

# Carmarthenshire Renewable and Low Carbon Energy Assessment 2019 - Maps

Companion Report

Carmarthenshire County Council

4 October 2019

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Carmarthenshire County Council

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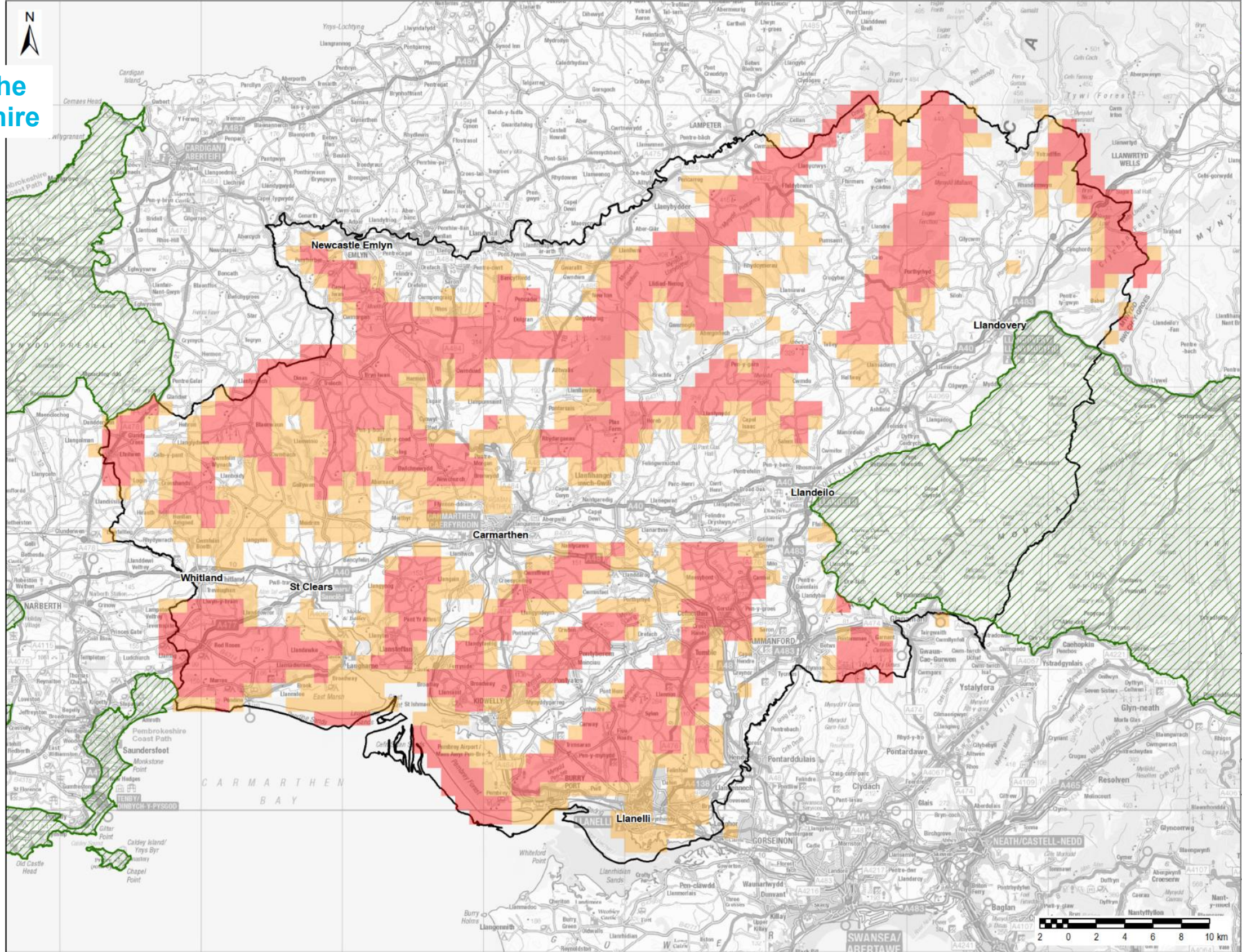
## Introduction

This report contains the maps created for and referenced in the Renewable and Low Carbon Energy Assessment for Carmarthenshire County Council. The methodology of the creation of the maps is detailed in the appendices of the aforementioned report.

Map S8 shows the ranking of the LSA's based on the land sensitivity analysis. Map S9 shows the finalised LSA's for wind and Solar PV respectively. It should be noted that the LSA's have not been constrained by the landscape assessment only ranked.

