Capacity allocation and reservation

A consultation on approach and best practice

WESTERN POWER DISTRIBUTION

Serving the Midlands, South West and Wales

Contents

1 Overview

Western Power Distribution (WPD) is the distribution network operator (DNO) for the Midlands, South West and South Wales. We are responsible for delivering electricity to approximately 7.8 million customers in the UK.

As part of our role as the incumbent DNO for the regions in which we operate, we have an obligation to connect new customers to the network by constructing new assets and upgrading the existing network as required to provide customers with the capacity they need.

In the past 2 years we have seen an upturn in new demand connections enquiries with many of these characterised by relatively large capacity requirements and long development build-out timescales. These are typically related to housing or commercial schemes. We have also seen a rapid increase in requests to connect battery storage schemes which are characterised by having large and immediate demand capacity requirements (alongside their equivalent export capacity requirements).

The increase in activity and demand for capacity means that in certain areas the network has become constrained so no further connections can be made without significant reinforcement. A considerable proportion of these constraints can be attributed to capacity which has been contracted under new connections schemes and 'reserved' but has not yet been taken up by an end user. This is because once a new connection offer has been accepted we have to ensure that this capacity is available to the customer according to the terms of the connection offer agreement. Therefore any design for subsequent applications for connection must assume that the previously contracted capacity will be fully utilised and is no longer available for the benefit of new customers.

This consultation sets out the issues we have been encountering with the volume, size and type of new demand connection applications and how these impact on both existing and future customers. We also present some proposals on our minded to approach to the way in which we will allocate network capacity to new customers and how we will allow them to reserve this capacity prior to the connection and energisation of the end user connections.

2 Quicker and more efficient connections

The issue of constraints on the network triggering costly and time consuming reinforcement is well understood. Where investment in the existing network is needed, the connecting customer will need to pay some of the cost, with the rest being shared between all other users of the network. Whilst this is true it is equally important that electricity bills are kept as low as possible for all customers. WPD is not allowed to reinforce the network ahead of need and recover the cost of doing so from the wider customer base unless we can demonstrate how all customers will benefit.

If we were allowed to invest ahead of need, i.e. investing in anticipation of increased demand, it would reduce the time it takes to complete connections. If the cost of this investment is recovered from all network users then the cost to the connecting customer will also be reduced. However, this could mean all network users could see their electricity bills go up through an increase in Distribution Use of System Charge (DUoS). It also increases the risk of infrastructure being built and paid for in anticipation of future energy use that does not emerge and it could weaken the price signal created by the current arrangements leading to the network being used less optimally.

In 2015 Ofgem issued an open letter on quicker and more efficient connections (QMEC) [1] under which they highlighted the importance of customer's obtaining a timely and cost effective connection. The document recognised the problems that some were facing due to network constraints. A number of potential initiatives were set out and stakeholders invited to respond. Ofgem subsequently issued a 'Next Steps' document[2] that included reference to the need to make improvements to the existing connections process by managing the connections queue.

We believe this area is very important and we are supportive of a number of strands of work that have since been developed including work to reduce the need for reinforcement via network management. This element of work is moving at pace and we are currently developing Smart Grid solutions that will provide greater flexibility on the network, potentially by the use of automated load transfer, dynamic asset rating and voltage reduction schemes. We are also considering flexibility services such as demand side response, a commercial service allowing customers to be rewarded for shifting their consumption during a peak period to help manage constraints on the network, thus reducing the need for reinforcement.

However, the development of these market arrangements is still a little way off and will not always deliver an outcome that a customer needs. We are therefore committed to exploring alternative contractual arrangements that will enable us to recover capacity where it is reasonable to do so. We recognise that it may not always serve the immediate customer's needs but we must balance their requirements against those of others who may be further down the connections queue but are in a position to proceed where the customer at the front of the queue is not.

It is important that WPD is able to facilitate new connections on to the network in a timely, efficient and cost effective way to benefit both the customers wanting to connect and the wider customer base who contributes to the reinforcement required to connect new customers through the DUoS.

