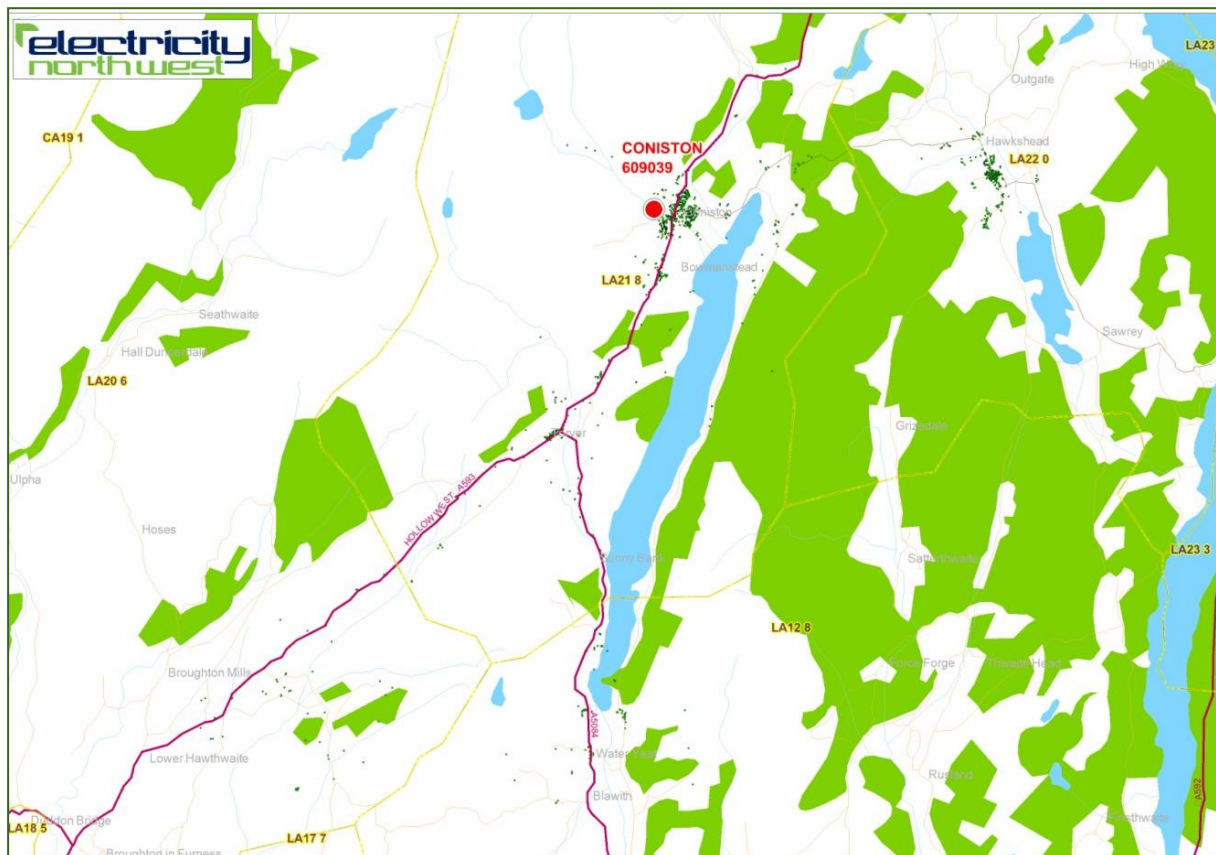


5.4 Coniston, Cumbria

Figure 5.3: Coniston – requirements

Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
LA12 area, sector 8 (ie LA12 8**) LA21 area, sector 8 LA22 area, sector 0	1.0	1.0	1.0	1.0	1.0

