

Electricity Networks Association  
Connections Working Group

Report to the Office of Gas and Electricity Markets  
Electricity Connections Steering Group

“Proposed Extension of Contestability for  
Competition in Connections”

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## 1. Glossary of Terms

ENA	Energy Networks Association
Ofgem	Office of Gas and Electricity Markets
DNO	Distribution Network Operator
IDNO	Independent Distribution Network Operator
ICP	Independent Connections Provider
HSE	Health and Safety Executive
LR	Lloyds Register
NERS	National Electricity Registration Scheme (Lloyds Register)
LV	1000 volts or less
HV	Above 1000 volts
Non-Intrusive Identification	Can be defined as the method employed to positively identify a cable without interfering with the cable or DNOs system in general by means of exposing cables for visual inspection and identification using the DNO cable records only.
MOCOPA	The Meter Operation Code of Practice Agreement (MOCOPA) is an Agreement between electricity distribution businesses and electricity meter operators in Great Britain.

## 2. Executive Summary

Ofgem asked the ENA to establish a Working Group to assess the safety and technical issues associated with an extension of contestability within the existing framework of Competition in Connections and to confirm what is currently considered as being a Contestable activity. The "Terms of Reference" (TOR) of this Connections Working Group (CWG) are shown in **Appendix 1**.

The scope of the extension considered includes all LV connections work and HV connections work. The CWG did not consider commercial issues and business risk and associated liabilities, costs or charges for services that may need to be made as a consequence of the extension.

This report summarises the issues the group has identified in considering all the key changes and resulting issues arising from the proposed extension of contestability. While further detailed work is needed to produce a working scheme, the changes and resulting issues have been considered in adequate detail to identify all the significant issues. The issues identified were reviewed to consider whether they produced any unacceptable risks.

The proposed changes do create new safety management requirements for the DNOs to manage and some associated safety risks and liabilities, but it is considered that these are similar in severity to the existing risks and liabilities that many DNOs experience under current arrangements with ICPs, Meter Operators and their own direct Contractors.

While there have been differing views within the group on some issues, the consensus view is that DNOs duties in respect of the safety risks and liabilities associated with this proposed extension of contestability can be discharged acceptably by establishing a suitable national framework based on the guidance produced by the CWG, with DNOs able to specify additional safeguards through their interface agreements to mitigate any specific concerns they have.

The report therefore recommends that if the ECSG proceeds with the extension of contestability, the framework developed by the CWG should be used as the basis for further detailed development work.

### 3 Introduction

Since Ofgem published its Decision document Part A Nov 2004 252/04, most DNOs now have had some experience of ICPs working on Live LV networks which they have installed on new metered connection developments, but still require the DNO to complete the final connection and associated activities to energise and adopt the ICP installed networks.

Many of the DNOs also have some experience of allowing ICPs to undertake live LV jointing on the DNO's existing unmetered service cables in the public highway, but these are still rare, small in scale and often referred to as "trials". To facilitate these existing arrangements all DNOs have their own version of formal agreements and processes which have been modelled on national templates, developed through the ECSG some years ago.

No DNO currently allows an ICP to undertake any LV or HV operational activity or to work on the DNO's existing HV network, other than when those same ICPs have been engaged as sub-contractors to the DNO.

It is the general view of ICPs and customers that these same processes and agreements could be adopted with only slight modification, to allow final connection and operational activities to be undertaken as contestable works.

The general view of DNOs is that there must be a robust safety management system to safeguard the DNO against additional risk and liabilities. In addition, consideration would need to be given by the DNOs to whether this conflicts with existing commercial and procurement contracts.

The DNOs are separate companies and while some elements of their practices are similar, they all have different approaches to managing their networks. There is also a wide variation in the extent to which they employ contractors on their networks and also the level of authorisation and the scope of activities those contractors are allowed to carry out.

Any national template solution must therefore recognise these differences and accommodate them if an extension of contestability is to be achieved in a reasonable timeframe. A successful solution is likely to contain a core with common elements, with the differing DNO specific elements contained in each DNO's interface agreement.

The view of the HSE on this aspect of the proposal is important. The initial view of the HSE is that while the host DNO would have a "duty of care" to ensure that an ICP working on their network works safely, this could be discharged by a suitable regime that ensured the ICP worked to an appropriate standard.

#### **CWG Approach**

The approach of the CWG has been to produce outline procedures for implementing the extension in specific areas of connection activity and operational activity, and then consider the changes necessary to facilitate this and the issues arising.

The CWG has representatives from all DNOs, and a representation from ICPs, IDNOs, and Ofgem together with, LR and the HSE and a full list of representatives is given in **Appendix 2**.

Much of the detailed work has been done by a CWG (Sub-Group) which has balanced representation from all parties.

At this stage the Group has produced outline proposals, and has considered the potential issues in principle to determine whether they are workable and whether any unacceptable new operational and safety risks and liabilities would be created.

When considering the changes necessary, the group has also identified all the main documentation that will need to be created or amended.

Of the changes required few create significant additional risks and liability on the DNO. These areas of change include the following:

- (i) Additional technical specifications, materials, jointing instructions.
- (ii) Modified Interface agreements.
- (iii) New/modified interface documentation, request forms, etc.
- (iv) Changes to existing NERS scope templates and the creation on new ones.
- (v) Changes to asset handover arrangements.
- (vi) New procedures to enable ICPs to interact with DNOs and carry out the increased scope of work.

Other areas of change are potentially more significant in their impact on risks and liabilities. These include:

- (i) ICPs carrying out a wider range and complexity of work on DNO networks.
- (ii) ICPs having more extensive and more frequent access to DNO networks.
- (iii) ICPs having greater interaction with DNO control, records and other systems.
- (iv) Operational activities carried out by ICP staff.

## 4 Existing and Proposed Activities

### 4.1 Overview of Proposals

The following information outlines the other specific topics that have been considered and the changes proposed to allow the extension of contestability within the existing framework of Competition in Connections.

The proposed extension applies to both metered and unmetered electricity connections (distributed demand and generation) to be connected to the distribution networks and subsequently adopted by the respective DNO or IDNO under Competition in Connections arrangements.

For simplicity, this document considers mainly Competition in Connection to DNO networks by ICPs, however, the principles apply equally to IDNO networks. Similarly, any DNO or IDNO can take on the role of an ICP, provided they have the required accreditation.

The Terms of Reference (TOR) included as **Appendix 1** of this report, outlined the requirements that needed to be considered with recognition of the timescales necessary to develop and introduce any proposed changes.

The specific aspects reviewed have therefore been established as **"Connection Activity"** and/or **"Operational Activity"** and the actual detailed activities are expanded upon further within this report.

The main consideration has been to identify what are the likely safety implications, risks and liabilities of extending contestability in connections and propose solutions to help ensure that the extension of contestability does not result in an increased probability of a connections related incident on distribution networks in GB.

Any proposals are not seen as replacing some of the existing arrangements, but merely to enhance the existing Competition in Connections framework agreements e.g. ENA ER G81.

### 4.2 Extent of Existing Contestable Activity

The CWG has reviewed the scope of the existing NERS scheme and a number of DNO's published statements. The table in **Appendix 9** reflects the CWG's consolidated view of the current industry understanding in a simple and clear format, so that it can be adopted by all parties and used to inform customers.

### 4.3 Proposed Extension of Contestability

The proposed extension of Contestable can be split into Connection Activity and Operational Activity at both LV and HV as shown in **Appendix 8**.

### **4.3.1 Key Changes for Extension of Connection Activity**

A number of key areas of change are recommended to all DNOs' existing arrangements to facilitate the extension of contestable Connection activity. These key areas are incorporated in the "end to end" process flow charts described in **Section 5** and included in **Appendices 3** and **4**.

#### **4.3.1.1 Identification of LV Cables – Connection Design**

Within the DNO's design process for determining a 3 phase LV mains Point of Connection (PoC) or the ICP's design process for determining individual single phase PoCs, the relevant Designer will determine the LV mains cable to which a connection is to be made and where possible, identify any additional risk that can be reasonably foreseen at the desktop stage that may make identification of this cable by ICP Operatives on site, more difficult. The ICP Designer will then include in his proposal for "Contestable Design Approval" an acknowledgement of this additional risk and any recommendation requiring additional LV cable identification procedures to be adopted on site. Where possible these should indicate whether these are likely to involve Intrusive Cable Identification procedures covered under Operational Activity.

This is the first opportunity for the ICP to decide whether a request should be made to the DNO to assist with LV cable identification on site as part of planning the works, or passes over the whole Connection Activity works to be undertaken by the DNO.

#### **4.3.1.2 Identification of LV cables – Non Intrusive Methods**

ICPs will have Operatives who are competent in the Non Intrusive methods of identification of the DNO's existing LV and HV mains cables installed in the highway. These methods will not require Operational Activity by the ICP or the DNO and typically include, the ability to differentiate between all cable types on appropriate records and in construction and physical cable tracking to known LV joints or terminations.

Where it has been anticipated that LV cable identification may be difficult, the ICP will normally undertake trial holes prior to planned work dates.

#### **4.3.1.3 Identification of LV cables – Intrusive Methods**

In the event that identification cannot be achieved by the ICP using Non Intrusive methods, the DNO will be contacted for assistance, where the ICP is not Authorised by the DNO for Operational Activity to undertake Intrusive methods of LV cable Identification.

Each DNO will determine how they will respond to such a request within their Network Access Agreement procedures. Ultimately whenever positive LV cable identification cannot be achieved by the ICP, the whole Connection Activity will be handed over to the DNO.

Intrusive Methods of LV cable identification include the connection of electronic cable tracing signal generators to the terminals of the LV mains involved.

#### **4.3.1.4 Operational Notification of "Daily LV Mains Connection Activity"**

In addition to existing "Daily Whereabouts" arrangements for notification of planned Contestable works, the ICP will inform the DNO's LV operational control centre or nominated person, on the morning of each planned LV mains connection activity that works are due to commence using a communication media agreed with the DNO. On the completion of the planned works or at the end of each working day in the case of multiple connection projects, the ICP will notify the DNO the planned works have been completed.