[1] https://www.ofgem.gov.uk/publications-and-updates/quicker-and-more-efficient-distribution-connections

[2] https://www.ofgem.gov.uk/publications-and-updates/quicker-and-more-efficient-connections-next-steps-0

3 Capacity allocation and reservation

In this consultation we focus on three key stages in the provision of capacity to new connections customers; application, acceptance and energisation. We will set out the current situation and the potential consequences with regards to these stages and the current trends in the demand connections activity:

Application for connections and their required capacity.

A customer requiring an electricity connection must first make an application to WPD identifying the premises to be connected, the capacity required and date upon which the connection is required. There is a set of minimum information which must be provided and a range of additional information may also be required in order to validate the customer's requirements. We will then assess the impact of the proposed connection on the existing network, design the connection works and issue a connection offer setting out the terms and conditions upon which the connection can be made.

Acceptance of offer for connection(s) and the required capacity

If a customer accepts their connection offer an agreement is formed which commits both parties to the connection works and effectively reserves the required capacity on the network. The customer will be required to pay the full cost of the sole use assets and contribute toward any reinforcement costs in accordance with WPDs charging methodology. The customer is not required to make payments for the capacity which they reserve.

There are milestones in the offer relating to the progression of the connection works, which the customer must meet. Where the milestones are not met, and there is insufficient evidence of progression, WPD may terminate the agreement, releasing the unutilised capacity back onto the network. These milestones are currently of a limited nature.

Energisation of the connection(s) and the take up of capacity

At the point of energisation the connection offer agreement falls away and larger end users, including IDNOs will be required to enter in to an enduring site specific connection agreement setting out the agreed import and/or export capacity. This capacity is then fully committed regardless of actual take up unless both parties agree to an amendment. The end user will begin to pay use of system charges from energisation. The IDNO will pay use of system charges for any end user connected on their downstream network.

4 Current issues and potential consequences

Whilst the above process generally works well, particularly for smaller connection/capacity requirements with shorter lead in times, we have experienced some issues in applying it when dealing with larger, more speculative developments with longer lead in and build out timescales.

Uncertainty of demand requirements

Customers approach us requesting large amounts of capacity for developments that will be phased over many years, very often over ten years and in some instances as much a thirty years. As capacity is allocated on a first-come-first served basis customers understandably want to secure their capacity requirements from the outset thus having comfort that the capacity will be available when it is needed and at a certain cost. In reality, the customer will have significant uncertainty as to the domestic/commercial mix of connection types and will tend to over-estimate the capacity requirements. Developments that have a longer the rollout period face greater uncertainty over ultimate progression as they rely on continued favourable external economic conditions. Any unforeseen changes such as a down-turn in economic conditions could impact on the make-up and delivery of the development.

