
# Network Assessment Guide

Assessments in association with
NGED Matrix designs

**December 2025**

Electricity
Distribution

nationalgrid

# Contents

# Data Portal 2

## Introduction

This guidance document can be used to assist with the evaluation of National Grid Electricity Distribution's (NGEDs) system in association with the determination process for the connection of loads up to 5.75kVA as per Standard Technique: SD5F.

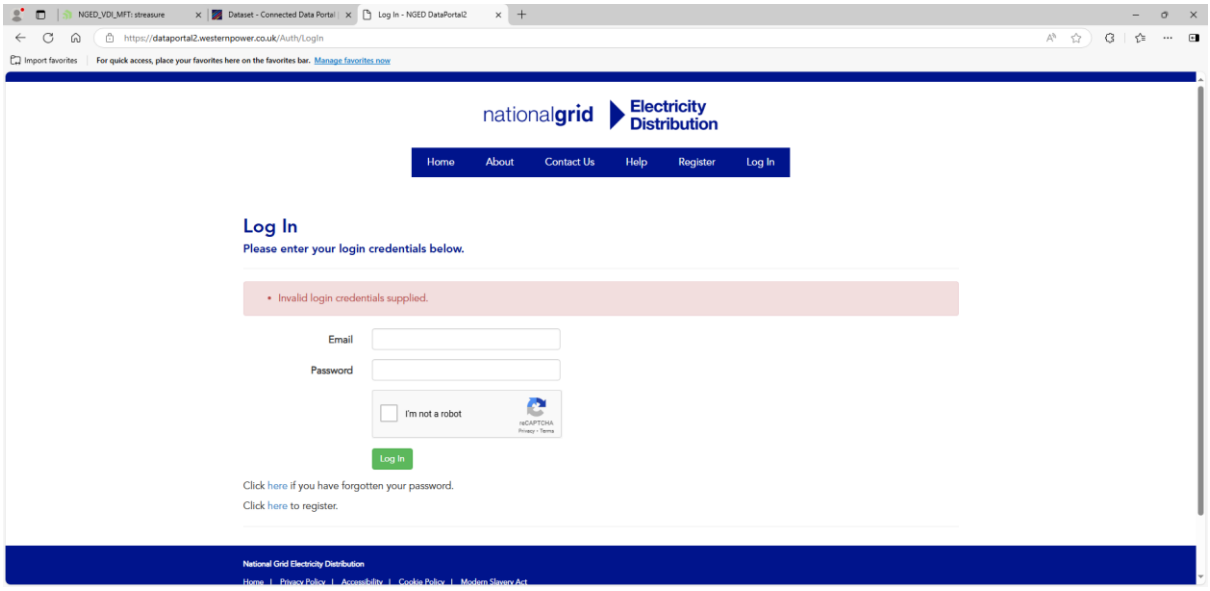
## DataPortal 2

NGED's network topology can be viewed on our DataPortal2 website, please note that only organisations with a business need are provided access. This is for security of our network and customers.

Log In - NGED DataPortal2

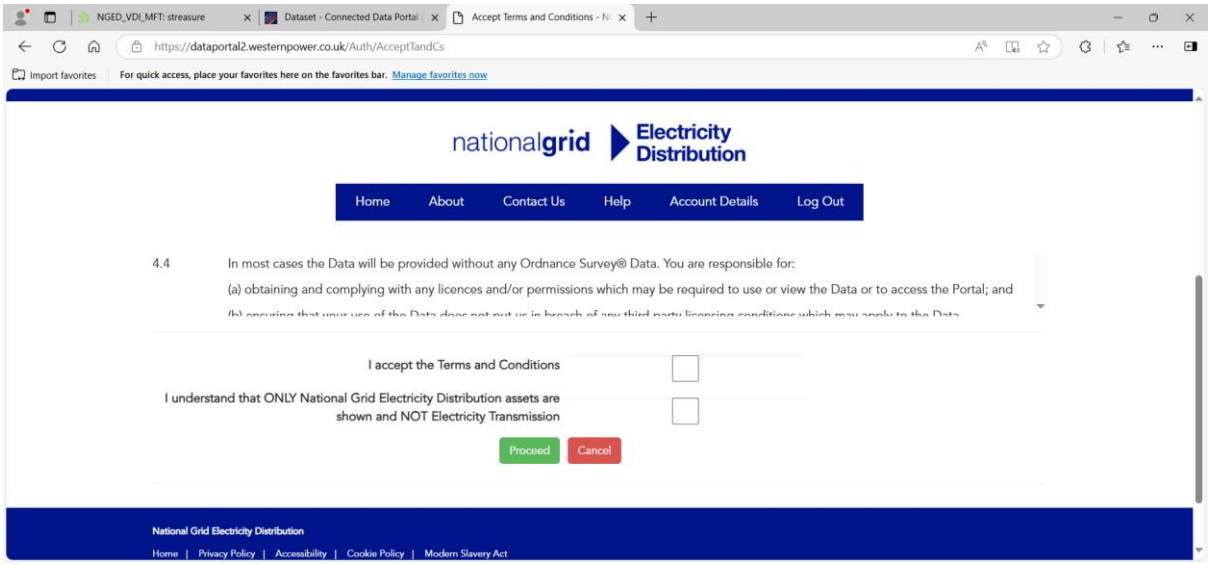
## Step 1. Create an account

We'll accept access to the system for work in conjunction with the assessment of our network in line with our Standard Technique: SD5F (Relating to connecting multiple small low voltage connections with limited network analysis).



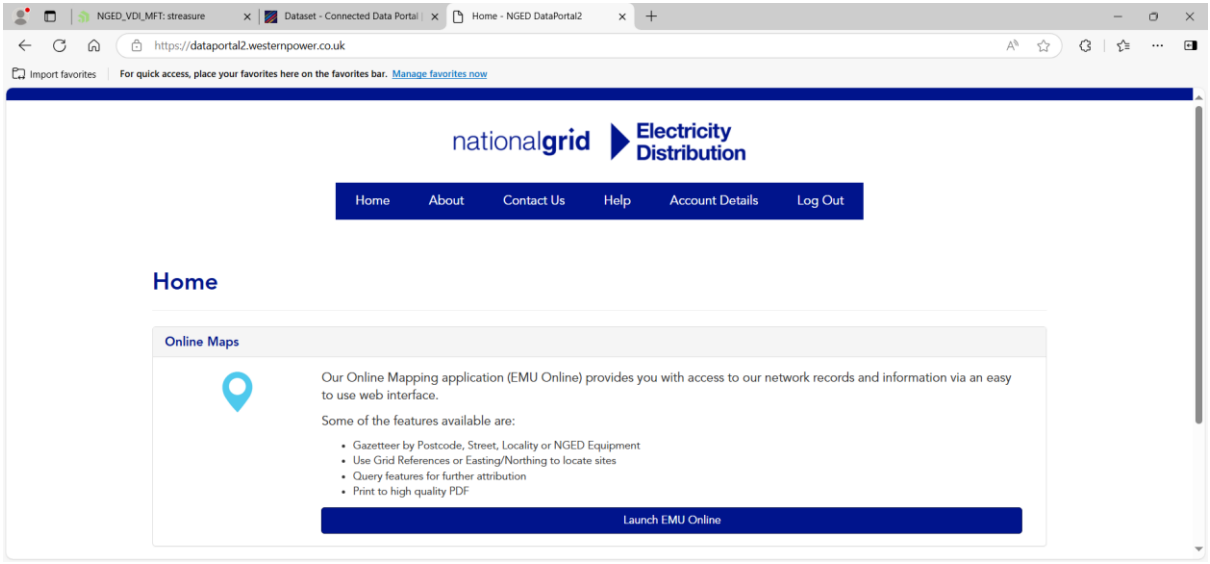

Once the account has been accepted, you'll be provided with a link to validate your account, once validated, you can pass to the next step.