# W1 – Wind Resource in the Carmarthenshire LPA Area

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**LEGEND**

- Wind Speed: 6.0 to 6.5m/s above 45m
- Wind Speed: >6.5m/s above 45m
- National Park
- Carmarthenshire County Council Boundary

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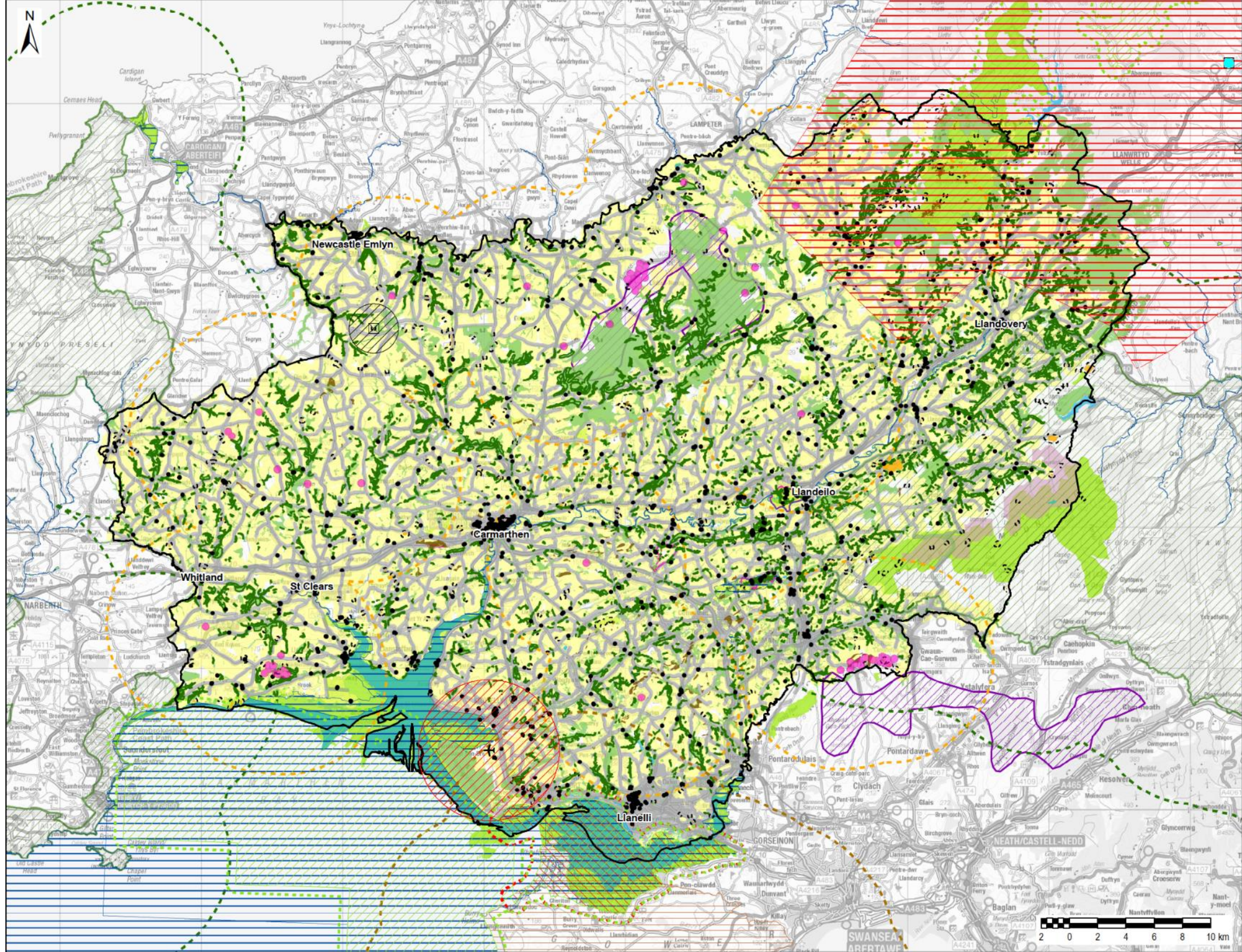
W1  
Unconstrained  
Wind Resource

25/07/19



# W2 – Statutory and Strategic Constraints

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**LEGEND**

- Meteorological Office Radar
- Meteorological Office Radar - 1.75km Buffer
- Aerodomes
- Restricted
- Carmarthenshire County Council Boundary
- Strategic Search Area (TAN)
- MOD Low Flying Tactical
- National Park
- National Park - 7km Buffer
- Special Protection Area
- Special Protection Area - 600m
- Special Area of Conservation
- Ramsar
- Ramsar - 600m Buffer
- Site of Special Scientific Interest
- Area of Outstanding Natural Beauty
- Area of Outstanding Natural Beauty - 7km Buffer
- National Nature Reserve
- Scheduled Ancient
- Scheduled Ancient Monument - 132m Buffer
- Listed Buildings
- Peat
- Areas constrained by NATS Aviation and Radar Safeguard Zones
- Transport Infrastructure
- Buildings - 500m Buffer
- Watercourse
- Ancient Woodland
- Woodland
- Existing/Proposed Wind Farms
- Existing/Proposed Wind Farms- 7km Buffer

