# West London Electricity Capacity Constraints Update

## February 2025 – GLA Update Document

This document provides the latest update on the West London electricity capacity constraints. This includes an outline of the status of the capacity constraints, as well as progress made by Scottish and Southern Electricity Networks (SSEN), the National Energy System Operator (NESO) and National Grid Electricity Transmission (NGET) in addressing the constraints.

Also included in this update is an overview of the work the Greater London Authority (GLA) continues to undertake in collaboration with the affected boroughs, developers, Government and Ofgem. This is to ensure both coordinated action and that the solutions deployed are in the best interest of Londoners.

The GLA welcomes the significant progress since our last update document. From March 2024, **3,315** permitted new homes have been unlocked through SSEN's electricity capacity allocation study. To date, stalled development sites with permissions for at least **11,690** new homes have now been unlocked with GLA support. This represents **close to the full pipeline of stalled permitted housing** in the affected area that the GLA is currently aware of. The solutions deployed continue to address capacity issues for residential and mixed-use schemes in the short term.

The timelines for upgrades to the electricity transmission network serving West London remain unchanged, and these upgrades do remain necessary to resolve the long-term issue in the area. The need for distribution-level upgrades is regularly reviewed by SSEN, considering new connection requests and additional capacity released using flexibility and capacity allocation solutions (see page 6). See page 12 for an update on the timelines for the distribution upgrades currently needed in the medium term.

SSEN's ability to release capacity in the interim, before physical upgrades to the network, means that many developments should continue to be able to connect using ramping solutions even before these upgrades are complete.

Connection reform led by Government, Ofgem and NESO, continues at pace and the GLA welcomes the on-going initiatives to accelerate connections. The GLA remans engaged with all parties involved in the implementation of these proposed reforms, expected later this year, and their potential to help alleviate the capacity constraints faced in West London.

The GLA continues to convene partners to progress medium- and long-term solutions that would resolve the existing capacity constraints, including for major energy users.

Our previous update documents, including background information on the capacity constraints, remains available on our website here.

The GLA has also produced a separate note specifically for developers looking to pursue development proposals within the affected areas of West London. This provides useful suggestions and best practice to help mitigate project risks associated with electricity. This note can be found on our website here.

# West London Electricity Capacity Constraints Update

**Summary of current progress:**

- Since summer 2022, stalled development sites comprising **11,690** permitted new homes have now been unlocked with GLA's support. This includes stalled sites comprising **3,315** permitted new homes unlocked since March 2024 through SSEN's deployment of flexibility solutions and the electricity capacity allocation study.
- Overall, **16,944** permitted new homes in the affected West London boroughs that the GLA are aware of have been unlocked since summer 2022.
- The GLA's work has also supported the unlocking of an expansion to an existing hospital, a leisure centre regeneration project, and three TfL EV charging sites.

**Key updates in this document include:**

- Latest GLA figures on the number of stalled developments and new homes that have an electricity connection secured, and those the GLA is aware of that are still waiting to connect.
- Summary of GLA's on-going work with developers to support the delivery of affordable homes in West London at pace.
- Updates on the >1MVA ramping solution to allow developments that require greater than 1MVA of ramped electricity capacity per year to proceed.
- Results of SSEN's review of affected schemes and deployment of flexibility solutions to deliver additional capacity and unlock schemes awaiting distribution upgrades.
- Updates from NGET and SSEN on transmission and distribution network upgrades.
- Further updates from NESO and Ofgem on connection reforms where these have relevance to resolving the West London capacity constraints.

## GLA Update

The GLA continues to monitor and engage with affected developments in West London. We are working with all developers in West London who have raised power connection issues with us. This includes developers who raised concerns via our October 2023 Developer Survey, as well as further developments identified through on-going engagement with West London boroughs. We have prioritised support to stalled residential developments in receipt of affordable housing grant. However, our involvement has extended to consider TfL EV charging hubs, social infrastructure, and specialist housing where this supports the mayor's objectives for good growth.

