UK Power Networks
Delivering your electricity

BNO Guide

An overview of multi-occupied buildings and Building Network Operators (BNOs)

September 2025 V4

Scope and Purpose

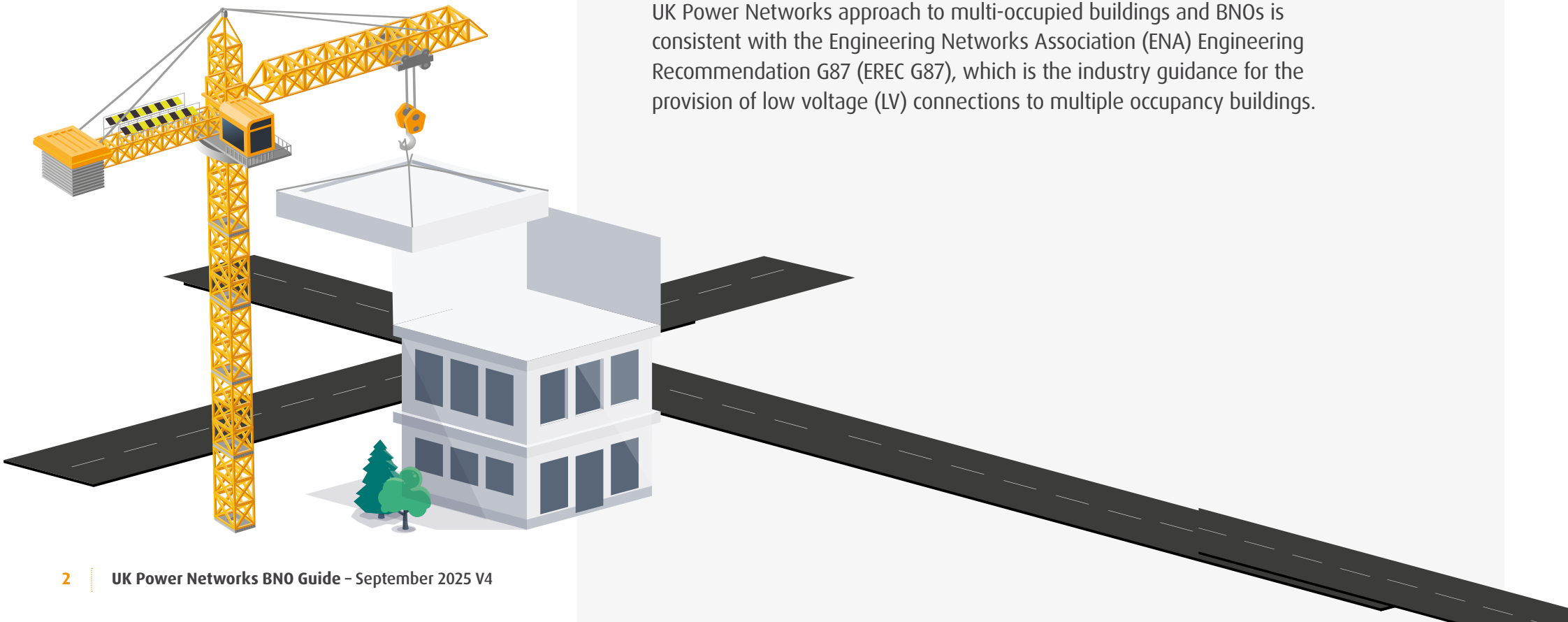
This guide has been created by UK Power Networks to provide an overview of multi-occupied buildings, building networks, and the role of a Building Network Operator (BNO).

The guidance outlines the key requirements for the electrical design and development of a multi-occupied building and should be used as supporting information to our current low voltage (LV) design standards.

This guide applies to customers who wish to:

- **Convert an existing building into a multi-occupied building.**
- **Develop a new multi-occupied building.**
- **Take ownership of (and responsibility for) a multi-occupied building.**

UK Power Networks approach to multi-occupied buildings and BNOs is consistent with the Engineering Networks Association (ENA) Engineering Recommendation G87 (EREC G87), which is the industry guidance for the provision of low voltage (LV) connections to multiple occupancy buildings.



Glossary of Terms and Abbreviations

Listed here are the terms and abbreviations used throughout this guide:

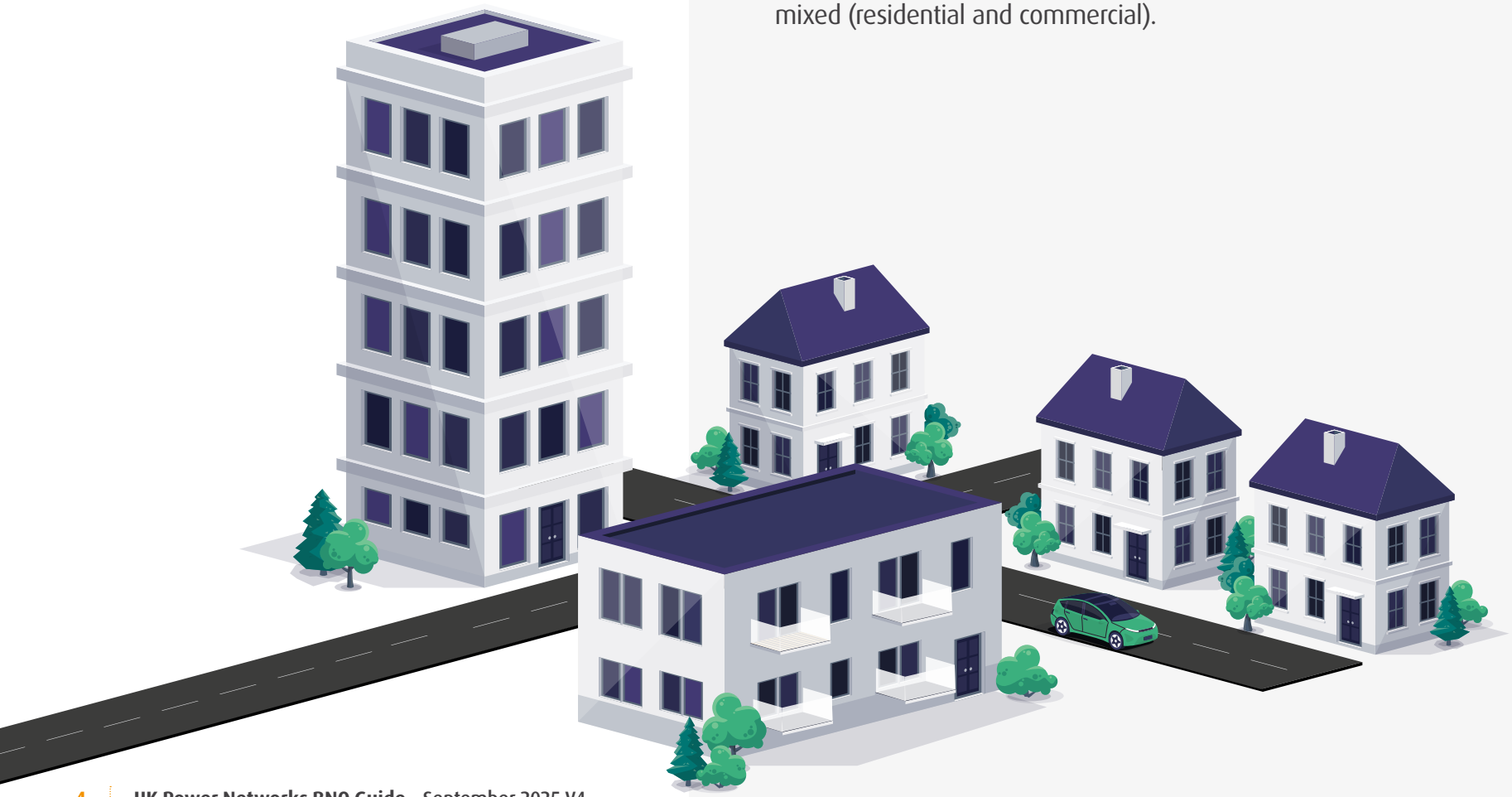
ACB	Air Circuit Breaker
BNO	Building Network Operator
BS	British Standard
BS 7671	IET Wiring Regulations 18th Edition
CDM	The Construction Design and Management Regulations 2015
DNO	Distribution Network Operator
ECA	Electrical Contractors Association
EDNO	Licence Exempt Distribution Network Operator
EDS	Engineering Design Standard
EHV	Extra High Voltage
ENA	Energy Networks Association
EREC	Engineering Recommendation
ESQCR	Electrical Safety, Quality and Continuity Regulations 2002
FSO	The Regulatory Reform (Fire Safety) Order 2005
HSWA	The Health and Safety at Work Act 1974
HV	High Voltage
ICP	Independent Connections Provider
IDNO	Independent Distribution Network Operator
kVA	Kilovolt-amperes
LV	Low Voltage
MW	Megawatt
MPAN	Meter Point Administration Number
OFGEM	The Office of Gas and Electricity Markets
NICEIC	National Inspection Council for Electrical Installation Contracting
RMU	Ring Main Unit

What is a Multi-occupied Building?

A multi-occupied building is defined in ENA EREC G87 as:

‘Any single building that has been sub-divided into more than one premise, for example flats (including conversions) or factories that have been broken up into smaller industrial units. It includes communal areas (if any).’

A multi-occupied building may be residential, commercial, or mixed (residential and commercial).



Multi-occupied Building
Residential

A residential multi-occupied building is designed to provide living spaces for multiple people within the same building. The building may include communal facilities such as car parks, storage, and a garden.

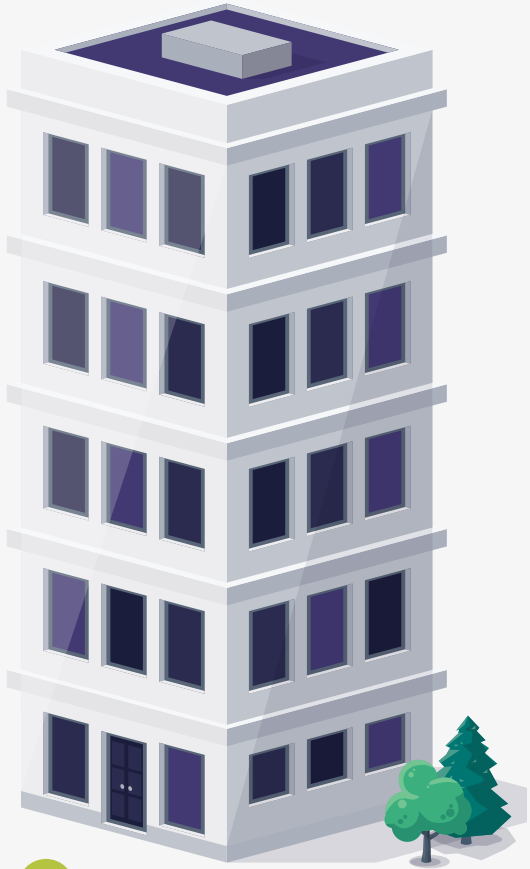
Examples of residential multi-occupied buildings:

1

House Conversion

2

Block of flats



3

High-Rise Block of flats

Multi-occupied Building
Commercial

A commercial multi-occupied building is designed to provide commercial spaces for multiple businesses within the same building. The building may include communal facilities such as car parks and storage.

Examples of commercial multi-occupied buildings:

1 Warehouses

2 Offices

Multi-occupied Building
Mixed

A mixed multi-occupied building is designed to provide both living and commercial spaces within the same building. The building may include communal facilities such as car parks, storage, and a garden.

Examples of mixed multi-occupied buildings:

1

Conversion including storage

2

Block including storage

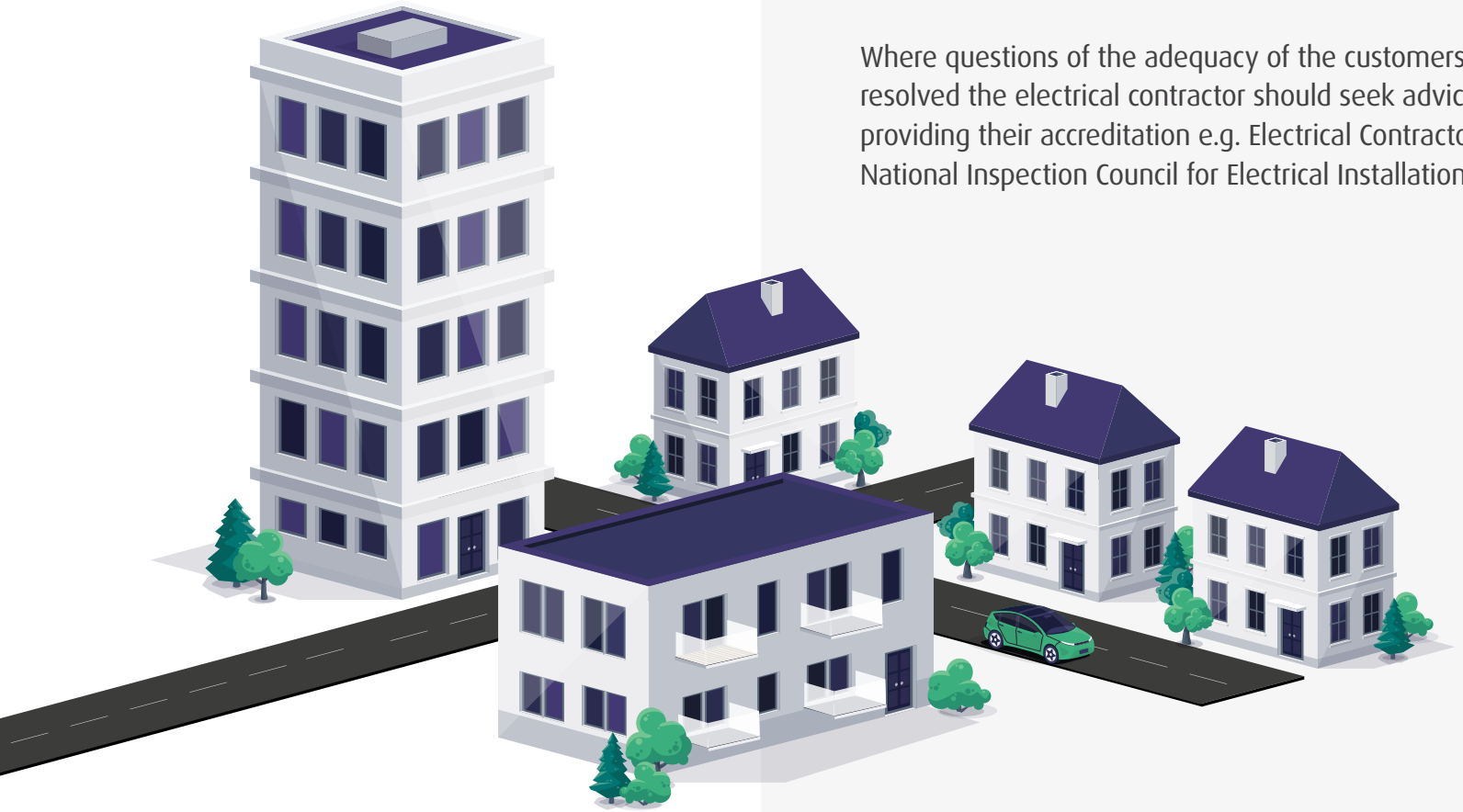
What is a Building Network?

A building network is defined in ENA EREC G87 as:

'The network comprising cables or bus-bars, switchgear / fusegear and any associated ancillary equipment between the intake position and customers premises.'

Building networks are governed by BS 7671; therefore, UK Power Networks shall not give approval for building network designs as UK Power Networks is not an enforcing or advisory body for BS 7671. In addition, there are additional regulatory requirements for multi occupied buildings e.g. fire regulations, Health and Safety at work Act 1974 etc.

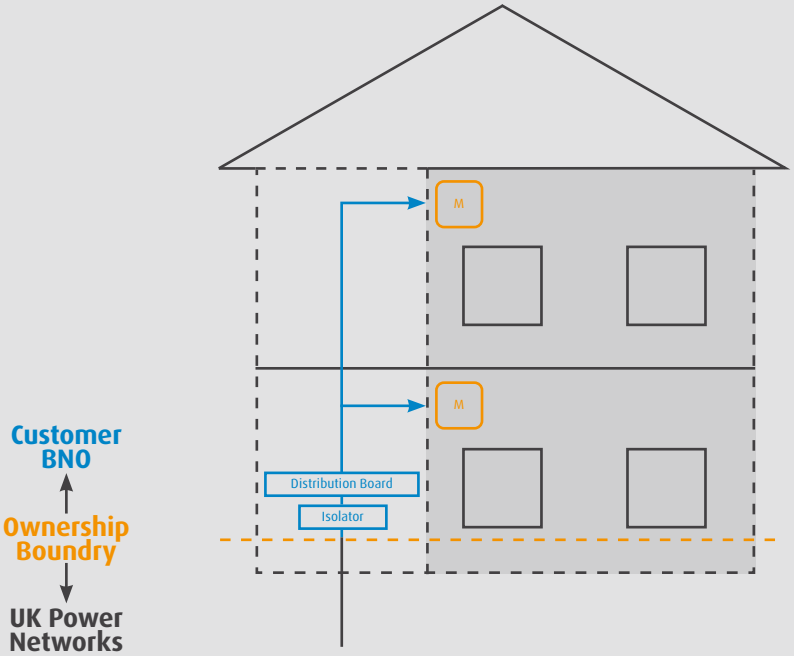
Where questions of the adequacy of the customers installation need to be resolved the electrical contractor should seek advice from the trade body providing their accreditation e.g. Electrical Contractors Association (ECA), National Inspection Council for Electrical Installation Contracting (NICEIC) etc.



Building Network
Residential

A building network refers to the internal wiring and electrical equipment required to distribute electricity to the individual premises within the building.

Example of a residential building network:



The building network must be designed, installed, and maintained in accordance with BS 7671.

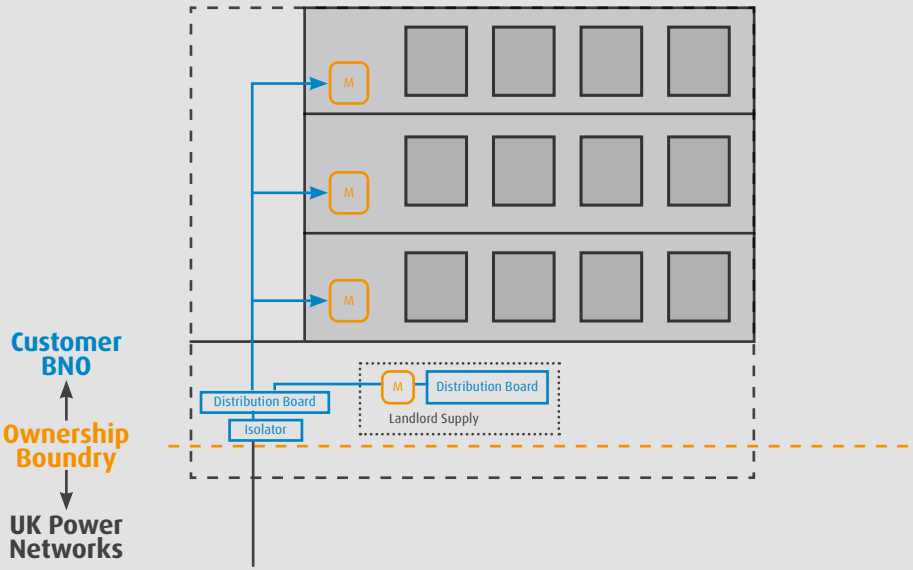
Prior to energisation the customer shall appoint a supplier and may be asked to provide a request for energisation in writing together with a statement of testing and compliance with BS 7671 (and any other applicable legislation) for the building network, signed by an appropriately authorised person.

