

| | |
|---|--|
| Cynulliad Cenedlaethol Cymru Pwyllgor Amgylchedd a Chynaliadwyedd | National Assembly for Wales Environment and Sustainability Committee |
| Dyfodol Ynni Craffach i Gymru? | Smarter energy future for Wales? |
| Gwybodaeth ychwanegol a ddaeth i law yn ystod yr ymchwiliad | Additional information received during the inquiry |
| Scottish Power (Saesneg yn unig) | Scottish Power |



Cynulliad
Cenedlaethol
Cymru

National
Assembly for
Wales



Mr Alun Ffred Jones
Chair, Environment and Sustainability Committee
The National Assembly for Wales
Cardiff Bay
Cardiff
CF99 1NA

Ref: SAS/HTT

29th October 2015

Dear Mr Jones

Inquiry into 'A Smarter Energy Future for Wales?'

Thank you for the opportunity to address the Environment and Sustainability Committee last week. I believe we can really build on the work we have been doing with communities and on innovation, both technical and commercial, to take new ideas and best practice forwards across Wales, and I was pleased to provide some information on this to the Committee.

At the Committee last week we presented you with evidence on the clean energy already connected in Mid and North Wales. We should all be proud that we have collectively achieved the position where there is 1400MW of clean energy connected or contracted against 800MW of peak demand for energy.

I am pleased to enclose a copy of our Heat Maps that we discussed last week. These maps are a simple geographical visualisation of the level of generation capacity available in our network at the different voltage levels.

I have included a map showing generation on the network. From this you will be able to see the volume of generation already connected and why much of the previously spare capacity has now been utilised, particularly at the lower voltage levels. The maps also give a picture following the investment that is planned within our current Regulatory Settlement Period RII0 ED1 and show the projected generation capacity by the end of this period.

I look forward to continuing our dialogue from last week,

Yours sincerely

Stephen Stewart
SP Manweb Licence Director

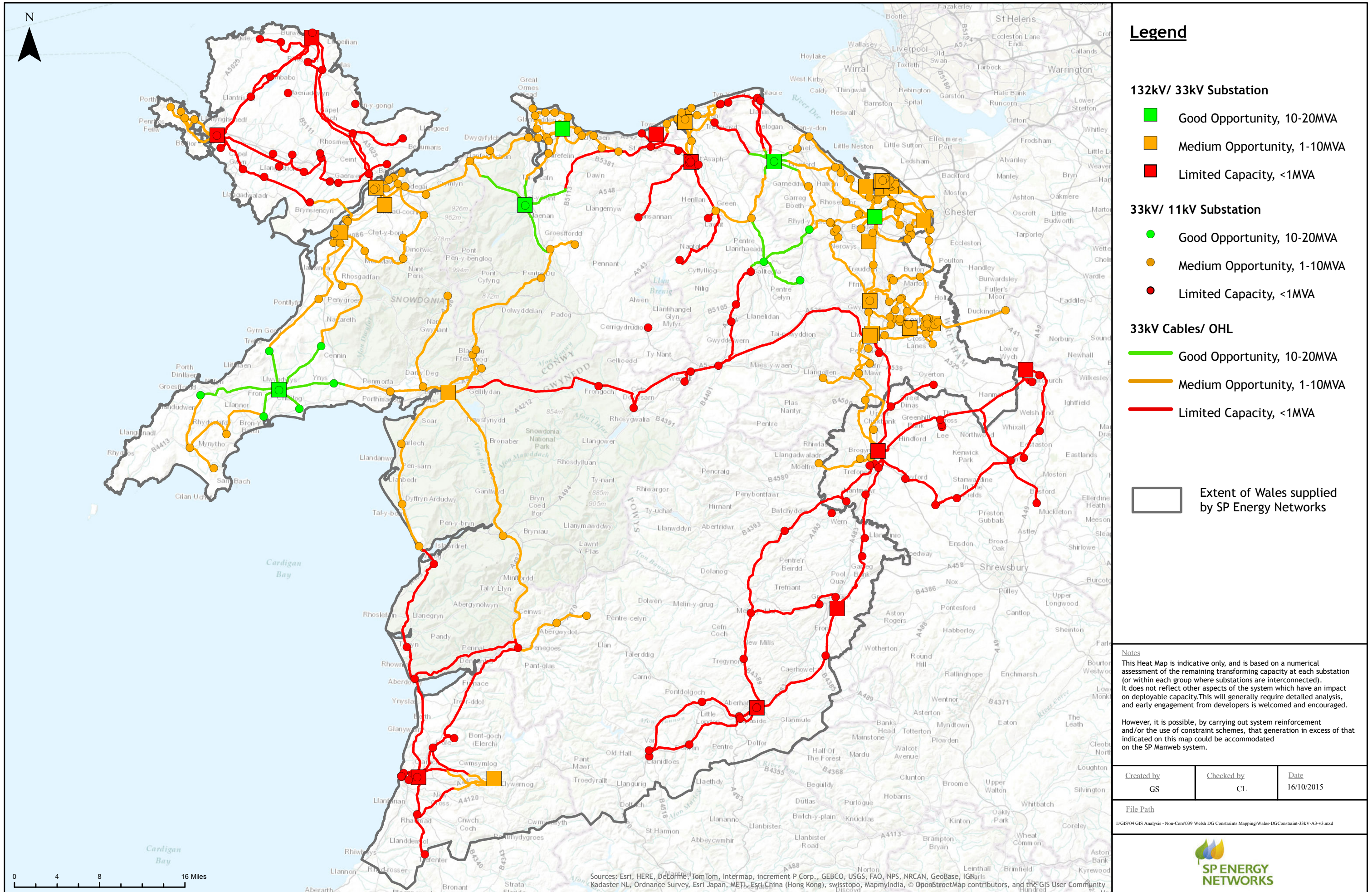
3 Prenton Way, Prenton, Merseyside CH43 3ET
www.spenergynetworks.co.uk

