

Network Development Plan

May 2026



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Executive Summary

Welcome to the third edition of the SP Electricity North West (SP ENW) Network Development Plan (NDP) report. The NDP outlines our expected network reinforcement solutions up to 2035 and the long-term flexibility service requirements to facilitate the growth in electricity demand, distributed generation and battery storage in the North West.

Our approach for capacity-related network planning follows a systematic end-to-end development process. The process starts with the forecasting of electricity demand and generation. This year's report is informed by our Distribution Future Electricity Scenarios (DFES) which, this year, embed the transitional Regional Energy System Plan (tRESP) released by the National Energy System Operator (NESO) in January 2026. Our Best View scenario is used to assure near-term licence compliance and risk management, while the tRESP embedded in our Holistic Transition scenario ('tRESP scenario') is used for strategic alignment and regulatory baseline signalling.

Our DFES (including the tRESP scenario) embed the Strategic Energy Needs (SENs) identified by NESO, which includes the highest number of areas identified across all DNOs with 38 schemes approved for proactive investment. Over 92% of these schemes have been submitted by SP ENW using our systematic regular DSO technical engagement with all local authorities across the North West.

Long-term forecasts have been used in network impact analyses utilising detailed power system studies to identify thermal, voltage and fault level issues. The identified network needs from these studies were used for the development of the proposed asset and flexibility service solutions.

In summary, by 2035 electricity demand is driving the need for intervention across 24 BSPs and 72 primary substations across our region, whereas distributed generation, considering the latest Connections Reform information (which is yet to conclude), is driving the need across 16 BSPs and ten primary substations. At 132kV our unique Cumbria ring reinforcement, proposed in two phases, is also briefly described.

Our NDP not only describes the proposed asset solutions, but explains the interdependencies and considerations that will be looked at moving forward. Focusing on flexibility services, our NDP report not only defines the long-term requirements and the associated range across DFES scenarios, but also highlights cases where the counterfactual network reinforcement would be commercially attractive, such as at primary substations which currently have a single transformer.

1. Overview of information in the NDP report

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:





- Long-term demand and generation forecasts across all of our Distribution Future Electricity Scenarios (DFES) which this year includes the transitional Regional Energy System Plan (tRESP) produced by the National Energy System Operator (NESO)
- Both conventional network reinforcement and flexibility service options to release the required network capacity
- Optimal (in terms of costs, benefits and risks) and co-ordinated network interventions that avoid the increased cost from a piecemeal network expansion.

In this Network Development Plan (NDP) report we provide a list of high-level plans for required network interventions for the ten-year period from 2025 (year 0 / latest historical financial year in our latest DFES) and 2035 (year 10 in our latest DFES)¹. Each capacity constraint when considering the tRESP Holistic Transition scenario is presented in the NDP report as an intervention requirement. For both demand and generation requirements the trigger points are considered for the 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.
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 Holistic Transition (linked with tRESP), but also our DFES Best View and Falling Behind scenarios. NDP report tables should be considered in conjunction for short-term requirements.</p> <p>Further explanation on our flexibility service products and recent tenders can be found on our 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 Points (BSPs) and primary substations, respectively. The feeding areas per BSP and primary substation can be accessed from our Open Data Portal.</p>

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

Information provided	Further explanation		
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 a tender process.
	Approved plan		Technical and commercial approval of preferred solution completed.
	Delivery		Preferred solution being developed through detailed design, procurement and construction where required.

The NDP report is structured by presenting capacity requirements and associated development options by each of SP Electricity North West’s grid supply point (GSP) substation feeding areas. The 17 GSPs are shown in section 2. For accessibility and consistency, all nomenclature used to describe development plans align with data tables and schematics in the Long Term Development Statement (LTDS).

1.1. The transitional Regional Energy System Plan (tRESP)

This year marks a significant shift in whole system planning with the introduction of a co-ordinated approach by the NESO tRESP. The tRESP was released in January 2026 and signals a substantive shift in the way Great Britain (GB) will structure, finance and implement the energy transition. For developers, network operators, investors, and—above all—our customers, the tRESP establishes the basis for a new, integrated approach to infrastructure co-ordination and investment planning, underpinning the delivery of the government’s objectives for a decarbonised electricity system by 2030 and net zero by 2050.

The tRESP provides a spatial view of future energy demand, supply and infrastructure needs across nine regions in England and two nations (Scotland and Wales). The aim of tRESP is to align national decarbonisation and economic growth objectives with regional energy planning to increase consistency in DNO business planning, enhance whole system co-ordination, reduce fragmentation across GB and limit delivery risks.

The tRESP is structured into three main components that interact with DSO forecasting processes: pathways, Common Planning Assumptions (CPAs) and Strategic Energy Needs (SENs).

The pathways provide future trends for the volumes of demand and generation components including electric vehicles (EVs), heat pumps, battery storage, onshore wind and solar photovoltaic installations. The associated data are provided for each GSP, i.e. large geographical areas across our region that supply hundreds of thousands of customers and are the interface substations with the electricity transmission network. The tRESP pathways have been produced using this year's DFES data as the main input, then adjusted by NESO to take into account, among others, the Clean Power 2030 action plan and the carbon budget review alignment.

NESO has provided the DNOs with three pathways aligned with the FES-DFES common scenario framework—Holistic Transition, Electric Engagement and Hydrogen Evolution. Holistic Transition is particularly significant since it serves as the reference pathway which our regulator, Ofgem, has asked DNOs to consider for the next ten years. The Holistic Transition scenario from our DFES that embeds the tRESP pathways, CPAs and SENs, published by NESO in January 2026 is what we will refer to hereafter as the 'tRESP scenario' in this document.

Our Best View scenario from the latest DFES is used to assure near-term licence compliance and risk management, while the tRESP pathways, CPAs and SENs are used for strategic alignment and regulatory baseline signalling. Our presentation of capacity requirements in the NDP report is based on our Holistic Transition scenario that embeds NESO's tRESP pathways, CPAs and SENs. We have also embedded high certainty assumptions in our Holistic Transition scenario this year to better align with the Best View scenario. More information on our forecasting scenarios can be found in our latest [Distribution Future Electricity Scenarios](#) (DFES – March 2026).

The asset solutions presented in this NDP report will form the basis of our ED3 business plan submission of load-related investment. However, our ED3 load related investment plan could exhibit differences from this NDP report as the latest Ofgem guidance might require different and/or new considerations, whereas the data validation process for SENs requested by NESO as part of the tRESP (process running until July 2026) could also change the planned developments of local stakeholders that need to be considered in the plan.

1.2. Timing of capacity requirements

The use of the tRESP scenario forms the baseline requirements presented in this NDP report and the likely supporting asset 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 the 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 our Accelerated Decarbonisation scenario.

To increase the certainty of the tRESP scenario this year we have aligned the assumptions on stakeholder engagement inputs (connections activity, LAEP/other longer-term developments) of the Holistic Transition scenario with our Best View scenario. Specifically, only the higher certainty projects (i.e., connections, approved SENs for proactive investment, high certainty projects identified as strategic for the region, high certainty smaller longer-term developments) reflected in the Holistic Transition scenario, form the basis of the 'tRESP scenario'. This means that the tRESP scenario reflects the region's highest certainty trends in the next one to ten years.

As explained in our latest [DFES report](#), we have among others:

- Considered the increased certainty in the electrification of transport with nearly 250,000 electric cars and vans being in our licence area compared to just under 30,000 three years

ago. The increase in EV volumes is expected to continue as battery costs reduce and access to EV charging improves

- Identified and considered an increasing certainty of the use of heat pumps. Even though the increase of heat pump volumes is not as impressive as EVs, according to the recently released Future Homes Standard all new houses post-2028 will be fuelled predominantly by heat pumps or heat networks fuelled by big-scale heat pumps, so it should be expected that the benefits of the use of heat pumps will also influence wider consumer choice
- Considered the SENs identified by NESO as suitable for proactive investment as well as a small number of projects classed by NESO as strategic for the region. We also considered smaller developments, including the consideration of data and insights across the whole demand connections pipeline and smaller than the SENs longer-term planned developments
- Considered the impact of Connections Reform across the latest generation and battery storage connections pipeline.

1.3. Sign posting future flexibility requirements in the NDP report

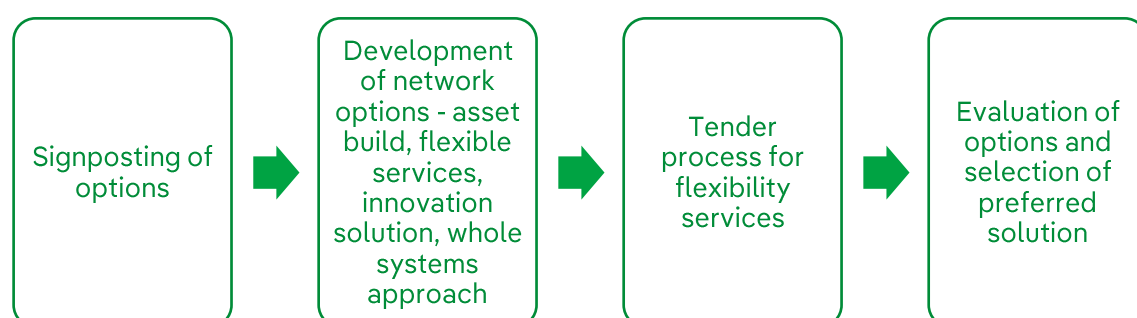
SP ENW takes a flexibility first approach, in that it promotes flexibility as an efficient solution for network capacity provision and seeks to deploy flexibility solutions in all opportunities where it is robust and economic to do so. Going beyond this, we recognise the value of flexibility through wider use cases, i.e. as a tool to accelerate connections and deal with planned and unplanned outages.

In this NDP report 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. The capacity requirements consider both the organic demand growth as reflected in DFES, but also the connection hot spots where flexibility services can be utilised to accelerate connections.

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 flexibility service option alongside the asset solution. This is to ensure there is clear visibility of all future requirements for flexibility service providers and it demonstrates our approach of not foreclosing a flexibility service opportunity before the market has been fully tested for a response. We have also identified the interventions where we anticipate a full or partial flexibility service response is likely to be technically and economically advantageous when compared to an asset solution.

We have also quantified the required amount of flexibility services using the Best View, Holistic Transition (tRESP) and Falling Behind scenarios to meet the 2050 requirements of the associated capacity release.



More 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. We publish flexibility service requirements on a monthly basis for all forecasted capacity requirements across all bulk supply point (BSP – typ. 132/33kV) and primary substation (typ. 33/11 or 6.6kV) capacity requirements and for large parts of our LV networks (secondary substations 11 or 6.6/0.4kV). This approach allows us to test the market response as close in time as possible to the capacity requirement materialising. In most cases this allows sufficient time to implement an asset solution if required, once the results of the flexibility tender are evaluated.

