

Network Development Report 2024

March 2024



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1 Overview of information in the NDR

As explained in the methodology document of our Network Development Plan (NDP), an extensive optioneering process is carried out to optimise decisions around our load related investment programme. The optioneering process considers among other factors:





- a) the long-term demand and generation forecasts across all of our Distribution Future Electricity Scenarios (DFES);
- b) both conventional network reinforcement and flexibility service options to release the required network capacity; and,
- c) optimal (in terms of costs, benefits and risks) and coordinated network interventions that avoid the increased cost from a piecemeal network expansion.

In this Network Development Report (NDR) we provide a list of high-level plans for required network interventions for the 10-year period from 2023 (year 0 / latest historical financial year in our latest DFES) and 2033 (year 10 in our latest DFES)¹. Each capacity constraint highlighted in the Network Headroom Report (NHR) tables when considering the Best View scenario is presented in the NDR as an intervention requirement. For both demand and generation requirements the trigger points are considered for intervention required to release the required capacity.

The following table explains the capacity requirements presented in this report.

Information Provided	Further explanation
Location of capacity requirement	X,Y co-ordinates are provided for the substation where intervention is required.
Details of the constraint	Details of either fault duty or thermal exceedance and when this first presents.
New infrastructure scope	Details the asset solution, including high level specification and start and end dates for works.

¹ Financial year / regulatory year from 1st April to 31st March

Information Provided	Further explanation		
Flexibility services requirements	<p>Identifies where the use of flexibility services is applicable to release the required capacity and describes the type of flexibility service that would be required.</p> <p>The level of peak response from flexibility services required up to 2050 (ie, financial year 2050/51 – FY51) is detailed to highlight the potential long-term requirements for Best View scenario. NDR tables should be considered in conjunction for short term requirements.</p> <p>Further explanation on our flexibility service products and more recent flexibility service tenders can be found in our Flexibility Hub: https://www.enwl.co.uk/future-energy/flexibility-hub/</p> <p>The possible location of flexibility services is based on typical 33kV and HV (11 and 6.6kV) network feeding areas for Bulk Supply Point (BSP) and primary substations, respectively. The feeding areas per BSP and primary substation can be accessed from the “geographical information” tab of our DFES workbook together with a tool that users can use to identify distance from substations. DFES workbook is online available at: https://www.enwl.co.uk/dfes</p>		
Project lifecycle stage (appears under site name)	Network analysis		Requirements identified, and further network analysis required to develop options. Timing and solution efficiencies being considered.
	Sign posting		Flexibility services or whole system solution assessment being undertaken. For flexibility services this will include tender process.
	Approved plan		Technical and commercial approval of preferred solution completed.
	Delivery		Preferred solution being developed through detailed design, procurement and where required construction.

The NDR is structured by presenting capacity requirements and associated development options by each Electricity North West Grid Supply Point (GSP). The 16 GSPs are shown in section 2. For accessibility and consistency, all nomenclature used to describe development plans will align with data tables and schematics in the [Long Term Development Statement](#) (LTDS).

1.1 Timing of Capacity Requirements

Our presentation of capacity requirements in the NDR is based on Electricity North West's Best View scenario from our latest [Distribution Future Electricity Scenarios](#) (DFES – March 2024). The Best View scenario follows a definition proposed by Electricity North West (Dec 2021) and standardised across all DNOs within ENA Open Networks projects. The scenario reflects the region's highest certainty trends in the next 1 to 10 years.

As the region's highest certainty scenario, Best View can help stakeholders understand local demand and generation trends over the short-term and provide the highest certainty basis for assessing network impact and the need for interventions in the next 10 years.

However, as explained in detail in our latest [DFES report](#), it is increasingly likely that the electrification of heating could be accelerated beyond 2030. This means that the demand growth defined by the Best View and Leading the Way scenarios defines the most likely demand range between 2030-2033. An accelerated electrification of heating as modelled in our Leading the Way scenario will drive additional interventions especially towards the end of RIIO-ED3 (the 2028-2033 regulatory period).

This means that the network development interventions described in this document based on the Best View scenario should be seen as a minimum required interventions in the next 10 years. Section 3 in this document presents, at high level, the range of interventions based on an accelerated pace of electrification of heating using the capacity headroom forecasts for demand between the Best View and the Leading the Way scenarios across substations in our Grid & Primary network (132kV to head of HV feeders).

The use of the Best View scenario in this NDR improves stakeholder utility by showing the highest certainty trends and removing the complexity of multiple scenarios. However, the full range of our scenarios is used to understand risks of additional capacity required.

The use of Best View scenario forms the baseline requirements presented in this NDR and the likely supporting asset and flexibility developments. However, the timing of actual interventions may change due to several factors. Beyond uncertainties in the pace of electrification of heating, the timing of capacity intervention may vary depending on rate of change in stakeholder and customer requirements. For example, our three main County Councils in the North West have decarbonisation ambitions in advance of 2040. Therefore, if regional and national policy supports further acceleration of decarbonisation projects we may see capacity requirements in specific areas being advanced by several years. These requirements may align more closely in timing and magnitude to a more progressive scenario such as, Leading the Way.

1.2 Sign posting future flexibility requirements in the NDR

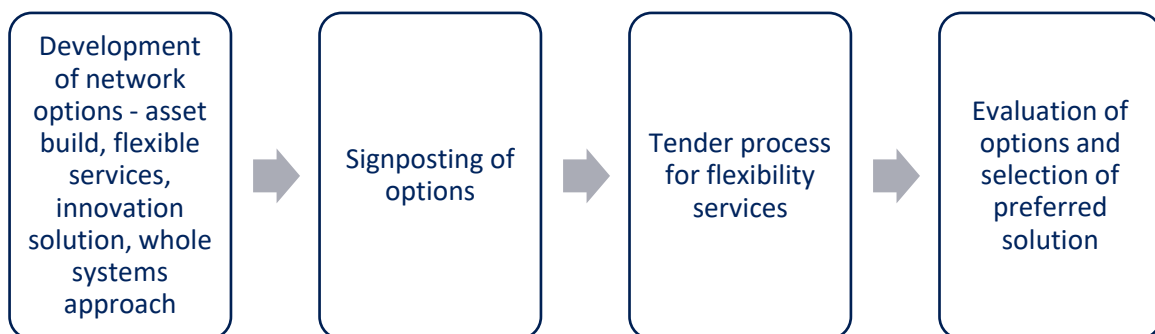
Electricity North West takes a flexibility first approach, in that it promotes flexibility as an efficient solution for network capacity provision and seeks to deploy flexibility solutions in all opportunities where it is robust and economic to do so. Within the NDR we have presented flexibility as an option for meeting demand capacity requirements where there is an underlying network thermal constraint that Distributed Energy Resources (DERs) and/or energy efficiency or demand side measures could

meet. Flexibility is not seen as a technically viable alternative to generation capacity requirements as these are primarily driven by network fault level constraints and therefore only asset-based developments are viable.

For every demand capacity requirement that is currently at the ‘network analysis’ or ‘sign posting’ stage we have outlined the flexible services option alongside the asset solution. This is to ensure there is clear visibility of all future requirements for flexibility services providers and it demonstrates our approach of not foreclosing a flexibility services opportunity before the market has been fully tested for a response. We have also identified the interventions within the NDR where we anticipate a full or partial flexible services response is likely to be technically and economically advantageous when compared to an asset solution.

Within the NDR we have quantified the minimum level of flexibility required using the Best View scenario to meet the 2050 level. We have also presented what levels of flexibility may be required by 2050 under Consumer Transformation and System Transformation scenarios to highlight the range of future uncertainty. Detailed flexibility requirements, such as half hourly capacity per day/month/season are developed at the tender stage, as we have greater certainty of the forecast requirements. The intention therefore of the NDR is to provide that future view of flexible requirements in terms of location and baseline quantities, whereas future tender information substantiates the volumes and service categorisation.

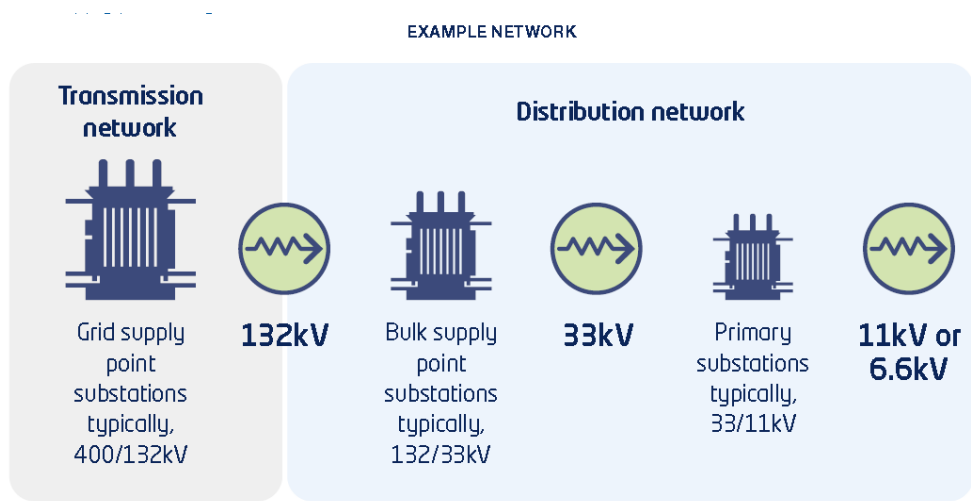
We publish flexible service requirements on a bi-annual basis (March and October) for all forecasted EHV (Extra High Voltage – 132kV to primary substations) capacity requirements two years in advance. This approach allows us to test the market response as close in time as possible to the capacity requirement materialising. In most cases this still allows sufficient time to implement an asset solution if required, once the results of the flexibility tender are evaluated.



2 Guide to using Network Development Report

Our NDP is presented in groups corresponding to the areas 14 Grid Supply Point(GSP) groups where our distribution network interfaces with the transmission network. We have also included two further areas where supply reaches our network via the SP Manweb area. Splitting the network in this way provides understanding on a local level. It allows the combined capability to be considered by grouping substations with capacities that may be shared most easily by creating interconnections and load transfers (eg via moving normally open points). Development plans in this report are presented per

GSP for bulk supply points, primary substations and associated networks, as illustrated in the example network below:



The map below shows all GSP and our 132kV network, which extends from Harker at Carlisle in the north to Bredbury in Stockport in the south.

ELECTRICITY NORTH WEST NETWORK SHOWING GRID SUPPLY POINTS



As can be seen in the table below based on the annual BO7 Demand compliance report transmission capacity in the 7-year window appears sufficient.

Grid supply point	Voltage	Electricity North West network area	National Grid BO7 Demand Compliance Status	
			Year 1	Year 7
Bredbury	132kV	South Peak	Compliant	Compliant
Carrington	132kV	Manchester	Compliant	Compliant
Harker & Hutton	132kV	Cumbria	Compliant	Compliant - SGT Upgrade planned for 2026
Heysham	132kV	Cumbria / Lancashire	Compliant	Compliant
Kearsley	132kV	Manchester/Lancashire	Compliant	Compliant
Kearsley Local	275kV	Manchester/Lancashire	Compliant	Compliant
Macclesfield	275kV	South Peak	Compliant	Compliant
Padiham	132kV	Lancashire	Compliant	Compliant
Penwortham East & Rochdale	132kV	Lancashire	Compliant	Compliant
Penwortham West & Stanah	132kV	Lancashire	Compliant	Compliant
Rochdale	132kV	Lancashire / North Peak	Compliant	Compliant
South Manchester	132kV	Manchester	Compliant	Compliant
Stalybridge	132kV	Manchester/South Peak	Compliant	Compliant
Washway Farm & Kirkby	132kV	Lancashire	Compliant	Compliant
Whitegate	132kV	Manchester	Compliant	Compliant
Bold (BSP)*	33kV	Lancashire/Manchester	N/A	N/A
Risley (Primary)*	11kV	Lancashire	N/A	N/A

**Supplied from the SP Manweb network*

3 Pace of heating electrification – impact on network development interventions

This year, due to the energy and cost of living crisis, we observed a slight decrease in overall electricity demand compared to the previous year. However, in some substations we observed an increase in peak demand driven by local developments and Low Carbon Technology (LCT) adoption. We also observed a record increase in EV registrations.

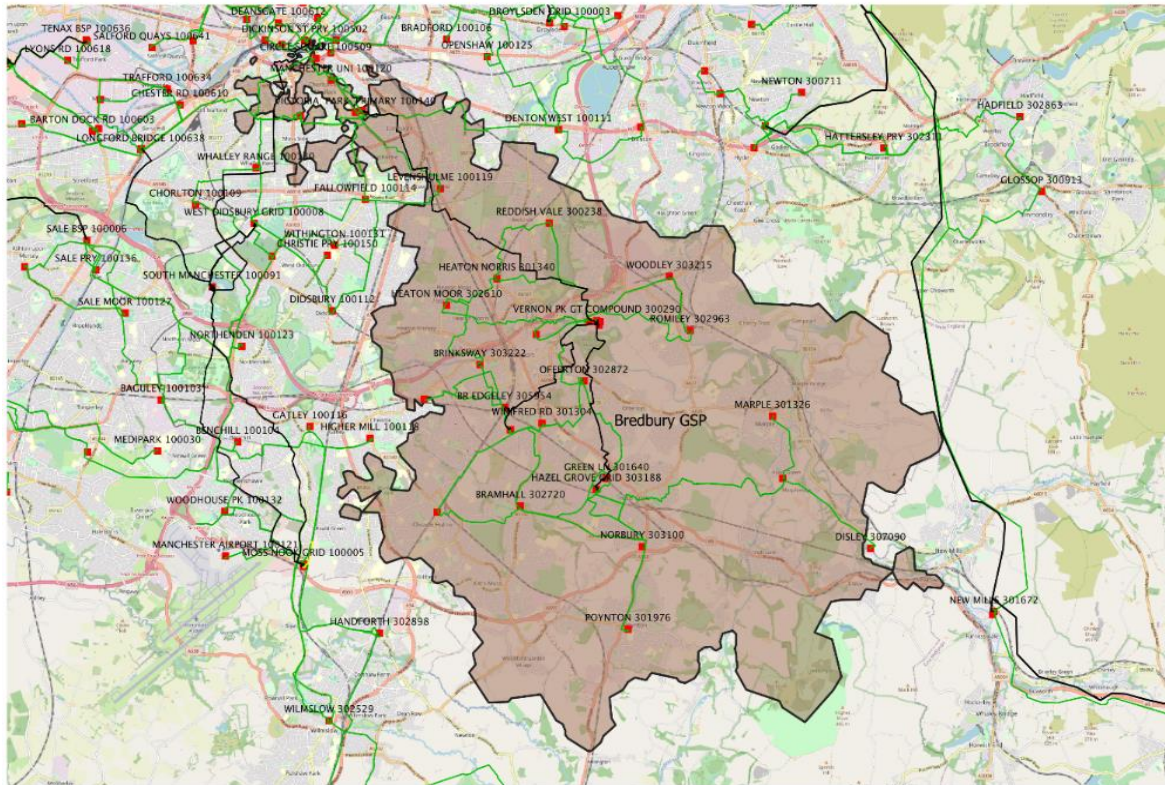
Moving forward we have high certainty in demand growth driven by planned developments associated with decarbonisation and the electrification of transport and heating. A key differentiator in our latest DFES is that we have increasing certainty that heat pumps will play an even more significant role in domestic heating. This is reflected in our Best View scenario, which captures the high certainty trends before 2030, and also in our Leading the Way scenario, which captures an increasingly likely accelerated electrification for domestic heating beyond 2030.

In this report the identified interventions are driven by the Best View scenario. As indicated above, it is increasingly likely that interventions driven by the Leading the Way scenario in the 2030-2033 period will be required. The following table summarises the volumes of interventions at BSP and primary substations associated with both the Best View and Leading the Way scenarios. At a high level, accelerated electrification of heating could result in over 66% more BSP and primary substation interventions across our entire network.

10 Year Outlook – Number of sites requiring Intervention

Scenario	Volumes of Demand Driven Interventions	
	Primary Substations	BSP Substations
Best View	75	18
Leading the Way	128	31

4 Bredbury GSP






GSP Summary: 23 Primaries 4 BSPs

Bredbury GSP is a 275/132kV substation which supplies approximately 178,000 customers across the Peak South and South Manchester region. The substation comprises three 240MVA transformers supplied from National Grid's 275kV network. The peak demand on the GSP is currently 256MVA, supplied via four BSPs and 23 primary substations




Capacity Requirements Overview





	Demand Driven	Generation Driven
0-2 years	Moss Side	N/A
3-5 years	Levenshulme	N/A
6-10 years	Heaton Moor Heaton Norris Longsight Marple Romiley Longsight BSP	Heaton Norris Vernon Park BSP