Since 2022, the GLA have engaged with **74** development schemes, **56** of which now have their point of connection confirmed. Of the **18** schemes without a point of connection, **10** schemes do not yet have planning permission and **7** schemes are permitted but are not yet ready to move forward with their point of connection applications. We are aware of **1** scheme with planning permission ready to move forward and the GLA are currently supporting this scheme to find a solution for their full power requirements.

In addition to the homes unlocked, the GLA has also supported other strategic developments that are key to delivering good growth. This includes an expansion to an existing hospital, the regeneration of a leisure centre, and the delivery of three EV charging sites supplying infrastructure to power London buses, taxis, and private vehicles. The GLA continues to regularly convene sessions between SSEN and West London development teams on a scheme-by-scheme basis to address specific concerns and seek solutions specific to their sites.

The GLA also continues to undertake subregional Local Area Energy Planning (LAEPs) in partnership with energy networks, London Councils and London boroughs. This process allows energy networks to better prepare for upcoming electricity capacity requirements in the medium and long term. You can learn more about LAEPs here.

The GLA holds regular engagement with the energy regulator Ofgem, the Department for Energy Security and Net Zero (DESNZ), and the Ministry of Housing, Communities & Local Government (MHCLG). This is to support on-going regulatory improvements to ensure that utility networks are appropriately planning, managing, and investing in the future of London's energy networks.

### Mitigating impacts on local air quality

Through our engagement with developers in West London affected by capacity constraints, we have become aware of instances where schemes have considered increasing the use of temporary generators to cover delays to their long-term electricity connections. This had the potential to cause unnecessary and negative impacts to local air quality given the emissions associated with temporary generators. The GLA has been able to help unlock 2 developments that had intended to rely on an increased use of temporary generation to cover their connection delay.

By helping eliminate this increased reliance on temporary generators, the GLA has avoided the emission of at least[1]:

- **1.62 tonnes** of particulate matter
- **22.63 tonnes** of nitrogen oxide
- **7,070.94 tonnes** of carbon dioxide

**Support for Developers**

The GLA is providing a new avenue via our website for affected developers to raise concerns and share information. This will allow the GLA to continue to identify developments in the affected areas facing issues securing power, so that the GLA can support work towards resolution. The GLA will continue to prioritise support to those schemes in receipt of affordable housing grant or that are strategic in nature and deliver on the mayor's objectives for good growth. Any developers facing issues in the affected areas due to the capacity constraints should use this avenue to get in contact with the GLA Infrastructure team, available on our website here.

Additionally, the GLA in partnership with SSEN, has prepared a short note for those considering development projects in the affected areas of West London. This provides useful suggestions and resources for development partners to consider when applying for an electricity connection from SSEN in the West London affected boroughs. This note can be found on our website here.

[1] Based on research by Imperial College ERG, averages across all available data from both TNO and Imperial research and on experience & supplier engagement.

## Update on Solutions

### >1MVA Ramping Solution

SSEN continues to provide a ramped capacity solution to support distribution-level demand connections in the affected area. This allows eligible developments to come forward more quickly, by allowing for a phased approach which delivers increasing electricity supply over time.

As noted in our last update document, SSEN through collaboration with NGET and NESO have been able to introduce an increase to the ramping allowance per year. The >1MVA ramping solution is available from all 5 affected Grid Supply Points in West London.

For schemes to be eligible for the >1MVA ramping solution, the project and its associated electricity demand needs must have been included in SSEN's latest published long term planning document – the Distribution Future Energy Scenarios (DFES). For a project to be included, the relevant Local Planning Authority (Ealing, Hillingdon, Hounslow, or OPDC) must have included the scheme within their annual DFES data submission to SSEN for the latest DFES. This can include inclusion through their receipt of a validated planning application, or if the scheme appears within the Local Plan, or as part of a Local Area Energy Plan (LAEP). For schemes to be considered by SSEN for the >1MVA ramping solution, the request must remain unaltered in terms of location, delivery timescale, technology type, and requested capacity. All connections offers, including those with the ramping solutions, over 500kVA remain subject on final System Planning Assessment. If a developer is unsure whether their project was included in the DFES, they should contact SSEN for a discussion.

