

Company Directive

STANDARD TECHNIQUE: SD1F/1

Competition in Connections Code of Practice

Procedure for network analysis by Independent Connection Providers

Policy Summary

This document specifies the procedure for WPD and ICP's, for compliance to the 'Code of Practice' where an ICP is to determine and approve the 'Point of Connection' design.

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Implementation Date: April 2016

Approved by



Policy Manager

Date:

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IMPLEMENTATION PLAN

Introduction

This document specifies the procedures that shall be followed by Western Power Distribution (WPD) and Independent Connection Provider (ICP) staff where the ICP wishes to determine the point of connection to WPDs network and / or approve their own design, in accordance with the ENA Competition in Connections Code of Practice (COP).

Main Changes

Clarification on when and how an ICP informs WPD of the POC location and design specification and confirmation self approval are included in Sections 5.6 and 5.7.

Impact of Changes

These changes harmonise elements across DNOs and have no direct operational impact.

Implementation Actions

Team Managers responsible for new connection activities shall ensure that all staff involved in the design of WPDs network are briefed on the requirements of this standard technique.

Implementation Timetable

This document can be implemented with immediate effect.

Document Revision & Review Table		
Date	Comments	Author
6 th May 2016	<ul style="list-style-type: none"> Appendix A form removed (now built into CIRT). Points 5.6 and 5.7 updated. Appendix references updated. 	Stephen Davies
29 th April 2016	<ul style="list-style-type: none"> Tables reformatted and added in Sections 6.1, 7.3 and 10.5 to harmonise content with other DNOs. 	Seth Treasure
25 th April 2016	<ul style="list-style-type: none"> WPD / ICP Design Approval form removed and replaced with electronic link to the Point of Connection & Contestable Design Audit form. Appendix B. 	Stephen Davies
September 2015	<ul style="list-style-type: none"> This is a new Standard Technique 	Seth Treasure

1.0 INTRODUCTION

- 1.1 WPD must provide Independent Connection Providers (ICP's) with the same level of information that is available to WPD staff. This information must be available on a 24/7 basis or delivered in a timely manner.
- 1.2 The objectives of the COP are to facilitate competition in the market of new electricity connections through minimising the input services from host DNOs and to ensure that the input services are provided on an equivalent basis to internal data systems.
- 1.3 Code of practice can be viewed by clicking on the following link - [Code of Practice](#)

2.0 SCOPE

The Code of Practice agreement has been created to detail the increased level of competition and set out the end to end processes, practices and requirements that a DNO will follow to enable ICPs to undertake contestable works. The scope of the Code of Practice is;

- Accreditation
- Determining the Point of Connection
- Convertible Quotations (Dual Offer)
- Design Approval
- Link Boxes
- Inspection

3.0 ACCREDITATION

- 3.1 Independent Connection Providers wishing to undertake market segments of competition must be appropriately accredited for the specific contestable activity.
- 3.2 Following the implementation of the Code of Practice agreement, the analysis of electricity distribution networks to facilitate new connections has been made contestable.
- 3.3 Independent Connection Providers that wish to undertake network studies must hold a relevant accreditation and be assessed to possess enough competence as awarded under the National Electricity Registration Scheme (NERS).
- 3.4 The individual planner does not need to obtain personal NERS accreditation for the relevant subject but will obtain internal company accreditation.