## Step 2. Accept Terms and Conditions

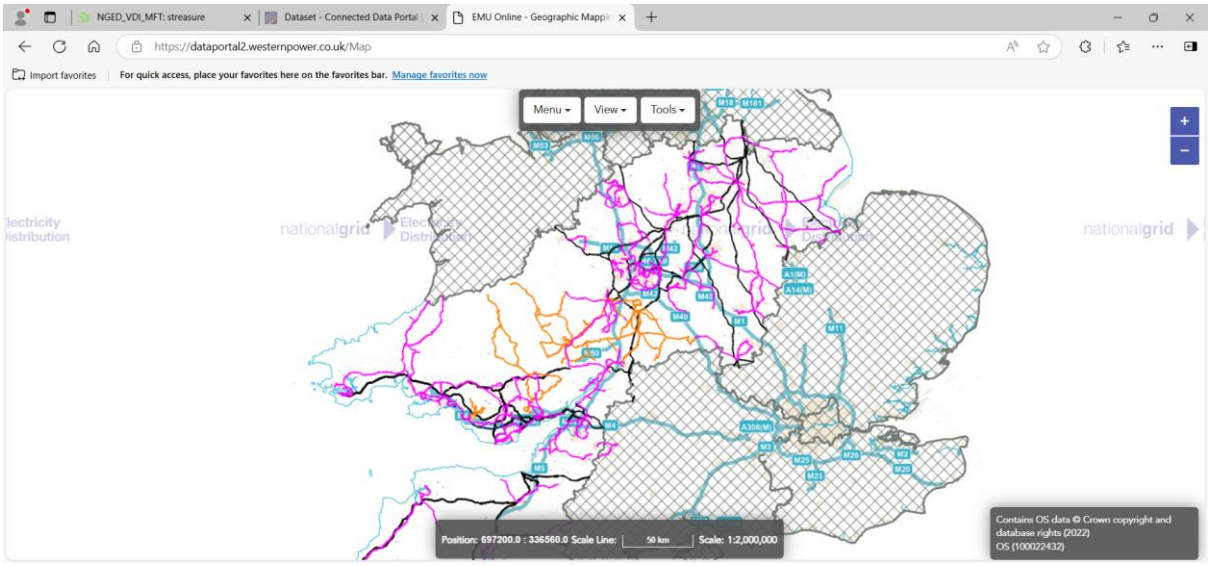



## Step 3. Launch EMU Online

This is our mapping system

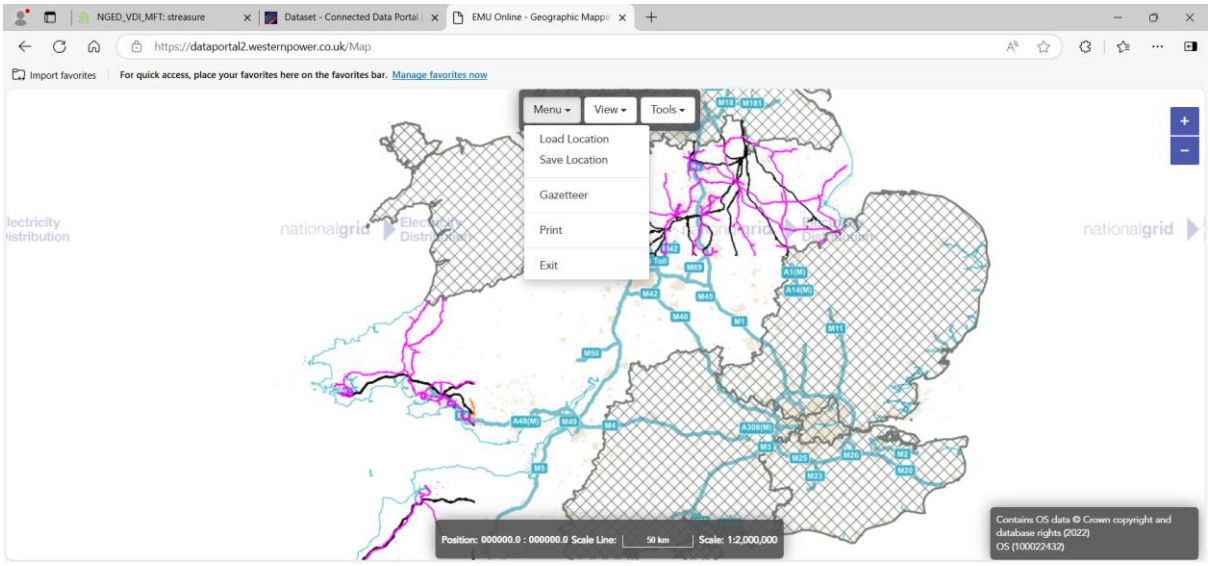


You'll see this page



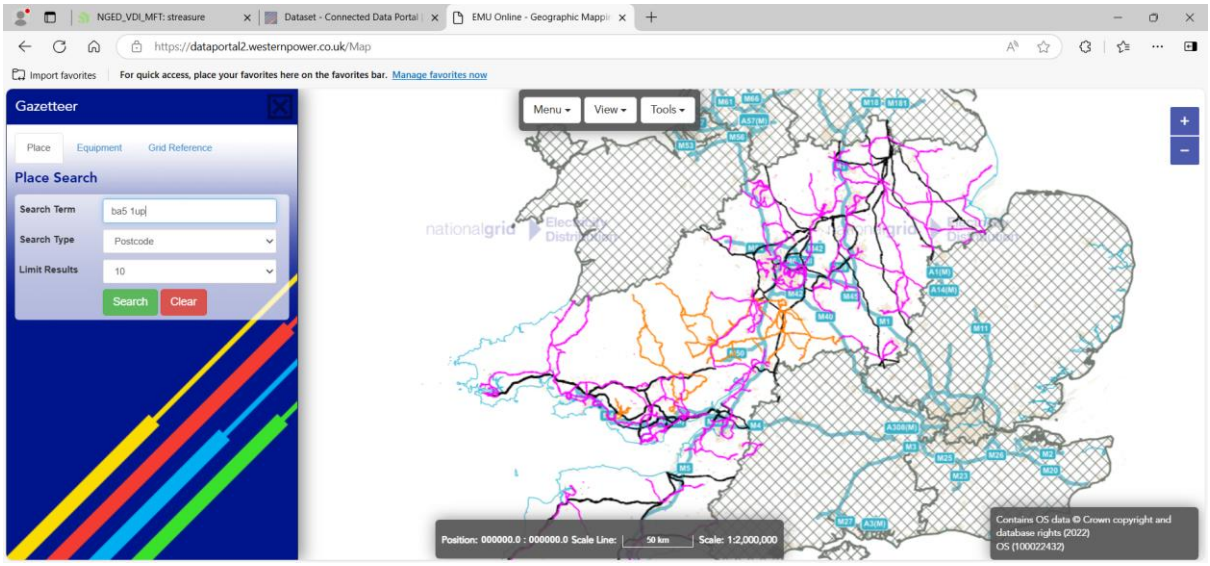

## Step 4. Finding the network of relevance.

Under MENU, select GAZATEER




Our assets can then be searched via Post Code, Equipment names and numbers or via Grid Reference

Within the example, post code **BA5 1UP** has been entered into the search function



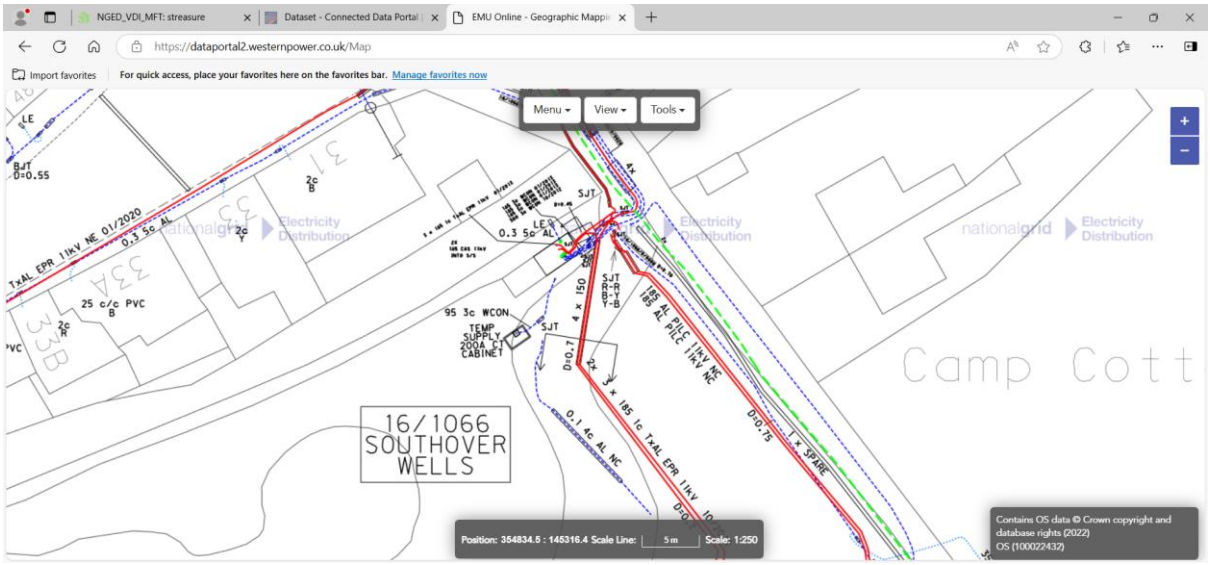

The screen will now display an area of asset associated with the chosen search method

