Land at Manor Farm, Poyle

Proof of Evidence of Mr Tim O'Reilly BSc FDEng MIET

Power Availability

Appeal Reference APP/J0350/W/25/3366043

Prepared for Manor Farm Propco Limited (the Appellant)

September 2025

1. Executive Summary

1.1. The Development will be connected to the transmission system from both Iver and Laleham transmission substations. This provides a supply from two separate parts of the transmission system. Connections will be made to Manor Farm by private cable and substation infrastructure owned by Juniper, a Joint Venture between Tritax Big Box REIT and EDF.

1.2. The Appeal Site will be supplied by three circuits, one from Iver and two from Laleham with a total import capacity of 107 MW with first energisation in Q4 2027. These Bilateral Connection Agreements (BCAs) defining the connections are not subject to the reinforcement works at Iver often referred to as either Iver B or Uxbridge Moor.

1.3. This network will be operated by EDF on behalf of Juniper, with the data centre connecting to the Juniper 33 kV substations on the Manor Farm site.

1.4. As Manor Farm is directly supplied by National Grid Electricity Transmission's network, it will benefit from their high levels of security of supply which NGET reported as 99.999998% for financial year 2023/24.

1.5. Due to unprecedented demand for electricity connections and capacity in the West London area, significant infrastructure upgrades are required. These reinforcement works, as summarised by the Greater London Authority on behalf of the network utilities, demonstrates that additional capacity for West London and the wider area will not be available before 2037.

1.6. Before this there will continue to be a deficiency between the network capacity available for data centres and the demand for new data centre capacity, the development would reduce this deficit through the unique utilisation of private wire capacity from a BESS system supplied from diverse sources.

2. Expertise

2.1. My name is Tim O'Reilly. I have a BSc in Physics and a FDEng in Power System Management and am a Member of the Institute of Engineering and Technology (IET). I am Director of Strategic Power at Tritax. I am responsible for power strategy across Tritax – developing and implementing a coordinated, resilient and futureproof offering.

2.2. Before joining Tritax I worked for National Grid Electricity Transmission (NGET) for 10 years. This included roles in investment delivery, and leading teams in construction, strategy and customer connection product development before becoming Head of Strategy and Innovation.

2.3. My experience at NGET spanned managing significant asset management portfolios and working on some of the UK's largest power projects. It also included leading the development of the innovative connection design that is proposed to be deployed to connect the development at Iver.

2.4. The evidence which I have prepared and provide for this appeal reference APP/J0350/W/25/3366043 (in this proof of evidence) is true and I confirm that the opinions expressed are my true and professional opinions.

3. Purpose

3.1. My Proof of Evidence has been prepared on behalf of Manor Farm Propco Limited (hereafter referred to as "the Appellant").

3.2. This planning appeal APP/J0350/W/25/3366043 is made under Section 78(2) of the Town and Country Planning Act 1990 ("Appeal") against the non-determination by Slough Borough Council ("SBC") of full planning application Ref No: P/10076/013 ("the Application") in respect of land known as Manor Farm, Poyle Road, Slough ("the Appeal Site").

3.3. The Application was submitted to SBC on 13th December 2024 seeking planning permission for:

"Demolition of existing buildings and redevelopment to comprise a Data Centre (Use Class B8) and Battery Energy Storage System with ancillary substation, offices, associated plant, emergency backup generators and associated fuel storage, landscaping, sustainable drainage systems, car and cycle parking, and new and amended vehicular and emergency access from Poyle Road and other associated works" ("the Development").

3.4. My proof of evidence concerns power availability, which is a key aspect of the deliverability of the Development. Deliverability is a main consideration for the Appeal, identified at the case management conference held on 22 July 2025. Other aspects of deliverability will be covered separately by other expert witnesses acting for the Appellant at the Appeal, in particular Mr Phil Murphy of Quod. Power availability is also relevant to alternative sites and the urgency of need, for which separate proofs of evidence have been prepared by Mr Alex Cole and Mr Mark Powney respectively.