Therefore the intention of the NDP report is to provide this long-term future view of flexibility requirements in terms of location and baseline quantities, whereas future tender information substantiates the volumes and service categorisation. An update from our previous NDP report in 2024 is that the flexibility service requirements do not only consider the capacity requirements associated with general reinforcement requirements driven by these three DFES scenarios, but also with flexibility service requirements to accelerate the connections driven reinforcement assuming similar requirements on the connection hot spots in the long-term.

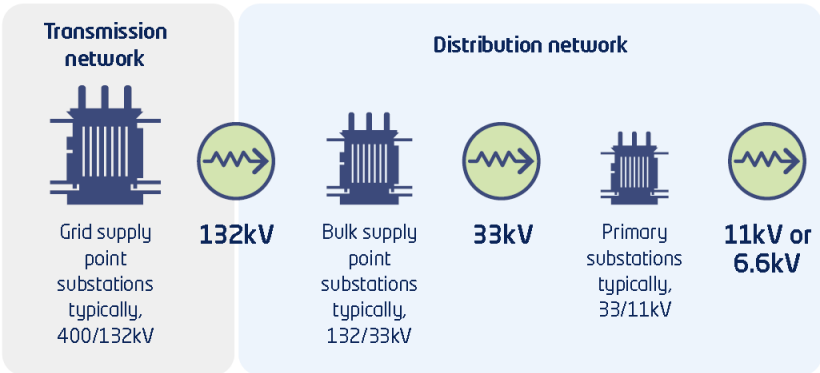
1.4. Stakeholder engagement

In March 2026 we launched a Network Development Plan consultation. The participants highlighted their familiarity with the NDP process and that the one to ten year horizon aligns with the timeline that is of interest to them.

The most common request was to access more information on network development for the lower voltages of our network. In response to their request we have been gathering data and information relevant to network loading and capacity across lower voltages in our [Open Data Portal](#). We also informed stakeholders that information on network data is accessible via our LTDS, where we go beyond the licence condition requirements to provide load and network data across lower voltages.

2. Guide to using the Network Development Plan

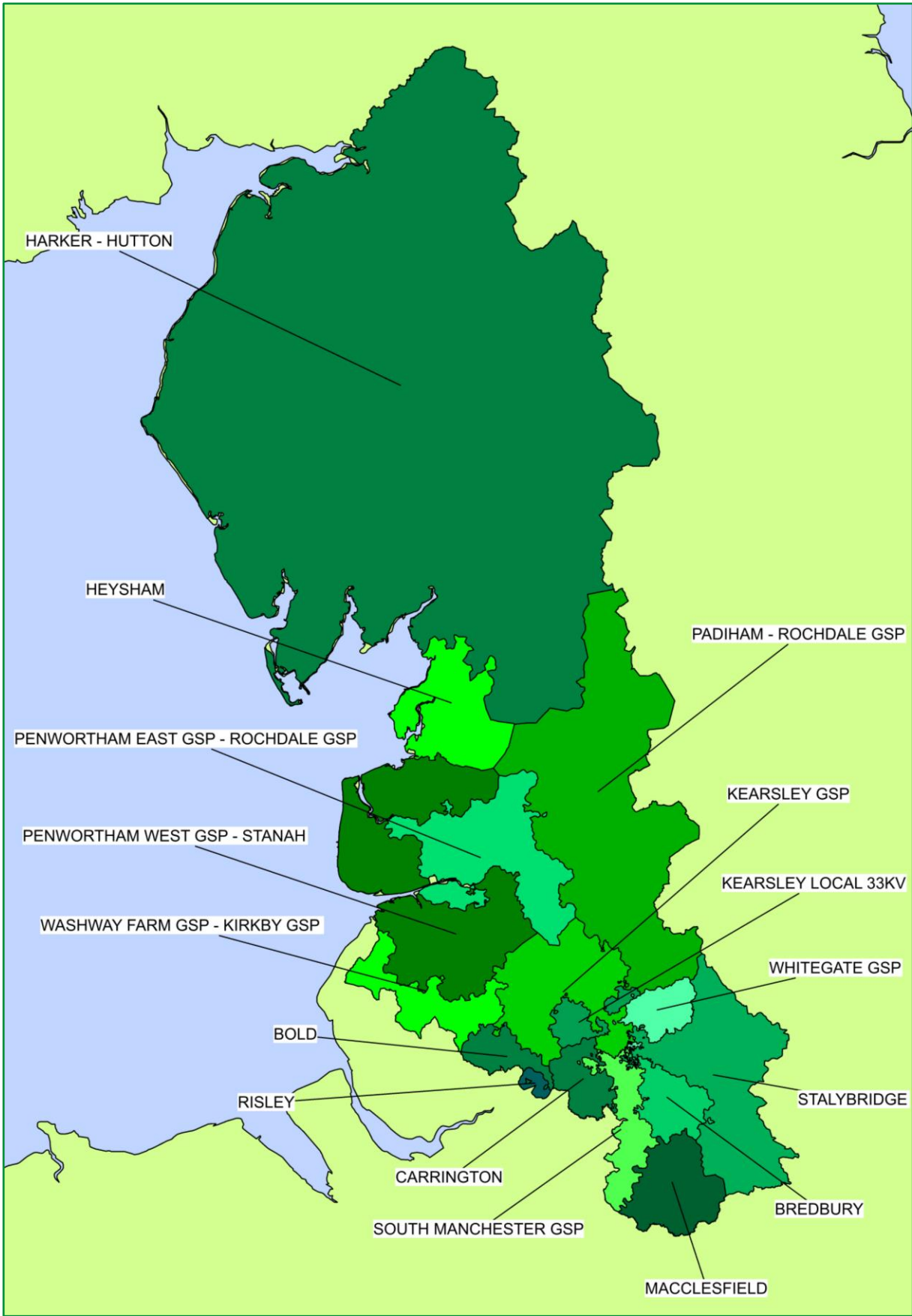
Our NDP is presented in groups corresponding to the areas of the 17 GSP groups where our distribution network interfaces with the transmission network. We have also included two further areas where supply reaches our network via the SP Manweb area. Splitting the network in this way provides understanding on a local level. It also 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 BSPs and primary substations and associated networks, as illustrated in the example network below:



The map below shows all GSPs and our 132kV network (overhead lines and underground cables), which extends from Harker at Carlisle in the north to Bredbury in Stockport in the south. This map shows the physical location of GSP substation assets. It should be noted that the GSP groups can run with interconnected assets across different substation locations, e.g. our Harker-Hutton GSP group supplies a wide area in Cumbria from the interconnected transformers at the low voltage side (132kV) of the Harker and Hutton substations.



The map below shows the feeding areas supplied by each of our GSP groups. For each of these feeding areas this NDP report presents the reinforcement solutions and associated flexibility services.



3. The main drivers of electricity demand growth

The asset solutions for network reinforcement detailed in this NDP report are driven predominantly by the tRESP scenario, which combines NESO's pathways, CPAs and SENs with our granular DFES forecasts. The other DFES scenarios are used as an assurance layer to validate the tRESP scenario assumptions. By doing this we ensure that our network development proposals do not only enhance whole system value and facilitate stakeholder plans as per NESO's data and guidance, but also allow us to develop and operate a secure and economic network.

The electrification of transport and heating combined with local stakeholder developments associated with economic growth (mix of industrial, commercial and housing) are the key drivers of electricity demand growth in our licence area in the next ten years and beyond.

Electrification of transport and heating

Transport

EVs are increasingly a more cost-efficient whole life cost alternative to internal combustion engine vehicles, and their use aligns with the government's focus on increasing energy security. Between 2024 and 2025 nearly 70,000 new electric cars and vans were registered in the North West (cleansed data excluding corporate registrations). This means that there are now around 239,000 EVs in our region, giving us increased confidence that shortly after 2030 we could see over one million EVs on our roads.

Heating

During the last year the government reversed the planned 2035 ban on sales of new gas boilers. However, the Future Homes Standard, released in early 2026, prohibits the installation of gas boilers in new-build homes from 2028, maintaining a strong policy signal toward low carbon heating in the construction sector. At the same time, the government's support for low carbon heating has increased with the expansion of the Boiler Upgrade Scheme, strengthening financial incentives for heat pump deployment. We anticipate around one million domestic heat pumps will be installed across our region by 2040, representing approximately 45% of customer properties. However, it's towards 2035-2040 when we expect higher uptakes of heat pumps compared to the next ten years.

Local stakeholder developments driving economic growth

This year we have submitted 72 local stakeholder plans to NESO as part of the tRESP process. Of these, 33 plans have achieved NESO SEN approval status, together with three more submitted by our stakeholders. Two of these were projects previously identified but subsequently amended by our stakeholders. The other will be excluded since an accepted connection is already in place and cannot be considered as a SEN under NESO's framework.

In summary all approved SENs are projects identified through regular bilateral engagement with local authorities and their developers, which highlights NESO's recognition of the quantity and quality of our stakeholder engagement.

For 29 of the remaining 39 planned development areas, NESO has assigned 'Strategic for the Region' status. Through the data validation process requested by NESO, these projects can be included in our ED3 business plans if strong evidence can be demonstrated that there are no overlaps with the pathway assumptions.

Beyond these projects, there are over 300 smaller planned development areas. For these we have carried out our certainty assessment process, following the ENA Best View scenario framework, standardised across all GB DNOs. In addition to this we have tried to replicate the NESO process by correlating our certainty assessment for the approved SENs. This showed that over three quarters of the approved SENs were projects where we would identify higher certainty levels (high or medium certainty). In our DFES scenarios (and the tRESP scenario) we consider learning from NESO's tRESP SEN process to inform the assumptions for the smaller stakeholder plans.