The GLA is aware that a caveat within the ramped connection agreements has previously created concerns from some development partners. This caveat relates to NGET indicating they may withdraw approval of the Ramped Capacity Scheme at any time and at short notice. Following consultation with NGET and SSEN, we can now confirm that this caveat has been removed and should not feature in ramped connection agreements moving forward. Those developments with connections agreements that still contain this caveat should feel free to raise this with SSEN if they would like it removed.

The >1MVA solution only applies where there is sufficient distribution network capacity in place. Some projects may be unable to immediately connect to the network or take advantage of ramping solutions because they are awaiting necessary distribution network upgrades. Where significant distribution level constraints exist, the threshold for projects that can connect before network reinforcement remains 500kVA for Extra High Voltage (EHV) network reinforcement works, and 278kVA for High Voltage (HV) network reinforcement works. However, in these instances, SSEN continues to use flexibility and capacity allocation solutions to help those currently awaiting distribution upgrades to connect sooner and before the physical upgrades occur. These solutions are described in further detail in the following sections. SSEN are continuing to move forward with the development of a distribution-level ramping solution, as well. Any projects requiring over 10MVA in total would still require further analysis and special consideration by SSEN.

### Use of Flexibility by SSEN

Network flexibility involves balancing the local grid to meet demand, using assets and resources connected to the grid such as generators, batteries and consumers. SSEN buys 'Flexibility Services' from their generation and demand customers currently connected to their network. Flexibility services have the potential to make available additional capacity for connections in the constrained areas of West London in the short-term.

Since May 2024, SSEN have undertaken two procurement exercises and have signed 19 Overarching Agreements, including with 6 new companies. SSEN now have all the major providers of flexibility services operating in the market contracted and are continuing to attract and work with more providers with their current contracting round ongoing[2]. In the May 2024 bidding round, SSEN targeted the procurement of 81 MW in the West London Area, focusing on requirements for Winter 24/25. In the August 2024 bidding round, SSEN tried to procure a further 160 MW in the West London Area. This procurement round was looking for future years beyond the 24/25 winter.

Unfortunately, the volumes achieved from the two procurement rounds did not meet the targeted volumes, and following the May bidding round SSEN approached providers to understand what was limiting participation in this region. The primary reason given for participation levels was limited assets to aggregate in the region.

SSEN are continuing to work with providers and potential providers to identify new assets to aggregate and are exploring ways to bring new flexibility assets to market to support in this region.

### SSEN's Electricity Capacity Allocation Study

As part of SSEN's considerations about how to connect new sites to the network (specifically 34 developers that had been identified by the GLA in summer 2024 wishing to connect their projects) without exceeding the actual available capacity, SSEN have undertaken an electricity capacity allocation study.

In the last 2 years, SSEN have not only accepted many new connections to their network but have also seen jobs cancelled. Some customers have capacity already secured from SSEN's networks but are not ready to utilise it, either fully or partially. This is due to some developers predicting a certain occupancy or consumption rate for their sites that has not materialised, or for investments that have not been delivered.

Electricity capacity allocation involves the distribution of available capacity in the networks amongst different customers, ensuring that supply meets the demand, whilst maintaining the stability of the networks and managing capacity constraints. Given that electricity networks are dynamic by nature, SSEN monitor network capacity regularly to ascertain if

[2] All contracts awarded are subject to procurement rules and processes in line with the Utilities Contracts Regulation Act 2016 or 2024.

capacity can be allocated to customers ready to connect.

SSEN conducted this study for three Grid Supply Points in West London and their associated primary substations. The study helped SSEN identify capacity available across the GSPs, to help them reconsider whether additional developer projects wishing to connect could be accommodated before any further physical upgrades had taken place.

