

Company Directive

STANDARD TECHNIQUE : NC6A/10

Responding to an Enquiry for the Connection of an Embedded Network to NGED's Distribution System

Policy Summary

This document sets out the process for dealing with an application from an Independent Distribution Network Operator, or its appointed agent, to connect its own distribution network to NGED's distribution system.

Author: Kelly McLaughlin

Implementation Date: March 2023

Approved by



Kester Jones
Connections Strategy Manager

Date: 27th March 2023

Target Staff Group	Network Services Teams and Primary System Design members responsible for dealing with applications to connect or augment embedded networks
Impact of Change	Amber – Changes affect staff dealing with applications to connect embedded networks
Planned Assurance checks	Internal review of CiC processes.

NOTE: The current version of this document is stored in the NGED Corporate Information Database. Any other copy in electronic or printed format may be out of date. Copyright © 2023 National Grid Electricity Distribution

IMPLEMENTATION PLAN

Introduction

This document provides guidance on responding to enquiries received for embedded connections.

Main Changes

Ofgem have approved four DCUSA change proposals, following the Access and forward looking significant code review, for the way reinforcement is costed and access to our network is provided for applications received post April 1st 2023. The changes made are to align with the new requirements following the outcome of the change proposals.

Impact of Changes

New section 8 added for Curtailable Connections.

Implementation Actions

Primary System Design Managers and Distribution Managers shall ensure that all staff who are involved in the process for providing a Connection Offer are made aware of this Standard Technique.

Webinars held throughout March 2023, the recordings of these along with the slide packs and Q&A are all available on SharePoint.

Implementation Time

The implementation date is 1st April 2023.

REVISION HISTORY

Document Revision & Review Table		
Date	Comments	Author
March 2023	<ul style="list-style-type: none"> New section 8, Curtailable Connections 	Kelly McLaughlin
February 2023	<ul style="list-style-type: none"> New paragraph 7.3 added to detail the requirement to capture the responsibility of safe access and egress as well as the ongoing responsibility of maintenance and replacement of NGED assets where an alternative substation design is approved, within the Responsibility Schedule as per ST: NC1V. 	Kate Shehean
November 2022	<ul style="list-style-type: none"> Removal of the requirement for CT/VT's under section 11.1 Removal of the example of IDNO owned LV breach joint within Appendix C. 	Kyle Smith
October 2018	<ul style="list-style-type: none"> Section 5 amended to reflect Ofgem's directive to extend the Development Phase from three years to five years. Section 11 amended to reflect requirements at the DNO/IDNO boundary. New Section 14 to advise on the treatment of stranded customers. 	Vanessa Buxton
August 2016	<ul style="list-style-type: none"> New Section 13 for provision of mobile generators to IDNO's and Appendix B for handover of the asset. New examples for allowable POC's 	Vanessa Buxton
October 2014	<ul style="list-style-type: none"> From 1st November 2014 new connections to IDNO networks will no longer normally require a low voltage link box at the interface. 	Tim Hughes
November 2013	<ul style="list-style-type: none"> From 1st December 2013 WPD will no longer require that boundary metering is installed where the point of supply is at high voltage. 	Tim Hughes

Contents

BACKGROUND	5
1.0 THE APPLICATION PROCESS.....	5
2.0 PREPARATION OF THE DESIGN	6
3.0 LV INTERFACE ARRANGEMENTS.....	7
4.0 PREPARATION OF THE CONNECTION OFFER	8
5.0 CAPACITY “RAMP UP”	8
6.0 OFFER ACCEPTANCE.....	9
7.0 BILATERAL CONNECTION AGREEMENT.....	10
8.0 CURTAILMENT CONNECTIONS.....	11
9.0 SECURING NGED ASSETS.....	12
10.0 SETTING UP PSEUDO MPAN’S AND IDNO RECORDS ON THE CROWN SYSTEM.....	13
11.0 SETTING UP RECORDS ON MAPS	15
12.0 METERING REQUIREMENTS	15
13.0 BILLING PROCESS	16
14.0 SECURITY OF SUPPLY	16
15.0 TRANSFERRING CUSTOMERS TO IDNO NETWORKS.....	17
APPENDIX A OVERVIEW OF PROCESS FOR ESTABLISHING A NEW EMBEDDED DISTRIBUTION NETWORK	18
APPENDIX B HANDOVER FORM – STANDBY GENERATOR HANDOVER (NGED/IDNO)	20
APPENDIX C ALLOWABLE LOW VOLTAGE IDNO POINTS OF CONNECTION	21
APPENDIX D SUPERSEDED DOCUMENTATION	24
APPENDIX E RECORD OF COMMENT DURING CONSULTATION.....	24
APPENDIX F ASSOCIATED DOCUMENTATION.....	24
APPENDIX G KEY WORDS	24

BACKGROUND

The implementation of the Utilities Act 2000 removed the monopoly held by the existing Distribution Network Operators (DNOs) to provide and maintain an electricity distribution network by opening up the market to Independent Distribution Network Operators (IDNOs). An IDNO is permitted to build and operate a distribution network within an area served by the host DNO. A DNO is also, subject to gaining accreditation, able to operate a distribution network outside of its traditional geographic area, acting as an IDNO.

This Standard Technique sets out the process for dealing with an application from an IDNO to connect its own distribution network (the “embedded network”) to NGED’s distribution system. The process is detailed below and a simplified diagram is attached as Appendix A.

Policy document POL: NC6 provides further background information and should be read in conjunction with this Standard Technique.