Ten-year outlook – number of sites requiring intervention

Scenario	Volumes of Demand Driven Interventions		Volumes of Generation Driven Interventions	
	Primary Substations	BSP Substations	Primary Substations	BSP Substations
tRESP (Holistic Transition)	72	24	10	16

4. Bredbury GSP





GSP summary: **4 BSPs** **23 primaries**

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




Intervention overview

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

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
Heaton Norris  X- 388860 Y- 391967	FC ² first exceeded in FY34 1.05MVA exceedance of FC by FY35	Marginal overload to be managed by transfers on the 6.6kV network	Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	15.1
			Holistic Transition	14.6
			Falling Behind	4.98
Levenshulme  X- 387494 Y- 394155	FC first exceeded in FY30 3.9MVA exceedance of FC by FY35	Firm capacity limited by T12 which is a 10/14MVA transformer. Replace T12 with a 16/23MVA transformer in ED3. Expect marginal overloads in ED3 to be managed by transfers on the 6.6kV network	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	15.2
			Holistic Transition	15.3
			Falling Behind	7.2
Longsight  X- 385535 Y- 396037	FC first exceeded in FY30 2.8MVA exceedance of FC by FY35	Strategic solution developed in RIIO-ED2 to install new 23MVA Southern Gateway primary. Demand to be transferred off Longsight via HV network onto Southern Gateway Start date: FY24 Completion: FY27 Installation of third transformer at Longsight also being considered	Max Flex Required at 2050 (FY51) - Winter Peak	MVA
			Best View	13.6
			Holistic Transition	13.2
			Falling Behind	8.0
Moss Side (Longsight)  X- 384007	FC first exceeded in FY27 12MVA exceedance by FY35	Strategic solution developed in RIIO-ED2 to install new 23MVA Southern Gateway primary. 8MVA minimum of demand to be	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	19.7

² Firm capacity

Site Name	Need	Asset Solution	Flexibility Service Solution	
Y- 395893		transferred off Moss Side (Longsight) via HV network onto Southern Gateway. Start date: FY24 Completion: FY27 Third transformer also being installed at Moss Side Completion FY27	Holistic Transition	21.96
			Falling Behind	11.1
Romiley  X- 393626 Y- 390716	FC first exceeded in FY30. 1.0MVA exceedance of FC by FY35	Marginal overload to be managed by transfers on the 11kV network 3MVA spare capacity on Woodley in FY35.	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	21.2
			Holistic Transition	18.9
			Falling Behind	9.8
Longsight BSP  X- 388860 Y- 391967	FC first exceeded in FY32 16MVA exceedance of FC by FY35	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	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	101.3
			Holistic Transition	99.7
			Falling Behind	59.9
Vernon Park BSP  X- 391131 Y- 390929	Non-FC first exceeded in FY30 17MVA exceedance of non-FC by FY35	Transfer Offerton primary onto Hazel Grove or Adwood BSP	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	83.4
			Holistic Transition	83.1
			Falling Behind	19.5

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 super grid transformers (SGTs), with SGTs 2B, 4 and 7 supplying the SP ENW network and SGTs 1B and 2A operating split, supplying SP Manweb. The SP ENW section supplies approximately 110,000 customers across the west and south of Manchester and comprises two 180MVA transformers supplied from National Grid's 275kV network and one 240MVA SGT supplied from the 400kV network. Peak demand is currently 224MVA, 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	Chassen Road	N/A

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Chassen Rd</p>  <p>X- 375542</p> <p>Y- 394453</p>	<p>FC first exceeded in FY31</p> <p>3MVA exceedance of FC by FY35</p>	<p>Overlay 2 x 4.3km of 33kV cable to increase FC to transformer rating</p> <p>Start date: FY31</p> <p>Completion date: FY32</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	12.7
			Holistic Transition	15.8
			Falling Behind	6.7

6. Harker SP ENW SGTs 1 2 3A 4 / Hutton Group

GSP summary: **10 BSPs** **64 primaries**

Harker SP ENW 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 one 240MVA 275kV SGT and four 120MVA 275kV SGTs. Hutton GSP takes its supply from National Grid via two 240MVA 400kV SGTs.

Together the GSPs supply the Cumbria ring (a unique project to GB) consisting of two 132kV switching stations, ten BSPs and 64 primary substations. The latest DFES including the tRESP pathways information validates the need for our proposed 132kV overhead line circuit reinforcement that will facilitate the planned generation and demand connections. This




reinforcement will release 238 MVA additional capacity in phase 1 and an additional 212 MVA in phase 2. Phase 1 will replace 154 km of length of lower rated ACSR overhead line conductors and phase 2 will uprate the remaining sections of the circuit.



There is significant generation on the network supplied by the Harker-Hutton group including several large windfarms and combined heat and power sites. Peak demand is currently 527MVA.





Intervention overview



	Demand Driven	Generation Driven
0-2 years	Alston Coniston Easton Mintsfeet Newbiggin on Lune Yealand	Bowaters Leyland National Morton Park & Pirelli
3-5 years	Newtongate T11 & T12 Sedbergh Selsmire	Fusehill
6-10 years	Egremont Gillsrow Hutton End & Skelton C Kendal Morton Park & Pirelli Newby Newtongate T13 Sebergham Westlinton Wigton Carlisle BSP Carlisle North BSP Kendal (Parkside Rd) BSP Penrith & Shap BSP	Glaxo




Intervention detail




Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Alston</p>  <p>X- 372125 Y- 546499</p>	<p>FC marginally exceeded in FY25. This is a single transformer site whose firm capacity is limited by HV transfer capacity. Currently, it is managed operationally using strategic generation deployment post fault.</p>	<p>To be resolved by a new HV interconnector (~26km) to Little Salkeld primary. This is an ED2 (Storm Arwen re-opener) project which is in delivery. Start date: FY27 Completion date: FY28</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	3.1
			Holistic Transition	3.8
			Falling Behind	1.7
<p>Coniston</p>  <p>X- 329874 Y- 497641</p>	<p>FC exceeded in FY25; however, it is managed post fault operationally using strategic generation deployment. This is a single transformer site whose firm capacity is limited by HV transfer capacity.</p>	<p>To be resolved by enhancing the HV interconnection between Coniston and Ambleside primaries. This is an ED2 (Storm Arwen re-opener) project which is in delivery. Start date: FY27 Completion date: FY28</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	4.0
			Holistic Transition	3.9
			Falling Behind	2.9
<p>Easton</p>  <p>X- 343201 Y- 571738</p>	<p>FC marginally exceeded in FY25 (0.01MVA). However, it is managed post fault operationally using strategic generation deployment. This is a single transformer site whose firm capacity is limited by HV transfer capacity.</p>	<p>Single transformer site and this is a commercially attractive area to use flexibility services to meet the firm capacity need in the area. Considering the marginal FC exceedance in FY35 (0.39MVA), there are still available demand transfers to other primaries utilising existing feeders. Alternatively, enhancing HV transfer capacity to nearby primaries. Start date: FY27 Completion date: FY28</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	1.3
			Holistic Transition	1.2
			Falling Behind	1.2


Site Name	Need	Asset Solution	Flexibility Service Solution									
<p>Egremont</p>  <p>X- 301070 Y- 513074</p>	<p>FC first exceeded in FY33 by 0.12MVA. 0.5MVA exceedance of FC by FY35</p>	<p>Transfer demand from Egremont to Hensingham primary. This might require a ~5km underground cable to reinforce HV interconnection between the primaries. 13.2MVA spare capacity on Hensingham in FY35 is adequate to accommodate the load transfer. Start date: FY32 Completion date: FY33</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>14.4</td> </tr> <tr> <td>Holistic Transition</td> <td>15.1</td> </tr> <tr> <td>Falling Behind</td> <td>7.4</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	14.4	Holistic Transition	15.1	Falling Behind	7.4	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	14.4											
Holistic Transition	15.1											
Falling Behind	7.4											
<p>Gillsrow</p>  <p>X- 337117 Y- 526444</p>	<p>FC first marginally exceeded in FY33 (by 0.06MVA), however it is managed post fault operationally using strategic generation deployment. This is a single transformer site whose firm capacity is limited by HV transfer capacity. Forecasted to exceed FC by 0.21MVA in FY35.</p>	<p>Single transformer site and this is a commercially attractive area to use flexibility services to meet the firm capacity need in the area. A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option. Closest primary is >10km away which makes any new HV interconnector between primaries technically challenging and expensive. Second 7.5/15MVA transformer required at Gillsrow to accommodate excess demand ~17km of 33kV cable between Gillsrow and Penrith primary to supply the new transformer Start date: FY32</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>Holistic Transition</td> <td>3.2</td> </tr> <tr> <td>Falling Behind</td> <td>2.4</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	2.9	Holistic Transition	3.2	Falling Behind	2.4	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	2.9											
Holistic Transition	3.2											
Falling Behind	2.4											

Site Name	Need	Asset Solution	Flexibility Service Solution	
		Completion date: FY33		
Hutton End & Skelton C  X- 345810 Y- 538827	FC first exceeded in FY33 by 0.35MVA. 2.65MVA exceedance of FC by FY35.	Transfer demand to Petteril Bank primary which has an FY35 spare capacity of 2.8MVA, enough to accommodate the load transfer. Start date: FY32 Completion date: FY33	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	11.0
			Holistic Transition	11.8
			Falling Behind	8.4
Kendal  X- 351915 Y- 491858	FC first exceeded in FY32 by 0.08MVA. 1.24MVA exceedance of FC in FY35.	HV demand transfer to nearby primaries as overload is marginal. Kendal primary interconnects with Mintsfeet primary which will have some capacity upon completion of the connections driven primary near Mintsfeet. Start date: FY31 Completion date: FY32	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	20.2
			Holistic Transition	20.4
			Falling Behind	10.8
Mintsfeet  X - 351827 Y - 494315	FC forecasted to exceed in FY27 by 0.2MVA. Demand growth driven by an increase in demand uptake by an existing customer.	To be resolved by a new primary in the area driven by demand connections. This project is in delivery. Start date: FY27 Completion date: FY28	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	mva
			Best View	27.2
			Holistic Transition	24.5
			Falling Behind	17.4
Newbiggin on Lune  X- 369770 Y- 505803	FC first exceeded in FY26 by a marginal 0.01MVA. This is a single transformer site whose firm capacity is limited by HV transfer capacity.	Single transformer site and this is a commercially attractive area to use flexibility services to meet the firm capacity need in the area. A viability and economic assessment will	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	1.1
			Holistic Transition	1.4




Site Name	Need	Asset Solution	Flexibility Service Solution	
	Forecasted FC exceedance in FY35 is 0.27MVA.	then be carried out against the technical solution detailed below to determine the preferred option. Closest primary is Kirkby Stephen >10km away which makes any new HV interconnector between primaries technically challenging and expensive. 7.2MVA spare capacity on Kirkby Stephen in FY35 can accommodate the load transfer. Start date: FY31 Completion date: FY33	Falling Behind	0.8
Newby  X- 360520 Y- 521151	FC first exceeded in FY34 by 0.04MVA. 0.04MVA exceedance of FC in FY35	HV demand transfer to nearby primaries as the forecast FY35 overload is marginal. Start date: FY33 Completion date: FY34	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK MVA	Best View 3.7 Holistic Transition 4.9 Falling Behind 2.3
Newtongate T11 & T12  X - 349973 Y - 530340	FC first exceeded in FY30 by 0.04MVA. 7.13MVA exceedance of FC in FY35	Replace existing transformers (11.5/23MVA) with 19/38MVA units. Overlay 33kV circuits supplying the substation from Penrith BSP (~ 2 x 200m). Further analysis is required to develop options and timing of delivery. Start date: FY29 Completion date: FY31	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK MVA	Best View 34.6 Holistic Transition 40.0 Falling Behind 28.1