Scottish Power Energy Networks Holdings Limited
Registered Office: Ochil House, 10 Technology Avenue, Hamilton International Technology Park, Blantyre G72 0HT.
Registered in Scotland No. SC389555 VAT No. GB 659 3720 08

Printed on 100% recycled paper

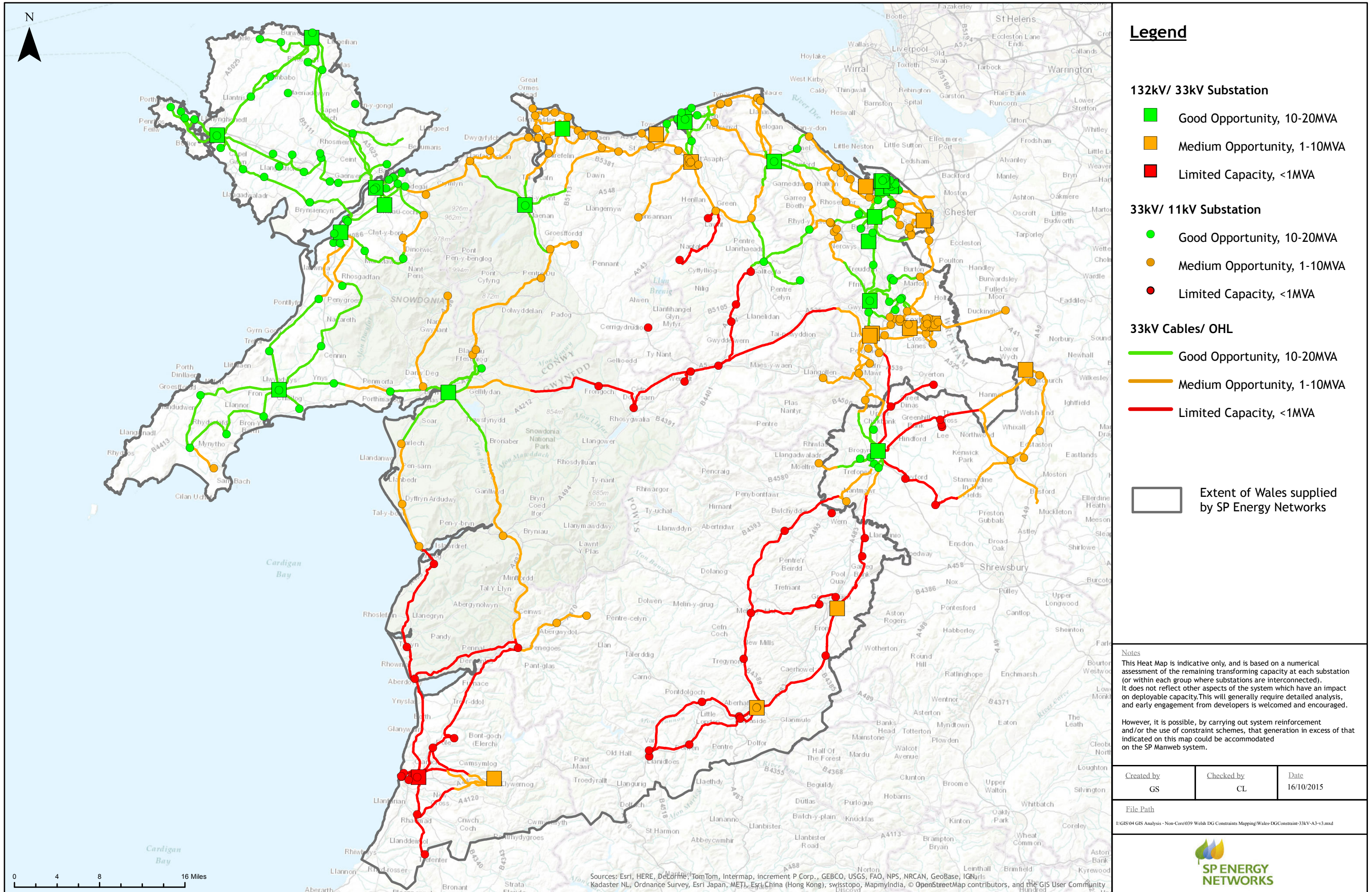
33kV Dosbarthwyd Cyfyngiadau Cynhyrchu, Cymru, 2015