1.0 THE APPLICATION PROCESS

- 1.1 All applications submitted by an IDNO (or its agent) for an electricity connection will be routed via the Records Teams at Bodmin, Swansea or Tipton.
- 1.2 The Records Team will raise a CROWN Enquiry and route it to the appropriate Network Services Team.
- 1.3 The Network Services Team will allocate the enquiry to the correct Crown Enquiry Category.
- 1.4 All IDNO enquiries must be allocated to one of the “CIC” Enquiry Categories, according to the nature of the connection work involved. The appropriate Enquiry Categories are:

CIC Demand EHV	CiC Generation EHV
CIC Demand HV	CiC Generation HV
CiC Demand LV	CiC Generation LV
CIC Alternative Demand 132kV	CIC Alternative Generation 132kV
CIC Alternative Demand EHV	CIC Alternative Generation EHV
CIC Alternative Demand HV	CiC Alternative Generation HV
CIC Alternative Demand LV	CiC Alternative Generation LV
CIC Demand HV – ICP Works Only Notification	CiC Generation HV – ICP Works Only Notification
CIC Demand LV – ICP Works Only Notification	CiC Generation LV – ICP Works Only Notification
CiC Demand or Generation – 132kV	
CIC Demand – LV ICP Multiple Design & POC Notification	

- 1.5 Enquiries must be allocated according to the highest voltage of works associated with the scheme, taking account of any reinforcement or diversionary works included within the scheme, and not necessarily to the voltage of connection to the IDNO’s distribution system.

- 1.6 It is important for reporting purposes under Standard Licence Condition 15 that all enquiries are correctly allocated. The Network Services Team is responsible for allocating the enquiry to the correct Enquiry Category. **It is essential that the correct Enquiry Category is attributed otherwise the prescribed timescales for standards of service may not be met. See ST: NC2K for further information relating to standards of service under SLC 15.**

[\\AVODCS01\DMS\ACROBAT\MAIN\NC\NC002\NC002K](#)

2.0 PREPARATION OF THE DESIGN

- 2.1 The Planner must evaluate the point of connection to the distribution system and prepare an Offer for connection within the timescales prescribed (see 4.2).
- 2.2 NGED is obligated to provide for the applicant the minimum cost technically compliant scheme (the “Minimum Scheme”) in accordance with NGED’s Connection Charging Methodology Statement prepared in accordance with Standard Licence Condition 14. An IDNO applicant however, may have different requirements from that of the developer who requests NGED carry out all the work. The Minimum Scheme for an IDNO applicant would be for NGED to provide a point of supply (the Connection Point) as close as possible to the point of connection to the existing NGED distribution system. The IDNO applicant may however, request:
- i) a point of supply at the site boundary, or within the site*;
 - ii) connection at a higher voltage than is required;
 - iii) at LV, a single point of supply, when two or more may be more viable.

*see paragraph 3.8

It is recommended therefore, that the Planner liaise with the IDNO applicant at an early stage to ascertain the applicant’s exact requirements. Establishing this fact at the outset can save wasted time and effort.

- 2.3 Any agreement with the applicant to provide a connection that exceeds the Minimum Scheme must be documented in the Offer. This is especially important where the scheme quoted for is not the same as an Offer prepared by NGED and submitted directly to the customer/developer. Any instances of discrimination against the IDNO could be viewed by Ofgem as a Licence breach and enforcement action could be taken against NGED.
- 2.4 The design will comply with arrangements laid down in Engineering Recommendation G88 published by the Energy Networks Association entitled; “Principles for the Planning, Connection and Operation of Electricity Distribution Networks at the Interface between Distribution Network Operator’s (DNO’s) and Independent Network Operator’s (IDNO’s)” (ER G88). A copy may be viewed by clicking on the link below.

[ER_G88_4 \(2021\).pdf](#)

- 2.5 Any request by an IDNO to diverge from ER G88 must first be referred to the Policy Manager.

- 2.6 When calculating LV volt drop to the Point of Connection the Planner should base the calculation on normal LV Connect principles with allowances for unbalance and diversity made according to the number of end users rather than simply using the single point, three phase, after diversity kVA load quoted by the IDNO applicant, which assumes the load is completely balanced.
- 2.7 For costing purposes the IDNO development is deemed to be for commercial use regardless of the ultimate usage by the end consumer, therefore all schemes raised in Crown Estimating & Charging should be allocated either to Budget Code 04 for a demand scheme or Budget Code 17 for a generation scheme. In both cases VAT must be applied at the standard rate.

3.0 LV INTERFACE ARRANGEMENTS

- 3.1 There is not normally a requirement for isolation equipment (e.g. link boxes) at the LV boundary between NGED's Distribution System and the IDNO network. The ownership boundary will be at an agreed position on the LV system; generally a straight or branch joint. See Appendix C for examples of allowable Points of Connection, a copy of which can also be found at [Embedded networks](#).
- 3.2 The point of ownership boundary will be identified on NGED's Mapping System and within the Bilateral Connection Agreement.
- 3.3 Where a link box is specifically required or requested at the interface between NGED's Distribution System and the IDNO network the party requiring the link box shall fund, own and maintain it.
- 3.4 On the rare occasion NGED require a link box and procure and install one the cost must not be charged to the IDNO therefore, for estimating and charging purposes, the estimated cost of procurement and installation should be allocated to non-chargeable Budget Code 35 - Quality of Supply.

If the IDNO contests the procurement and installation of the link box in accordance with Competition in Connection rules the IDNO may invoice NGED for its reasonable costs. NGED will raise a Purchase Order and book the cost to the specific Crown scheme.

- 3.5 Where the IDNO procure and install the link box on behalf of NGED they must do so in accordance with associated NGED Standard Techniques and Engineering Equipment Specifications and submit information to NGED to satisfy the design submission process.
- 3.6 If the IDNO requires a link box the IDNO will procure and install it at their own cost.
- 3.7 The link box must carry a label identifying who owns it.
- 3.8 NGED shall only agree a point of supply remote from the point of connection where there is adequate capacity and a foreseeable potential to connect other customers to the asset.