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Newtongate T13</p>  <p>X – 349973 Y - 530340</p>	<p>FC first exceeded in FY33 by 0.07MVA. 0.8MVA exceedance of FC in FY35</p>	<p>HV demand transfer to Newtongate T11 & T12, after completion of the reinforcement above. The forecast FY35 overload at Newtongate T13 primary is marginal. Start date: FY32 Completion date: FY33</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	12.3
			Holistic Transition	13.1
			Falling Behind	8.8
<p>Sebergham</p>  <p>X- 335344 Y- 542653</p>	<p>FC first exceeded in FY35 by a marginal 0.05MVA. This is a single transformer site whose firm capacity is limited by HV transfer capacity.</p>	<p>Single transformer site and this is a commercially attractive area to use flexibility services to meet the firm capacity need in the area. Alternatively, transfer demand to nearby primaries as the 0.05MVA exceedance in FY35 is very marginal. For example, Askerton Castle primary has a spare capacity of 0.8MVA in FY35. Start date: FY34 Completion date: FY35</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	2.2
			Holistic Transition	2.1
			Falling Behind	1.6
<p>Sedbergh</p>  <p>X – 365151 Y – 491747</p>	<p>FC first exceeded in FY30 by a marginal 0.002MVA. FY35 FC exceedance is 4.1MVA. FC is limited by 400A HV T12 incomer.</p>	<p>HV demand transfer to Kendal or Mintsfeet primaries. However, both primaries are also triggered by load, hence this will depend on completion of respective reinforcement projects. Alternatively, uprate the 8-panel switchboard to 1200A. Further analysis is required to develop options, a whole systems solution</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	7.1
			Holistic Transition	7.2
			Falling Behind	5.2

Site Name	Need	Asset Solution	Flexibility Service Solution									
		and timing of delivery. Start date: FY29 Completion date: FY31										
<p>Selsmire</p>  <p>X – 361018 Y – 507505</p>	<p>FC first exceeded in FY29 by 8.52MVA. Load growth is driven by uptake of low carbon technologies in the area. FY35 FC exceedance is 30.03MVA. This is a single transformer site whose firm capacity is limited by HV transfer capacity.</p>	<p>Reinforce the network by establishing a new single transformer primary with potential to convert to a two-transformer substation. This project is currently in delivery. Start date: FY26 Completion date: FY28</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>19.4</td> </tr> <tr> <td>Holistic Transition</td> <td>19.5</td> </tr> <tr> <td>Falling Behind</td> <td>18.4</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	19.4	Holistic Transition	19.5	Falling Behind	18.4	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	19.4											
Holistic Transition	19.5											
Falling Behind	18.4											
<p>Westlinton</p>  <p>X – 339551 Y – 564489</p>	<p>FC first exceeded in FY33 by a marginal 0.37MVA. FY35 FC exceedance is 2.7MVA. FC is limited by the existing 2 x 15MVA transformer units.</p>	<p>Replace the existing 2 x 15MVA transformers with higher rated units. Further analysis is required to assess other options, size of the new transformer units and timing of delivery. Start date: FY30 Completion date: FY32</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>15.7</td> </tr> <tr> <td>Holistic Transition</td> <td>16.0</td> </tr> <tr> <td>Falling Behind</td> <td>14.1</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	15.7	Holistic Transition	16.0	Falling Behind	14.1	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	15.7											
Holistic Transition	16.0											
Falling Behind	14.1											
<p>Wigton</p>  <p>X- 325814 Y- 549933</p>	<p>FC first exceeded in FY32 by 0.21MVA. 0.7MVA exceedance of FC by FY35</p>	<p>Replace existing 11.5/23MVA transformers with 16/32MVA units. This scheme is in delivery as the transformers were due for asset replacement. Higher capacity units were specified to proactively reinforce the substation. Start date: FY29 Completion date: FY31</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>9.4</td> </tr> <tr> <td>Holistic Transition</td> <td>9.5</td> </tr> <tr> <td>Falling Behind</td> <td>4.8</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	9.4	Holistic Transition	9.5	Falling Behind	4.8	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	9.4											
Holistic Transition	9.5											
Falling Behind	4.8											

Site Name	Need	Asset Solution	Flexibility Service Solution									
<p>Yealand</p>  <p>X- 351537 Y- 475934</p>	<p>FC first exceeded in FY26 by 0.1MVA, however it is managed post fault operationally using strategic generation deployment. Increase in demand exceedance to 10.49MVA by FY35 requires consideration of non-operational solution. This is a single transformer site, and its firm capacity is limited by HV transfer capacity.</p>	<p>Single transformer site and this is a commercially attractive area to use flexibility services to meet the firm capacity need in the area. A viability and economic assessment will then be carried out against the technical solution detailed below to determine the preferred option. Install a HV interconnector from Arnside primary to transfer demand off Yealand Cable route ~7km Start date: FY30 Completion date: FY31</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>11.4</td> </tr> <tr> <td>Holistic Transition</td> <td>11.3</td> </tr> <tr> <td>Falling Behind</td> <td>10.2</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	11.4	Holistic Transition	11.3	Falling Behind	10.2	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	11.4											
Holistic Transition	11.3											
Falling Behind	10.2											
<p>Carlisle BSP</p>  <p>X- 338655 Y- 556583</p>	<p>FC first exceeded in FY32 by 0.39MVA. 33.52MVA exceedance of FC in FY35. This substation has three transformers (2 x 60MVA and 1 x 90MVA). Firm capacity is limited by the 60MVA units.</p>	<p>Replace the 2 x 60MVA units with 90MVA units to increase the firm capacity from 150MVA to 207MVA. Further analysis is required to assess the timing of delivery. Start date: FY29 Completion date: FY32</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>191.9</td> </tr> <tr> <td>Holistic Transition</td> <td>340.9</td> </tr> <tr> <td>Falling Behind</td> <td>84.1</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	191.9	Holistic Transition	340.9	Falling Behind	84.1	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	191.9											
Holistic Transition	340.9											
Falling Behind	84.1											
<p>Carlisle North BSP</p>  <p>X - 338547 Y - 560280</p>	<p>FC first exceeded in FY32. Forecasted to overload by 4.85MVA in FY35. FC limited by voltage step change due to high impedance transformers.</p>	<p>Could be resolved by replacing existing transformers with standard impedance units. Further analysis is required to develop options and timing of delivery. Start date: FY29 Completion date: FY32</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>Holistic Transition</td> <td>13.6</td> </tr> <tr> <td>Falling Behind</td> <td>13.5</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	12.8	Holistic Transition	13.6	Falling Behind	13.5	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	12.8											
Holistic Transition	13.6											
Falling Behind	13.5											

Site Name	Need	Asset Solution	Flexibility Service Solution								
Kendal BSP  X- 351915 Y- 491858	FC first exceeded in FY31 by 2.96MVA. 32.7MVA exceedance of FC by FY35. FC is limited by the capacity of 2 x 90MVA transformers at the substation.	A third 90MVA GT located at Kendal BSP fed from Hutton. Further analysis is required to assess the timing of delivery as this project is currently triggered by connection activity. Start date: FY29 Completion date: FY31	<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>132.2</td> </tr> <tr> <td>Holistic Transition</td> <td>209.8</td> </tr> <tr> <td>Falling Behind</td> <td>52.6</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	132.2	Holistic Transition	209.8	Falling Behind	52.6
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	132.2										
Holistic Transition	209.8										
Falling Behind	52.6										
Penrith & Shap BSP  X- 349996 Y- 530398	FC first exceeded in FY31 by 10.33MVA. 62.95MVA exceedance of FC by FY35. FC is limited by the capacity of transformers (2 x 60MVA and 1 x 45MVA) and uneven sharing of load among the transformers.	Replace existing transformers with 3 x 90MVA units. Further analysis is required to assess other options as a whole system solution might be prudent for the area. Start date: FY29 Completion date: FY31	<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>168.8</td> </tr> <tr> <td>Holistic Transition</td> <td>326.4</td> </tr> <tr> <td>Falling Behind</td> <td>58.3</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	168.8	Holistic Transition	326.4	Falling Behind	58.3
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	168.8										
Holistic Transition	326.4										
Falling Behind	58.3										
Fusehill 33kV  X- 302535 Y- 529330	Make fault level exceedance in FY30. Fault rating is restricted by 17.5kA rated 33kVswitchgear.	There is a RIIO-ED2 scheme to resolve the forecast FL issue at Fusehill 33kV. After analysis, the recommended option is to joint out the switchboard or run with 33kV bus-section open. Start date: FY29 Completion date: FY30	Not suitable solution for fault level exceedances.								
Bowaters  X- 319579 Y- 472480	Make fault level exceedance in FY27. Fault rating is restricted by 13.1kA rated 11kV switchgear.	There is a RIIO-ED2 scheme to change the running arrangement and install an auto-close scheme at Bowaters primary. Start date: FY29 Completion Date: FY32	Not suitable solution for fault level exceedances.								

Site Name	Need	Asset Solution	Flexibility Service Solution
<p>Glaxo</p>  <p>X- 330458 Y- 477825</p>	<p>Make fault level exceedance in FY34. Fault rating is restricted by 13.1kA rated 11kV switchgear.</p>	<p>Replace CB 9-panel switchboard with new 25/62.5kA rated switchgear. Start date: FY32 Completion Date: FY34</p>	<p>Not suitable solution for fault level exceedances.</p>
<p>Leyland National</p>  <p>X- 301973 Y- 525948</p>	<p>Make fault level exceedance in FY25, currently being managed operationally. Fault rating is restricted by 13.1kA rated 11kV switchgear.</p>	<p>There is a RIIO-ED2 scheme to replace 13.1kA rated 11kV switchboard with new 25/62.5kA rated switchgear. This scheme is planned to be delivered in ED3. Start date: FY29 Completion Date: FY31</p>	<p>Not suitable solution for fault level exceedances.</p>
<p>Morton Park & Pirelli</p>  <p>X- 337826 Y- 553939</p>	<p>Make fault level exceedance in FY26. Fault rating is restricted by 13.1kA rated HV switchgear.</p>	<p>Monitor FL and/manage operationally in ED2. Plan to replace Morton Park 11kV switchboard with new 25/62.5kA rated switchgear. Start date: FY30 Completion Date: FY32</p>	<p>Not suitable solution for fault level exceedances.</p>

7. Heysham GSP

GSP summary 2 BSPs 10 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. Peak demand on the GSP is currently only 111MVA supplied via two BSPs and ten 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 Electricity Transmission has reviewed this requirement and in conjunction with SP ENW developed a solution to construct a new GSP at Middleton close to Heysham.

Intervention overview

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

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Burrow Beck</p>  <p>X- 347903 Y- 458401</p>	<p>FC first exceeded in FY27 7.3MVA exceedance of FC by FY35</p>	<p>Existing RIIO-ED2 scheme to establish new primary and transfer demand off Burrow Beck Start date: FY27 Completion: FY30</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p> <p>Best View</p> <p>Holistic Transition</p> <p>Falling Behind</p>	<p>MVA</p> <p>30.8</p> <p>34.5</p> <p>23.1</p>
<p>Woodhill Lane</p>  <p>X- 343294 Y- 463785</p>	<p>FC first exceeded in FY33 1.7MVA exceedance of FC by FY35</p>	<p>Overload to be managed by load transfers on the 6.6kV network onto Westgate and Broadway primaries</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p> <p>Best View</p> <p>Holistic Transition</p> <p>Falling Behind</p>	<p>MVA</p> <p>6.5</p> <p>6.4</p> <p>0.9</p>
<p>Lancaster BSP</p>  <p>X- 348644 Y- 463628</p>	<p>FC first exceeded in FY31 21MVA exceedance of FC by FY35</p>	<p>Lay 11km of 132kV cable from Heysham/Middelton GSP to the existing GT3, allowing Lancaster BSP to operate solid, significantly increasing the FC Start date: FY30 Completion Date: FY32</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p> <p>Best View</p> <p>Holistic Transition</p> <p>Falling Behind</p>	<p>MVA</p> <p>150.5</p> <p>172.5</p> <p>53.2</p>

8. Kearsley GSP


GSP summary **7 BSPs** **38 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. Peak demand on the GSP is currently 496MVA, supplied via seven BSPs and 38 primary substations.