3.5. My proof of evidence demonstrates the lack of availability of electricity connections in the West London area and consequently the ability of the Development to meaningfully contribute towards urgent data centre need in the Slough Availability Zone. I explain the process by which electricity networks companies in Great Britain connect new customers to their networks and discuss the lack of availability and delays in connecting to both the electricity distribution and transmission networks in West London specifically. I also explain why the grid connections secured by the Appellant mean that it can bypass these delays (that will impact other data centre development in the area) so that data centre capacity can be brought forwards rapidly at the Appeal Site to meet identified need.

3.6. I reserve the right to add to or amend my evidence on receipt of evidence submitted by SBC and any interested parties to the Appeal.

4. Structure

4.1. In this proof of evidence I will address four key aspects of power in relation to the Development

- How power capacity is secured
- When can it be delivered
- The complexities around provisioning
- Why timing is critical, particularly at the Appeal Site

4.2. In light of this context, I demonstrate why the grid connections secured by the Appellant provide an opportunity to deliver data centre capacity swiftly to meet urgent need. In this way the Development has the ability to make a significant contribution towards meeting need both in terms of quantum as well as speed of deployment.

4.3. I also respond to contentions made by SBC about power availability (and its implications for data centre capacity in the Slough Availability Zone) in its Statement of Case [CD ●] which are misguided.

5. Getting connected to electricity networks in Great Britain

5.1. Electricity Networks in Great Britain

5.1.1. In Great Britain the electricity network is divided into transmission and distribution systems. The National Electricity Transmission System (NETS) operates at higher voltages (400 kV to 132 kV) while the distribution systems it supplies operate at 132 kV and below. The interfaces between the transmission and distribution systems occur at Grid Supply Points (GSPs) usually at 132 kV. Because the NETS operates at higher voltages it can carry more power than distribution networks can, but it costs more to connect users to the NETS. The transmission network is therefore used to carry bulk power around the country while the distribution networks collect and distributes this power to the vast majority of users. Only very energy intense users of electricity such as steel works and Network Rail directly connect to the Transmission network although the growth in size of data centres means the largest of these are also being connected to the NETS directly.

5.1.2. Both the NETS and distribution networks have been geographically divided into license areas, with each area operated by a licensee with a monopoly in that region, regulated by Ofgem. The only part of electricity networks not developed and owned by these regulated monopolies are offshore transmission networks and connections between new customers and the existing distribution network.

5.1.3. In the British electricity industry, supply is separated from electricity networks, supply companies sell electricity to users regardless of which network they are connected to. The environmental impact of the energy use of a data centre is dependent upon how the supply company sources this electricity. Appendix 1 is a letter from EDF Energy which outlines how EDF Energy could supply electricity for the data centre within the development entirely from zero carbon sources, a combination of nuclear and renewable generation.

5.2. The Connection Process

5.2.1. When a new customer wishes to connect to either the distribution or transmission network they must apply to the relevant licensee in the area they wish to connect. For distribution networks, the connections process is governed by the National Terms of Connection and the relevant technical standards are the Distribution Code. For transmission networks the process is governed by the Connection and Use of System Code (CUSC) and the technical standards are the Grid Code.

5.2.2. While the processes for connection are separate, they share common features. When someone applies to connect, the network licensee must present the applicant with an offer for connection within a defined timescale. This connection offer includes the site-specific terms and conditions for the connection including the connection location, the works that the network company needs to complete to connect the customer and the date by which these works can be completed by the network company, and when the connection will become available.

5.2.3. When determining the works necessary to connect the customer, both existing customers and other future customers are considered, with future customers being prioritised according to a first come first served ‘queue’ by application date. Customers that apply first to connect in an area will generally require less

work on the network to connect them and therefore be offered an earlier connection date. The greater the volume of customers wishing to connect within an area of network, the further into the future these connection dates become.

5.2.4. The works necessary to connect a customer to a network can be divided into two categories, the works necessary to provide a physical connection point for the customer to the network and the works necessary to provide sufficient additional capacity between the connection point and the rest of the network. In some cases, the work necessary to provide a connection point for a new customer may be minor, a suitable connection point (bay) may be already available at a local substation and therefore only minor and brief modifications are required and a connection date can be offered relatively soon after the application. In most cases the provision of a new connection point requires the construction of an extension to an existing substation or an entirely new substation. A transmission substation is a high voltage facility (usually >132 kV) used to connect circuits together. New indoor substations are up to 100m long buildings with ancillary equipment around them while outdoor substations can be up to 400m long. Usually, new substations will take longer to build and result in a later connection date than the extension of existing substations, with a new transmission substation now typically requiring a 7-year build programme.