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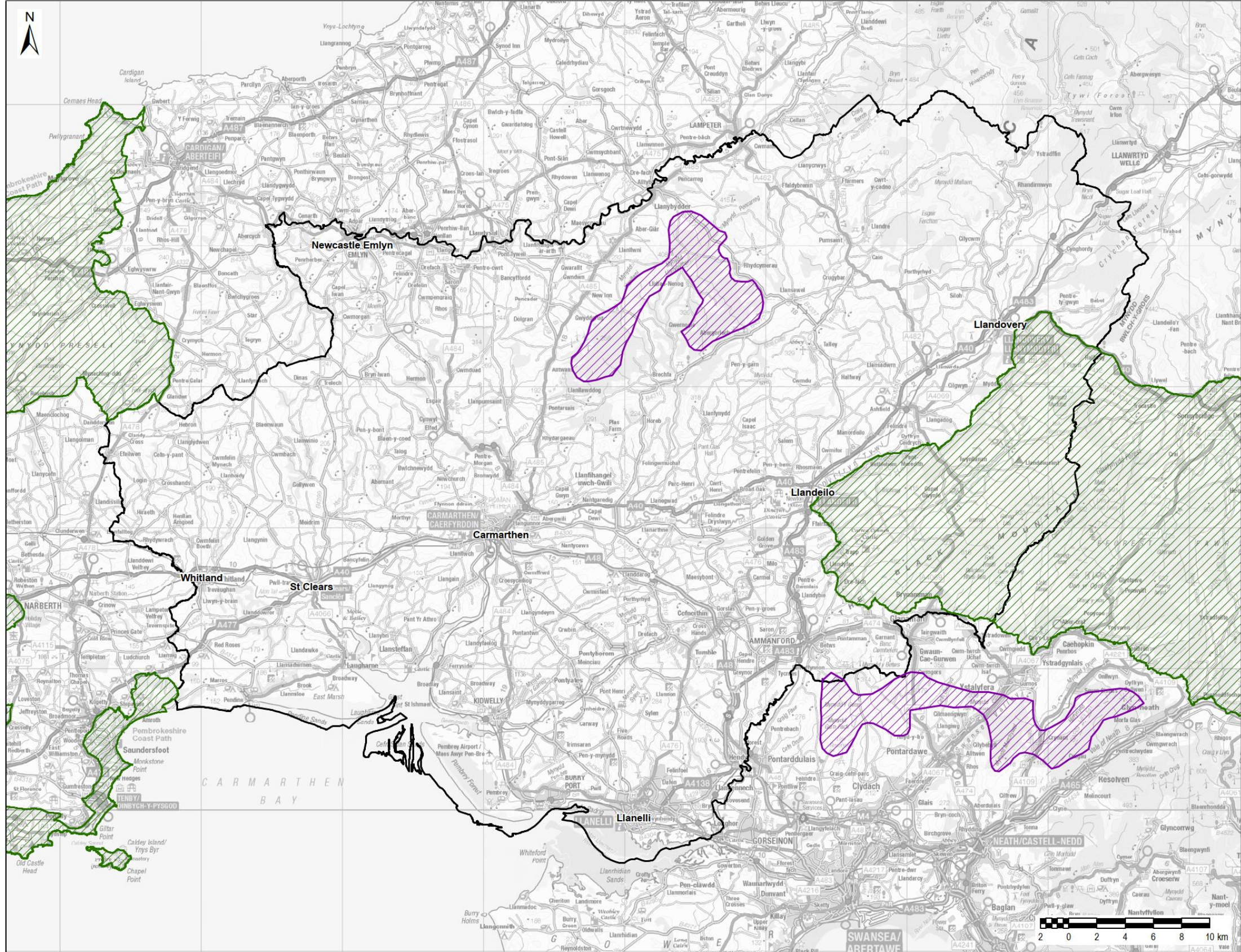
W2  
Statutory and  
Strategic Constraints

03/10/19



# W3 – Wind Resource Available

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**LEGEND**

- Carmarthenshire County Council Boundary
- Strategic Search Area (TAN 8)
- National Park