Intervention overview






	Demand Driven	Generation Driven
0-2 years	N/A	Trinity Woolfold 33kV Bolton BSP Bury BSP
3-5 years	Barbara St Cheetham Hill Frederick Road BSP	N/A
6-10 years	Blackfriars Crown Lane Frederick Rd Harwood Robert Hall St The Height Westhoughton Atherton BSP Radcliffe BSP	Bury Town Centre


Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
Barbara St  X- 370695 Y- 407609	FC first exceeded in FY30 3.8MVA exceedance of FC by FY35	FC limited by 33kV circuit. Overlay ~5km of 33kV cable and replace transformers Start date: FY28 Completion date: FY30	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	10.2
			Holistic Transition	10.1
			Falling Behind	4.5

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Blackfriars</p>  <p>X- 383030 Y- 402218</p>	<p>FC first exceeded in FY32 3.6MVA exceedance of FC in FY35</p>	<p>Existing RIIO-ED2 scheme to overlay 33kV cables to increase FC to 20.5MVA. Any subsequent marginal overload to be managed through load transfers on 6.6kV network</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	16.0
			Holistic Transition	16.3
			Falling Behind	4.7
<p>Cheetham Hill</p>  <p>X- 383606 Y- 402218</p>	<p>FC first exceeded in FY30 8.6MVA exceedance of FC by FY35 FC limited by 6.6kV switchboard rating.</p>	<p>Replace 6.6kV switchboard at Cheetham Hill. There is a RIIO-ED2 project to replace the switchboard on asset condition. Long-term, capacity released from switchboard replacement will have to be supplemented with a third transfer. Start date: FY28 Completion date: FY30</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	21.6
			Holistic Transition	20.9
			Falling Behind	4.8
<p>Crown Lane</p>  <p>X- 362706 Y- 410859</p>	<p>FC first exceeded in FY31 7.9MVA exceedance of FC by FY35</p>	<p>Establish new 23MVA primary substation supplied from Westhoughton BSP to support the demand requirements Start date: FY30 Completion Date: FY33</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	22.1
			Holistic Transition	22.2
			Falling Behind	12.9
<p>Frederick Rd</p>  <p>X- 383606 Y- 402218</p>	<p>FC first exceeded in FY31 by marginal 0.61MVA exceedance. 6.93MVA exceedance of FC by FY35</p>	<p>Install 0.1km of 33kV cable from the local Frederick Rd BSP and install a third transformer to accommodate additional demand Start date: FY30 Completion Date: FY32</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	23.1
			Holistic Transition	23.5
			Falling Behind	7.9

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Harwood</p>  <p>X- 374043 Y- 410941</p>	<p>FC first exceeded in FY32 by marginal 0.53MVA exceedance. 1.9MVA exceedance of FC by FY35</p>	<p>Overload to be managed by load transfers on the 11kV network Start date: FY32 Completion Date: FY32</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	16.98
			Holistic Transition	15.9
			Falling Behind	6.1
<p>Robert Hall St</p>  <p>X- 381359 Y- 397718</p>	<p>FC first exceeded in FY34 by 1.5MVA. 3.28MVA exceedance of FC by FY35</p>	<p>Transfer demand onto Salford Quays primary via existing 6.6kV network feeders Estimated completion in FY34</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	10.7
			Holistic Transition	15.2
			Falling Behind	6.5
<p>The Height</p>  <p>X - 379792 Y - 400497</p>	<p>FC first exceeded in FY35 by marginal 0.53MVA exceedance.</p>	<p>Marginal overload to be managed by load transfers on the 6.6kV network Start date: FY35 Completion Date: FY35</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	10.5
			Holistic Transition	10.8
			Falling Behind	5.3
<p>Westhoughton</p>  <p>X- 365831 Y- 407025</p>	<p>FC first exceeded in FY32 by marginal 0.31MVA exceedance. 2.07MVA exceedance of FC by FY35</p>	<p>Transfer demand onto Lostock primary via existing 11kV network feeders 5.3MVA of spare capacity on Lostock in FY35 Estimated completion in FY32</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	22.0
			Holistic Transition	20.7
			Falling Behind	11.8

Site Name	Need	Asset Solution	Flexibility Service Solution	
Atherton BSP  X- 366150 Y- 402088	Non-FC first exceeded in FY33 by a marginal 0.56MVA exceedance. 6.17MVA exceedance of non-FC by FY35	Install 3 rd 90MVA GT supplied from Kearsley GSP via 13.5km of 132kV cable	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	84.8
			Holistic Transition	87.1
			Falling Behind	42.0
Frederick Rd BSP  X- 381795 Y- 399250	FC first exceeded in FY28 by a marginal 0.13MVA exceedance. 57.09MVA exceedance of FC by FY35.	In-flight RIIO-ED2 scheme to replace existing 3 x 60MVA transformers with 3 x 90MVA units. Start date: FY24 Completion Date: FY28	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	119.7
			Holistic Transition	127.8
			Falling Behind	47.9
Radcliffe BSP  X- 377524 Y- 406160	FC first exceeded in FY34 by 1.15MVA exceedance. 2.41MVA exceedance of FC by FY35.	Transfer HV demand onto Ringley primary via existing HV feeders 15MVA of spare capacity on Ringley in FY35 Estimated completion in FY34	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	24.7
			Holistic Transition	25.8
			Falling Behind	12.2
Bury Town Centre  X - 380863 Y - 410807	Make fault level exceedance in FY33. Existing 13-panel 6.6kV switchboard is rated 20kA.	Monitor the FL and install a higher rated 13-panel HV switchboard. Estimated completion in FY32	Not suitable solution for fault level exceedances.	
Trinity  X- 382649 Y- 398230	Make fault level exceedance in FY25 currently managed operationally. Existing 26-panel 6.6kV switchboard is rated 20kA.	Site identified for intervention in RIIO - ED2. Possible substation operational arrangement change could be implemented to	Not suitable solution for fault level exceedances.	

Site Name	Need	Asset Solution	Flexibility Service Solution
		resolve Make FL issue. Start date: FY26 Completion Date: FY28	
Bolton BSP  X- 372255 Y- 410566	Make fault level exceedance in FY25 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.
Bury BSP  X- 380272 Y- 411184	Make fault level exceedance in FY25 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.
Woolfold 33kV  X- 378874 Y- 411666	Make fault level exceedance in FY25.	Currently managed operationally by operating with the bus section CB Open. Consider jointing out 33kV switchboard,	Not suitable solution for fault level exceedances.

9. Kearsley Local GSP




GSP summary **9 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. Peak demand on the GSP is currently 106MVA, supplied via nine 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	Hill Top T11 & T12 Little Hulton Moss Lane	N/A

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Hill Top T11 & T12</p>  <p>X- 373466 Y- 403748</p>	<p>FC first exceeded in FY34 1.1MVA exceedance of FC by FY35.</p>	<p>HV demand transfers are available onto Farnworth and Carr St primaries via existing standby HV feeders 4.9MVA of spare capacity on Farnworth and 8.1MVA of spare capacity on Carr St in FY35 Start date: FY34 Completion Date: FY34</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	20.3
			Holistic Transition	18.2
			Falling Behind	12.9
<p>Little Hulton</p>  <p>X- 372024 Y- 403826</p>	<p>FC first exceeded in FY32</p>	<p>Scheme identified as part of RIIO ED2 program. ~Lay 7km of HV interconnectors from Cutacre primary to transfer ~5MVA of demand off Little Hulton. 10MVA of spare capacity on Cutacre in FY35 Start date: FY27 Completion Date: FY27</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	16.9
			Holistic Transition	16.4
			Falling Behind	9.2
<p>Moss Lane</p>  <p>X- 380858 Y- 408856</p>	<p>FC first exceeded in FY32 4.3MVA exceedance of FC by FY35</p>	<p>Strategic solution developed in RIIO-ED2 to install new 23MVA South Heywood, Northern Gateway primary. 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. Start date: FY24 Completion Date: FY27</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	20.1
			Holistic Transition	19.8
			Falling Behind	12.2

10. Macclesfield GSP


GSP summary **4 primaries**

Macclesfield GSP is a 275/33kV substation which supplies approximately 36,000 customers across the south Peak region. The substation comprises two 100MVA transformers supplied from National Grid's 275kV network. Peak demand on the GSP is currently 85MVA, supplied via four primary substations.

Intervention overview

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

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution
<p>Macclesfield BSP</p>  <p>X- 392047 Y- 374564</p>	Make fault level exceedance in FY27.	Manage operationally or replace the 33kV switchboard with new 25/62.5kA switchgear Start date: FY27 Completion Date: FY28	Not suitable solution for fault level exceedances.

11. Padiham GSP

GSP summary **4 BSPs** **25 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. Peak demand on the GSP is currently 227MVA, supplied via four BSPs and 25 primary substations.





The existing 132kV switchgear is currently an outdoor double busbar arrangement with main and reserve bars, and ten feeder bays.




Intervention overview


	Demand Driven	Generation Driven
0-2 years	Bolton by Bowland Settle	Spring Cottage
3-5 years	Peel St	

	Demand Driven	Generation Driven
6-10 years	Flat Lane Helwith Bridge Nelson BSP Ribblesdale T13 & T14	Nelson BSP

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution								
Bolton By Bowland  X- 378320 Y- 449559	Existing FC issue but it is managed post fault operationally using strategic generation deployment. 0.9MVA exceedance of FC by FY35.	Reinforcement planned in ED3 to strengthen the existing HV interconnection to Ribblesdale. Revised FC is sufficient for FY35. Start date: FY29 Completion Date: FY29	<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>2.7</td> </tr> <tr> <td>Holistic Transition</td> <td>2.3</td> </tr> <tr> <td>Falling Behind</td> <td>2.2</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	2.7	Holistic Transition	2.3	Falling Behind	2.2
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	2.7										
Holistic Transition	2.3										
Falling Behind	2.2										
Flat Lane  X- 383248 Y- 456995	FC first exceeded in FY31. 0.4MVA exceedance of FC by FY35.	Reinforcement planned in ED3 to strengthen the existing HV interconnection to Settle. Revised FC is sufficient for FY35. Start date: FY31 Completion Date: FY31	<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>3.9</td> </tr> <tr> <td>Holistic Transition</td> <td>3.7</td> </tr> <tr> <td>Falling Behind</td> <td>2.3</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	3.9	Holistic Transition	3.7	Falling Behind	2.3
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	3.9										
Holistic Transition	3.7										
Falling Behind	2.3										
Helwith Bridge  X - 381025 Y - 469428	FC first exceeded in FY31. 0.1MVA exceedance of FC by FY35.	Carry out HV load transfer to Ingleton which has 1.1MVA spare FC in FY35. Start date: FY31 Completion Date: FY31	<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>1.5</td> </tr> <tr> <td>Holistic Transition</td> <td>1.4</td> </tr> <tr> <td>Falling Behind</td> <td>0.8</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	1.5	Holistic Transition	1.4	Falling Behind	0.8
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	1.5										
Holistic Transition	1.4										
Falling Behind	0.8										
Nelson BSP 	Make fault level exceedance in FY31. FC first exceeded in FY32.	Existing ED2 scheme in delivery to replace the 33kV switchboard and GT2. As the 33kV	Not suitable solution for fault level exceedances.								