The example shown is for illustrative purposes only, the arrangement of the building network is the responsibility of the BNO. The building network must be designed and installed in accordance with BS 7671.

Building Network
Commercial

A building network refers to the internal wiring and electrical equipment required to distribute electricity to the individual premises within the building.

Example of a commercial building network:



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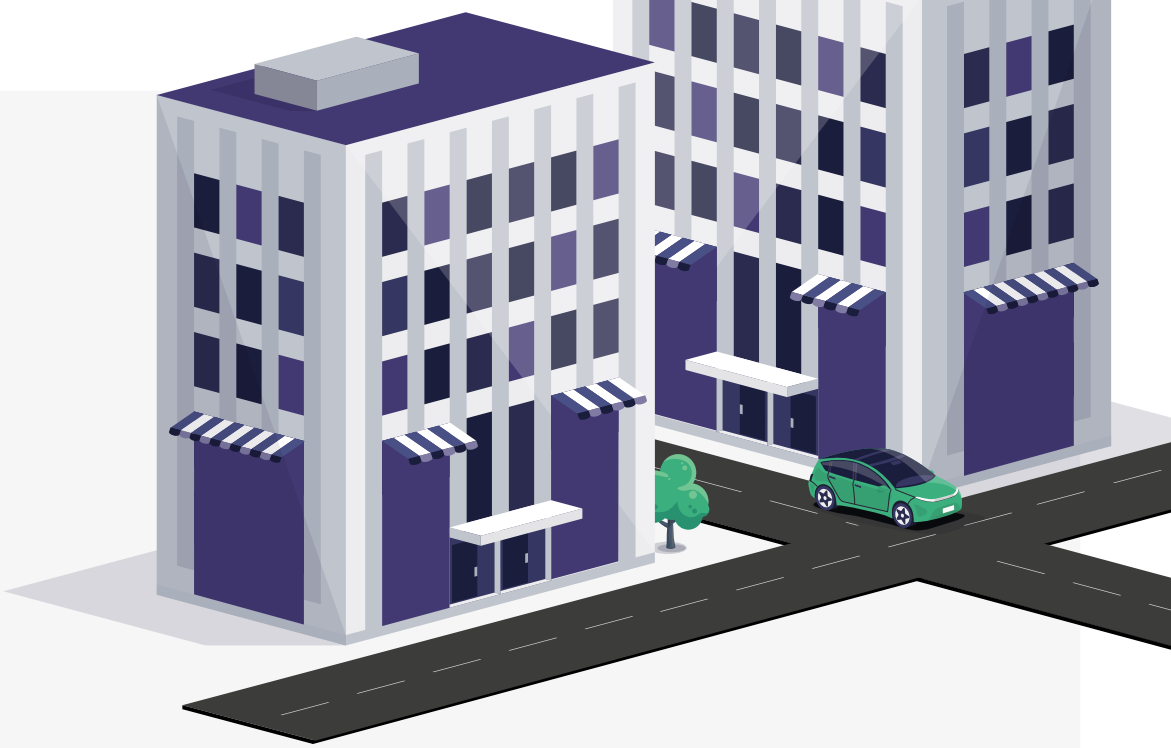
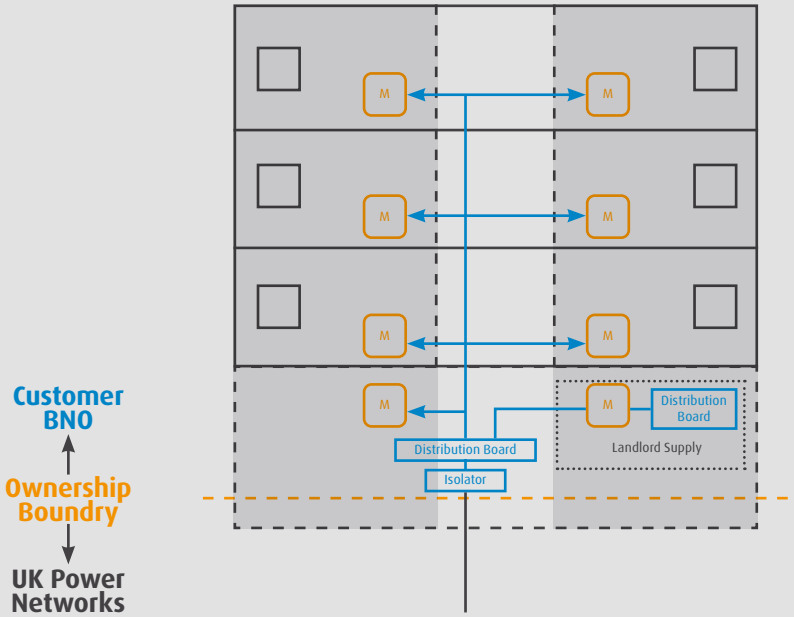
Building Network
Mixed

A building network refers to the internal wiring and electrical equipment required to distribute electricity to the individual premises within the building.



Example of a mixed building network:



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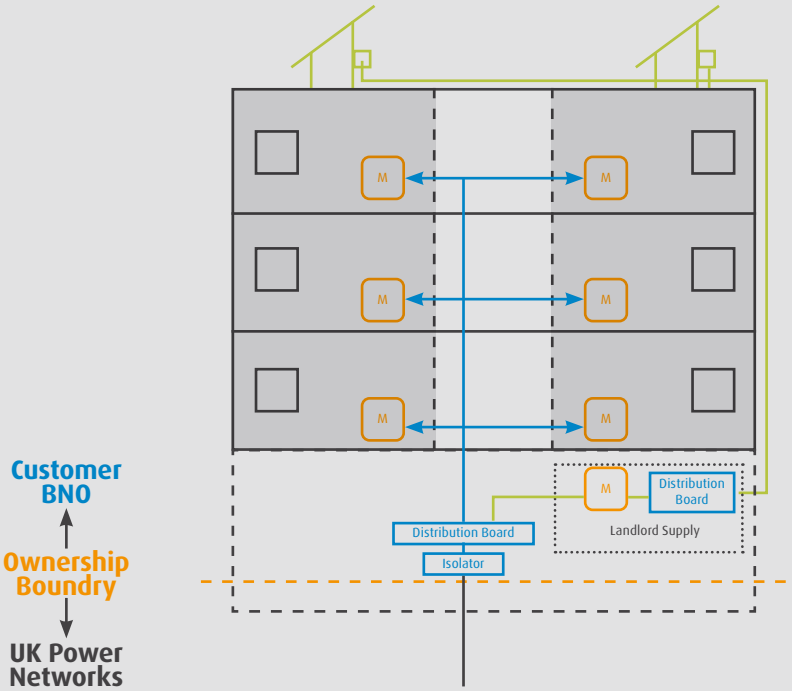
The example shown is for illustrative purposes only, the arrangement of the building network is the responsibility of the BNO. The building network must be designed and installed in accordance with BS 7671.