The DNO will use this information to integrate with its LV network management system or other procedures to prevent additional danger to the ICP Operatives arising, from LV network abnormal events.

#### **4.3.1.5 LV Network "Release" and System Operations Reference Number (SORN)**

To assist in defining the location of each contestable connection to LV main activity, it is proposed that DNOs adopt procedures, which "release" the specific section of the LV main to be worked on, into the responsibility of the ICP. The Section released is limited to each jointing position defined by geographic location and relevant LV network details. Operational Responsibility for the LV network involved is not being handed over and the ICP does not need to be authorised by the DNO for Operational Activity.

Individual or multiple connection point network section releases can be requested using a proposed new form which captures all the relevant location and network operational details of the Connection Activities to be undertaken each day.

On receiving the request in the appropriate DNO LV Operational Team, the DNO's nominated person will confirm to the ICP that the planned Connection Activities detailed on the request can go ahead, and will issue a dated and time stamped SORN to the ICP. This approval to proceed will be formally communicated and logged by all parties making reference to the SORN.

The SORN will be referenced in all future communications between the ICP and DNO in undertaking the works particularly in the daily start and finish notifications. The SORN will also be referenced in the case of any abnormal network event or incident which affects defined connection activities.

#### **4.3.1.6 Additional NERS Safe Working Audits requirements**

In addition to the DNOs current NERS audit regimes for contestable working and live LV jointing, Lloyds Register proposed to introduce "unannounced" audits by themselves focussing on the safe working practices of the ICP operatives and the quality of their connection to main jointing works.

DNOs will be asked to facilitate these audits by directly communicating with Lloyds Register on the daily whereabouts of ICP Operatives. Details of all the NERS scheme proposed changes are presented in **Section 9** of this report and **Appendix 6**.

#### **4.3.1.7 Issue of Permits to ICP Operatives**

Subject to robust procedures being implemented between the DNO and ICP for both safety and business risk considerations, it may be possible under certain circumstances that a DNO SAP could be asked to undertake the Operational Activity on a project where the ICP is carrying out the Connection Activity.

This will mean that the DNO's SAP will issue the permit to the ICP's Operative. In this situation it is envisaged that the ICP's Operative will be issued with a DNO's documentation and that they will hold a DNO's Competence Certificate. The DNO will only be responsible for providing a safe piece of network to operate on and ensure that the ICP Operative has the correct information to make any connection in a safe and appropriate manner e.g. correct phasing etc.

All other safety related or site specific issues will be the responsibility of the ICP's Management Team and any agreements between the ICP and DNO will need to be drafted to reflect this arrangement.

#### **4.3.1.8 Arrangements for Implementation**

Implementation of the scheme may be undertaken in various stages as the specific DNO establishes its processes and agreements to support the development of this extension.

The ICPs will also have to establish with LR what they will have to undertake to gain the necessary accreditation and establish the new procedures within their own Safety Management System and company procedures. It is envisaged that these will take some time to put in place, not least because the NERS Assessors will have a number of requests for the initial assessments and "partial" accreditations. Whilst these may prove difficult to manage initially it should be recognised that this will occur and this time should be spent getting robust systems in place with the DNOs in whose areas they will be operating.

#### **4.3.2 Connection Activity**

The scope of Connection Activity can be defined as the requirement of an ICP to be given "authority" by a DNO through the application of appropriate Safety Management Systems and associated procedures to undertake physical activity tasks e.g. LV/HV jointing in making final connection to the DNO's existing Distribution Network, including Non-Intrusive Identification of cables at the point of work.

The main consideration is to create new and/or expand existing frameworks to allow ICP operative to achieve Connection Activity level competencies through skills training and experience. The following show the types of activity that the Operatives would be undertaking based on their skills and competence:-

##### **Low Voltage (LV) Networks**

- Connection of single and 3 phase services to existing mains:
  - Plastic/Plastic
  - Plastic/PILC
  - PILC/PILC
- Connection of LV Mains:
  - Plastic/Plastic
  - Plastic/PILC
  - PILC/PILC
- LV Pole, Link Box and LV Board / Pillar Terminations
  - Subject to additional constraints (e.g. Operational Activity)

##### **High Voltage (HV) Networks**

- Connection of HV Cable Mains
  - Plastic/Plastic
  - Plastic/PILC
  - PILC/PILC
  - PICAS/Triplex
- HV Pole and Switchgear Terminations

### 4.3.3 Operational Activity

Operational Activity can be defined as the requirement of an ICP to be given “authority” by a DNO through the application of appropriate Safety Management Systems and associated procedures to undertake operational tasks and putting authorised staff to work e.g. operational switching on the DNOs distribution network associated with the Connection Activity outlined above.

**It is an essential requirement that the accreditation of the ICP or their individual Operatives under the Connections Activity will be a pre-requisite to the application and/or any competency under Operational Activity.**

The following items are not considered as Operational Activity for the purpose of this document, but are part of the Connection Activity requirements:-

- Planning/ producing work instructions and associated drawings.
- Making contact with DNOs operational contact.
- CDM/TMA/NRSWA notifications.
- Providing weekly/daily whereabouts.

Under **Connections Activity** arrangements the following will be carried out by the DNO’s operational staff, but under **Operational Activity** they can be carried out by an appropriately accredited ICP.

- Identifying, isolating and proving LV cables for dead jointing.
- Identifying LV cables for live jointing.
- Operating HV Network that has been released for work under central control.
- Operating HV Network that has been released for work under local/field control.

In addition for **Operational Activity** requirements the following further information will be required by the Independent Connections Provider (ICP):-

- Operational Diagrams.
- Supporting network information (e.g. Individual HV Feeder Loads, SCADA information, worst case load profile Feeder Protection Details/Settings)
- Agreed operational network management interface (principles, policy & procedures)

The main consideration is to create new and/or expand existing frameworks to allow ICP operative to perhaps achieve **Operational Activity** level competencies through skills training and experience and the following are related issues for further consideration in the above process:-

The WG reviewed the “out of scope” and “within scope” of activities described in the Terms of Reference to clarify those to be included in the extension of contestability. The result of this review is summarised in the tables in **Appendix 7** and **Appendix 8** respectively.

## 5 Outline Flow Charts for the Extension of Contestable Works

Flow charts have been produced to cover Connection and Operational activities on both low and high voltage networks. The Flow charts show the required exchanges of information and communication between the ICP and the DNO throughout the process. The charts are split into “swim lane” format to show which party is responsible for each stage of the process. In addition the charts cover both Planning and Construction phases showing all of the required steps leading up to completion of the works.

The flow charts have been developed as a template with the understanding that DNOs have different operating regimes. The charts may require alteration for specific DNO requirements; however it is anticipated that the key stages will apply.

### 5.1 LV Flow Chart

The LV flow chart **Appendix 3** shows all the stages of the process to allow the ICP to undertake Connection Activity and where agreed, Operational Activity. It covers Connection Activity involving single or multiple connections to the DNOs existing LV main. Multiple connections are required in the case of un-metered connection schemes.

### 5.2 HV Flow Chart

The HV flow chart **Appendix 4** is divided into two charts to allow for either, the DNO to provide Operational Activity support or the ICP to undertake this activity. The latter arrangement will require the DNO to release the relevant section of their HV network under normal “field control” arrangements so that the ICPs SAP can issue the required documentation e.g. permits to enable the jointing works be completed.

## 6 DNO Agreements

### 6.1 Existing Arrangements

All DNOs currently have formal agreements to cover adoption of new assets installed by the ICP "Adoption Agreements" and agreement for the ICP to work on and connect new assets to their existing distribution network "Consent To Connect" or "Network Access" agreement. Some DNOs have a single agreement which covers both adoption and network access.

In the case of unmetered connections some DNOs offer Tripartite Agreements, which bind the customer into a share of the ICP's responsibilities. Some DNOs also offer these Tripartite Agreements for metered connections. All these agreements set out the commercial, legal, and contractual responsibilities of the parties involved and include such requirements as defining the level of third party liability insurance, and warranty periods for newly installed assets, and responsibility if the works are sub contracted. In addition to these typical contractual terms, most DNOs set out what is and is not contestable works; the DNO's requirements for approving ICP and their staff; where operational responsibility and asset ownership changes during the connection process, and what should happen in the event of an incident or an audit non compliance.

It is anticipated that the contractual terms of these existing DNO agreements will need to change with the proposed extension of contestable activity and the level of change may vary for each DNO. Those agreements that incorporate detailed ICP authorisation, operational and process requirements rather than in a separate guidance document, will need to be changed or supplemented with new agreements.

### 6.2 Required Changes to Adoption Agreements

There are no significant changes required to existing DNO adoption agreements other than clarification of where and how "adoption" and handover takes place under the proposal to allow final connection "closing joints" to be made by the ICP and to make reference to any additional NERS scope for establishing the ICP has the safety management system and competence to undertaking these closing joint activities (dead or live).

Where the DNO wishes to continue to combine adoption and network access requirements in the same agreement, then these agreements will also take account of the changes referred to in **Section 6.3.**

### 6.3 Changes Required to Network Access Agreements

The changes to Network Access agreements anticipated include reference to:-

- The DNO's operational/control team notification requirements.
- Procedure for the DNO issue of permits to ICP jointers.
- Inclusion of the new process maps and notification forms with supporting text

- The requirement “Network Section Release” process.
- Responsibility in the event of planned or unplanned customer supply interruptions.
- Any additional NERS scope and accreditation requirements.
- Any additional DNO/ICP and jointer authorisation, approval and audit requirements.
- Clarification of “trial stages” with the removal of undue restrictions on project size, duration and the scope of contestable activity.
- Clear differentiation between Agreements which are limited to Connection Activity and those which allow both Connection and Operational Activity as it is envisaged that the latter will be more complex and take longer to finalise.

It is not proposed that these should be distilled into one version but each DNO will utilise their existing versions. Where required, these will need to be modified to cover HV working and any Operational working over and above those prescribed. Over a period of time this may be reviewed but this is envisaged to be in the medium to long term.

The DNOs will need to review their existing documents and ensure that they are satisfied that the necessary amendments are made to ensure it covers the extension to the contestable work that is envisaged within this document.