## Step 5. Assessing the network

Substations can be ascertained by the substation text and by determining the red (high voltage conductors) lines entering into an outlined shape with exiting blue (low voltage conductors) lines.

For this example, the Substation is called Southover Wells and the substation number is 16/1066.

The prefix 16 denotes the area – for this example the area is East Mendip (Midsomer Norton office)

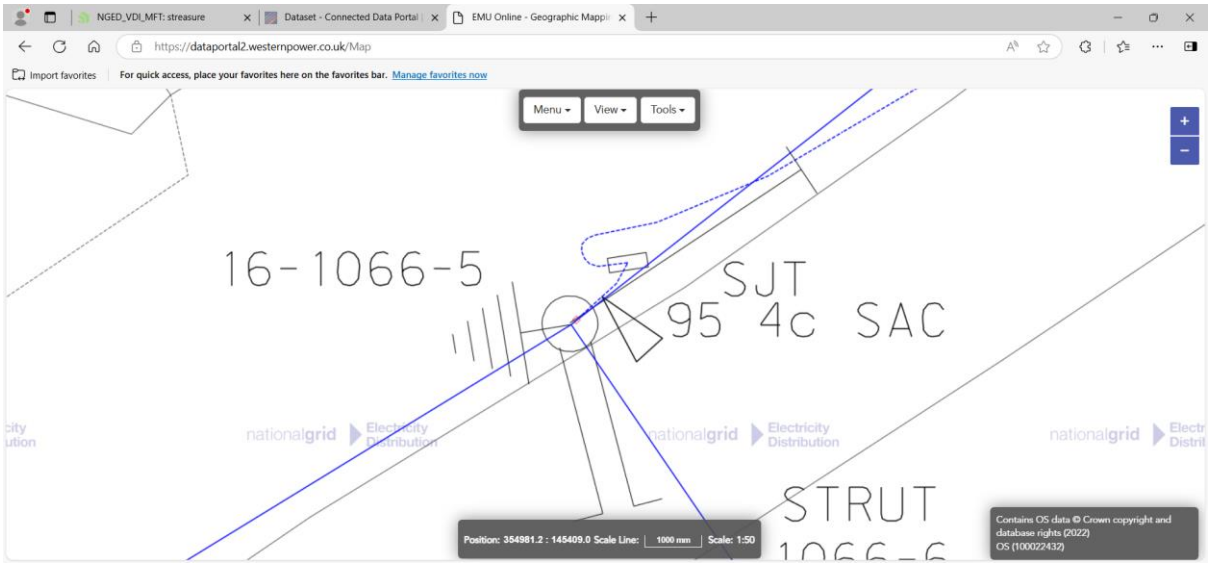



The scroll button can be used to zoom in and out and the left or central mouse button can be used to grab and pull the screen around the network.

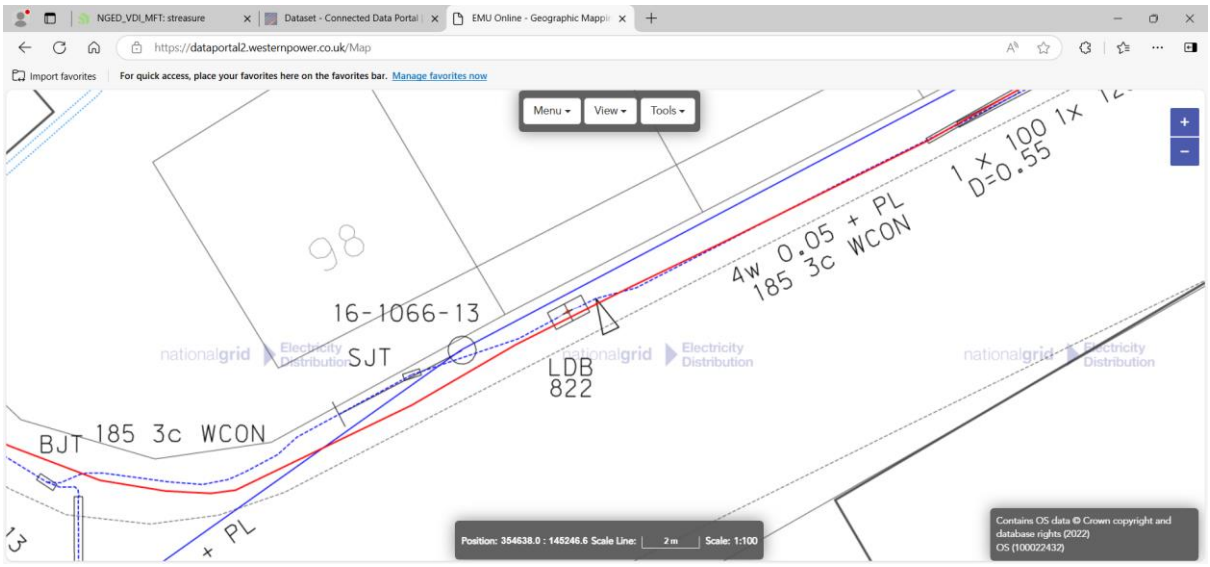
# Guidance with Open Points (ends of network)

To determine the extent of a circuit, the blue lines are followed until an open point is found,

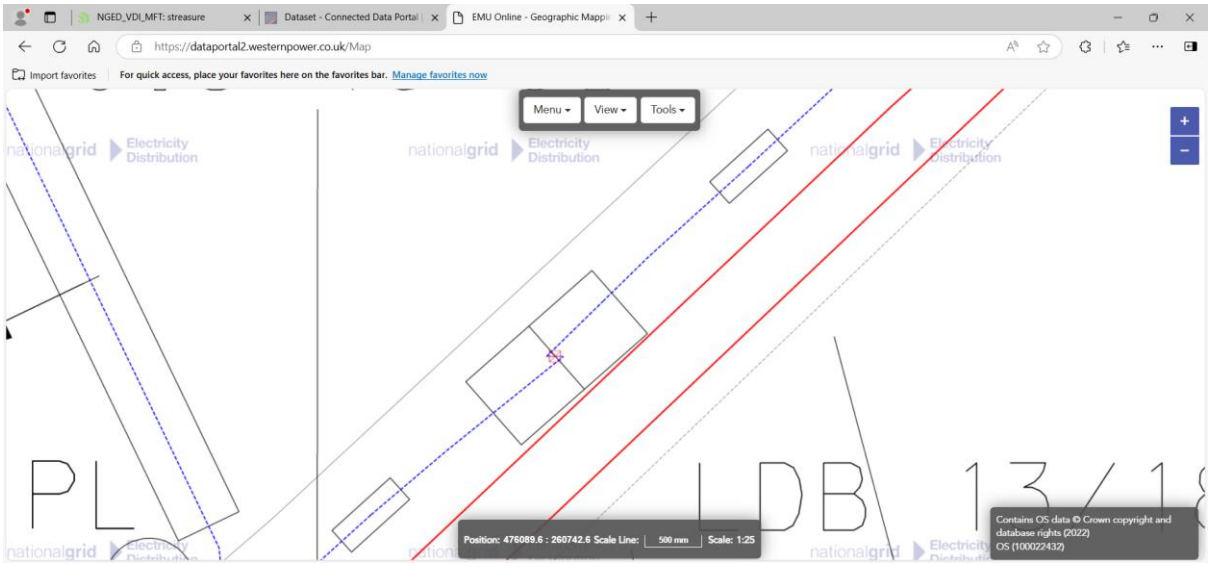
Example of an open point in the South West – A triangle denotes the end of a circuit. For this example, the open link is between the overhead line and underground cable.