33kV Distributed Generation Constraints, Wales, 2015



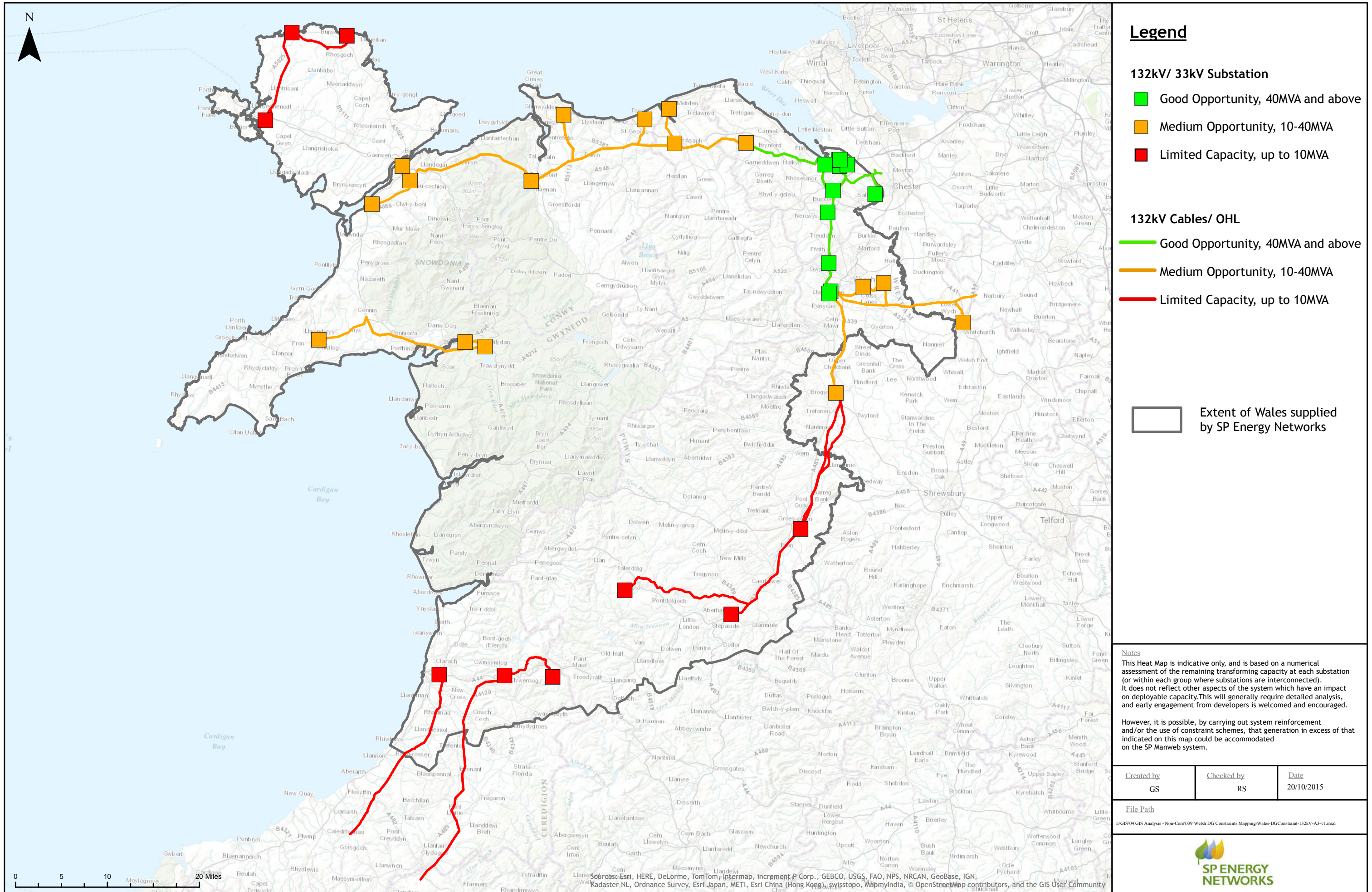
33kV Dosbarthwyd Cyfyngiadau Cynhyrchu, Cymru, 2023

