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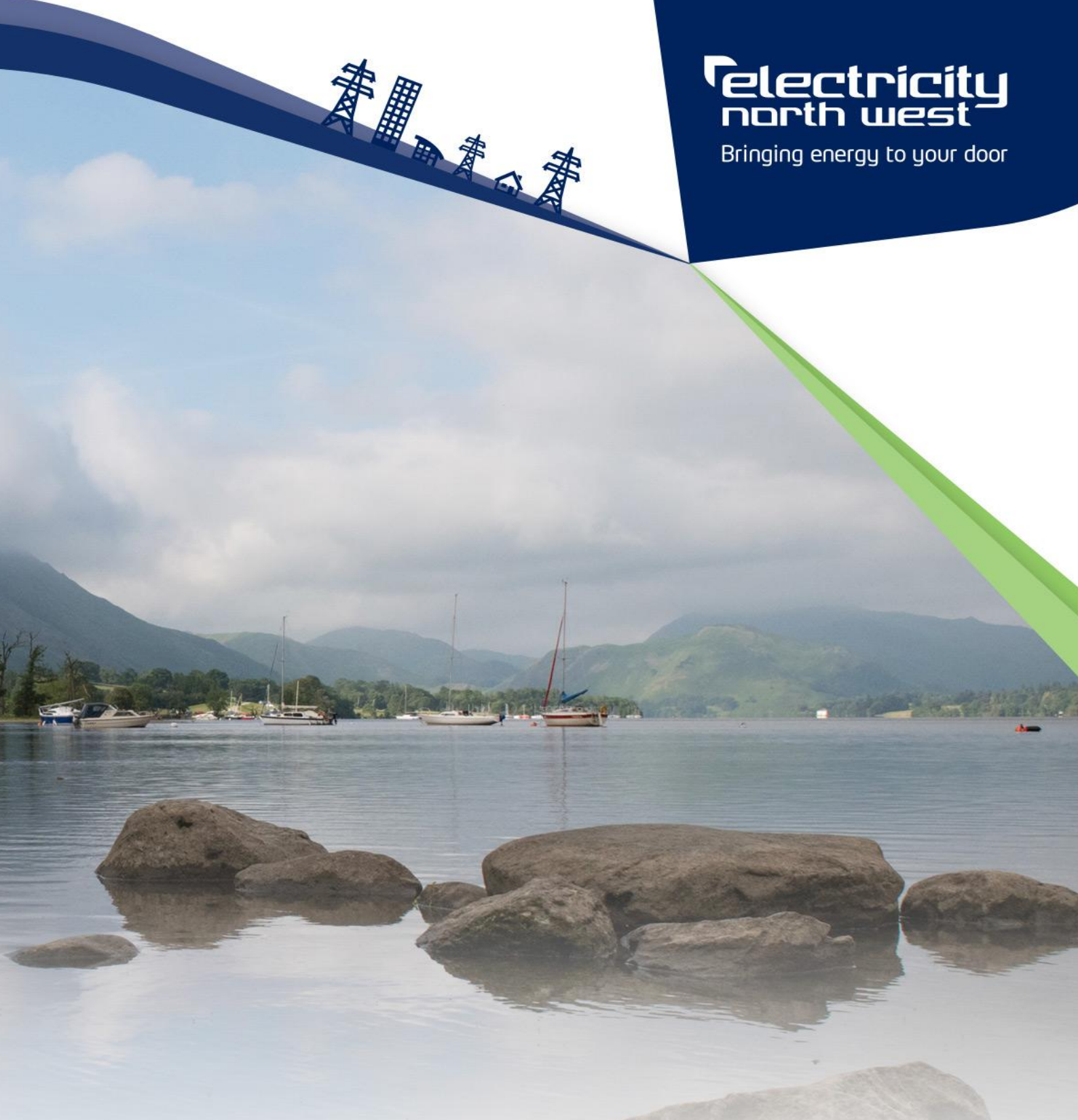

Flexible Service requirement in Cumbria

March 2019

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1. WHAT ARE FLEXIBLE SERVICES

1.1 Local flexibility needs

Distributed Energy Resources (DERs) are companies or individual customers capable of adjusting how much they consume or generate electricity. These adjustments can support the local distribution network due to high electricity demand or when the network is operating abnormally, and DERs 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 our 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.

2 NETWORK REQUIREMENTS

This section provides information regarding the network location where flexibility could potentially be of benefit to the network.

Figure 2.1: Flexible Services requirement areas in Cumbria

All three of our requirements in Cumbria are for a RESTORE response, which means that we only require flexible services in the event of a network abnormality. Figure 2.2 shows the service characteristics of this type of response.

Figure 2.2: Service characteristics of a RESTORE response

Type of Response	When to Act	Trigger	Certainty of Utilisation	Risk to network assets	Frequency of use
RESTORE	Post Fault	Network abnormality	Uncertain	High	Low

Figure 2.3 summarises our requirements for each of the areas in which we are seeking flexible services.

Figure 2.3: Flexible Services requirements in Cumbria in FY20

Network Location	Voltage of connection	Maximum Flexible Service requirement (MVA)	Availability Window				Estimated Availability Rate	Estimated Utilisation Rate
			Start date	Months	Days	Times		
Alston	LV or HV	0.2	Nov-19	Nov-Mar	Mon-Sat	07:00-16:00	Up to 65 hrs pa	Up to 40hrs pa
Coniston	LV or HV	1.8	Nov-19	All year	All week	All day	Up to 5202 hrs pa	Up to 40hrs pa
Easton	LV or HV	0.1	Dec-19	Dec-Jan	Sun, Mon, Tues, Weds	17:00-20:00	Up to 100 hrs pa	Up to 40hrs pa

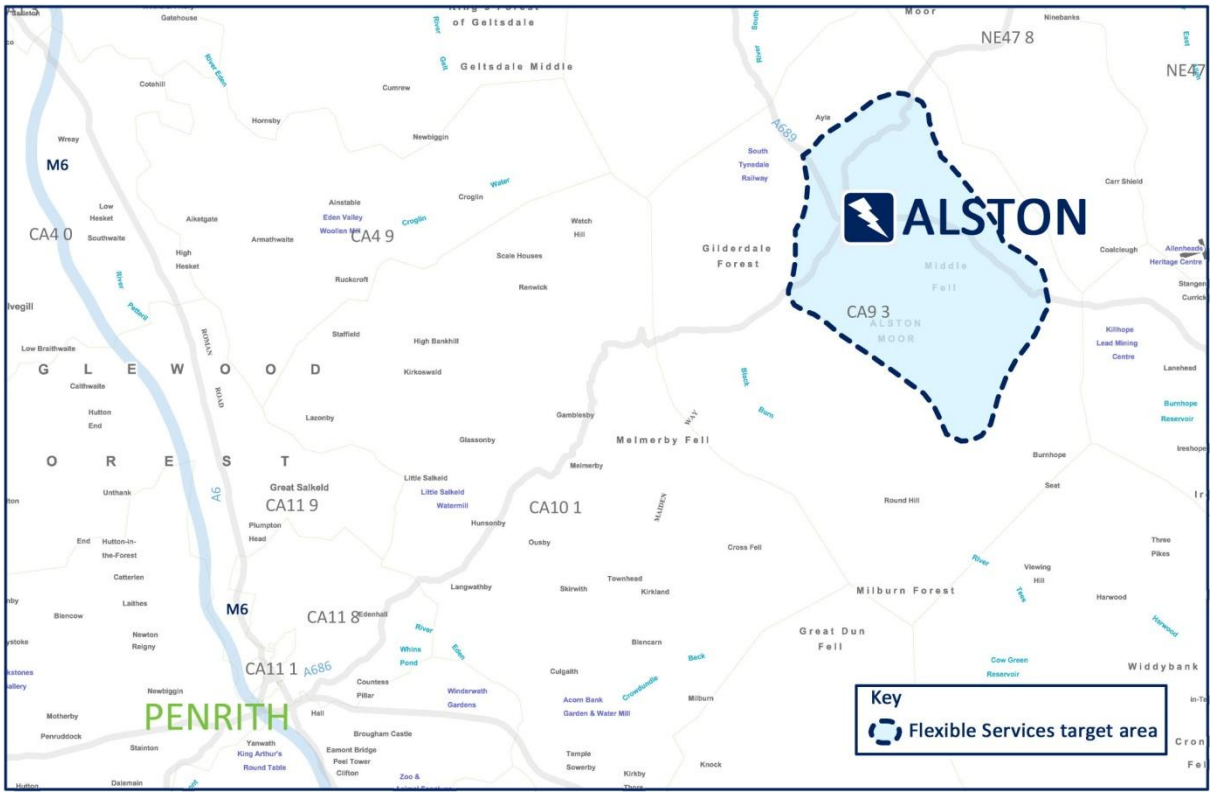
The following pages provide further detail for each of our requirement areas in Cumbria. Maps are provided that show each area individually at a smaller scale in addition to charts which indicate the loading and indicative flexible service requirements by year, month, week and day.

2.1 Alston

We are currently seeking flexible services for our primary substation in Alston.

The flexible services target area for this requirement is located in the town of Alston which is to the north east of Penrith in Cumbria, as illustrated in Figure 2.1.1.

Figure 2.1.1: Flexible services target area for Alston



The following three pages contain additional charts that further detail our requirement in this area; each chart contains estimated values.