5.3. Distribution vs Transmission Connections

5.3.1. Customers can choose whether to apply for a connection to the distribution network, the transmission network or both (and then choose to accept the offer they prefer).

5.3.2. In England and Wales, in the main customers that require less than 50 MW of connection capacity will choose to apply to the distribution system as the cost and timescale of the connection is likely to be more favourable at this size. Less than 1% of the capacity of generators who have applied to connect to the transmission system (according to the public Transmission Entry Capacity register published by the NESO) are smaller than 50 MW.

5.3.3. Between 50 MW and 100 MW, a connection to either distribution or transmission could be favourable depending on the proximity, availability of connection points and remaining capacity of both networks in the local area. Around 16% of generation connection applications on the TEC register are in this capacity range. Above 100 MW a distribution connection will rarely be rapidly available or economically preferable over a direct connection to the transmission system.

5.3.4. This is because it is very rare for over 100 MW of capacity to be available on an existing distribution network and the works required to provide this level of capacity at distribution voltages can be very costly usually including long new overhead line or cable routes, a new distribution substation, transmission substation extensions or a combination of these major works. Because transmission networks operate at higher voltage and have equipment rated to higher currents the existing network is far more likely to be able to provide this level of capacity and if network reinforcement is required it is likely to be less significant than the works required to deliver this level of capacity on the distribution system.

5.4. Connecting Data Centres to Electricity Networks

5.4.1. Traditionally a vast majority of electricity generation came from large power stations with a capacity greater than 100 MW that were directly connected to the transmission system, while users of electricity, also called demand users, were usually much smaller, more diffuse, and connected to the electricity system via the lower voltage distribution systems.

5.4.2. Steel works and electrified major rail routes were the exceptions to this pattern because they either needed more than 100 MW of capacity or had other technical requirements that necessitated a direct connection to the transmission system.

5.4.3. Data centres are highly energy intensive buildings and large-scale data centre buildings can require more than 100 MW of input power. This means a large new data centre will almost certainly require a connection to the transmission system.

5.4.4. Because generators and demand users have different requirements and different impacts on the transmission system there are different commercial arrangements and technical solutions for the two types of connections.

5.4.5. Generation connections are typically via a single connection point and require Transmission Entry Capacity (TEC) rights to export power to the transmission system. Generation customers can supply demand also for their own purposes or via private wire arrangements.

5.4.6. Demand connections are usually via at least two connection points to provide additional security of supply. They do not require TEC and they cannot export power to the transmission system without permission from the NESO.

5.5. Connections Reform

5.5.1. Connections reform is an electricity industry initiative to transform the network connection process. It has been driven by the unprecedented volume of customers wanting to connect to both distribution and transmission networks leading to very long wait times for new connections across much of Great Britain. Connections reform will tackle this challenge by requiring connection customers to provide evidence of their readiness to connect, and in the case of generation and storage customers, that their capacity is required in the location they are seeking to connect. Customers who cannot prove their readiness to connect, or whose generation or storage capacity is determined to be in excess of the volumes required in their location, will be removed from the queue or have their connection delayed.

5.5.2. It is anticipated that connections reform will reduce the overall size of the connection 'queue' and reduce the connection wait times for some types of customers in some locations. However, the capacity volume targets for 2030 have been set at around the maximum level that the network companies can deliver with Alice Delahunty, President of NGET, describing the Clean Power 2030 target as:

"I think it's an incredibly stretching target…If it went perfectly along current regimes, it wouldn't get there. So, it needs to go perfectly along reformed regimes."[1]

Therefore, it is unlikely that new customers will be offered any new transmission connections before 2031.