Intervention Detail

Site Name (& location co-ordinate)	Need	Asset Solution	Flexible Services Option								
<p>Heaton Moor</p>  <p>X- 387623</p> <p>Y- 391345</p>	<p>FC² first exceeded in FY32</p> <p>0.5MVA exceedance of FC by FY33</p>	<p>Marginal overload to be managed by transfers on the 6.6kV network</p>									
<p>Heaton Norris</p>  <p>X- 388860</p> <p>Y- 391967</p>	<p>FC first exceeded in FY32</p> <p>0.3MVA exceedance of FC by FY33</p>	<p>Marginal overload to be managed by transfers on the 6.6kV network.</p> <p>If required, install an HV interconnector to Reddish Vale to transfer demand off Heaton Norris, cable route ~2.5km.</p> <p>4.0MVA spare capacity on Reddish Vale in FY33</p> <p>Start date: FY31</p> <p>Completion: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>15.4</td> </tr> <tr> <td>Leading the Way</td> <td>14.5</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	15.4	Leading the Way	14.5	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	15.4										
Leading the Way	14.5										
Falling Short	-										
<p>Levenshulme</p>  <p>X- 387494</p> <p>Y- 394155</p>	<p>FC first exceeded in FY26</p> <p>2.9MVA exceedance of FC by FY33</p>	<p>Firm capacity limited by T12 which is a 10/14MVA transformer.</p> <p>Replace T12 with a 11.5/23MVA transformer in ED3.</p> <p>Expect marginal overloads in ED2 to be managed by transfers on the 6.6kV network</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>21.3</td> </tr> <tr> <td>Leading the Way</td> <td>19.1</td> </tr> <tr> <td>Falling Short</td> <td>4.0</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	21.3	Leading the Way	19.1	Falling Short	4.0
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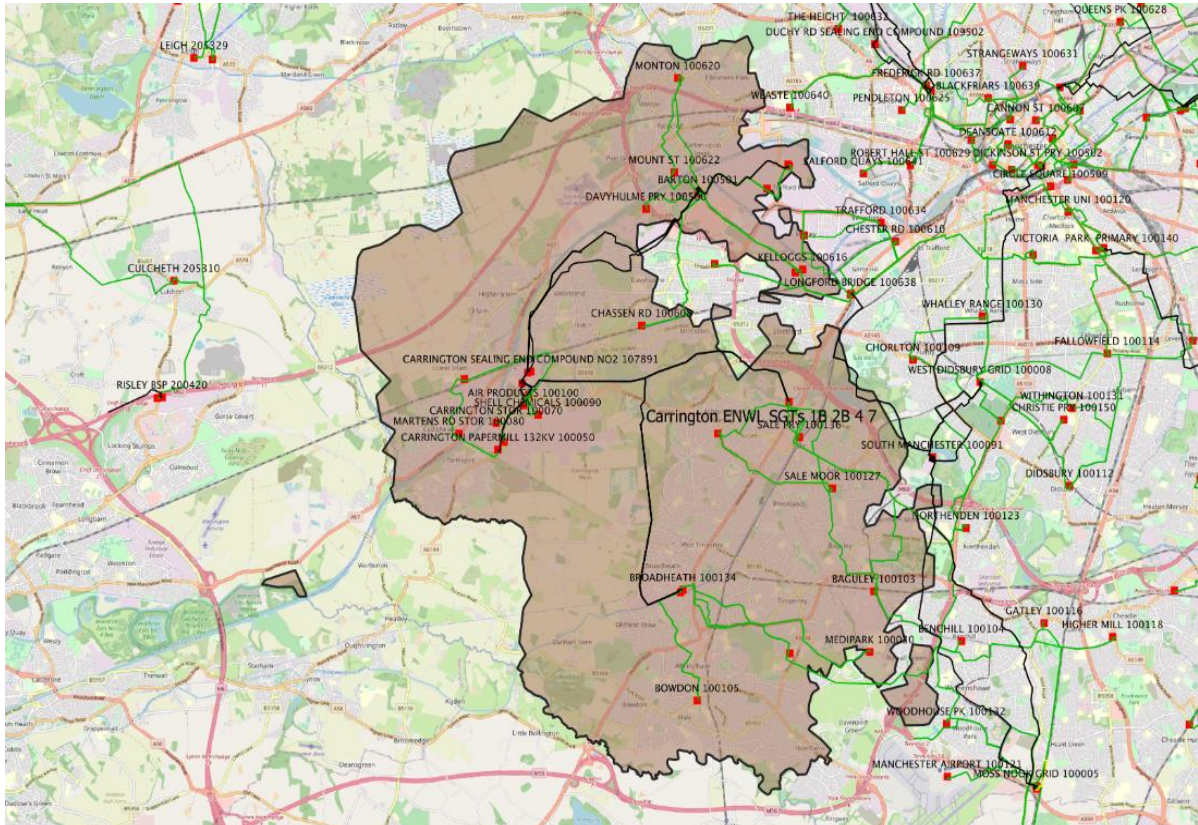
² Firm capacity

Site Name (& location co-ordinate)	Need	Asset Solution	Flexible Services Option								
<p>Longsight</p>  <p>X- 385535</p> <p>Y- 396037</p>	<p>FC first exceeded in FY31</p> <p>1.0MVA exceedance of FC by FY33</p>	<p>Strategic solution developed in RIIO-ED2 to install new 23MVA Southern Gateway primary.</p> <p>At least 1MVA of demand to be transferred off Longsight via HV network onto Southern Gateway to alleviate issues in the next 3-10 years.</p> <p>Start date: FY24</p> <p>Completion: FY26</p>									
<p>Marple</p>  <p>X- 395671</p> <p>Y- 388643</p>	<p>FC first exceeded in FY33 with marginal 0.03MVA exceedance.</p>	<p>Marginal overload to be managed by transfers on the 11kV network.</p>									
<p>Moss Side (Longsight)</p>  <p>X- 384007</p> <p>Y- 395893</p>	<p>FC first exceeded in FY24</p>	<p>Strategic solution developed in RIIO-ED2 to install new 23MVA Southern Gateway primary.</p> <p>8MVA minimum of demand to be transferred off Moss Side (Longsight) via HV network onto Southern Gateway to alleviate issues in the next 3-10 years.</p> <p>Start date: FY24</p> <p>Completion: FY26</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="1002 1525 1394 1832"> <thead> <tr> <th data-bbox="1002 1525 1219 1671">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1219 1525 1394 1671">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="1002 1671 1219 1711">Best View</td> <td data-bbox="1219 1671 1394 1711">18.6</td> </tr> <tr> <td data-bbox="1002 1711 1219 1794">Leading the Way</td> <td data-bbox="1219 1711 1394 1794">20.1</td> </tr> <tr> <td data-bbox="1002 1794 1219 1832">Falling Short</td> <td data-bbox="1219 1794 1394 1832">-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	18.6	Leading the Way	20.1	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	18.6										
Leading the Way	20.1										
Falling Short	-										

Site Name (& location co-ordinate)	Need	Asset Solution	Flexible Services Option								
<p>Romiley</p>  <p>X- 393626</p> <p>Y- 390716</p>	<p>FC first exceeded in FY32.</p> <p>1.7MVA exceedance of FC by FY33</p>	<p>Limited available headroom on existing adjacent HV feeders. Install a HV interconnector to Woodley primary to transfer demand off Romiley, cable route ~2km.</p> <p>7.5MVA spare capacity on Woodley in FY33.</p> <p>Start date: FY28</p> <p>Completion: FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>22.7</td> </tr> <tr> <td>Leading the Way</td> <td>18.5</td> </tr> <tr> <td>Falling Short</td> <td>1.0</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	22.7	Leading the Way	18.5	Falling Short	1.0
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	22.7										
Leading the Way	18.5										
Falling Short	1.0										
<p>Longsight BSP</p>  <p>X- 388860</p> <p>Y- 391967</p>	<p>FC first exceeded in FY27</p> <p>38MVA exceedance of FC by FY33</p>	<p>On completion of West Didsbury 33kV switchgear reinforcement. Lay 2 x 33kV cables (5.2km total) from West Didsbury to Moss Side and Whalley Range. Transfer Moss Side primary onto West Didsbury</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>93.3</td> </tr> <tr> <td>Leading the Way</td> <td>86.7</td> </tr> <tr> <td>Falling Short</td> <td>24.9</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	93.3	Leading the Way	86.7	Falling Short	24.9
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
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Leading the Way	86.7										
Falling Short	24.9										
<p>Heaton Norris</p>  <p>X- 388860</p> <p>Y- 391967</p>	<p>Make fault level exceedance in FY29.</p>	<p>Scheme in flight to replace 6.6kV Switchgear.</p> <p>Complete FY27</p>	<p>Not suitable solution for fault level exceedances.</p>								
<p>Vernon Park BSP</p> 	<p>Make fault level exceedance in FY31.</p>	<p>Replace 17.5kA rated 33kV switchboard with new 25/62.5kA rated switchgear.</p>	<p>Not suitable solution for fault level exceedances.</p>								

Site Name (& location co-ordinate)	Need	Asset Solution	Flexible Services Option
X- 391131		Start date: FY28	
Y- 390929		Completion Date: FY30	

5 Carrington GSP



GSP Summary: **4 BSPs** **17 Primaries**



Carrington GSP is a 400/275/132kV substation shared with SP Manweb. The substation comprises a total of five SGTs, with SGTs 2B, 4 & 7 supplying ENWL network and SGTs 1B & 2A operating split, supplying SP Manweb. The ENWL section supplies approximately 110,000 customers across the West and South Manchester region and comprises of two 180MVA transformers supplied from National Grid's 275kV network and one 240MVA SGT supplied from the 400kV network. The peak demand is currently 235MVA, supplied via four BSPs and 17 primary substations.

Capacity Requirements Overview

	Demand Driven	Generation Driven
0-2 years	N/A	N/A
3-5 years	N/A	N/A

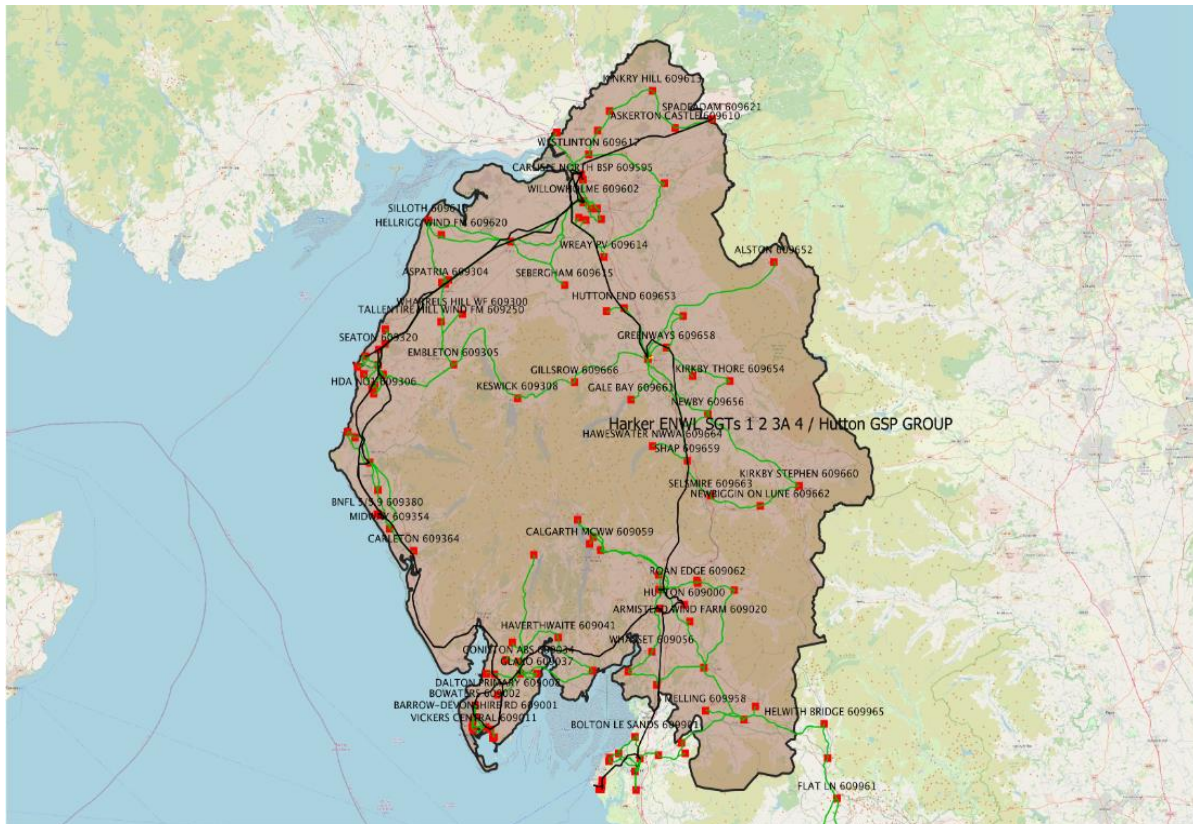
	Demand Driven	Generation Driven
6-10 years	Chassen Road Trafford Park North	N/A

Intervention Detail

Site Name	Need	Asset Solution	Flexible Services Solution								
<p>Chassen Rd</p>  <p>X- 375542</p> <p>Y- 394453</p>	<p>FC first exceeded in FY32</p> <p>0.5MVA exceedance of FC by FY33</p>	<p>HV demand transfers available to Urmston and NWGB Partington primaries via existing feeders.</p> <p>In FY33, there is 7.5MVA spare on Urmston and 6.0MVA spare on NWGB Partington.</p> <p>Start date: FY32</p> <p>Completion date: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>17.9</td> </tr> <tr> <td>Leading the Way</td> <td>15.2</td> </tr> <tr> <td>Falling Short</td> <td>2.1</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	17.9	Leading the Way	15.2	Falling Short	2.1
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	17.9										
Leading the Way	15.2										
Falling Short	2.1										
<p>Trafford Park North</p>  <p>X- 378738</p> <p>Y- 397694</p>	<p>FC first exceeded in FY33 with 2.2MVA exceedance</p>	<p>Existing Asset Replacement scheme to replace both transformers with 11.5/23MVA units.</p> <p>Start date: FY30</p> <p>Completion date: FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>5.0</td> </tr> <tr> <td>Leading the Way</td> <td>5.3</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	5.0	Leading the Way	5.3	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	5.0										
Leading the Way	5.3										
Falling Short	-										

6 Harker ENWL SGTs 1 2 3A 4 / Hutton Group

GSP Summary: **10 BSPs** **93 Primaries**




Harker ENWL SGTs 1 2 3A 4 / Hutton Group supplies approximately 235,000 customers across the North and South Lakes region of the network. The supply is taken from Harker GSP and Hutton GSP. Harker GSP takes its supply from National Grid via 1 x 240MVA 275kV SGT and 4 x 120MVA 275kV SGTs. Hutton GSP takes its supply from National Grid via 2 x 240MVA 400kV SGTs. Together the GSPs supply the Cumbria ring consisting of 2 x 132kV switching stations, 10 x BSP and 93 x Primary Substations. There is significant generation on the network including several large windfarms and combined heat and power sites. The peak demand is currently 577MVA.


Intervention Overview



	Demand Driven	Generation Driven
0-2 years	Coniston	HDA 1 & 2 Leyland National Morton Park & Pirelli



	Demand Driven	Generation Driven
3-5 years	<p>Alston</p> <p>Morton Park & Pirelli</p> <p>Easton</p> <p>Egremont</p> <p>James St</p> <p>Kendal</p> <p>Newby</p> <p>Sebergham</p> <p>Whasset</p> <p>Wigton</p> <p>Carlisle BSP</p>	<p>Bowaters</p>
6-10 years	<p>Askam & Dalton</p> <p>Embleton</p> <p>Gillsrow</p> <p>Newbiggin on Lune</p> <p>Yealand</p> <p>Kendal BSP</p>	<p>Stainburn BSP</p> <p>Siddick BSP</p>



Intervention Detail




Site Name	Need	Asset Solution	Flexible Services Solution				
<p>Alston</p>  <p>X- 372125</p> <p>Y- 546499</p>	<p>FC first exceeded in FY27, however it is managed post fault operationally using strategic generation deployment.</p> <p>Increase in demand exceedance of 0.6MVA by FY33 requires consideration of</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>2.9</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	2.9
Max Flex Required at 2050 (FY51) - Winter Peak	MVA						
Best View	2.9						



Site Name	Need	Asset Solution	Flexible Services Solution									
	<p>non-operational solution.</p> <p>Whole systems solution to be considered with Northern Power Grid adjacent network. Development planning in progress.</p>	<p>against the technical solution detailed below to determine the preferred option.</p> <p>One option is to establish HV Interconnection with Little Salkeld ~27km.</p> <p>Second option is to investigate possible interconnection with neighbouring Northern Power Grid network.</p> <p>Start date: FY28</p> <p>Completion date: FY31</p>	<table border="1"> <tr> <td data-bbox="979 253 1193 331">Leading the Way</td> <td data-bbox="1193 253 1375 331">2.7</td> </tr> <tr> <td data-bbox="979 331 1193 376">Falling Short</td> <td data-bbox="1193 331 1375 376">1.0</td> </tr> </table>		Leading the Way	2.7	Falling Short	1.0				
Leading the Way	2.7											
Falling Short	1.0											
<p>Askam & Dalton</p> <p>(single transformer primaries run in parallel at HV)</p>  <p>Askam</p> <p>X- 321558</p> <p>Y- 477806</p> <p>Dalton</p> <p>X- 323582</p> <p>Y- 474255</p>	<p>FC first exceeded in FY29</p> <p>1.1MVA exceedance of FC by FY33</p>	<p>Uprate existing 33kV cable to Dalton to increase FC</p> <p>Estimated completion in FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th data-bbox="979 1211 1193 1350">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 1211 1375 1350">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="979 1350 1193 1395">Best View</td> <td data-bbox="1193 1350 1375 1395">21.3</td> </tr> <tr> <td data-bbox="979 1395 1193 1473">Leading the Way</td> <td data-bbox="1193 1395 1375 1473">17.3</td> </tr> <tr> <td data-bbox="979 1473 1193 1518">Falling Short</td> <td data-bbox="1193 1473 1375 1518">2.2</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	21.3	Leading the Way	17.3	Falling Short	2.2
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	21.3											
Leading the Way	17.3											
Falling Short	2.2											
<p>Coniston</p>	<p>FC first exceeded in FY23, however it is managed post fault operationally using</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for</p>										


Site Name	Need	Asset Solution	Flexible Services Solution								
 <p>X- 329874</p> <p>Y- 497641</p>	<p>strategic generation deployment.</p> <p>Increase in demand exceedance to 1.6MVA by FY33 requires consideration of non-operational solution.</p>	<p>flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is 13km away. One option is to establish a new HV interconnector to Ambleside.</p> <p>Alternatively, a second 4MVA transformer is required at Coniston. ~17km of 33kV cable back to Ulverston BSP.</p> <p>Start date: FY28</p> <p>Completion date: FY31</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="979 360 1370 669"> <thead> <tr> <th data-bbox="979 360 1193 506">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 360 1370 506">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="979 506 1193 546">Best View</td> <td data-bbox="1193 506 1370 546">4.3</td> </tr> <tr> <td data-bbox="979 546 1193 624">Leading the Way</td> <td data-bbox="1193 546 1370 624">3.9</td> </tr> <tr> <td data-bbox="979 624 1193 669">Falling Short</td> <td data-bbox="1193 624 1370 669">2.1</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	4.3	Leading the Way	3.9	Falling Short	2.1
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	4.3										
Leading the Way	3.9										
Falling Short	2.1										
<p>Easton</p>  <p>X- 343201</p> <p>Y- 571738</p>	<p>FC first exceeded in FY27, however it is managed post fault operationally using strategic generation deployment.</p> <p>Increase in demand exceedance to 0.5MVA by FY33 requires consideration of non-operational solution.</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="979 1565 1370 1874"> <thead> <tr> <th data-bbox="979 1565 1193 1711">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 1565 1370 1711">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="979 1711 1193 1751">Best View</td> <td data-bbox="1193 1711 1370 1751">1.2</td> </tr> <tr> <td data-bbox="979 1751 1193 1830">Leading the Way</td> <td data-bbox="1193 1751 1370 1830">0.9</td> </tr> <tr> <td data-bbox="979 1830 1193 1874">Falling Short</td> <td data-bbox="1193 1830 1370 1874">0.9</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	1.2	Leading the Way	0.9	Falling Short	0.9
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	1.2										
Leading the Way	0.9										
Falling Short	0.9										