Building Network
with Distributed Generation

A building network may also include distributed generation. Refer to FAQ 09 for further information on the connection process.

Example of a residential building network with generation:



The building network must be designed, installed, and maintained in accordance with BS 7671.

Prior to energisation the customer shall appoint a supplier and may be asked to provide a request for energisation in writing together with a statement of testing and compliance with BS 7671 (and any other applicable legislation) for the building network, signed by an appropriately authorised person.

The example shown is for illustrative purposes only, the arrangement of the building network is the responsibility of the BNO. The building network must be designed and installed in accordance with BS 7671.

Building Network - Equipment

A building network refers to the internal wiring and electrical equipment required to distribute electricity to the individual premises within the building.

Examples of equipment found in a building network:

Meter Tails

Double insulated cables installed at the service intake position.

Isolator

Dedicated isolation device used to isolate the building network.

Distribution Board

Dedicated enclosure for the distribution of a single service to multiple circuits within the building.

Cable

An arrangement of conductors used for the distribution of electricity to multiple premises within the building.

Red Head

Isolation device installed before an electricity meter for isolation purposes.

What is a Building Network Operator (BNO)?

A BNO is defined in ENA EREC G87 as:

'The organisation that owns or operates the electricity distribution network within a multiple occupancy building, between the intake position and customers installations. The BNO may be the DNO, another licensed distributor or a third party exempt from an electricity distribution license (e.g. a facilities management company)'.

UK Power Networks will not undertake a BNO function as building networks are governed by BS 7671.

Therefore, the BNO function may be undertaken by a:

- Developer.
- Building owner.
- Landlord.
- Building management company.
- IDNO (refer to FAQ 03).
- EDNO (refer to FAQ 04).

What are the responsibilities of a BNO?

Design, installation, and maintenance

The design, installation, and maintenance of the building network is the responsibility of the BNO and must be carried out in accordance with the requirements of BS 7671.

Safety and compliance

The ongoing safety of both the public and any operational staff (such as meter operators etc.) within the building is the responsibility of the BNO. The BNO must ensure that all regulatory requirements are adhered to, such as (but not limited to):

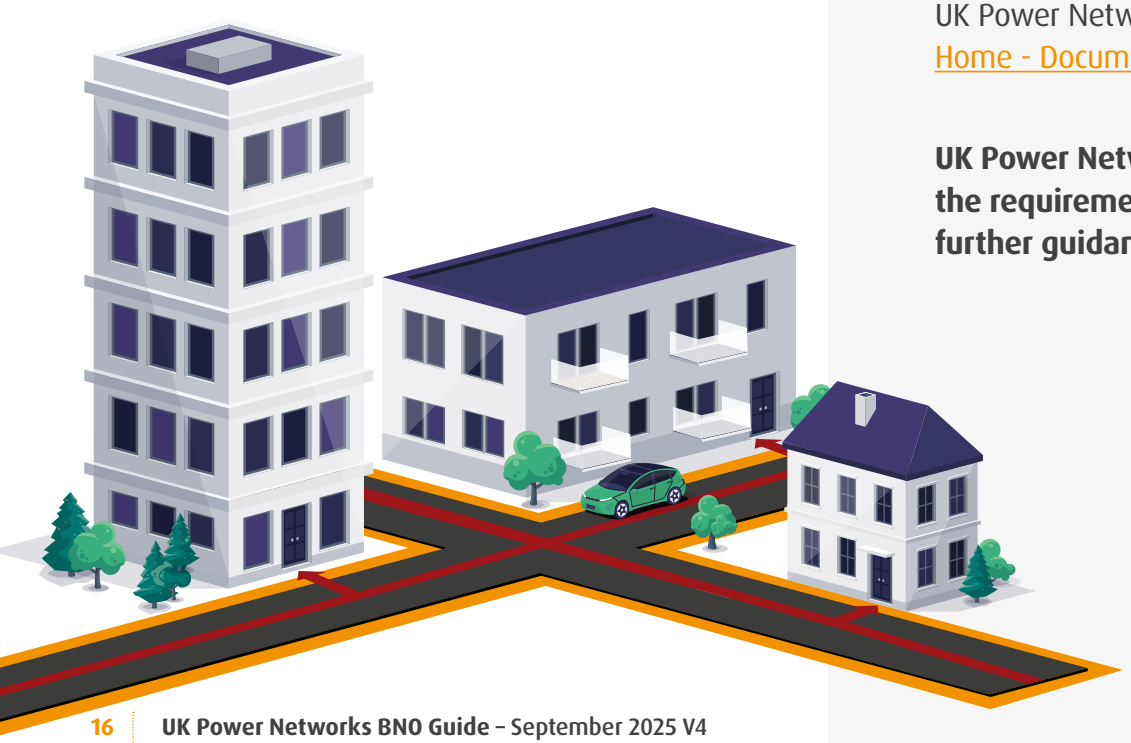
- The Construction Design Management Regulations (CDM) 2015.
- The Health and Safety at Work Act (HASAWA) 1974.
- The Building Regulations 2010.
- The Regulatory Reform (Fire Safety) Order (FSO) 2005.

Quality of supply

The quality of supply at the customer supply terminals, in accordance with the Electricity Safety, Quality and Continuity Regulations (ESQCR) 2002, is the responsibility of the BNO.

Supplies to Multi-occupied Buildings

Following the publication of ENA EREC G87 to provide industry guidelines for the provision of LV supplies to multi-occupied buildings, UK Power Networks produced EDS 08-1103 to provide guidance on multiple occupancy building supplies.



The guidance aims to ensure the following:

- Compliance with ENA EREC G87.
- Clear ownership boundaries and responsibilities within the multi-occupied building.
- A safe system of earthing is provided to the multi-occupied building.
- Points of electrical isolation are provided and appropriately labelled.