Figure 5.4: Coniston – feeding area

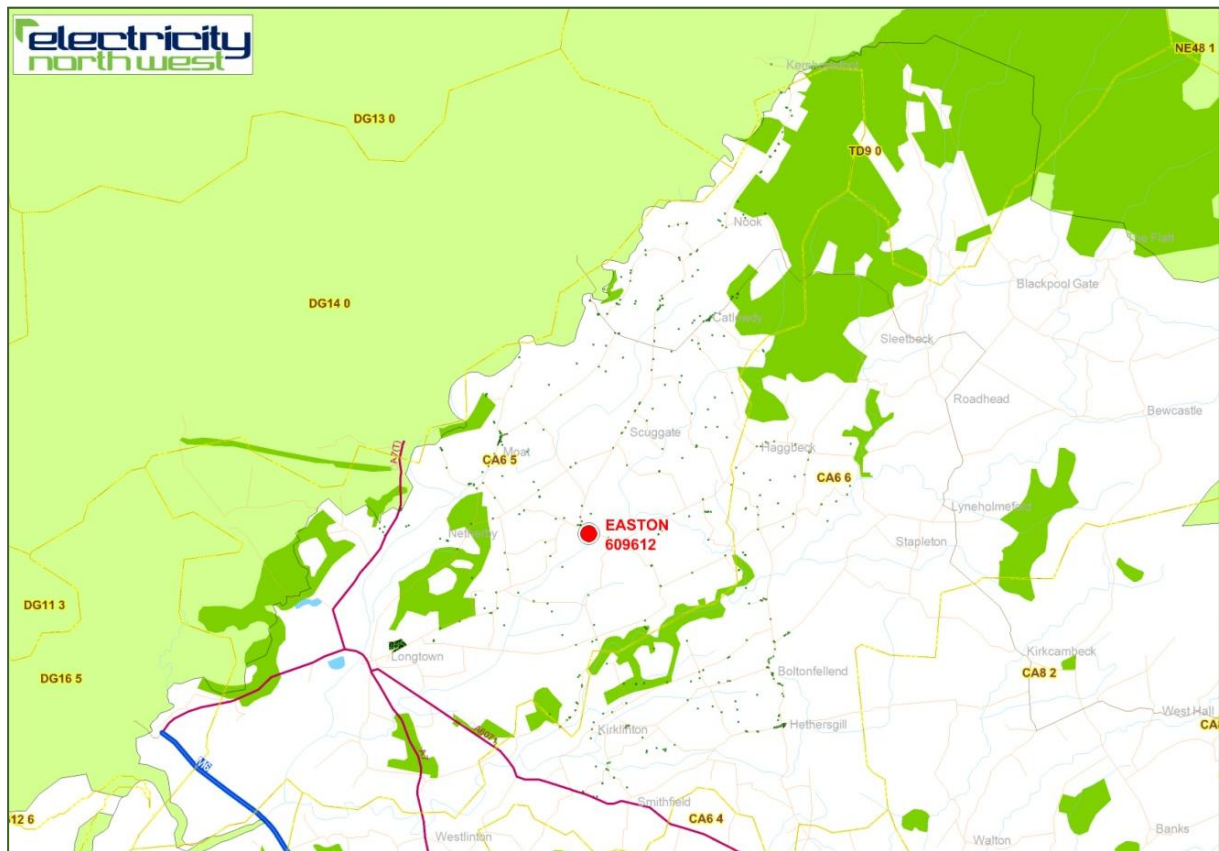


5.5 Easton, Cumbria

Figure 5.5: Easton – requirements

Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
CA6 area, sector 6 (ie CA6 6**)	2.0	2.0	2.0	2.0	2.0