Site Name	Need	Asset Solution	Flexible Services Solution								
		Considering the small increase from FY23 to FY33 there are still available demand transfers from Easton available utilising existing feeders									
<p>Egremont</p>  <p>X- 301070</p> <p>Y- 513074</p>	<p>FC first exceeded in FY28</p> <p>2.9MVA exceedance of FC by FY33</p>	<p>Install an HV interconnector to Hensingham primary to transfer demand off Egremont, cable route ~5km</p> <p>9.8MVA spare capacity on Hensingham in FY33</p> <p>Start date: FY28</p> <p>Completion date: FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>20.0</td> </tr> <tr> <td>Leading the Way</td> <td>16.8</td> </tr> <tr> <td>Falling Short</td> <td>2.8</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	20.0	Leading the Way	16.8	Falling Short	2.8
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	20.0										
Leading the Way	16.8										
Falling Short	2.8										
<p>Embleton</p>  <p>X- 315767</p> <p>Y- 529389</p>	<p>FC first exceeded in FY30</p> <p>1.7MVA exceedance of FC by FY33</p>	<p>New 11kV switchboard installed. Capacity now limited by 11.5/16MVA transformers. Investigate possibility of increasing this to 11.5/23MVA with forced cooling.</p> <p>Alternative option to replace both transformers with 11.5/23MVA units</p> <p>Start date: FY29</p> <p>Completion date: FY31</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>11.3</td> </tr> <tr> <td>Leading the Way</td> <td>8.9</td> </tr> <tr> <td>Falling Short</td> <td>1.8</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	11.3	Leading the Way	8.9	Falling Short	1.8
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	11.3										
Leading the Way	8.9										
Falling Short	1.8										
<p>Gillsrow</p>	<p>FC first exceeded in FY31, however it is managed post fault operationally using</p>	<p>Single transformer site and our initial approach to meet the firm capacity</p>									



Site Name	Need	Asset Solution	Flexible Services Solution								
 X- 337117 Y- 526444	<p>strategic generation deployment.</p> <p>Increase in demand exceedance to 0.5MVA by FY33 requires consideration of non-operational solution.</p>	<p>need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is >10km away which makes any new HV interconnector between primaries technically challenging and expensive.</p> <p>Second 7.5/15MVA transformer required at Gillsrow to accommodate excess demand</p> <p>~17km of 33kV cable between Gillsrow and Penrith primary to supply the new transformer</p> <p>Start date: FY29</p> <p>Completion date: FY31</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="978 360 1374 669"> <thead> <tr> <th data-bbox="978 360 1193 506">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 360 1374 506">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="978 506 1193 546">Best View</td> <td data-bbox="1193 506 1374 546">3.0</td> </tr> <tr> <td data-bbox="978 546 1193 627">Leading the Way</td> <td data-bbox="1193 546 1374 627">2.3</td> </tr> <tr> <td data-bbox="978 627 1193 669">Falling Short</td> <td data-bbox="1193 627 1374 669">1.4</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	3.0	Leading the Way	2.3	Falling Short	1.4
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	3.0										
Leading the Way	2.3										
Falling Short	1.4										
<p>James St</p>  X- 340034 Y- 555418	<p>FC first exceeded in FY27</p> <p>2.1MVA exceedance of FC by FY33</p>	<p>Install an HV interconnector to Willowholme primary to transfer demand off James St, cable route ~3km</p> <p>7.3MVA spare capacity on Willowholme in FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="978 1816 1374 2002"> <thead> <tr> <th data-bbox="978 1816 1193 1962">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 1816 1374 1962">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="978 1962 1193 2002">Best View</td> <td data-bbox="1193 1962 1374 2002">16.1</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	16.1				
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	16.1										



Site Name	Need	Asset Solution	Flexible Services Solution									
		Start date: FY27 Completion date: FY28	Leading the Way 15.2	Falling Short -								
<p>Kendal</p>  <p>X- 351915 Y- 491858</p>	<p>FC first exceeded in FY28</p> <p>2.5MVA exceedance of FC by FY33</p>	<p>Install third transformer at Kendal to accommodate the excess demand</p> <p>Additional 33/11kV transformer and switchboard at Kendal supplied from the local BSP</p> <p>Start date: FY28</p> <p>Completion date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>21.8</td> </tr> <tr> <td>Leading the Way</td> <td>19.4</td> </tr> <tr> <td>Falling Short</td> <td>4.4</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	21.8	Leading the Way	19.4	Falling Short	4.4
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
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<p>Morton Park & Pirelli</p>  <p>Morton Park X- 337826 Y- 553939 Pirelli X- 339059 Y- 553548</p>	<p>FC first exceeded in FY29</p> <p>9MVA exceedance of FC by FY33</p>	<p>Uprate existing transformer at Pirelli to 11.5/23MVA</p> <p>Start date: FY28</p> <p>Completion date: FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>29.5</td> </tr> <tr> <td>Leading the Way</td> <td>32.9</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	29.5	Leading the Way	32.9	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	29.5											
Leading the Way	32.9											
Falling Short	-											
<p>Newbiggin on Lune</p>  <p>X- 369770 Y- 505803</p>	<p>FC first exceeded in FY30</p> <p>Marginal 0.2MVA exceedance of FC by FY33</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>0.8</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	0.8				
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	0.8											




Site Name	Need	Asset Solution	Flexible Services Solution									
		<p>assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is Kirkby Stephen >10km away which makes any new HV interconnector between primaries technically challenging and expensive.</p> <p>5.9MVA spare capacity on Kirkby Stephen in FY33</p> <p>Start date: FY30</p> <p>Completion date: FY31</p>	Leading the Way	0.7								
			Falling Short	0.5								
<p>Newby</p>  <p>X- 360520</p> <p>Y- 521151</p>	<p>FC first exceeded in FY28</p> <p>1.3MVA exceedance of FC by FY33</p>	<p>Install second transformer at Newby from local 33kV switchboard to accommodate the excess demand</p> <p>Start date: FY28</p> <p>Completion date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="979 1350 1375 1659"> <thead> <tr> <th data-bbox="979 1350 1193 1496">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 1350 1375 1496">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="979 1496 1193 1541">Best View</td> <td data-bbox="1193 1496 1375 1541">5.2</td> </tr> <tr> <td data-bbox="979 1541 1193 1619">Leading the Way</td> <td data-bbox="1193 1541 1375 1619">4.5</td> </tr> <tr> <td data-bbox="979 1619 1193 1659">Falling Short</td> <td data-bbox="1193 1619 1375 1659">1.8</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	5.2	Leading the Way	4.5	Falling Short	1.8
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	5.2											
Leading the Way	4.5											
Falling Short	1.8											
<p>Sebergham</p> 	<p>FC first exceeded in FY26, however it is managed post fault operationally using</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for</p>										

Site Name	Need	Asset Solution	Flexible Services Solution								
X- 335344 Y- 542653	<p>strategic generation deployment.</p> <p>Increase in demand exceedance to 0.8MVA by FY33 requires consideration of non-operational solution.</p>	<p>flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is >9km away which makes any new HV interconnector between primaries technically challenging and expensive.</p> <p>Second 4/8MVA transformer required at Sebergham to accommodate excess demand</p> <p>Install 5 panel 33kV board and 6km 33kV to loop in to Carlisle/Wigton circuit to supply the new transformer</p> <p>Start date: FY29</p> <p>Completion date: FY31</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>2.2</td> </tr> <tr> <td>Leading the Way</td> <td>1.7</td> </tr> <tr> <td>Falling Short</td> <td>0.3</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	2.2	Leading the Way	1.7	Falling Short	0.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	2.2										
Leading the Way	1.7										
Falling Short	0.3										
<p>Whasset</p>  <p>X- 350648 Y- 481468</p>	<p>FC first exceeded in FY28</p> <p>3.5MVA exceedance of FC by FY33</p>	<p>Limited available headroom on existing adjacent standby feeders</p> <p>Install a HV interconnector to Arnside primary to transfer demand off</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>9.9</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	9.9				
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
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Site Name	Need	Asset Solution	Flexible Services Solution									
		<p>Whasset, cable route ~5km</p> <p>9.1MVA spare capacity on Arnside in FY33</p> <p>Start date: FY29</p> <p>Completion date: FY31</p>	Leading the Way	7.7								
			Falling Short	-								
<p>Wigton</p>  <p>X- 325814</p> <p>Y- 549933</p>	<p>FC first exceeded in FY28</p> <p>5.3MVA exceedance of FC by FY33</p>	<p>Demand driven by single large customer in the area. Non-firm connection agreements in place and issue currently managed operationally</p> <p>Proposal to increase FC is to extend existing switchboard at Wigton and install third transformer.</p> <p>Customer in the area may drive this ahead of ED3.</p> <p>Start date: FY28</p> <p>Completion date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="979 846 1369 1160"> <thead> <tr> <th data-bbox="979 846 1193 992">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 846 1369 992">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="979 992 1193 1037">Best View</td> <td data-bbox="1193 992 1369 1037">5.0</td> </tr> <tr> <td data-bbox="979 1037 1193 1115">Leading the Way</td> <td data-bbox="1193 1037 1369 1115">2.5</td> </tr> <tr> <td data-bbox="979 1115 1193 1160">Falling Short</td> <td data-bbox="1193 1115 1369 1160">-</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	5.0	Leading the Way	2.5	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	5.0											
Leading the Way	2.5											
Falling Short	-											
<p>Yealand</p>  <p>X- 351537</p> <p>Y- 475934</p>	<p>FC first exceeded in FY30, however it is managed post fault operationally using strategic generation deployment.</p> <p>Increase in demand exceedance to 0.4MVA by FY33 requires consideration of</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="979 1691 1369 2004"> <thead> <tr> <th data-bbox="979 1691 1193 1836">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1193 1691 1369 1836">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="979 1836 1193 1881">Best View</td> <td data-bbox="1193 1836 1369 1881">5.9</td> </tr> <tr> <td data-bbox="979 1881 1193 1960">Leading the Way</td> <td data-bbox="1193 1881 1369 1960">7.5</td> </tr> <tr> <td data-bbox="979 1960 1193 2004">Falling Short</td> <td data-bbox="1193 1960 1369 2004">2.0</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	5.9	Leading the Way	7.5	Falling Short	2.0
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	5.9											
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Site Name	Need	Asset Solution	Flexible Services Solution								
	non-operational solution.	<p>below to determine the preferred option.</p> <p>Install a HV interconnector from Arnside primary to transfer demand off Yealand</p> <p>Cable route ~6km</p> <p>Start date: FY30</p> <p>Completion date: FY31</p>									
<p>Carlisle BSP</p>  <p>X- 338655</p> <p>Y- 556583</p>	<p>FC first exceeded in FY27</p> <p>35MVA exceedance of FC by FY33</p>	<p>Currently three GTs at Carlisle. 2 x 60MVA and 1 x 90MVA rated.</p> <p>Replace the 2 x 60MVA units with 90MVA units to increase the firm capacity from 150MVA to 207MVA.</p> <p>Start date: FY27</p> <p>Completion date: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="978 992 1370 1301"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>143.1</td> </tr> <tr> <td>Leading the Way</td> <td>140.1</td> </tr> <tr> <td>Falling Short</td> <td>20.2</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	143.1	Leading the Way	140.1	Falling Short	20.2
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
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Leading the Way	140.1										
Falling Short	20.2										
<p>Kendal BSP</p>  <p>X- 351915</p> <p>Y- 491858</p>	<p>FC first exceeded in FY30</p> <p>15.5MVA exceedance of FC by FY33</p>	<p>Two options have been considered to increase capacity at Kendal.</p> <p>A third 90MVA GT located at Kendal BSP fed from Hutton.</p> <p>An alternative option is to utilise the site at the BR Natland, install a 90MVA GT here and reorganise the 33kV network.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1" data-bbox="978 1585 1370 1895"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>108.5</td> </tr> <tr> <td>Leading the Way</td> <td>90.7</td> </tr> <tr> <td>Falling Short</td> <td>17.5</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	108.5	Leading the Way	90.7	Falling Short	17.5
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Best View	108.5										
Leading the Way	90.7										
Falling Short	17.5										

Site Name	Need	Asset Solution	Flexible Services Solution
		<p>Further Optioneering to be carried out in ED2 to determine most cost effective option.</p> <p>Start date: FY30</p> <p>Completion date: FY33</p>	
<p>Stainburn & Siddick BSP</p>  <p>X- 302535</p> <p>Y- 529330</p>	<p>Make fault level exceedance in FY32.</p>	<p>Due to three GTs running in parallel already a significantly high make fault level identified at this location.</p> <p>Current preferred solution is to install 2nd GT at Siddick 132/33kV and associated 33kV circuit breakers. Future substation operational arrangement to be confirmed.</p> <p>Start date: FY29</p> <p>Completion date: FY31</p>	<p>Not suitable solution for fault level exceedances.</p>
<p>Bowaters</p>  <p>X- 319579</p> <p>Y- 472480</p>	<p>Make fault level exceedance in FY28.</p>	<p>There is a RIIO-ED2 scheme to replace 13.1kA rated 11kV switchboard with new 25/62.5kA rated switchgear.</p> <p>Start date: FY23</p> <p>Completion Date: FY28</p>	<p>Not suitable solution for fault level exceedances.</p>
<p>HDA NO1 & HDA NO2</p>	<p>Make fault level exceedance in FY23.</p>	<p>Fault rating restricted by one feeder circuit breaker. Replace CB</p>	<p>Not suitable solution for fault level exceedances.</p>

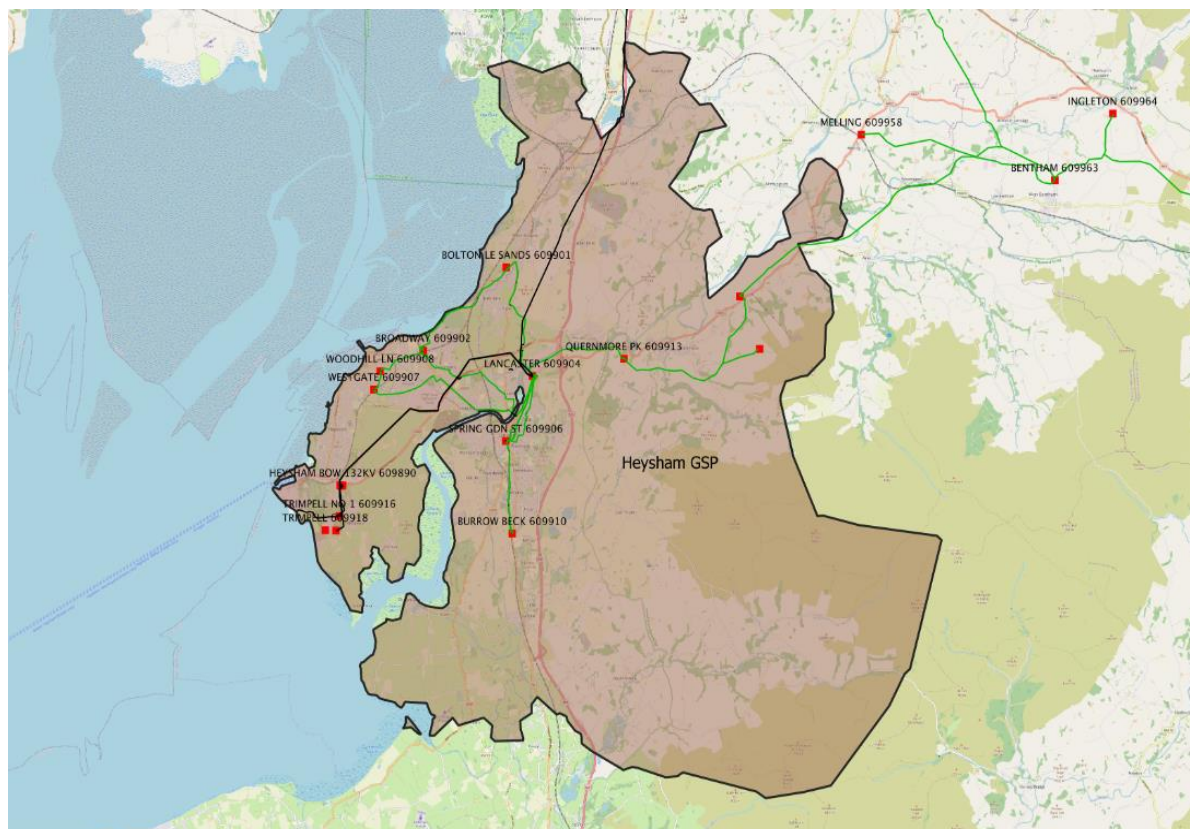
Site Name	Need	Asset Solution	Flexible Services Solution
 <p>X- 301743 Y- 524532</p>		with 13.1kA rated breaker.	
<p>Leyland National</p>  <p>X- 301973 Y- 525948</p>	Make fault level exceedance in FY23, currently being managed operationally.	<p>There is a RIIO-ED2 scheme to replace 13.1kA rated 11kV switchboard with new 25/62.5kA rated switchgear.</p> <p>Start date: FY23</p> <p>Completion Date: FY28</p>	Not suitable solution for fault level exceedances.
<p>Morton Park & Pirelli</p>  <p>X- 337826 Y- 553939</p>	Make fault level exceedance in FY24.	<p>Monitor FL and/manage operationally in ED2. Plan to replace Morton Park 11kV switchboard with new 25/62.5kA rated switchgear.</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>	Not suitable solution for fault level exceedances.

7 Heysham GSP

GSP Summary

2 BSPs

9 Primaries





Heysham GSP is a 400/132kV substation which supplies approximately 50,000 customers across the North Lancashire and South Lakes region. The substation comprises three 240MVA transformers supplied from National Grid's 400kV network. The peak demand on the GSP is currently only 110MVA supplied via two BSPs and nine primary substations. However, there are several large offshore windfarms connected at Heysham and therefore export is a greater constraint than import.