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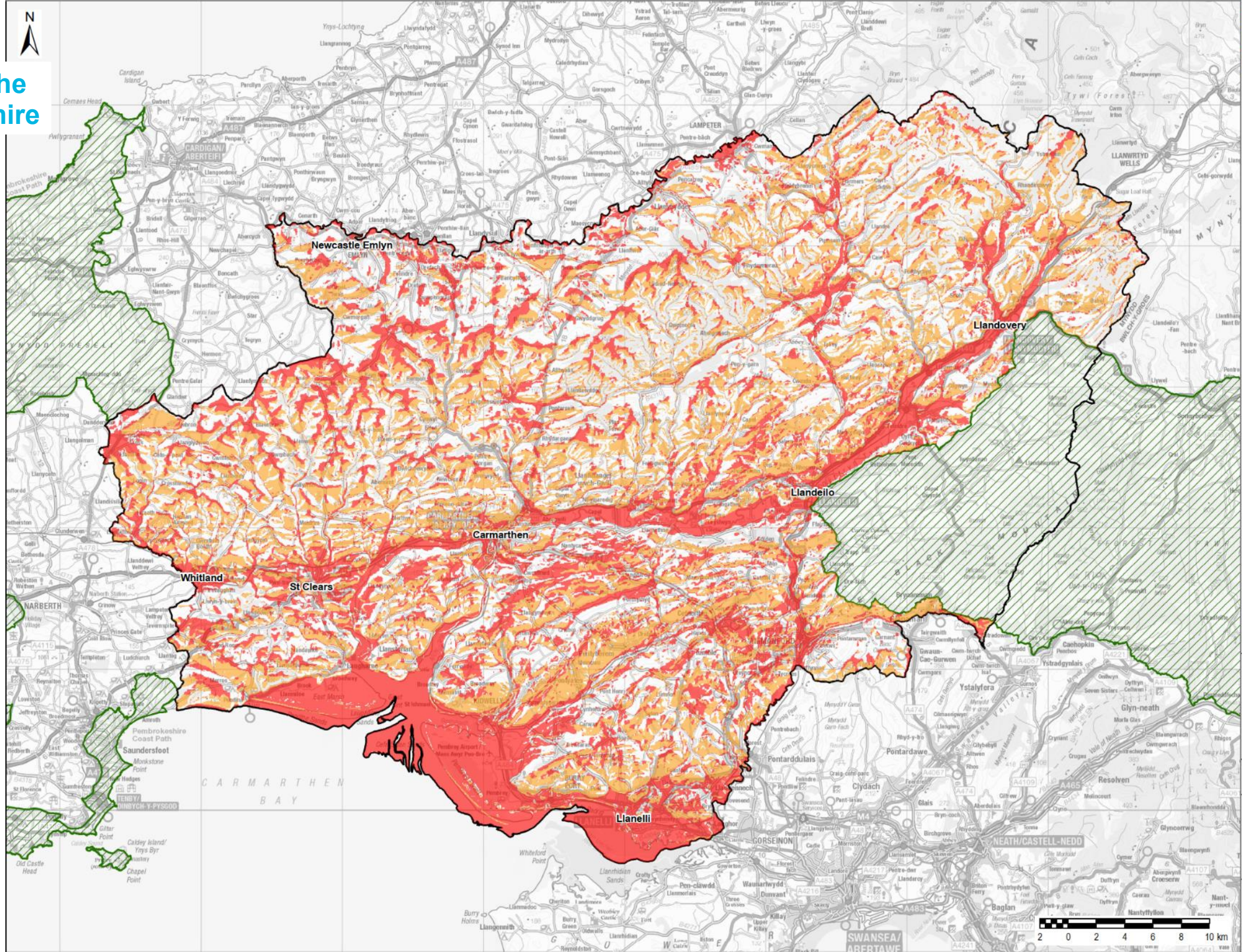
W3  
Remaining Wind Resource after Applying Statutory & Strategic Constraints

02/12/19



# S1 – Solar Resource in the Carmarthenshire LPA Area

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**LEGEND**

- Potential PV Resource - All Orientations
- Potential PV Resource - SE to SW Orientations
- National Park
- Carmarthenshire County Council Boundary