Figure 2.1.2, shows the maximum demand achieved at this site, following an unplanned network event the demand at this site must be reduced to within its firm capacity of 1.7 MVA.

Figure 2.1.3 shows our forecasted flexible service requirement for each price control period and financial year (FY).

Figure 2.1.4 and 2.1.5 illustrate the maximum flexible service requirement by month and week day for the first year of the requirement (FY20).

Figure 2.1.6 illustrates the time profiled flexible service requirement by month for FY20.

Figure 2.1.2: Estimated maximum daily profile for FY20

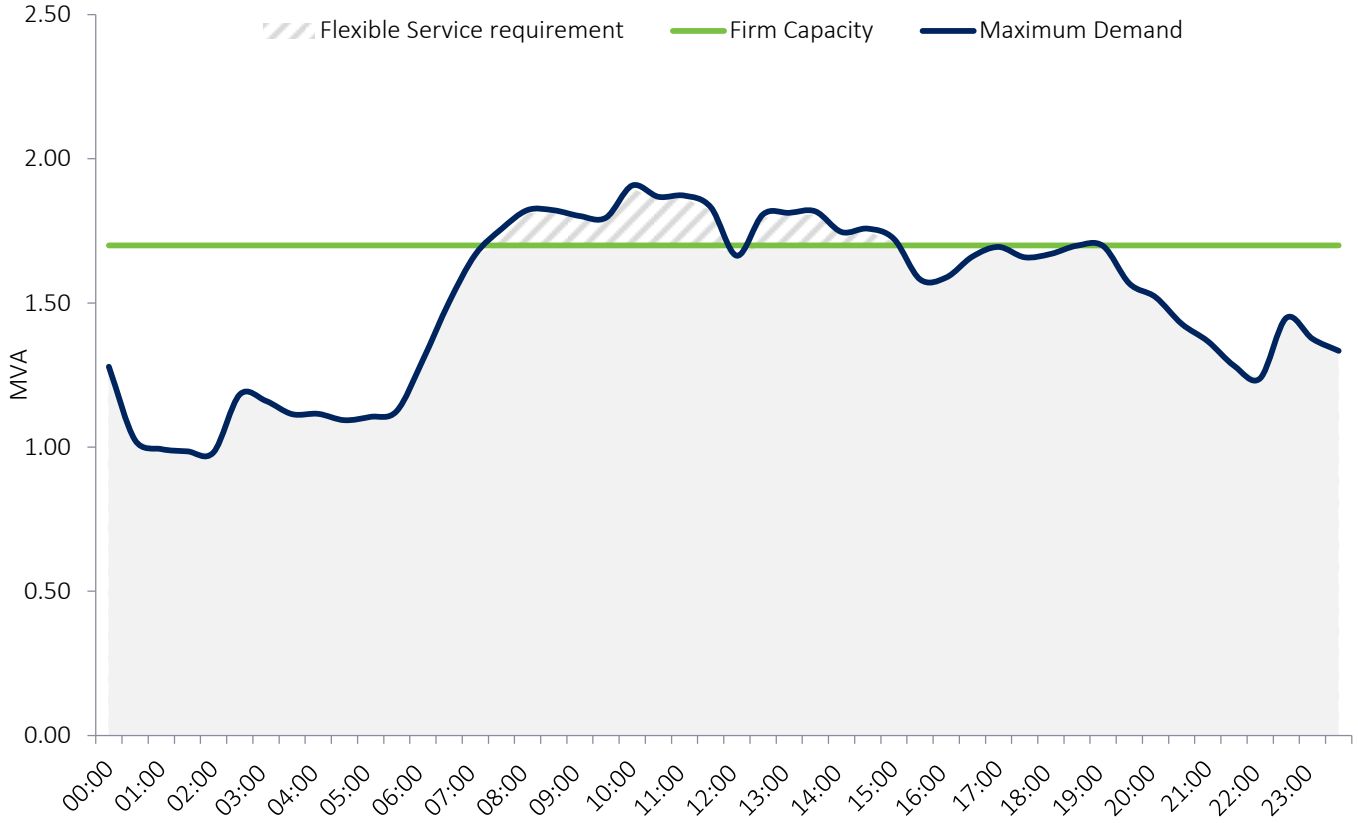


Figure 2.1.3: Forecasted flexible service requirement up to FY33

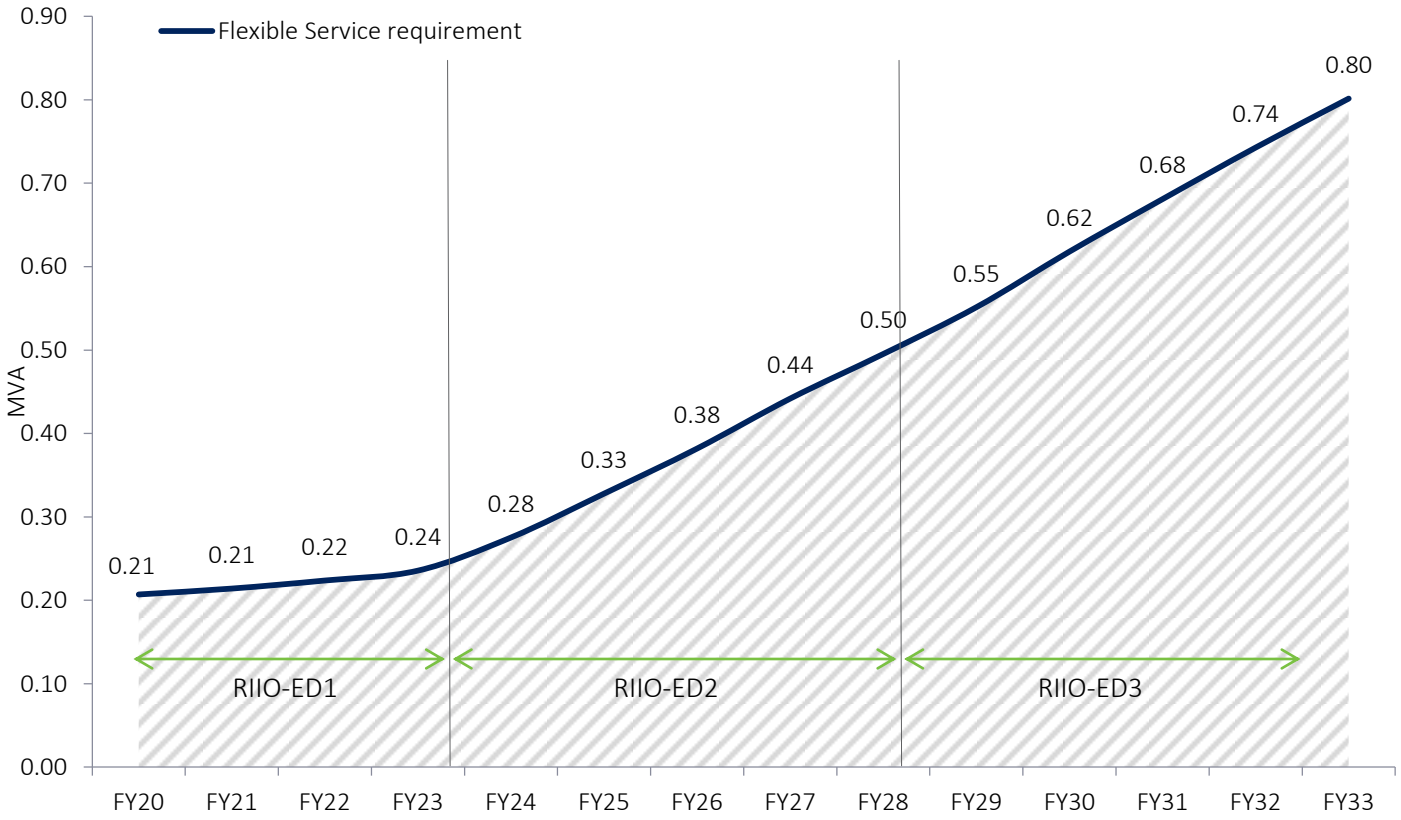


Figure 2.1.4: Maximum estimated flexible service requirement by month for FY20

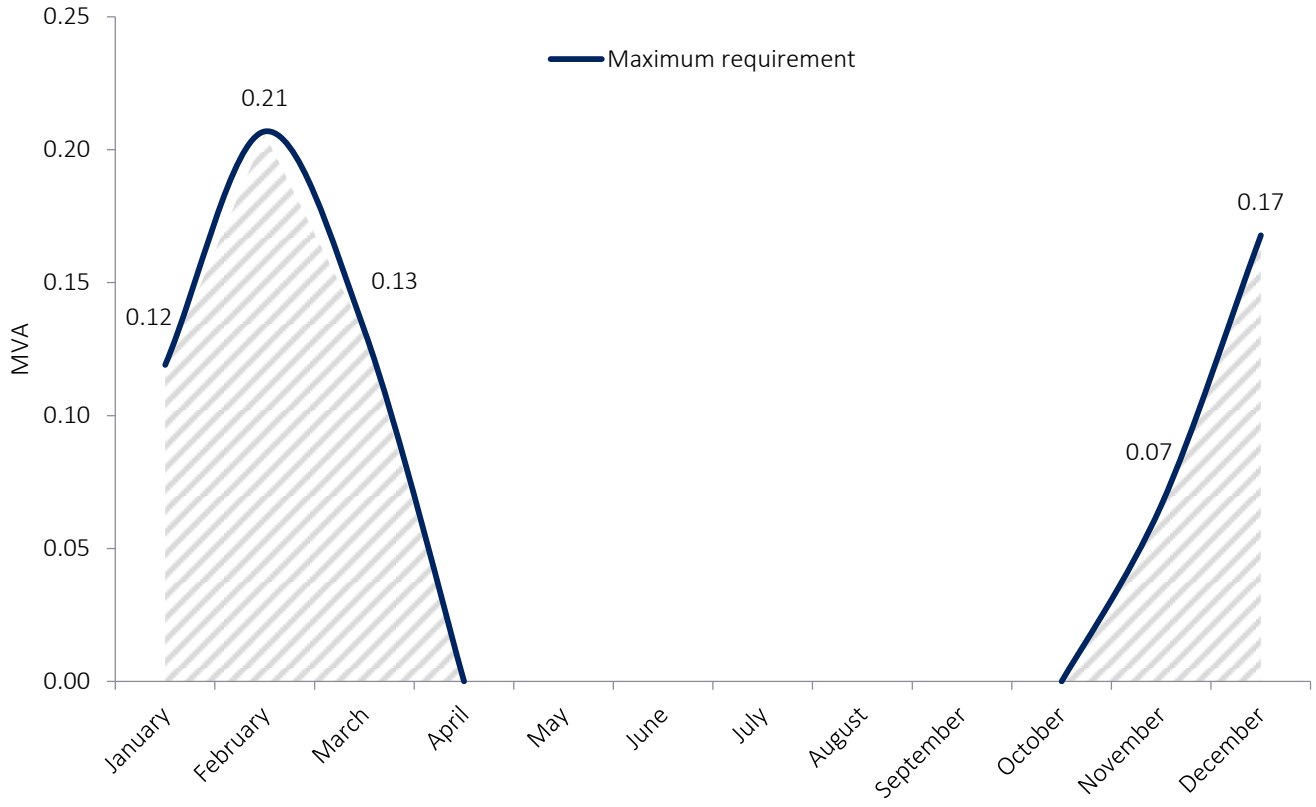


Figure 2.1.5: Maximum estimated flexible service requirement by week day for FY20

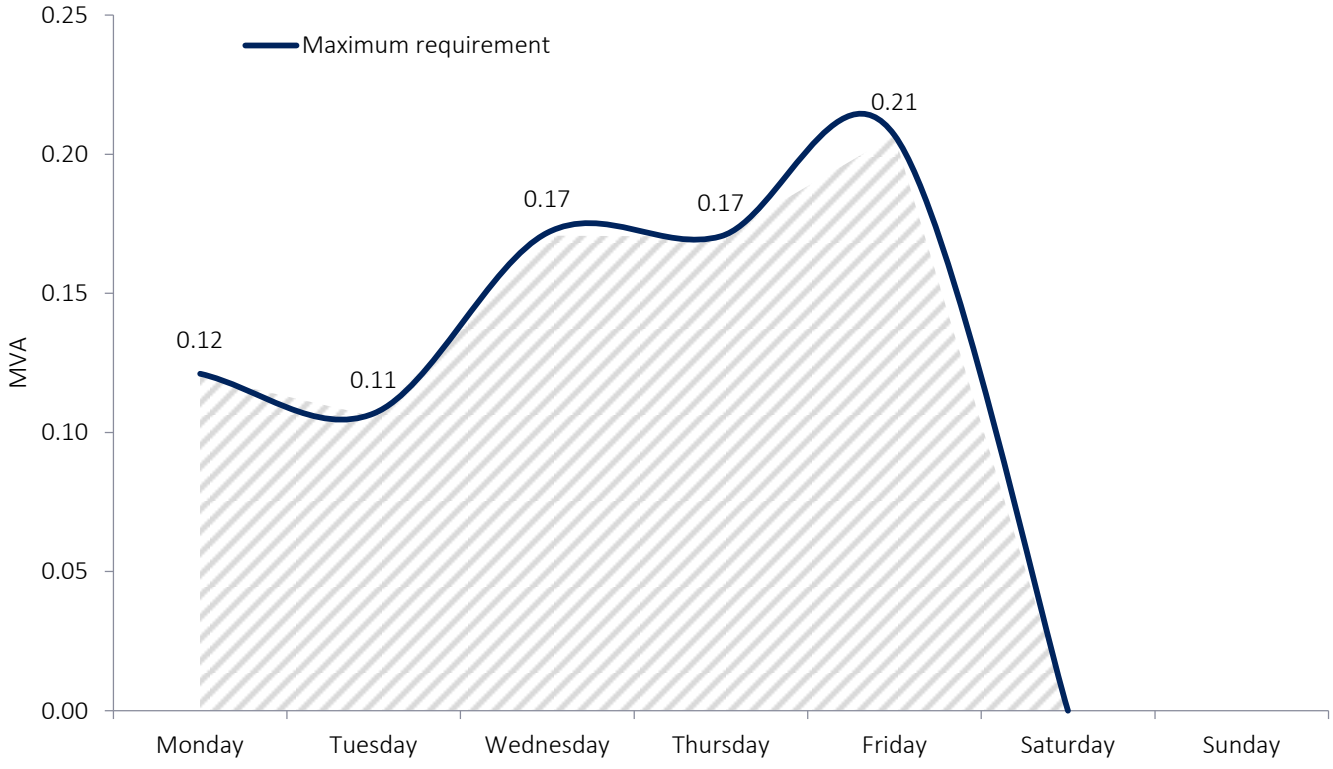
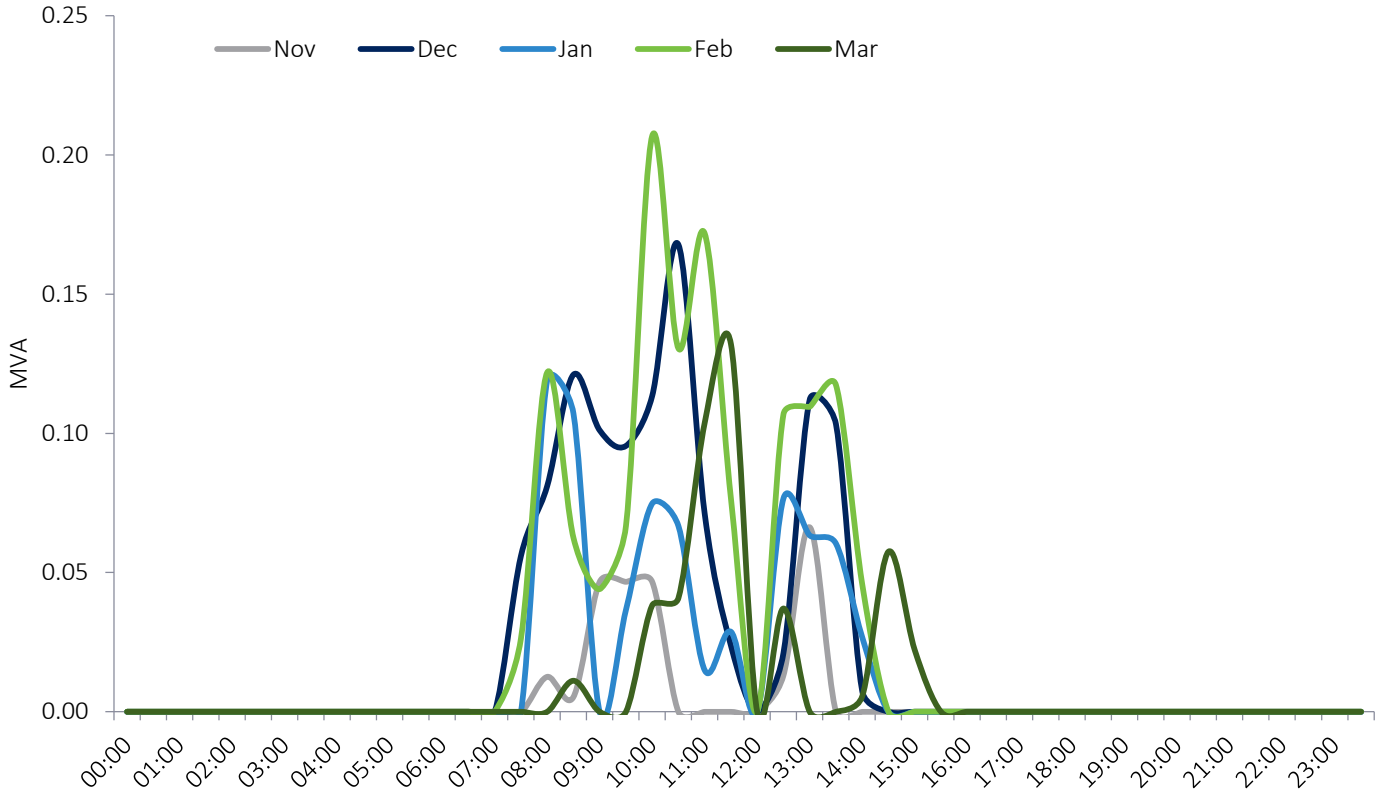


Figure 2.1.6: Estimated time profiled flexible service requirement by month for FY20