33kV Distributed Generation Constraints, Wales, 2023



132kV Dosbarthwyd Cyfyngiadau Cynhyrchu, Cymru, 2015

132kV Distributed Generation Constraints, Wales, 2015



Legend

- 132kV/ 33kV Substation**
- Good Opportunity, 40MVA and above
 - Medium Opportunity, 10-40MVA
 - Limited Capacity, up to 10MVA
- 132kV Cables/ OHL**
- Good Opportunity, 40MVA and above
 - Medium Opportunity, 10-40MVA
 - Limited Capacity, up to 10MVA

Extent of Wales supplied by SP Energy Networks

Notes
 This Heat Map is indicative only, and is based on a numerical assessment of the remaining transforming capacity at each substation (or within each group where substations are interconnected). It does not reflect other aspects of the system which have an impact on deployable capacity. This will generally require detailed analysis, and early engagement from developers is welcomed and encouraged.

However, it is possible, by carrying out system reinforcement and/or the use of constraint schemes, that generation in excess of that indicated on this map could be accommodated on the SP Manweb system.

| | | |
|------------------|------------------|--------------------|
| Created by GS | Checked by RS | Date 20/10/2015 |
|------------------|------------------|--------------------|

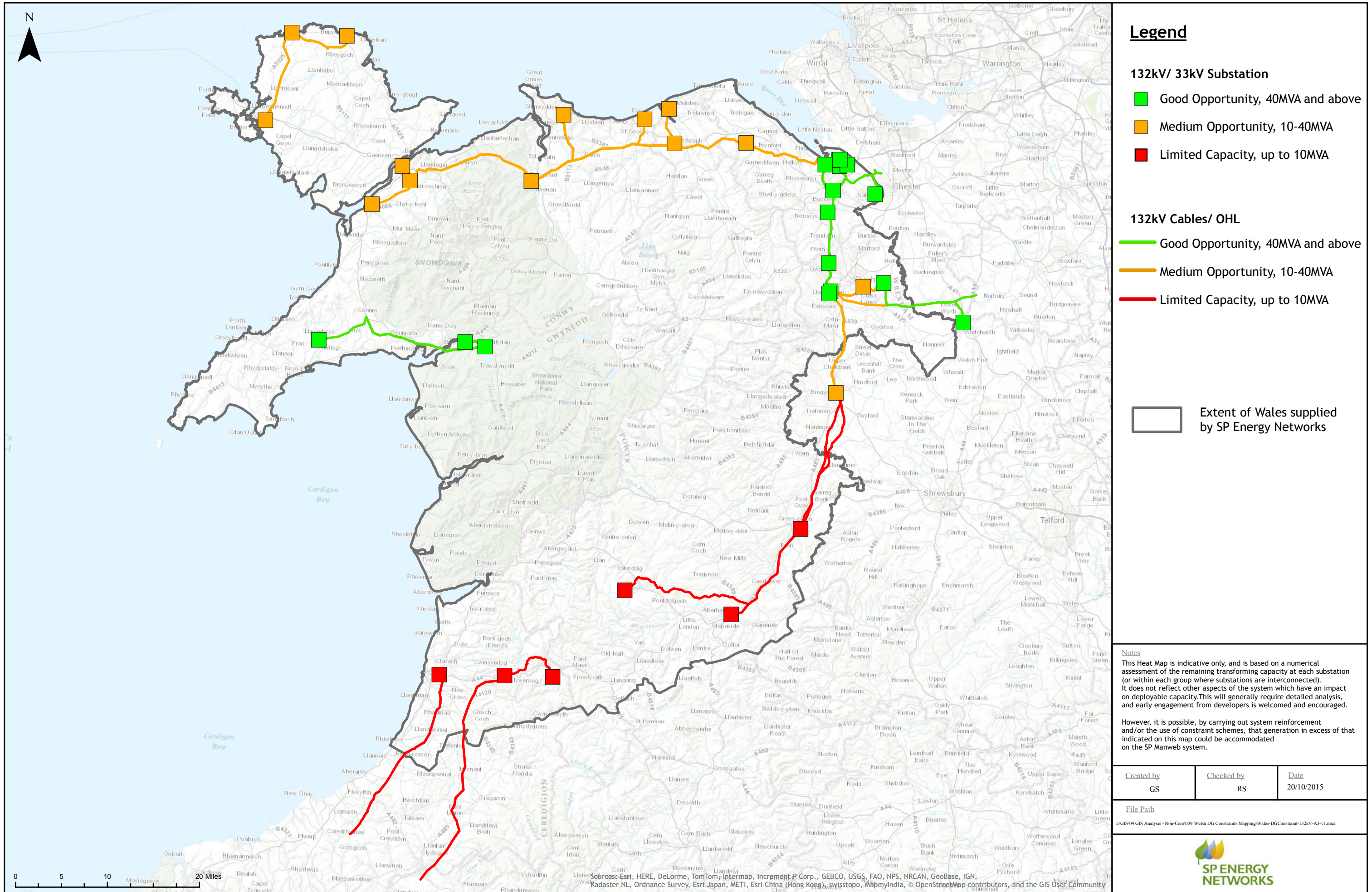
File Path
 I:\GIS\04 GIS Analysis - Non-Core\039 Welsh DG Constraints Mapping\Wales-DGConstraint-132kV-A3-v1.mxd



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

132kV Dosbarthwyd Cyfyngiadau Cynhyrchu, Cymru, 2023

132kV Distributed Generation Constraints, Wales, 2023



Legend

- 132kV/ 33kV Substation**
- Good Opportunity, 40MVA and above
 - Medium Opportunity, 10-40MVA
 - Limited Capacity, up to 10MVA

- 132kV Cables/ OHL**
- Good Opportunity, 40MVA and above
 - Medium Opportunity, 10-40MVA
 - Limited Capacity, up to 10MVA

Extent of Wales supplied by SP Energy Networks

Notes
 This Heat Map is indicative only, and is based on a numerical assessment of the remaining transforming capacity at each substation (or within each group where substations are interconnected). It does not reflect other aspects of the system which have an impact on deployable capacity. This will generally require detailed analysis, and early engagement from developers is welcomed and encouraged.

However, it is possible, by carrying out system reinforcement and/or the use of constraint schemes, that generation in excess of that indicated on this map could be accommodated on the SP Manweb system.