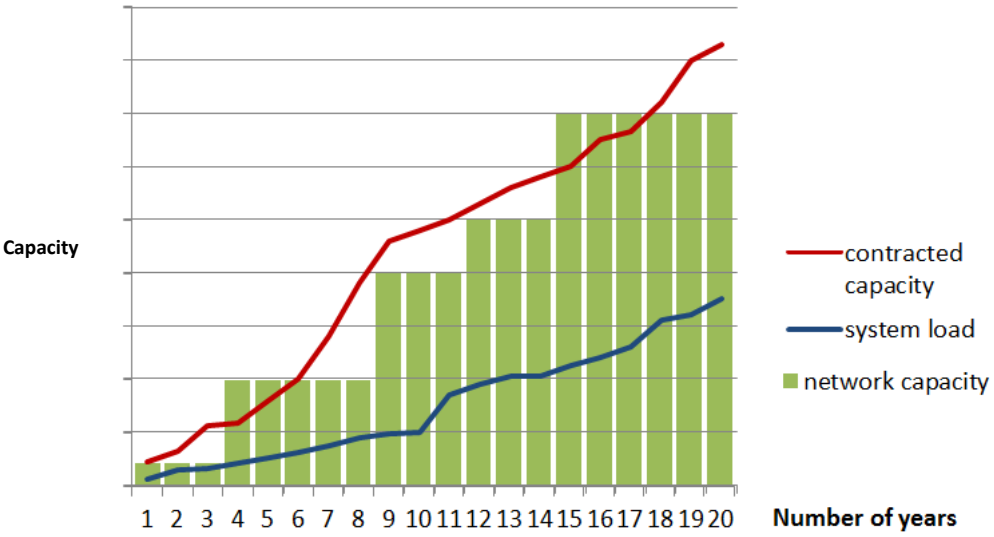
Effects of reserving capacity

When we assess the impact of an application for connection on the existing network our design must account for both connected and **contracted capacity** (on accepted offers). Consequently any new connection offer we issue will be based on the overall committed capacity. The effect of this is that:

- The network becomes 'full' with contracted future capacity but actual network demands are much lower
- Available network capacity is reserved without any immediate defined requirements of end users
- New customers may face delays and the need to make contributions towards significant reinforcement costs due to existing capacity taken up by long term, possibly speculative sites

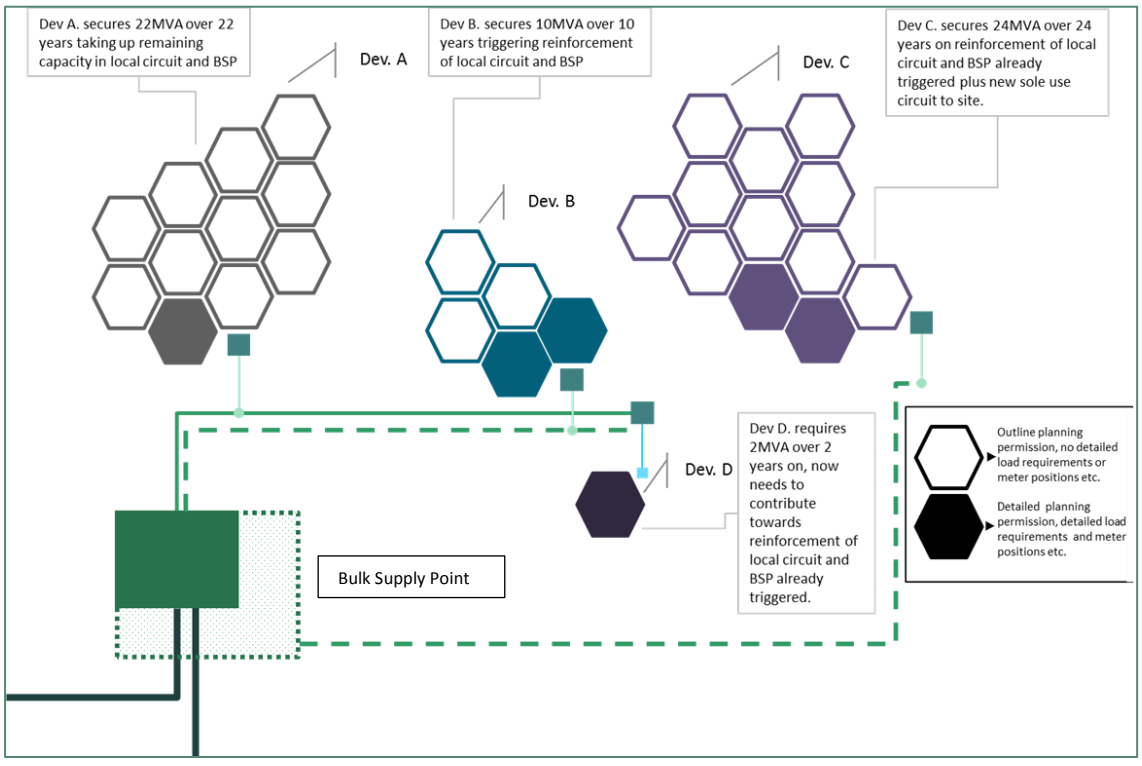
If contracted capacity does not materialise there is a danger that reinforcement and sole use assets may be constructed which were not required. These assets may therefore become 'stranded' thus creating an inefficient network that ultimately the wider customer base has to fund through DUoS charges.