Due to the significant levels of generation in this area transmission capacity has already been exceeded. National Grid ESO have reviewed this requirement and in conjunction with ENW have developed a solution to construct a new GSP at Middleton close to Heysham.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	N/A
3-5 years	Cloughton	N/A
6-10 years	Lancaster	N/A
	Woodhill Lane	
	Lancaster BSP	

Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Cloughton</p>  <p>X- 355872</p> <p>Y- 466268</p>	<p>FC first exceeded in FY28, however it is managed post fault operationally using strategic generation deployment.</p> <p>Increase in demand exceedance to 0.9MVA by FY33 requires consideration of non-operational solution.</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is >7km away which gives limited transfer capability if a new HV interconnector was installed</p> <p>Second 7.5MVA transformer required at Cloughton to accommodate excess demand</p> <p>~7.7km of 33kV cable between Cloughton and Lancaster BSP to supply the new transformer</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>3.7</td> </tr> <tr> <td>Leading the Way</td> <td>3.1</td> </tr> <tr> <td>Falling Short</td> <td>0.7</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	3.7	Leading the Way	3.1	Falling Short	0.7
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	3.7										
Leading the Way	3.1										
Falling Short	0.7										
<p>Lancaster</p>  <p>X- 348644</p>	<p>FC first exceeded in FY27</p> <p>3.1MVA exceedance of FC by FY33</p>	<p>Adjacent primaries are >7km away thus limited impact from a new HV interconnector due to voltage step issues</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Max Flex Required at	MVA						
Max Flex Required at	MVA										

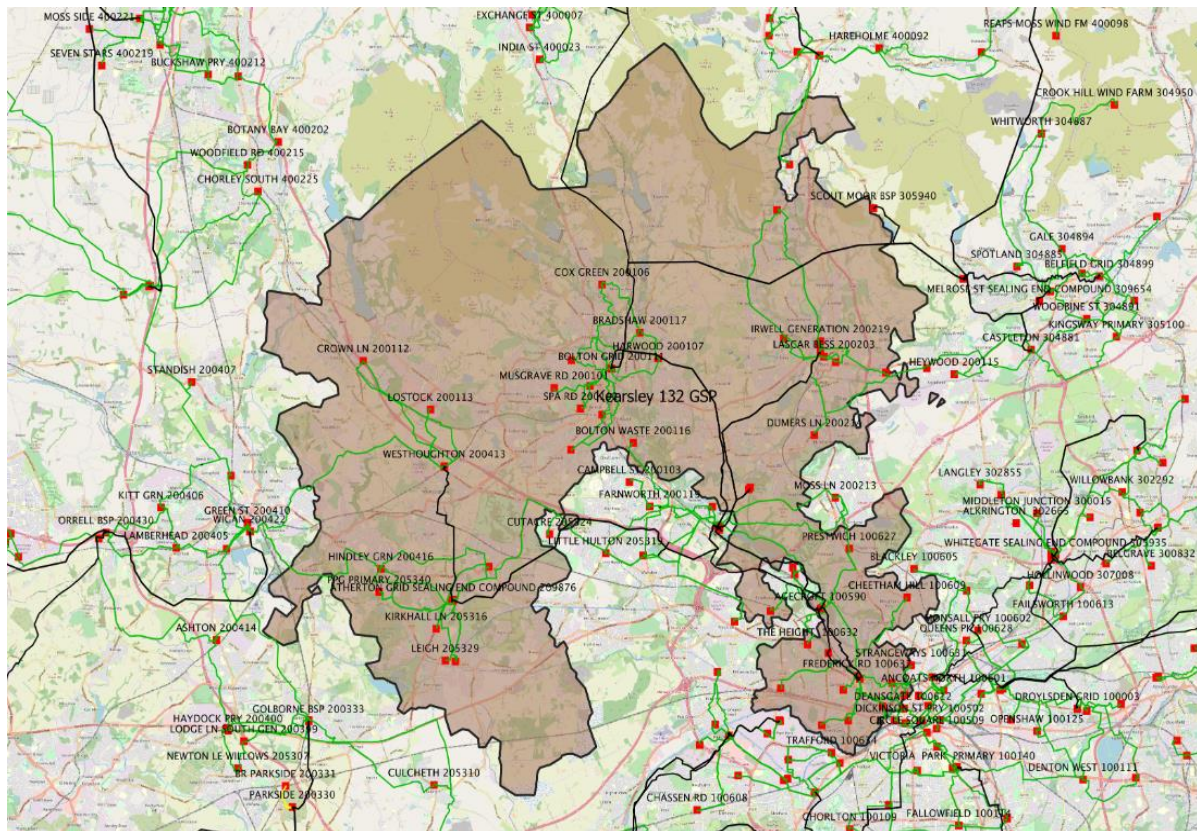
Site Name	Need	Asset Solution	Flex Plan Location	
Y- 463628		Install third transformer at Lancaster to accommodate additional demand Start date: FY28 Completion Date: FY30	2050 (FY51) - Winter Peak	
			Best View	19.1
			Leading the Way	16.3
			Falling Short	2.1
Woodhill Lane  X- 343294 Y- 463785	FC first exceeded in FY29 2.4MVA exceedance of FC by FY33	Install an HV interconnector to Westgate primary to transfer demand off Woodhill Lane, cable route ~1km 3MVA spare capacity on Westgate in FY33 Start date: FY29 Completion date: FY30	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	8.5
			Leading the Way	7.3
			Falling Short	-
Lancaster BSP  X- 348644 Y- 463628	FC first exceeded in FY29 19.9MVA exceedance of FC by FY31	Currently there is a third GT at Lancaster which is on open standby fed from the Harker & Hutton Network – initial proposal to be analysed in RIIO ED2 is to utilise this network asset to support demand Start date: FY28 Completion Date: FY30	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	160.5
			Leading the Way	150.2
			Falling Short	4.4

8 Kearsley GSP

GSP Summary

7 BSPs

37 Primaries





Kearsley GSP is a 275/132kV substation which supplies approximately 322,000 customers across the South Lancashire and North Manchester region. The substation comprises four 240MVA transformers supplied from National Grid's 275kV network. The peak demand on the GSP is currently 510MVA, supplied via seven BSPs and 37 primary substations.




Intervention Overview




	Demand Driven	Generation Driven
0-2 years	Frederick Road BSP	Trinity Bolton BSP Bury BSP
3-5 years	Atherton Town Centre Barbara St Cheetham Hill	Westhoughton Westhoughton BSP





	Demand Driven	Generation Driven
6-10 years	<p>Bedford</p> <p>Chamberhall</p> <p>Crown Lane</p> <p>Frederick Rd</p> <p>Harwood</p> <p>Robert Hall St</p> <p>Westhoughton</p> <p>Radcliffe BSP</p> <p>Atherton BSP</p>	N/A





Intervention Detail



Site Name	Need	Asset Solution	Flex Plan Location								
<p>Atherton Town Centre</p>  <p>X- 367546</p> <p>Y- 403338</p>	<p>FC first exceeded in FY28</p> <p>7.8MVA exceedance of FC by FY33</p>	<p>Overlay ~2.2km of 33kV cable to increase existing firm capacity to 38MVA</p> <p>and</p> <p>Install 2.2km of 33kV cable and a third primary transformer.</p> <p>Start date: FY28</p> <p>Completion date: FY31</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>39.4</td> </tr> <tr> <td>Leading the Way</td> <td>35.5</td> </tr> <tr> <td>Falling Short</td> <td>7.6</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	39.4	Leading the Way	35.5	Falling Short	7.6
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	39.4										
Leading the Way	35.5										
Falling Short	7.6										
<p>Barbara St</p>  <p>X- 370695</p>	<p>FC first exceeded in FY27</p> <p>1.7MVA exceedance of FC by FY33</p>	<p>FC limited by 33kV circuit. Overlay ~5km of 33kV cable to increase FC to 17.5MVA</p> <p>Start date: FY28</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Max Flex Required at	MVA						
Max Flex Required at	MVA										

Site Name	Need	Asset Solution	Flex Plan Location								
Y- 407609		Completion date: FY29	<table border="1"> <tr> <td>2050 (FY51) - Winter Peak</td> <td></td> </tr> <tr> <td>Best View</td> <td>16.1</td> </tr> <tr> <td>Leading the Way</td> <td>15.7</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </table>	2050 (FY51) - Winter Peak		Best View	16.1	Leading the Way	15.7	Falling Short	-
2050 (FY51) - Winter Peak											
Best View	16.1										
Leading the Way	15.7										
Falling Short	-										
<p>Bedford</p>  <p>X- 366258</p> <p>Y- 399876</p>	FC first exceeded in FY33 with marginal 0.1MVA exceedance	Marginal overload to be managed by load transfers on the 11kV network onto Kirkhall Lane	<p>Utilisation of network capacity on adjacent substations – implemented through HV switching will be a low-cost solution.</p> <p>Therefore, flexibility services not required before 2033.</p>								
<p>Chamberhall</p>  <p>X- 380280</p> <p>Y- 411215</p>	<p>FC first exceeded in FY30</p> <p>1.8MVA exceedance of FC by FY33</p>	<p>Install 0.1km of 33kV cable from Bury BSP to Chamberhall and install a third transformer to accommodate additional demand</p> <p>Start date: FY30</p> <p>Completion Date: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <tr> <td>Max Flex Required at 2050 (FY51) - Winter Peak</td> <td>MVA</td> </tr> <tr> <td>Best View</td> <td>22.2</td> </tr> <tr> <td>Leading the Way</td> <td>19.5</td> </tr> <tr> <td>Falling Short</td> <td>3.3</td> </tr> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	22.2	Leading the Way	19.5	Falling Short	3.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	22.2										
Leading the Way	19.5										
Falling Short	3.3										
<p>Cheetham Hill</p>  <p>X- 383606</p> <p>Y- 402218</p>	<p>FC first exceeded in FY28</p> <p>1.7MVA exceedance of FC by FY33</p>	<p>FC limited by 6.6kV switchboard rating.</p> <p>Replace 6.6kV switchboard at Cheetham Hill</p> <p>Start date: FY28</p> <p>Completion date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <tr> <td>Max Flex Required at 2050 (FY51) - Winter Peak</td> <td>MVA</td> </tr> <tr> <td>Best View</td> <td>15.4</td> </tr> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	15.4				
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	15.4										

Site Name	Need	Asset Solution	Flex Plan Location									
			Leading the Way	13.2								
			Falling Short	1.6								
<p>Crown Lane</p>  <p>X- 362706</p> <p>Y- 410859</p>	<p>FC first exceeded in FY33 with marginal 0.1MVA exceedance.</p>	<p>Marginal overload to be managed by load transfers on the 11kV network onto Lostock</p>	<p>Utilisation of network capacity on adjacent substations – implemented through HV switching will be a low-cost solution.</p> <p>Therefore, flexibility services not required before 2033.</p>									
<p>Frederick Rd</p>  <p>X- 383606</p> <p>Y- 402218</p>	<p>FC first exceeded in FY30</p> <p>2.5MVA exceedance of FC by FY33</p>	<p>Install 0.1km of 33kV cable from the local Frederick Rd BSP and install a third transformer to accommodate additional demand</p> <p>Start date: FY30</p> <p>Completion Date: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>15.9</td> </tr> <tr> <td>Leading the Way</td> <td>14.6</td> </tr> <tr> <td>Falling Short</td> <td>5.8</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	15.9	Leading the Way	14.6	Falling Short	5.8
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	15.9											
Leading the Way	14.6											
Falling Short	5.8											
<p>Harwood</p>  <p>X- 374043</p> <p>Y- 410941</p>	<p>FC first exceeded in FY31</p> <p>1.1MVA exceedance of FC by FY33</p>	<p>Install an HV interconnector to Union Rd primary to transfer demand off Harwood, cable route ~2km</p> <p>3.3MVA spare capacity on Union Rd in FY33</p> <p>Start date: FY31</p> <p>Completion Date: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>20.7</td> </tr> <tr> <td>Leading the Way</td> <td>17.3</td> </tr> <tr> <td>Falling Short</td> <td>3.3</td> </tr> </tbody> </table>		Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	20.7	Leading the Way	17.3	Falling Short	3.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	20.7											
Leading the Way	17.3											
Falling Short	3.3											
<p>Robert Hall St</p>	<p>FC first exceeded in FY32</p> <p>0.6MVA exceedance of FC by FY33</p>	<p>Transfer HV demand onto Salford Quays primary via existing HV feeders</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p>									

Site Name	Need	Asset Solution	Flex Plan Location	
 X- 381359 Y- 397718		5.5MVA of spare capacity on Salford Quays in FY33 Estimated completion in FY32	Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	11.6
			Leading the Way	10.3
			Falling Short	5.1
Westhoughton  X- 365831 Y- 407025	FC first exceeded in FY32 0.5MVA exceedance of FC by FY33	Transfer demand onto Lostock primary via existing HV feeders 3.5MVA of spare capacity on Lostock in FY33 Estimated completion in FY32	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	23.1
			Leading the Way	20.0
Falling Short	3.4			
Atherton BSP  X- 366150 Y- 402088	FC first exceeded in FY29 14.8MVA exceedance of FC by FY33	Install 3 rd 90MVA GT supplied from Kearsley GSP.	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	115.0
			Leading the Way	101.9
Falling Short	11.0			
Frederick Rd BSP  X- 381795 Y- 399250	FC first exceeded in FY25	In-flight RIIO-ED2 scheme to replace existing 3 x 60MVA transformers with 3 x 90MVA units. Start date: FY24 Completion Date: FY28	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	58.6
			Leading the Way	52.7
Falling Short	-			

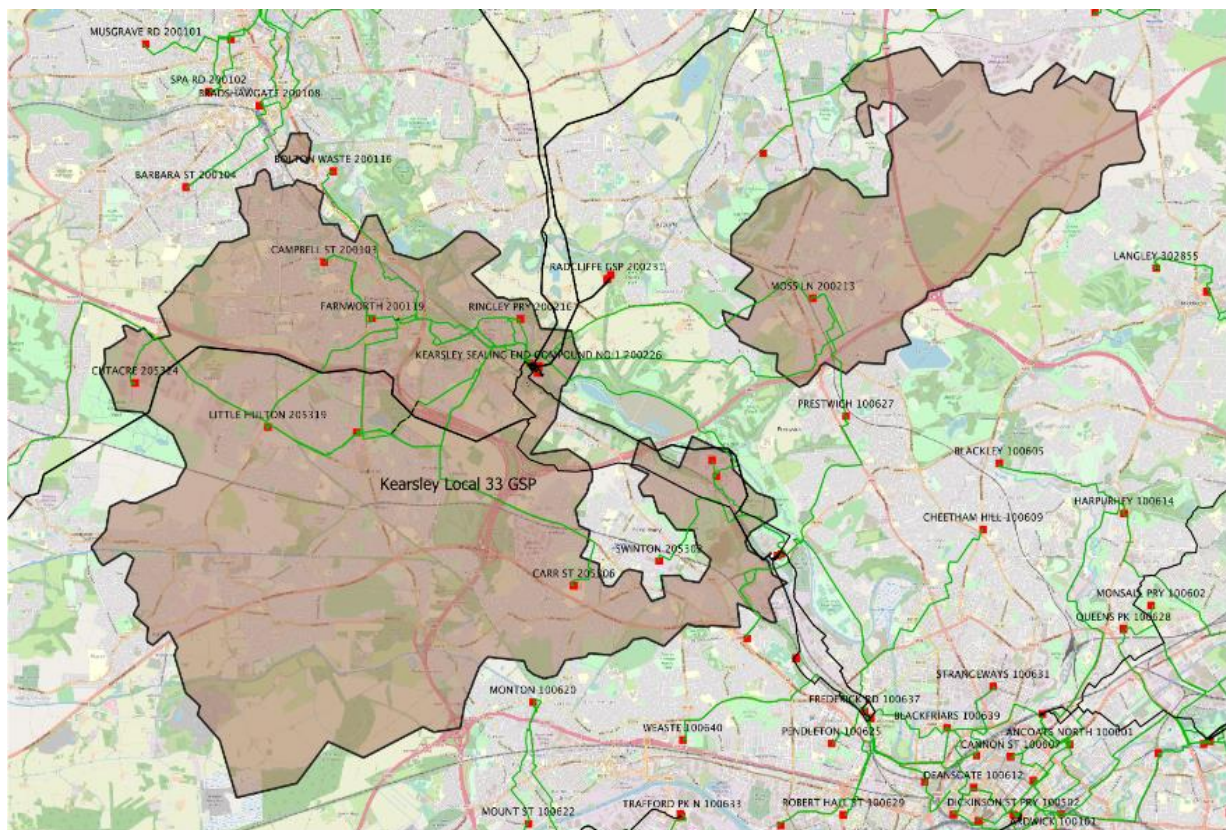
Site Name	Need	Asset Solution	Flex Plan Location								
<p>Radcliffe BSP</p>  <p>X- 377524</p> <p>Y- 406160</p>	<p>FC first exceeded in FY32</p> <p>1.5MVA exceedance of FC by FY33</p>	<p>Transfer HV demand onto Ringley primary via existing HV feeders</p> <p>14MVA of spare capacity on Ringley in FY33</p> <p>Estimated completion in FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>33.5</td> </tr> <tr> <td>Leading the Way</td> <td>28.7</td> </tr> <tr> <td>Falling Short</td> <td>4.1</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	33.5	Leading the Way	28.7	Falling Short	4.1
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	33.5										
Leading the Way	28.7										
Falling Short	4.1										
<p>Trinity</p>  <p>X- 382649</p> <p>Y- 398230</p>	<p>Make fault level exceedance in FY23 currently managed operationally.</p>	<p>Site identified for intervention in RIIO - ED2. Possible substation operational arrangement change could be implemented to resolve Make FL issue.</p> <p>Start date: FY26</p> <p>Completion Date: FY28</p>	<p>Not suitable solution for fault level exceedances.</p>								
<p>Westhoughton</p>  <p>X- 365831</p> <p>Y- 407025</p>	<p>Make fault level exceedance in FY27.</p>	<p>Monitor the FL and replace switchgear with higher rated plant in RIIO ED3.</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>	<p>Not suitable solution for fault level exceedances.</p>								
<p>Bolton BSP</p>  <p>X- 372255</p> <p>Y- 410566</p>	<p>Make fault level exceedance in FY23 currently managed operationally.</p>	<p>Site identified for intervention in RIIO - ED2. Replace section A and B as the lower rated switchgear.</p> <p>Start date: FY26</p> <p>Completion Date: FY28</p>	<p>Not suitable solution for fault level exceedances.</p>								

Site Name	Need	Asset Solution	Flex Plan Location
Bury BSP  X- 380272 Y- 411184	Make fault level exceedance in FY23 currently managed operationally.	Monitor the FL and replace switchgear with higher rated plant in RIIO ED3. Start date: FY28 Completion Date: FY30	Not suitable solution for fault level exceedances.
Westhoughton BSP  X- 365831 Y- 407025	Make fault level exceedance in FY28.	Monitor the FL and replace switchgear with higher rated plant in RIIO ED3. Start date: FY28 Completion Date: FY30	Not suitable solution for fault level exceedances.