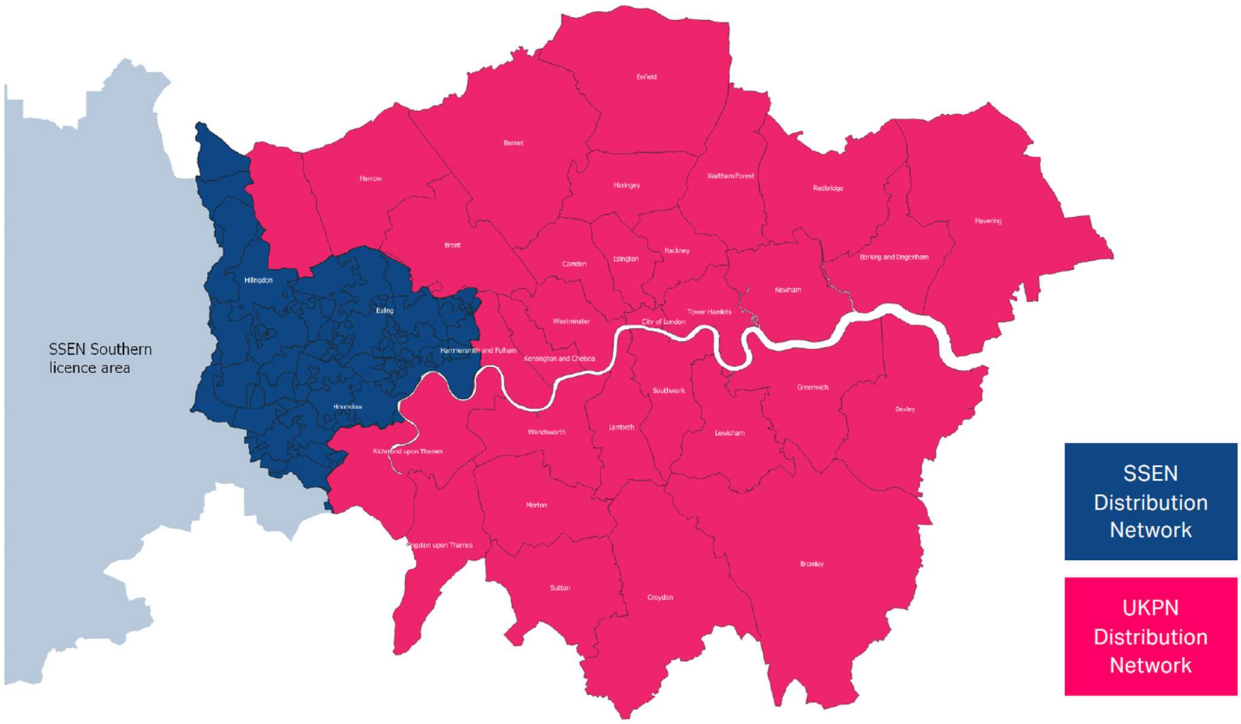
5.5.3. The capacity for the network companies to deliver additional connections by 2030 is limited by the volume of work and equipment that can be delivered by their supply chains, the number of outages they can take on the system at once and the number of specialist skilled people who can facilitate the work. From my experience of managing and developing projects at NGET it is not usually possible to substitute projects within 2-3 years of delivery and maintain the date of the connection. Therefore, if pre-2030 connections are delayed, there is a risk that network companies will not be able to deliver the volume of generation and demand connections that the economy requires to deliver economic growth and the decarbonisation of society.

5.5.4. Additionally, the volume targets do not apply to demand connections so in areas where these are dominant, the connection queue will remain mostly unchanged, with similar waits for connections as observed currently. Finally, where connection times are driven by the need for substantial new construction work to provide a new physical connection point, such as a new substation, connection times will be unchanged as the reform process will not affect the long lead times for delivery of such infrastructure.

6. Connection availability in the West London area

6.1. As mentioned previously, the NETS and electricity distribution system have been divided into geographic service areas. In the West London area, the transmission network is owned by National Grid Electricity Transmission (NGET) who serve all of England and Wales, and the distribution network is owned by Scottish and Southern Electricity Networks (SSEN). The below map, taken from the Mayor of London's website, shows the division of distribution network ownership in the Greater London area between SSE and UKPN.