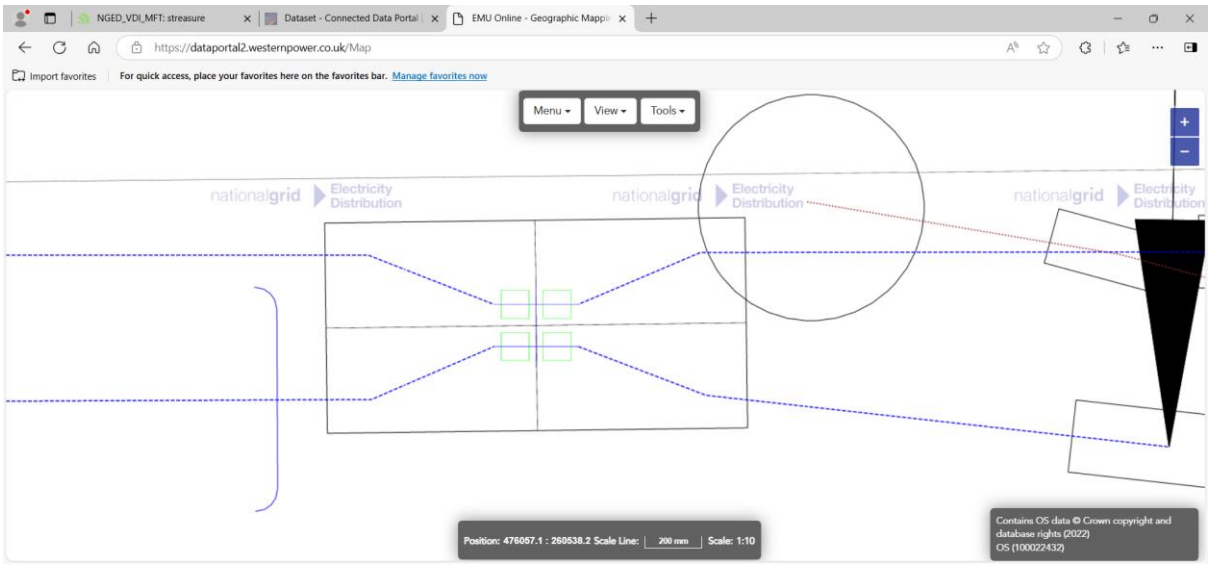

The below drawing, shows an LDB (Linkable Distribution Box), with a triangle showing the end of circuit between two cables.



The below picture shows an open (Links out) link box within the Midlands region – electricity does not flow through the link box




The below picture shows a closed (Links in) link box within the Midlands region – electricity flows through the link box. Therefore, this is not the end of the circuit.

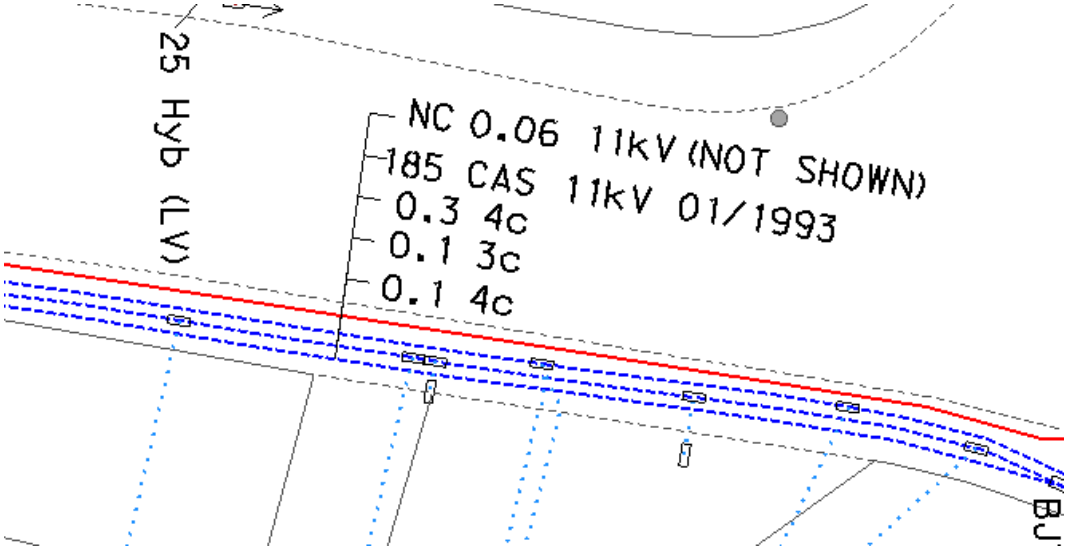


# Conductor guidance

Example of a 0.1 square inch, five core pilc (Paper Insulated Lead Covered) cable. This cable has a modern equivalent cross sectional area of 70mm², the cores will be copper and the five cores show a Separate Neutral Earth (TN-S) cable – this asset has likely been converted to provide PME (TN-C-S). Inside this cable, three of the cores will be for the pases, one will be the neutral, and the fifth core is an old streetlighting core.


The number of cores available will often be a indication of whether three phase is available, some caution may be needed as sometimes three core cables are ‘bunched’ on single phase systems to help reduce volt drop across the cable. These cables will always be labelled with bunched and detailing the phasing arrangement.

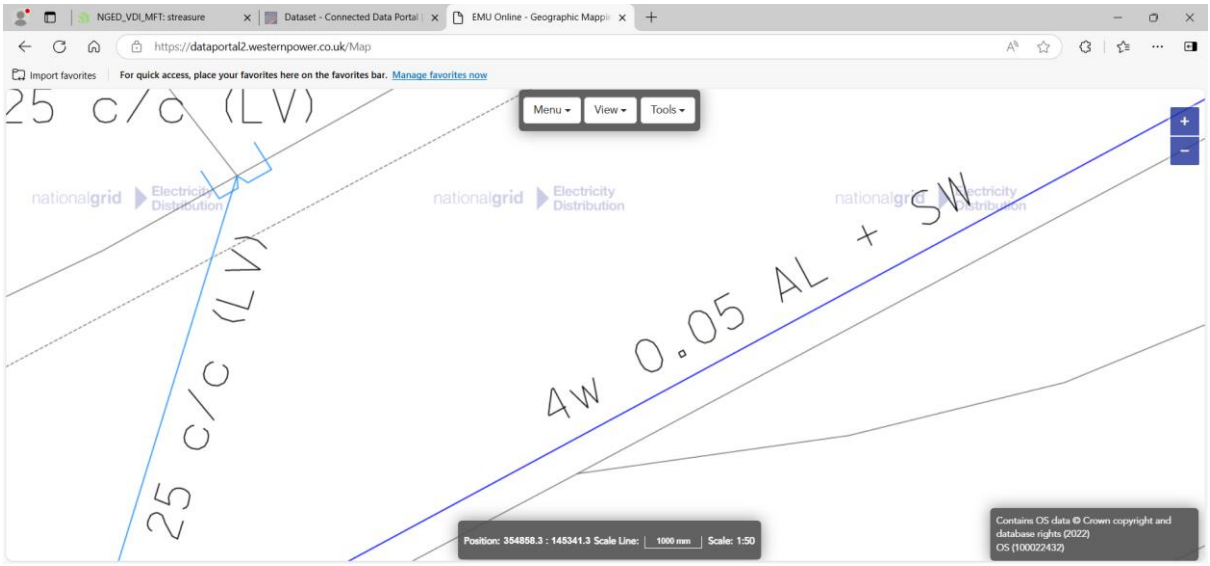
In towns and cities, old cables were reused when the distribution system was standardised across the country, this means that in some places you will see cables for different voltages or misleading nomenclature. For example in the image below you see both 3c and 4c pilc cables, it can easily be misunderstood these are CNE and SNE cables. However 3c pilc cables are acutally old DC cables that have been converted to run on the AC system and only contain two out of the three phases.