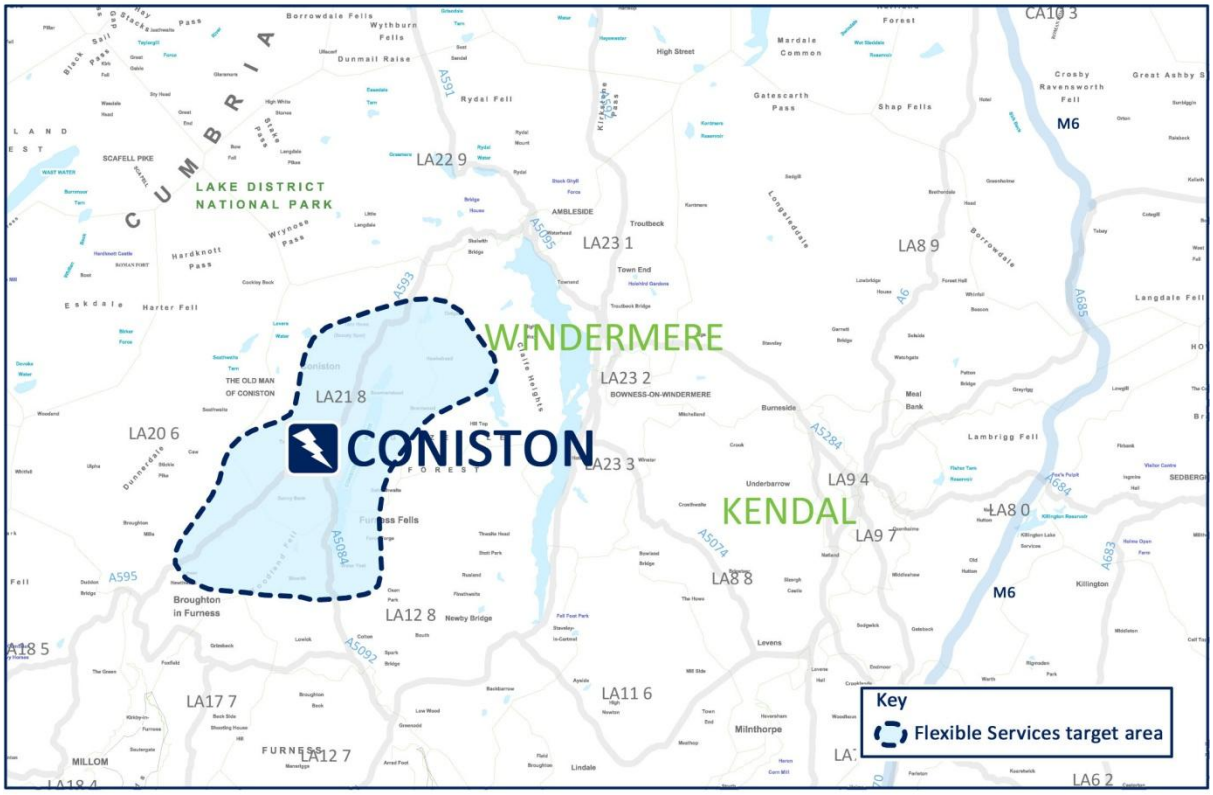


2.2 Coniston

We are currently seeking flexible services for our primary substation in Coniston.

The flexible services target area for this requirement is located around the village of Coniston which is just west of Windermere in Cumbria as illustrated in Figure 2.2.1.

Figure 2.2.1: Flexible services target area for Coniston



The following three pages contain additional charts that further detail our requirement in this area; each chart contains estimated values.

Figure 2.2.2 shows the maximum demand achieved at this site, following an unplanned network event the demand at this site must be reduced to within its firm capacity of 1.8 MVA.

Figure 2.2.3 shows our forecasted flexible service requirement for each price control period and financial year (FY).

Figure 2.2.4 and 2.2.5 illustrate the maximum flexible service requirement by month and week day for the first year of the requirement (FY20).

Figure 2.2.6 illustrates the time profiled flexible service requirement by month for FY20.