9 Kearsley Local GSP

GSP Summary

11 Primaries






Kearsley Local GSP is a 275/33kV substation which supplies approximately 50,000 customers across the South Lancashire region. The substation comprises two 120MVA transformers supplied from National Grid's 275kV network. The peak demand on the GSP is currently 106MVA, supplied via eleven primary substations.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	N/A
3-5 years	Little Hulton Moss Lane	N/A
6-10 years	Hill Top T11&T12	N/A

Intervention Detail

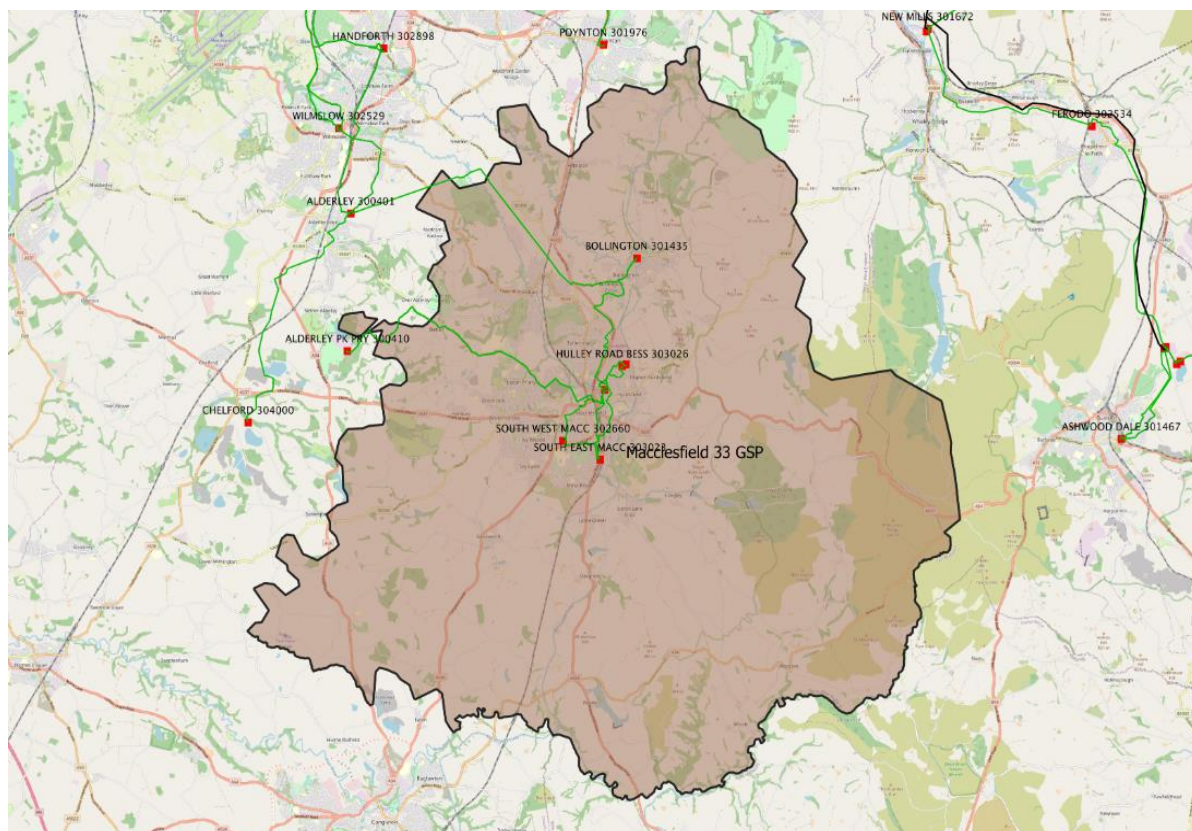
Site Name	Need	Asset Solution	Flex Plan Location								
<p>Hill Top T11 & T12</p>  <p>X- 373466</p> <p>Y- 403748</p>	<p>FC first exceeded in FY33 with marginal 0.1MVA exceedance.</p>	<p>HV demand transfers are available onto Farnworth and Carr St primaries via existing standby HV feeders</p> <p>5.4MVA of spare capacity on Farnworth and 6.6MVA of spare capacity on Carr St in FY33</p> <p>Start date: FY33</p> <p>Completion Date: FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>20.3</td> </tr> <tr> <td>Leading the Way</td> <td>18.0</td> </tr> <tr> <td>Falling Short</td> <td>3.5</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	20.3	Leading the Way	18.0	Falling Short	3.5
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	20.3										
Leading the Way	18.0										
Falling Short	3.5										

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Little Hulton</p>  <p>X- 372024</p> <p>Y- 403826</p>	<p>FC first exceeded in FY27</p>	<p>Scheme identified as part of RIIO ED2 program.</p> <p>~Lay 7km of HV interconnectors from Cutacre primary to transfer ~5MVA of demand off Little Hulton.</p> <p>9MVA of spare capacity on Cutacre in FY33</p> <p>Start date: FY25</p> <p>Completion Date: FY27</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>19.6</td> </tr> <tr> <td>Leading the Way</td> <td>18.3</td> </tr> <tr> <td>Falling Short</td> <td>1.3</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	19.6	Leading the Way	18.3	Falling Short	1.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	19.6										
Leading the Way	18.3										
Falling Short	1.3										
<p>Moss Lane</p>  <p>X- 380858</p> <p>Y- 408856</p>	<p>FC first exceeded in FY27</p> <p>3.9MVA exceedance of FC by FY33</p>	<p>Strategic solution developed in RIIO-ED2 to install new 23MVA South Heywood, Northern Gateway primary.</p> <p>4MVA minimum of demand to be transferred off Moss Lane via HV network onto Northern Gateway to alleviate issues in the next 3-10 years.</p> <p>Start date: FY25</p> <p>Completion Date: FY28</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>24.4</td> </tr> <tr> <td>Leading the Way</td> <td>24.0</td> </tr> <tr> <td>Falling Short</td> <td>4.1</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	24.4	Leading the Way	24.0	Falling Short	4.1
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	24.4										
Leading the Way	24.0										
Falling Short	4.1										

10 Macclesfield GSP

GSP Summary

6 Primaries






Macclesfield GSP is a 275/33kV substation which supplies approximately 36,000 customers across the Peak South region. The substation comprises two 100MVA transformers supplied from National Grid's 275kV network. The peak demand on the GSP is currently 73MVA, supplied via six primary substations.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	Macclesfield GSP Withyfold Drive
3-5 years	N/A	N/A
6-10 years	S.W. Macclesfield	N/A

Intervention Detail

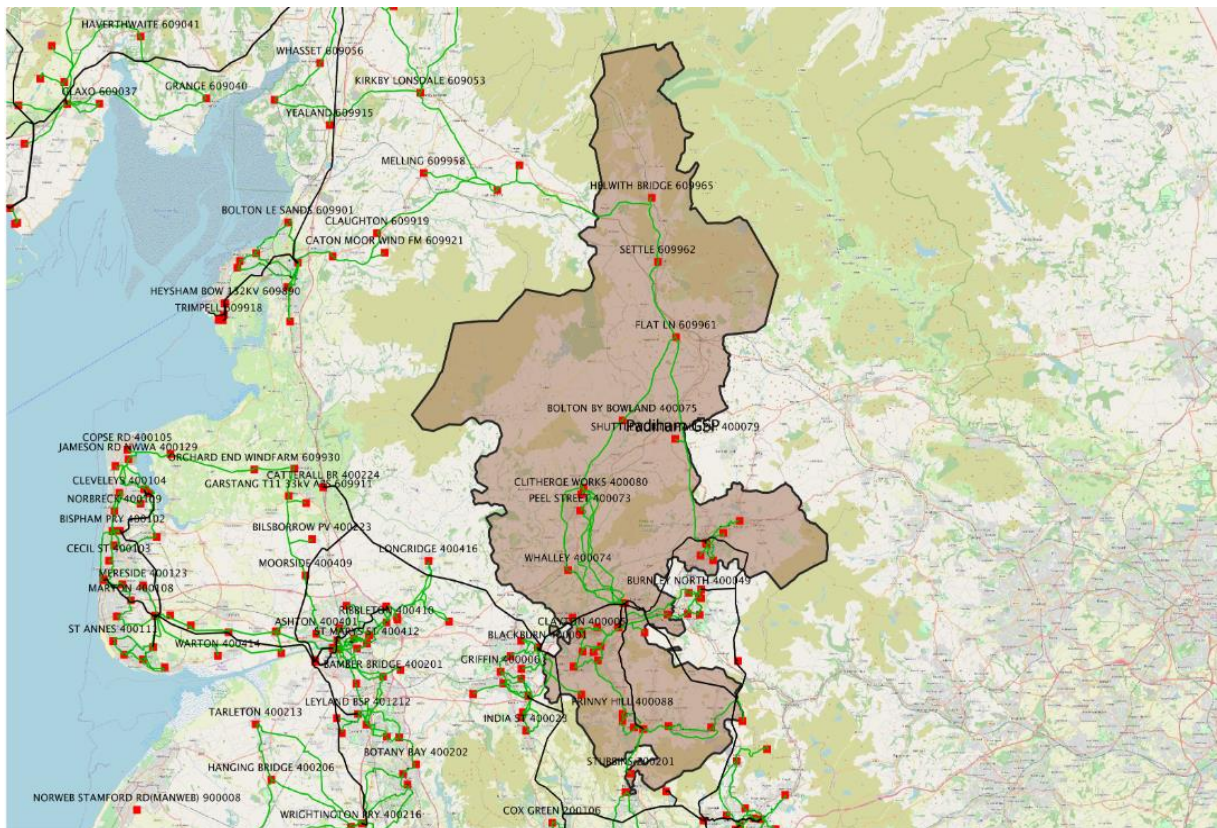
Site Name	Need	Asset Solution	Flex Plan Location								
<p>S.W. Macclesfield</p>  <p>X- 390968</p> <p>Y- 373004</p>	<p>FC first exceeded in FY29</p> <p>3.0MVA exceedance of FC by FY33</p>	<p>HV demand transfers onto South East Macclesfield via existing standby feeders</p> <p>4.6MVA of spare capacity at South East Macclesfield in FY33</p> <p>Estimated completion in FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>23.9</td> </tr> <tr> <td>Leading the Way</td> <td>21.5</td> </tr> <tr> <td>Falling Short</td> <td>3.6</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	23.9	Leading the Way	21.5	Falling Short	3.6
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	23.9										
Leading the Way	21.5										
Falling Short	3.6										
<p>Macclesfield BSP</p>  <p>X- 392047</p> <p>Y- 374564</p>	<p>Make fault level exceedance in FY23.</p>	<p>Site identified for intervention in RIIO - ED2. Possible substation operational arrangement change could be implemented to resolve Make FL issue.</p> <p>Start date: FY26</p> <p>Completion Date: FY28</p>	<p>Not suitable solution for fault level exceedances.</p>								
<p>Withyfold Drive</p>  <p>X- 392132</p> <p>Y- 374352</p>	<p>Make fault level exceedance in FY23, currently managed operationally.</p>	<p>Monitor and review in RIIO-ED2 and action intervention as required in ED3. Operational intervention may resolve.</p>	<p>Not suitable solution for fault level exceedances.</p>								

11 Padiham GSP

GSP Summary

4 BSPs

28 Primaries




Padiham GSP is a 400/132kV substation which supplies approximately 130,000 customers across the East Lancashire region. The substation comprises two 240MVA transformers supplied from National Grid’s 400kV network. The peak demand on the GSP is currently 216MVA, supplied via four BSPs and twenty-eight primary substations.



The existing 132kV switchgear is currently an outdoor double busbar arrangement with main and reserve bars, and 10 feeder bays. Based on age and condition, the switchgear is being replaced with an indoor GIS solution which is due to be completed by March 2025.




Intervention Overview



	Demand Driven	Generation Driven
0-2 years	Bolton By Bowland Settle	Spring Cottage
3-5 years	Flat Lane Peel St	Great Harwood
6-10 years	Church Ribblesdale T13 & T14	Nelson BSP


Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Bolton By Bowland</p>  <p>X- 378320</p> <p>Y- 449559</p>	<p>FC first exceeded in FY24, however it is managed post fault operationally using strategic generation deployment.</p> <p>Increase in demand exceedance to 1.1MVA by FY33 requires consideration of non-operational solution.</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is >7km away which gives limited transfer capability if a new HV interconnector was installed</p> <p>Second 7.5MVA transformer required at Bolton By Bowland to accommodate excess demand</p> <p>~7km of 33kV cable between Ribblesdale primary and Bolton By Bowland to supply the new transformer</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>3.1</td> </tr> <tr> <td>Leading the Way</td> <td>2.3</td> </tr> <tr> <td>Falling Short</td> <td>1.3</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	3.1	Leading the Way	2.3	Falling Short	1.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	3.1										
Leading the Way	2.3										
Falling Short	1.3										
<p>Church</p>	<p>FC first exceeded in FY29</p> <p>0.6MVA exceedance of FC by FY33</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p>								

Site Name	Need	Asset Solution	Flex Plan Location	
 X- 374687 Y- 428919		<p>flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Closest primary is >7km away which gives limited transfer capability if a new HV interconnector was installed</p> <p>Proposed second 33/11kV transformer supplied from local 33kV switchboard</p> <p>Start date: FY29</p> <p>Completion Date: FY31</p>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	8.1
			Leading the Way	7.3
			Falling Short	1.6
Flat Lane  X- 383248 Y- 456995	<p>FC first exceeded in FY27, however it is managed post fault operationally using strategic generation deployment.</p> <p>Increase in demand exceedance to 1.5MVA by FY33 requires consideration of non-operational solution.</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for flexible services in the area.</p> <p>A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option.</p> <p>Limited capacity on surrounding primaries</p>	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	4.9
			Leading the Way	4.0
			Falling Short	1.7

Site Name	Need	Asset Solution	Flex Plan Location								
		<p>Install a second transformer at Flat Ln to accommodate the excess demand</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>									
<p>Peel St</p>  <p>X- 374463</p> <p>Y- 441514</p>	<p>FC first exceeded in FY25</p> <p>4.6MVA exceedance of FC by FY33</p>	<p>Install an HV interconnector to Peel St from Whalley primary to transfer excess demand, cable length ~6km,</p> <p>And transfer demand onto Ribblesdale T13 & T14 utilising existing feeders.</p> <p>3.9MVA of spare capacity at Whalley in FY33</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>23.9</td> </tr> <tr> <td>Leading the Way</td> <td>22.6</td> </tr> <tr> <td>Falling Short</td> <td>5.3</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	23.9	Leading the Way	22.6	Falling Short	5.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	23.9										
Leading the Way	22.6										
Falling Short	5.3										
<p>Ribblesdale T13 & T14</p>  <p>X- 374759</p> <p>Y- 443587</p>	<p>FC first exceeded in FY29</p> <p>3.4MVA exceedance of FC by FY33</p>	<p>Existing RIIO-ED1 scheme to replace and uprate T13 to an 11.5/23MVA transformer, increasing FC to 23MVA</p> <p>Start date: FY26</p> <p>Completion Date: FY26</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>12.3</td> </tr> <tr> <td>Leading the Way</td> <td>10.8</td> </tr> <tr> <td>Falling Short</td> <td>1.7</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	12.3	Leading the Way	10.8	Falling Short	1.7
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	12.3										
Leading the Way	10.8										
Falling Short	1.7										
<p>Settle</p> 	<p>FC first exceeded in FY24, however it is managed post fault operationally using</p>	<p>Single transformer site and our initial approach to meet the firm capacity need is to tender for</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p>								

Site Name	Need	Asset Solution	Flex Plan Location									
X- 381588 Y- 463721	strategic generation deployment. Increase in demand exceedance to 2.7MVA by FY33 requires consideration of non-operational solution.	flexible services in the area. A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option. Limited capacity on surrounding primaries Install 33kV circuits from Flat Lane and second transformer at Settle to accommodate the excess demand Start date: FY28 Completion Date: FY30	<table border="1"> <thead> <tr> <th data-bbox="1002 250 1212 398">Max Flex Required at 2050 (FY51) - Winter Peak</th> <th data-bbox="1212 250 1383 398">MVA</th> </tr> </thead> <tbody> <tr> <td data-bbox="1002 398 1212 439">Best View</td> <td data-bbox="1212 398 1383 439">5.5</td> </tr> <tr> <td data-bbox="1002 439 1212 517">Leading the Way</td> <td data-bbox="1212 439 1383 517">5.4</td> </tr> <tr> <td data-bbox="1002 517 1212 557">Falling Short</td> <td data-bbox="1212 517 1383 557">0.7</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	5.5	Leading the Way	5.4	Falling Short	0.7	
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	5.5											
Leading the Way	5.4											
Falling Short	0.7											
Spring Cottage  X- 385446 Y- 437481	Make fault level exceedance in FY23.	Site identified for intervention in RIIO - ED2. Replace section A and B required. Start date: FY26 Completion Date: FY28	Not suitable solution for fault level exceedances.									
Great Harwood  X- 373765 Y- 431955	Make fault level exceedance in FY26.	Monitor and review in RIIO-ED2 and action intervention as required in ED3. Operational intervention may resolve.	Not suitable solution for fault level exceedances.									

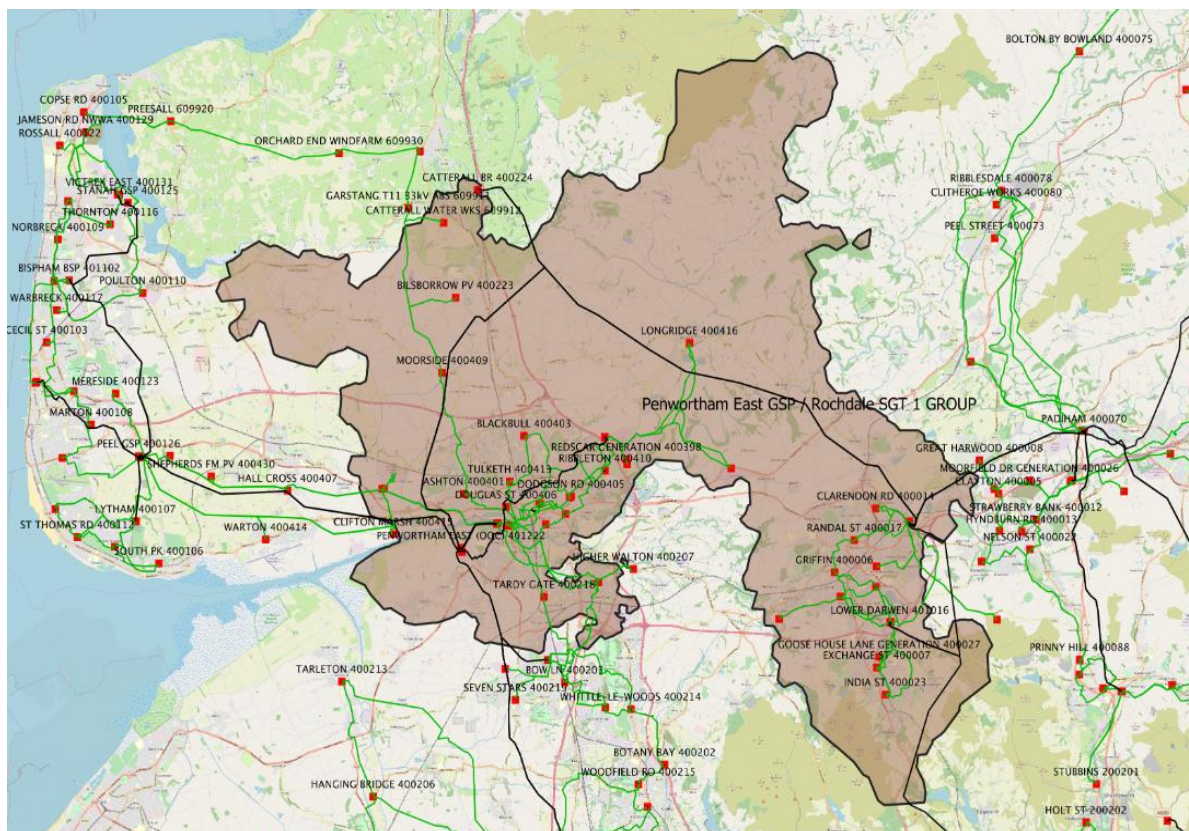
Site Name	Need	Asset Solution	Flex Plan Location
<p>Nelson BSP</p>  <p>X- 385989</p> <p>Y- 438643</p>	<p>Make fault level exceedance in FY30.</p>	<p>Site identified for intervention in RIIO - ED2. Replace section A and B required.</p> <p>Start date: FY26</p> <p>Completion Date: FY28</p>	<p>Not suitable solution for fault level exceedances.</p>

