

National Infrastructure Commission call for evidence, November 2015

Memorandum from the City of London Corporation Response to Question 4: Electricity interconnection and storage

Introduction

1. This submission provides the City Corporation's views on the need for greater regulatory flexibility and more targeted investment and calls for better planning of the delivery of capacity in the system. The submission concludes with a suggestion for a new approach to the capacity problem.
2. The City Property Advisory Team at the City of London Corporation works alongside developers, utilities and telecoms providers in ensuring that the Square Mile provides the optimum environment for existing and new businesses. It is in the context of the City's role in promoting the Square Mile as a world leading hub for business, that the City of London Corporation makes this submission.
3. The Square Mile directly competes with other cities to be the premium destination for global business. One part of the City's, and London's, attractiveness to international business is the ability to provide the highest quality commercial buildings and services. A significant factor working against London's position is exemplified by a recent World Bank Report which placed the UK as the 62nd out of 184 countries for getting an electricity connection on time.
4. The City of London's area has the largest electrical footprint (over 600 megawatts) in the UK and demand for electricity in the Square Mile has greatly increased in recent years, owing, for example, to the widespread use of power intensive IT equipment and cooling systems.

Lack of Capacity

5. UK Power Networks (UKPN) is the District Network Operator (DNO) for London. It is clear that its network in London does not have available spare capacity to cope with future demand. This poses risks to future development and refurbishment cycles because developers and property owners are unable to be sure of the availability of electricity capacity. Further uncertainty results from the fact that it can take up to 3 years for substations to be reinforced and installation works completed so as to have sufficient capacity to supply a new building.
6. Given that Ofgem's existing regime does not incentivise investment ahead of need, new connections generally occur on an ad hoc basis, responding to immediate demand. The difficulty of creating such new connections at the last minute is hampered by the physical characteristics of the City (such as utilities congestion under the highway). This is a further factor that creates uncertainty and results in a lack of capacity in the system.

Resilience and Security - Generation

7. Recent research¹ undertaken by the British Council for Offices has outlined that the forthcoming closure of the UK's legacy generation plant and lack of available new sources of generation has increased the likelihood of blackouts from 1 in 3,307 years in 2012 to 1 in 12 years in 2015. Moreover, the sector's regulator, Ofgem, does not incentivise DNOs to modify and improve aging network assets. The City Corporation is concerned that a possible "black start" - where supply is suddenly unavailable across the whole of a network and needs to be restored - would severely affect the Square Mile and its ability to continue to operate as a business centre. We are also gravely concerned about the effect that such an event would have on London's reputation.

Network Resilience / Power Network Distribution

8. As a regulated monopoly, UKPN is obliged to carry out a price control review every 8 years, which involves submission of their business plans to Ofgem, to determine future investment plans, and the overall revenues that UKPN is permitted to recover from customers. Under the latest price control review process, UKPN is required to consult with stakeholders and ensure that their views are represented in the final business plan. As part of UKPN's consultation, the City of London provided information to UKPN on likely forthcoming developments. After considering the draft business plan produced at the end of this process, the City concluded that UKPN's investment plans for the period 2015-2023 (which included the reinforcement of 6 existing substations serving the City of London). Whilst UKPN received considerably less funding than expected from Ofgem's final determination, it is understood that the planned level of new capacity will be sufficient to support forthcoming development activity in the Square Mile for the next 10 years. It is therefore the timing of investment that remains key.
9. The City Corporation is concerned that Ofgem's reduction in UKPN's proposed funding could affect UKPN's plans for investment in greater network automation enabling the provider to switch power between substations and thus avoiding loss of supply to businesses and residents. Investment in such automation would do much to provide a more robust network for Central London.
10. In a further aspect of its final determination of UKPN's business plan, Ofgem has reduced the amount of expenditure that UKPN will be allowed to make in installing deep level tunnels to house critical 132kv transmission cables. These operate at high voltage and deliver power to substations from the National Grid. If, because of Ofgem's determination, UKPN is required to take the cheaper route and install such cables under the public highway, there would be a serious negative impact on traffic across London. In addition, placing such heavily powered cables under the public highway could pose

¹ http://www.bco.org.uk/Research/Publications/Britains_Energy_Gap.aspx

considerable risk of catastrophic district wide network outages should one of the cables be disturbed by any of the many utilities companies that regularly dig up the highway.