[1] https://www.politicshome.com/thehouse/article/national-grids-alice-delahunty-2030-clean-power-target-unachievable-without-reform



6.2. The Mayor of London's West London electricity capacity constraints work has produced several documents since 2022 explaining the current situation to those wishing to connect to electricity networks in West London. The latest of these, published in 2025 is included as Appendix 2. Currently customers can connect to SSEN's distribution network if they are only seeking increases of capacity of 2 MVA (approximately equal to 2 MW) or less per year. The table below taken from the Mayor of London's latest update document published in February 2025 shows that any connection above 2 MVA at any of the 5 Grid Supply Points (GSPs), that supply the distribution system from the transmission system, in the area can only connect after NGET have completed reinforcement works currently scheduled for 2037. Therefore, no new demand connections can connect for another 12 years. These reinforcements works are described in NGET's London strategy and include "a new transmission circuit from the South West fed into demand hotspots in West London" which would be at least 100km in length. Such a project does not yet appear on NGET's public Infrastructure Projects website indicating it is still in the earliest stages of development. For several years there has been discussion in the Mayor of London's update documents of accelerating these works, but no progress has been made in bringing this date forward.

6.3. This is why paragraph 6.15 in SBC's Statement of Case is misleading, there are no existing power networks with any capacity for data centre development anywhere in West London. Existing networks must be expanded with new investment to provide capacity for any new use. SBC confirm this in paragraph 6.42 of their own Statement of Case as Slough Trading Estate have already exceeded the capacity of their existing provision and require network reinforcement to increase supply.

6.4. Additionally, capacity added through the expansion of existing distribution networks is needed to meet new housing demand. If a development of the size of that proposed at Manor Farm (107 MVA network capacity) was instead connected to existing distribution networks it would reduce the number of new homes that could be connected by ~24,000 homes based on the Mayor of London's analysis that 58 MVA of new capacity is delivering 13,000 homes. By utilising a private wire arrangement and connecting to the transmission system, this development avoids using valuable distribution network capacity that could otherwise be used for new housing in the area.

6.5. One solution that has been pursued by those wishing to connect in inner West London, close to the boundary between SSEN and UKPN's network areas, has been to apply for 'cross border' connections from UKPN with a cable run from UKPN's service area to the customer. However, the Mayor of London's reports say that these connections "…should be considered only as a last resort, as they are more expensive, carry more risk, and

are very disruptive to Londoners". Such connections are also unsuitable for connections the size of large data centres and located a considerable distance from the boundary with UKPN's service area.

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

6.6. The availability of future connections directly to the transmission system in West London is dependent upon plans from NGET to build a new substation called Uxbridge Moor, with a currently anticipated completion date of 2029. It should be noted that NGET stated in documents published by the Mayor of London in 2022 that Uxbridge more would be completed in 2026 so the completion date has remained 4 years away for at least the last 3 years.

6.7. As a large transmission infrastructure project Uxbridge Moor will experience the challenges to timely delivery that all such projects face with build rates growing and exceeding historical maximums. The first of these are supply chain shortages with the number of construction projects exceeding the capacity of the range of contractors who deliver them for NGET. The second is system access as it becomes harder and more costly to secure the outages on the existing network necessary to connect and commission new infrastructure, any unplanned outage or unexpected system conditions in the area could lead to the cancellation of system access and significant delay of the project. The third is the shortage of key skilled resource to oversee the construction and commissioning of new infrastructure with any changes to skilled resources deployment rotas resulting in similar significant delays. Finally, even if the substation is completed in 2029, each customer that is connecting to it must have their connections sequentially commissioned afterwards, this means capacity is not immediately available even once the substation is complete. This commissioning sequence will take months, with duration depending on the number of customers to be commissioned.

6.8. When completed this new substation will provide up to 1,840 MW (but may be limited below 1,500 MW subject to substation design) of additional transmission capacity to demand customers in West London, however all of this capacity has been allocated to customers already and is insufficient to meet the needs of the SAZ by 2030 even if all this capacity is used for data centres. Any new applicants for capacity must wait for capacity until at least the mid-2030s at any West London substation as shown in NGET's Research Assistant. NGET's London strategy also indicates that no substations in West London can be expanded for new connections, all of them will require the build of new substations or the rebuilding of existing substations. These works will require a wait for connection of at least 7 years.