As an illustration of these effects, the diagram below provides a notional indication of the potential effect of reserving capacity over a long period of time. The network capacity indicated in green shows the incremental nature of available capacity following completion of reinforcement works, which lags behind the contracted capacity. The lag is created due to the effect of planning, materials and construction timescales. It portrays, not only the gap between the capacity contracted and the demand that we may actually experience on the network but also the potential to construct assets that exceed the system requirements and can become stranded.



Example scenario 1: multiple large multi-phase developments securing large demand capacities over long timescales and triggering reinforcement

This following example demonstrates the issues described above whereby developments are able to request connection offer agreements which allocate and reserve capacity based on requirements which are not fully substantiated. The blocks of each development which are filled in are those which have substantiated requirements and full planning, the unfilled block are where the requirements are less certain and only outline planning is in place. The timescales between the applications for developments (dev.) A to D could be months, weeks or even days and are treated in the order in which they are received when considering any interactivity and allocation of capacity.



Dev. A is a multiphase development with a capacity requirement of 22MVA and an expected buildout timescale of 22 years for the 11 phases. This development utilises the available network capacity on the local circuit and the bulk supply point (BSP) and their accepted connection offer secures this capacity for the length of the entire development's construction.

When Dev. B applies and an assessment is made (taking into account both the connected and the committed contracted capacity for Dev. A), it is found that network reinforcement must be undertaken in order to meet their requirements. Dev B. then secures 10MVA of capacity for their expected 10 year build out.

Dev. C is a large development requesting 24MVA over 24 years, and utilises the capacity created by the reinforcement triggered by Dev. B.

Dev. D applies for what is a relatively small connection over a 2 year build-out timescale. They have fully substantiated requirements and are ready to progress. Dev. D may be able to connect onto the network prior to the construction of the reinforcement but due to the order in which the applications and accepted offers have occurred, the existing network capacity has been allocated to the earlier developments and Dev. D would still need to contribute towards the reinforcement triggered by the other developments.

5 What are the considerations for ensuring a fair and pragmatic approach?

When we consider our approach to the overall connection process from application to energisation and how we allocate capacity and enable it to be reserved, we need to ensure that we are meeting our customers' requirements whilst maintaining our overall obligations to operate an economic and efficient network. There is a balance to be struck between the needs of individual connections customers' requirements on their developments and the needs of other connections customers as well as the wider connected customer base. Facilitating the reservation of large amounts of capacity on the network well ahead of its take-up (or confirmed necessity) can lead to delays and cost increases for other connectees as well as increased or inefficient costs for customers already connected to the network.

Without setting reasonable limits to the extent to which network capacity can be requested and reserved, there is a risk of creating substantial 'bottlenecks' on the network whereby connections are delayed and the works required to construct them become less efficient if more work is undertaken than may ultimately be required (due to the contracted capacity not materialising). There are therefore a range of considerations to take into account to ensure that we are able to take a fair and reasonable approach to capacity allocation and reservation and we believe there are a number of fundamental questions that first must be asked:

- What information should the applicant provide in order to validate specific capacity requirements?
- Is there a reasonable time upon which capacity should be able to be reserved after acceptance of an offer?
- Is there a reasonable level of capacity that should be able to be reserved and should this relate to the type of development in any way?
- What is a reasonable level of capacity and / or timescale ahead of usage that can be reserved that is over and above the immediate validated needs of a development (i.e. the requirements of the initial substantiated phases)?
- Should there be different criteria applied to the reservation of existing network capacity (with no contribution from the connectee) and new constructed capacity (contributed to by connectee)?

6 Proposed principles for the allocation and reservation of capacity for connections

Underlying principles to allocating capacity upon application for a formal connection offer

We believe a number of principles should be applied when considering the allocation of capacity following an application.

- Principle 1 - Capacity should be allocated according to customers' defined and verified requirements assessed against a set of qualifying criteria. Principles of the qualifying criteria can be summarised as:
  - When do you need the capacity? – i.e. what is the timescale for the completion of the development and therefore utilisation of the capacity and is the development firm rather than speculative?
  - How much capacity do you really need? – i.e. what are the detailed load requirements for the connection(s)?
- Principle 2 - Capacity should be allocated on a strict date order of firm requirements and in line with WPD interactivity procedures
- Principle 3 - Capacity should be allocated according to the immediate requirements of end users and not on a speculative basis or for future undefined developments
- Principle 4 - Capacity should be allocated with defined milestones for the obtaining of planning permissions, commencement of construction and completion of connection works.