4.0 WPD RESPONSIBILITIES

- 4.1 WPD must provide the ICP with information on a 24/7 basis and to the same standard as provided to its own staff. The information must be provided in a timely manner and therefore much of the information will be available via a new CROWN internet routing and tracking (CIRT) software package that will provide the ICP with instant information.
- 4.2 Where information is currently unavailable via the CIRT software package (Embedded Network Agreed Capacities, HV feeder demands etc.) this information will be requested by the ICP via email to the appropriate person within the local team structure who will provide the requested information in a timely manner.
- 4.3 WPD will provide the ICP with relevant documentation detailing the current design standards and techniques and this will be made available via the WPD Tech Info website.
- 4.4 WPD will provide the ICP with sufficient mapping information as to enable the clear interpretation of the WPD distribution network and to facilitate the determination of the point of connection onto the existing network.
- 4.5 WPD will create Meter Point Administration Numbers (MPAN) where the intention is for WPD to adopt the assets.
- 4.6 WPD will make customers aware of competition and connections, provide competition information and provide Dual Offer quotations to facilitate competition.
- 4.7 WPD will inform the ICP of interactivity with existing quotations, the existence of Potential Refunds, Apportionment of Cost and network reinforcements or network constraints. In all cases where these items apply, the point of connection and associated extra costs will be calculated by WPD as the works have been determined to be non-contestable.
- 4.8 In the event of an ICP applying to design a connection with one or more of the above requirements, the ICP shall be informed of non-compliance to this policy and WPD shall provide a cost for the non-contestable activities.

5.0 ICP RESPONSIBILITIES

- 5.1 The ICP will assess the connection application and determine whether they are appropriately accredited to determine the point of connection.
- 5.2 On receipt of an application for new connections to an ICP, the ICP shall inform WPD of its intention to determine the Point of Connection. This shall be made via the CROWN CIRT + database where an enquiry will be raised (Point of connection notice).
- 5.3 The ICP will assess the connection application and determine if a detailed technical assessment or matrix type assessment is required. ST:SD5B provides guidance on matrix type assessments.

- 5.4 The ICP shall design the point of connection and any works to be adopted by WPD, in accordance with the ENA ER G81 documents, WPDs G81 Appendices and the relevant WPD Directives and Connection Guides. These documents are available from WPDs Technical Information website, www.westernpowertechinfo.co.uk.
- 5.5 The ICP will inform WPD of the progress of the application at the *Investigation, Point of Connection Issue* and *Point of Connection Acceptance* milestones in accordance with the COP.
- 5.6 The ICP will provide WPD with a POC location and contestable design electronically by attaching the plan/ documents to the CIRT enquiry when completing the 'POC Acceptance – ICP Quote Accepted' CIRT activity.
- 5.7 Where the ICP is to self-approve the design of the POC the ICP will confirm compliance to the relevant standards when completing the 'POC Issue – ICP Quoted' CIRT activity.

6.0 DETERMINING THE POINT OF CONNECTION

- 6.1 The Code of Practice Agreement for ICPs Determining the POC onto WPDs Network is available for the following connection works detailed within table 1.

Connection Type	Self-determination available (Yes/No)	Comment
LV Demand	Yes	Matrix design available – see section 7
HV Demand	Yes	
HVEHV Demand	No	
EHV132 Demand	No	
DGLV	No	
DGHVEHV	No	
UMS LA	Yes	
UMS Other	Yes	
UMS PF1	Yes	

Table 1: Contestability of Connection Design

- 6.2 The Code of practice agreement is only available for determining the point of connection of **new load** connections and therefore generation connections, alterations or augmentations are deemed to be non- contestable. For avoidance of doubt, connection enquiries predominantly for load with a small proportion of generation conform to this policy.
- 6.3 It is not possible to offer the facility for generation connections to be determined in the East Midlands or South West license areas due to interactions with National Grid reinforcements. For consistency generation connections are not included across the WPD area at this time. This decision will be kept under review.

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- 6.4 Point of Connection designs by ICPs may only be undertaken where the relevant sections of electricity networks **do not display** Potential Refund or Apportionment of Cost hand symbols on the EMU V8 mapping system.
- 6.5 Point of Connection designs by ICPs may only be undertaken when the local network is **not subject to** any (cost applicable) upstream reinforcement works and or local network constraints as the designs and works remain non-contestable.
- 6.6 Point of Connection designs by ICPs may only be undertaken when there are no interactive schemes on any associated and relevant parts of the network. For avoidance of doubt, multiple enquiries for the same developer or connection via multiple ICPs and WPD are deemed not to be interactive.
- 6.7 The Point of Connection Design (at LV) must be compliant to Standard Technique: SD5K for network characteristics and must utilise the customer profiles and data sets provided within ST: SD7A.