The provision of a supply to a multiple occupancy building will be provided in accordance with the relevant UK Power Networks connection standards (refer to next slides).

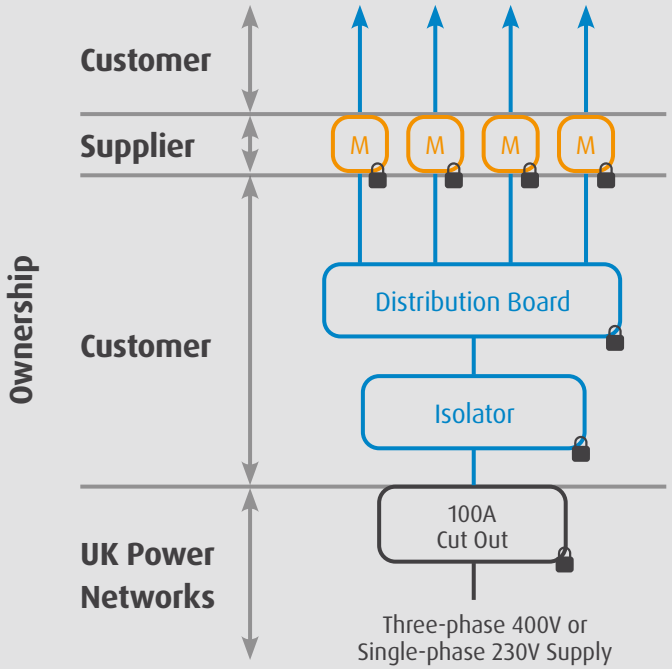
Customers, installers, ICPs, and IDNOs can obtain a copies of all available UK Power Networks design standards via the G81 website:
Home - Document Library - UK Power Networks

UK Power Networks are unable to provide supplies that comply with the requirements of BS 9991 or BS 9999. Refer to EDS 08-1103 for further guidance

LV Supplies
up to 69kVA

LV supplies up to 69kVA (100A) will be provided by UK Power Networks in accordance with the requirements of EDS 08-2101.

Example of a 100A supply arrangement:



EDS 08-2101 LV Customer Supplies up to 100A

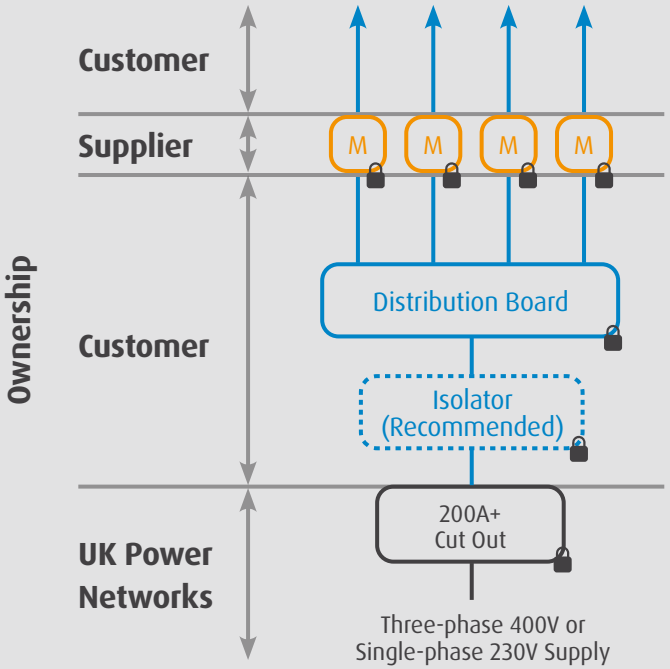
General requirements include:

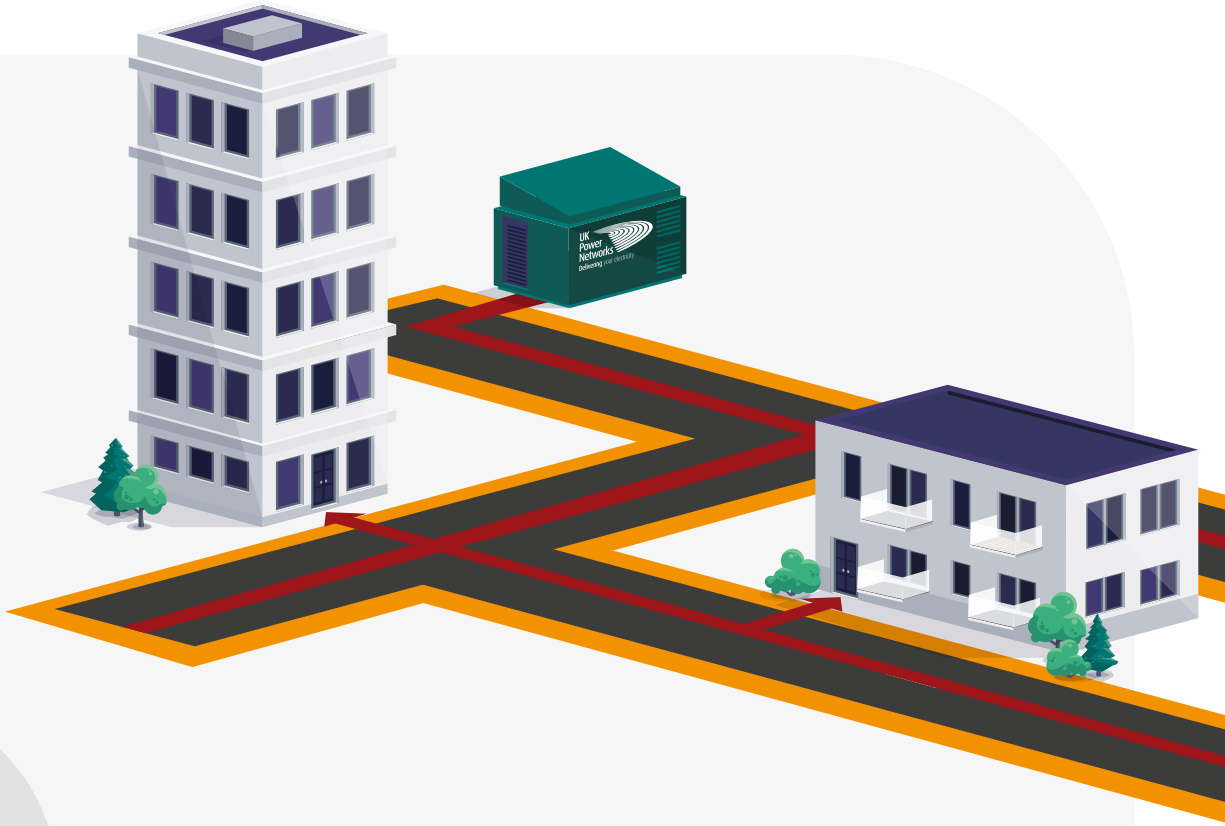
- Service cable, length and route.
- Cable ducts.
- Earthing.
- Point of isolation.
- Intake position.
- Ownership boundary.
- Customer cables and equipment.
- Access and security.