Figure 5.6: Easton – feeding area

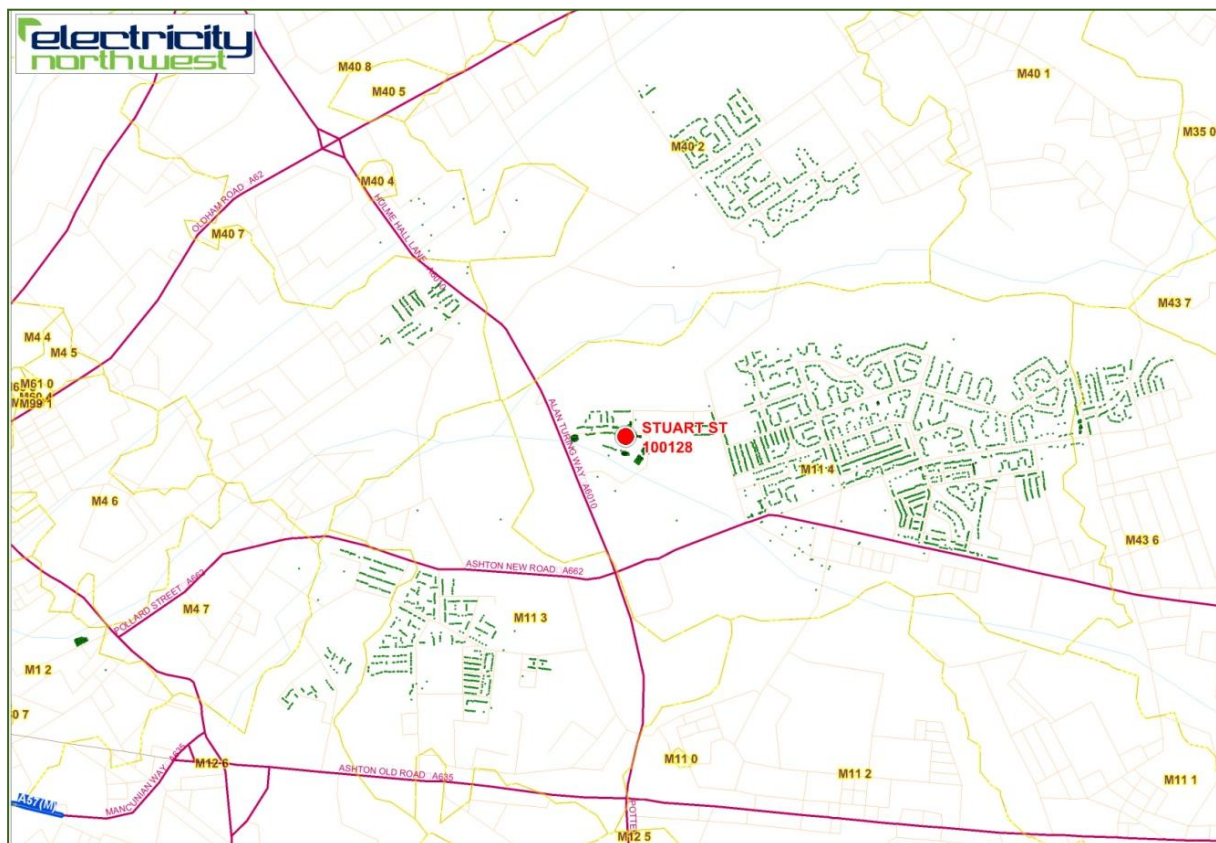


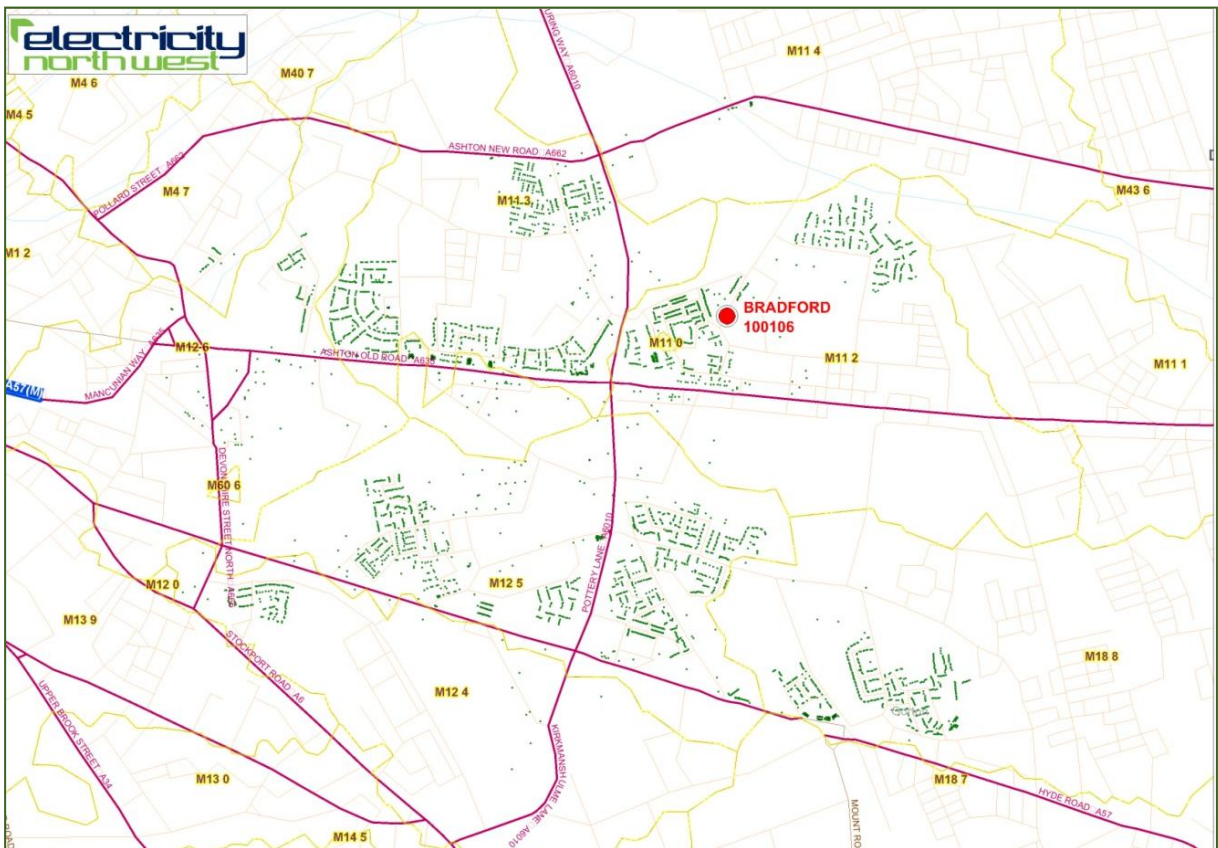
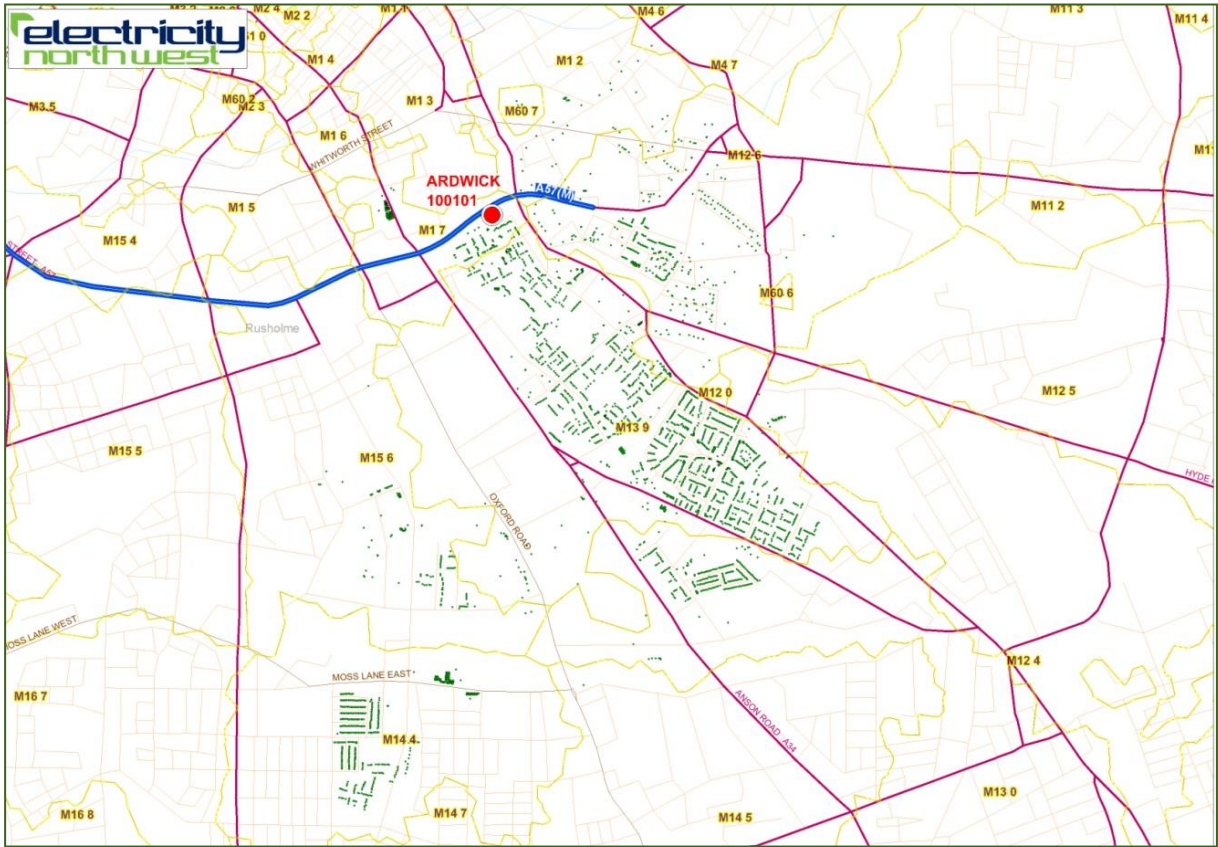
5.6 Stuart Street, Central and East Manchester