11. Following UKPN's final determination, it is understood that new investment in central London has recently been constrained due to an appeal lodged against UKPN's 2015-2023 settlement by a third party energy provider. This matter needs to be resolved as soon as possible to avoid any impact on delivery of energy supplies to key strategic development sites across central London.

Size of Connection

12. The planning process for large developments can take many years. In an ordinary case, for example, it will take about 3 years. During the planning stage for large office buildings in central London, there are often difficult negotiations with UKPN over the availability of power supply to the building. These negotiations arise for two reasons: (i) there is very little spare capacity in the system; and (ii) the work required to reinforce a substation such that it is able to supply the required amount of power often takes longer than the design and build of an office block.
13. A separate problem arises because there appears to be an unknown amount of reserved capacity on the network which is currently unused. Some of the larger buildings in the Square Mile are now requesting up to 15MW, enough electricity to power a small town, which is largely to cater for trading floor operations. Developers (whether in relation to new build or to refurbishment) are likely to request large amounts of capacity because, given the difficulty of obtaining supply in a timely manner, they cannot sure what type of tenant is likely to occupy the building and so hedge their bets. The additional cost of reservation charges is borne by the business because they regard it as a way of mitigating the severe difficulty and uncertainty surrounding a future request for the supply of electricity.
14. UKPN has confirmed to the City Corporation that UKPN would consider a scheme where capacity could be sold by a building back to UKPN for use elsewhere on the network. UKPN maintains, however, that it is constrained from progressing this idea because the existing regulatory regime prevents it from engaging in such arrangements.
15. The City Corporation considers that, given the scarcity of available capacity in substations serving the Square Mile, UKPN should be permitted to take an active role in policing the size of the connections which developers and occupiers are able to retain when it is beyond their requirements.
16. UKPN should adopt the model used by Consolidated Edison, the electricity network operator for New York City, whereby developers are told what size connection they are allowed based on industry standard formula (10Kilowatts per sq m), and the amount of capacity taken is therefore dictated by a calculation of watts per square metre of the whole building. Developers are

able to reserve extra capacity for future expansion, if they agree to pay the cost of additional power at the start. Network capacity is, however not reserved, and Consolidated Edison will agree to invest in the network to create the additional capacity at an agreed point in time, providing the developer exercises the option for additional power at a contracted point in time. If the developer does not exercise its option, Consolidated Edison retains all monies paid by the developer and the capacity is released for use by other customers.

Investment ahead of need / timing of investment

17. The scenario set out above leads the City Corporation to conclude that there is a failure in the regulatory framework that prevents DNOs investing ahead of need. The City believes that in an area with the largest electrical footprint in the UK investment ahead of need should be permitted.
18. The City of London, London First and the City Property Association commissioned the “Delivering Power” study² in April 2012 which found that UKPN is not incentivised to invest ahead of need under Ofgem’s current regime. The existing system promotes a “just in time” approach. The failure to allow investment ahead of need constrains developers’ ability to ensure network capacity for new developments. Consequently, businesses and developers suffer from uncertainty in crafting their business plans, delays to new developments and risks to their business.
19. Together with Westminster City Council, GLA, City Property Association, Westminster Property Association and London First, the City Corporation has engaged with UKPN to feed into their business plan and called for central London to be allowed greater flexibility in investing in spare capacity.
20. In August 2013 the City submitted to UKPN’s business planning consultation details of forthcoming developments in the Square Mile. The timing and distribution of the investment remains key - to ensure that capacity is delivered in a timely manner so that it does not pose risks to the delivery of new development. There must be better predictability of UKPN’s investment path. The City Corporation’s planning policy, in its 2015 Local Plan, requires developers to engage with UKPN as soon as possible. Developers must include the building’s likely electricity footprint in the planning application so that this information can inform UKPN’s future demand modelling for network upgrading. This approach can make, however, only a limited impact on the overall problem.
21. Engagement, by the City Corporation and others, with developers has shown that they are willing to pay more if it means that their connections will be delivered faster. In certain cases developers are prepared to pay for full reinforcement of substations, despite only using a fraction of the new reinforcement and accepting that refunds (calculated on subsequent use by other parties) may be paid at a much later date. This highlights how desperate