We explore these Principles in further detail below.

Principle 1 - Capacity should be allocated according to customers' defined and validated requirements assessed against a set of qualifying criteria.

We don't believe a customer should be able to reserve capacity unless they provide an application that confirms and validates the capacity requirements and programme of works. For example, it should not be sufficient for a customer to provide an application for connection of 10MVA over a 10 year period, based on 1MVA per year unless they can substantiate that requirement.

There are other services open to the customer if they don't have the necessary detail and need to obtain an indication of the costs and timescales to provide a connection. They may request either a free of charge Budget Estimate that will provide a high level overview of the potential costs or, for a fee, a more detailed Feasibility Study. We understand that these options are less attractive to the customer as they neither set a place in any interactive connections queue of form part of a binding contract in terms of reservation of capacity. However, where a customer has a long-term development without fully validated requirements, but does have detailed requirements for the initial phase(s) of their development, they have the option to apply solely for this part and secure a formal connection offer agreement.

In order to validate the requirements set out a customer's application the customer should be able to provide evidence of the following:

- Detailed load requirements for each of the required end connections on the development
- Detailed build-out programme / schedule demonstrating how the overall required capacity will be taken up by end users over the timescale of the development.
- A letter of authority where the applicant is not the land owner or the developer
- Outline planning permission (detailed planning required as a milestone in the formal offer letter).

WPD has a statutory obligation to provide a connection offer and regulatory guidance sets out the minimum information that is required from the customer. We must meet our obligations but believe that it is reasonable to apply different contractual terms of the connection offer according to the level of information provided.

Question 1: Do you consider the criteria for the customer to validate the requirement for their requested capacity is appropriate?

Question 2: Are there any other criteria or is there any other evidence WPD should consider when assessing the validity of a customer's requested capacity?

Principle 2 - Capacity should be allocated on a strict date order of confirmed requirements and in line with WPD interactivity procedures

WPD already has well established processes for dealing with occasions where we receive two or more applications for connection which make use of the same part of the network. These may become "Interactive Connection Applications". The interactive process is set out in detail in our guidance note available on our website.[3]
A place in any interactive connections queue is secured once certain information is provided and an 'Application Date' confirmed. Where the customer is unable to provide all the relevant information for the development at the time of application they may not obtain an Application Date and hence not secure a place in any interactive connections queue. For larger developments with longer lead in times however, the customer may have details for their immediate requirements, i.e. for a development requiring 10MVA over 10 years the customer may have details of the first phase requiring 2 MVA in the first two years. It could therefore be possible to secure capacity under a connection offer for that part of the development.

Question 3: Do you consider it is correct that a customer should only secure a place in any interactive connections queue where they have clearly defined requirements and an immediate need for the connection?

Principle 3 - Capacity should be allocated according to the immediate requirements of end users and not on a speculative basis or for future undefined developments

Under Principle 2 we discussed how a customer should only secure capacity and obtain a place in any interactive queue where they have detailed plans and an immediate requirement. We recognise however, that in determining overall capacity requirements there may be a need to provide electrical infrastructure to the development and/or to undertake reinforcement works upstream of the connection point. Where a customer contributes to these works they will require some certainty that the capacity created will be available for their long term requirements.

Our view is that where a connection customer has a requirement for capacity but does not have firm enough requirements to meet the qualifying criteria for a formal offer for connection, they should be able to apply for the infrastructure required to provide their capacity and reserve capacity. However, we do not believe that other connections customers or the wider WPD customer base should be disadvantaged by this.