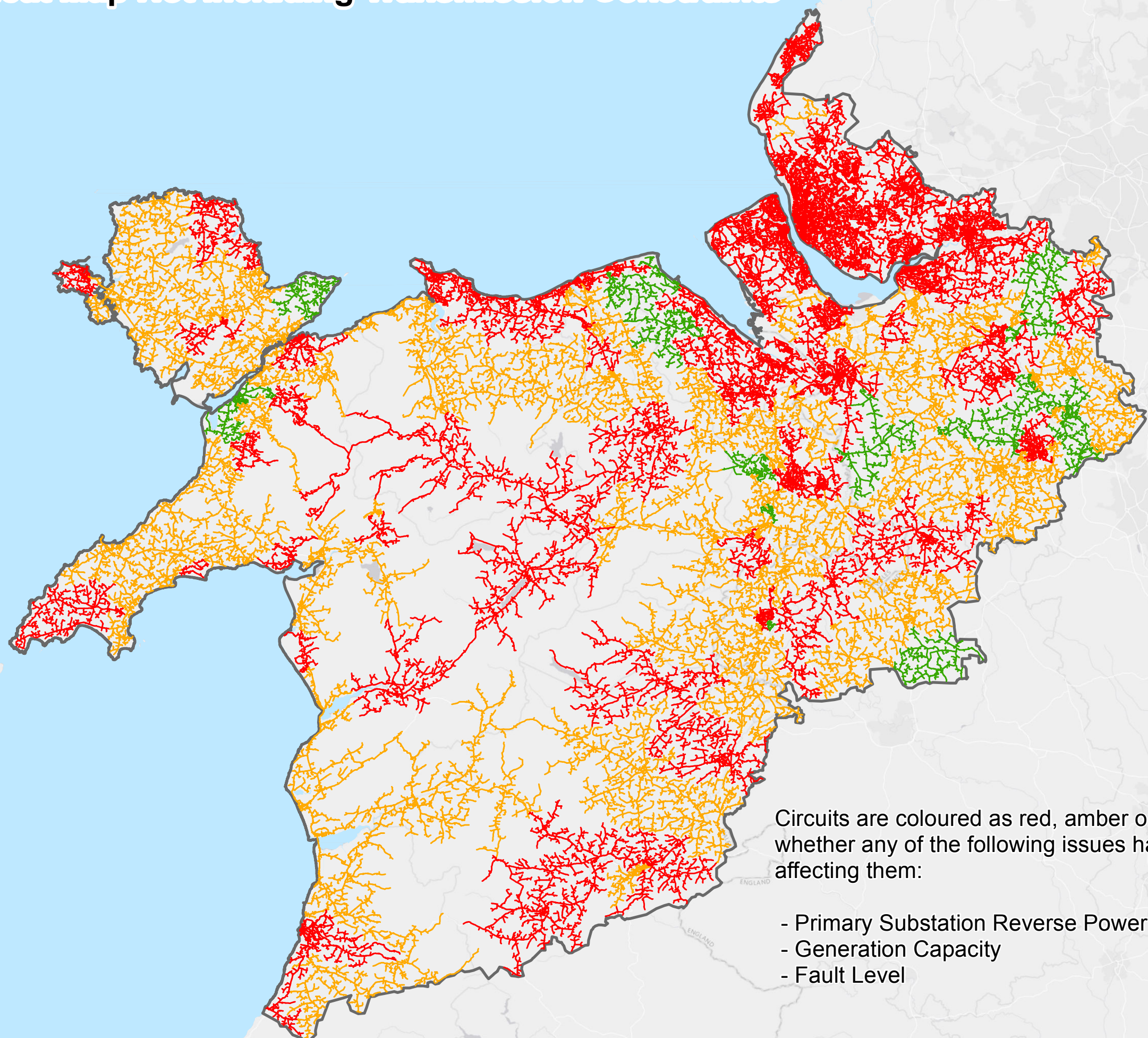
| | | |
|------------------|------------------|--------------------|
| Created by GS | Checked by RS | Date 20/10/2015 |
|------------------|------------------|--------------------|

File Path
 I:\GIS\04 GIS Analysis - Non-Core\039 Welsh DG Constraints Mapping\Wales-DGConstraint-132kV-A3-v1.mxd



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan (Hong Kong), Swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

11kV Circuit Heat Map Not Including Transmission Constraints



Circuits are coloured as red, amber or green depending on whether any of the following issues have been identified as affecting them:

- Primary Substation Reverse Power Flow
- Generation Capacity
- Fault Level