Site Name	Need	Asset Solution	Flexibility Service Solution								
X- 385989 Y- 438643	7.4MVA exceedance of FC by FY35.	switchboard restricts the fault level and thermal headroom, its replacement will also increase the FC at Nelson BSP. On completion the revised FC is sufficient for FY35. Start date: FY26 Completion Date: FY29									
Peel St  X- 374463 Y- 441514	FC first exceeded in FY29. 2.4MVA exceedance of FC by FY35.	Reinforcement planned in ED3 to Install a HV interconnector to Peel St from Whalley primary to transfer excess demand, cable length ~6km. Whalley has 6.7MVA spare FC in FY35. Start date: FY29 Completion Date: FY29	<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>23.2</td> </tr> <tr> <td>Holistic Transition</td> <td>23.3</td> </tr> <tr> <td>Falling Behind</td> <td>9.9</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	23.2	Holistic Transition	23.3	Falling Behind	9.9
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	23.2										
Holistic Transition	23.3										
Falling Behind	9.9										
Ribblesdale T13 & T14  X- 374759 Y- 443587	FC first exceeded in FY34. 0.3MVA exceedance of FC by FY35.	Existing RIIO-ED1 scheme to replace and uprate T13 to an 11.5/23MVA transformer. Revised FC is sufficient for FY35. Start date: FY29 Completion Date: FY29	<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>10.1</td> </tr> <tr> <td>Holistic Transition</td> <td>9.8</td> </tr> <tr> <td>Falling Behind</td> <td>6.1</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	10.1	Holistic Transition	9.8	Falling Behind	6.1
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	10.1										
Holistic Transition	9.8										
Falling Behind	6.1										
Settle  X- 381588 Y- 463721	FC first exceeded in FY26. 1.5MVA exceedance of FC by FY35.	Reinforcement planned in ED3 to strengthen the existing HV interconnection to Flat Lane. Revised FC is sufficient for FY35. Start date: FY29 Completion Date: FY29	<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>5.6</td> </tr> <tr> <td>Holistic Transition</td> <td>5.8</td> </tr> <tr> <td>Falling Behind</td> <td>3.6</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	5.6	Holistic Transition	5.8	Falling Behind	3.6
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	5.6										
Holistic Transition	5.8										
Falling Behind	3.6										

Site Name	Need	Asset Solution	Flexibility Service Solution
<p>Spring Cottage</p>  <p>X- 385446 Y- 437481</p>	Existing make fault level exceedance.	Existing ED2 scheme planned to replace the 6.6kV switchgear with new 25/62.5kA switchgear. Make fault level exceedance managed operationally until scheme completion. Start date: FY28 Completion Date: FY32	Not suitable solution for fault level exceedances.

12. Penwortham East GSP – Rochdale SGT 1


GSP summary **4 BSPs** **28 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. Peak demand is currently 303MVA, supplied via four BSPs and 28 primary substations.

Intervention overview

	Demand Driven	Generation Driven
0-2 years	Catterall Waterworks	N/A
3-5 years	N/A	N/A
6-10 years	Ashton (Ribble) Lower Darwen BSP Moorside	N/A

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution				
<p>Ashton (Ribble)</p>  <p>X – 350275 Y - 430526</p>	FC first exceeded in FY31 2.6MVA exceedance of FC by FY35	Reinforcement scheme in ED3 to extend the existing 6.6kV switchboard and install a second 11.5/23MVA transformer. Replacement of T11 has been	<table border="1"> <tr> <td>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</td> <td>MVA</td> </tr> <tr> <td>Best View</td> <td>6.6</td> </tr> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	6.6
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA						
Best View	6.6						

Site Name	Need	Asset Solution	Flexibility Service Solution	
		accelerated due to its condition. Start date: FY29 End date: FY30	Holistic Transition	5.7
			Falling Behind	3.5
Catterall Waterworks  X- 349381 Y- 442178	FC already exceeded. Site recently cancelled a managed connection to deal with FC exceedance. 5.7MVA exceedance of FC by FY35	Ongoing reinforcement scheme to strengthen the existing HV interconnection. Revised firm capacity sufficient for FY35. Start date: FY25 Completion Date: FY27	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	8.1
			Holistic Transition	7.2
			Falling Behind	8.3
Moorside  X- 349331 Y- 435746	FC first exceeded in FY32 1.19MVA exceedance of FC by FY35	Carry out HV load transfer to Garstang which has 3.9MVA spare FC in FY35. Start date: FY32 Completion Date: FY32	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	7.7
			Holistic Transition	6.4
			Falling Behind	7.1
Lower Darwen BSP  X- 369695 Y- 424981	FC first exceeded in FY33 5.5MVA exceedance of FC by FY35	Scheme identified as part of RIIO ED2 program. Exact solution to be established. Possible 33kV load transfer of Griffin primary onto Blackburn BSP. Alternatively install line circuit breakers on the incoming 132kV circuits and restring 132kV interconnection between Penwortham East and Rochdale GSPs. Start date: FY32 Completion Date: FY33	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	78.2
			Holistic Transition	86.1
			Falling Behind	31.6

13. Penwortham West GSP – Stanah GSP Group



GSP summary **7 BSPs** **36 primaries**





Penwortham West GSP is a 400/275/132kV substation comprising three 240MVA transformers located near Preston. Stanah GSP is a 400/132kV substation comprising 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. Peak demand is currently 432MVA, supplied via seven BSPs and 36 primary substations.




Intervention overview




	Demand Driven	Generation Driven
0-2 years	Moss Side (Leyland) & Seven Stars Wrightington BSP	Bispham BSP
3-5 years		N/A
6-10 years	Bow Lane Blackpool BSP Cecil St Chorley South Hall Cross Hanging Bridge Peel BSP Thornton BSP Woodfield Rd	N/A

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution				
Bispham BSP  X- 332328 Y- 439711	Make fault level exceedance in FY27.	Either manage operationally or replace the 33kV switchboard with new 25/62.5kA switchgear. Start date: FY27 Completion Date: FY27	Not suitable solution for fault level exceedances.				
Bow Lane  X- 354895 Y- 422392	0.1MVA FC exceedance in FY35.	Carry out HV load transfer to Tardy Gate which has 7.4 MVA spare FC in FY35. Start date: FY35 Completion Date: FY35	<table border="1"> <tr> <td>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</td> <td>MVA</td> </tr> <tr> <td>Best View</td> <td>19.4</td> </tr> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	19.4
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA						
Best View	19.4						

Site Name	Need	Asset Solution	Flexibility Service Solution	
			Holistic Transition	18.3
			Falling Behind	12.1
Blackpool BSP  X - 330835 Y - 435308	FC first exceeded in FY31. 241MVA exceedance of FC by FY35.	Connect 475MW Strategic Energy Need (SEN) project at 132kV from the Penwortham West – Stannah GSP group. Also, carry out 33kV load transfer of Cecil St primary onto Bispham BSP, which has 34MVA spare firm capacity in FY35. Start date: FY31 Completion Date: FY31	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	144.3
			Holistic Transition	144.6
			Falling Behind	85.8
Cecil St  X - 331301 Y - 437023	FC first exceeded in FY34. 1.8MVA exceedance of FC by FY35.	Carry out HV load transfer to Warbreck which has 5.8MVA spare FC in FY35. Start date: FY34 Completion Date: FY34	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	12.7
			Holistic Transition	12.4
			Falling Behind	2.7
Chorley South  X- 358658 Y- 417041	FC first exceeded in FY31 3MVA exceedance of FC by FY35	Existing RIIO-ED2 reinforcement scheme to replace T12 with an 11.5/23MVA to increase FC. Revised FC sufficient for FY35 requirements. Start date: FY28 Completion Date: FY30	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	18.6
			Holistic Transition	17.8
			Falling Behind	11.3
Hall Cross  X- 342288 Y- 430650	FC first exceeded in FY34. 0.8MVA exceedance of FC by FY35.	Carry out HV load transfer to Warton which has 10.7MVA spare FC in FY35. Start date: FY34 Completion Date: FY34	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	13.9

Site Name	Need	Asset Solution	Flexibility Service Solution	
			Holistic Transition	12.1
			Falling Behind	8.9
Hanging Bridge  X- 346186 Y- 417486	0.4MVA FC exceedance in FY35.	Carry out HV load transfer to Tarleton which has 1.8MVA spare FC in FY35. Start date: FY35 Completion Date: FY35	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	6.7
			Holistic Transition	6.97
			Falling Behind	4.8
Moss Side (Leyland) & Seven Stars  Moss Side (Leyland) X- 352170 Y- 422970 Seven Stars X- 352653 Y- 421636	FC first exceeded in FY26. 4.6MVA exceedance of FC by FY35.	Ongoing reinforcement scheme in construction to install a second transformer at Moss Side expected to complete in FY28. Revised FC is sufficient for FY35. FC exceedance between FY26 and FY28 (0.6MVA) to be managed by HV load transfer to Wrightington, which has 8.3MVA spare FC in FY28. Start date: FY23 Completion Date: FY28	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	18.3
			Holistic Transition	16.2
			Falling Behind	12.1
Peel BSP  X - 335644 Y - 432080	Non-FC first exceeded in FY31. 9.7MVA exceedance of Non-FC in FY35. FC first exceeded in FY32. 6.2MVA exceedance of FC by FY35.	Reinforcement scheme planned in ED3 to replace both existing 45MVA GTs with 90MVA units. Start date: FY29 Completion Date: FY31	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	32.5
			Holistic Transition	36.6
			Falling Behind	12.2