Figure 2.2.2: Estimated maximum daily profile for FY20

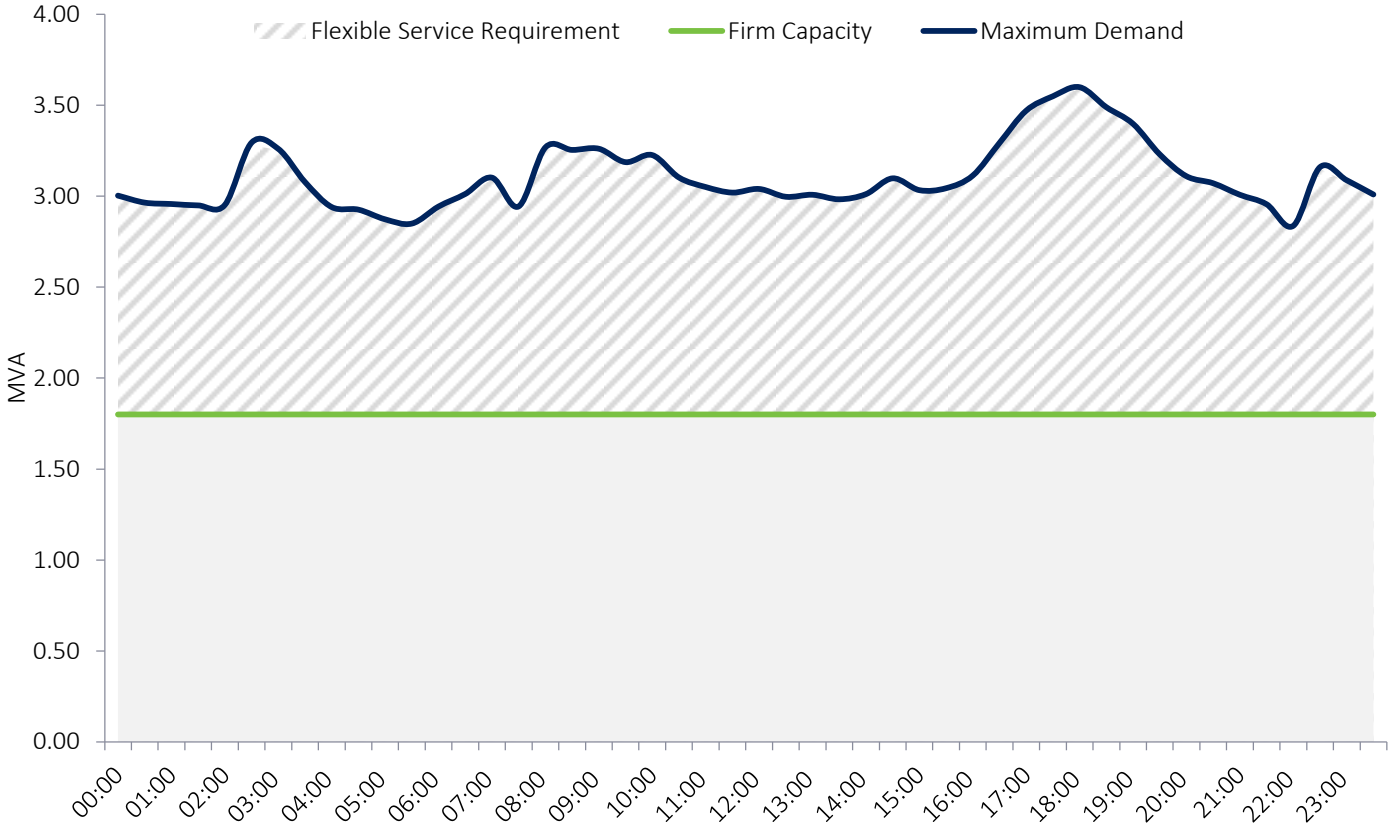


Figure 2.2.3: Forecasted flexible service requirement up to FY33

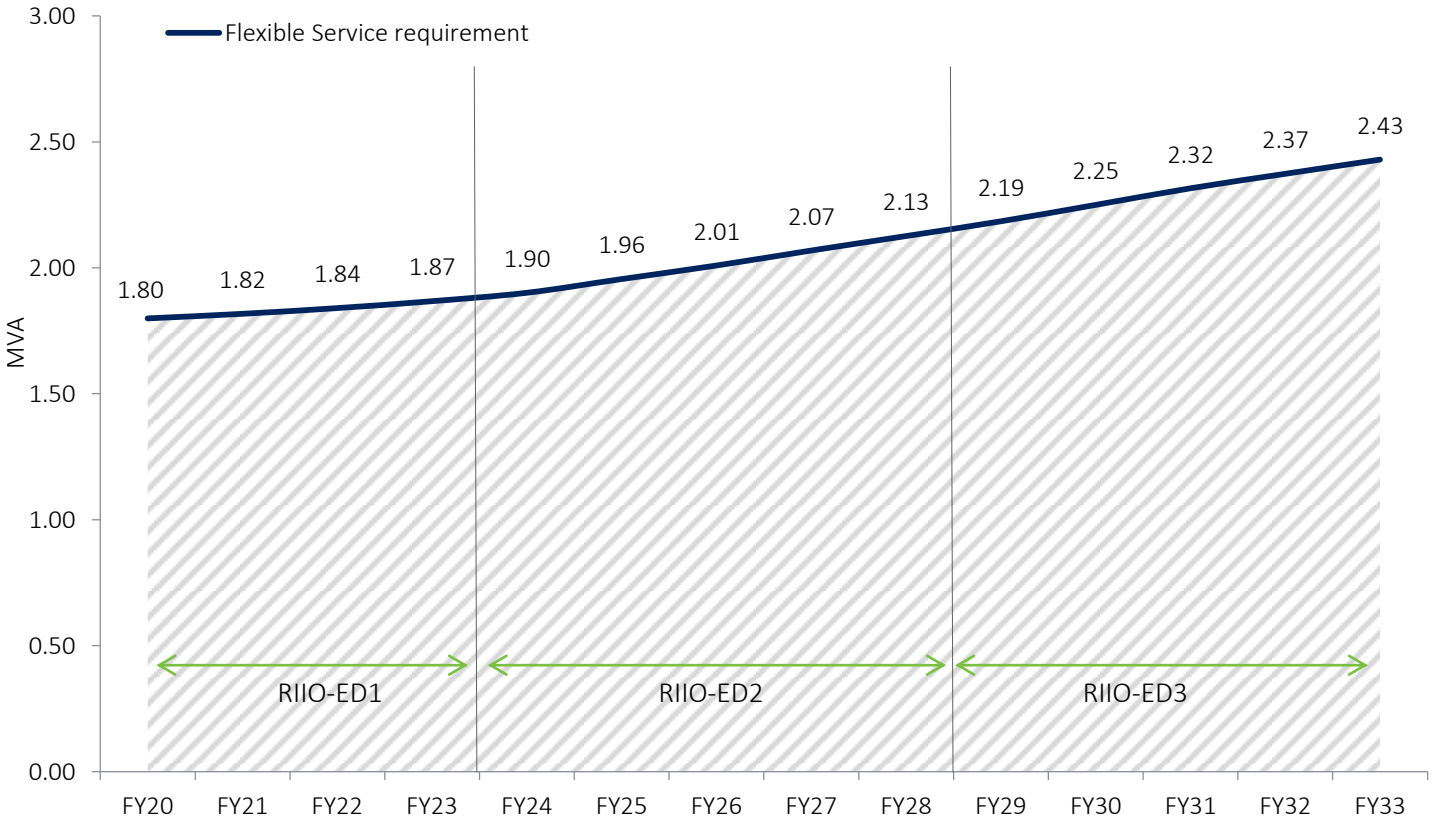


Figure 2.2.4: Maximum estimated flexible service requirement by month for FY20

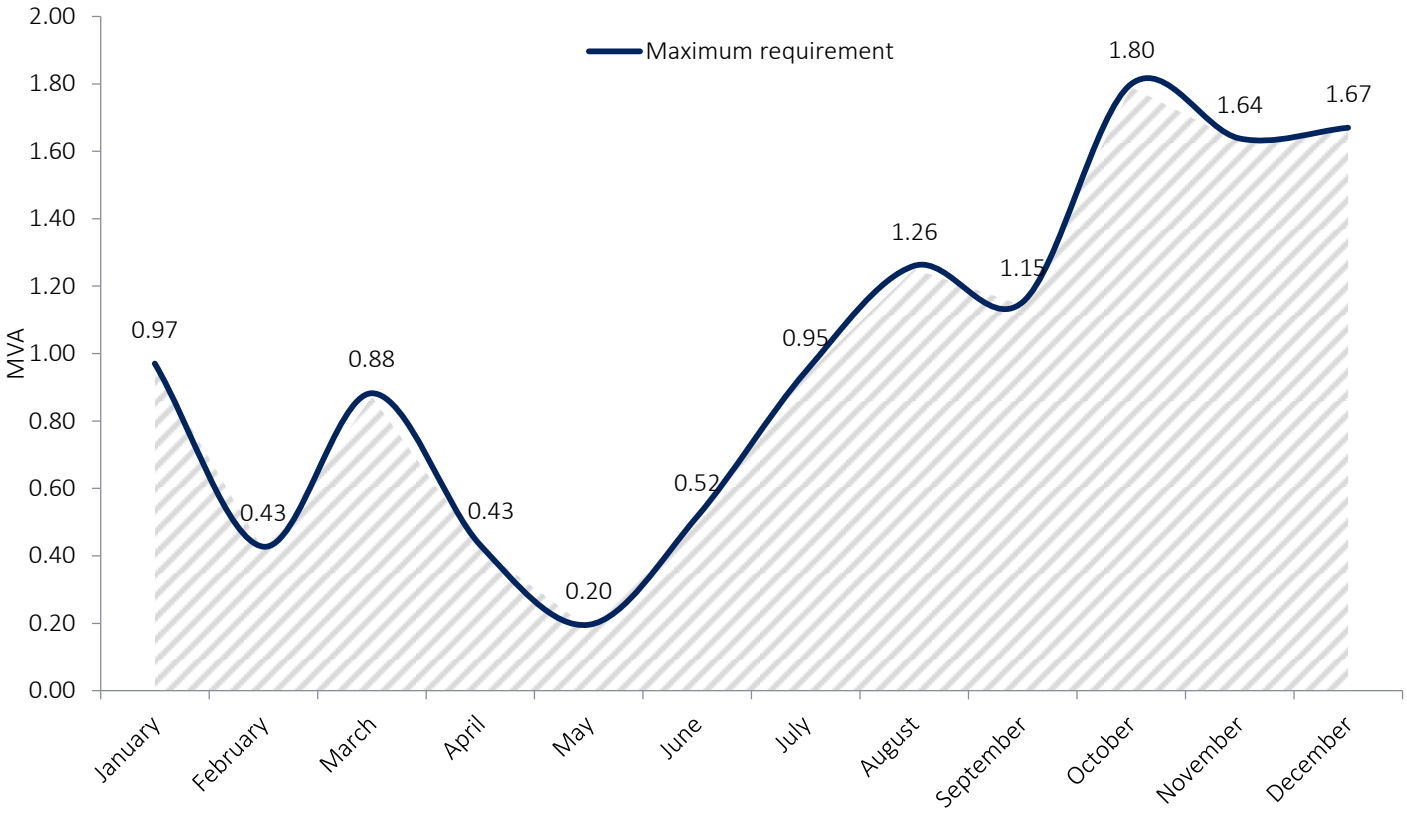


Figure 2.2.5: Maximum estimated flexible service requirement by week day for FY20