Example of a four wire 0.05 Aluminium overhead line plus street light wire. The direct relationship between the cross sectional area 0.05 square inch and the metric equivalent is 35mm², however, for overhead lines only, the imperial cross sectional areas denote the equivalent copper conductor, based on thermal capacity. Therefore, for an overhead line, the following applies;

- 0.05 AL = 50mm² Aluminium
- 0.05 CU = 35mm² Copper
- 0.1 AL = 100mm² Aluminium
- 0.1 CU = 70mm Copper

The above does not apply to an underground cable, the imperial to metric conversion correlates to size and not thermal capacity.




Example of a 300mm² three core wavecon cable (combined neutral earth / PME), the cable has aluminium phases and a copper neutral

## Conductor nomenclature

The below does not impact the assessment.

Historic cables can be seen by the use of imperial square inch cross sectional values, the below cable is 0.3 Sq in or 185mm² as a metric value. The cable is also noted as four core (4C) which for a paper insulated lead covered cable (PILC) is a Combined Neutral Earth cable (TN-C-S).

Therefore, the following naming conventions apply,

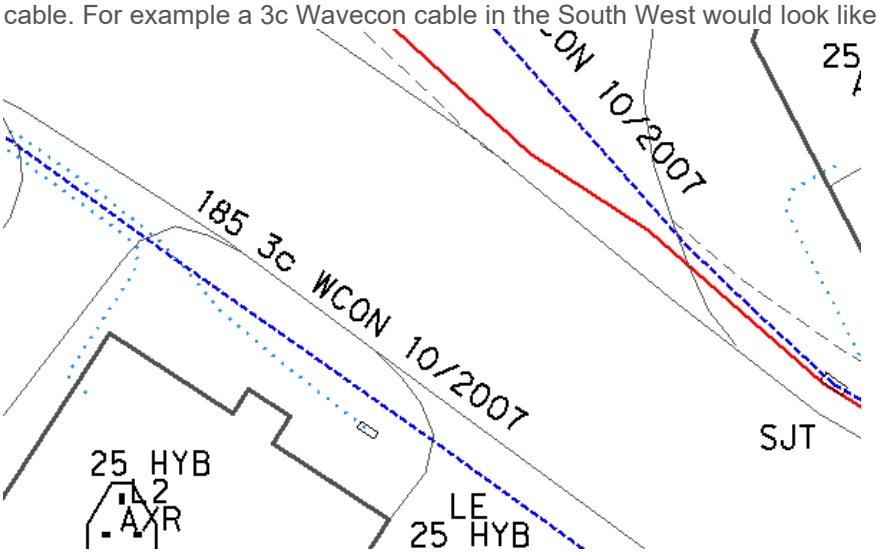
A CNE cable

- 3c wavecon or 4c PILC

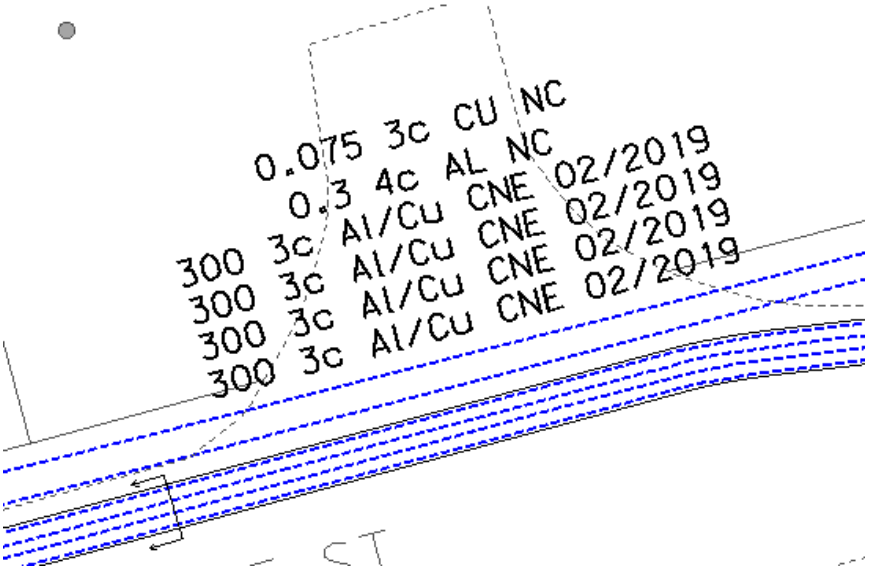
A SNE cable

- 4c wavecon or 5c PILC

There are also differences in how the South West and Wales, and the Midlands describe the same cable. For example a 3c Wavecon cable in the South West would look like this:




Whilst in the Midlands it looks like this:




It should be noted that this is still a cable with aluminium cores, the Cu is referring to the neutral/earth sheath.

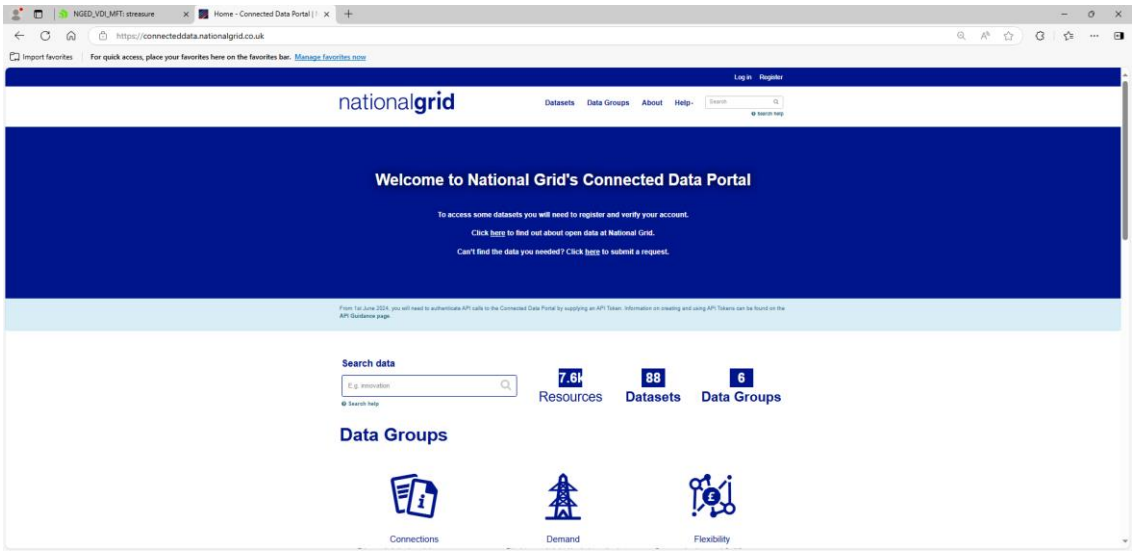
# Connected Data

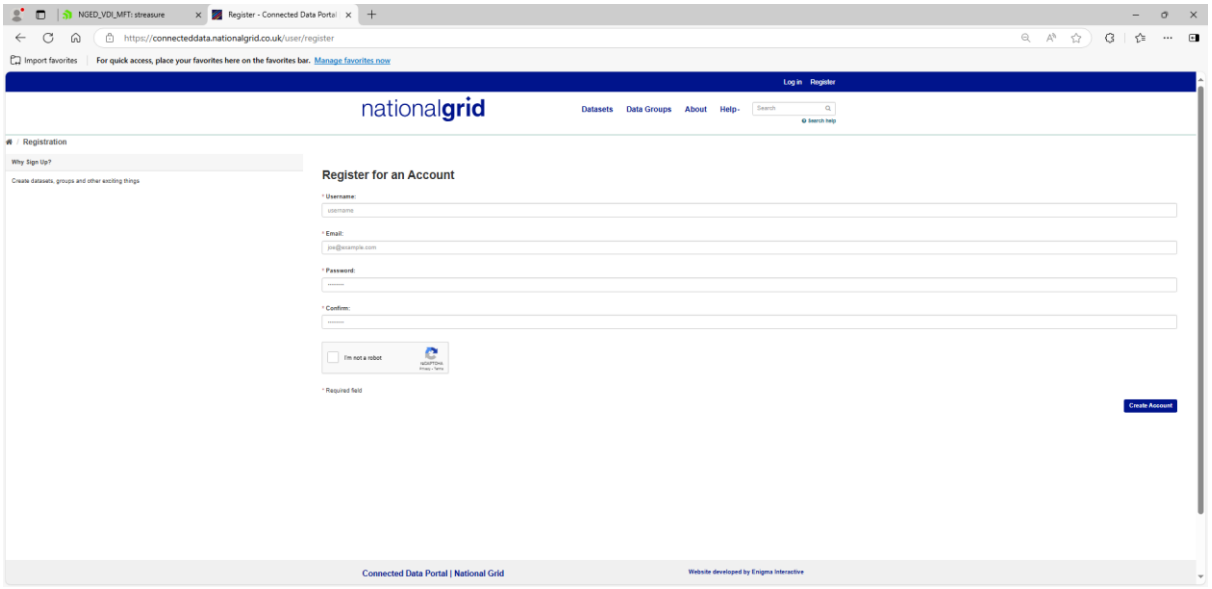
NGED make various network data available to stakeholders of need and within the Distribution Substation data file, the below information can be found.