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Thornton BSP</p>  <p>X – 334559 Y - 443368</p>	<p>FC first exceeded in FY32. 32MVA exceedance of FC by FY35.</p>	<p>Connect 100MW Strategic Energy Need (SEN) project at 132kV from Stannah GSP. Start date: FY32 Completion Date: FY32</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	20.7
			Holistic Transition	41.8
			Falling Behind	-
<p>Woodfield Rd</p>  <p>X – 358258 Y - 418014</p>	<p>0.1MVA FC exceedance in FY35.</p>	<p>Carry out HV load transfer to Whittle – Le - Woods which has 3.6MVA spare FC in FY35. Start date: FY35 Completion Date: FY35</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	17.3
			Holistic Transition	17.3
			Falling Behind	10.7
<p>Wrightington BSP</p>  <p>X- 354460 Y- 413610</p>	<p>Non-FC first exceeded in FY26. 36.9MVA exceedance of Non-FC in FY35. FC first exceeded in FY32 13MVA exceedance of FC by FY35</p>	<p>Carry out 33kV load transfer of Standish primary onto Wigan BSP by via existing 33kV network in ED3. Wigan BSP is currently being reinforced under a RIIO-ED2 scheme and will have sufficient capacity in FY35. Install a third 90MVA GT and 33kV bus section at Wrightington BSP in ED4. Third GT supplied by a 17km 132kV circuit from Penwortham West GSP. Start date: FY32 Completion Date: FY35</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	105.2
			Holistic Transition	123.9
			Falling Behind	63.1

14. Rochdale SGTs 2 3 4




GSP summary **4 BSPs** **17 primaries**

Rochdale GSP is a 275/132kV substation comprising four SGTs. The GSP operates split with SGTs 2, 3 and 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 north Peak region and comprises three 240MVA SGTs supplied from National Grid's 275kV network. Peak demand is currently 190MVA, 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	Heywood Castleton BSP	Burnley BSP

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
Burnley BSP  X- 385569 Y- 434469	Make fault level exceedance in FY32	Manage operationally or replace the 33kV switchboard with new 25/62.5kA switchgear Start date: FY32 Completion date: FY32	Not suitable solution for fault level exceedances	
Castleton BSP  X- 388461 Y- 411290	Non-FC first exceeded in FY33 13MVA exceedance of non-FC by FY35	Transfer Woodbine St primary onto Rochdale Central BSP by moving open point	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	18.9
			Holistic Transition	23.0
			Falling Behind	-
Heywood  X- 385429 Y- 410369	FC first exceeded in FY31 8.7MVA exceedance of FC by FY35	Strategic solution developed in RIIO-ED2 to install new 32MVA South Heywood primary. Demand to be supported from	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	8.0

Site Name	Need	Asset Solution	Flexibility Service Solution	
		South Heywood primary Start date: FY24 Completion: FY27	Holistic Transition	7.7
			Falling Behind	3.1

15. South Manchester GSP

GSP summary **5 BSPs** **26 primaries**

South Manchester GSP is a 400/132kV substation which supplies approximately 156,000 customers across south Manchester. The substation comprises four 240MVA transformers supplied from National Grid's 275kV network. Peak demand on the GSP is currently 386MVA, supplied via five BSPs and 26 primary substations.



The existing 132kV switchgear is an outdoor double busbar arrangement with main and reserve bars and nine feeder bays. There is an ongoing reinforcement scheme to replace the 132kV switchgear at South Manchester GSP expected to complete is FY33. Although the number of circuit breakers is not expected to change, the revised arrangement includes an additional bus section circuit breaker, made available by the banking of outgoing 132kV circuits.





Intervention overview

	Demand Driven	Generation Driven
0-2 years		Moss Nook BSP West Didsbury BSP Whalley Range
3-5 years	Withington	
6-10 years	Fallowfield Moss Nook BSP Trafford Whalley Range West Didsbury BSP	Woodhouse Park

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
Fallowfield  X - 385608 Y - 393881	FC first exceeded in FY31. 4.7MVA exceedance of FC by FY35.	HV load transfer to Withington and Victoria Park via existing network. Victoria Park has 1.1MVA spare firm capacity in FY35 and additional	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	13.3

Site Name	Need	Asset Solution	Flexibility Service Solution								
		capacity being provided at Withington by replacing 2 x 10/14MVA transformer with 16/32MVA units. Alternative is to install a third 11.5/23MVA transformer and 6.6kV bus section, from West Didsbury BSP (3.5km). Start date: FY30 End date: FY31	<table border="1"> <tr> <td>Holistic Transition</td> <td>13.1</td> </tr> <tr> <td>Falling Behind</td> <td>7.1</td> </tr> </table>	Holistic Transition	13.1	Falling Behind	7.1				
Holistic Transition	13.1										
Falling Behind	7.1										
<p>Moss Nook BSP</p>  <p>X – 384073 Y – 385068</p>	<p>FC first exceeded in FY34. 5.3MVA exceedance of FC in FY35. Existing make fault level exceedance.</p>	<p>Reinforcement scheme in ED3 to replace the existing 3 x 60MVA GTs with 90MVA units. Start date: FY29 Completion date: FY33 Manage operationally until reinforcement scheme in ED3 to replace the 33kV switchboard with new 25/62.5kA switchgear. Start date: FY32 Completion date: FY33</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>94.0</td> </tr> <tr> <td>Holistic Transition</td> <td>135.0</td> </tr> <tr> <td>Falling Behind</td> <td>10.7</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	94.0	Holistic Transition	135.0	Falling Behind	10.7
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	94.0										
Holistic Transition	135.0										
Falling Behind	10.7										
<p>West Didsbury BSP</p>  <p>X – 382900 Y - 393269</p>	<p>FC first exceeded in FY32. 12.7MVA exceedance of FC in FY35. Existing make fault level exceedance.</p>	<p>Existing ED2 scheme in construction to replace the 33kV switchboard at West Didsbury BSP. New 25/62.5kA switchgear resolves the peak make exceedance and will also increase the firm capacity of the site. Start date: Ongoing End date: FY27</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>94.3</td> </tr> <tr> <td>Holistic Transition</td> <td>91.3</td> </tr> <tr> <td>Falling Behind</td> <td>35.5</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	94.3	Holistic Transition	91.3	Falling Behind	35.5
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	94.3										
Holistic Transition	91.3										
Falling Behind	35.5										

Site Name	Need	Asset Solution	Flexibility Service Solution								
Trafford  X – 380714 Y - 396551	FC first exceeded in FY33. 2.3MVA exceedance of FC in FY35.	HV load transfer to Mosley Rd via existing network. Mosley Rd has 8.6MVA spare firm capacity in FY35. Start date: FY33 End date: FY33	<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>6.8</td> </tr> <tr> <td>Holistic Transition</td> <td>8.8</td> </tr> <tr> <td>Falling Behind</td> <td>5.0</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	6.8	Holistic Transition	8.8	Falling Behind	5.0
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	6.8										
Holistic Transition	8.8										
Falling Behind	5.0										
Whalley Range  X – 382923 Y - 394645	0.1MVA FC exceedance in FY35. Make fault level exceedance in FY26.	HV load transfer to Chorlton via existing network. Chorlton has 1.5MVA spare firm capacity in FY35. Either manage operationally or replace the 33kV switchboard with new 25/62.5kA switchgear. Start date: FY35 End date: FY35	<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> <tr> <td>Holistic Transition</td> <td>9.7</td> </tr> <tr> <td>Falling Behind</td> <td>3.2</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	9.9	Holistic Transition	9.7	Falling Behind	3.2
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	9.9										
Holistic Transition	9.7										
Falling Behind	3.2										
Withington  X – 384841 Y - 392774	FC first exceeded in FY29. 2.9MVA exceedance of FC in FY35.	Reinforcement scheme in ED3 to replacing the existing 10/14MVA transformers with 16/32MVA units. Marginal overloads prior to completion in FY31 can be managed by HV load transfers to West Didsbury, which has 3.7MVA spare in FY31. Start date: FY30 End date: FY31	<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>10.1</td> </tr> <tr> <td>Holistic Transition</td> <td>9.8</td> </tr> <tr> <td>Falling Behind</td> <td>4.5</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	10.1	Holistic Transition	9.8	Falling Behind	4.5
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	10.1										
Holistic Transition	9.8										
Falling Behind	4.5										
Woodhouse Park  X – 382132 Y - 386340	Make fault level exceedance in FY32.	Either manage operationally or replace the 33kV switchboard with new 25/62.5kA switchgear. Start date: FY32 End date: FY32	Not suitable solution for fault level exceedances								

16. Stalybridge GSP


GSP summary **6 BSPs** **31 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. Peak demand on the GSP is currently 397MVA, supplied via six BSPs and 31 primary substations.



Intervention overview

	Demand Driven	Generation Driven
0-2 years	Ardwick	
3-5 years		Hadfield
6-10 years	Buxton BSP Hattersley Openshaw Queens Park	Droylsden BSP Hartshead - Heyrod

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution									
<p>Ardwick</p>  <p>X- 384753 Y- 397415</p>	<p>FC first exceeded in FY26. 6.7MVA exceedance of FC in FY35.</p>	<p>Proposed reinforcement to replace both existing transformers (10/14MVA) with higher rated (11.5/23MVA) units. Revised FC is sufficient for FY35. Start date: FY30 Completion: FY31</p> <p>There is also an ongoing strategic development to establish a new 32MVA primary in the region in ED2. Start date: FY25 Completion: FY29</p> <p>To mitigate any FC exceedances prior to FY29 load can be transferred by the existing HV network to Central Manchester, which has 10MVA spare FC in FY29.</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>Holistic Transition</td> <td>14.7</td> </tr> <tr> <td>Falling Behind</td> <td>7.2</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	12.1	Holistic Transition	14.7	Falling Behind	7.2	
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA											
Best View	12.1											
Holistic Transition	14.7											
Falling Behind	7.2											

Site Name	Need	Asset Solution	Flexibility Service Solution								
<p>Buxton BSP</p>  <p>X – 407769 Y – 375476</p>	<p>Non FC first exceeded in FY31. 8.3MVA exceedance of non FC in FY35.</p>	<p>Proposed reinforcement to transfer a large industrial customer off Buxton BSP onto a new BSP. The headroom on Buxton BSP removes the non FC exceedance. Start date: FY25 Completion: FY29</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>87.6</td> </tr> <tr> <td>Holistic Transition</td> <td>97.9</td> </tr> <tr> <td>Falling Behind</td> <td>76.5</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	87.6	Holistic Transition	97.9	Falling Behind	76.5
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	87.6										
Holistic Transition	97.9										
Falling Behind	76.5										
<p>Droylsden BSP</p>  <p>X – 390140 Y - 398146</p>	<p>Make fault level exceedance in FY32.</p>	<p>Either manage operationally or replace the 33kV switchboard with new 25/62.5kA switchgear. Start date: FY32 End date: FY32</p>	<p>Not suitable solution for fault level exceedances</p>								
<p>Hadfield</p>  <p>X – 401790 Y - 395876</p>	<p>Make fault level exceedance in FY29.</p>	<p>Either manage operationally or replace the HV switchboard with new 25/62.5kA switchgear. Start date: FY29 End date: FY29</p>	<p>Not suitable solution for fault level exceedances</p>								
<p>Hattersley</p>  <p>X- 398419 Y- 395120</p>	<p>FC first exceeded in FY33. 2.1MVA exceedance of FC in FY35.</p>	<p>Proposed reinforcement scheme to uprate the existing transformers to 11.5/23MVA units to increase FC. Revised FC is sufficient for FY35. Start date: FY30 End date: FY31</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>21.6</td> </tr> <tr> <td>Holistic Transition</td> <td>20.6</td> </tr> <tr> <td>Falling Behind</td> <td>16.97</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	21.6	Holistic Transition	20.6	Falling Behind	16.97
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	21.6										
Holistic Transition	20.6										
Falling Behind	16.97										
<p>Hartshead – Heyrod</p>  <p>X – 397322 Y - 399942</p>	<p>Make fault level exceedance in FY31.</p>	<p>Either manage operationally or replace the HV switchboard with new 25/62.5kA switchgear. Start date: FY31 End date: FY31</p>	<p>Not suitable solution for fault level exceedances</p>								