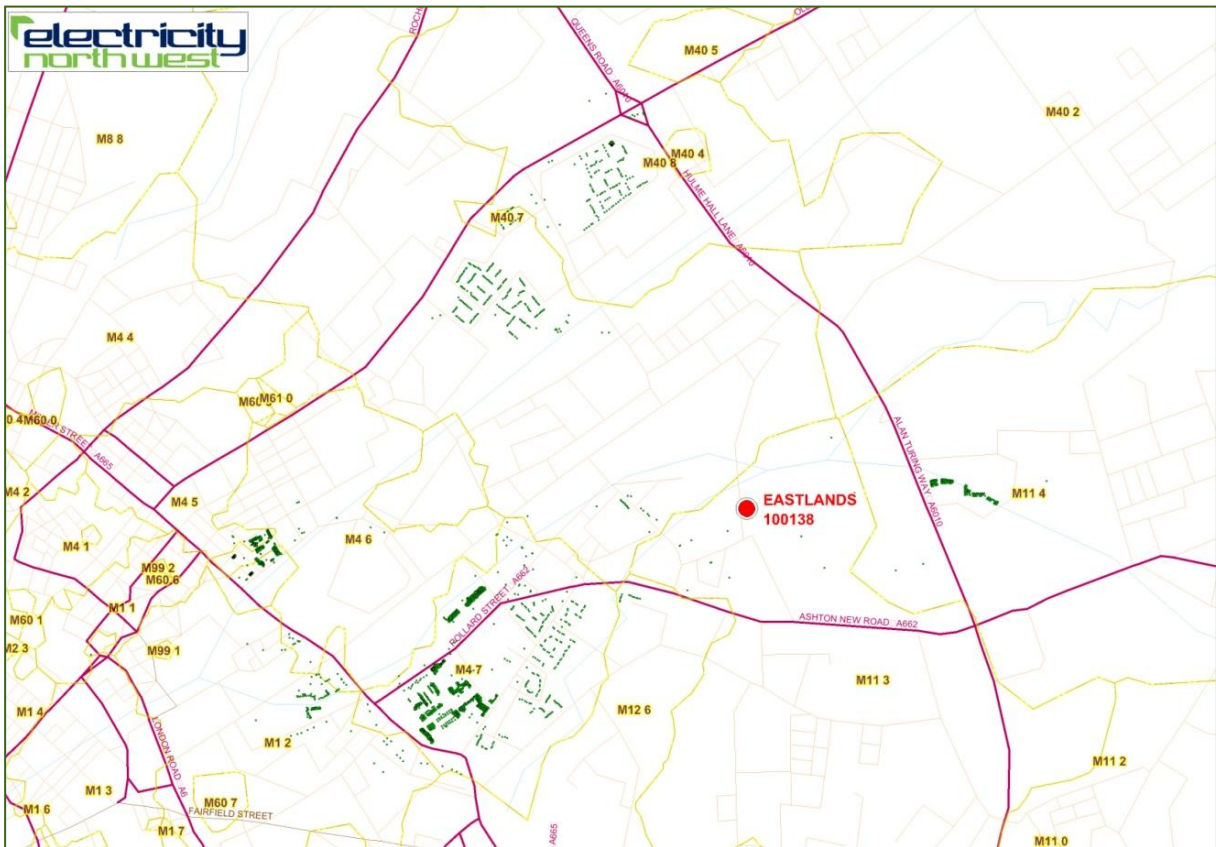
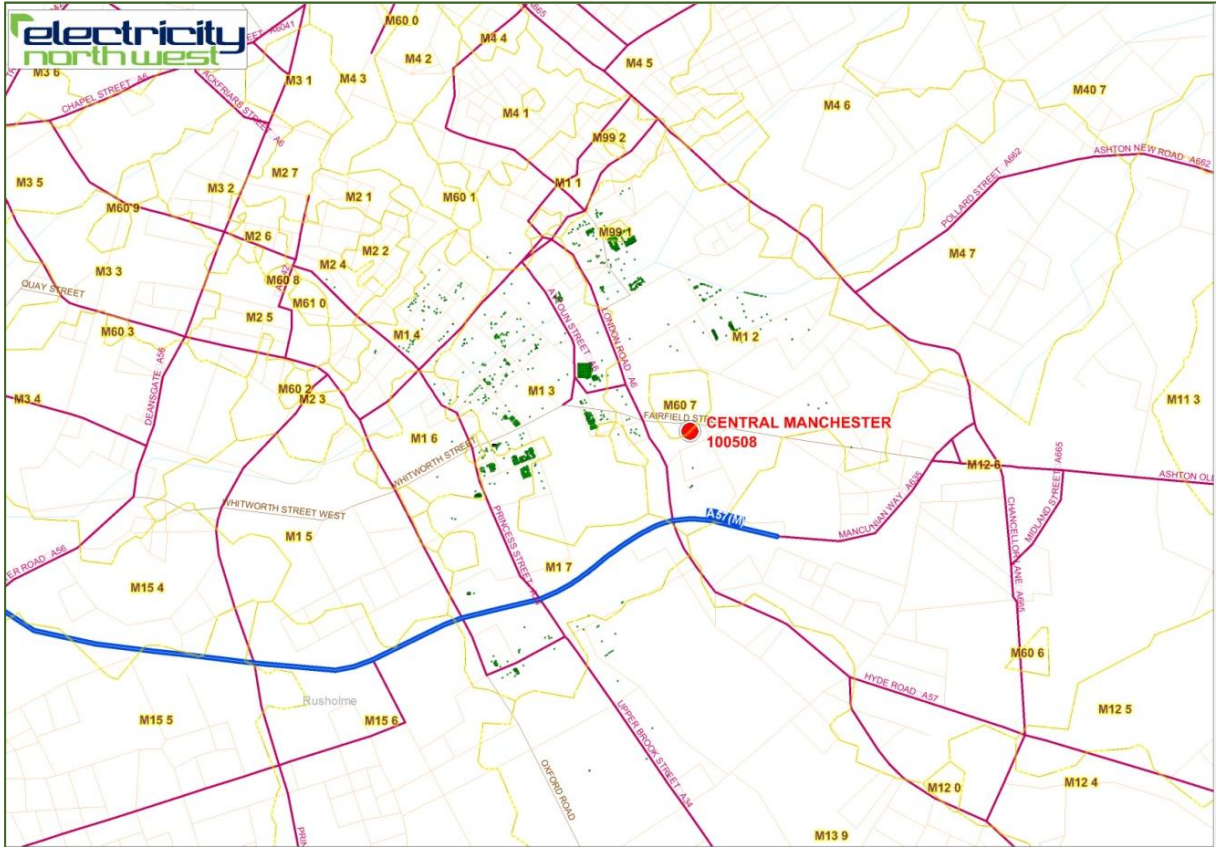
Figure 5.7: Stuart Street – requirements