Please ensure that an up to date data capture is downloaded for each phase of works.

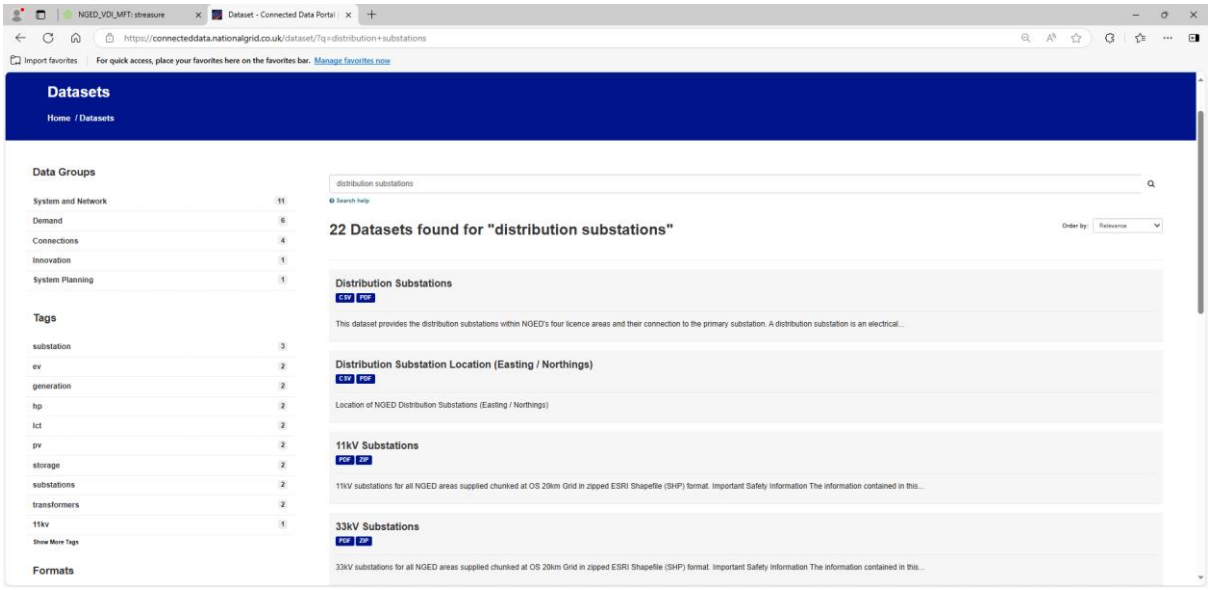
[Dataset - Connected Data Portal | National Grid]