The capacity released through this process was allocated to customers according to their position in the connection queue, their timescales, and the capacity they required, either in full or partly. As a result of this study, SSEN were able to offer capacity or accelerated connection dates across their customer queues. This includes all the 34 developers' connections requests that were identified by the GLA.

**Update on Distribution Network Upgrades**

The timelines for distribution-level upgrades are regularly reviewed by SSEN, considering new connection requests and additional capacity released using flexibility and capacity allocation solutions. Further details on current proposed timelines for reinforcements are given in the appendix.

SSEN are in the process of developing a series of Strategic Development Plans (SDPs) for each of the Grid Supply Point areas within their network. These SDPs detail the future system needs to 2050 across both the higher voltage networks and lower voltage systems. The SDPs make recommendations for works that need to be delivered and when they are likely to be needed. In the context of West London, the SDPs are a new approach by SSEN to work with local stakeholders to better design and build the local markets and networks needed to support capacity planning.

SSEN have recently published their Ealing Grid Supply Point SDP. The draft SDP for the North Hyde Grid Supply Point has also recently been published for consultation. SDPs for the remaining affected Grid Supply Points in West London are expected to be published for consultation by SSEN throughout 2025. Draft SDPs for consultation will be made available on SSEN's DSO consultation library, which can be accessed here. The SDPs represents a longer-term plan for network reinforcement within the West London affected area. The SDPs are therefore not a mechanism for delivering short-term solutions to the current capacity constraints.

**Update on Transmission Network Upgrades**

Reinforcement works in the region, including the potential provision of new transmission circuits and upgrades to existing circuits, are expected to conclude in 2037.

At present, there are no updates to these existing timelines for upgrades on the transmission network serving West London. NGET do not expect any further updates to reinforcement works and completion dates until the implementation of the

proposed connections reforms currently being progressed by NESO, which is expected later in 2025.

Further details on how connections reform could help address the capacity constraints in West London are given in the next section of this document.

## Update on Connection Reforms

We welcome the continued progress on the implementation of Government and Ofgem's joint Connections Action Plan. Since our last update document, several initiatives have been further developed by both Ofgem, Government and the NESO that have the potential to help address the capacity issues faced in West London.

### NESO TMO4+ Connection Reforms

The NESO have continued to develop a suite of proposed code modifications (TMO4+) for connections reform. This would see a move away from the 'first come first served' approach for connections. Under the proposed reformed process, customers who are ready to connect and meet certain 'strategic alignment' criteria should be able to connect to the electricity network quicker. These reforms would apply to all existing and new generation connections across transmission and distribution, as well as demand connections at the transmission level only.

Under the proposals, when requesting a connection, the customer would need to demonstrate they had appropriate land rights and were aligned to Government's Clean Power 2030 Plan in order to be successful.

The proposed implementation date for TMO4+, assuming Ofgem formally approve the reforms, is now Q2 2025 (with an exact date still pending). Following this, NESO would undertake an assessment to prioritise projects in the existing connections queue based on their 'readiness' to connect. This has the potential to release further capacity on the transmission network by removing more speculative schemes and others that are not suitably progressed or ready, or are not needed for Clean Power 2030, from the connections queue.

The reforms would also allow both NESO and NGET the opportunity to further assess the portfolio reinforcements across their network using a more co-ordinated approach across industry processes. The outcomes of this engineering assessment are expected to conclude in September 2025 and may have the potential to further accelerate reinforcement timeframes within West London.

### Ofgem Connections End-to-End Review

DESNZ and Ofgem have continued to progress the implementation of the Connections Action Plan, and have recently wrapped up the consultation on proposed changes to the regulatory framework around electricity connections as part of the connections end-to-end review. The GLA is largely supportive of the various proposals and believe that the changes can improve quality of service and timely connection requests for distribution demand customers, such as those in West London. Ofgem expect to respond to the consultation on the end-to-end review later in 2025.