7.0 MATRIX DESIGN - STANDARD TECHNIQUE: SD5B FOR MINIMAL NETWORK ANALYSIS

- 7.1 WPD provides a standard design matrix which if followed correctly shall enable the quick determination of the Point of Connection with minimal network analysis. WPD's standard design matrix is Standard Technique: SD5B.
- 7.2 The matrix design process uses pre-assessed parameters modelled within WinDebut to enable the connection of Low Voltage demands subject to the compliance to minimum network requirements and maximum demand requirements.
- 7.3 The Code of Practice Agreement for ICPs determining the POC using a standard matrix design requires that the criteria for matrix designs are published in the table below

Criteria	Measurement	Comment
connection capacity	200kVA maximum	reduced to 150kVA maximum for 6.6kV networks
distance to substation	200m	increased to 250m for capacity less than 150kVA
service cable length	30m	
transformer capacity	315kVA and above	restriction on total load on single LV fuseway
asset types excluded	none	

7.4 A summary of Standard Technique: SD5B is detailed below

Load and Demand (balanced loads only)		
Demand Subject to available spare transformer and feeder capacity	11kV HV network	6.6kV HV network
Permissible new load to be connected to 315KVA TX	200kVA	150kVA
Permissible new load to be connected to 500KVA TX	200kVA	150kVA
Permissible single point load to be connected to 315kVA TX	172kVA	138kVA
Total load (existing & new) on single fuseway	217kVA	172kVA
Feeder Length and Size		
Continuous length $\geq 185\text{mm}$ wavecon $\leq 200\text{m}$	200kVA	
Continuous length $\geq 185\text{mm}$ wavecon & between 200 and 250m	150kVA	

- 7.5 Where a standard design matrix has been used (WPD or ICP) it will be recorded as a yes / no flag indication within the Send Quote activity in CROWN CIRT.
- 7.6 Where the Standard Design Matrix is used to determine the Point of Connection, the competent electrical designer will require cable plans, substation and feeder loads.
- 7.7 Where an ICP has assessed the POC using the Standard Design Matrix and has fully complied with the clauses and requirements, any network design issues that arise after the work has been completed (e.g. thermal issues, voltage issues etc.) will be rectified by WPD at WPDs cost.
- 7.8 If network issues arise following the connection of load by an ICP onto WPD's network and it is found that the ICP has not complied with the clauses with Standard Technique: SD5B, the required reinforcement works, calculated by WPD (as reinforcement is deemed to be non-contestable) will be fully funded by the responsible ICP.
- 7.9 Any proposed connections that do not fall within the scope of the Standard Design Matrix detailed within Standard Technique: SD5B will require full detailed technical assessment.

8.0 NOTIFICATION PROCESS

- 8.1 WPD and ICP's will exchange information relevant to the determination of the Point of Connections for new load connections. Automatic data exchanges will be made via the CIRT package and additional information will be made available by the relevant departments within WPD.

8.2 The ICP must notify WPD with the relevant information detailed below at the following stages.

- Point of Connection Notice – when the ICP commences investigation into the determination of a Point of Connection.
- Point of Connection Issue – When the ICP issues an Offer Quotation to the customer.
- Point of Connection Acceptance – When the customer accepts the quotation provided by the ICP.

The above bullet points will be noted activities within an enquiry category for ICP connections.

8.3 Point of Connection Notice – The ICP must notify WPD of their intention to calculate the Point of Connection and provide WPD with the following information.

- Confirmation of the capacity required.
- The nature and type of load or generation that is to be connected.
- The timing of the connection.
- The proposed network owner that will be responsible for the end-consumer connections and MPAN creation.
- A polygon showing the location and the size of the development.
- A build-out programme over a five-year period showing the growth of the capacity required.