## Step 1. Raise and account and log in



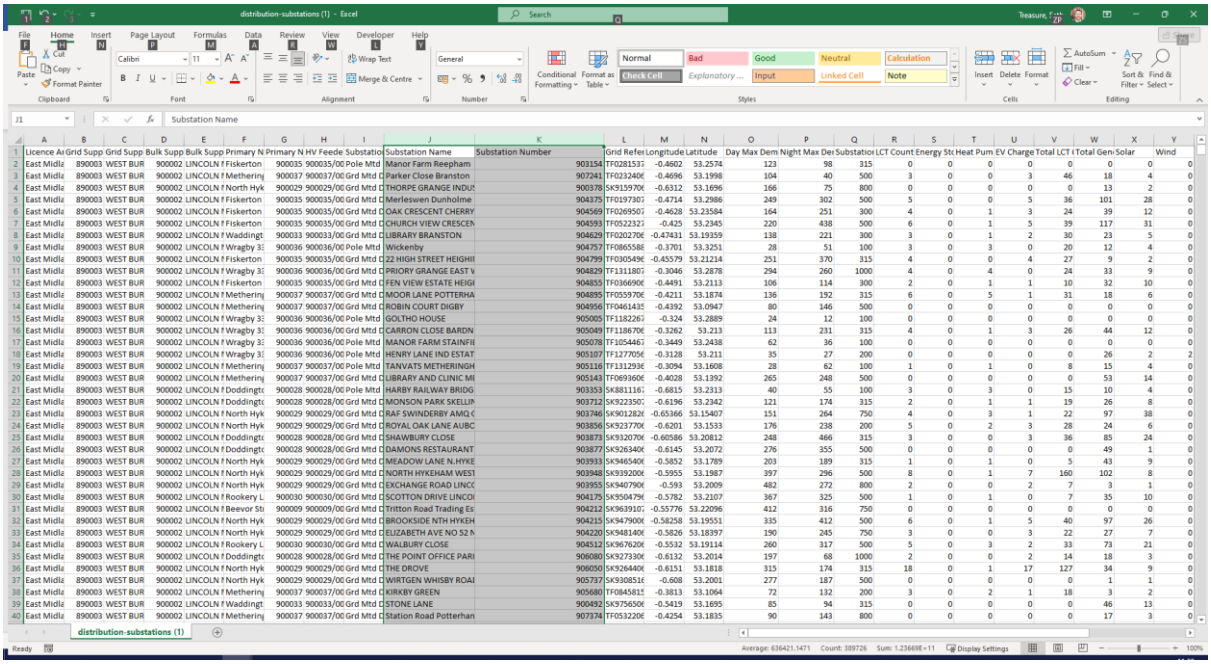



## Step 2. Use the link to search for the ‘Distribution Substation’ data set




## Step 3. Locating data

Substation name and number within column J & K

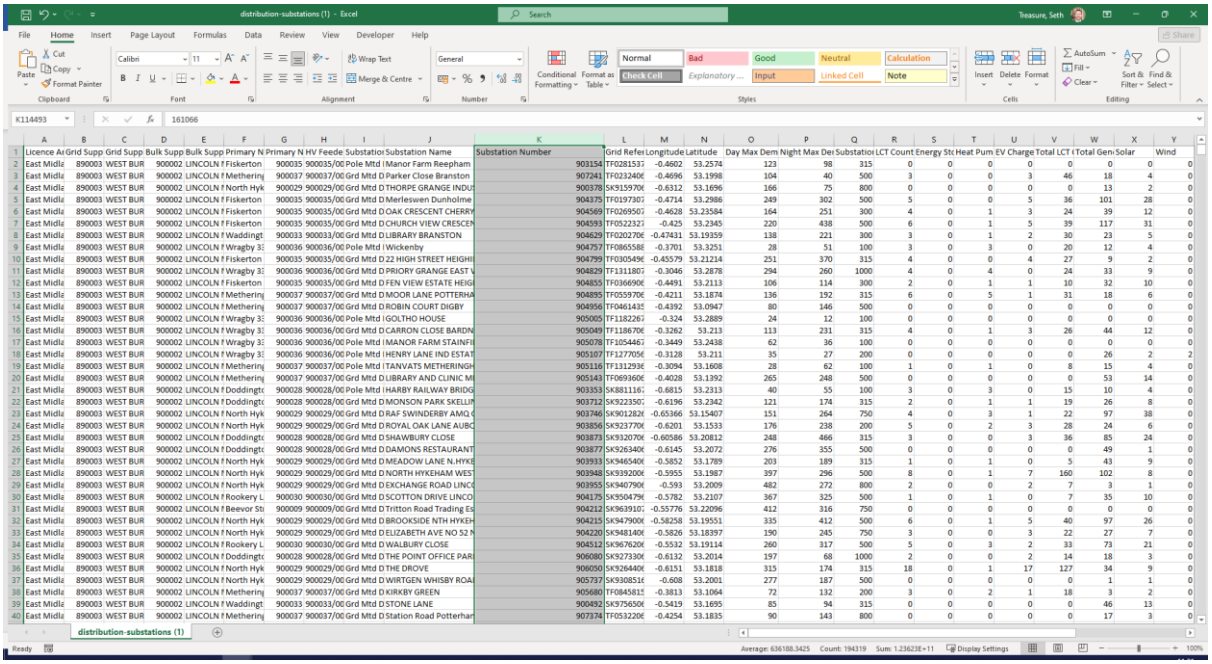


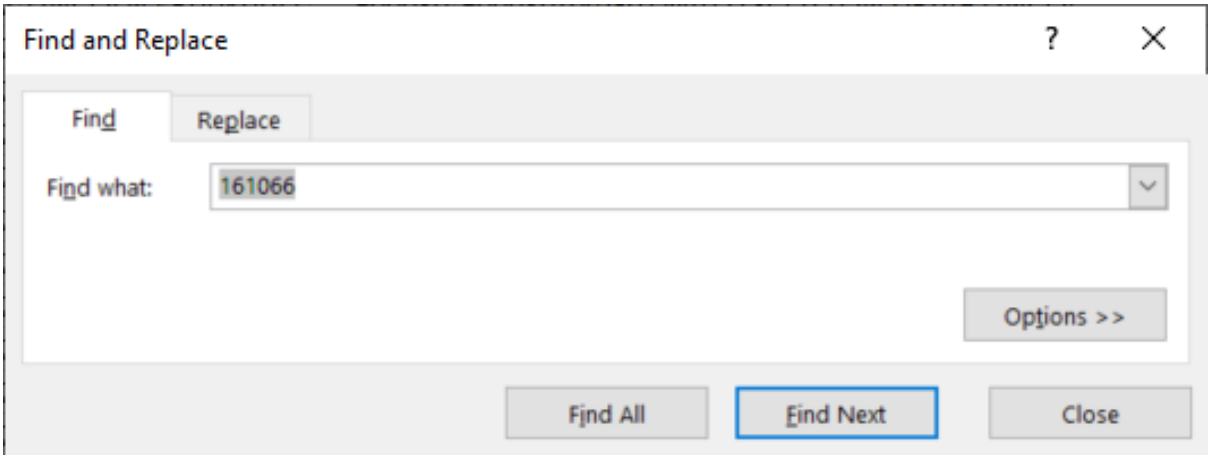

## Step 4. Formatting data

Freeze frame for titles.

View>Freeze Panes>Freeze Top Row

Highlight the column K and use the search function to search for the substation number of choice.