#### **6.4 Network Access Arrangements**

For work on the DNO’s network there will need to be a process and procedure to be put in place to allow the section of network to be released to the ICP so that they can undertake the works.

Within the process shown in the LV and HV process flows it is envisaged that the ICP will prepare detailed documentation to be sent to the DNO requesting that they can undertake the work. The DNO will respond by providing the necessary release form that will then be used by the ICP to book the work in with the appropriate part of the DNO’s organisation responsible for Operational control.

For some DNOs this may be by use of an existing operational document some DNOs may need to develop a version suited for this need. It is proposed that the DNO provides a DNO specific version of this document.

## 7 ER G81 Changes

The Energy Networks Association (ENA), Engineering Recommendation ER G81 publication is a suite of national documentation has been developed setting out common requirements for Design and Planning, Material Specification and Installation and Records.

### **National Framework Documents:**

Engineering Recommendation G81 Part 1 - Design & Planning  
Engineering Recommendation G81 Part 2 - Materials Specification  
Engineering Recommendation G81 Part 3 - Installation and Records  
Engineering Recommendation G81 Part 4 - Design & Planning Industrial and Commercial  
Engineering Recommendation G81 Part 5 - Materials Specification Industrial and Commercial  
Engineering Recommendation G81 Part 6 - Installation and Records Industrial and Commercial  
Engineering Recommendation G81 Part 7 Contestable Diversionary and Reinforcement Works

As the scope of the contestable works increases to include connecting onto existing networks it is envisaged that to facilitate these changes the following areas will need to be revisited by the DNOs.

- Update to Part 1 will be required to include the Prerequisites of the Operational work as part of the planning process, this may also need to be included in Part 4 as industrial and commercial connection activity may also be undertaken in this way.
- Update to Part 2 as the types and variations of cables and joints are going to be increased this section will need to be enhanced so that all the different requirements are included.
- Potential updates to Parts 3 and 6 may be required if any additional records are required.
- Update to Part 7 to ensure any additional details are included within the Appendix.

The majority of forms and documentation are currently in existence for testing or as provided within the ER G81 suite. Further details that are required will be specified by the DNO and inserted into their ER G81 documentation within the appropriate sections.

In addition is proposed that a further Engineering Recommendation G81 document is produced as:

- Engineering Recommendation G81 Part 8 – Operational Control and Procedures with an appropriate appendix for each DNO's requirements. A draft content proposal for the ER G81 Part 8 is included in **Appendix 5**.

## **8 Personal Protective Equipment, Tools and Equipment**

### **8.1 Personal Protective Equipment**

All DNOs have different requirements and solutions for the type and application of PPE. This could cause additional complexities for compliance against these differing requirements when ICPs are working across a number of DNO areas. ICPs could end up carrying three or four differing pieces of the same PPE and ultimately this gives greater potential for incorrect use of PPE. Traditionally within the current internal arrangements, DNOs may have specified exact manufacturers through their procurement process rather than the requirement for compliance with particular standards. However the imperative factor from a health and safety perspective, is compliance with technical standards for particular pieces of PPE rather than specific manufacturers.

It is envisaged that the DNO's ER G81 Part 8 and any commercial agreement will highlight the PPE requirements and ensure that it is part of the contractual arrangements and this will have two elements associated with it. The DNO will outline the specification and technical standards required for particular PPE to meet. This will not be a specific manufacturer requirement but a technical standard/performance specification that individual pieces of PPE must meet. The individual DNO will then also outline their policy for when particular PPE is required to be utilised for certain operational/physical activities that are carried out on their network.

The ICP will assess the requirements of a DNO in terms of both specification for PPE and what PPE is required within a particular DNO area to carry out specific tasks on the network, for the various activities the ICP is involved with.

They will establish systems to demonstrate their compliance with the DNO requirements as detailed in NERS National Operations. The ICP will be expected to demonstrate this compliance for all individual DNO areas the ICP is operating within. Whilst not prescriptive, it is envisaged that the ICP will first assess the PPE against the DNO technical standards to ensure the PPE they provide is equal to or approved to meet these standards and this assessment is documented within the ICP's processes.

The ICP will then determine its policy for use of PPE when undertaking tasks within particular DNO areas. As a minimum the ICP must comply with the base requirements of the DNO's systems. However the ICP may determine that due to working across a number of DNO areas they will insist on a PPE regime higher than individual DNO areas to enable them to have a single policy within their business. In this case the ICP must ensure they comply with the minimum requirements outlined for each DNO area they operate within. During NERS surveillance visits the ICP will need to demonstrate their compliance with these procedures.

### **8.2 Tools**

In a similar way to PPE tools should be specified so that an ICP can procure tools to the correct standard rather than a specific manufacturer.

They will have to establish a process to demonstrate that they are complying with the DNO's requirements based on the specifications identified within the DNO's G81 Part 8 or other documents that the DNO may provide to give guidance in this area.

Where the DNO has identified that a specific tool has been banned from use the ICP must recognize this and ensure that it complies with these requirements.

### **8.3 Equipment**

For certain testing of electrical network the DNO will specify within its G81 Part 8 the specific test equipment that must be used. In some circumstances this may be a specific manufacturer which will have to be used and in other situations it may be more generic.

The ICP must demonstrate that it has the systems in place to obtain the correct equipment and that it can ensure that it is maintained and calibrated correctly. This is similar to procedures that ICPs currently have in place but there may be additional requirements to ensure test prods and other High Voltage equipment are housed in suitable conditions and that they are regularly checked and maintained.

It is expected that ICPs would supply all specialist test equipment and test prods required.

## **9 Changes to NERS**

### **9.1 NERS Registration**

The National Electricity Registration Scheme (NERS) Requirements Document will be amended to include new requirements associated with the extension of contestable work to include the final connection to existing DNO LV and HV mains network and operations on the DNO's LV and HV networks. The amendments will be introduced either in their entirety or in phases depending on the agreed phasing of the implementation plan for the changes in contestable works. The current proposals are shown in **Appendix 6** and are subject to approval of the NERS Advisory Panel (NERSAP).

The amendments are only being introduced where the existing scheme requirements are not considered sufficient. The existing requirements still form the basis of the controls and to obtain a better understanding of the overall NERS framework it is required to compare the proposed amendments with the complete existing NERS Requirements Document and to also have an understanding of the associated document (NERS) Guidance Document – Safety Management System.

The proposals include the introduction of new scopes and the ICP will be required to successfully complete a scope extension assessment to achieve "partial" accreditation for the relevant scope/s before entering into the new arrangements with the DNO. A later site visit/s will be required to then convert the partial to full accreditation.

The number and type of new scopes are identified by the bulleted sections under each of the Connections Activity and Operations Activity headings. They are aimed at ensuring that the ICP as an organisation is accredited as having the required additional competencies without overly complicating the scheme by having too many accreditation scopes and also avoids being over-prescriptive in how the ICP can break down the scope within its competency procedure to reflect the differing combination of cable types. In general the combinations will be as detailed in this report and will be restricted by the DNO interface arrangements. There may be a requirement to separate some elements as individual scopes, particularly for special cable types, and this is subject to the discussion and agreement at NERSAP.

The requirement for the ICP to develop a detailed competency matrix is not mandatory, however, it is now suggested that the matrix would be a useful tool to enable the ICP to control skills development.

### **9.2 Audit and Inspection**

The scope extension assessment will involve a detailed assessment of the ICP's management systems and procedures relevant to the new scheme requirements before a "partial accreditation" is awarded for the new scope/s. A site visit/s is required to assess the application of the system before the "full" accreditation is awarded, as per normal scheme requirements. Once the full accreditation is awarded the ICP will undergo a number of surveillance visits, as per normal scheme requirements. A new requirement associated with the new scopes is for unannounced surveillance visits. This is dependent on a robust system being in place for weekly / daily whereabouts and for arrangements to be in place between the ICP

and DNO for site staff reporting. The changes to the NERS requirements document required to implement this change is also subject to approval by NERSAP.

The DNO may undertake its own audits and inspections as required by the arrangements between the ICP and DNO.

### **9.2.1 Audit and Inspection (any additional requirements) LR & DNOs**

None of the proposed changes affect existing requirements or needs of ICPs or DNOs to monitor safety and quality of work being undertaken. The primary duty for auditing is the responsibility of the ICP for safety with the DNOs reviewing the quality of the assets that are being installed.

LR will still be obliged to audit work being undertaken with additional office and site audits for the extra work areas that will be included. This detail is documented in the LR Audit proposals identified in the previous section and **Appendix 6**.

Over and above the audits carried out by NERS, DNOs and the ICP it is envisaged that from time to time the HSE will also be invited to join any of the parties on joint or combined audits to ensure that full compliance of the ICP's or DNO's SMS is being undertaken.

## **10 Risks, Duties and Liabilities**

### **10.1 Risks, Responsibilities and Liabilities**

#### **10.1.1 Hazards and Risks**

The hazards involved for any given connection activity are the same irrespective of who is carrying out the work. The residual risks are determined by the quality of the control measures in place to manage the hazards.

The responsibility for controlling risks from an activity rests with anyone who has a "duty of care" to those carrying out, or affected by the activity. Liabilities arise where there is a failure to meet this "duty of care". Under both common and criminal law most duties are qualified. The most relevant duties here are those set out in Sections 2 and 3 of the Health and Safety at Work etc. Act 1974 which deal with employers' duties to their employees and others. Both of these duties are qualified with the words "so far as is reasonably practicable".

Asset quality risks are mainly controlled through specifying methods, materials, equipment and requiring assessment of competence. Risks to continuity of supply are largely eliminated by good management of Health and Safety and asset delivery. While risks from poor installation of assets are very important, well established procedures exist for the acceptance of assets and this area of risk was not considered to be a significant issue.