6.9. Although these connection timescales are in advance of the delivery of connection reform, the reasons why it is unlikely that reform will significantly alter them in West London were outlined in the previous section on reform. First, West London connections are almost entirely demand, with no other transmission connected generation or storage projects in the TEC register before 2030; therefore projects will only need to show they are ready to connect to keep their connection dates, there will be no reductions based on generation capacity volumes. Secondly, connection timescales are set by the minimum time necessary to deliver major new substations, even if the number of customers were reduced this minimum time would not change.

6.10. In summary, there is currently no immediately available capacity for large demand customers such as Data Centres in the West London area on either SSEN's distribution network or NGET's transmission network. Major construction works are required to provide future capacity on either network. The earliest this could be achieved on either network is by 2029, although there are several keys risks to this delivery and this capacity has already been allocated to existing customers.

6.11. The new NGET substation at Uxbridge Moor even if immediately fully utilised, will provide only 48-58% of the ~3 GW of total data centre need before 2030 in the area (including already consented projects). However, once the substation is commissioned in 2029 at the earliest, each customer connection must be commissioned in turn and their data centres progressively fitted out with equipment and commissioned so it is likely that only a fraction of this capacity will be operational by 2030.

6.12. The earliest that new customers could access capacity would be the mid-2030s via a transmission connection, but potentially not until delivery of a new 100km+ new overhead line from the South West of England to London with a delivery date of 2037 at the earliest.

6.13. It is therefore vital that transmission system capacity available by 2030 is utilised to meet the critical national infrastructure requirement for data centres in the area. It is acknowledged by SBC in paragraph 6.62 of their Statement of Case that power availability is the critical factor as to whether data centres are built in this area or not. However, their assertion in paragraph 6.147 that sufficient data centre demand could be met on other sites cannot be true as the other network investment schemes presented by both SSE and NGET for the Slough area do not provide close to 3.2 GW of data centre demand by 2030 even if they all progress to currently stated timelines.

7. Connecting the Manor Farm development to the transmission system

7.1. The Development is intended to be supplied via a private wire connection to a BESS system that will connect to the transmission system at both Iver and Laleham substations. This provides a resilient supply from multiple sources. The battery and data centre will share connection capacity allowing both types of infrastructure to be built within the constraint of available network capacity. This is the only transmission connected power generation project in the area before 2030 (according to the public TEC register) so the only opportunity to share power capacity and enable connectionat least 2 years in advance of other capacity being available in the area..

7.2. As the BESS system connects directly to the transmission system the connection agreements at both Iver and Laleham are for the connection of energy storage. This means that the delivery of the BESS system is essential for the unlocking of the private wire capacity for the data centre. Without the BESS system the opportunity to provide early connection capacity to meet data centre demand in the area is lost.

7.3. As generation connections are usually only a single circuit, to be able to provide a private wire connection to a data centre two connections are required. As only a single circuit connection is available at Iver and Laleham without waiting for the construction of a new substation at either site, any data centre wanting to utilise these connection points and capacity must be within reasonable proximity of both Iver and Laleham substation.

7.4. My evidence in points 7.2 and 7.3 show why SBC are mistaken in paragraphs 6.22-6.24, 6.33 of their statements of case that the need for a BESS system or proximity to both Iver and Laleham can be removed from the ASA. Both are required to unlock this network capacity and if either are neglected this capacity cannot be used to serve the data centre market to meet the otherwise unmet demand before 2030.

7.5. Co-location with the BESS also provides benefit to the data centre as the battery system is able to provide improved resilience in the event of faults and a reduction in the use of diesel generators, reducing both air pollution and carbon emissions.