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[3] https://www.westernpower.co.uk/docs/connections/New-connectons/Budget-estimates,-feasibility-studies-formal-off/Interactivity-process-Final-01_04_2016.aspx

Under our Connection Charging Methodology Statement there are principals that describe what is considered to be a speculative development and the consequences this has for the contributions the customer has to make towards the cost of constructing the required assets. In particular, where a development is to be considered as speculative, the costs of any required network reinforcement are charged to the customer in full and not apportioned with WPD. There may also be additional charges for the ongoing operation, repair and maintenance costs of the assets.

Taking this into account we believe the capacity should be classified in two types:

1) Existing network capacity: capacity available on the existing network without need for further reinforcement.

   Under this scenario it should be understood that the customer has successfully secured system capacity without having to make any financial commitment other than for the newly constructed electrical infrastructure downstream of the existing network. So as not to encourage inappropriate behaviour we believe the customer should only be allowed to reserve that level of existing capacity over a timescale equivalent to that required to complete the works assuming there is no delay. In this respect we believe 3 years post acceptance of the connection offer is appropriate. Any longer term reservation could disadvantage other connection customers with firm requirements for developments which could utilise this capacity within a similar timescale.

2) Constructed capacity: capacity created by the construction of new sole or shared use assets with a contribution from the customer triggering these works.

   Under this scenario we believe it is right to recognise that the customer has made a financial commitment to the cost of the infrastructure works and therefore should enjoy the protection of knowing the capacity is secured for a longer period. The principles for reservation will differ according to the type of works required:

   - Sole use: where the customer contributes fully to the newly built sole use infrastructure assets we will reserve the capacity for the length of the customer's development build out programme up to a maximum of ten years.
   - Reinforcement: where the customer has triggered and contributed to some upstream reinforcement works we will reserve the capacity for up to ten years in line with the Electricity (Connection Charges) Regulations 2017. Therefore, where the customer remains eligible, we shall refund any contribution made by them toward the reinforcement work where we subsequently utilise that capacity for the benefit of another customer.

Question 4: - Do you agree that existing network capacity should not be allocated and reserved beyond the timescales of the construction programme for the connection works on infrastructure-only or speculative developments?

Question 5: - Over what time scales do you think it is reasonable to secure capacity ahead of its actual usage?

If the capacity cannot be substantiated with any level of certainty it may deemed to be speculative. Under our charging methodology we can mitigate the risk of having stranded assets by charging in full for any reinforcement we undertake and make additional charges to reflect ongoing operation, repair and maintenance costs. However, at our sole discretion, we can allow capacity to be reserved on the infrastructure provided to service the development. So if a customer wishes to reserve capacity and is not able to substantiate the capacity requirements an infrastructure offer can be made that will include these additional charges.

Question 6: - Do you agree that it is a reasonable cost signal to require speculative developments to pay 100% of the reinforcement costs and an uplift for operations, repairs and maintenance?

Some DNOs offer the customer the ability to reserve capacity on infrastructure assets by paying a reservation charge commensurate with the capacity they wish to reserve. We are not convinced this sends a strong enough cost signal and ultimately customers who are prepared to pay such charges will not help to resolve the 'bottlenecks' in network capacity availability.

Question 7: - Do you think this represents a workable solution to reserving capacity and if not, are there any alternative approaches that you believe WPD should consider, to supplement or replace the approach we are proposing here?

Principle 4 - Capacity should be allocated with defined milestones for the obtaining of planning permissions, commencement of construction and completion of connection works

In order to be fair to all customers, where we do allocate capacity and allow it to be reserved, it is important that we then ensure that it is taken up in a timely manner so that other connectees who happen to have applied later but who could have more readily utilised the capacity are not unfairly disadvantaged or held up by a project which is not progressing.

Following an industry wide consultation a set of best practice principles for the fair and effective management of connection queues has been developed by the Electricity Networks Association. The principles set out a number of progression milestones that apply to connection schemes. Initially developed with a focus on Distributed Generation connections, we believe it is important that, where appropriate, these milestones are utilised for demand connections to ensure that there is efficient and fair allocation of network capacity.

Having a set of project progression milestones set out as terms to the connection offer agreement, ensures that there is a contractual basis in which WPD can challenge slow moving or stalled projects and ultimately remove them from the 'queue' if the project is not progressing. This then frees up the unutilised capacity for other customers to be connected faster or with less cost and / or without the need for reinforcement.