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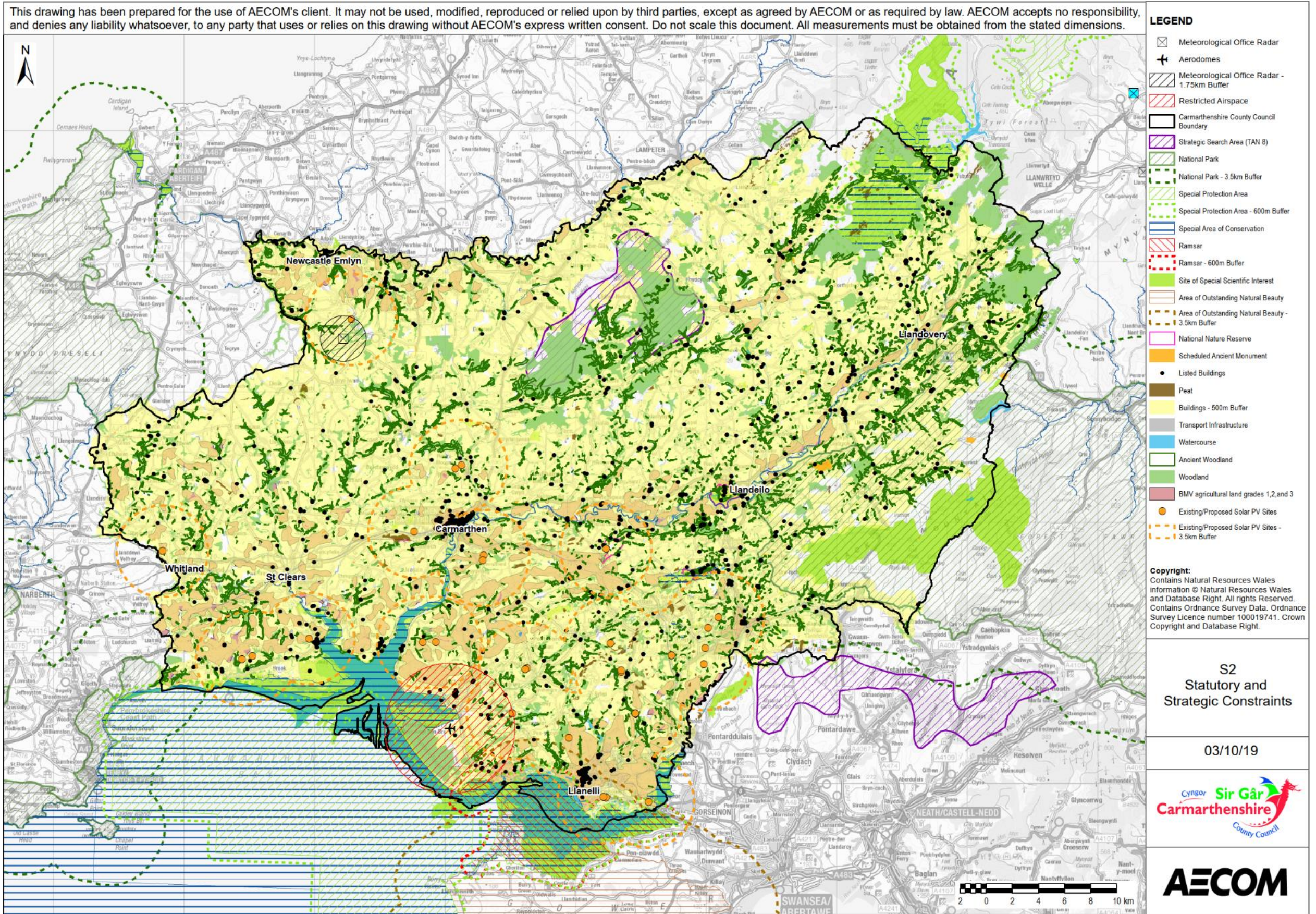
S1  
Unconstrained  
PV Resource