### Ofgem ED3 Framework Consultation

Ofgem have recently completed consultation on the framework for the next electricity distribution price control, starting in April 2028. This would determine how SSEN and the other DNOs are regulated during the next price control period. The GLA acknowledges and agrees with Ofgem's assessment that the

balance of risks associated with network investment is changing; that the risks of overinvestment are less pronounced compared to the need for more proactive investment ahead of demand to ensure the network can meet the needs for growth and for a net zero future. The GLA therefore supports the ED3 framework in proposing a more proactive stance to delivering network capacity. We believe this would bring benefits to the West London capacity constraints in the longer-term, as well as set the foundation for a regulatory environment that helps minimise future risk of capacity constraints emerging. It also supports the delivery of the Mayor's Net Zero and affordable housing targets for London.

**ENA Accelerated Demand Solution**

In 2025, the Energy Networks Association (the industry body representing network operators) will be leading on a reform initiative to look at an Accelerated Demand Solution to provide connection ahead of required reinforcements for both transmission and distribution connected demand projects. This initiative is currently in the design phase and further updates will be available in due course. NESO, NGET and the DNOs (including SSEN) via the ENA are committed to exploring initiatives at the interface between Transmission and Distribution that can enable further capacity to be unlocked for customers in West London.

## Update from Government (DESNZ)

Reducing electricity network connection timescales is a top priority for the Government. The Department for Energy Security and Net Zero is working at pace with Ofgem and the National Energy System Operator (NESO) to achieve fundamental reforms of the connection process. Stalled projects must be removed from the connection queue and requirements raised for obtaining and retaining a connection agreement. The released network capacity will then be reallocated to accelerate the connection of viable projects that align with the Government's strategic needs.

NESO submitted proposals for connections reform in December 2024, with an Ofgem decision expected in March 2025. If approved, these reforms will reduce the time it takes for viable projects to connect to the grid, accelerating connection timescales for projects across GB.

We are also committed to working with Ofgem and NESO to accelerate grid investment. Alongside this, planning reforms to speed up infrastructure development will play a vital role in unblocking housing developments and driving growth across GB.

## Next Steps

The GLA continues to work with SSEN, NGET, NESO, Ofgem, DESNZ, MHCLG, London Boroughs and development partners to support the improvement of connection timeframes in West London.

We expect to publish a further update document later in 2025. In the meantime, please use our web form (available on our website here.) to notify us of development schemes facing connection issues within the affected areas of West London.

If you are considering a development proposal in the affected areas of West London, we encourage you to begin conversations with SSEN as early as possible. Our note provides suggestions and resources that may be helpful to you and can be accessed here.

## Appendix

**Timeframe of Distribution and Transmission Network Upgrade Timelines**

(as of February 2025)

| GSP | Type of reinforcement required | Transmission reinforcement completion date | When are the >1MVA solutions applicable to all applicants | Distribution reinforcement completion date |
|---|---|---|---|---|
| **Iver (66kV and 132kV** | Transmission (NGET) & Distribution (SSEN) | 2037 | Ramping applications open to all – and will remain available subject to capacity sourced through flexibility and capacity reallocation. | New distribution capacity will start to become available from 2027* |
| **Laleham** | Transmission upgrade (NGET) | 2037 | Today | No reinforcement triggered to date |
| **Ealing** | Transmission (NGET) & Distribution (SSEN) | 2037 | Ramping applications open to all – and will remain available subject to capacity sourced through flexibility and capacity reallocation. | New distribution capacity will start to become available from 2026* |
| **North Hyde** | Transmission (NGET) & Distribution (SSEN) | 2037 | Ramping applications open to all – and will remain available subject to capacity sourced through flexibility and capacity reallocation. | New distribution capacity will start to become available from 2027* |
| **Willesden** | Transmission upgrade (NGET) | 2037 | Today | No reinforcement triggered to date |

* This capacity will be available under specific Primary substations at that GSP but not all, from the date stated. For further details on phasing of network build to release further capacity under each GSP, please see SSEN's Strategic Development plans which are being developed to provide this more granular visibility.