7.6. The co-location of the BESS and data centre also benefits the local area as:

7.6.1. It reduces the overall network capacity required compared to if both were connected separately, freeing up capacity and connection points for other developments

7.6.2. It allows for sharing of power infrastructure, including cables and substation, reducing cost and land usage

7.6.3. It avoids using up capacity on the local distribution system which is needed to support growth in housing in West London

7.7. The connection of the BESS to the transmission system has additional benefits to the energy system including:

7.7.1. Securing demand when renewables are low and/or demand is high

7.7.2. Capturing the value of renewables when generation is high and/or demand is low

7.7.3. Helping the NESO manage voltage in the area, improving quality of supply and reducing the need for extra investment

7.7.4. Acting flexibly to help manage constraints on the network, unlocking more capacity for other users

7.7.5. Providing support and flexibility to multiple NGET substations

7.8. As the Manor Farm development is intended to be supplied from both Iver and Laleham substations it is resilient to a loss a supply event that affects a whole substation such as the recent incident at North Hyde substation that affected Heathrow. This would allow for the possibility of the Manor Farm data centre providing resilient backup for other data centres in the availability zone which could be disconnected in such a scenario.

7.9. The Manor Farm development is bounded immediately to the south and almost immediately to the north by major fibre optic routes so SBC are not correct in their assertion in paragraph 6.16 of their Statement of Case that the site is unsuitable for data centre development because it is too far from existing fibre routes.

8. Using the Iver and Laleham transmission connections for other developments

8.1. SBC assert in their Statement of Case in paragraph 6.54 that if the Manor Farm development did not progress that the electricity network capacity could be reassigned to other developments in the area. There are several reasons why this would not result in the same capacity becoming available, or in the same timescale, or without greater cost and disruption in the local area.

8.2. Firstly, connection reform requires those wanting to connect to hold land rights to declared 'red line' parcels of land and their project must be developed on this red line area. If planning permission were to be refused for this development the capacity could not be sold or transferred to another party without the connection being re-allocated through a future Gate 2 connection exercise sometime in 2026.

8.3. If this capacity were to be used by another development connecting to the transmission system, they would then have to begin the process of designing cable routes from both Iver and Laleham substations as initially there is only one connection point available at each site and data centre developments require two connections for resilience. As the proposed site is positioned almost as directly between the two substations as possible, alternative developments would likely involve longer, more expensive and more disruptive cable routes. For example, if the development were on Slough Trading Estate the total direct distance from both substations would be over 70% higher than the proposed development (~24km vs ~14km). Additionally, these cable routes would require navigating much of Slough which would come at significant additional cost and disruption of excavating roads to be able to reach the development site. Additionally, the significant extra cable length would materially reduce the effectiveness of the battery to help manage voltage on the wider network, significantly reducing the value of the only such asset planned in the region.

8.4. Given the delays in being assigned capacity and beginning the cable routing process it is highly unlikely that the new development would be able to achieve the connection dates currently held by the development. NGET would therefore have to cancel the planned outages and resources assigned to the project and reschedule. Given these outages and resources need to be reserved several years in advance it is likely the next available opportunity to connect will be significantly later than 2027, especially as regional resources will be required for other projects in the local area in that timescale. Therefore, there is a low likelihood that another transmission connected party could use the capacity of this development before 2030.

8.5. There are also significant hurdles to using the capacity for distribution network connected developments. Transmission capacity is not the only constraint on network capacity for distribution customers; there must be sufficient capacity between transmission and distribution system and in the distribution network itself. For example, according to SSE's Network Map, new distribution connections supplied by Laleham substation require a list of transmission reinforcements that will not be complete until 2038. In the case of Iver both transmission and distribution works are required for any new connections which will not be completed until 2028. Even then, the scale of new connections unlocked will be limited, a single new grid transformer will be built to supply Slough, increasing capacity by 90 MVA which is insufficient to supply the level of capacity of this single development even if there were no other developments planning to connect to the distribution network in Slough.

8.6. This level of new capacity for Slough is perhaps only 20% of that needed to supply enough capacity to utilise the 4.3m square feet of space that SBC have claimed is available at STE for data centre development.

9. Conclusions

9.1. How power capacity is secured

9.1.1. Power capacity is secured through formal connection agreements with the relevant network operators. For large-scale developments like data centres, this typically involves direct connections to the National Electricity Transmission System (NETS) rather than local distribution networks, due to the high demand (>100 MW). The Development has secured capacity via bilateral connection agreements at Iver and Laleham substations, supported by a private wire network and substation infrastructure owned by Juniper (a Tritax and EDF joint venture). This arrangement includes three circuits, providing 107 MVA of import capacity, ensuring resilience and compliance with regulatory frameworks such as the Connection and Use of System Code (CUSC) and Grid Code.