4.0 PREPARATION OF THE CONNECTION OFFER

- 4.1 The Planner should proceed straight to the Offer unless it is not viable to do so in which case a Budget Estimate may be provided. The Connections Charge Letter should generate through CROWN for all Connection Offers.
- 4.2 On most occasions the IDNO applicant will be competing directly against NGED to provide the electricity infrastructure for the developer. To ensure non-discrimination NGED must provide the Connection Offer as soon as is reasonably practicable and in all cases in accordance with SLC 15 which places an obligation on NGED to meet prescribed levels of performance for certain non-contestable services.
- 4.3 The Offer must be presented in an appropriate form and contain information to allow the applicant to design the embedded network. Reference should be made to ST: NC2A, relating to the preparation of a Connection Offer for a new or augmented connection. Click on the link below for further details,

<\\AVODCS01\DMS\ACROBAT\MAIN\NC\NC002\NC002A>

- 4.4 A drawing showing the surrounding network in relation to the site should be included with the Offer. The Planner may prepare a drawing using the EMU system, ensuring the correct border (.bdr), showing copyright information, is attached.
- 4.5 In the event an oil pipeline is present the Planner should refer to the Mapping Response Team and request a plan omitting the pipeline. The Mapping Response Team can forward the plan to the Planner for inclusion in the Offer.
- 4.6 The Offer must include the cost of any associated reinforcement or diversionary work required as a separate itemised cost within the overall Connection Charge.

Note: Upstream reinforcement and diversionary work may be contestable where it can be carried out independently of the existing distribution system, does not require access to NGED operational areas and is fully funded by a single third party.

- 4.7 When the Offer is sent to the applicant it is imperative the “Send Quote” activity within Routing & Tracking is updated immediately to record the period of time it has taken to prepare and send the Offer since the application was received.

5.0 CAPACITY “RAMP UP”

- 5.1 The IDNO must state the capacity required to accommodate the overall development demand. However, due to the construction programme and phased connection of multiple premises, demand may ramp up over a period of time; possibly a number of years. Where the overall capacity requirement is greater than 500kVA NGED may request that the agreed capacity is incremented over a five year period, upon each anniversary of the initial energisation of the connection.

- 5.2 Under Portfolio billing arrangements ‘ramping’ the agreed capacity will have no discernible effect on DUoS charges for connections. However, incremental capacities may still be agreed in these instances to promote consistency of approach and to encourage development of an economic and efficient distribution system.
- 5.3 The incremental arrangement will be captured within the Offer and Bilateral Connection Agreement (BCA) held between NGED and the IDNO. Provision is made to incorporate the ramp up arrangements within the Connections Offer as per the table below.

	Upon Energisation	1 st Anniversary	2 nd Anniversary	3 rd Anniversary	4 th Anniversary	5 th Anniversary
Maximum Import Capacity						

- 5.4 On the first, second, third and fourth anniversary of energisation of the connection the agreed capacity will increase automatically unless the IDNO, giving 28 days notice, requests a review of the capacity requirements. NGED and the IDNO will mutually agree a revised capacity requirement going forward.
- 5.5 On the fifth anniversary of energisation of the connection NGED and the IDNO will review the IDNO’s capacity requirements. The IDNO may ask to;
- i) Retain the agreed capacity applied; or
 - ii) Increase the agreed capacity; or
 - iii) Decrease the agreed capacity.
- 5.6 If the IDNO wishes to increase the agreed capacity above that stated at the fifth anniversary they must apply in accordance with the process set out under NGED’s connection charging methodology statement. NGED is under no obligation to provide more capacity than that agreed prior to the date of each anniversary of energisation.

6.0 OFFER ACCEPTANCE

- 6.1 When an Offer is accepted and the downstream design has been approved the Planner should submit a request to Connection Policy to raise a pseudo MPAN and prepare a BCA. Submission of the BCA request will enable Connection Policy to prepare the BCA (see Section 6.0). Submission should be made using the standard form. The pro-forma can be found on Connection Strategy sharepoint shared area:

[BCA proforma.docx](#)

Operational diagrams and locational drawings should be attached to the pro-forma submitted. Where a distribution substation is required the drawing used for Land Registry purposes may be used.

- 6.2 If a new substation is to be commissioned as part of the connection works the Planner should first allocate a substation number. The feeding substation number, transformer, feeder and role identifiers must all be included in the BCA request form submitted to Connection Strategy.

7.0 BILATERAL CONNECTION AGREEMENT

- 7.1 The terms and conditions under which a DNO shall allow an IDNO to connect to the DNO distribution system are set out under Section 2B of the Distribution, Connection and Use of System Agreement (the “DCUSA”). The DCUSA stipulates that where an IDNO requests connection to the DNO distribution system the DNO shall offer to enter into a Bilateral Connection Agreement (the “BCA”).
- 7.2 The BCA will be specific to a determined Connection Point or Connection Points. It will have Schedules attached which provide details unique to the connection, for example;
- the characteristics of the connection;
 - the agreed capacity (including any “ramping” arrangement);
 - ownership and responsibility for buildings, plant and equipment;
 - safety management systems;
 - access arrangements;
 - connection charge and payment arrangements;
 - An operational diagram and location drawing.
 - Where applicable, curtailment arrangements & system requirements to instruct curtailment
- 7.3 Where an alternative substation design as set out in ST NC1V is approved and installed, specific details relating to safe access and egress for NGED staff and the maintenance and replacement of NGED assets shall be captured within the Responsibility Schedule within the BCA.
- 7.4 The connection must not be energised until the BCA is signed by the IDNO. Connection Strategy will inform the Network Services Team when this is done.

8.0 CURTAILMENT CONNECTIONS

8.1 Curtailment offer BCA will need to reflect the following:

Non-Curtailable Import Capacity:	[xxx] kVA
Non-Curtailable Export Capacity:	[xxx] kVA
Curtailable Import Capacity:	[xxx] Kva
Curtailable Export Capacity:	[xxx] kVA
Curtailment End Date:	[[N/A] or [DD/MM/YYYY]]
Import Curtailment Limit:	[hours]
Export Curtailment Limit:	[hours]
Exceeded Import Curtailment Price (subject to change):	[£/MVAh]
Exceeded Export Curtailment Price (subject to change):	[£/MVAh]

- Details of Curtailable connections connected to the User's system
- Details of Technical requirements to instruct curtailment to User
- Agreed alternatives to curtailment.

8.2 Details on the technical requirements for Curtailable Connections between DNO and IDNO can be found within the Flexible Design and System Design policy suites.

8.3 Curtailable Connections do not apply to connection offers for: (a) domestic and non-domestic Customers that are billed on an aggregated and non-site-specific basis or who are metered directly using whole current meters; or (b) Unmetered Supplies.