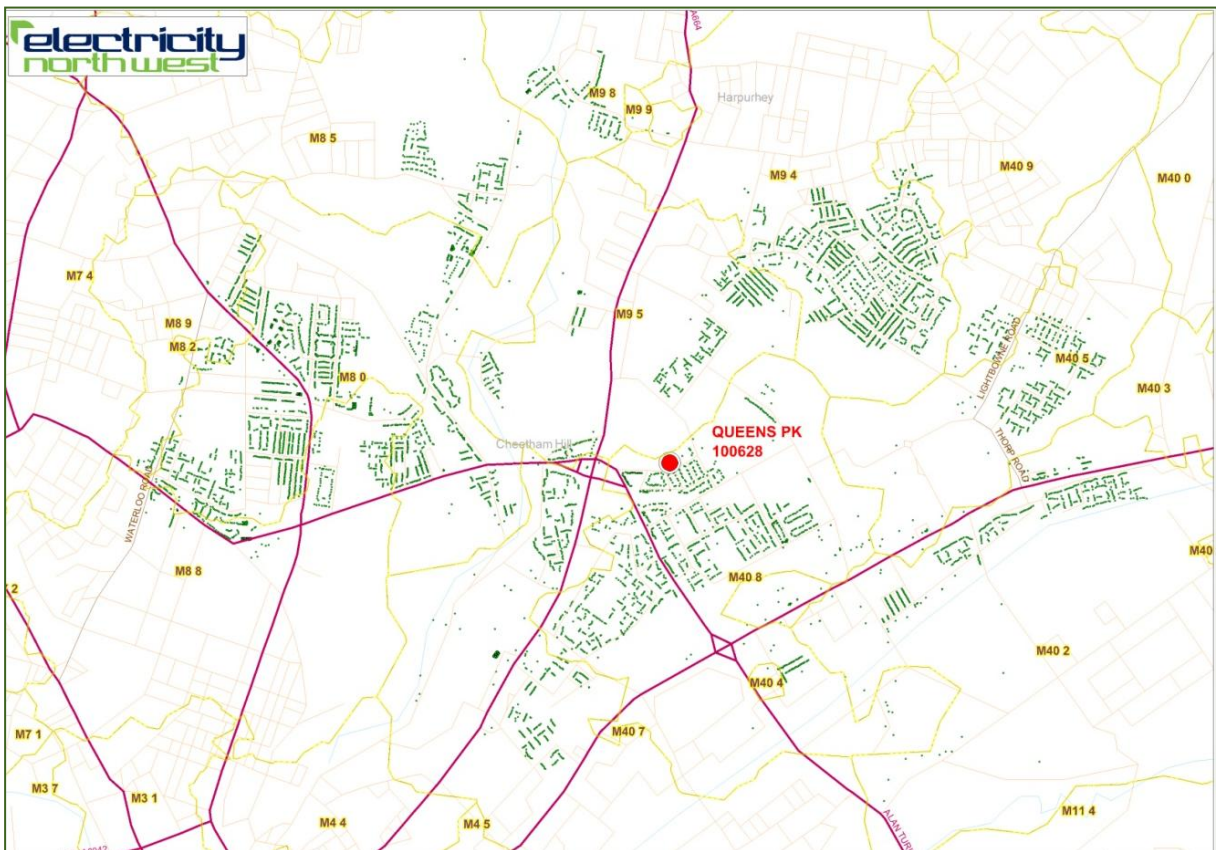
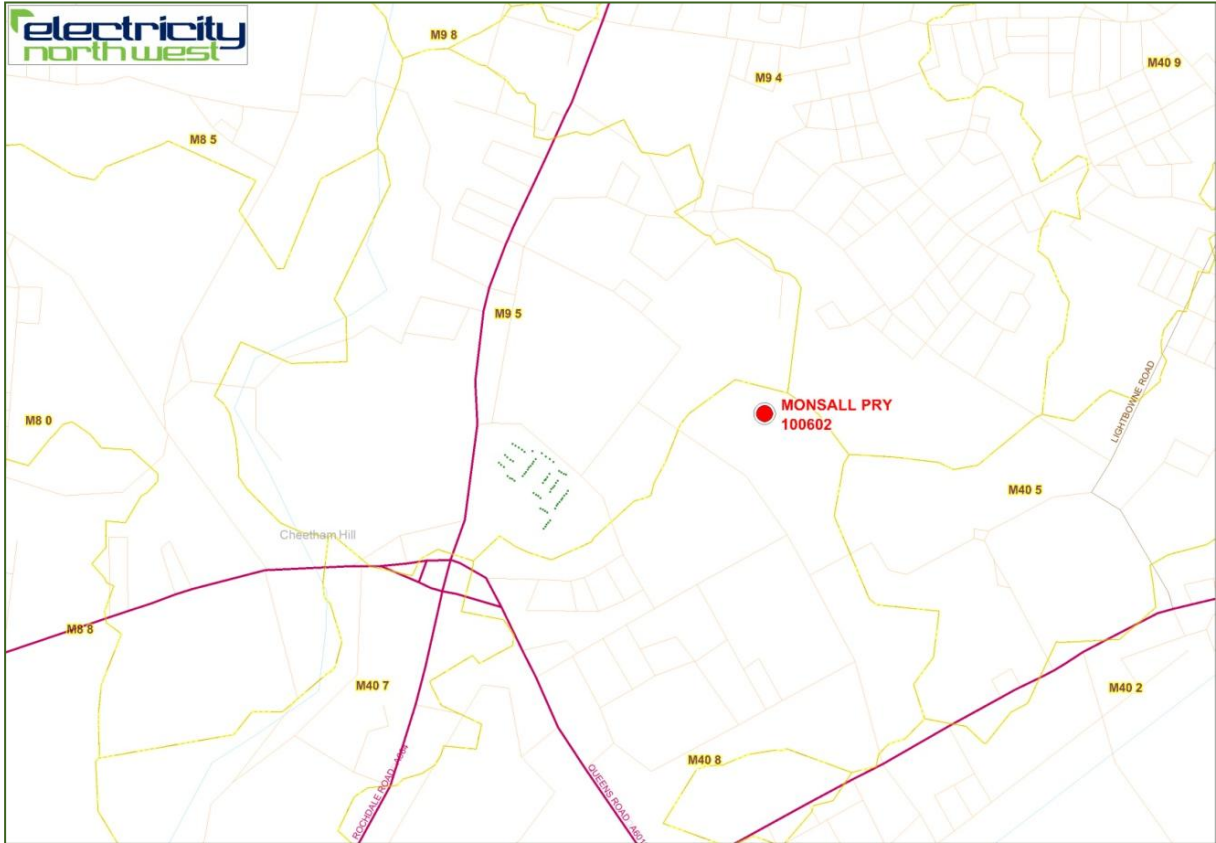
Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
M1 area, sector 7 (ie M1 7**) M2 area, sectors 2 & 3 M4 area, sectors 6 & 7 M8 area, sectors 0,4,5,8 & 9 M9 area, sector 5 M11 area, sectors 0,2,3 & 4 M12 area, sectors 4,5 & 6 M13 area, sectors 0 & 9 M14 area, sectors 4 & 5 M15 area, sector 6 M18 area, sector 8 M40 area, sectors 2,5,7 & 8 M60 area, sector 6	9.5	19.5	19.5	20.5	21.5