LV Supplies
above 69kVA (cut-out supplies)

LV supplies above 69kVA (200A+) will be provided by UK Power Networks in accordance with the requirements of EDS 08-2100.

Example of a 200A+ cut-out supply arrangement:





EDS 08-2100 LV Customer Supplies above 100A

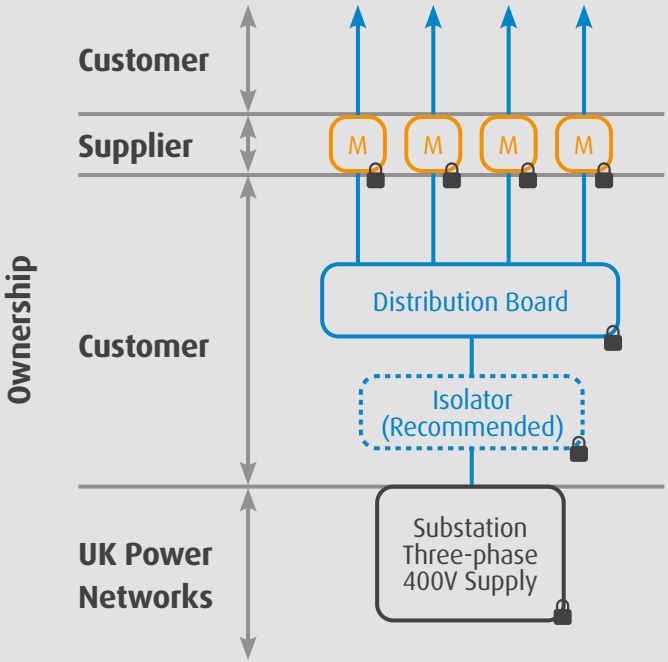
General requirements include:

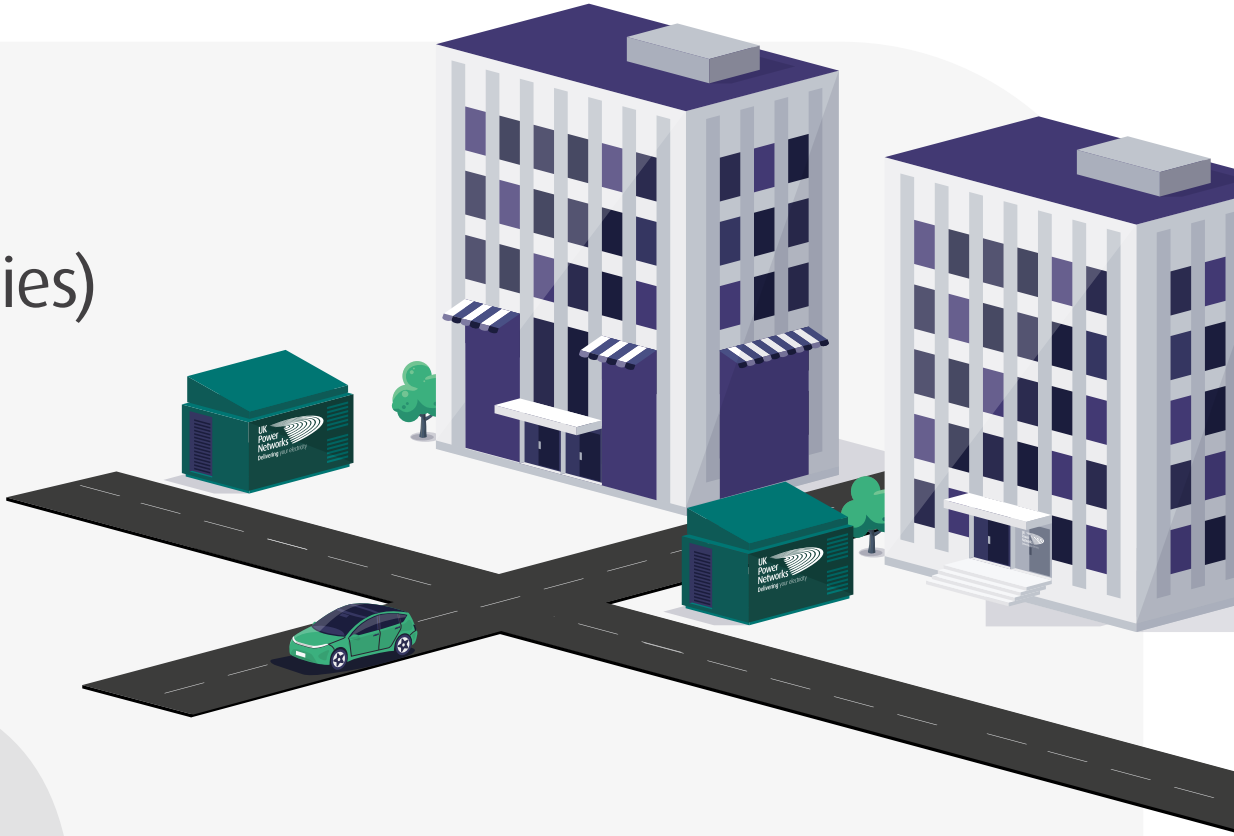
- Service cable, length and route.
- Cable ducts.
- Earthing.
- Point of isolation.
- Intake position.
- Ownership boundary.
- Customer cables and equipment.
- Metering requirements.
- Access and security.

LV Supplies
above 69kVA (substation supplies)

LV supplies above 69kVA (200A+) will be provided by UK Power Networks in accordance with the requirements of EDS 08-2100.