8.4 A Curtailable Connection will only be offered where NGED has identified a requirement for Reinforcement to facilitate provision of the requested connection, and where the Curtailment will provide a network benefit.

9.0 SECURING NGED ASSETS

- 9.1 Where a substation is required the Planner must first establish on what basis NGED's assets will be secured. This will be dependent on the type of accommodation provided, i.e. standalone/shared/integral and which party is to be the majority asset holder.
- 9.2 The preferred method is by transferring the freehold from the developer or land owner but a long leasehold or sub-lease may sometimes be more appropriate. Where the IDNO is the majority asset holder they will be responsible for the accommodation and hold site duties under the ESQC Regulations. Under this scenario, for LV and 11kV sites, the IDNO will normally want to secure the rights for the substation under a bilateral lease/transfer agreement between themselves and the landowner. NGED's assets on the site and cables will be included in this agreement as further described in this section.
- 9.3 NGED has been working with the IDNO's and a process has been agreed to allow IDNO's to liaise directly with the land owner over the land transfer and to have control over the legal process for 11kV and low voltage connections only. Connections at 33kV and above will be the subject of a tri party agreement under guidance from the Consents and Wayleaves team.
- 9.4 The IDNO will acquire rights from the landowner by securing either a lease or transfer in respect of the substation and cabling, with NGED relying on the Contracts (Rights of Third Parties Act) 1999 to enforce the rights set out in the direct agreement between the IDNO and the landowner. The process to be adopted by the parties is based on one agreed with a major IDNO and is more particularly described the Guidance Note for Completion of Legals for Embedded Connections with IDNO's which can be viewed using the link below.
- https://sharepoint.westernpower.co.uk/sites/wpd/policy/connections/Competition_in_Connections/Embedded_networks/Guidance_Note_for_Embedded_Connections_with_IDNO.doc
- 9.5 For 33kV connections and in rare cases where an IDNO does not wish to adopt this procedure, following offer acceptance, the Planner/Estates Specialist should instruct NGED's solicitor using the appropriate notification letter and accompanying drawings. The notification letter can be viewed using the link below,
- https://sharepoint.westernpower.co.uk/sites/wpd/policy/connections/Competition%20in%20Connections/Embedded%20networks/Proformas/IDNO_SharedSite_GeldardsInstructionLetter_V2.doc
- 9.6 The IDNO agent will negotiate the transfer/lease and instruct the IDNO solicitor who will liaise and agree the documentation with the solicitor for the developer/land owner. NGED's solicitor would only be involved (with the exception of tri-party agreements for 33kV and above where NGED's solicitor would be involved from the start of the process) should amendments be required to the clauses that impact on NGED in the standard transfer/lease templates. At that point, NGED's solicitor would need to be instructed - refer to the Guidance Note in 8.4 for further details.
- 9.7 NGED will exercise discretion regarding timing of the energisation of the Connection Point and generally may complete the connection works but not energise unless the Transfer of Part of Registered Title (Form TP1) has been signed by all appropriate parties.

- 9.8 Easements or wayleaves for cable routes will be negotiated in the same manner (and generally included as Ancillary Rights within the transfer/lease agreement) but prior to agreement with the land owner, the IDNO agent will submit a draft drawing to NGED for approval which shows the proposed cable route(s) and ownership splits. The Planner/Estates Specialist may prepare their own drawing for inclusion in the BCA.
- 9.9 The IDNO will notify NGED's solicitor and the NGED case owner of completion and provide the document electronically and, following registration at Land Registry, NGED's solicitor will forward a copy of the transfer documents for retention in the Deed Room. Where easements/wayleaves are included in the transfer/lease, on completion, a copy must also be sent by the NGED case owner to the Records Team so that wayleave records and EMU are updated.

10.0 SETTING UP PSEUDO MPAN'S AND IDNO RECORDS ON THE CROWN SYSTEM

- 10.1 Upon receipt of a BCA request from the Planner the Connection Strategy Team shall ensure that the Crown database is updated.

This database will hold details of all IDNOs and their associated embedded networks within the NGED distribution service areas.

- 10.2 Using the database the Connection Strategy Team will:
- i) maintain a list of all IDNOs operating within the NGED area which will include each IDNO's registered office address, to which planned shutdown notices are sent, routine and emergency telephone number contacts including their control, market participant identifier, MPAN prefix and service level identifier. The IDNO details may be viewed by all staff with access to Crown;
 - ii) attribute connection details to each IDNO. Details will include individual site address, pseudo MPAN(s), feeding substation number and transformer, feeder and role identifiers;
 - iii) allocate end customer MPANs to their associated embedded network Connection Point.
- 10.3 Connection Strategy will request a "dummy" substation number from the ENMAC Support Team using the information provided by the Planner.
- A new record and associated pseudo MPAN cannot be created in the Crown database without a dummy substation number to attribute it to.
- 10.4 Connection Policy will raise a pseudo MPAN and forward it to the Planner. The pseudo MPAN should be used by the Planner in all internal communication. The pseudo MPAN is used for NGED's internal processes, including identifying the connection for operational purposes, such as issue of planned shutdown notices.

- 10.5 The MPAN will be prefixed with NGED's distributor identification number, (e.g. 21 for South Wales and 14 for East Midlands). The unique reference number component shall start "555" which shall only be applied to embedded networks and thus allow easy recognition, e.g:

South Wales	21 555 1234 5678
East Midlands	14 555 1234 5678

- 10.6 The Crown database will link with ENMAC and other business processes to allow efficient management of:

- IDNO customer calls;
- MPAS queries;
- Planned shutdowns*;
- Emergency response;
- DUoS invoicing;
- Fault investigation and reporting.

* For shutdown notification purposes the IDNO is considered as a single customer. NGED must notify the IDNO at least 5 working days prior to the intended shutdown but will, under normal operating conditions and in accordance with the BCA, undertake to notify the IDNO at least 10 working days prior to the intended shutdown. The IDNO is then responsible for notifying all of its affected customers.

However, if an IDNO is required to make individual compensation payments to its end users under the Guaranteed Performance Standards scheme and NGED is at fault, NGED shall be required to make an equivalent compensation payment for each affected end user to the IDNO.