Figure 5.8: Stuart Street – feeding areas







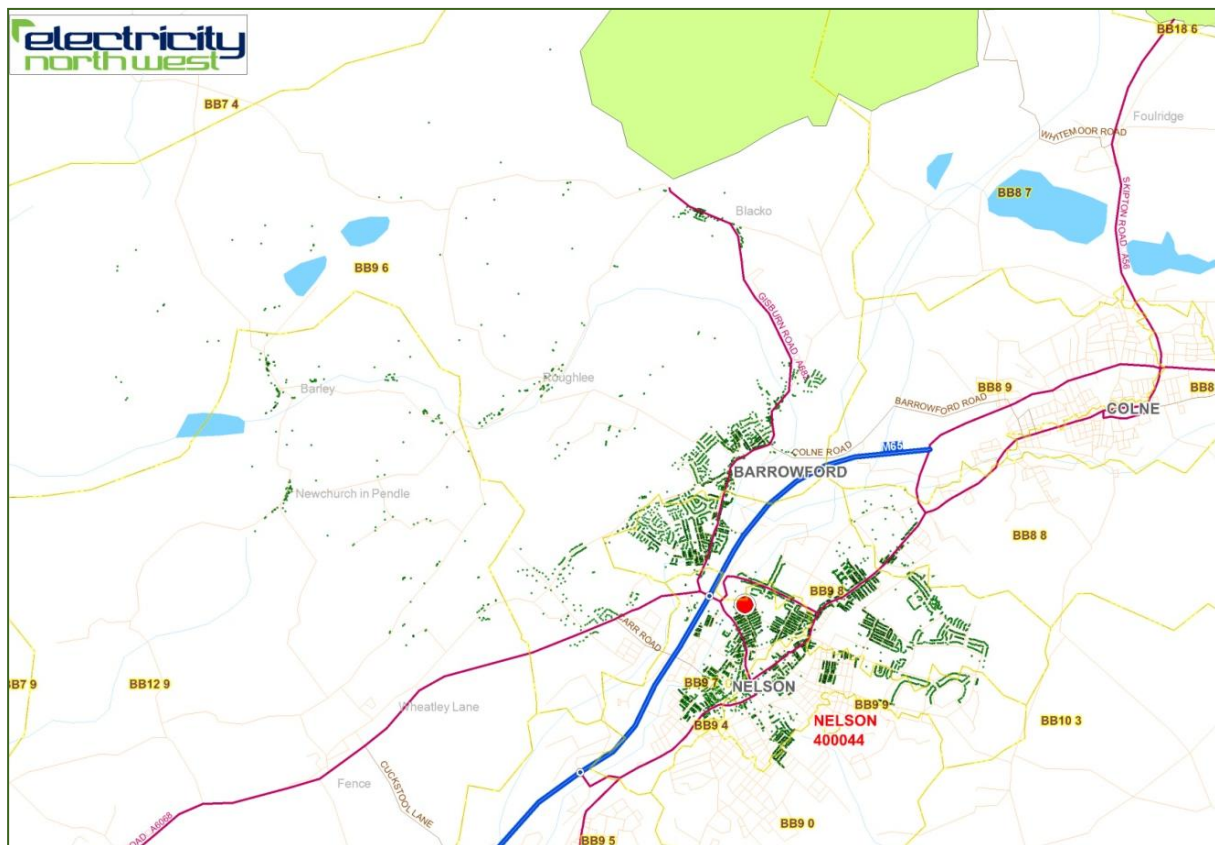