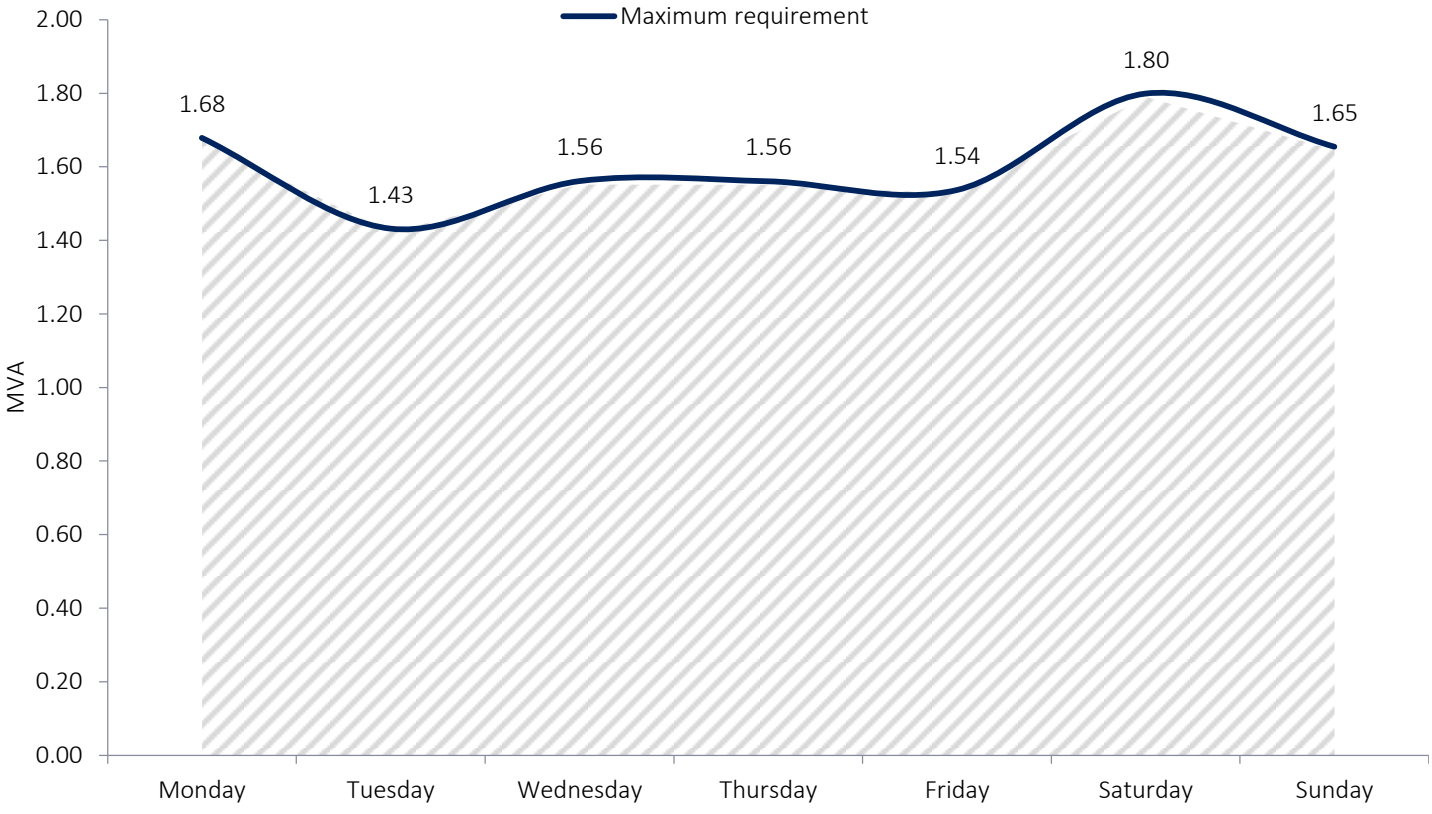
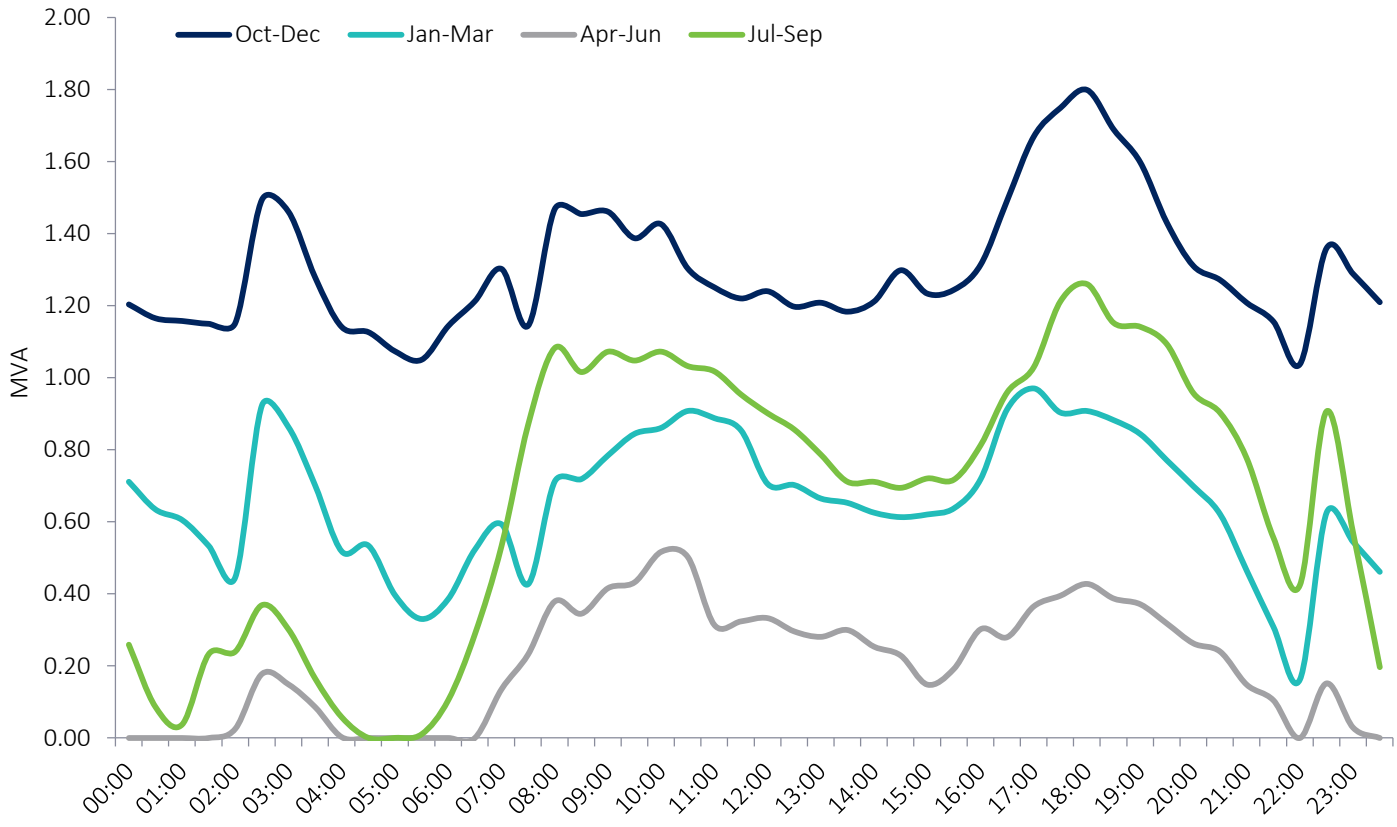


Figure 2.2.6: Estimated time profiled flexible service requirement by month for FY20



2.3 Easton

We are currently seeking flexible services for one of our primary substations in Easton.

The flexible services target area for this requirement is located in the village of Easton, which is just north from Carlisle in Cumbria, as illustrated in Figure 2.3.1.

Figure 2.3.1: Flexible services target area for Easton

The following three pages contain additional charts that further detail our requirement in this area; each chart contains estimated values.

Figure 2.3.2 illustrates the maximum demand at this site, following an unplanned network event the demand at this site must be reduced to within its firm capacity of 1.7 MVA.

Figure 2.3.3 shows our forecasted flexible service requirement for each price control period and by financial year (FY).

Figure 2.3.4 and 2.3.5 illustrate the maximum flexible service requirement by month and week day for the first year of the requirement (FY20).

Figure 2.3.6 illustrates the time profiled flexible service requirement by month for FY20.