- 10.7 Behind every pseudo MPAN, NGED will associate a list of IDNO MPANs and postal addresses. Data will be derived and updated via the Electricity Central Online Enquiry Service (ECOES). Every month Connection Strategy will update the Crown database by associating new IDNO MPANs to the correct pseudo MPAN.
- 10.8 Connection Strategy will set a reminder in place using Microsoft Outlook to check each month that an updated ECOES disk has been forwarded by the DUoS Billing Team. If the disk is not received by the 15th of each month Connection Strategy will prompt the DUoS Billing Team for it.
- 10.9 When postal addresses are first registered on the ECOES system it is common for plot numbers to be used and Post Codes to be incomplete. IDNO's should update addresses and feed information back using ECOES but if NGED is made aware of an inaccuracy (generally the Contact Centre in discussion with an IDNO customer) then the IDNO should be contacted and notified of the discrepancy.

11.0 SETTING UP RECORDS ON MAPS

- 11.1 The embedded network will remain under the ownership and control of the IDNO. NGED will therefore have no responsibility for keeping records of the IDNO network. NGED must however, ensure that its own records indicate where a connection to an embedded network is made.
- 11.2 Just prior to the time of connection the Planner must forward to the Mapping Centre details of the extent of the embedded network. Detail should include:
- i) a suitably scaled drawing showing the extent of the site;
 - ii) a record of the point of supply between NGED's distribution system and the embedded network;
 - iii) confirmation of the IDNO identity.

A pro-forma to attach the drawing to and send to the Mapping Centre is available by following the link:

https://sharepoint.westernpower.co.uk/sites/wpd/policy/connections/Competition_in_Connections/Embedded_networks/Proformas/Mapping_Centre_Memo.doc

- 11.3 The Mapping Centre will add the information to the EMU database. Where there is a clearly defined development area the record map will show its extent and mark the boundary.
- 11.4 The IDNO's apparatus will not be shown on EMU.
- 11.5 A site identification note will also be added, stating the IDNO's name and telephone contact number.

12.0 METERING REQUIREMENTS

- 12.1 In March 2010 Ofgem published a document entitled "*Decision on IDNO/DNO boundary equipment and which parties should fund this equipment, Ref:29/10.*" The document set out Ofgem's decision regarding the requirements for, and the funding of, IDNO/DNO boundary equipment. It found that it is for DNO's to determine whether, and how, to measure flows at the boundary. NGED has determined that the following arrangements shall apply:
- Where the POS is at LV or HV boundary metering shall not be required.
 - Where the POS is at EHV or 132kV boundary metering shall not be required. However, to accommodate for future planning/design purposes a power analogue (+/- MW & +/-MVA_r) connected/collected over SCADA will be required with transducers that have appropriate accuracy that comply with:
 - EE SPEC: 136 specifies GE Grid Solutions i5M transducer that have an accuracy class of 0.2 for voltage and current, and a class of 0.5s for power measurements.

13.0 BILLING PROCESS

- 13.1 Any customer connected to the IDNO network must enter into a supply contract with an electricity supplier. The electricity supplier will be party to an agreement with the IDNO for use of its network.
- 13.2 Energy will be transported across both NGED's Distribution System and the IDNO network to reach the end customer. The electricity supplier will pay DUoS charges to the IDNO who will in turn pay NGED for use of its distribution system.
- 13.3 DUoS charges will be calculated using the "Portfolio Tariff" arrangement prescribed in Section 19 of the Distribution and Connection Use of System Agreement
- 13.4 NGED's IDNO DUoS charges are set out within Annex 4 of our Statement of Charges for Use of NGED's Electricity Distribution System which is available to view on NGED's website.
- 13.5 The Planner will advise Connection Strategy when the Connection Point is energised.
- 13.6 The DUoS Billing Team will:
- Send monthly DUoS Invoices.
 - Ensure invoices are paid.
 - Report bad debts to the Income Manager.
 - Carry out quarterly reconciliation to ensure all IDNO MPANs are billed.

14.0 SECURITY OF SUPPLY

- 14.1 When considering taking customers off supply for a planned outage on the NGED network, or in the event of an unplanned outage on the NGED network, IDNO points of connection should be given the same consideration as any other connection to the NGED network system.
- 14.2 Where an outage, whether planned or unplanned, is likely to exceed 12 hours, and where the use of standby generation on NGED's network system will not result in restoring a supply to the IDNO network, the IDNO should be offered the use of a NGED standby generator at no cost to them. NGED will need to ensure that a standby generator is available prior to offering its use to the IDNO.
- 14.3 As the standby generator will require connection to assets owned and operated by the IDNO, the physical connection of the standby generator will be the responsibility of the IDNO.
- 14.4 Delivery to and collection from the connection point of the standby generator will be the responsibility of NGED.
- 14.5 A handover of responsibility for the standby generator will take place at the connection point between representatives of both NGED and the IDNO. Both parties will need to sign to confirm delivery and receipt of the equipment.

Please see handover form in Appendix B, a copy of which can also be found at <https://sharepoint.westernpower.co.uk/sites/wpd/policy/connections/Competition%20in%20Connections/Embedded%20networks>

- 14.6 NGED reserves the right to refuse a GS payment to an IDNO who declined the provision of a standby generator. Local teams will need to ensure that a clear record is made of the contact name, date and time relating to any conversation with the IDNO whereby standby generation has been offered and refused.

15.0 TRANSFERRING CUSTOMERS TO IDNO NETWORKS

- 15.1 There can be circumstances where an IDNO development requires NGED apparatus to be diverted or dismantled. In some situations existing customers such as farms become isolated within the infrastructure of this new development.
- 15.2 NGEDs preferred option is to retain these existing customers however, where it becomes uneconomic and inefficient to retain the NGED connection, the alternative solution will be to transfer the customers to the IDNO network.
- 15.3 In such circumstances agreement should be sought from the IDNO for the customers to be transferred. When agreed with the IDNO, the customer shall be contacted to inform them of the proposed transfer and a follow up letter of explanation shall be sent.
- 15.4 If it is not possible to make the arrangements outlined above further advice should be obtained from Connection Strategy.