#### **10.1.2 Existing Situation**

We therefore need to consider what "duty of care" already exists and how this duty is currently met. The HSE considers that DNOs have a duty of care to anyone working on their networks. There are currently several circumstances where other parties work on DNO networks. These are:

- (i) Direct contractors, employed by the DNO.
- (ii) Meter operators' staff, working close to and operating the DNO's metered service termination equipment, under MOCOPA.
- (iii) ICPs' staff working under existing contestable arrangements on new assets installed by them.
- (iv) ICPs staff working under existing contestable arrangements on DNO's existing live unmetered service cables.
- (v) Street lighting electricians working close to and operating the DNO's unmetered service termination equipment under each DNO's Engineering Recommendation ER G39/1 arrangements.

With (i) DNOs meet their "duty of care" by managing their contractors effectively as an extension of their organisation. With (ii) this is mainly achieved by requiring Meter Operators to meet the requirements of MOCOPA. Some DNOs accept the MOCOPA arrangements alone as adequate

whereas, others currently require all Meter Operators' staff to be assessed by the DNO. However, agreement has been reached in principle to remove the requirement for DNO assessment in the future when improvements to the Meter Operator training have been proven.

With (iii & iv), all DNOs are now required to have a live jointing agreement and process, and most are now operating live jointing arrangements with ICPs. To enable DNOs to manage their "duty of care" under these arrangements, all have a regime in place for carrying out inspection of the ICP's works. With (v) DNOs have established a specification for training in order to show an acceptable level of competence. Unlike MOCOPA there is no national agreement and DNOs differ in the way they recognise this training.

The current situation as regards to duties, risks and liabilities is summarised in the Risks, Responsibilities and Liabilities table in **Appendix 10** Column 1 deals with Existing Contestable Work.

### **10.1.3 Health and Safety Executive (HSE) View**

The HSE considers that a DNO has a duty to ensure that anyone working or operating on their network is working safely and not compromising the health and safety of themselves and others.

The HSE caution that they can only offer a view and that any actual incidents or non-compliance will of course be tested in the courts.

However, they do believe that DNOs can meet their duties towards ICPs and others under the proposed extension of contestability, by putting in place a robust regime which ensures high standards of health, safety and good quality of assets. Their main concern is that the proposed regime must be effective in ensuring high standards are met.

In addition to a robust accreditation framework, the HSE would like to see specific arrangements in place to ensure robust communication between ICPs and DNOs. This should include the exchange of DNO specific safety information, covering aspects such as special switchgear types, operational requirements, PPE and any other relevant information necessary.

### **10.1.4 Solution Proposed**

The proposal for extending contestability is essentially based upon an extension of NERS and ER G81 to create a framework that ensures ICPs operate a robust safety management system and have appropriate method statements to deliver high standards of health safety and asset quality. The principles would be similar to MOCOPA in that the scheme would be agreed by all DNOs then operated independently as far as possible, placing most responsibilities for ICP staff compliance and competence with the ICP. DNOs would have the option of building in additional safeguards, and specific requirements where reasonably required by DNO systems.

### **10.1.5 Liabilities arising under the proposed Extension of Contestability**

Based on the above, DNOs will fulfil their "duty of care" provided that the arrangements put in place for the extension of contestability ensure that any activity carried out on their networks is done safely so far as is reasonably practicable.

Considering the changes proposed, the impact can be seen by looking at the Risks, Responsibilities and Liabilities table in **Appendix 10**, columns 2 to 5.

Key points that emerge are:

- (i) For most activities, the responsibility for controlling risks for activities carried out by ICP staff does not change and rests with the ICP.
- (ii) DNO procedures and risk assessments must be used by the ICP in certain activities.
- (iii) If ICP staff are to carry out operational activities, they will need to be appointed as authorised persons by the DNO under the DNO system, unless the DNO agrees to some specific operational activities being carried out by ICP staff authorised under the ICP system.
- (iv) For some activities, where both parties are involved, the ICP and the DNO will share responsibilities. In these cases responsibilities will need to be very clearly specified in detail and communicated to all concerned so that there is no misunderstanding, especially at those points in processes where responsibility passes from one party to another.
- (v) There are no truly new risks. The risks that DNOs face from ICP staff working on their network would replace similar risks from direct staff or DNO contractors working on the network.
- (vi) The severity of the risks is similar whoever is doing the work, provided that controls are equally well applied by all parties.

In addition, at all CWG meetings members have been asked to raise any issues of concern on the issue of liabilities. The following are the key issues that have been raised on the issue of liabilities:

- (vii) The new procedures required to accommodate this extension of contestability must not be allowed to become too complex. Where information is passed across parties it is imperative that the interfaces are clearly defined, the responsibilities of every party are clearly defined and that the process is robustly monitored. Most of the procedures involved already exist to enable direct staff and contactors to access networks and although some model forms have been proposed, ICPs will use local DNO systems wherever required.
- (viii) It is logical to allow ICPs to work to their own systems as far as possible however compliance with DNO specific requirements will mean that ICPs operating nationally will need to ensure that their Safe Systems of working account for each DNO specific requirements. This could be achieved by either requiring the ICP staff to operate specifically to each DNO set of Safety Rules and associated procedures or the ICP could demonstrate it has clear systems in place to identify and communicate DNO specific requirements that differ from their own systems of work. Each DNO will ultimately determine the extent to which an ICP needs to adopt the DNO's systems when working on that DNO's network.
- (ix) The example a DNO Senior Authorised Person (SAP) issuing a Permit-to-Work (PTW) to an ICP jointer was quoted as being a case of high risk and liability for the DNO. While it is true that the DNO and the SAP do have responsibilities to ensure the PTW is issued correctly, these responsibilities and the associated liabilities are the same when the permit to work is issued to any jointer. The proposed scheme would ensure that the jointer acquired all necessary competencies equivalent to a DNO HV jointer before being permitted to carry out HV jointing and the ICP jointer would be certified accordingly.

- (x) The principle of why the DNO should accept the risks of ICP staff working on the DNO network was discussed separately from the issue of severity. However this issue is outside the scope of the CWG and a matter for the ECSG. The brief of the CWG is to consider whether risks are acceptable, not whether any particular risks should be accepted by any parties. Similar discussions around whether it is reasonable for DNOs to charge ICPs for any services provided as part of these arrangements is also outside the scope of the CWG and must also be considered separately by the ECSG.
- (xi) The new arrangements should ensure that systems in DNOs and ICPs are efficient and aligned. The framework will be based upon a core set of requirements that everyone can sign up to. Over and above this, DNOs will have specific requirements that will need to be built into their Network Access Agreements. NERS will need to ensure the ICPs comply with individual DNO requirements. It follows that the overall arrangements will be simpler if more aspects can be covered by the core scheme with fewer variations between DNOs, however, it is recognised that this will not be possible initially and remains a longer term aspiration.

Some DNOs have unique IT systems, handheld devices and other specific system requirements for anyone using their systems and in some cases ICPs will need to adopt these systems.

## 11 Conclusions

- (i) DNOs have a duty of care to anyone working or operating on their networks. This duty of care must be met by ensuring that the risks to health and safety are reduced so far as is reasonably practicable.
- (ii) The electrical and work hazards associated with the connection process and activity are the same whichever party carries out the site work activity.
- (iii) Provided that the proposed framework has good controls, the safety risks from the activities will be similar to existing arrangements however; there will be potential implications for business risk and associated liabilities for DNOs to consider under their Distribution Licence obligations.
- (iv) It is considered that there are no operational and safety issues or risks which cannot be overcome with the implementation of suitable and appropriate safety management systems. If a suitable framework is developed and accepted by all relevant parties, then there is no reason why contestable works cannot be extended to cover the recommended scope under the TOR.
- (v) A framework for approving ICP staff for access to and operation of DNO equipment could be produced following similar principles and arrangements to those that already exist under MOCOPA for Meter Operators.
- (vi) Commercial issues regarding the provision of non-contestable services and transfer of business risk have been raised at the CWG, but not resolved as they are considered out of scope. They will need resolving in any final scheme.
- (vii) Because DNOs operate different Health and Safety Management Systems, IT systems and business procedures, any scheme will have some common elements, with additional DNO specific arrangements.
- (viii) If the outline proposals are accepted by the ECSG, the individual DNOs and/or a successor CWG Working Group will need to produce comprehensive detailed proposals and include any change to commercial arrangements.
- (ix) DNOs may already have processes in place that could possibly be adapted to allow the extension of Contestable work, these include the use of Authorised and Competent staff.
- (x) Some DNOs allow ICPs to do additional contestable work under existing arrangements providing the ICP complies with the DNO's requirements e.g. associated diversionary and reinforcement works and this was considered as an example of more flexible arrangements that have already been developed.
- (xi) There is no reason in principle why all DNOs should not offer the full extension of contestability proposed. However, it is recognised that there are big differences in the extent to which DNOs already facilitate contractors and others access to their networks. DNOs should therefore be given adequate time, and also some flexibility in how they facilitate these proposals.

## 12 Recommendations

The final decision to extend the scope of contestable work rests with the ECSG. If this proceeds, the ENA CWG recommends that the high level framework developed so far should be used the basis for the extension of contestable working to include all activities identified in **Appendix 8**, on the basis that the framework and principles contained within this report are adopted by all parties to manage the associated operational and safety risks. This would be subject to the resolution of issues associated with business risk and liabilities to the satisfaction of all parties affected. More specifically, if the extension proceeds, the CWG recommends:

- (i) The bounds of Contestable working can be increased to allow for the inclusion of Connection Activity and Operational Activity on live LV networks and HV networks work within the UK both for new site works and for any connection to the DNO's existing network.
- (ii) A new Connections Working Group (CWG) with terms of reference should be established aimed at producing a comprehensive, detailed scheme for the extension of contestability. This WG should cover all aspects of the scheme including, any commercial arrangements required.
- (iii) DNOs whose existing arrangements are sufficiently robust to allow ICPs to undertake some or all of the recommended additional contestable work scopes should be encouraged to offer trials so that they and others can learn from their experience.
- (iv) DNOs can also take these outline proposals and develop their own detailed framework to support the agreed extension of contestability using the guidelines set out in this document.