26/07/19



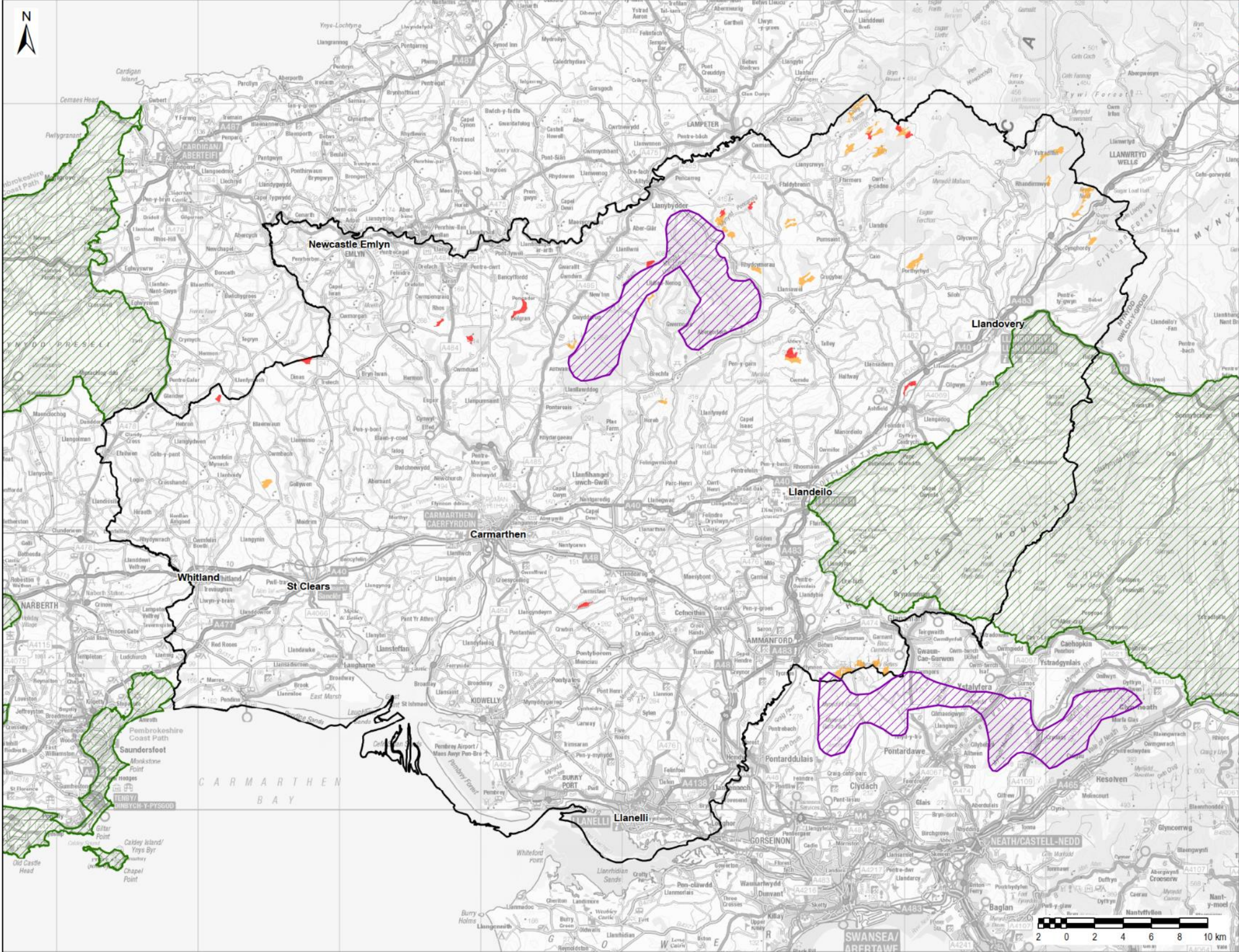


# S2 – Statutory and Strategic Constraints



# S3 – Solar PV Resource Available

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**LEGEND**

- Potential PV Resource - All Orientations
- Potential PV Resource - SE to SW Orientations
- National Park
- Strategic Search Area (TAN 8)
- Carmarthenshire County Council Boundary

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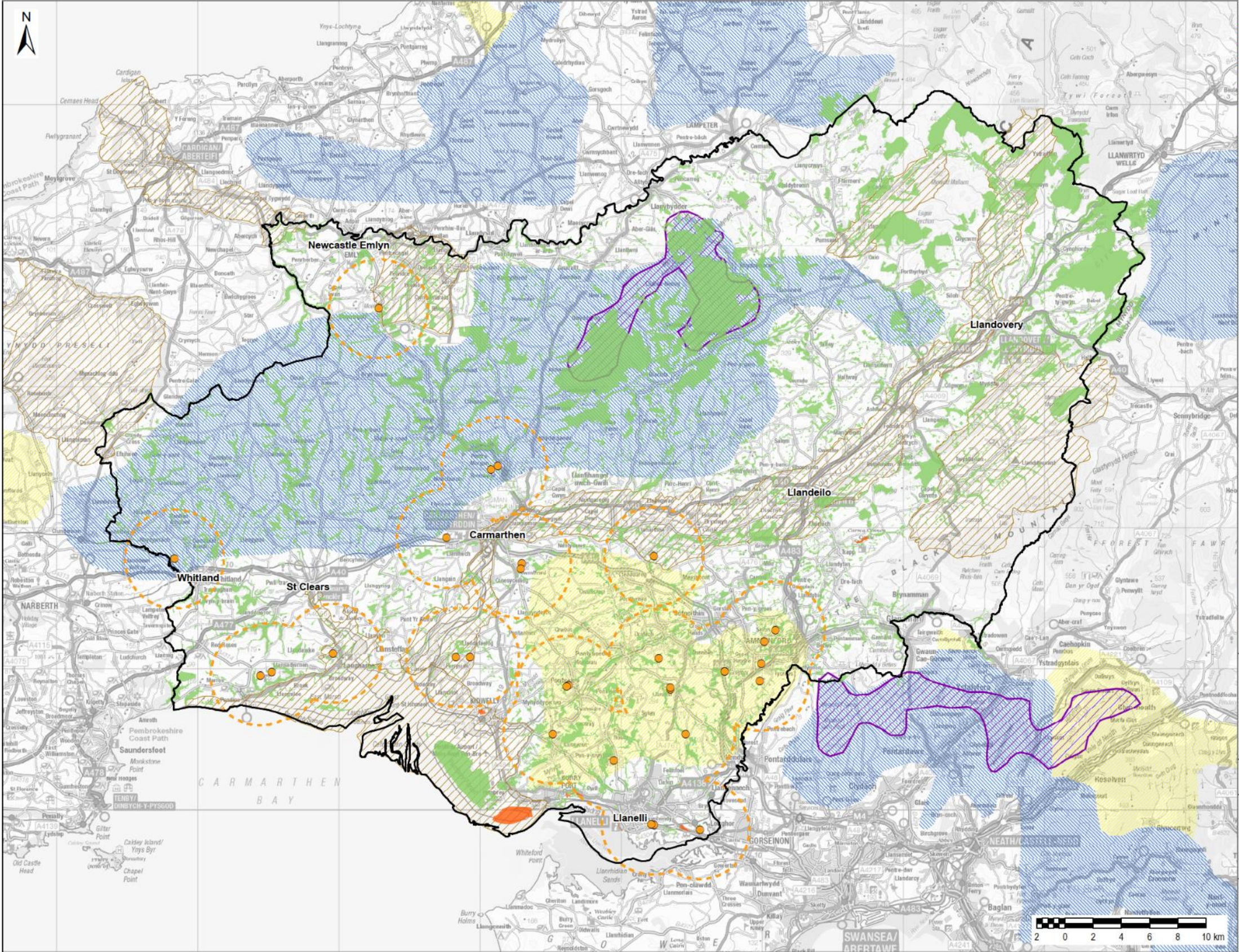
S3 Remaining Wind Resource after Applying Statutory & Strategic Constraints