APPENDIX A

Overview of Process for Establishing a New Embedded Distribution Network. Part 1

DUoS BILLING

REMOTE
METERING

MAPPING CENTRE

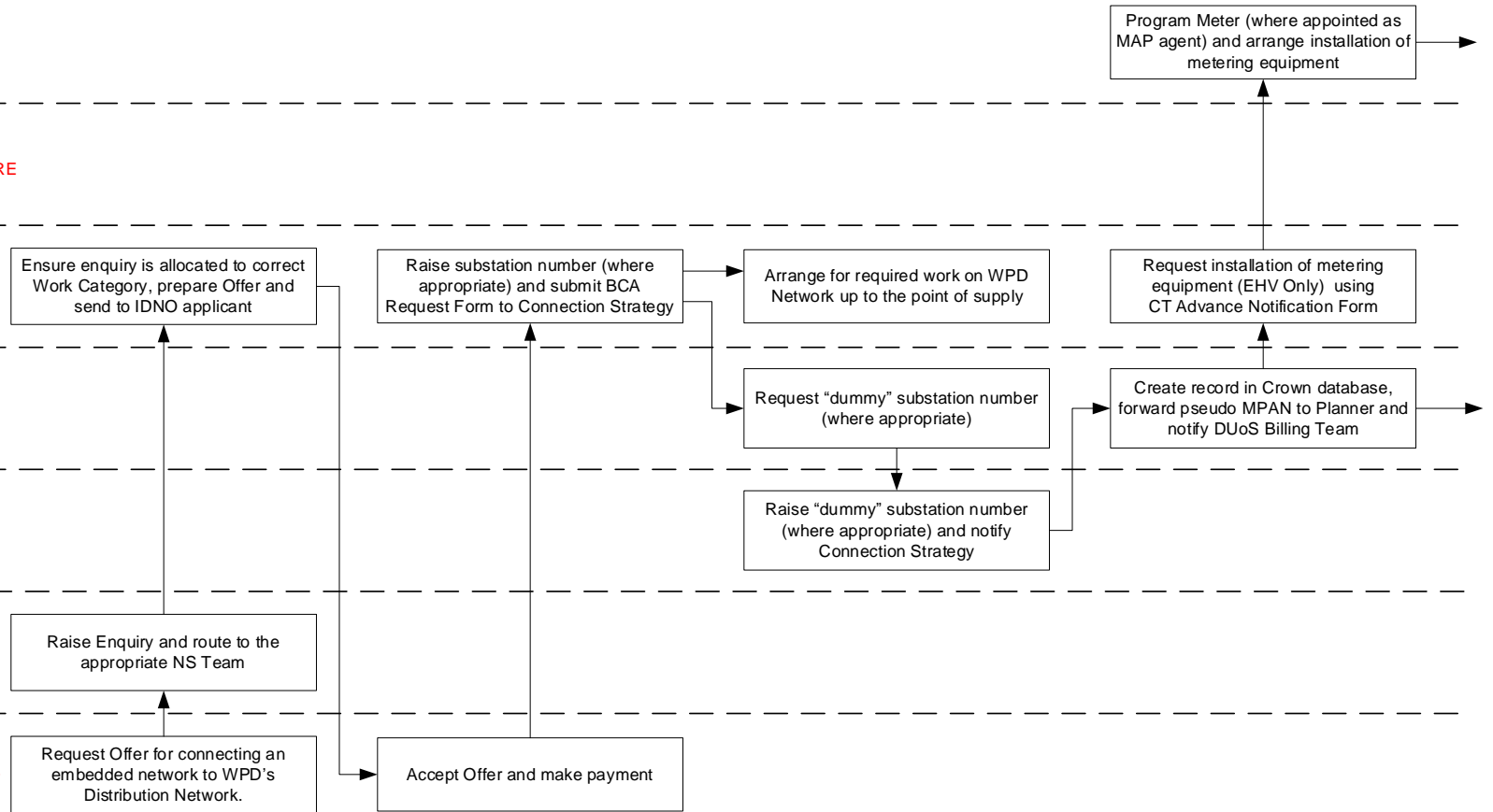
PLANNER

CONNECTION
STRATEGY

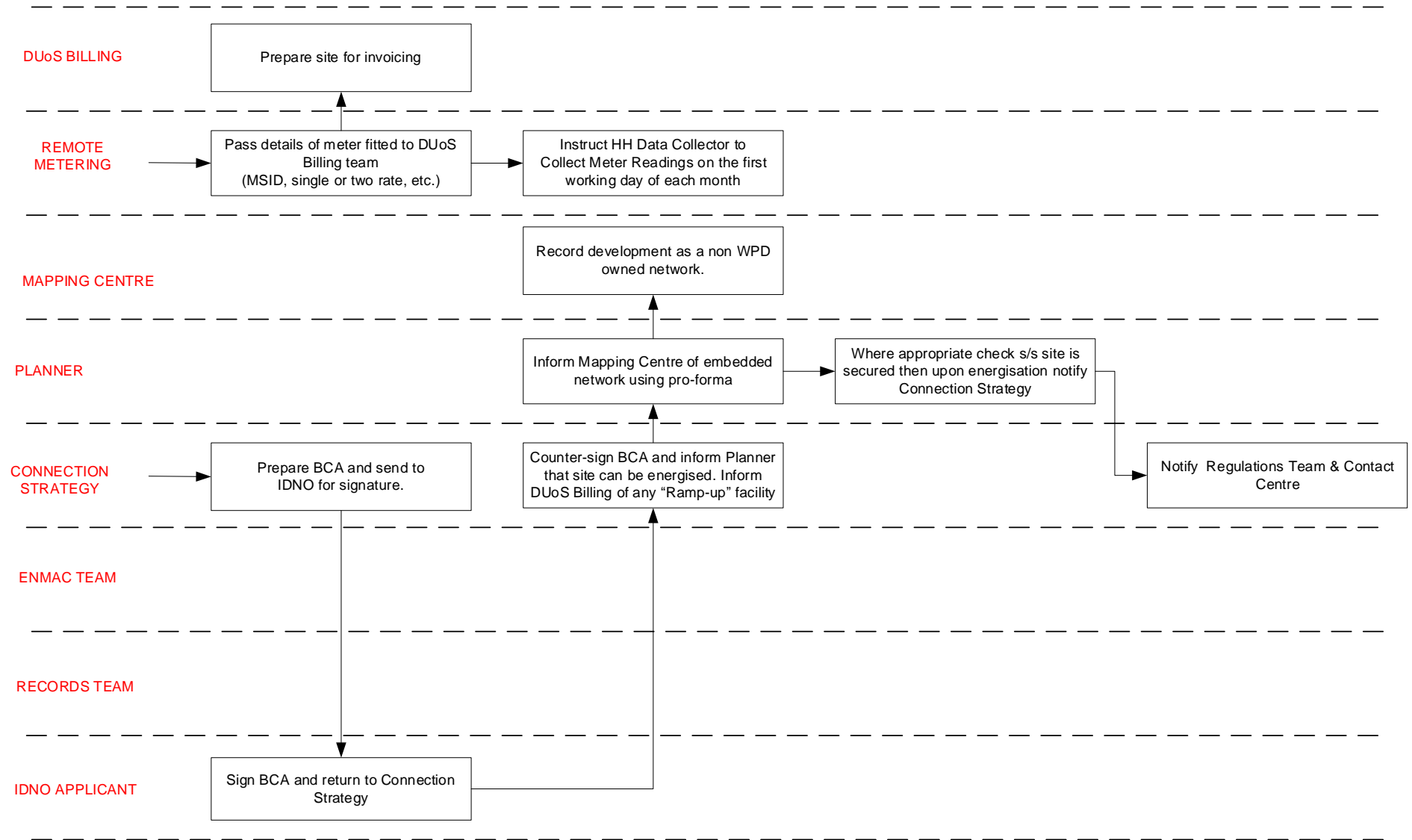
ENMAC TEAM

RECORDS TEAM

IDNO APPLICANT



Overview of Process for Establishing a New Embedded Distribution Network. Part 2



APPENDIX B

Standby Generator Handover (NGED/IDNO)	
NGED Reference Number	
Site Address	
Delivered to	(Print Name)
Independent Distribution Network Operator	(Company)
Registered Address	
Telephone Contact Number	

I confirm that the Mobile Generator bearing the serial/unique ID has been delivered to the site address detailed above for the purposes of connection by the named IDNO to their network.

Signed (NGED)..... Print Name Date Time

I understand that the Mobile Generator detailed above is now under the operational control of (IDNO)

Signed (IDNO)..... Print Name Date Time

The above named representative of the IDNO confirms that:

- The specified generator has been received at the site address
- Oil levels are sufficient for use
- The generator will be refuelled, as required, at no cost to NGED
- All persons responsible for connecting the generator to the IDNO network are competently trained to do so
- The generator has been checked for initial signs of damage/fault and all liability for damage to the generator incurred during the loan period remains with the IDNO
- Methods are in place to protect the equipment from theft and all liability for theft or loss of the generator and/or associated equipment, e.g. connection leads, remains with the IDNO
- Liability for environmental issues arising as a result of the use of the generator, e.g. fuel spills, unless directly associated with a fault of the generator, will remain with the IDNO