12 Penwortham East GSP – Rochdale SGT 1

GSP Summary

4 BSPs

31 Primaries








Penwortham East GSP is a 400/132kV substation comprising of three SGTs. The GSP operates in parallel with a single SGT at Rochdale GSP forming the Penwortham East / Rochdale group. The GSP group supplies approximately 167,000 customers across the West and East Lancashire region and comprises three 240MVA transformers at Penwortham East and a single 120MVA transformer at Rochdale. The peak demand is currently 303MVA, supplied via four BSPs and 31 primary substations.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	Catterall Waterworks Lower Darwen BSP	N/A
3-5 years	N/A	N/A
6-10 years	Craggs Row & Bushell St Moorside Preston East BSP	N/A

Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Catterall Waterworks</p>  <p>X- 349381</p> <p>Y- 442178</p>	<p>FC already exceeded. Site recently cancelled a managed connection to deal with FC exceedance.</p> <p>4.5MVA exceedance of FC by FY33</p>	<p>Second 7.5/15MVA transformer required at Catterall to accommodate excess demand</p> <p>~13km of 33kV cable between Moorside primary and Catterall to supply the new transformer</p> <p>Start date: FY25</p> <p>Completion Date: FY28</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>6.2</td> </tr> <tr> <td>Leading the Way</td> <td>5.4</td> </tr> <tr> <td>Falling Short</td> <td>2.6</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	6.2	Leading the Way	5.4	Falling Short	2.6
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	6.2										
Leading the Way	5.4										
Falling Short	2.6										
<p>Craggs Row & Bushell St</p>  <p>X- 353809</p> <p>Y- 430094</p>	<p>FC first exceeded in FY32.</p> <p>Marginal 0.3MVA exceedance of FC by FY33</p>	<p>HV demand transfers are available onto Avenham primary via existing 6.6kV feeders</p> <p>10MVA of spare capacity on Avenham in FY33</p> <p>Start date: FY33</p> <p>Completion Date: FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>12.8</td> </tr> <tr> <td>Leading the Way</td> <td>11.5</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	12.8	Leading the Way	11.5	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	12.8										
Leading the Way	11.5										
Falling Short	-										
<p>Moorside</p>  <p>X- 349331</p> <p>Y- 435746</p>	<p>FC marginally exceeded in FY33 by 0.2MVA</p>	<p>Limited HV transfer capability. Closest primary >7km away.</p> <p>Replace existing 10/14MVA transformers with 11.5/23MVA units</p> <p>Start date: FY32</p> <p>Completion Date: FY34</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>7.2</td> </tr> <tr> <td>Leading the Way</td> <td>8.0</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	7.2	Leading the Way	8.0	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	7.2										
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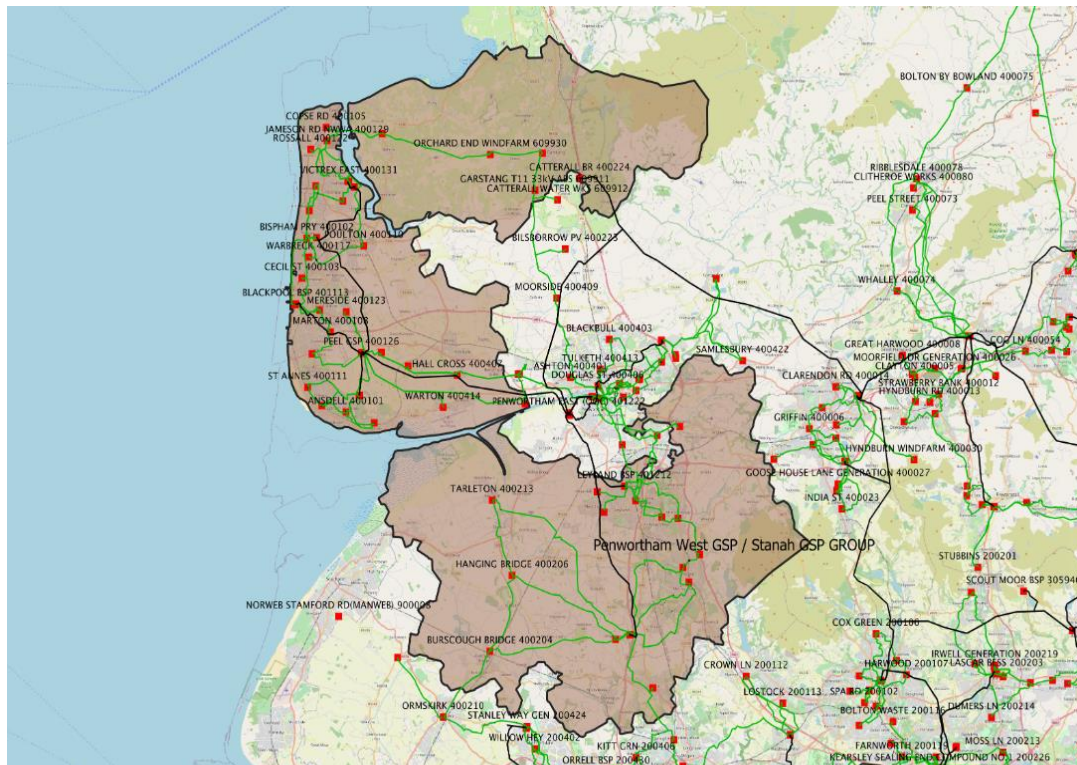
Site Name	Need	Asset Solution	Flex Plan Location								
<p>Lower Darwen BSP</p>  <p>X- 369695</p> <p>Y- 424981</p>	<p>FC first exceeded in FY24</p> <p>19MVA exceedance of FC by FY33</p>	<p>Scheme identified as part of RIIO ED2 program.</p> <p>Exact solution to be established. Possible 33kV transfer onto Blackburn BSP or 132kV switchgear</p> <p>Start date: FY25</p> <p>Completion Date: FY28</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>71.3</td> </tr> <tr> <td>Leading the Way</td> <td>64.2</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	71.3	Leading the Way	64.2	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	71.3										
Leading the Way	64.2										
Falling Short	-										
<p>Preston East BSP</p>  <p>X- 356774</p> <p>Y- 432942</p>	<p>FC first exceeded in FY31</p> <p>7.8MVA exceedance of FC by FY33</p>	<p>Transfer either Avenham or Craggs Row & Bushell St onto Ribble BSP by moving open points on 33kV network.</p> <p>42MVA of spare capacity on Ribble BSP in FY33</p> <p>Start date: FY31</p> <p>Completion Date: FY31</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>47.4</td> </tr> <tr> <td>Leading the Way</td> <td>51.9</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	47.4	Leading the Way	51.9	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	47.4										
Leading the Way	51.9										
Falling Short	-										

13 Penwortham West GSP – Stanah GSP Group

GSP Summary

7 BSPs

45 Primaries





Penwortham West GSP is 400/275/132kV substation comprising of three 240MVA transformers located near Preston. Stanah GSP is a 400/132kV substation comprising of two 240MVA transformers, located on the Fylde peninsula. The two GSPs operate in parallel to form the Penwortham West / Stanah group. The group supplies approximately 240,000 customers across the West Lancashire region, including a large offshore wind farm, the Isle of Man and a feed to SP Manweb. The peak demand is currently 432MVA, supplied via 7 BSPs and 45 primary substations.




Intervention Overview




	Demand Driven	Generation Driven
0-2 years	Rossall	Bispham BSP
3-5 years	Botany Bay Chorley South Hall Cross Higher Walton Moss Side (Leyland) & Seven Stars	N/A




	Demand Driven	Generation Driven
6-10 years	<p>Bow Lane</p> <p>Hanging Bridge</p> <p>Tarleton</p> <p>Blackpool BSP</p> <p>Leyland BSP</p> <p>Peel BSP</p> <p>Wrightington BSP</p>	N/A




Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Botany Bay</p>  <p>X- 359442</p> <p>Y- 418850</p>	<p>FC first exceeded in FY28</p> <p>1.9MVA exceedance of FC by FY33</p>	<p>Install a second transformer at Botany Bay to accommodate the excess demand</p> <p>~8km 33kV cable required from Botany Bay to Wrightington along with 33/11kV transformer.</p> <p>Start date: FY28</p> <p>Completion Date: FY30</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>12.1</td> </tr> <tr> <td>Leading the Way</td> <td>11.4</td> </tr> <tr> <td>Falling Short</td> <td>3.2</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	12.1	Leading the Way	11.4	Falling Short	3.2
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	12.1										
Leading the Way	11.4										
Falling Short	3.2										
<p>Bow Lane</p>  <p>X- 354895</p> <p>Y- 422392</p>	<p>FC first exceeded in FY32</p> <p>0.9MVA exceedance of FC by FY33</p>	<p>HV Demand transfers available to Tardy Gate and Whittle Le Woods primaries via existing feeders</p> <p>In FY33, there is 5.3MVA spare on Tardy Gate and</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>22.5</td> </tr> <tr> <td>Leading the Way</td> <td>21.2</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	22.5	Leading the Way	21.2		
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	22.5										
Leading the Way	21.2										

Site Name	Need	Asset Solution	Flex Plan Location	
		2.5MVA spare on Whittle Le Woods Start date: FY30 Completion Date: FY30	Falling Short	4.9
Chorley South  X- 358658 Y- 417041	FC first exceeded in FY26 4.8MVA exceedance of FC by FY33	Existing RIIO-ED2 reinforcement scheme to replace T12 with an 11.5/23MVA to increase FC. Start date: FY27 Completion Date: FY28	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	18.1
			Leading the Way	15.8
			Falling Short	2.9
Hall Cross  X- 342288 Y- 430650	FC first exceeded in FY25 5.9MVA exceedance of FC by FY31	Existing 400XLPE interconnector between Hall Cross and Warton can be utilised to transfer demand off Hall Cross, in addition to smaller load transfers by moving open points 10MVA of spare capacity on Warton primary in FY33 Start date: FY25 Completion Date: FY25	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	21.5
			Leading the Way	19.4
			Falling Short	4.9
Hanging Bridge  X- 346186 Y- 417486	FC first exceeded in FY31 0.7MVA exceedance of FC by FY33	Install second transformer at Hanging Bridge ~9.5km 33kV lay from Hanging Bridge to Wrightington	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	8.2

Site Name	Need	Asset Solution	Flex Plan Location									
		Start date: FY30 Completion Date: FY32	Leading the Way 8.0	8.0								
			Falling Short 2.0	2.0								
<p>Higher Walton</p>  <p>X- 358020 Y- 427270</p>	<p>FC first exceeded in FY28</p> <p>4.0MVA exceedance of FC by FY33</p>	<p>Lay ~5km of 11kV cable to establish interconnection with new Samlesbury Enterprise Zone primary and transfer demand</p> <p>>10MVA of spare capacity on Samlesbury Enterprise Zone primary in FY33</p> <p>Start date: FY25</p> <p>Completion Date: FY25</p>	Operational Utilisation & Variable Availability or Peak Reduction									
			<table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>17.6</td> </tr> <tr> <td>Leading the Way</td> <td>20.1</td> </tr> <tr> <td>Falling Short</td> <td>1.6</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	17.6	Leading the Way	20.1	Falling Short	1.6	
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	17.6											
Leading the Way	20.1											
Falling Short	1.6											
<p>Moss Side (Leyland) & Seven Stars</p>  <p>Moss Side (Leyland)</p> <p>X- 352170 Y- 422970</p> <p>Seven Stars</p> <p>X- 352653 Y- 421636</p>	<p>FC first exceeded in FY25</p> <p>4.1MVA exceedance of FC by FY33</p>	<p>Lay ~3km of 33kV cable from Leyland BSP to Moss Side and install second 11.5/23MVA transformer to support the increased demand</p> <p>Start date: FY25</p> <p>Completion Date: FY28</p>	Operational Utilisation & Variable Availability or Peak Reduction									
			<table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>17.4</td> </tr> <tr> <td>Leading the Way</td> <td>17.9</td> </tr> <tr> <td>Falling Short</td> <td>1.9</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	17.4	Leading the Way	17.9	Falling Short	1.9	
Max Flex Required at 2050 (FY51) - Winter Peak	MVA											
Best View	17.4											
Leading the Way	17.9											
Falling Short	1.9											
<p>Rossall</p>  <p>X- 331916</p>	<p>FC first exceeded in FY23, however it is managed post fault operationally using strategic generation deployment.</p>	<p>HV demand transfers onto Copse Rd primary via existing feeders available.</p>	Operational Utilisation & Variable Availability or Peak Reduction									
			<table border="1"> <thead> <tr> <th>Max Flex Required at</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Max Flex Required at	MVA							
Max Flex Required at	MVA											

Site Name	Need	Asset Solution	Flex Plan Location	
Y- 445505	Increase in demand exceedance to 1.1MVA by FY33 requires consideration of non-operational solution.	3MVA of spare capacity on Copse Rd primary in FY33 Start date: FY25 Completion Date: FY25	2050 (FY51) - Winter Peak	
			Best View	3.3
			Leading the Way	2.5
			Falling Short	0.2
Tarleton  X- 344741 Y- 422417	FC first exceeded in FY32 0.6MVA exceedance of FC by FY33	Limited HV interconnection to surrounding primaries. Install third 11.5/23MVA transformer from location 33kV switchboard. Start date: FY32 Completion Date: FY33	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	12.3
			Leading the Way	9.7
			Falling Short	-
Blackpool BSP  X- 330835 Y- 435308	FC first exceeded in FY29 18.6MVA exceedance of FC by FY33	Transfer Cecil St primary onto Bispham BSP and Squires Gate primary onto Peel BSP by moving open points on 33kV network. 26MVA spare capacity on Bispham BSP in FY33 and 54MVA spare capacity on Peel BSP (after reinforcement) Start date: FY32 Completion Date: FY32	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	93.3
			Leading the Way	85.7
			Falling Short	5.9
Leyland BSP 	FC first exceeded in FY32 4.7MVA exceedance of FC by FY33	Transfer Higher Walton primary onto Ribble BSP by moving open point on 33kV network.	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at	MVA

Site Name	Need	Asset Solution	Flex Plan Location	
X- 354121 Y- 423373		42MVA spare capacity on Ribble BSP in FY33 Start date: FY32 Completion Date: FY32	2050 (FY51) - Winter Peak	
			Best View	88.8
			Leading the Way	97.0
			Falling Short	11.0
Peel BSP  X- 335644 Y- 432080	FC first exceeded in FY29 4.3MVA exceedance of FC by FY33	Replace existing 132/33kV 45MVA GTs with 90MVA units to accommodate increase in demand and facilitate Squires Gate primary transfer for Blackpool BSP Start date: FY29 Completion Date: FY32	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	29.4
			Leading the Way	27.5
			Falling Short	1.1
Wrightington BSP  X- 354460 Y- 413610	FC first exceeded in FY29 16.2MVA exceedance of FC by FY33	Transfer Standish primary onto Wigan BSP by moving open point on 33kV network. Reinforcement scheme in RIIO-ED2 will increase capacity of Wigan BSP capacity. Start date: FY29 Completion Date: FY29	Operational Utilisation & Variable Availability or Peak Reduction	
			Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	117.1
			Leading the Way	104.0
			Falling Short	29.1
Bispham BSP  X- 332328 Y- 439711	Make fault level exceedance in FY24	Manage FL through RIIO-ED2 and replace 17.5kA rated 33kV switchboard with new 25/62.5kA rated switchgear in line with policy as required in ED3.	Not suitable solution for fault level exceedances.	

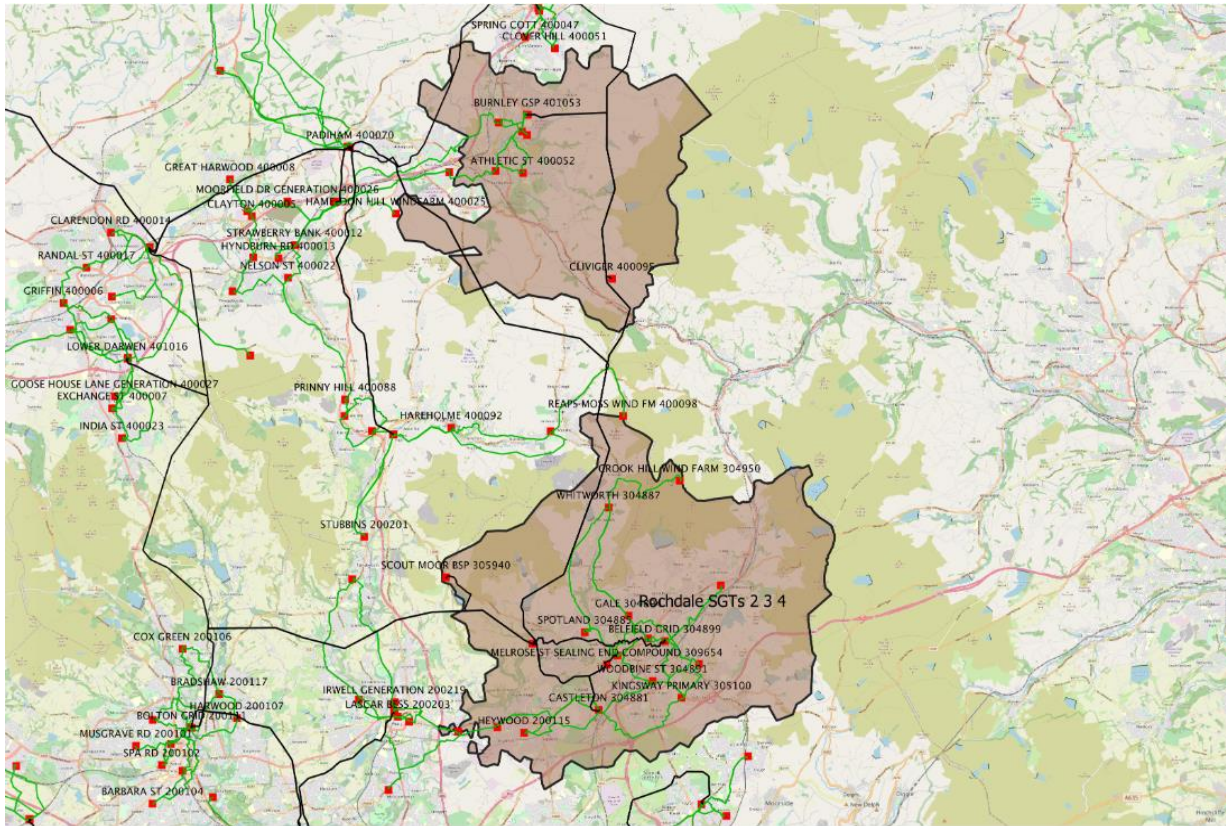
Site Name	Need	Asset Solution	Flex Plan Location
		Start date: FY28 Completion Date: FY30	

14 Rochdale SGTs 2 3 4

GSP Summary

4 BSPs

17 Primaries



Rochdale GSP is a 275/132kV substation comprising of four SGTs. The GSP operates split with SGTs 2, 3 & 4 forming the main Rochdale GSP, and SGT1 operating in parallel with Penwortham East GSP. The main GSP supplies approximately 155,000 customers across the East Lancashire and Peak North region and comprises three 240MVA SGTs supplied from National Grid's 275kV network. The peak demand is currently 201MVA, supplied via four BSPs and 17 primary substations.