² <http://www.cityoflondon.gov.uk/business/economic-research-and-information/research-publications/Documents/research-2012/Delivering%20Power.pdf>

developers are to secure electricity supplies for their building. It is therefore likely that developers would support any future developer-funded proposal to facilitate investment ahead of need.

22. Ofgem has argued that DNOs can invest ahead of need under Section 22 of the Electricity Act 1989. This provision allows developers to act as a consortium which may be effective on brownfield sites where there are 3 or 4 major developers, but it would not be practical in areas such as the City of London or other urban areas where there is a high level of continuous growth and with, for instance, over 70 developers operating across 120 development sites with varying timescales and developers requiring electricity connections at different times.
23. The City Corporation supports the Mayor of London's representations to Government on investment ahead of need, which led to Ofgem's "Quicker and more efficient connections" consultation in March 2015. This consultation brought forward good suggestions for addressing the issue of investment ahead of need. Whilst the City broadly supports incentives which could allow DNOs to make investment ahead of need in areas where there is an expected high level of development growth, some of the proposals required UKPN to seek Ofgem approval and for Ofgem to publicly consult on the location and level of investment being made. This is likely to be a protracted and cumbersome process for developers to manage, (for whom time is key). It is therefore unlikely that any developer would await the outcome of a public consultation to find out whether they have sufficient electricity supplies for their development as it would present too big a risk to their project. For this reason, the model would only be suitable for developments in areas where there is no spare network capacity in (or plans to upgrade) any of the surrounding substations and no other obvious immediate connecting customers in the surrounding area. It is highly unlikely that this model would be able to be adopted in the City of London given the continuous cyclical nature of development and differing timescales of developments which would mean that the need for consultation on investment would be too time consuming and present too many risks to timely investment and delivery of power supplies.
24. The consultation also suggested private investment in the form of a "DevCo" proposal that would be able to investment in new capacity. The City of London felt that this arrangement would give the DevCo inappropriate powers and the DNO onerous responsibilities in selection of development types which could benefit from reinforced infrastructure. The proposal would cut across the existing regime for planning new infrastructure (through the Community Infrastructure Levy), which considers a wide range of factors in consideration of the types of schemes which are appropriate in a given location, and would be inappropriate. DNOs in particular could be seen to be acting outside of their remit given that they are bound by existing regulation to not discriminate between those requesting connections.
25. The City of London welcomes Ofgem's findings from this consultation, however the starting point for the verification of any case for investment

ahead of need will be a clear overview of available DNO substation capacity in areas of high development growth. Regrettably this data is currently unavailable. Ofgem and the Government should ensure that DNOs make this information publicly available. It would be important to consider this data alongside information from developers, market details and Local Authority information (in London at the GLA level as well as at borough level) in determining appropriate areas. The City, for example, has robust information on the timescales of forthcoming developments.

26. The City has met with Ofgem and suggested that the link between local authorities and DNOs should be restored to allow UKPN to be able to compare future investment with local authorities' development projections, to coordinate connection works more effectively, and install spare ducts in areas of expected need. Areas such as the Square Mile benefit from high levels of continuous development growth and the City maintains a development pipeline that can pinpoint where large loads will occur. Based on this suite of information it can be argued that there will be a very high utilisation of investment in capacity ahead of need in such areas.

City of London Corporation
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