9.2. When can it be delivered

9.2.1. The Development is scheduled for first energisation in Q4 2027, which is significantly earlier than the general availability of new capacity in West London. Broader regional reinforcements, including a new 100km transmission circuit and major substation projects like Uxbridge Moor, are not expected to deliver additional capacity until 2029 at the earliest, with most new demand connections delayed until the mid-2030s or even 2037. This timeline reflects the long lead times for major infrastructure projects and the current congestion in the connection queue.

9.3. The complexities around provisioning

9.3.1. Provisioning is complicated by several factors:

9.3.1.1. Infrastructure constraints: existing substations in West London cannot accommodate new large-scale demand without major reinforcement or new builds.

9.3.1.2. Regulatory and procedural hurdles: connection offers follow a first-come, first-served “queue”, and reforms now require proof of readiness to connect.

9.3.1.3. Supply chain and resource limitations: shortages of skilled labour, specialist equipment, and system access for outages create risks of delay.

9.3.1.4. Geographical challenges: alternative sites would require longer, more disruptive cable routes, increasing cost and reducing system benefits.

9.3.1.5. Sequential commissioning: even after new substations are built, customers must be connected in sequence, further extending timelines.

9.4. Why timing at the Appeal Site is critical

9.4.1. Timing is critical for a number of reasons:

9.4.1.1. Severe capacity constraints: no new large demand connections can be made in West London until at least the mid-2030s without secured agreements.

9.4.1.2. Other existing demand connection agreements are insufficient to meet the demand for data centre deployment in the area by 2030.

9.4.1.3. Economic and strategic impact: delays risk slowing economic growth, data centre deployment, and decarbonisation targets.

9.4.1.4. Unique opportunity: the Manor Farm project’s early secured capacity (2027) is unique and cannot easily be reassigned without major delays.

9.4.1.5. System resilience: co-locating a battery energy storage system (BESS) with the data centre enhances flexibility, reduces diesel reliance, and supports grid stability – benefits that would be lost if the project is delayed or cancelled,

9.5. The consequences of granting consent

9.6. If consent is granted:

9.6.1. 72 MW of data centre capacity will be available for use from 2027, reducing the deficit between available capacity and demand for data centre growth

9.6.2. This reduction of the deficit will reduce the economic impact of power network constraints

9.6.3. The connection of the BESS system to the transmission network will allow the provision of constraint management, voltage regulation and other ancillary services to the NESO which will not be available from any other customers in the area in the same timescales

9.7. If consent is not granted:

9.7.1. There will be a reduction in the available capacity for data centres in the area by 2030 of 107 MVA because the capacity cannot be allocated elsewhere, nor can the connection points be reused without significant delay, increasing the size of the deficient between supply and demand of data centres

9.7.2. This increase in the deficit will increase the economic impact of power network constraints in the area

9.7.3. The NESO will lose access to a flexible asset and may increase system charges as less optimal operational actions are taken to solve issues

9.7.4. The opportunity to reduce overall cost, disruption and land take of electricity assets by co-locating a BESS and data centre on the same site will be lost

10. Summary

10.1. The importance of this development to meeting the needs of both the UK data centre industry and the energy sector can be summarised with the answers to two questions; Why here? Why now?

10.2. The location of the development serves the Slough Availability Zone, adding significant capacity in the most important area in Europe for data centres.

10.3. The development also includes the only transmission connected BESS in the area due to connect in the next 5 years, this makes its contributions in reducing the cost of the operation of the energy system uniquely valuable.

10.4. As power capacity in the West London area is currently unavailable and wait times for capacity are up to 12 years for new customers, the fact that the development has secured connections to the transmission system from 2027 makes it especially valuable to the data centre industry.

10.5. It is unlikely that electrical connection capacity will be able to keep up with demand for data centre growth in the SAZ so it is important this development progresses to utilise its electrical connection so that the opportunity to add capacity to the SAZ before 2030 is not lost.