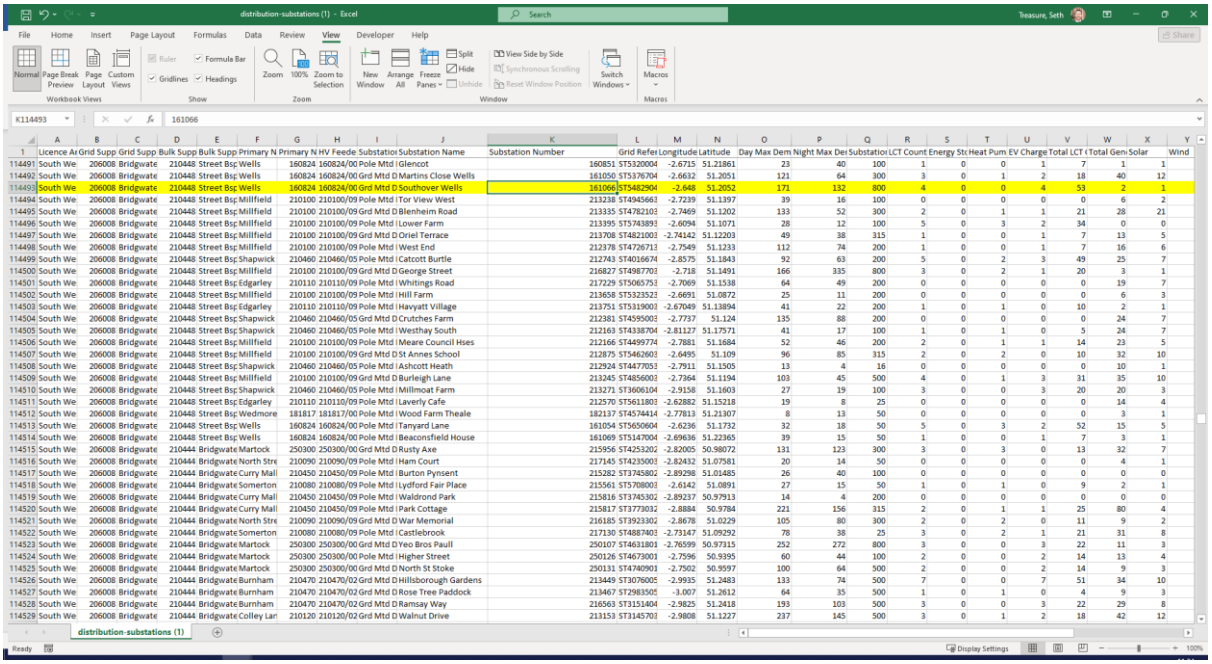


# Step 5. Determining substation utilisation

Transformer rating (kW) is shown within column Q

Day utilisation (kW) is shown within column O

Night utilisation (kW) is shown within column P



| 1 | Licence Ar | Grid Supp | Grid Supp | Bulk Supp | Bulk Supp | Primary N | Primary N | HV Feede | Substation | Substation Name | Substation Number | Grid Refer | Longitude | Latitude | Day Max Dem | Night Max Dei | Substation | LCT Count | Energy Stc | Heat Pum | EV Charge | Total LCT ( | Total Gen | Solar | Wind |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 114491 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Wells | 160824 | 160824/00 | Pole Mtd | Glencot | | | | | | | | | | | | | | | |
| 114492 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Wells | 160824 | 160824/00 | Grd Mtd D | Martins Close Wells | | 161050 | ST5376704 | -2.6632 | 51.2051 | 121 | 64 | 300 | 3 | 0 | 1 | 2 | 18 | 40 | 12 |
| 114493 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Wells | 160824 | 160824/00 | Grd Mtd D | Southover Wells | | 161066 | ST5482904 | -2.648 | 51.2052 | 171 | 132 | 800 | 4 | 0 | 0 | 4 | 53 | 2 | 1 |
| 114494 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Pole Mtd | Tor View West | | 213238 | ST4945663 | -2.7239 | 51.1397 | 39 | 16 | 100 | 0 | 0 | 0 | 0 | 0 | 6 | 2 |
| 114495 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Grd Mtd D | Blenheim Road | | 213335 | ST4782103 | -2.7469 | 51.1202 | 133 | 52 | 300 | 2 | 0 | 1 | 1 | 21 | 28 | 21 |
| 114496 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Pole Mtd | Lower Farm | | 213395 | ST5743893 | -2.6094 | 51.1071 | 28 | 12 | 100 | 5 | 0 | 3 | 2 | 34 | 0 | 0 |
| 114497 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Grd Mtd D | Oriel Terrace | | 213708 | ST4821003 | -2.74142 | 51.12203 | 49 | 38 | 315 | 1 | 0 | 0 | 1 | 7 | 13 | 5 |
| 114498 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Pole Mtd | West End | | 212378 | ST4726713 | -2.7549 | 51.1233 | 112 | 74 | 200 | 1 | 0 | 0 | 1 | 7 | 16 | 6 |
| 114499 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Shapwick | 210460 | 210460/05 | Pole Mtd | Catcott Burtle | | 212743 | ST4016674 | -2.8575 | 51.1843 | 92 | 63 | 200 | 5 | 0 | 2 | 3 | 49 | 25 | 7 |
| 114500 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Grd Mtd D | George Street | | 216827 | ST4987703 | -2.718 | 51.1491 | 166 | 335 | 800 | 3 | 0 | 2 | 1 | 20 | 3 | 1 |
| 114501 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Edgarley | 210110 | 210110/09 | Pole Mtd | Whitings Road | | 217229 | ST5065753 | -2.7069 | 51.1538 | 64 | 49 | 200 | 0 | 0 | 0 | 0 | 0 | 19 | 7 |
| 114502 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Pole Mtd | Hill Farm | | 213658 | ST5323523 | -2.6691 | 51.0872 | 25 | 11 | 200 | 0 | 0 | 0 | 0 | 0 | 6 | 3 |
| 114503 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Edgarley | 210110 | 210110/09 | Pole Mtd | Havyatt Village | | 213751 | ST5319003 | -2.67049 | 51.13894 | 41 | 22 | 200 | 1 | 0 | 1 | 0 | 10 | 2 | 1 |
| 114504 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Shapwick | 210460 | 210460/05 | Grd Mtd D | Crutches Farm | | 212381 | ST4595003 | -2.7737 | 51.124 | 135 | 88 | 200 | 0 | 0 | 0 | 0 | 0 | 24 | 7 |
| 114505 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Shapwick | 210460 | 210460/05 | Pole Mtd | Westhay South | | 212163 | ST4338704 | -2.81127 | 51.17571 | 41 | 17 | 100 | 1 | 0 | 1 | 0 | 5 | 24 | 7 |
| 114506 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Pole Mtd | Meare Council Hses | | 212166 | ST4499774 | -2.7881 | 51.1684 | 52 | 46 | 200 | 2 | 0 | 1 | 1 | 14 | 23 | 5 |
| 114507 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Grd Mtd D | St Annes School | | 212875 | ST5462603 | -2.6495 | 51.109 | 96 | 85 | 315 | 2 | 0 | 2 | 0 | 10 | 32 | 10 |
| 114508 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Shapwick | 210460 | 210460/05 | Pole Mtd | Ashcott Heath | | 212924 | ST4477053 | -2.7911 | 51.1505 | 13 | 4 | 16 | 0 | 0 | 0 | 0 | 0 | 10 | 1 |
| 114509 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Millfield | 210100 | 210100/09 | Grd Mtd D | Burleigh Lane | | 213245 | ST4856003 | -2.7364 | 51.1194 | 103 | 45 | 500 | 4 | 0 | 1 | 3 | 31 | 35 | 10 |
| 114510 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Shapwick | 210460 | 210460/05 | Pole Mtd | Millmoat Farm | | 213271 | ST3606104 | -2.9158 | 51.1603 | 27 | 19 | 100 | 3 | 0 | 0 | 3 | 20 | 20 | 3 |
| 114511 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Edgarley | 210110 | 210110/09 | Pole Mtd | Laverly Cafe | | 212570 | ST5611803 | -2.62882 | 51.15218 | 19 | 8 | 25 | 0 | 0 | 0 | 0 | 0 | 14 | 4 |
| 114512 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Wedmore | 181817 | 181817/00 | Pole Mtd | Wood Farm Theale | | 182137 | ST4574414 | -2.77813 | 51.21307 | 8 | 13 | 50 | 0 | 0 | 0 | 0 | 0 | 3 | 1 |
| 114513 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Wells | 160824 | 160824/00 | Pole Mtd | Tanyard Lane | | 161054 | ST5650604 | -2.6236 | 51.1732 | 32 | 18 | 50 | 5 | 0 | 3 | 2 | 52 | 15 | 5 |
| 114514 | South We | 206008 | Bridgwate | 210448 | Street Bsg | Wells | 160824 | 160824/00 | Pole Mtd | Beaconsfield House | | 161069 | ST5147004 | -2.69636 | 51.22365 | 39 | 15 | 50 | 1 | 0 | 0 | 1 | 7 | 3 | 1 |
| 114515 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Martock | 250300 | 250300/00 | Grd Mtd D | Rusty Axe | | 215956 | ST4253202 | -2.82005 | 50.98072 | 131 | 123 | 300 | 3 | 0 | 3 | 0 | 13 | 32 | 7 |
| 114516 | South We | 206008 | Bridgwate | 210444 | Bridgwate | North Stre | 210090 | 210090/09 | Pole Mtd | Ham Court | | 217145 | ST4235003 | -2.82432 | 51.07581 | 20 | 14 | 50 | 0 | 0 | 0 | 0 | 0 | 4 | 1 |
| 114517 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Curry Mall | 210450 | 210450/09 | Pole Mtd | Burton Pynsent | | 215282 | ST3745802 | -2.89298 | 51.01485 | 26 | 40 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114518 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Somerton | 210080 | 210080/09 | Pole Mtd | Lydford Fair Place | | 215561 | ST5708003 | -2.6142 | 51.0891 | 27 | 15 | 50 | 1 | 0 | 1 | 0 | 9 | 2 | 1 |
| 114519 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Curry Mall | 210450 | 210450/09 | Pole Mtd | Waldrond Park | | 215816 | ST3745302 | -2.89237 | 50.97913 | 14 | 4 | 200 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 114520 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Curry Mall | 210450 | 210450/09 | Pole Mtd | Park Cottage | | 215817 | ST3773032 | -2.8884 | 50.9784 | 221 | 156 | 315 | 2 | 0 | 1 | 1 | 25 | 80 | 4 |
| 114521 | South We | 206008 | Bridgwate | 210444 | Bridgwate | North Stre | 210090 | 210090/09 | Grd Mtd D | War Memorial | | 216185 | ST3923302 | -2.8678 | 51.0229 | 105 | 80 | 300 | 2 | 0 | 2 | 0 | 11 | 9 | 2 |
| 114522 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Somerton | 210080 | 210080/09 | Pole Mtd | Castlebrook | | 217130 | ST4887403 | -2.73147 | 51.09292 | 78 | 38 | 25 | 3 | 0 | 2 | 1 | 21 | 31 | 8 |
| 114523 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Martock | 250300 | 250300/00 | Grd Mtd D | Yeo Bros Paull | | 250107 | ST4631801 | -2.76599 | 50.97315 | 252 | 272 | 800 | 3 | 0 | 0 | 3 | 22 | 11 | 3 |
| 114524 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Martock | 250300 | 250300/00 | Pole Mtd | Higher Street | | 250126 | ST4673001 | -2.7596 | 50.9395 | 60 | 44 | 100 | 2 | 0 | 0 | 2 | 14 | 13 | 4 |
| 114525 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Martock | 250300 | 250300/00 | Grd Mtd D | North St Stoke | | 250131 | ST4740901 | -2.7502 | 50.9597 | 100 | 64 | 500 | 2 | 0 | 0 | 2 | 14 | 9 | 3 |
| 114526 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Burnham | 210470 | 210470/02 | Grd Mtd D | Hillsborough Gardens | | 213449 | ST3076005 | -2.9935 | 51.2483 | 133 | 74 | 500 | 7 | 0 | 0 | 7 | 51 | 34 | 10 |
| 114527 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Burnham | 210470 | 210470/02 | Grd Mtd D | Rose Tree Paddock | | 213467 | ST2983505 | -3.007 | 51.2612 | 64 | 35 | 500 | 1 | 0 | 1 | 0 | 4 | 9 | 3 |
| 114528 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Burnham | 210470 | 210470/02 | Grd Mtd D | Ramsay Way | | 216563 | ST3151404 | -2.9825 | 51.2418 | 193 | 103 | 500 | 3 | 0 | 0 | 3 | 22 | 29 | 8 |
| 114529 | South We | 206008 | Bridgwate | 210444 | Bridgwate | Colley Lan | 210120 | 210120/02 | Grd Mtd D | Walnut Drive | | 213153 | ST3145703 | -2.9808 | 51.1227 | 237 | 145 | 500 | 3 | 0 | 1 | 2 | 18 | 42 | 12 |

Data excludes IDNO connected customers

You can contact us via email **nged.data@nationalgrid.co.uk**

nationalgrid

Registered Office: Avonbank, Feeder Road, Bristol BS2 0TB
**nationalgrid.co.uk**