8.4 At the Notice stage, Western Power Distribution must provide the ICP with any relevant information regarding;

- Network Constraints *
- Upstream Reinforcement *
- Interactivity (associated Offered quotations to the same parts of the network that are not yet connected) *
- Regulation Payments associated with Potential Refunds or Apportionment of Costs as per Standard Technique: NC1P *
- Agreed Supply Capacities for existing Embedded Networks.
- Earthing arrangements for Distribution Substations (PME / SNE / PNB / None).
- Protection arrangements for Distribution Substations (Fuse size or CB settings).
- Earthing arrangements for the Distribution Network (Hot or Cold – ROEP >/< 430V).
- Protection data for Primary Substations and HV feeders.
- Feeder Load data for HV networks (Raw data from Data Logging OAS) detailed within guidance notes.

* Schemes subject to Network Constraints, Upstream Reinforcement, Interactivity, and Regulation Payments cannot be considered for Point of Connection Design by ICP's or IDNO's as they are outside of the scope of the Code of Practice agreement.

The WPD Planner will respond to the ICP enquiry within **five working days** of the notification.

8.5 Point of Connection Issue – The ICP must confirm to WPD when and to whom a quote was issued.

- WPD will log the details for future reference to further possible associated connection applications.
- Where a quote becomes interactive with a subsequent WPD or ICP quote, WPD will notify the relevant ICPs that a **requote** would no longer be compliant to the Code of Practice.

8.6 For consistency the following timescales will apply to the stages;

- Point of connection notice – If the scheme does not progress to the Issue stage following 20 working days, WPD will close the enquiry.
- Point of connection issue - The Offer is open for acceptance for ninety days from the date of the Offer Letter, after which it will (if not accepted) automatically expire.

8.7 Point of Connection Acceptance

- If the Standard Design Matrix was utilised, the ICP must confirm in writing that the connection is compliant to the requirements of Standard Technique:SD5B. WPD will not be required to approve designs compliant to Standard Technique: SD5B.
- If an appropriate detailed network study was undertaken, the ICP must confirm in writing to WPD that the Connection design is compliant to WPD policies and Standard Techniques.
- Suitably Accredited ICP's may self-approve the Point of Connection design in accordance to their NERS accreditation. The ICP shall still submit the design to WPD for inspection.
- Where the ICP does not undertake the design approval, WPD shall be entitled to require the ICP to submit their design for approval in accordance to the requirements of the Code of Practice.
- Inspection works of the constructed network shall be carried out in accordance to the Inspection and Monitoring Regime.
- As Constructed drawings of connection works to be adopted by WPD shall be forwarded to the regional Mapping Centre.

9.0 LINK BOXES

9.1 Where a link box is required at the connection boundary between WPD's Distribution System and the network of an IDNO, the link box shall be considered to be in addition to the minimum cost scheme compliant to industry / company standards.

- Where the link box is requested by the ICP or the IDNO, the link box will become the property of the IDNO.
- Where the link box is requested by WPD, the link box will become the property of WPD.
- The cost of providing the link box will be funded by the party that is to own the link box (as described above).

- 9.2 WPD (local and or the relevant IDNO must be contacted to determine the requirement of a Link Box at each Point of Connection.

10.0 DESIGN APPROVAL

- 10.1 The suitably accredited ICP or WPD shall ensure that the Point of Connection Design is compliant to all relevant national laws, regulations and ENA documentation. It shall also be compliant with WPD Policies, Standard Techniques and Design Specifications.
- 10.2 Assessments shall be made to ensure compliance to thermal restrictions, voltage regulation, impedance limits, Fault Levels, Protection settings / compliance, material specification, earthing arrangements and suitable positioning / access or egress concerns.
- 10.3 Where WPD is to approve a design, the reviewer shall assess the proposed design to the same standards to that of internal works and will not make any requirements above that of the competitive WPD design.
- 10.4 If required the WPD assessment of the Point of Connection design shall be recorded and documented within the [Point of Connection and Contestable Design Audit form](#) (Appendix A).
- 10.5 The Code of Practice Agreement for ICPs Design Approval is available for the following connection works detailed in the table below

Relevant Market Segment	Self Approval of Designs Available (Yes/No)	Comment
LV Demand	Yes	
HV Demand	Yes	
HV/EHV Demand	No	
EHV/132kV Demand	No	
DGLV	No	
DG HV/EHV	No	
UMS LA	Yes	
UMS Other	Yes	
UMS PF1	Yes	