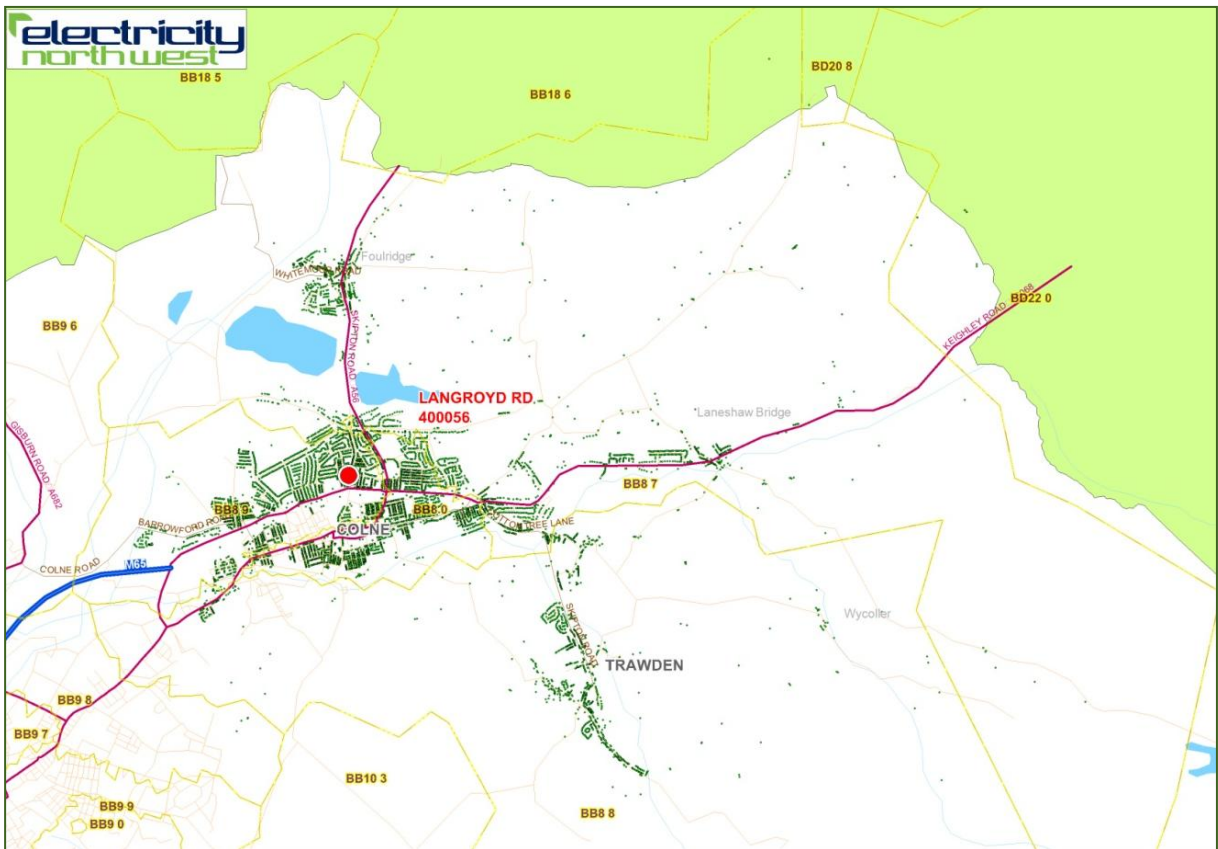
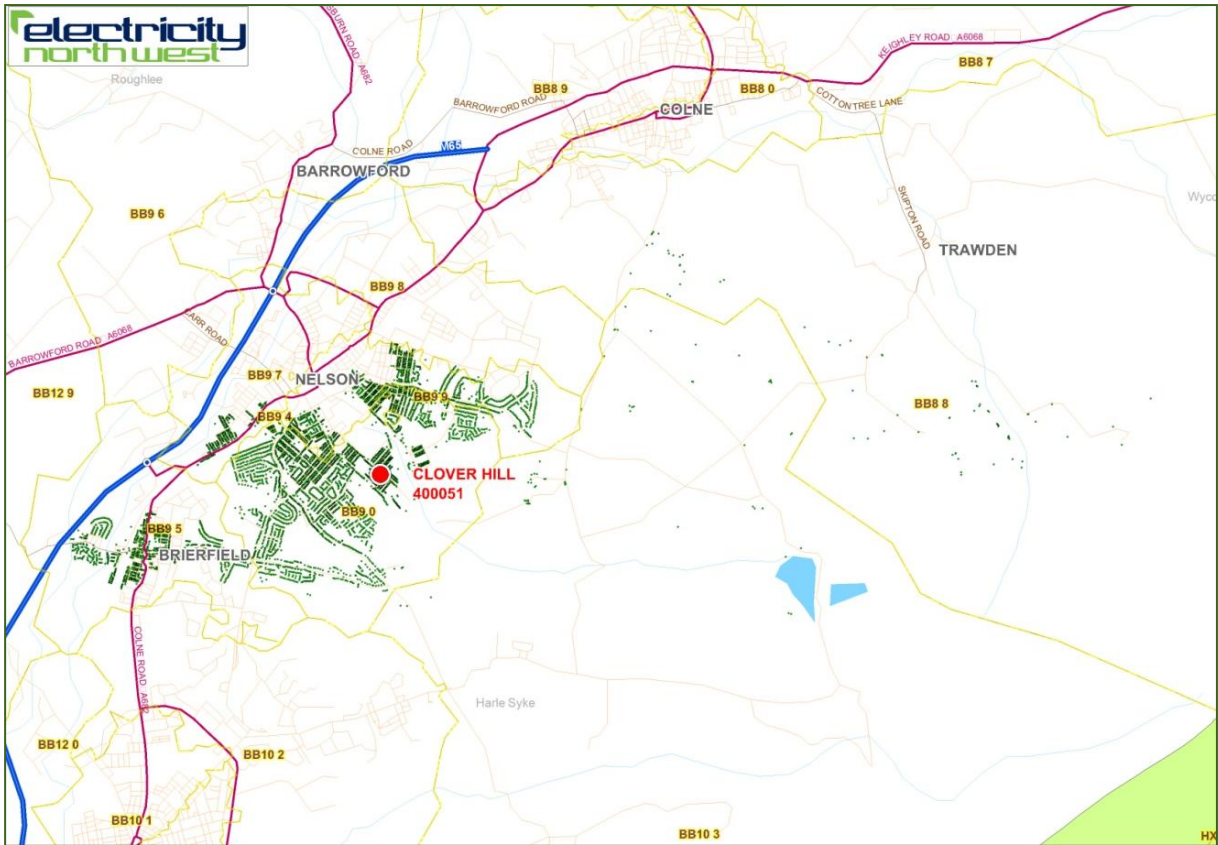
5.7 Nelson, East Lancashire