Example of a 200A+ substation supply arrangement:





EDS 08-2100 LV Customer Supplies above 100A

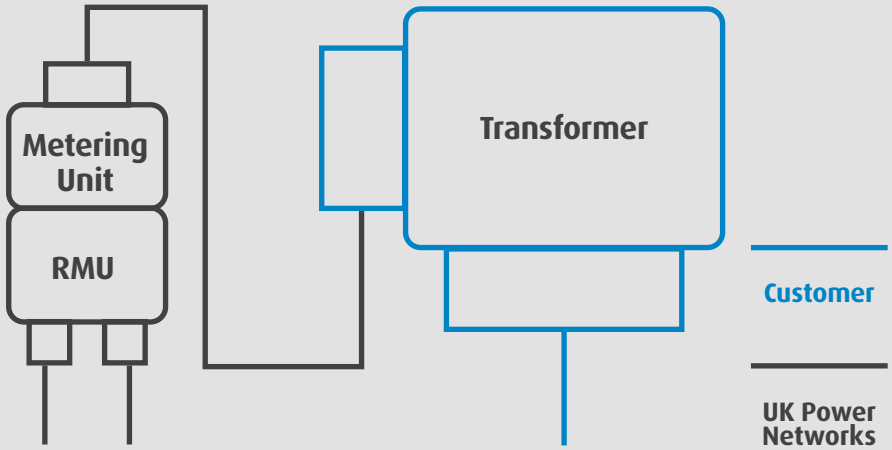
General requirements include:

- Service cable, length and route.
- Cable ducts.
- Earthing.
- Point of isolation.
- Intake position.
- Ownership boundary.
- Customer cables and equipment.
- Metering requirements.
- Access and security.

HV Supplies

HV supplies will be provided by UK Power Networks in accordance with the requirements of EDS 08-3100.

Example of a of a HV supply arrangement:



*Typical arrangment using an RMU and metering unit.
Refer to EDS 08-3100 for other HV supply arrangements.

EDS 08-3100 HV and EHV Customer Demand and Generation Supplies

General requirements include:

- Substation requirements.
- Substation earthing.
- Customer cables and equipment.
- Emergency trip facility.
- Ownership boundary.
- Access and security.

Frequently Asked Questions (FAQs)

Q1. :

Who installs what, and where?

The customer (or BNO) is responsible for the installation and maintenance of the building network. This includes the provision of a suitable intake room (to accommodate the DNO service equipment) and suitable metering positions (to accommodate the suppliers metering equipment).

The supplier (or meter operator) is responsible for the installation and maintenance of the metering equipment. The supplier must be consulted at the design stage to agree on appropriate metering positions and any additional requirements to ensure the safety and security of the supplies.

The DNO is responsible for the installation and maintenance of the service equipment. The DNO must also be consulted at the design stage to agree on a suitable intake position and additional requirements to ensure the safety and security of the supplies.

Frequently Asked Questions (FAQs)

Q2. :

Is an Electrical Installation Condition Report (ECIR) required for energisation?

Yes, an ECIR is required to energise the building network. The ECIR confirms that the building network has been installed and tested in accordance with the requirements of BS 7671.

Q3. :

What is an IDNO?

An Independent Distribution Network Operator (IDNO) is an organization that owns, manages, and maintains electricity infrastructure. Unlike Distribution Network Operators (DNOs), which serve specific geographic regions, IDNOs do not have a fixed region and can operate across the country.

Frequently Asked Questions (FAQs)

Q4. :

What is an EDNO?

An Exempt Distribution Network Operator (EDNO) is an entity that operates a distribution network without requiring a distribution license, provided they meet certain criteria. The criteria includes the distribution of less than 2.5MW of load or generation of less than 10MW. A license exempt building network operator may recover the costs of providing and operating their building network, refer to **Q3**.

Q5. :

As an EDNO, how do I recover my costs?

OFGEM has issued guidance for licence exempt building network operators and associated charge for use of their building network. Please refer to the OFGEM document "Guidance on third party access charges for licence exempt gas and electricity distribution networks" reference 151/11, published 10th November 2011, a pdf of which is available at:
https://www.ofgem.gov.uk/ofgem-publications/50612/tpa-network-charging.pdf

Frequently Asked Questions (FAQs)

Q6. :

Which electrical standards must an IDNO and EDNO installation comply with?

All network operators must comply with Electrical Safety, Quality and Continuity Regulations 2002 (ESQCR). In addition, a licenced distribution network operator (IDNO) is governed by both national DNO requirements and the IET Wiring Regulations 18th Edition (BS 7671) where as an unlicenced distribution network operator (EDNO) is governed by BS 7671 only.

Q7. :

Who is responsible for Meter Point Administration Numbers (MPANs)?

Only licenced distribution network operators (DNOs/IDNOs) are responsible for MPANs. EDNOs will need to arrange for customer MPANs via UK Power Networks.

Frequently Asked Questions (FAQs)

Q8. :

Can UK Power Networks provide more than one supply to my building network?

UK Power Networks preferred approach is to provide a single supply to a building network due to the additional safety risks associated with multiple supplies. In most cases, a single supply will be sufficient to cater for the building network but there may be instances where a second supply is permitted. For further guidance on multiple occupancy building supplies, refer to EDS 08-1103 via our G81 website:
Home - Document Library - UK Power Networks

Frequently Asked Questions (FAQs)

Q9. :

How do I connect distributed generation to my building network?

Distributed generation will be connected in accordance with the relevant ENA EREC:

- G98 for distributed generation below 16A/3.6kW per phase.
- G99 for distributed generation above 16A/3.6kW per phase.

For frequently asked questions relating to ENA EREC G98 and G99, refer to G98 and G99 FAQs - UK Power Networks. If you have any additiona questions relating to the process, please call a member of our connections team on 020 3324 1460

The G98 or G99 application form will need to be submitted to our connections gateway team at connections.gateway@ukpowernetworks.co.uk for assessment. UK Power Networks will assess the local distribution network to determine the impact of the proposed connection and advise if any additional works are required. Please note any additional works may be chargeable.

Frequently Asked Questions (FAQs)

Q10. :

What happens if there is a loss of supply to my building network?

UK Power Networks will respond to investigate and restore supply to the building network. It is important to note that UK Power Networks can only respond to (and work on) faults associated with our distribution network. Where the issue is associated with the building network, the BNO is responsible for the repairs and restoration of customer supplies.

Q11. :

How does a customer know if they are supplied from a building network or BNO?

Whilst it may not be apparent that a customer is supplied from a building network or BNO, there may be information within the building that will confirm the supply arrangement. Alternatively, the customer can seek advice from the building management company or other residents of the building.

Frequently Asked Questions (FAQs)

Q12. :

How does a customer report a loss of supply to their residence?

The customer should contact '105' via telephone or visit the ENA power cut website: UK Power Cut? Call 105 For Free | Find Your Electricity Provider.
UK Power Networks will respond accordingly and where ownership is unclear, attend site to investigate.


UK
Power
Networks
Delivering your electricity