Intervention Overview

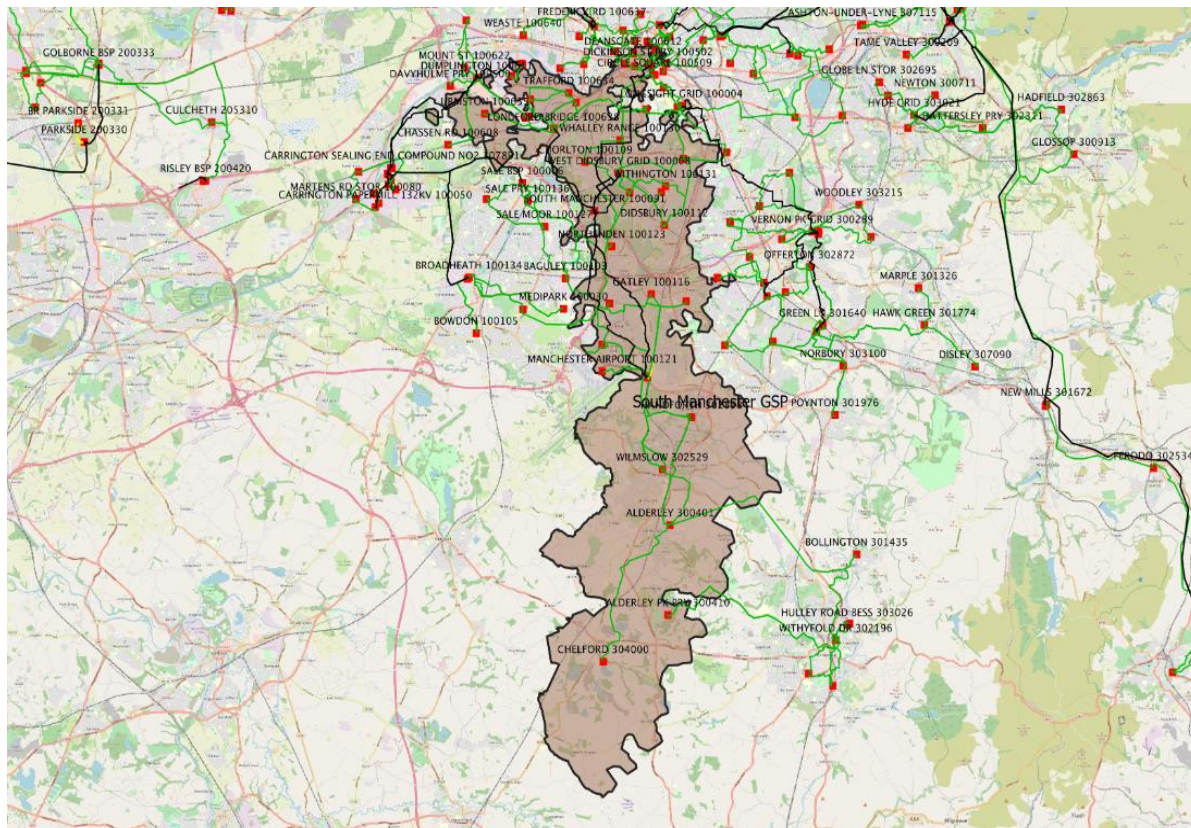
	Demand Driven	Generation Driven
0-2 years	N/A	N/A
3-5 years	N/A	N/A
6-10 years	N/A	N/A

15 South Manchester GSP

GSP Summary

4 BSPs

27 Primaries







South Manchester GSP is a 400/132kV substation which supplies approximately 156,000 customers across the South Manchester region. The substation comprises four 240MVA transformers supplied from National Grid’s 275kV network. The peak demand on the GSP is currently 309MVA, supplied via four BSPs and 27 primary substations.


The existing 132kV switchgear is an outdoor double busbar arrangement with main and reserve bars, and 9 feeder bays. Based on age and condition, the switchgear is being replaced by an indoor GIS solution which is due to be completed by 2026.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	West Didsbury BSP Moss Nook BSP
3-5 years	Withington	N/A
6-10 years	Whalley Range West Didsbury BSP	N/A

Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Whalley Range</p>  <p>X- 382923</p> <p>Y- 394645</p>	<p>FC marginally exceeded in FY33 by 0.1MVA</p>	<p>HV Demand transfer available to Chorlton primary via existing 6.6kV network</p> <p>2.4MVA spare capacity on Chorlton in FY33</p> <p>Start date: FY33</p> <p>Completion: FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>17.4</td> </tr> <tr> <td>Leading the Way</td> <td>14.1</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	17.4	Leading the Way	14.1	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	17.4										
Leading the Way	14.1										
Falling Short	-										
<p>Withington</p>  <p>X- 384841</p> <p>Y- 392774</p>	<p>FC first exceeded in FY28</p> <p>2.2MVA exceedance of FC by FY33</p>	<p>HV demand transfers available to Didsbury and Fallowfield primaries via existing feeders</p> <p>In FY33, there is 4.1MVA spare on Didsbury and 2.5MVA spare on Fallowfield</p> <p>Estimated completion in FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>17.1</td> </tr> <tr> <td>Leading the Way</td> <td>14.6</td> </tr> <tr> <td>Falling Short</td> <td>1.2</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	17.1	Leading the Way	14.6	Falling Short	1.2
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	17.1										
Leading the Way	14.6										
Falling Short	1.2										
<p>West Didsbury BSP</p>  <p>X- 382900</p> <p>Y- 393269</p>	<p>FC first exceeded in FY30</p> <p>11.4MVA exceedance of FC by FY33</p>	<p>FC limited by 33kV switchgear rating. Existing RIIO-ED2 scheme to replace 33kV switchgear which will increase FC to accommodate the increase in demand</p> <p>Start date: FY27</p> <p>Completion: FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>105.5</td> </tr> <tr> <td>Leading the Way</td> <td>91.3</td> </tr> <tr> <td>Falling Short</td> <td>13.3</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	105.5	Leading the Way	91.3	Falling Short	13.3
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	105.5										
Leading the Way	91.3										
Falling Short	13.3										
<p>West Didsbury</p> 	<p>Make fault level exceedance in FY23, currently managed operationally.</p>	<p>Site identified for intervention in RIIO - ED2. Replace section A and B as the lower rated switchgear.</p>	<p>Not suitable solution for fault level exceedances.</p>								

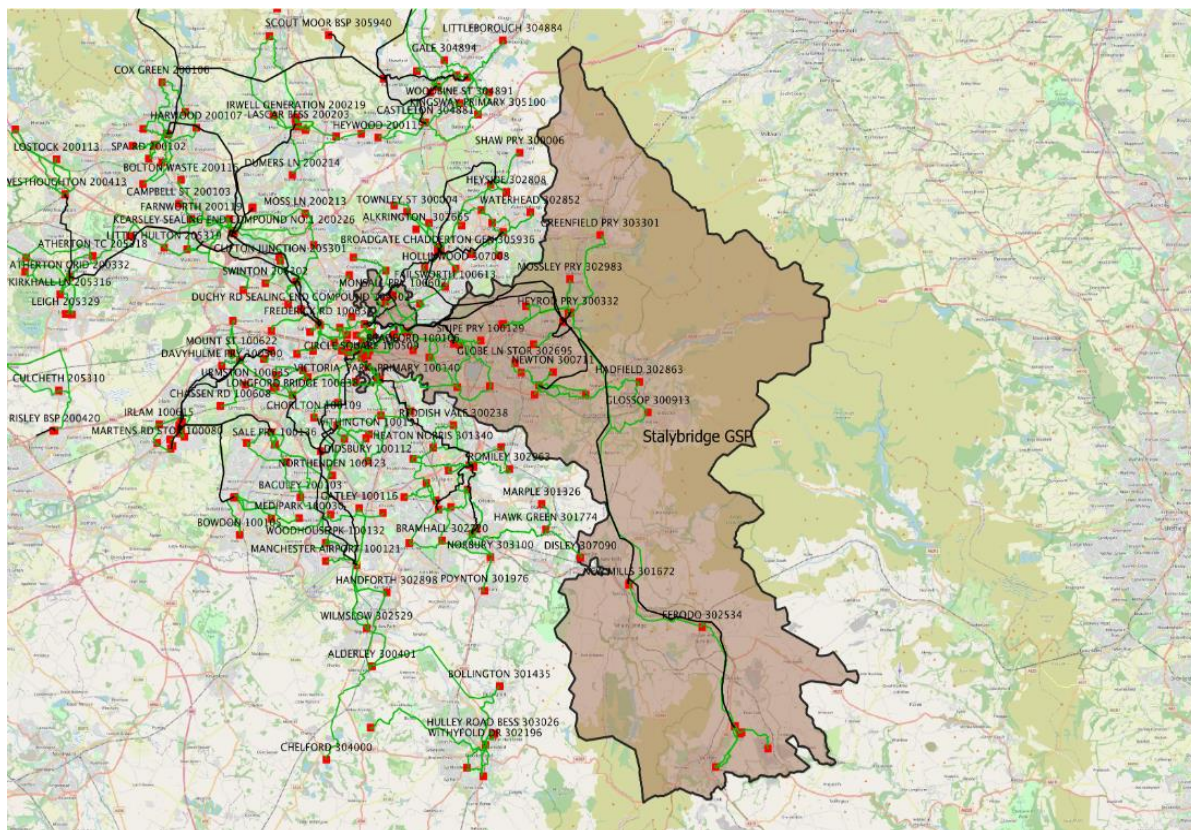
Site Name	Need	Asset Solution	Flex Plan Location
X- 382900 Y- 393269		Start date: FY26 Completion Date: FY28	
Moss Nook  X- 384073 Y- 385068	Make fault level exceedance in FY23, currently managed operationally.	Site identified for intervention in RIIO - ED2. Replace section A and B as the lower rated switchgear. Start date: FY26 Completion Date: FY28	Not suitable solution for fault level exceedances.

16 Stalybridge GSP

GSP Summary

6 BSPs

28 Primaries









Stalybridge GSP is a 275/132kV substation which supplies approximately 216,000 customers across the Peak and East Manchester region. The substation comprises two 240MVA transformers and two 180MVA transformers supplied from National Grid’s 275kV network. The peak demand on the GSP is currently 357MVA, supplied via 6 BSPs and 28 primary substations.


Intervention Overview

	Demand Driven	Generation Driven
0-2 years	Ardwick	Bradford Droylsden BSP
3-5 years	Eastlands Openshaw Queens Park	N/A
6-10 years	Hattersley	N/A

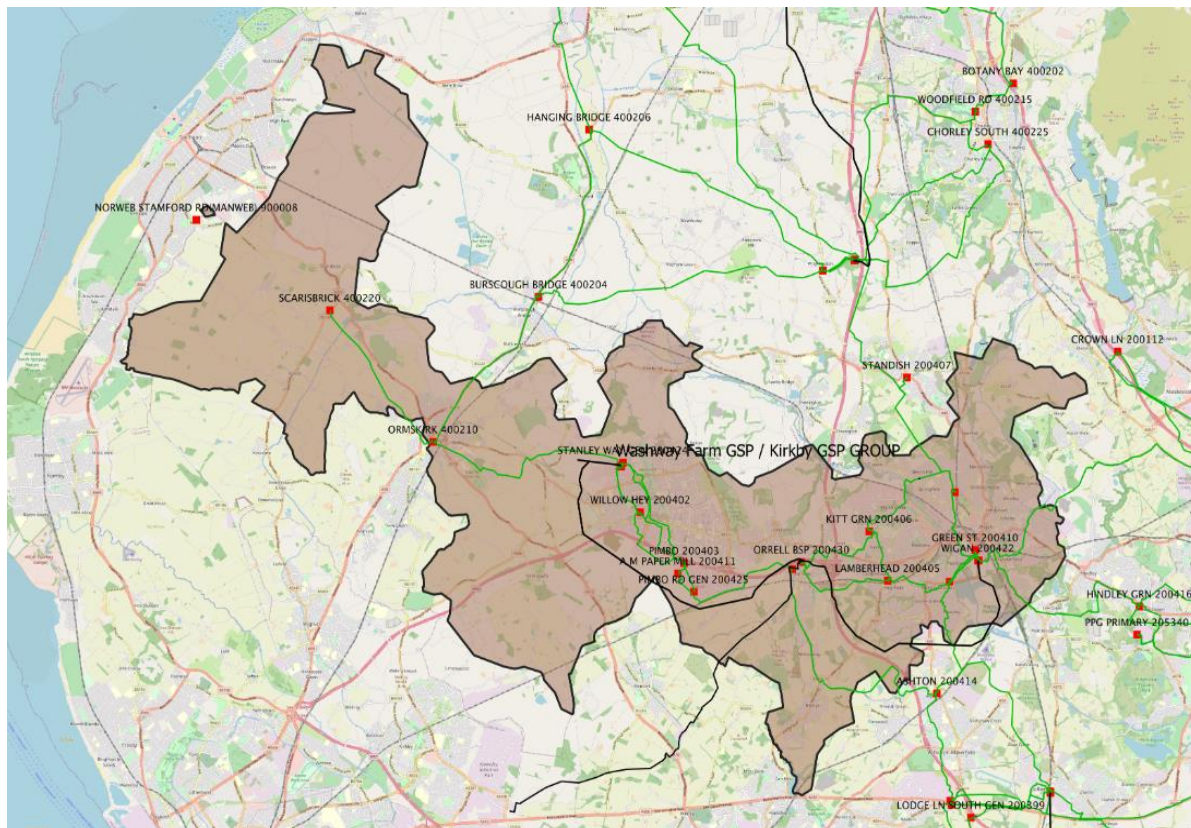
Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Ardwick</p>  <p>X- 384753</p> <p>Y- 397415</p>	<p>FC exceeded in FY24</p> <p>3.6MVA exceedance of FC by FY33</p>	<p>Strategic solution developed in RIIO-ED2 to install new 32MVA Mayfield primary.</p> <p>HV Demand to be transferred off Ardwick and onto Mayfield to alleviate issues.</p> <p>Start date: FY25</p> <p>Completion: FY27</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>-</td> </tr> <tr> <td>Leading the Way</td> <td>-</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	-	Leading the Way	-	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	-										
Leading the Way	-										
Falling Short	-										
<p>Eastlands</p>  <p>X- 386458</p> <p>Y- 398693</p>	<p>FC exceeded in FY26</p>	<p>Strategic solution developed in RIIO-ED2 to install third transformer at Eastlands Primary to accommodate increase in demand.</p> <p>FC increasing to 42.0MVA</p> <p>Start date: FY24</p> <p>Completion: FY26</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>2.9</td> </tr> <tr> <td>Leading the Way</td> <td>3.2</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	2.9	Leading the Way	3.2	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	2.9										
Leading the Way	3.2										
Falling Short	-										
<p>Hattersley</p>  <p>X- 398419</p> <p>Y- 395120</p>	<p>FC marginally exceeded in FY33 by 0.2MVA</p>	<p>Proposed RIIO-ED2 scheme to uprate the existing transformers to 11.5/23MVA to increase.</p> <p>Marginal overload could be managed by HV demand transfer. Scheme maybe deferred to ED3.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>8.0</td> </tr> <tr> <td>Leading the Way</td> <td>6.3</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	8.0	Leading the Way	6.3	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	8.0										
Leading the Way	6.3										
Falling Short	-										

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Openshaw</p>  <p>X- 388606</p> <p>Y- 397346</p>	<p>FC first exceeded in FY27</p> <p>3.0MVA exceedance of FC by FY33</p>	<p>4.0MVA spare capacity on Denton West primary in FY33.</p> <p>6.6MVA spare capacity on Bradford in FY33.</p> <p>Proposal is to transfer HV demand via existing standby feeders</p> <p>Start date: FY27</p> <p>Completion: FY27</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>19.8</td> </tr> <tr> <td>Leading the Way</td> <td>18.2</td> </tr> <tr> <td>Falling Short</td> <td>4.2</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	19.8	Leading the Way	18.2	Falling Short	4.2
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Leading the Way	18.2										
Falling Short	4.2										
<p>Queens Park</p>  <p>X- 385893</p> <p>Y- 400645</p>	<p>FC exceeded in FY26</p>	<p>Strategic solution developed in RIIO-ED2 to install third transformer at Queens Park primary to accommodate increase in demand.</p> <p>FC increasing to 42.0MVA</p> <p>Start date: FY25</p> <p>Completion: FY27</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>-</td> </tr> <tr> <td>Leading the Way</td> <td>0.4</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	-	Leading the Way	0.4	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	-										
Leading the Way	0.4										
Falling Short	-										
<p>Bradford</p>  <p>X- 387613</p> <p>Y- 397710</p>	<p>Make fault level exceedance in FY27</p>	<p>Make fault level exceedance – monitor and review in RIIO-ED2 and action intervention as required in ED3. Operational intervention may resolve.</p>	<p>Not suitable solution for fault level exceedances.</p>								

Site Name	Need	Asset Solution	Flex Plan Location
<p data-bbox="236 255 414 286">Droylsden BSP</p>  <p data-bbox="261 483 389 515">X- 390140</p> <p data-bbox="261 555 389 586">Y- 398146</p>	<p data-bbox="464 255 711 322">Make fault level exceedance in FY24.</p>	<p data-bbox="727 255 971 501">Monitor and review in RIIO-ED2 and action intervention as required in ED3. Operational intervention may resolve.</p>	<p data-bbox="1019 255 1377 322">Not suitable solution for fault level exceedances.</p>

17 Washway Farm / Kirkby GSP






GSP Summary **3 BSPs** **12 Primaries**




Washway Farm GSP / Kirkby GSP Group supplies approximately 74,000 customers across the South Lancashire region. Washway Farm GSP takes its supply from National Grids 275kV network via 2x180MVA SGTs. Kirkby GSP which is a SPManweb site affords supply to ENW via 1x240MVA SGT. The GSP group feeds into three BSPs and 12 Primary Substations. The peak demand is currently 185MVA.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	Skelmersdale Primary Skelmersdale BSP
3-5 years	Wigan BSP	N/A
6-10 years	Green St T12 & T13 Kitt Green Upholland	N/A

Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Green St T12 & T13</p>  <p>X- 358225</p> <p>Y- 404888</p>	<p>FC marginally exceeded by 0.1MVA in FY33.</p>	<p>HV demand transfer available to Gidlow via existing 6.6kV feeders.</p> <p>1.7MVA spare on Gidlow in FY33</p> <p>Start date: FY33</p> <p>Completion: FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>18.4</td> </tr> <tr> <td>Leading the Way</td> <td>16.7</td> </tr> <tr> <td>Falling Short</td> <td>1.5</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	18.4	Leading the Way	16.7	Falling Short	1.5
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	18.4										
Leading the Way	16.7										
Falling Short	1.5										
<p>Kitt Green</p>  <p>X- 354934</p> <p>Y- 405947</p>	<p>FC first exceeded in FY32</p> <p>1.8MVA exceedance of FC by FY33</p>	<p>HV demand transfer available to Lamberhead primary via existing 6.6kV feeders.</p> <p>5.9MVA spare on Lamberhead in FY33</p> <p>Start date: FY32</p> <p>Completion: FY32</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>14.8</td> </tr> <tr> <td>Leading the Way</td> <td>14.3</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	14.8	Leading the Way	14.3	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	14.8										
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Falling Short	-										
<p>Upholland</p>  <p>X- 352531</p> <p>Y- 404369</p>	<p>FC marginally exceeded by 0.1MVA in FY33</p>	<p>Small amount of HV demand transfer available to Pimbo via existing 11kV network</p> <p>6.0MVA spare on Pimbo in FY33</p> <p>For additional transfer capacity, ~4km of 11kV cable would be required.</p> <p>Start date: FY33</p> <p>Completion: FY33</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>17.5</td> </tr> <tr> <td>Leading the Way</td> <td>13.7</td> </tr> <tr> <td>Falling Short</td> <td>1.9</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	17.5	Leading the Way	13.7	Falling Short	1.9
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<p>Wigan BSP</p>	<p>FC first exceeded in FY28</p>	<p>FC limited by voltage step change. There is an existing RIIO-ED2 to install 132kV</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p>								

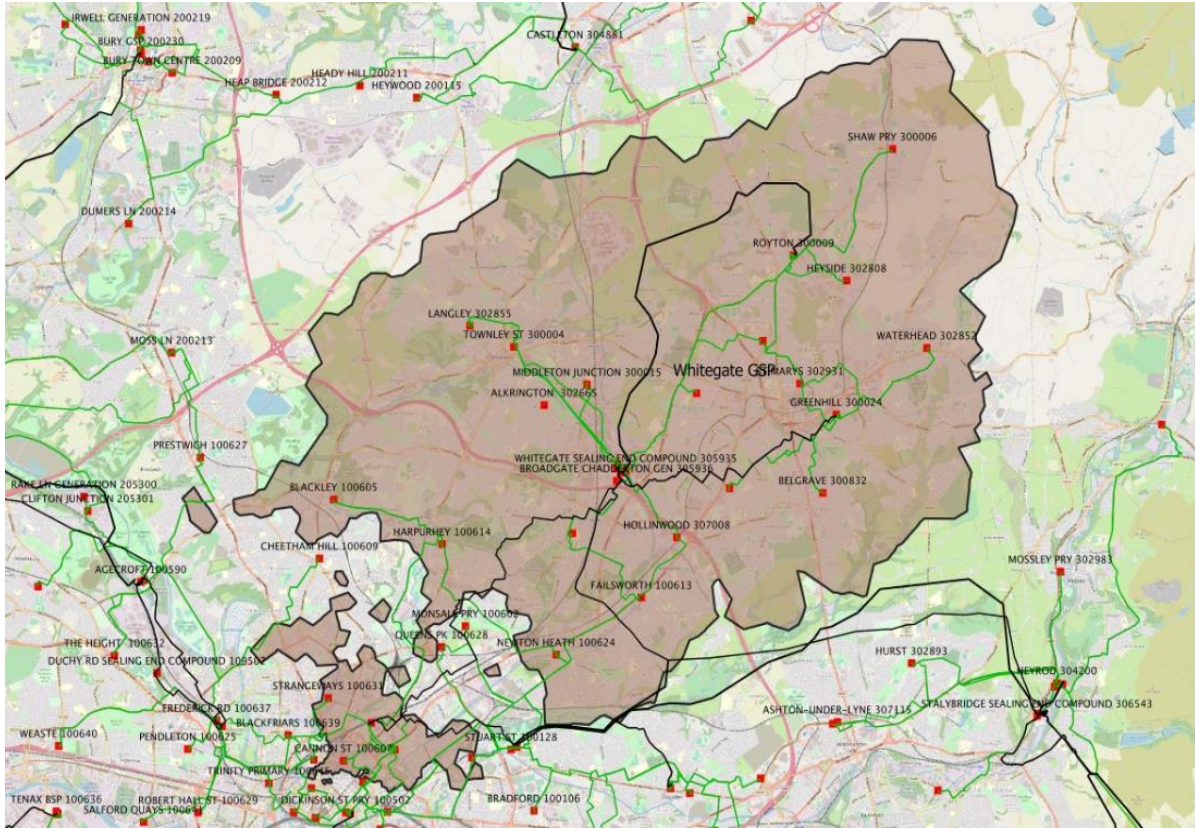
Site Name	Need	Asset Solution	Flex Plan Location	
 X- 358343 Y- 404626	12.8MVA exceedance of FC by FY33	switchgear to increase FC and accommodate the additional demand. FC can be increased further when required by replacing GT2 with a standard impedance GT to match GT1. Start date: FY26 Completion: FY28	Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	51.2
			Leading the Way	44.9
			Falling Short	-
Skelmersdale  X- 347198 Y- 407434	Make fault level exceedance in FY25.	Monitor and review in RIIO-ED2 and action intervention as required in ED3. Operational intervention may resolve.	Not suitable solution for fault level exceedances.	
Skelmersdale BSP  X- 347172 Y- 407455	Make fault level exceedance in FY23, currently managed operationally.	Site identified for intervention in RIIO - ED2. Replace section A and B. Start date: FY26 Completion Date: FY28	Not suitable solution for fault level exceedances.	

18 Whitegate GSP

GSP Summary

4 BSPs

23 Primaries










Whitegate GSP is a 275/132kV substation which supplies approximately 179,000 customers across the Peak North and North Manchester region. The substation comprises three 240MVA transformers supplied from National Grid's 275kV network. The peak demand on the GSP is currently 257MVA, supplied via four BSPs and 23 primary substations.

Intervention Overview

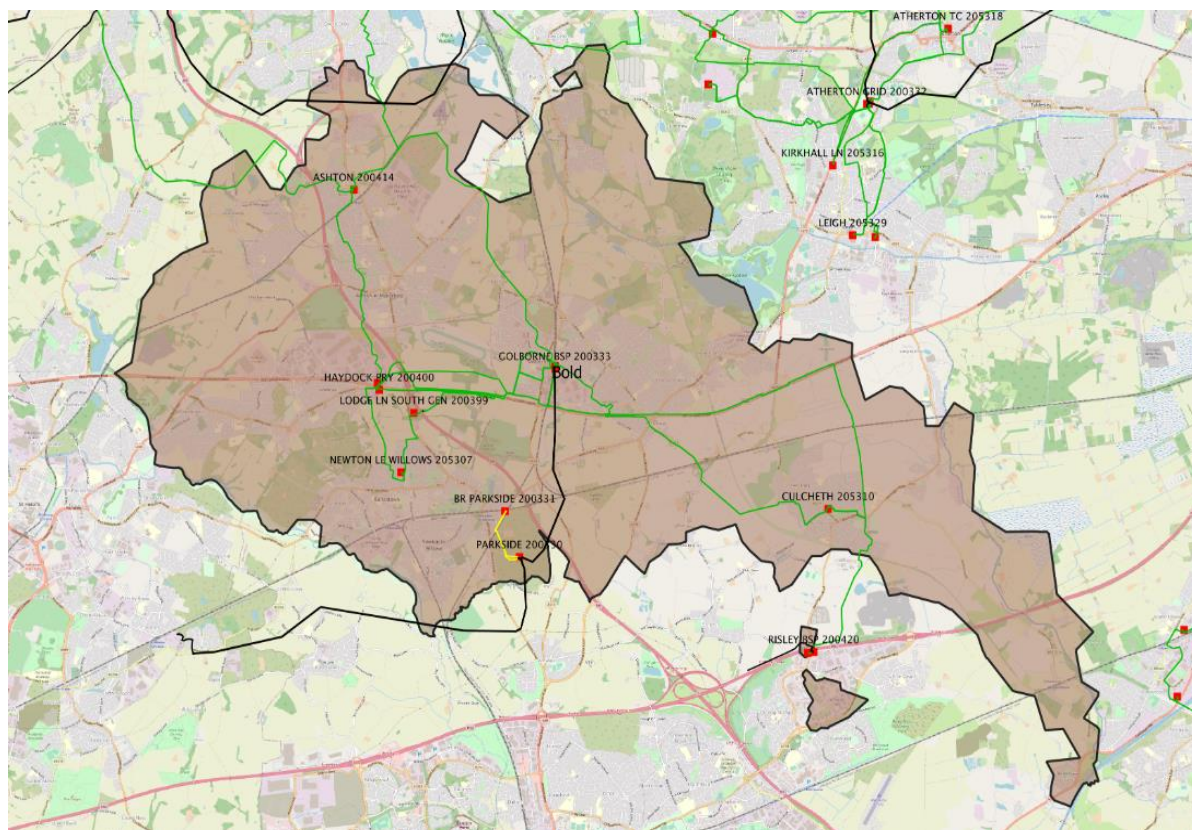
	Demand Driven	Generation Driven
0-2 years	N/A	Royton BSP
3-5 years	N/A	Greenhill Cannon Street
6-10 years	Ancoats North T11 & T12 Ancoats North T14 Blackley Chadderton BSP	N/A

Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Ancoats North T11 & T12</p>  <p>X- 385022</p> <p>Y- 398830</p>	<p>FC first exceeded in FY31.</p> <p>1.3MVA exceedance of FC by FY33.</p>	<p>HV demand transfers available to Strangeways primary via existing feeders.</p> <p>In FY33, there is 1.8MVA spare on Strangeways primary</p> <p>Start date: FY30</p> <p>Completion date: FY30.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>10.9</td> </tr> <tr> <td>Leading the Way</td> <td>10.3</td> </tr> <tr> <td>Falling Short</td> <td>3.6</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	10.9	Leading the Way	10.3	Falling Short	3.6
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Leading the Way	10.3										
Falling Short	3.6										
<p>Ancoats North T14</p>  <p>X- 385032</p> <p>Y- 398840</p>	<p>FC first exceeded in FY30.</p> <p>0.8MVA exceedance of FC by FY33.</p>	<p>HV demand transfers available to Cannon St primary via existing feeders.</p> <p>In FY33, there is 7.5MVA spare on Cannon St.</p> <p>Start date: FY29</p> <p>Completion date: FY29.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>4.3</td> </tr> <tr> <td>Leading the Way</td> <td>4.1</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	4.3	Leading the Way	4.1	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	4.3										
Leading the Way	4.1										
Falling Short	-										
<p>Blackley</p>  <p>X- 383882</p> <p>Y- 403258</p>	<p>FC first exceeded in FY33 with marginal 0.2MVA exceedance.</p>	<p>HV demand transfers available to Harpurhey primary via existing feeders.</p> <p>In FY33, there is 7.2MVA spare on Harpurhey.</p> <p>Start date: FY32</p> <p>Completion date: FY32.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>9.7</td> </tr> <tr> <td>Leading the Way</td> <td>9.2</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	9.7	Leading the Way	9.2	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	9.7										
Leading the Way	9.2										
Falling Short	-										
<p>Chadderton BSP</p>  <p>X- 389137</p>	<p>FC first exceeded in FY30.</p> <p>7.3MVA exceedance of FC by FY33.</p>	<p>Lay ~0.2km of 132kV cable and install third 90MVA GT supplied from Whitegate GSP.</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> </tbody> </table>	Max Flex Required at	MVA						
Max Flex Required at	MVA										

Site Name	Need	Asset Solution	Flex Plan Location								
Y- 403821			<table border="1"> <tr> <td>2050 (FY51) - Winter Peak</td> <td></td> </tr> <tr> <td>Best View</td> <td>107.9</td> </tr> <tr> <td>Leading the Way</td> <td>96.7</td> </tr> <tr> <td>Falling Short</td> <td>15.9</td> </tr> </table>	2050 (FY51) - Winter Peak		Best View	107.9	Leading the Way	96.7	Falling Short	15.9
2050 (FY51) - Winter Peak											
Best View	107.9										
Leading the Way	96.7										
Falling Short	15.9										
Royton BSP  X- 392426 Y- 407533	Make fault level exceedance in FY23 currently managed operationally.	Site identified for intervention in RIIO - ED2. Replace section A and B. Start date: FY26 Completion Date: FY28	Not suitable solution for fault level exceedances.								
Greenhill  X- 393262 Y- 404755	Make fault level exceedance in FY26	Three transformer primary. Scheme in flight to change running arrangement and install an Auto Close. This will be enabled when FL exceeds Switchgear Rating	Not suitable solution for fault level exceedances.								
Cannon St  X- 384064 Y- 398635	Make fault level exceedance in FY26, currently managed operationally.	Site identified for intervention in RIIO - ED2. Possible substation operational arrangement change could be implemented to resolve Make FL issue. Start date: FY25 Completion: FY28	Not suitable solution for fault level exceedances.								

19 Bold (Golborne BSP)



BSP Summary **5 Primaries**

Bold is a 132kV Switching Station that takes its supply from Rainhill GSP on SP Manweb network. There is an agreement in place between ENWL and SP Manweb to share the 4 x 240MVA SGTs at Rainhill. This gives ENWL 114MVA of capacity to be supplied from Bold to feed Golborne BSP and British Rail Parkside. The supply onto Golborne BSP feeds approximately 34,000 customers across the South Lancashire region of the network. The Peak Demand is currently 83MVA supplied via five primaries.

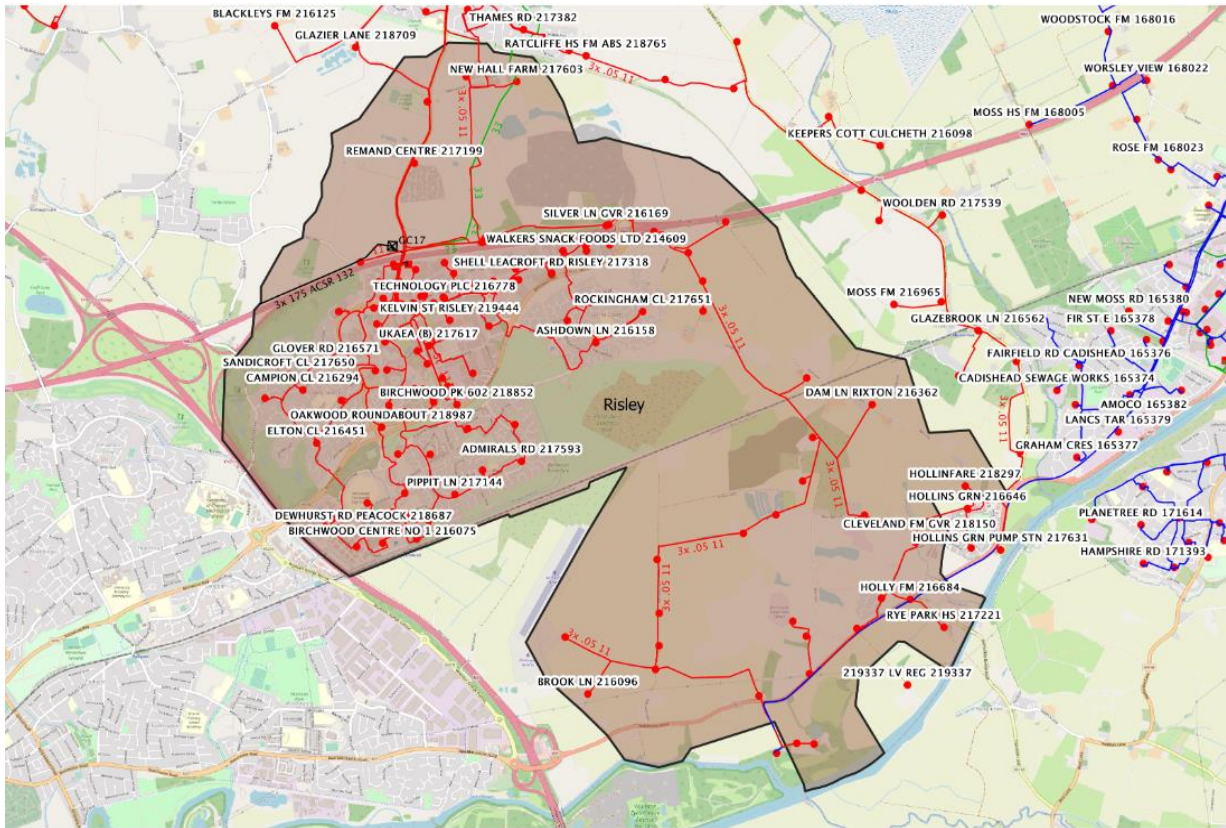
Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	N/A
3-5 years	N/A	N/A
5-10 years	N/A	N/A

20 Risley

Primary Summary

1 Primary





Risley is a 132/11kV Primary supplied from the SP Manweb network via a single 15/30MVA grid transformer. For security the primary can be fed via a 33/11kV transformer fed from Golborne BSP. The primary feeds approximately 5000 customers across the South Lancashire region of the network. The Peak Demand is currently 15MVA.

Intervention Overview

	Demand Driven	Generation Driven
0-2 years	N/A	N/A
3-5 years	N/A	N/A
6-10 years	Risley	Risley

Intervention Detail

Site Name	Need	Asset Solution	Flex Plan Location								
<p>Risley</p>  <p>X- 365181</p> <p>Y- 392989</p>	<p>FC first exceeded in FY32</p> <p>0.25MVA exceedance of FC by FY33</p>	<p>Replace ~1.3km of 33kV cable between Golborne BSP and Risley to increase FC to 23MVA</p> <p>Start date: FY28</p> <p>Completion: FY29</p>	<p>Operational Utilisation & Variable Availability or Peak Reduction</p> <table border="1"> <thead> <tr> <th>Max Flex Required at 2050 (FY51) - Winter Peak</th> <th>MVA</th> </tr> </thead> <tbody> <tr> <td>Best View</td> <td>11.6</td> </tr> <tr> <td>Leading the Way</td> <td>11.6</td> </tr> <tr> <td>Falling Short</td> <td>-</td> </tr> </tbody> </table>	Max Flex Required at 2050 (FY51) - Winter Peak	MVA	Best View	11.6	Leading the Way	11.6	Falling Short	-
Max Flex Required at 2050 (FY51) - Winter Peak	MVA										
Best View	11.6										
Leading the Way	11.6										
Falling Short	-										
<p>Risley</p>  <p>X- 365181</p> <p>Y- 392989</p>	<p>Make fault level exceedance in FY33</p>	<p>Site identified for intervention in RIIO - ED2. Replace section A and B.</p> <p>Start date: FY26</p> <p>Completion Date: FY28</p>	<p>Not suitable solution for fault level exceedances.</p>								