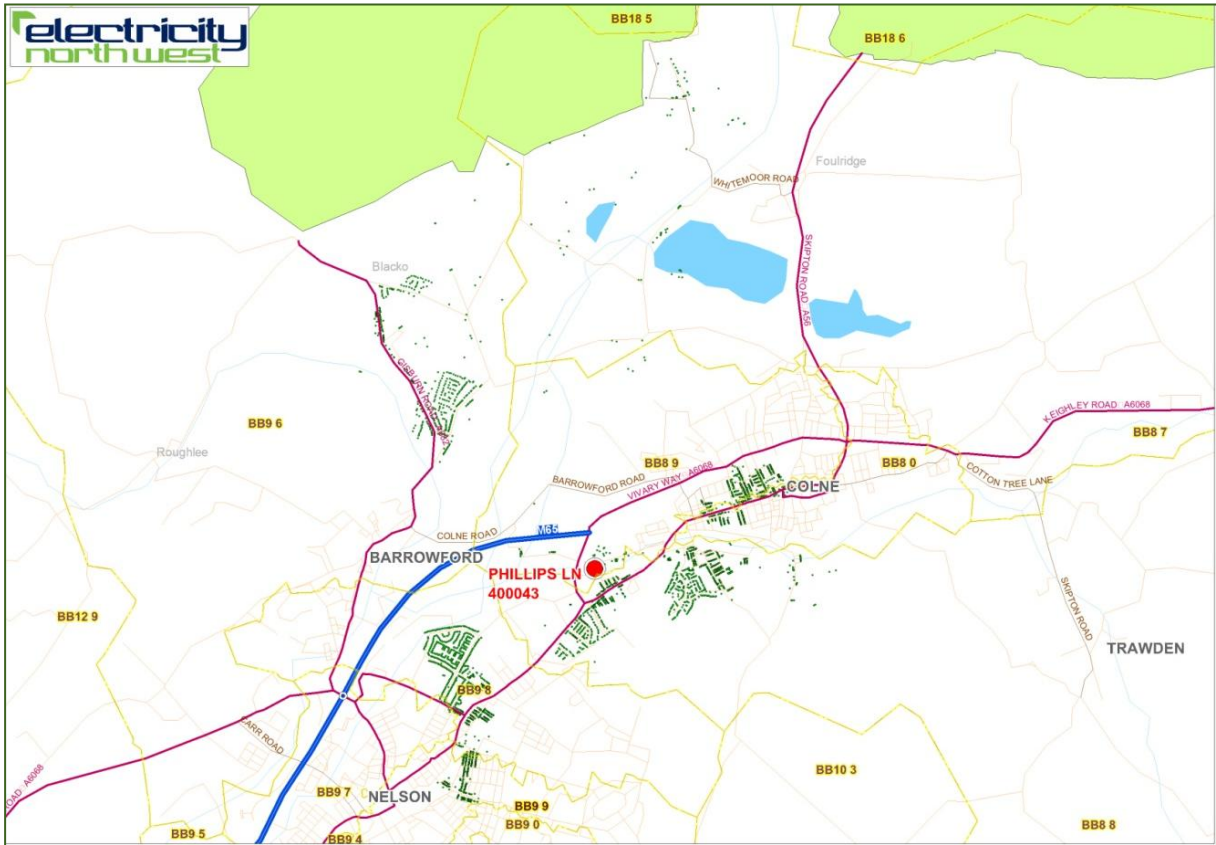
Figure 5.9: Nelson – requirements

Postcode sectors	Approximate requirement (MW)				
	18/19	19/20	20/21	21/22	22/23
BB8 area, sectors 0, 7, 8 & 9 (ie BB8 0**) BB9 area, sectors 0, 4, 5, 6, 7, 8 & 9 BB10 area, sector 3 BB12 area, sector 9 BD20 area, sector 8 BD22 area, sector 0	20.0	20.5	21.0	22.0	22.5

Figure 5.10: Nelson – feeding areas



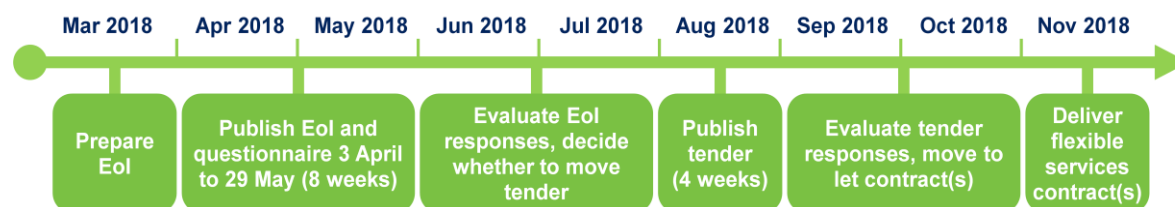




6 PROCUREMENT TIMELINE

This Expression of Interest is the initial stage for this year’s tender round to seek to contract for services to deliver during winter 2018/19 (starting from November 2018) and for next winter (2019/20). The proposed process is set out below.

Figure 6.1: Indicative procurement timeline



In subsequent years, we expect to issue, on an annual basis, similar Eols outlining our future requirements; this is likely to include a range of support requirements covering normal or post-fault operating conditions.

7 GLOSSARY

Abbreviation	Definition
Availability window	This defines the likely time periods when we expect to seek flexible services support from the provider
Distributed Energy Resource (DER)	Resources like generators, consumers, and electricity storage connected to the distribution network
Distributed generation (DG)	A generator connected to the distribution network
Distribution network operator (DNO)	The owner and operator of a distribution network licensed by the Gas and Electricity Markets Authority
Expression of Interest (Eol)	This document which is publicising that Electricity North West is seeking flexible services from existing and potential customers connected to its distribution network
Flexible services	The provision of a change in import and/or export when instructed. This is also sometimes referred to as demand side response
Feeding area	The geographic area that is supplied electricity by the cables and/or overhead lines connected to the local substation
High voltage (HV)	The voltages of 6.6kV or 11kV in Electricity North West’s distribution network
Low voltage (LV)	The voltages of 400V / 230V in Electricity North West’s distribution network
Post-fault condition	The situation where the distribution network is operating abnormally, generally following the disconnection and isolation of a section of the network due to an electrical fault on that section of network
Utilisation rate	This defines the maximum number of hours that we expect to seek flexible services from the provider