The Qualifying Criteria that will apply to allow an ICP to move between the different levels of design approval are

Audit Level	Criteria
1 (100% audit)	20 audits required to move to Level 2
2 (50% audit)	20 audits required to move to Level 3
3 (25% audit)	
Self Audit Level	
1 (5% audit)	20 audits required to move to Level 2
2 (2% audit)	

11.0 INFORMATION ON REQUEST

11.1 ICP's can obtain the following information by using the online CIRT package.

- Substation Name
- Substation Number
- HV Feeder Reference
- Primary Substation Name & Number
- Total number of Customers
- Total Agreed Supply Capacity (must be reserved)
- Day MD*
- Night MD*
- Transformer Size & Voltage
- LV Cabinet / Pillar size
- HV Switch Type
- Automation assets

Then per LV Feeder:

- Feeder Number
- Number of Customers by Profile Class
- Number of Half Hourly Customers
- Number of IDNO Customers per substation
- Agreed Supply capacities per feeder (These capacities must be reserved)

* Inaccurate figures may appear where MPAN numbers are incorrectly profiled or the meter supplier has provided inaccurate data. In the event of spurious or suspicious data WPD's local responsible team must be contacted for interpretation.

11.2 Any information not included within CIRT and required for the design of the connection can be obtained by contacting the local responsible team. The contact details of the responsible team will be provided in the confirmation email during the notification process. This information shall be provided within five working days where the information is available on the WPD systems or up to six weeks where monitoring equipment needs to be fitted on site to collect data.

11.3 Information obtained via local responsible team –

- HV Feeder protection
- HV feeder demand data
- Earthing arrangements
- IDNO Agreed Supply Capacities

11.4 Information to be obtained via the central Primary System Design Planning team –

- Primary Substation protection data
- Automatic voltage control settings (target and bandwidth of voltage)
- Earthing Arrangements within close proximity to Primary Substations
- Information required for the analysis of the Rise of Earth Potential at a Distribution Substation

Emails shall be sent to wpdpsdicpdata@westernpower.co.uk

12.0 LAND RIGHTS

- 12.1 ICP's must ensure that all statutory consents and land rights are negotiated in accordance with WPD's Estates and Wayleaves Policy documents.
- 12.2 Land rights should be negotiated so as to be in accordance with the terms of WPD's standard legal document templates.
- 12.3 WPD Estates and Wayleaves documents and standard legal document templates will be made available on the WPD Technical information website.

APPENDIX A

Point of Connection & Contestable Design Audit form

<\\AVODCS01\NEWCON\CIC\I and MR\Forms for I&MR\POC + CONTESTABLE DESIGN AUDIT FORM.pdf>

APPENDIX B

SUPERSEDED DOCUMENTATION

This document supersedes ST:SD1F dated September 2015 which should now be withdrawn.

APPENDIX C

ASSOCIATED DOCUMENTATION

- Electricity Act 1989
- Electricity, Safety, Quantity and Continuity Regulations 2002
- ST:SD5A - Design of Low Voltage Domestic Connections
- ST:SD5C - Design of Low Voltage connections to Multiple Occupancy buildings
- ST:SD5D - Arrangement of Low Voltage Cut outs
- ST:SD5K - Relating to the use of Windebut computer software
- ST:SD5P - Design of Unmetered Connections
- ST:SD5R - Earth Fault loop Impedances and Phase to Neutral Loop Impedances at LV installations
- ST:SD6B - Relating to connection design between 69 & 1000Kva
- ST:SD6J - Connection Design – Potentially disturbing Electrical Equipment rated up to 75A
- ST:SD8B - Relating to Cable Ratings
- ST:TP4B - Relating to the protection of Distribution Substations
- ST:TP21D - 11kV, 6.6kV and LV earthing
- ST:TP21E - Provision of WPD earth terminals to customer LV installation
- ENA ER G81 (all parts)
- WPD G81 Appendices (all parts)
- ENA Competition in Connections Code of Practice

APPENDIX D

KEY WORDS

Point of Connection, ICP Design, Code of Practice Agreement.