We therefore believe that the following milestones should be applied to demand developments:

i) the customer has submitted a valid detailed planning application to the local authority;
ii) the customer has and retains some form of land rights for the development, e.g. some form of freehold or leasehold interest;
iii) the customer has obtained detailed planning consent;
iv) a detailed programme of works is agreed and the connection works commenced;
v) the customer's installation is connected to the network and energised

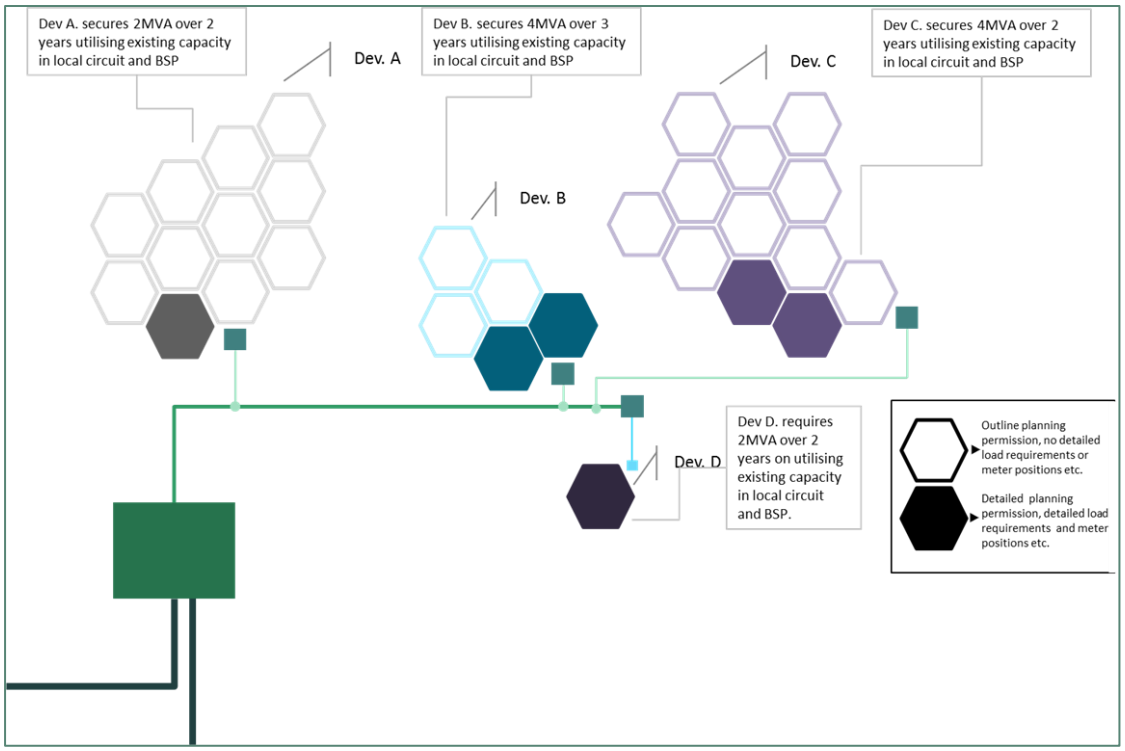
Timescales relevant to the nature of the development will be established for each milestone. It should be noted that the milestones may be extended by agreement where the customer can evidence to WPD's satisfaction that the scheme is still progressing.

Question 8: - Do you agree that it is a reasonable cost signal to require demand customers to comply with a set of project progression milestones in order to retain their connection offer and its allocated capacity?

Question 9: – Do you agree with the milestones set out above or should we consider any alternative set of milestones?

7 Impact of applying the proposed principles for the reservation of capacity

Example scenario 2: multiple large multi-phased developments applying only for the substantiated capacity requirements.



This example demonstrates the impact of applying the principles described in the section on proposed principles for the allocation and reservation of capacity for connections. In this example each development only applies for the initial fully defined phases of their development. As with Example 1, the timescales between the applications for developments (Dev.) A to D could be months, weeks or even days and are treated in the order in which they are received when considering any interactivity and allocation of capacity.