## Appendix 1 – CWG Terms of Reference

### Connections Working Group

#### Terms of Reference

##### Current Situation

The Electricity Connections Steering Group (ECSG) was set up to advise Ofgem on the measures and changes required to introduce competition in the electricity connections market. The forum has taken forward a diverse working programme and a number of changes to extend contestability have been implemented. The Independent Connection Providers (ICPs), Independent Distribution Network Operators (IDNOs) and contractor representatives who operate in the metered and unmetered connections market and sit on the ECSG, have set out their aspirations to extend contestability further in the electricity connections market. One of the highest priorities for ICPs and IDNOs was to extend contestability by allowing suitably accredited ICPs to connect onto existing distribution networks. It was agreed that Ofgem, on behalf of the ECSG committee would approach the ENA to set up a Working Group to consider the safety, technical and practical issues surrounding the procedures and processes that would need to be put in place to allow this work to be undertaken by ICPs in the electricity connections market.

The issue of deciding the scope of what activities should become contestable in the electricity connections market is outside of the scope of the ENA Working Group. The ECSG committee will continue to look at how and when to extend contestability into activities that are currently considered to be non- contestable and the various support functions for these elements.

##### Purpose and Scope of the Working Group

The purpose of the Working Group is to examine the practicalities of developing an appropriate framework to enable ICPs/ IDNOs (the third party) to undertake connection activities on existing distribution networks in the metered and unmetered connections market.

In recognition of timescale for deliverables and the complexity of the issues involved, the Working Group is to consider the following stages of development.

**Stage 1:** Develop a methodology to initially enable a third party to undertake connections activities on existing distribution networks with any necessary Operational Activity provided by the distribution licensee.

**Stage 2:** Subject to the successful development and/or implementation of **Stage 1**, requirements, to further develop the methodology to enable the Operational Activity to be undertaken by the third party.

This working group will provide a forum where industry representatives can constructively discuss ideas in an open environment and jointly explore developing a supporting framework.

As part of the discussions that take place the group will consider how similar regimes in gas have developed and consider whether there are opportunities to utilise these experiences in developing the safety and operational framework that may be developed to support the extension of contestability.

Work is likely to encompass reviewing safety implications, identifying risks & issues and propose solutions as to how risks are best managed and the appropriate operational changes that may be required by distributors if extension of contestability is to be considered.

### **Unmetered Connections:**

#### **Allowing third party connection providers to carry out-**

- The live jointing of permanent disconnections, temporary disconnections, reconnections, transfers and extensions to existing unmetered service cables are currently recognised by most DNOs and NERS as contestable activities. Some DNOs have extended this range of activities, whilst others have excluded some or imposed additional restrictions on their application. The Working Group will aim to develop a common understanding and consistency across all DNOs on the scope, definition and application of existing unmetered contestable activities.
- Explicit removal of the restriction that prevents a third party from carrying out live jointing associated with service cables to underground, unmetered, single phase 230V connections less than 1 metre from the main cable as measured along the service cable ("the 1 metre rule").
- Connections to existing DNO LV mains and metered service cables in the public highway.
- Urgent disconnections
- Connections to LV OH lines.
- Access to appropriate LV records.
- Operational Activity (where appropriate). – Phase 1 to consider what services the DNO would need to provide; Phase 2 to consider this undertaken by the third party provider.

### **Metered Connections:**

#### **Allowing third party connection providers to carry out:**

- Final works (e.g. closing joints) including LV and 11kV and 20kV connections; and
- Associated operational activity (where appropriate). – Phase 1 to consider what services the DNO would need to provide; Phase 2 to consider this undertaken by the third party provider.

### **Membership**

The Working Group will be chaired by the ENA. Membership of the Working Group is open to delegates from DNOs, IDNOs, ICPs, contractors, relevant regulators (Ofgem / HSE), "customers" and other interested parties (e.g. Lloyds Register).

### **Organisation**

Dates and locations for each meeting will be at the ENA London offices. The ENA will not meet the expenses of any individuals invited to participate on the working groups and no funds are available for the commissioning of studies, etc.

The ENA will provide a secretariat role for the Working Group and will produce a minute of the meetings which will be circulated to members to ensure views have been accurately reflected. Where possible, the minute will be circulated 2 weeks after each meeting. These will then be used to produce a summary of

key issues from each meeting, which will be circulated to members of the ENA with updates being provided to the ECSG.

Where possible, agendas and any materials for discussion will be circulated to Working Group members one week prior to each meeting.

Members are not under any confidentiality requirement and will be free to report back to other parties on the issues that have been discussed.

### **Compliance**

The Working Group will at all times comply with the requirements of the 1998 Competition Act and will not deal with any matter which will or is likely to prevent, restrict or distort competition or constitute an abuse of a dominant position as construed within the Act.

### **Deliverables**

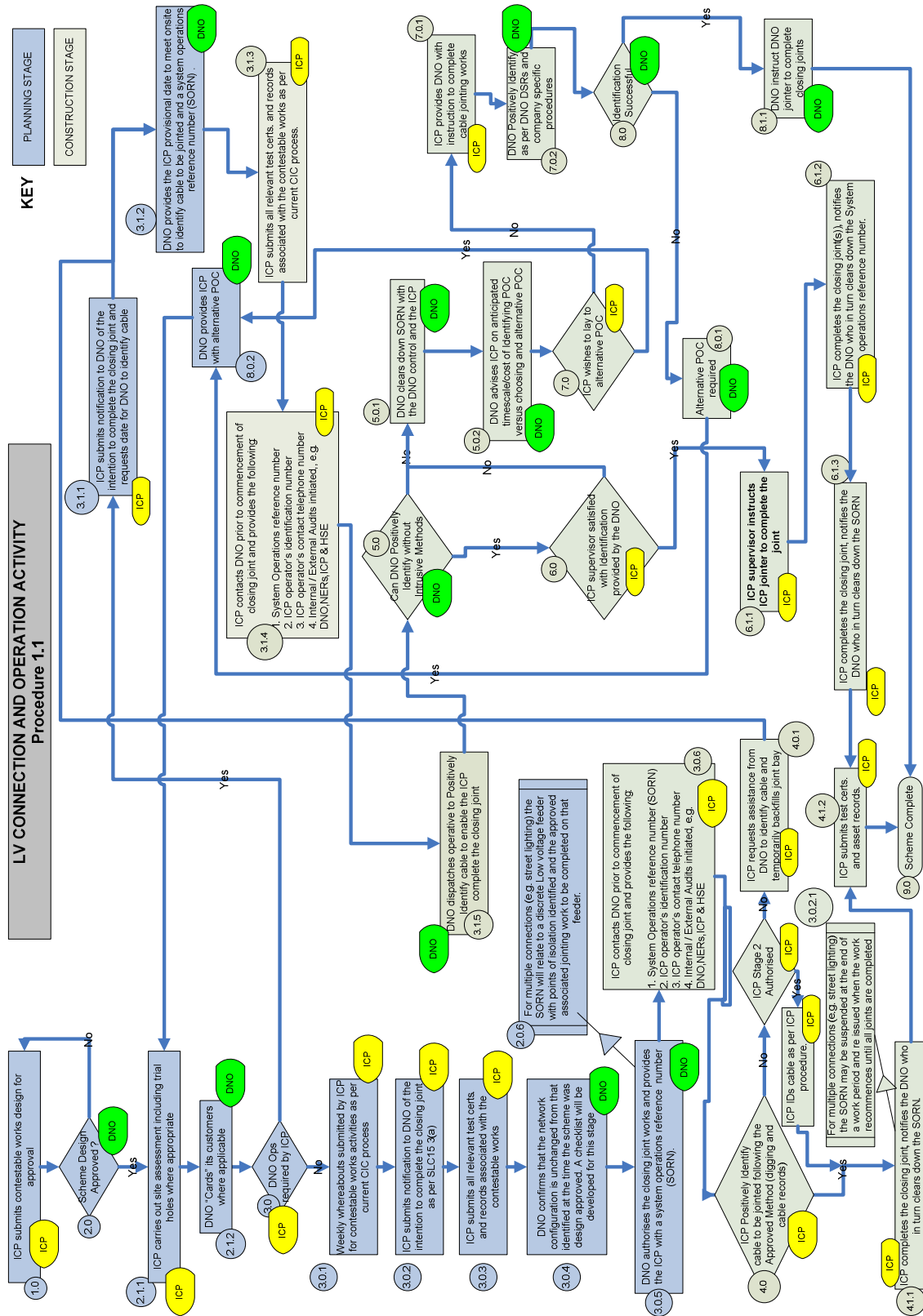
The output of the Working Group will be a proposed framework document possibly aligned to Engineering Recommendation ER G81 to support contestability in the area of connections onto existing distribution networks, including both unmetered and metered connections. The document will need to consider an assessment of the lead-time for implementation. The target date for production of the document is the end of March 2010 for Phase 1. Timescales for the delivery of Phase 2 to be agreed by the Working Group . Consideration will be given to the framework forming part of the relevant suite of ENA Engineering documents.

## Appendix 2 – Membership of CWG

Peter Roberts*	Energy Networks Association (Chair)
Bill D'Albertanson	EDF Energy
Ian Barge/ Mike Cahill*	Lloyds Register
Dora Guzeleva	Ofgem (Substitute for Roger Morgan)
David Ball*	United Utilities (for ENW Ltd)
Chris Bean*	Power On Connections
Richard Le Gros	Energy Networks Association
Colin MacArthur	Scottish Power
Paul Smith*	Western Power Distribution
Kevin Kelleher	EDF Energy
Steven Bolland*	Amey LG Ltd
David Overman*	GTC UK
Keith Hodson*	E.ON Central Networks
Stephen Hennell*	E.ON Central Networks
Graham Cotton	ESP Electricity
Martin Gillick*	Scottish & Southern Energy
Neil Fitzsimons*	INEXUS
Mark Johnston	CE Electric UK
Gareth Pritchard	ASLEC

\* Denotes also CWG (Sub-Group) Member.