- NGED will be notified at the earliest opportunity in the event of any issues arising

I am authorised as a representative of the specified Independent Distribution Network Operator to assume temporary responsibility of the mobile generator for use on our network system for the duration of the outage to NGED's own network.

To be completed on collection from site:

I confirm that the Mobile Generator bearing the serial/unique ID has been disconnected from the IDNO network.

Signed (IDNO)..... Print Name Date Time.....

I confirm that the mobile generator has been returned to NGED and has been checked for signs of damage/fault

Signed (NGED)..... Print Name Date Time

APPENDIX C ALLOWABLE LOW VOLTAGE IDNO POINTS OF CONNECTION

A number of examples are provided below to identify allowable points of connections of Low Voltage IDNO networks to NGED's own network system.

In all instances, the point of connection and the IDNO boundary location should be agreed in advance with the IDNO.

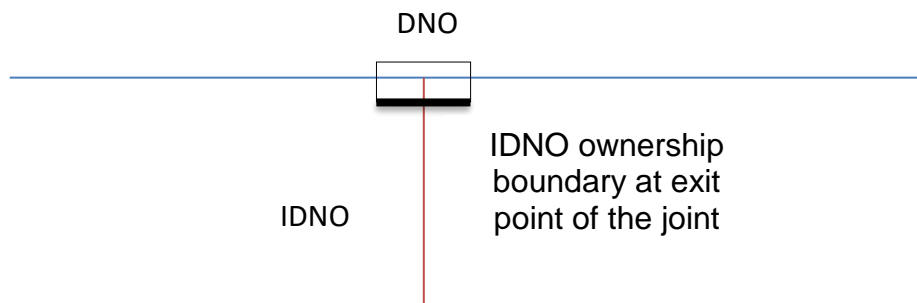
In the absence of a link box, the IDNO boundary location could be;

- A straight/branch joint
- An 'invisible' location at an agreed position

The IDNO boundary location should be identified, including measurements, on the schematic included within the Bilateral Connection Agreement.

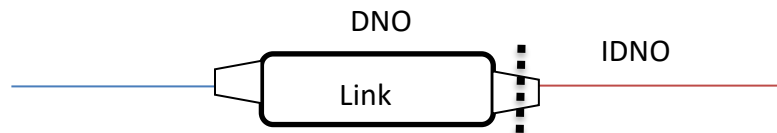
Example 1 – NGED provided joint

Where the IDNO low voltage cable is to be jointed onto NGED LV cable, and the joint is carried out by NGED, the joint will remain under the ownership of NGED. The boundary for the IDNO network shall be at the exit point of the IDNO cable at the joint.