In contrast to Example 1, each of the applications received for developments A to D's capacity requirements can be accommodated on the existing network without the need for reinforcement. Dev. D can therefore connect without any delay or significant reinforcement cost.

By using these principles, reinforcement will only be triggered at a point when an application for the further phase of a development, conforming to our proposals relating to certainty, is received. The applicant would be charged for this reinforcement in line with our charging methodology and the potential to construct assets that could become stranded is very much reduced.

8 Summary

We are eager to establish a set of principles which create processes and policy to facilitate fair, reasonable and efficient allocation of network capacity. The examples provided to illustrate the issues and proposals in this consultation are straightforward scenarios, however we are aware that many of the 'real-world' scenarios may be much more complicated by the variety and requirements of developments and situations on the network. Our intention is that the underlying principles established by this consultation process enable us to produce policy and process changes supported by and benefiting our stakeholders.

9 Responding to this consultation

We want to hear your views on the issues and proposals presented in this consultation. It is important that we get a broad range of stakeholders' opinions and we are keen to get your feedback on the specific questions we have included throughout this consultation.

To assist with your response we have produced a questionnaire with the specific questions from the consultation reproduced in Appendix 1.

Responses should be returned by 19th February 2018 to:

Richard Allcock
Connections Policy Engineer
Western Power Distribution
Pegasus Business Park
East Midlands Airport
DE74 2TU
T: 01332 827503

Or emailed to: wpdconnectionpolmids@westernpower.co.uk

If you wish for your response or any of its content to remain confidential, please clearly mark it to that effect.

10 Next steps

Following review of the responses to this consultation we will develop as set of final proposals which we will publish alongside a summary of the responses in March **2018.**

Appendix 1: Questionnaire for WPD Capacity allocation and reservation consultation on approach and best practice

Please provide you responses in the template set out below. A standalone editable version of this template is available on our website and upon request.

Please indicate the type of stakeholder you represent

1.Domestic customer (or representative)	☐	7. Community energy scheme	☐
2.Business customer (or representative)	☐	8.Consultant	☐
3.Local authority / council officer	☐	9.Energy / utility company	☐
4.Parish councillor	☐	10.Regulator / government	☐
5.Developer / connections representative	☐	11.Academic / education institute	☐
6.Distributed Generation developer	☐	12.Other	☐

Proposed principles for the allocation and reservation of capacity for connections

Principle	Question	Response
Principle 1 - Capacity should be allocated according to customers' defined and verified requirements assessed against a set of qualifying criteria.	1) Do you consider the criteria for the customer to validate the requirement for their requested capacity is appropriate?	
	2) Are there any other criteria or is there any other evidence WPD should consider when assessing the validity of a customer's requested capacity?	

Principle 2 - Capacity should be allocated on a strict date order of confirmed requirements and in line with WPD interactivity procedures	3) Do you consider it is correct that a customer should only secure a place in any interactive connections queue where they have defined and verified requirements and an immediate need for the connection?	
Principle 3 - Capacity should be allocated according to the immediate requirements of end users and not on a speculative basis or for future undefined developments	4) Do you agree that existing network capacity should not be allocated and reserved beyond the timescales of the construction programme for the connection works on infrastructure-only or speculative developments?	
	5) Over what time scales do you think it is reasonable to secure capacity ahead of its actual usage?	
	6) Do you agree that it is a reasonable cost signal to require speculative developments to pay 100% of the reinforcement costs and an uplift for operations, repairs and maintenance?	
	7) Do you think this represents a workable solution to reserving capacity and if not, are there any alternative approaches that you believe WPD should consider, to supplement or replace the approach we are proposing here?	

Principle 4 - Capacity should be allocated with defined milestones for the obtaining of planning permissions, commencement of construction and completion of connection works	8) Do you agree that it is a reasonable cost signal to require demand customers to comply with a set of project progression milestones in order to retain their connection offer and its allocated capacity?	
	9) Do you agree with the milestones set out above or should we consider any alternative milestones?	

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