# Appendix 3 – LV Flow Chart



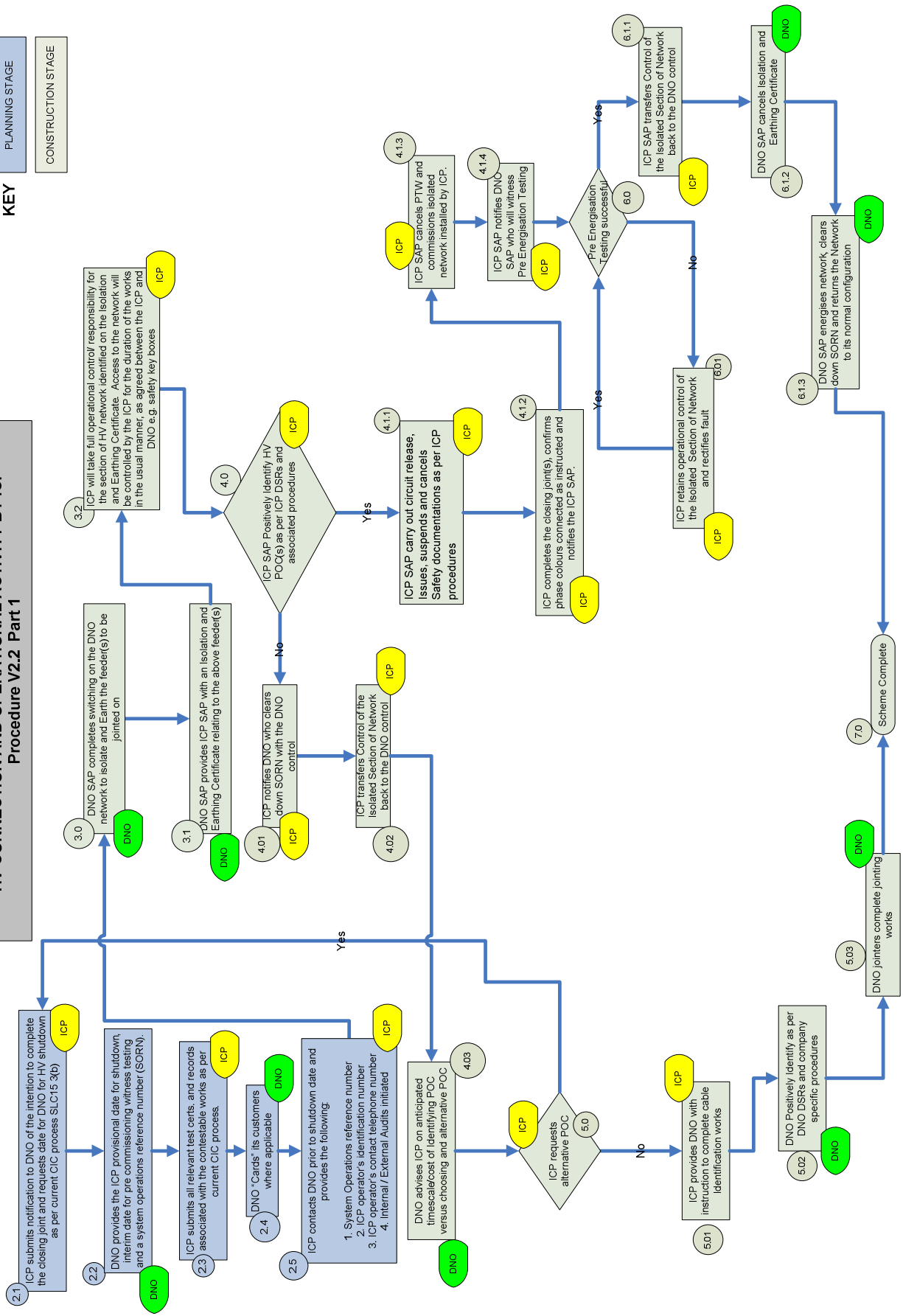


**KEY**

PLANNING STAGE

CONSTRUCTION STAGE

**HV CONNECTION AND OPERATIONAL ACTIVITY BY ICP**  
**Procedure V2.2 Part 1**



## Appendix 5 – Draft ER G81 Document

### Proposed ER G81 Part 8 Structure

The table below provides a suggested format for a “Draft” Part 8 document to include, operational control procedures and specific DNO appendix requirements.

#### PROPOSED G81 PART 8 – INDEX

	CONTENTS	
1	BACKGROUND.	
2	SCOPE.	
3	REFERENCES.	
3.1	Energy Networks Association / ESI publications.	
3.2	Energy Networks Association Technical Specifications (ENATS).	
3.3	HSE Legislation Applicable.	
3.4	ESQCR.	
4	CONNECTION ACTIVITY	
4.1	LV Activity.	
4.2	HV Activity	
4.3	Assessments and Authorisation required by DNO	
4.4	Documentation required	
4.5	Process Map	
4.6	Activity Contact Details	
4.7	Emergency Contact Details	
5	OPERATIONAL ACTIVITY	
5.1	LV Operations	
5.2	HV Operations	
5.3	Assessments and Authorisation required by DNO	
5.4	Documentation required	
5.5	Process Map	
5.6	Operational Contact Details	
5.7	Emergency Contact Details	
6	PPE, Tools and Equipment Requirements	
7	Audits and Inspections	
8	Records	
9	Tests	
10	DEFINITIONS and ABBREVIATIONS.	
	APPENDIX A: TEST REQUIREMENTS.	
	APPENDIX B: DOCUMENTS TO BE USED – <i>Typical Examples Only.</i>	

## **Appendix 6 – Proposed Amendments to NERS**

### **Introductions**

This appendix to the Connections Working Group (CWG) report proposes changes to the NERS Requirements Document. The proposals reflect terminology used in the main body of the CWG report and are subject to change following further discussion with relevant parties and to approval by the NERS Advisory Panel (NERSAP).

The main headings follow the format of the section headings in the NERS Requirements Document.

### **Scopes**

Network Connections is the classification of works associated with the connection of new networks to the adopting DNO/IDNO's existing network. This is broken down into Connections and Operations Activities and each has a number of scopes against which accreditation is required.

#### **Network Connections - Connection Activity**

##### **Low Voltage (LV) Networks**

The scopes detailed below include live and dead jointing. There is no scope available for dead only jointing associated with Network Connections. The normal decision making considerations for live and dead jointing apply and live jointing techniques should also be used for dead jointing where required by the relevant procedure.

- Network Connections (Un-Metered) – Cable Jointing of single phase un-metered services to existing mains
- Network Connections – Cable Jointing of LV Mains and single / 3 phase services to existing mains
- Network Connections – Cable Jointing for LV Pole, Link Box and LV Board / Pillar Terminations (A current pre-requisite for this scope is that the ICP also holds the LV Operational Activity scope)

##### **High Voltage (HV) Networks**

It is a pre-requisite for HV Network Connections scopes that the ICP also holds the HV Operational Activity scope unless the DNO can offer the Operational Service under a contractual arrangement.

- Network Connections – Cable Jointing of HV Cable Mains
- Network Connections – Cable Jointing for HV Pole and Switchgear Terminations

## **Network Connections - Operational Activity**

- Network Connections - LV Operations; includes the identification, isolation and proving of LV cables for dead jointing and the use of test equipment on the DNO network to identify LV cables for live jointing
- Network Connections - HV Operations; includes the releasing of HV cables for work under central control or local/field control

ICPs undertaking 11kV connections shall not connect to overhead lines but may carry out switching on overhead lines.

## **National Operations**

Additional requirement as follows:-

ICPs carrying out Network Connections (see Scopes) shall be able to demonstrate that they are fully aware of the individual notice and control requirements of each DNO. They shall also be able to demonstrate how they will keep up to date with any changes in these requirements. These will include issues such as communication channels to be used in emergency situations; operational and safety information; operational requirements and the methods of gaining and keeping this information up to date. The ICP will also demonstrate how this information is including in their method statements and Risk Assessments for any tasks they are to undertake.

## **General Competency Requirements**

The competency process shall reflect the diverse range of skills associated with different cable types, including those that can only be worked on dead due to safety / technical reasons, safety rule authorisations and notice and control requirements. The production of a competency matrix is recommended for those ICPs with Network Connections scopes to facilitate skills development.

## **Role Competency Requirements**

### **Requirements of an Assessing Officer**

To assess candidates for work/operations in the Network Connections scopes the Assessing Officer shall be able to demonstrate a detailed knowledge of the Distribution Safety Rules (DSR) and Operational Procedures of the DNO and / or ICP depending on the interface arrangements that each DNO has in place.

### **Requirements of Operational Staff**

Staff carrying out work and/or operations in the Network Connections scopes shall be required to gain authorisation as Competent, Authorised or Senior Authorised Person as appropriate against the DNO and / or ICP DSRs. Where the ICP DSRs are used the host DNO may wish to document their acceptance of the Person's authorisation. The process for authorisation against the ICP DSRs is detailed in the NERS Guidance Document – Safety Management System (SMS). [the SMS may require amendment to better reflect the reliance on the ICP authorisation process where the ICP DSRs are used].

## **Working Issues and Control**

### **Control of Work and/or Operations under the Network Connections      Scopes**

Work and/or operations under the Network Connections scopes shall be subject to the notice and control regimes of the host DNO. ICPs shall demonstrate knowledge of these regimes and have procedures for complying with them.

### **Methods of Working**

ICPs with Network Connections - Operational Activity scopes shall demonstrate that they have the relevant operational procedures, risk assessments and method statements in place.

## **Quality and Safety Systems**

### **PPE, Tools and Equipment**

Where ICPs with Network Connections scopes are working under the DNO DSRs then the DNO may specify minimum standards. The ICP may choose to standardise on the highest standards across the DNO areas in which they operate.

### **Accident and Incident Investigation and Reporting**

ICPs with Network Connections scopes shall demonstrate that they have procedures for investigating and reporting accidents, incidents and system emergencies which are consistent with the requirements of DNO interface arrangements.

## **Monitoring of Accredited Independent Connection Providers**

### **Surveillance Visits**

ICPs with Network Connections scopes shall declare all work and/or operations under those scopes on a weekly and daily whereabouts database. Where required by the DNO interface arrangements the operative shall report to the DNO control when they arrive on site and when the work is completed.

The Accreditation Body shall carry out unannounced surveillance visits at intervals [to be determined]. If any major deficiencies are identified the Accreditation Body will stop work on site and report the matter, immediately, to the host DNO and ICP. The ICPs network connections accreditation will be suspended pending reassessment.