02/10/19



# S4 – Local Constraints

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**LEGEND**

- Carmarthenshire County Council Boundary
- Strategic Search Area (TAN)
- Local Nature Reserves
- Registered Landscapes of Special Historic Interest
- Woodland
- Existing/Proposed Solar PV Sites
- Existing/Proposed Solar PV Sites - 3.5km Buffer
- Indicative NDF Area - Solar Only
- Indicative NDF Area - Wind and Solar

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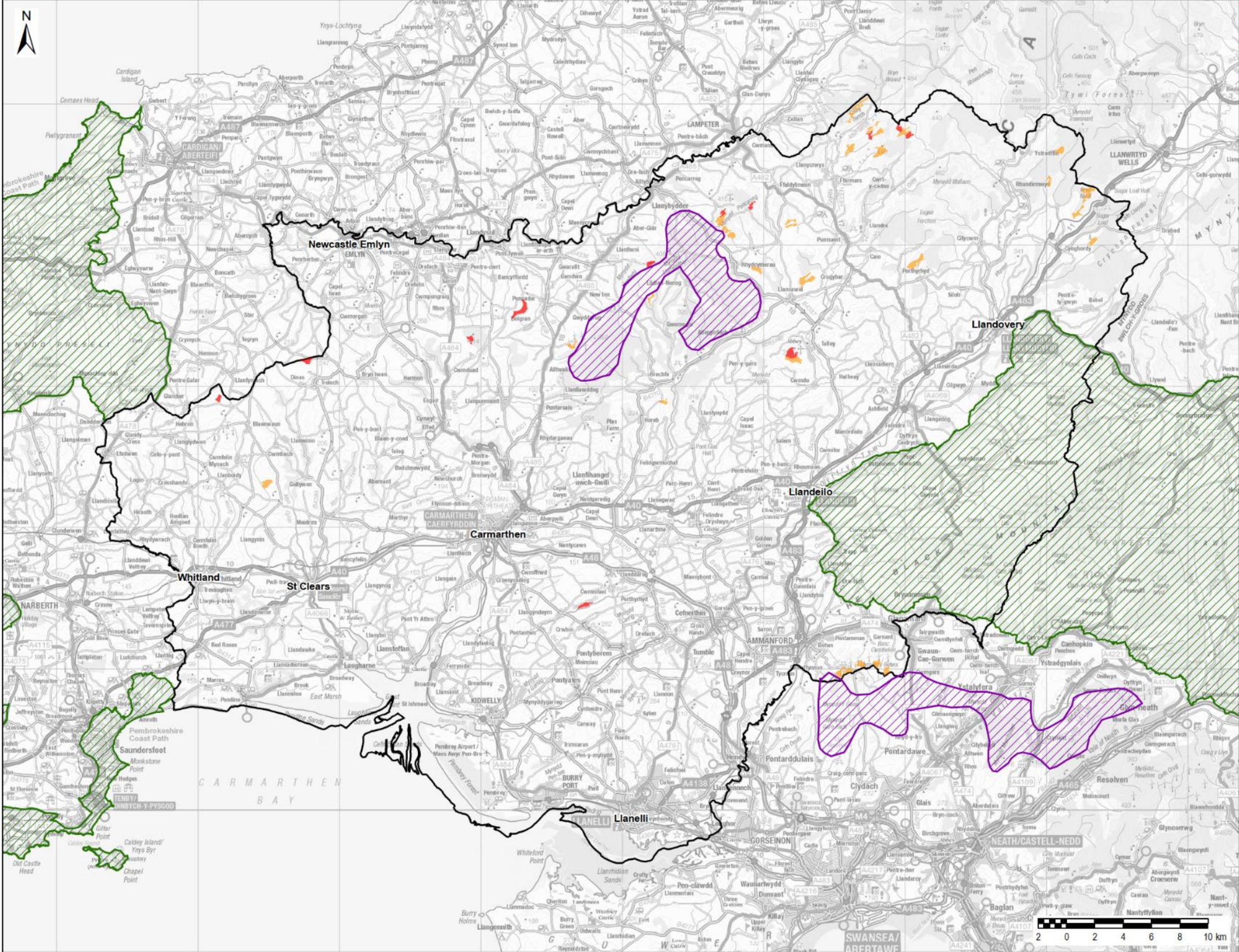
S4  
 Local Constraints