Site Name	Need	Asset Solution	Flexibility Service Solution	
 Openshaw X- 388606 Y- 397346	FC first exceeded in FY31. 3.8MVA exceedance of FC by FY35.	Proposed reinforcement scheme to uprate the existing transformers to 11.5/23MVA units to increase FC. Revised FC is sufficient for FY35. Start date: FY29 End date: FY31	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK Best View Holistic Transition Falling Behind	MVA 13.6 13.6 7.7
 Queens Park X- 385893 Y- 400645	FC first exceeded in FY33. 4.9MVA exceedance of FC by FY35.	Reinforcement scheme in construction to install a third transformer at Queens Park. Revised FC is sufficient for FY35. Start date: FY25 Completion: FY27	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK Best View Holistic Transition Falling Behind	MVA 3.0 3.0 -

17. Washway Farm / Kirkby GSP





GSP summary **3 BSPs** **13 primaries**

Washway Farm GSP / Kirkby GSP group supplies approximately 74,000 customers across south Lancashire. Washway Farm GSP takes its supply from National Grid's 275kV network via 2x180MVA SGTs. Kirkby GSP which is an SP Manweb site supplies SP ENW via 1x240MVA SGT. The GSP group feeds into three BSPs and 13 primary substations. Peak demand is currently 181MVA.

Intervention overview

	Demand Driven	Generation Driven
0-2 years		Skelmersdale BSP
3-5 years		
6-10 years	Ashton (Golborne) Green St T11 & T13 Wigan BSP	

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Ashton (Golborne)</p>  <p>X – 357056 Y - 400663</p>	<p>FC first exceeded in FY33. 1.7MVA exceedance of FC by FY35.</p>	<p>HV demand transfer available to Lamberhead via existing 6.6kV feeders. Lamberhead has 4.5MVA spare FC in FY35. Start date: FY33. Completion: FY33.</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	27.2
			Holistic Transition	25.9
			Falling Behind	19.8
<p>Green St T12 & T13</p>  <p>X- 358225 Y- 404888</p>	<p>FC first exceeded in FY34. 0.8MVA exceedance of FC by FY35.</p>	<p>HV demand transfer available to Green St T11 node via existing 6.6kV feeders. Green St T11 node has 1.5MVA spare FC in FY35. Start date: FY34. Completion: FY34.</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	19.9
			Holistic Transition	19.7
			Falling Behind	8.2
<p>Skelmersdale BSP</p>  <p>X- 347172 Y- 407455</p>	<p>Existing make fault level exceedance.</p>	<p>There is an existing ED2 scheme to replace the 33kV switchgear with new 25/62.5kA switchgear. Make fault level exceedance to be managed operationally until the asset scheme is delivered. Start date: FY29. Completion Date: FY30.</p>	<p>Not suitable solution for fault level exceedances.</p>	
<p>Wigan BSP</p>  <p>X- 358343 Y- 404626</p>	<p>FC first exceeded in FY33. 4.3MVA exceedance of FC by FY35.</p>	<p>FC limited by voltage step change. There is an existing ED2 scheme to install 132kV switchgear to increase FC and accommodate the additional demand. Start date: FY27. Completion: FY33.</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	94.4
			Holistic Transition	93.0
			Falling Behind	60.3

18. Whitegate GSP



GSP summary **4 BSPs** **22 primaries**




Whitegate GSP is a 275/132kV substation which supplies approximately 179,000 customers across the north Peak and north Manchester region. The substation comprises three 240MVA transformers supplied from National Grid's 275kV network. Peak demand on the GSP is currently 256MVA, supplied via four BSPs and 22 primary substations.




Intervention overview

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

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Ancoats North T11 & T12</p>  <p>X- 385022 Y- 398830</p>	<p>FC first exceeded in FY32 by 0.43MVA. 4.27MVA exceedance of FC by FY35.</p>	<p>Install a fourth transformer at Ancoats and split the site into two independent primaries, with two transformers at each primary (T11/T12 and T14/New transformer). Further analysis is required to firm the asset solution, transformer capacity, and timing of delivery. Start date: FY29 Completion date: FY32.</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p> <p>MVA</p>	
			Best View	14.0
			Holistic Transition	15.2
			Falling Behind	13.4
<p>Ancoats North T14</p>  <p>X- 385032</p>	<p>FC first exceeded in FY30. 0.8MVA exceedance of FC by FY33.</p>	<p>Install a fourth transformer at Ancoats and split the site into two independent primaries, with two transformers at</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p> <p>MVA</p>	
			Best View	2.5

Site Name	Need	Asset Solution	Flexibility Service Solution	
Y- 398840		each primary (T11/T12 and T14/New transformer). Further analysis is required to firm the asset solution, transformer capacity, and timing of delivery. Start date: FY29 Completion date: FY32.	Holistic Transition	1.4
			Falling Behind	2.9
Blackley  X- 383882 Y- 403258	FC first exceeded in FY32 with marginal 0.07MVA exceedance. 0.99MVA exceedance of FC by FY35.	HV demand transfers available to Harpurhey primary via existing feeders. In FY35, there is 9.2MVA spare on Harpurhey which can accommodate the load transfer. Start date: FY32 Completion date: FY32.	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	5.4
			Holistic Transition	5.1
			Falling Behind	1.7
Newton Heath  X – 388030 Y – 400511	FC first exceeded in FY30 with marginal 0.08MVA exceedance. 5.15MVA exceedance of FC by FY35.	HV demand transfers available to Stuart St and Failsworth primaries via existing feeders. In FY35, there is a total of 8.2MVA spare on Stuart St and Failsworth primaries which can accommodate the load transfer. Start date: FY30 Completion date: FY30.	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	8.9
			Holistic Transition	8.7
			Falling Behind	1.5
Willowbank  X – 391885 Y – 406064	FC first exceeded in FY33 with marginal 0.16MVA exceedance. 1.31MVA exceedance of FC by FY35.	HV demand transfers available to Royton primary via existing feeders. In FY35, there is 5.9MVA spare on Royton primary which can accommodate the load transfer. Start date: FY33	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA
			Best View	8.5
			Holistic Transition	8.0

Site Name	Need	Asset Solution	Flexibility Service Solution								
		Completion date: FY33.	Falling Behind 3.8								
Chadderton BSP  X- 389137 Y- 403821	FC first exceeded in FY33 with marginal 0.12MVA exceedance. 8.05MVA exceedance of FC by FY35.	Lay ~0.2km of 132kV cable and install third 90MVA GT supplied from Whitegate GSP. Further analysis is required to firm the asset solution and timing of delivery.	<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>93.1</td> </tr> <tr> <td>Holistic Transition</td> <td>100.5</td> </tr> <tr> <td>Falling Behind</td> <td>50.4</td> </tr> </tbody> </table>	MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA	Best View	93.1	Holistic Transition	100.5	Falling Behind	50.4
MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK	MVA										
Best View	93.1										
Holistic Transition	100.5										
Falling Behind	50.4										
Royton BSP  X- 392426 Y- 407533	Make fault level exceedance in FY25 currently managed operationally. Existing 11-panel switchboard is rated 13.1kA.	Site identified for intervention in RIIO - ED2. Replace existing switchboard with higher rated switchgear. Start date: FY26 Completion Date: FY28	Not suitable solution for fault level exceedances.								
Cannon St  X- 384064 Y- 398635	Make fault level exceedance in FY28. Existing 32-panel 6.6kV switchboard is rated 21.9kA.	Site identified for intervention in RIIO - ED2. Possible substation operational arrangement change could be implemented to resolve Make FL issue. Start date: FY26 Completion: FY28	Not suitable solution for fault level exceedances.								

19. Bold


BSP Summary **4 primaries**

Bold is a 132kV switching station that takes its supply from Rainhill GSP on the SP Manweb network. There is an agreement in place between SP ENW and SP Manweb to share the 4 x 240MVA SGTs at Rainhill. This gives SP ENW 114MVA of capacity supplied from Bold to feed Golborne BSP and British Rail Parkside. The supply to Golborne BSP feeds approximately 34,000 customers across south Lancashire. Peak demand is currently 72MVA supplied via four primaries.

Intervention overview

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

Intervention detail

Site Name	Need	Asset Solution	Flexibility Service Solution	
<p>Culcheth</p>  <p>X- 365430 Y- 395366</p>	<p>FC first exceeded in FY33 1MVA exceedance of FC by FY35</p>	<p>Marginal overload to be managed by transfers on the 11kV network onto Risley and Bedford primaries</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	3.0
			Holistic Transition	3.9
			Falling Behind	1.1

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 5,000 customers across south Lancashire. 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	Flexibility Service Solution	
<p>Risley</p>  <p>X- 365181 Y- 392989</p>	<p>FC first exceeded in FY27 7MVA exceedance of FC by FY35</p>	<p>Replace ~1km of 33kV cable between Golborne BSP and Risley to increase FC to 23MVA. Start date: FY28 Completion: FY28</p>	<p>MAX FLEX REQUIRED AT 2050 (FY51) - WINTER PEAK</p>	<p>MVA</p>
			Best View	20.7
			Holistic Transition	29.8
			Falling Behind	10.3
<p>Risley</p>  <p>X- 365181 Y- 392989</p>	<p>Make fault level exceedance in FY32</p>	<p>Site identified for intervention in RIIO - ED2. Replace section A and B. Start date: FY29 Completion Date: FY31</p>	<p>Not suitable solution for fault level exceedances.</p>	

21. Conclusions

Our Network Development Plan has defined the proposed asset solution interventions up to 2035 and the corresponding long-term flexibility service requirements. Using our latest DFES including NESO's tRESP information the modelled electricity demand growth is driving the need for intervention across 24 BSPs and 72 primary substations in our region. The corresponding intervention requirements for distributed generation growth considering the latest Connections Reform information (which is yet to conclude) is for 16 BSPs and ten primary substations. Major projects that are unique to Great Britain, such as the Cumbria ring reinforcement driven by both demand and generation connections have been also described.