If ICP staff are not in the location specified on the whereabouts database the Accreditation Body may, in the absence of a reasonable explanation, suspend the ICP's accreditation. In any event the Accreditation Body will charge for an aborted visit.

## Appendix 7 – Out of Scope Extension of Contestability

The Connections Working Group and Sub-Group identified the areas below as being out of current scope for both Connection and Operational activity.

Area of Work	Risk Assessment	Decision
Live Line working on 11kV OHL.	High Risk area of work involving specialist equipment and specifically trained Operatives.	The risk to staff and costs associated with this area made it an area that would be looked at in the long term.
Working within Grid Substations.	High Risk area with the potential for multiple cables, exposed bus bars and cable tunnels or basements.	Risks and Authorisation levels are very high for this situation and deemed too complicated to justify at this stage.
Working within Primary Substations.	High Risk area with multiple non standard various voltage cables, cable tunnels or basements.	Risks and Authorisation levels are very high for this situation and deemed too complicated to justify at this stage.
Work on rare cable construction types.	Knowledge of opening cables and infrequency of operation would pose an additional risk.	These cables would need to be identified but the jointing skills and live working arrangement would be considered a risk for teams not used to working on them.
Fault working on LV cables.	Not considered.	Out of scope of work looked at.
Shutdown cards.	DNO responsible for this as part of their GS standards.	As agreed if shutdowns are required and the DNO needs to keep control of this issue then the work is best placed for the DNO to carry out.

The reasoning for these decisions was based on a mixture of safety issues and the belief that the volume of work would not allow operators to gain enough experience.

## Appendix 8 – Within Scope Extension of Contestability

The following areas are considered as the main types of work that can be carried out by ICPs under the new arrangements. However the complexity of implementation will require various additional works.

<b>Stage 1 Area of Work</b>	<b>Comments</b>	<b>Decision/ Opinion</b>	<b>Indicative Timescale/ Level of Difficulty *</b>
Connection Activity on Plastic LV cable.	Already carried out by ICPs under own Safety Rules.	This should be within scope.	Easy within 3 months.
Connection Activity on PILC LV cable.	Fairly generic cable type with known risks and worked on live by existing DNO Contractors therefore, there is no additional risk.	This should be within scope.	Not difficult, within 4 months.
Connection Activity on plastic HV cable.	Already carried out by ICPs under own Safety Rules.	This should be within scope.	Not difficult, within 4 months.
Connection Activity on HV cable non-plastic construction.	Already carried out by ICPs under own Safety Rules.	This should be within scope.	Not difficult, within 4 months.
Connection activity in existing DNO 11kV/ 400V Distribution Substations.		This should be within scope.	Requires further work and authorisation if acceptable to DNO – 12 months +
<b>Stage 2 Area of Work</b>	<b>Comments</b>	<b>Decision/ Opinion</b>	<b>Indicative Timescale/ Level of Difficulty *</b>
Operational Activity on Plastic LV cable.	Already carried out by ICPs under own Safety Rules.	This should be within scope.	Within 3 months.
Operational Activity on PILC LV cable.	Fairly generic cable type with known risks and worked on live by existing DNO Contractors therefore there is no additional risk.	This should be within scope.	Within 4 months.
Operational Activity for “dead” working on LV cables - clean feeder with no Customers.			Within 4 months.
Operational Activity on plastic HV cable.	Already carried out by ICPs under own Safety Rules.	This should be within scope.	Within 6 months.
Operational Activity on HV cable non-plastic construction.	Already carried out by ICPs under own Safety Rules.	This should be within scope.	Within 12 months.
Operational Activity in existing DNO 11kV/ 400V Distribution Substations.		This should be within scope.	Requires further work and authorisation if acceptable to DNO - 12 months +

**Note:** \* Timescales determined from the full implementation of formal arrangements.

## Appendix 9 – Existing “Contestable” Works Activity

### Existing “Contestable” Works Activity

Activity	Contestable	Notes
Carry out work to determine the point of connection.	No	
Secure all legal and wayleave permissions for ICP installed asset to be adopted by the DNO.	No	An ICP may obtain prelim agreement from respective landowners.
Produce detailed designs for the “on and off-site” ICP network extension asset installation works.	Yes	ICP designs are subject to DNO approval.
Project manage the connection scheme.	Yes	
Provide materials to our specification or agreement for contestable activities.	Yes	
Carry out cable trenching, joint hole excavation, and associated civil works on-site for both contestable and non contestable activities.	Yes	
Install ducts, cables and LV service terminations on site for both contestable and non contestable activities.	Yes	Some variation nationally, not all DNOs permit ICPs to install non-contestable assets.
Carry out substation building and civil work on-site.	Yes	
Carry out non-electrical work off-site (including meeting provisions of the New Roads and Street Works Act).	Yes	
Carry out final connection (closing joint) to existing DNO network (all voltages).	No	
Carry out connection to and extension of LV network underground cable assets installed by an ICP which have been connected to the DNO network and where necessary LIVE.	Yes	Requires ICP to enter into DNO’s Consent to Connect or Network Access Agreement.
Carry out the transfer, disconnection, reconnection and extension of existing LIVE DNO LV unmetred PVC & PILC service cables, up to its connection to the LV underground main (a service joints distance away).	Yes	Requires ICP to enter into DNO’s Consent to Connect or Network Access Agreement.
Carry out the transfer, disconnection, reconnection and extension of existing LIVE DNO LV unmetred PVC & PILC service cables, up to a safe working distance from its connection to the LV overhead line (in line with ER G39 guidance).	Yes	Requires ICP to enter into DNO’s Consent to Connect or Network Access Agreement.
Carry out any diversion and reinforcement work on the DNO’s existing system associated with the ICP’s new connection scheme.	Yes	Subject to the works being fully funded by the customer. The DNO may ask the ICP to undertake other works on their behalf under separate contractual arrangements.
Carry out Quality Assurance inspections of new ICP network asset installation works which are to be adopted.	No	The DNO will still expect the ICP to undertake its own QA inspections in addition to the DNO’s own regime.
Carry out final inspection and electrical compliance tests on new ICP assets before being connected to the DNO’s network	Yes	Evidence of Test Certificates will be required by the DNO before adoption.
Carry out inspection and electrical commission tests on new ICP assets, as part of the DNO’s acceptance and final connection of those assets to its existing network.	No	The DNO normally witnesses the ICP carrying out these tests.

## Appendix 10 – Risks, Responsibilities and Liabilities Table

### Notes:

The following table:-

- Has been created to determine what change in Risks, Responsibilities and Liabilities come about by the proposed "extension of contestability".
- Deals **ONLY** with work carried out by ICP staff when working on DNO networks, it does not cover ICP staff working on un-adopted networks or DNO staff working on DNO networks.
- It sets out the responsibilities of ICPs and DNOs. This does not restrict any commercial arrangements that may be made between the parties to provide services e.g. training.
- It **does not** define what services must be offered or how, but considers the Risks, Responsibilities and Liabilities that might arise if the scenarios 1 to 5 are implemented.

The items indicated with an asterisk\* are some of those where costs may need to be recovered between parties, but the table is not primarily dealing with this.

Key Health and Safety Duties, Risks, Liabilities that will arise.	1. Existing Contestable Work Arrangements.	2. ICP carrying out live working on DNO LV mains. DNO carrying out all operational work.	3. ICP carrying out live working on DNO LV mains. ICP carrying out all field operational work.	4. ICP carrying out HV jointing on DNO network. DNO carrying out all (HV) operational work, issues PTW to ICP.	5. ICP carrying out HV jointing on DNO network. ICP carrying out all field (HV) operational work.
Provide a Safe System of Work – Procedures, Rules etc.	Responsibility is with the ICP. <b>Note:</b> ICP must adopt DNO operational procedures as required by DNO interface agreement.	Responsibility is with the ICP. <b>Note:</b> ICP must adopt DNO operational procedures as required by DNO interface agreement.	Responsibility is with the ICP. <b>Note:</b> ICP must adopt DNO operational procedures as required by DNO interface agreement.	Responsibility is with the ICP. <b>Note:</b> ICP must adopt DNO operational procedures as required by DNO interface agreement.	Responsibility is with the ICP. <b>Note:</b> ICP must adopt DNO operational procedures as required by DNO interface agreement).
Safe System of Work etc fails to protect staff or Public.	ICP	Responsibility is with ICP (If ICP staff work to DNO procedures the ICP must accept these as part of ICP SSoW)	Responsibility is with ICP (If ICP staff work to DNO procedures the ICP must accept these as part of ICP SSoW)	Responsibility is with ICP (If ICP staff work to DNO procedures the ICP must accept these as part of ICP SSoW)	Responsibility is with ICP (If ICP staff work to DNO procedures the ICP must accept these as part of ICP SSoW)