Figure 2.3.2: Estimated maximum daily profile for FY20

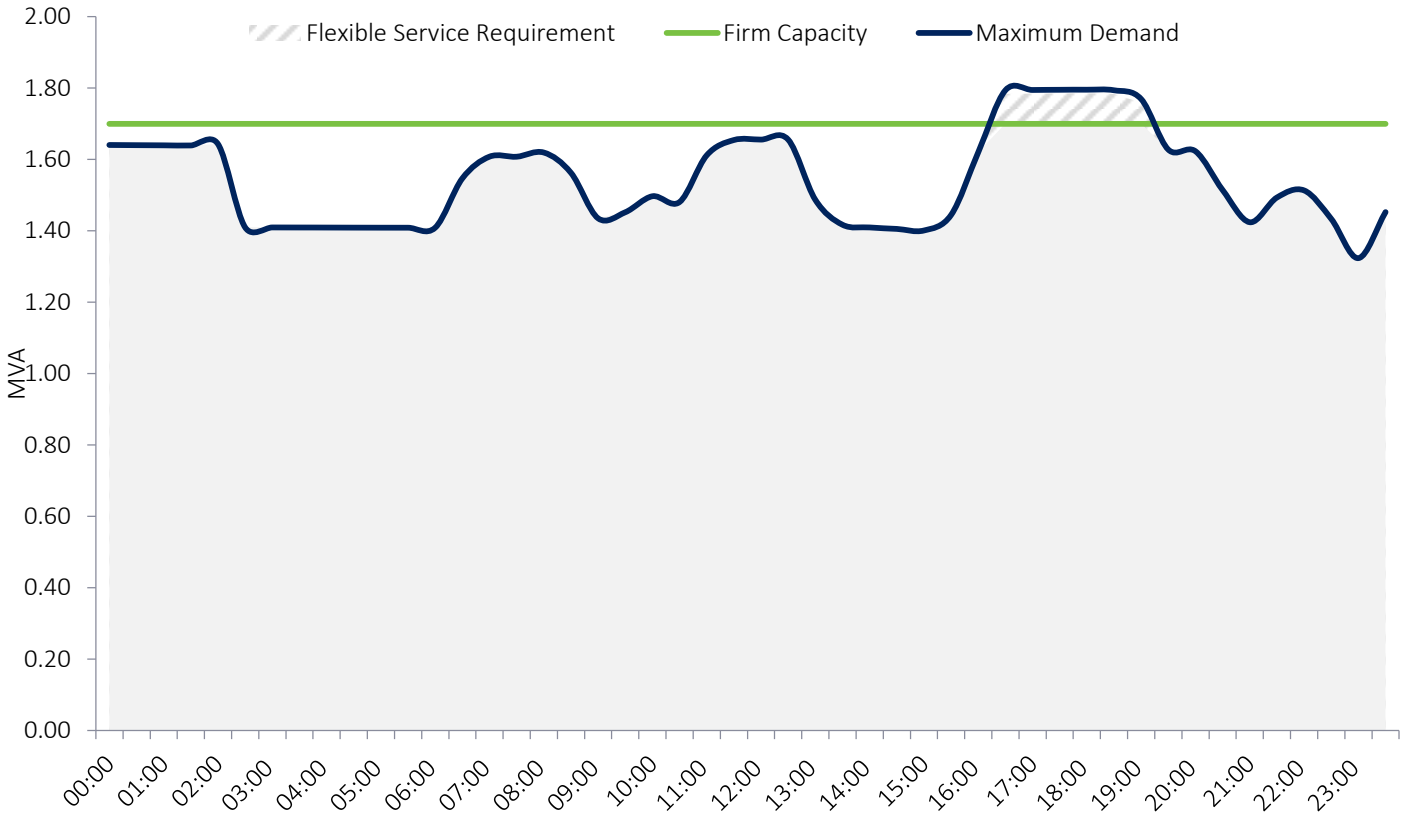


Figure 2.3.3: Forecasted flexible service requirement up to FY33

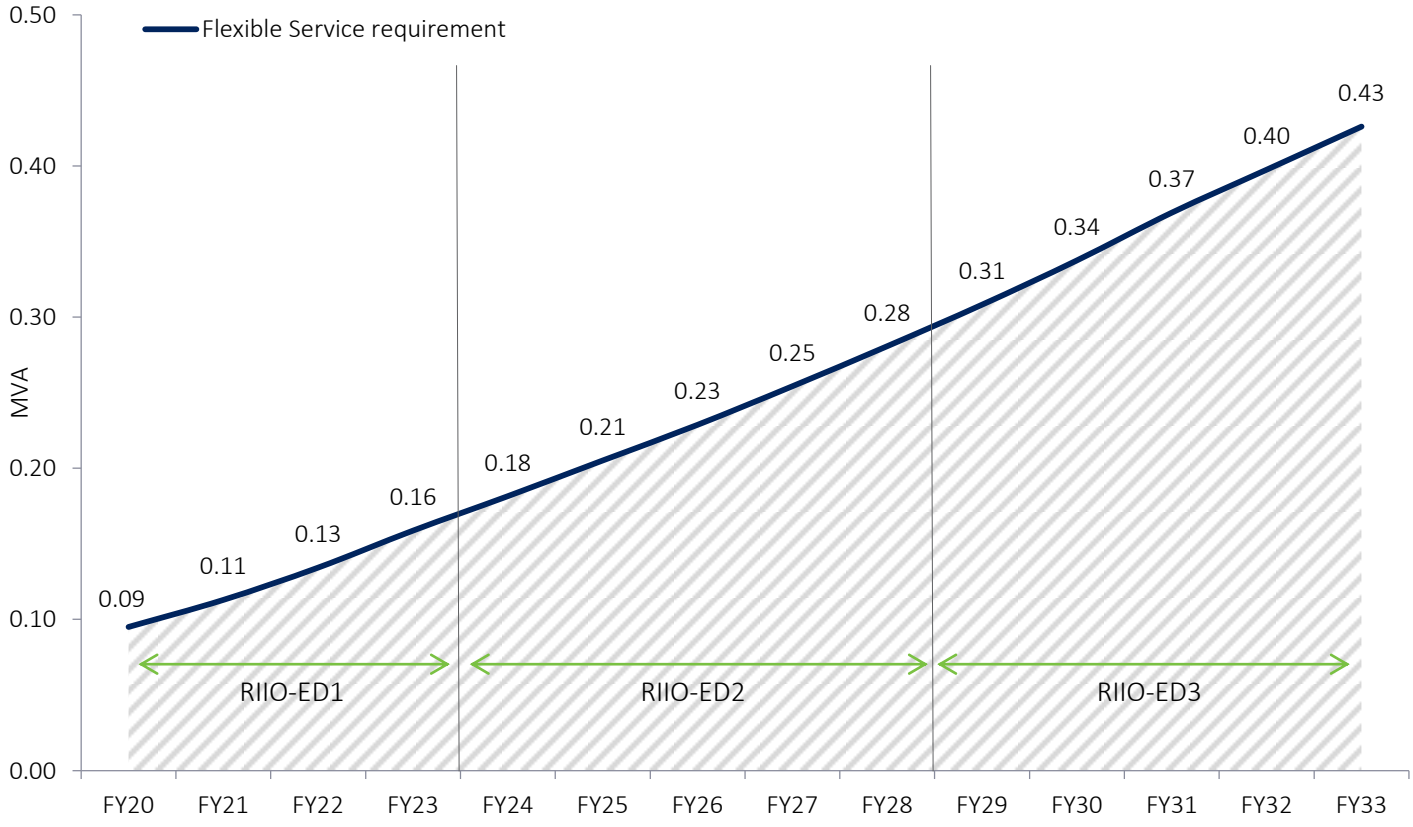


Figure 2.3.4: Maximum estimated flexible service requirement by month for FY20

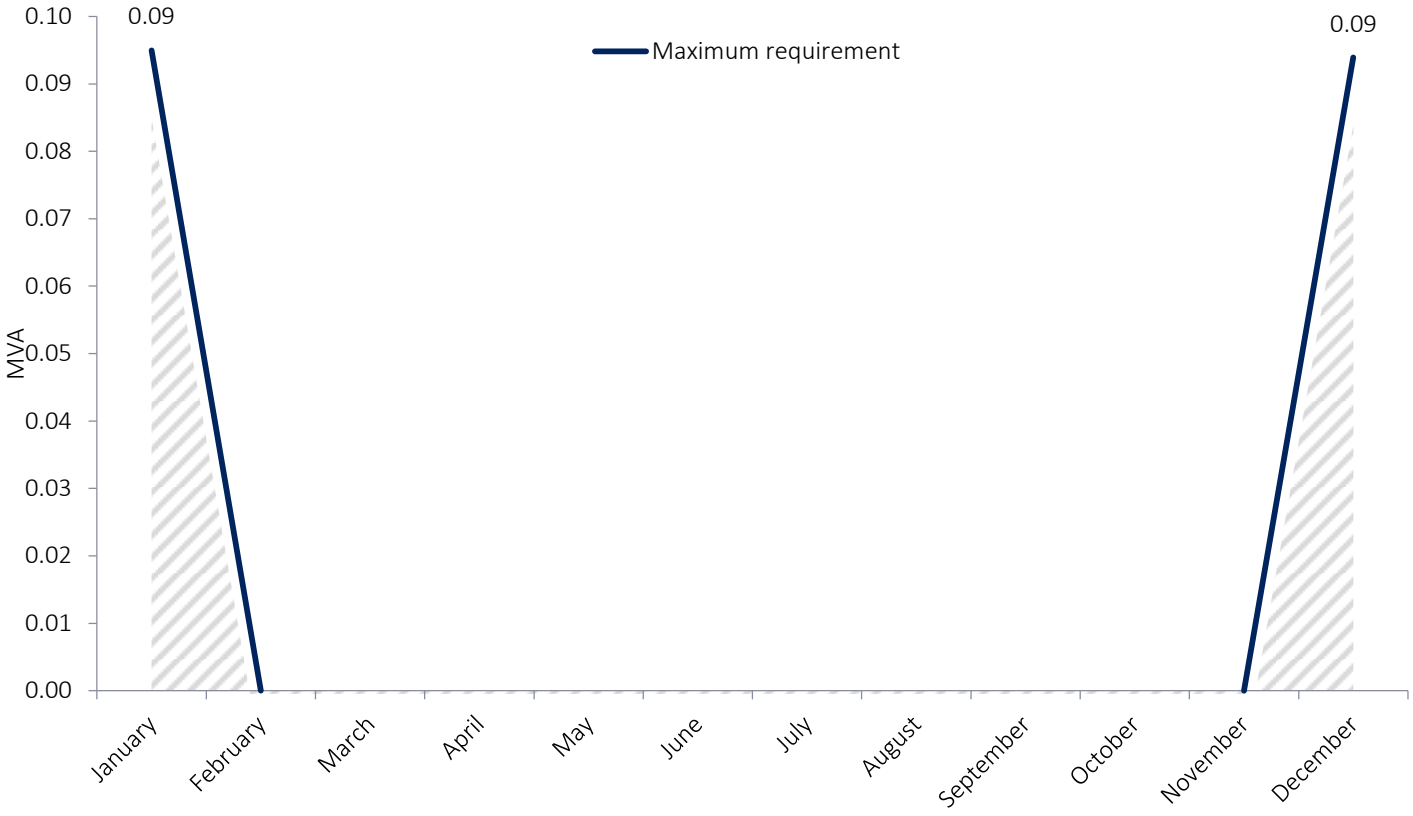


Figure 2.3.5: Maximum estimated flexible service requirement by week day for FY20