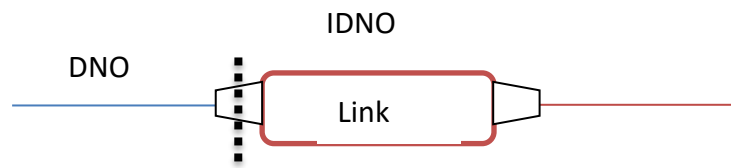
Example 2 – NGED provided link box

Where a new link box is requested by NGED, it will remain under the ownership of NGED, regardless of who installs it. The boundary for the IDNO network shall be situated at the exit point of the link box. This applies to both 2-way and 4-way link boxes.



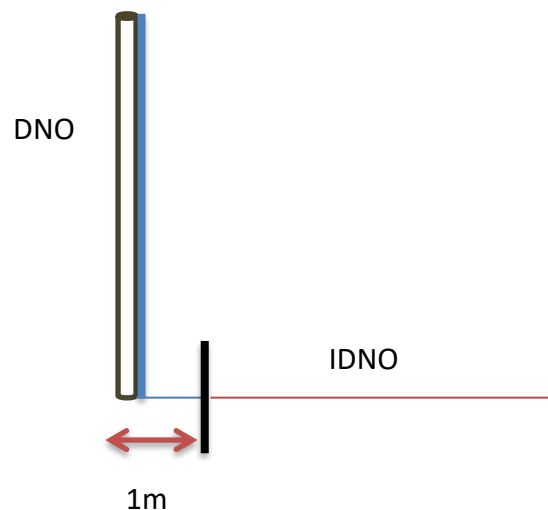
Example 3 – IDNO provided link box

Where a new link box is requested by the IDNO, it will remain under the ownership of the IDNO, regardless of who installs it. The boundary for the IDNO network shall therefore be the location of the link box. This applies to both 2-way link boxes and 4-way link boxes.



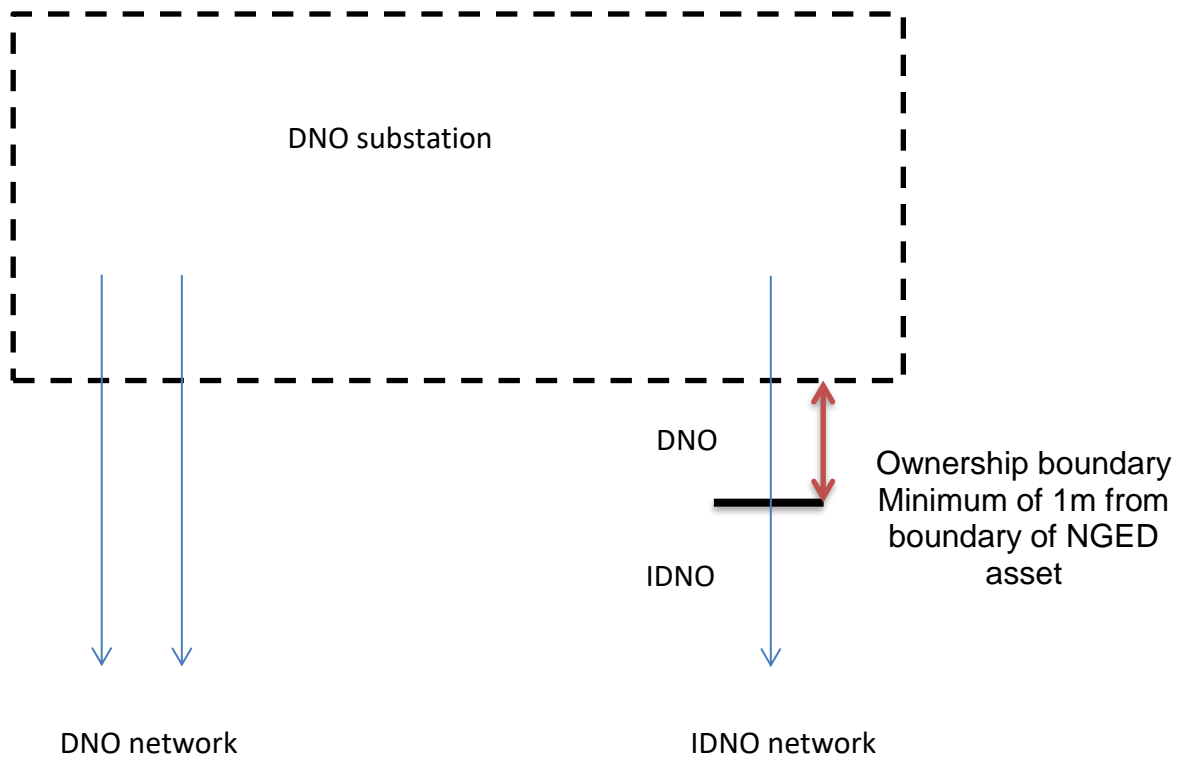
Example 4 – Pole termination

Where in the absence of a joint the LV cable terminates to an overhead line pole, the boundary for the IDNO network shall be located a minimum of 1m from the pole.



Example 5 – Termination to NGED owned substation

Where in the absence of a joint the IDNO LV cable terminates directly to a fused way within a NGED owned distribution substation, the boundary for the IDNO network shall be a location agreed with the IDNO and at least 1m outside of the substation boundary. This enables the IDNO to carry out any works on their own asset without encroaching into NGED's substation boundary.



APPENDIX D SUPERSEDED DOCUMENTATION

This document supersedes ST: NC6A/9 dated February 2023 which has now been withdrawn.

APPENDIX E RECORD OF COMMENT DURING CONSULTATION

[Link to internal audit and NSM comments Link](#)

APPENDIX F ASSOCIATED DOCUMENTATION

POL: NC6

Engineering Recommendation G88 - "Principles for the Planning, Connection and Operation of Electricity Distribution Networks at the Interface between Distribution Network Operator's (DNO's) and Independent Network Operator's (IDNO's).

Electricity Act 1989 as amended by the Utility Act 2000

Electricity Safety, Quality & Continuity Regulations 2002

NGED's condition 14 Statements.

APPENDIX G KEY WORDS

Budget Estimate, Embedded Network, Independent Distribution Network Operator (IDNO), Offer, Point of Connection.