<b>Key Health and Safety Duties, Risks, Liabilities that will arise.</b>	<b>1. Existing Contestable Work Arrangements.</b>	<b>2. ICP carrying out live working on DNO LV mains. DNO carrying out all operational work.</b>	<b>3. ICP carrying out live working on DNO LV mains. ICP carrying out all field operational work.</b>	<b>4. ICP carrying out HV jointing on DNO network. DNO carrying out all (HV) operational work, issues PTW to ICP.</b>	<b>5. ICP carrying out HV jointing on DNO network. ICP carrying out all field (HV) operational work.</b>
Keep the risks of Injury or damage arising from failure of DNO plant or cables to very low.	Joint DNO/ICP. DNO - existing duty - significant liability only arises if DNO is negligent. DNO to manage through prompt repairs, notification of existing faults, or known poor cable types and locations. ICP to ensure due care when exposing cables, check condition before work, notify defects and faults.	Joint DNO/ICP. DNO - existing duty - significant liability only arises if DNO is negligent. DNO to manage through prompt repairs, notification of existing faults, or known poor cable types and locations. ICP to ensure due care when exposing cables, check condition before work, notify defects and faults.	Joint DNO/ICP. DNO - existing duty - significant liability only arises if DNO is negligent. DNO to manage through prompt repairs, notification of existing faults, or known poor cable types and locations. ICP to ensure due care when exposing cables, check condition before work, notify defects and faults.	Joint DNO/ICP. DNO - existing duty - significant liability only arises if DNO is negligent. DNO to manage through prompt repairs, notification of existing faults, or known poor cable types and locations. ICP to ensure due care when exposing cables, check condition before work, notify defects and faults.	Joint DNO/ICP. DNO - existing duty - significant liability only arises if DNO is negligent. DNO to manage through prompt repairs, notification of existing faults, or known poor cable types and locations. ICP to ensure due care when exposing cables, check condition before work, notify defects and faults.
Injury or loss to DNO or 3 <sup>rd</sup> Party arises due to ICP staff error carrying out activity or providing wrong information.	ICP	ICP	ICP	ICP	ICP
Injury or loss to ICP or 3 <sup>rd</sup> Party arises due to DNO staff error carrying out activity or providing wrong information.	DNO - similar to existing duties towards DNO contractor.	DNO - similar to existing duties towards DNO contractor.	DNO - similar to existing duties towards DNO contractor.	DNO - similar to existing duties towards DNO contractor.	DNO - similar to existing duties towards DNO contractor.
Provide General H&S Information.	ICP	ICP	ICP	ICP	ICP
Provide network specific Health and Safety information.	DNO is responsible for passing relevant Health and Safety and operational bulletins and information to ICP*	DNO is responsible for passing relevant Health and Safety and operational bulletins and information to ICP*	DNO is responsible for passing relevant Health and Safety and operational bulletins and information to ICP*	DNO is responsible for passing relevant Health and Safety and operational bulletins and information to ICP*	DNO is responsible for passing relevant Health and Safety and operational bulletins and information to ICP*
Provide Training.	ICP	ICP	ICP	ICP	ICP

<b>Key Health and Safety Duties, Risks, Liabilities that will arise.</b>	<b>1. Existing Contestable Work Arrangements.</b>	<b>2. ICP carrying out live working on DNO LV mains. DNO carrying out all operational work.</b>	<b>3. ICP carrying out live working on DNO LV mains. ICP carrying out all field operational work.</b>	<b>4. ICP carrying out HV jointing on DNO network. DNO carrying out all (HV) operational work, issues PTW to ICP.</b>	<b>5. ICP carrying out HV jointing on DNO network. ICP carrying out all field (HV) operational work.</b>
Provide Supervision.	ICP	ICP (DNO AP may be required to assist with cable identification.)	ICP	ICP (Where ICP CP is working for DNO SAP; DNO is responsible for issue of permit, including any specific supervisory requirements and safety precautions.)	ICP
Fault restoration and repairs arising from any ICP work.	DNO*	DNO*	DNO*	DNO*	DNO*
Provide Instruction	ICP	ICP	ICP	ICP	ICP
Carry out Risk Assessment.	ICP (ICP must accept DNO RA for operational procedures as required by DNO)	ICP (ICP must accept DNO RA for operational procedures as required by DNO)	ICP (ICP must accept DNO RA for operational procedures as required by DNO)	ICP (ICP must accept DNO RA for operational procedures as required by DNO)	ICP (ICP must accept DNO RA for operational procedures as required by DNO)
Provide PPE.	ICP (ICP to comply with general requirements of DNO, i.e. extent of FR clothing required, but not detail.)	ICP (ICP to comply with general requirements of DNO, i.e. extent of FR clothing required, but not detail.)	ICP (ICP to comply with general requirements of DNO, i.e. extent of FR clothing required, but not detail.)	ICP (ICP to comply with general requirements of DNO, i.e. extent of FR clothing required, but not detail.)	ICP (ICP to comply with general requirements of DNO, i.e. extent of FR clothing required, but not detail.)

Key Health and Safety Duties, Risks, Liabilities that will arise.	1. Existing Contestable Work Arrangements.	2. ICP carrying out live working on DNO LV mains. DNO carrying out all operational work.	3. ICP carrying out live working on DNO LV mains. ICP carrying out all field operational work.	4. ICP carrying out HV jointing on DNO network. DNO carrying out all (HV) operational work, issues PTW to ICP.	5. ICP carrying out HV jointing on DNO network. ICP carrying out all field (HV) operational work.
DNO Network Operational duties. DNO opts for ICP to be authorised under DNO authorisation system.	N/A	DNO is responsible for carrying out DNO DSR CP assessment of ICP employee. ICP is responsible for selecting suitable staff for operational authorisation and making DNO aware of any other reasons why authorisation should be withdrawn. DNO is responsible for withdrawing authorisation when DNO receives information or observes behaviour indicating that the individual is no longer suitable for CP role.	DNO is responsible for carrying out DNO DSR CP/AP/SAP assessment of ICP employee. ICP is responsible for selecting suitable staff for operational authorisation and making DNO aware of any other reasons why authorisation should be withdrawn. DNO is responsible for withdrawing authorisation when DNO receives information or observes behaviour indicating that the individual is no longer suitable for <b>CP/AP/SAP</b> role.	DNO is responsible for carrying out DNO DSR CP assessment of ICP employee. ICP is responsible for selecting suitable staff for operational authorisation and making DNO aware of any other reasons why authorisation should be withdrawn. DNO is responsible for withdrawing authorisation when DNO receives information or observes behaviour indicating that the individual is no longer suitable for CP role.	DNO is responsible for carrying out DNO DSR CP/AP/SAP assessment of ICP employee. ICP is responsible for selecting suitable staff for operational authorisation and making DNO aware of any other reasons why authorisation should be withdrawn. DNO is responsible for withdrawing authorisation when DNO receives information or observes behaviour indicating that the individual is no longer suitable for <b>CP/AP/SAP</b> role.
DNO Network Operational duties. DNO opts for ICP staff to be authorised under ICP authorisation system.	N/A	ICP. DNO procedures may need to be changed to facilitate ICP CP jointing on DNO Networks.	It is not clear how this could work for operational activities. May be possible for certain activities where no conflict exists between ICP and DNO systems. DNO to determine.	ICP. DNO procedures may need to be changed to facilitate ICP CP jointing on DNO Networks.	It is not clear how this could work for operational activities. May be possible for certain activities where no conflict exists between ICP and DNO systems. DNO to determine.
Risk of loss of supply arising from ICP actions while	ICP but liability to customers probably limited to negligence only.	ICP but liability to customers probably limited to negligence	ICP but liability to customers probably limited to negligence	ICP but liability to customers probably limited to negligence	ICP but liability to customers probably limited to negligence

working on DNO Network.		only.	only.	only.	only.
<b>Key Health and Safety Duties, Risks, Liabilities that will arise.</b>	<b>1. Existing Contestable Work Arrangements.</b>	<b>2. ICP carrying out live working on DNO LV mains. DNO carrying out all operational work.</b>	<b>3. ICP carrying out live working on DNO LV mains. ICP carrying out all field operational work.</b>	<b>4. ICP carrying out HV jointing on DNO network. DNO carrying out all (HV) operational work, issues PTW to ICP.</b>	<b>5. ICP carrying out HV jointing on DNO network. ICP carrying out all field (HV) operational work.</b>
Carry out audits and inspections.	Primary responsibility is with ICP (DNO may carry out A and Is' also).	Primary responsibility is with ICP (DNO may carry out A and Is' also).	Primary responsibility is with ICP (DNO may carry out A and Is' also).	Primary responsibility is with ICP (DNO may carry out A and Is' also).	Primary responsibility is with ICP (DNO may carry out A and Is' also).
Investigate incidents affecting network.	DNO (ICP representative to sit on panel).	DNO (ICP representative to sit on panel).	DNO (ICP representative to sit on panel).	DNO (ICP representative to sit on panel).	DNO (ICP representative to sit on panel).
Investigate incidents not affecting network.	ICP	ICP	ICP	ICP	ICP
ESQCR Reporting.	ICP via DNO where applicable.	ICP via DNO where applicable.	ICP via DNO where applicable.	ICP via DNO where applicable.	ICP via DNO where applicable.
Report any damage, defects, etc caused or found on DNO network.	ICP	ICP	ICP	ICP	ICP
Vibration.	ICP	ICP	ICP	ICP	ICP
Manual Handling.	ICP	ICP	ICP	ICP	ICP
Driving.	ICP	ICP	ICP	ICP	ICP
Travelling.	ICP	ICP	ICP	ICP	ICP
Noise.	ICP	ICP	ICP	ICP	ICP
Dangerous Substances.	ICP	ICP	ICP	ICP	ICP
Work at Height.	ICP	ICP	ICP	ICP	ICP
Welfare provisions.	ICP	ICP	ICP	ICP	ICP
EL Insurance.	ICP	ICP	ICP	ICP	ICP
RIDDOR Reporting	ICP	ICP	ICP	ICP	ICP
All other general Health and Safety Risks.	ICP	ICP	ICP	ICP	ICP
Costs arising from failure of any work done by ICP.	Existing arrangements apply.	Existing arrangements apply.	Existing arrangements apply.	Existing arrangements apply.	Existing arrangements apply.
Costs arising from additional DNO work procedures etc required*	Existing arrangements apply.	ECSG to determine.	ECSG to determine.	ECSG to determine.	ECSG to determine.

<b>Key Health and Safety Duties, Risks, Liabilities that will arise.</b>	<b>1. Existing Contestable Work Arrangements.</b>	<b>2. ICP carrying out live working on DNO LV mains. DNO carrying out all operational work.</b>	<b>3. ICP carrying out live working on DNO LV mains. ICP carrying out all field operational work.</b>	<b>4. ICP carrying out HV jointing on DNO network. DNO carrying out all (HV) operational work, issues PTW to ICP.</b>	<b>5. ICP carrying out HV jointing on DNO network. ICP carrying out all field (HV) operational work.</b>
Live LV Working Assessment.	Both DNO and ICP to be involved based on interface agreement.	Both DNO and ICP to be involved based on interface agreement.	Both DNO and ICP to be involved based on interface agreement.	N/A	N/A
Ensure that ICP staff does not carry out work beyond their capabilities.	ICP	ICP	ICP	ICP	ICP
Correct notification of customers for planned shut-downs.	DNO*	DNO*	DNO*	DNO*	DNO*