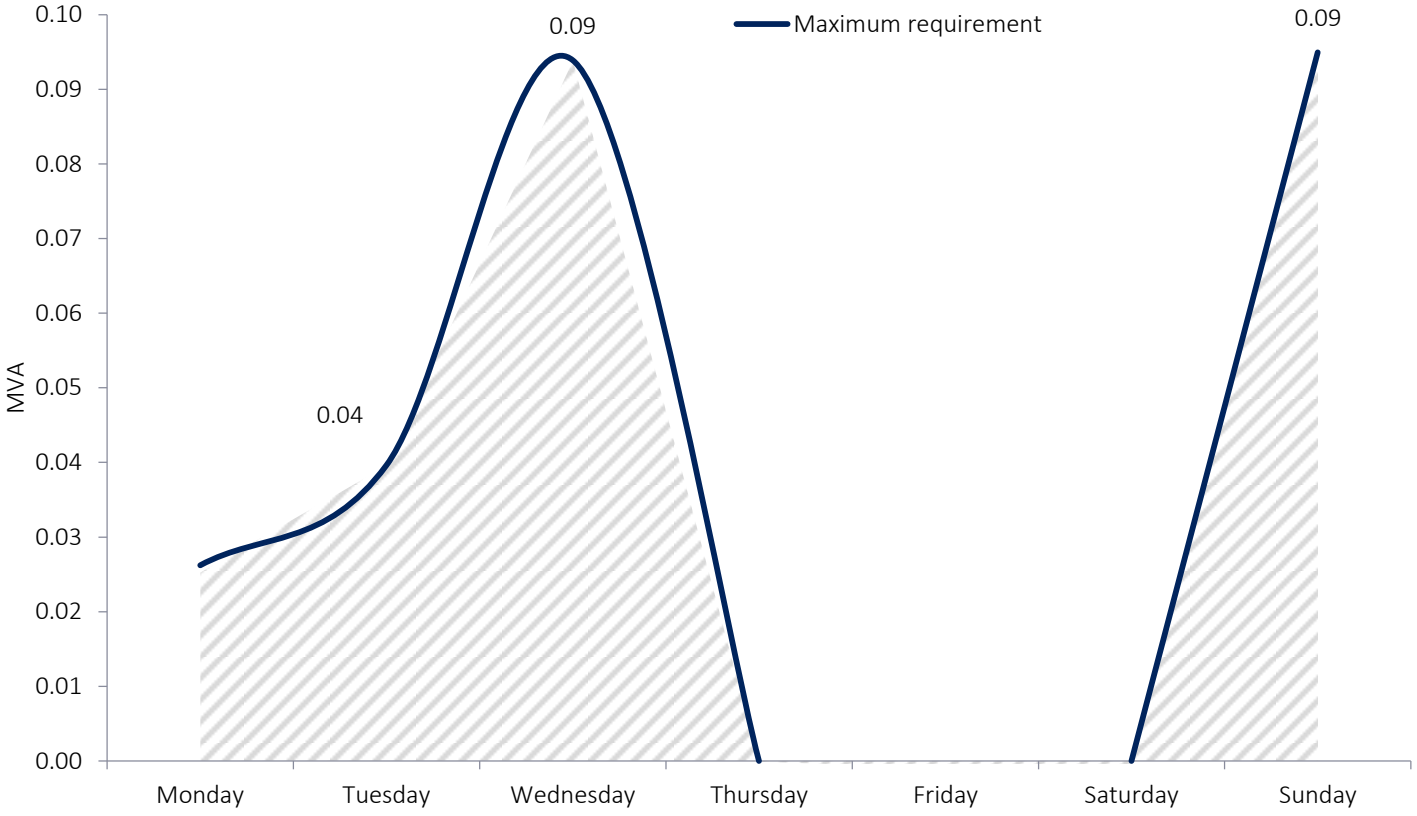
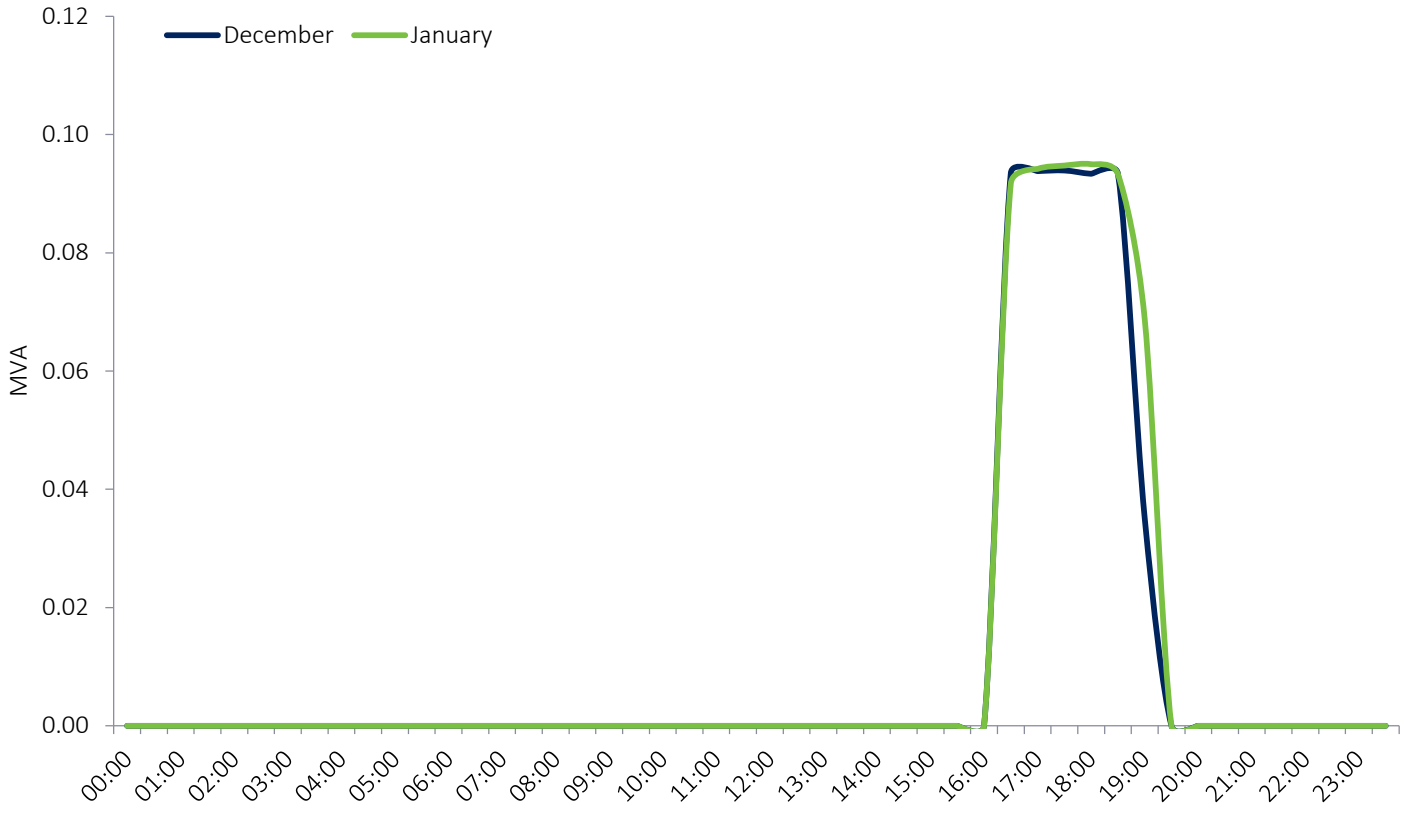


Figure 2.3.6: Estimated time profiled flexible service requirement by month for FY20



3 CONDITIONS PRECEDENT

The Bidder will need to meet the following high level conditions in order to provide a Flexible Service to the Company:

- The Flexible Resource must:

  either be already connected to the network location being supported; providers should use the highlighted area on the maps provided (*Fig 2.1.1, 2.2.1 and 2.3.1*) as an indication of whether the resource is in the right geographic location[1],

  or

  be able to locate (i.e. install, commission, and deliver) the Flexible Resource in the locality of the network asset being supported by summer 2019[2] .

- The minimum size for directly contracted resources should be at least 100kW.There are no restrictions on the size of sub-sites of aggregated portfolios, but the total portfolio size needs to be at least 250kW (flexibility capability and not capacity).

- The Supplier should be able to deliver and manage, upon the Company's request, a net reduction in the demand 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.

- Generators and electrical 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 or EREC G99.

- Flexible service suppliers should be able to deliver the service during winter 2019/20 (specific start dates are stated for each site).

[1] If you would like the Electricity North West to verify that the electrical connection is suitable prior to submission of your proposal, please email flexible.contracts@enwl.co.uk with your meter point administration numbers (MPANs).

[2] Further information on connection to Electricity North West's distribution network is available at Get connected. All connection charges will be payable by the connectee in accordance with our Common Connection Charging Methodology

4 REGISTERING YOUR INTEREST

For further details or to register your interest for this requirement for flexible services, visit our website. Alternatively you can confirm your company name and contact information via email to flexible.contracts@enwl.co.uk. Please register your interest by noon on the 29 March 2019 to guarantee participation.

You will be registered on our e-procurement portal, WAX digital, where the full Request for Proposal will be available, which includes:

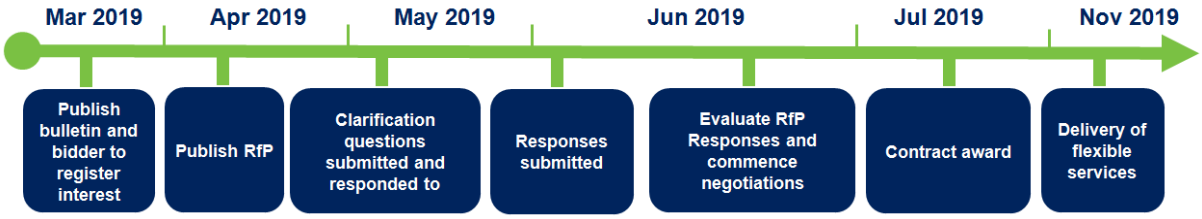
- Technical Specification,
- Template contract, and
- Terms and Conditions.

The portal also contains the response template which you will be required to complete as part of your submission.

5 PROCUREMENT TIMELINE

We are seeking to contract for services to deliver during winter 2019/2020. The proposed process is set out below.

Figure 5.1: Indicative procurement timeline



6 GLOSSARY

Abbreviation	Definition
Availability Rate	This defines the maximum number of hours that we may seek flexible services from the provider
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
Distribution network operator (DNO)	The owner and operator of a distribution network licensed by the Gas and Electricity Markets Authority
Feeding area	The geographic area that is supplied electricity by the cables and/or overhead lines connected to the local substation
Flexible Services	The provision of a change in import and/or export when instructed. This is also sometimes referred to as demand side response
Flexible Resource	Resources like generators, consumers, and Electricity Storage connected to the distribution network.
Flexible Service supplier	The company providing the Flexible Service
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
Utilisation Rate	This defines the maximum number of hours that we expect to seek flexible services from the provider