29/11/19



# S5 – Solar PV Resource Available

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- LEGEND**
- Potential PV Resource - All Orientations
  - Potential PV Resource - SE to SW Orientations
  - National Park
  - Strategic Search Area (TAN 8)
  - Carmarthenshire County Council Boundary

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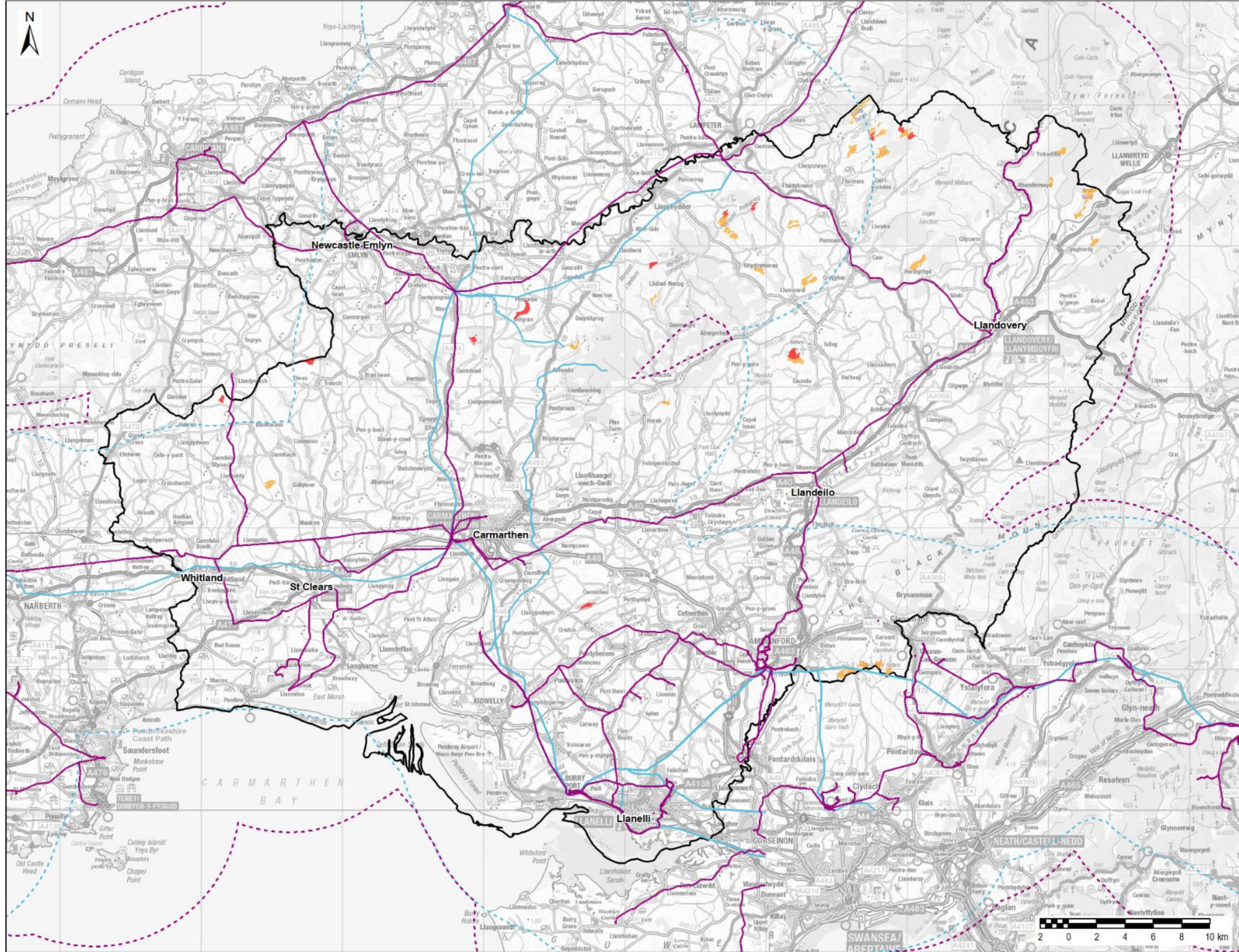
S5 Remaining Wind Resource after Applying Statutory & Strategic Constraints and Local Constraints

19/08/19



# S6 – Solar PV Farm Resource Available within Grid Connection

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**LEGEND**

- Grid Infrastructure 33kV
- Grid Infrastructure 132kV
- Grid Infrastructure 33kV 10km Buffer
- Grid Infrastructure 132kV 10km Buffer
- Potential PV Resource - All Orientations
- Potential PV Resource - SE to SW Orientations
- Carmarthenshire County Council Boundary

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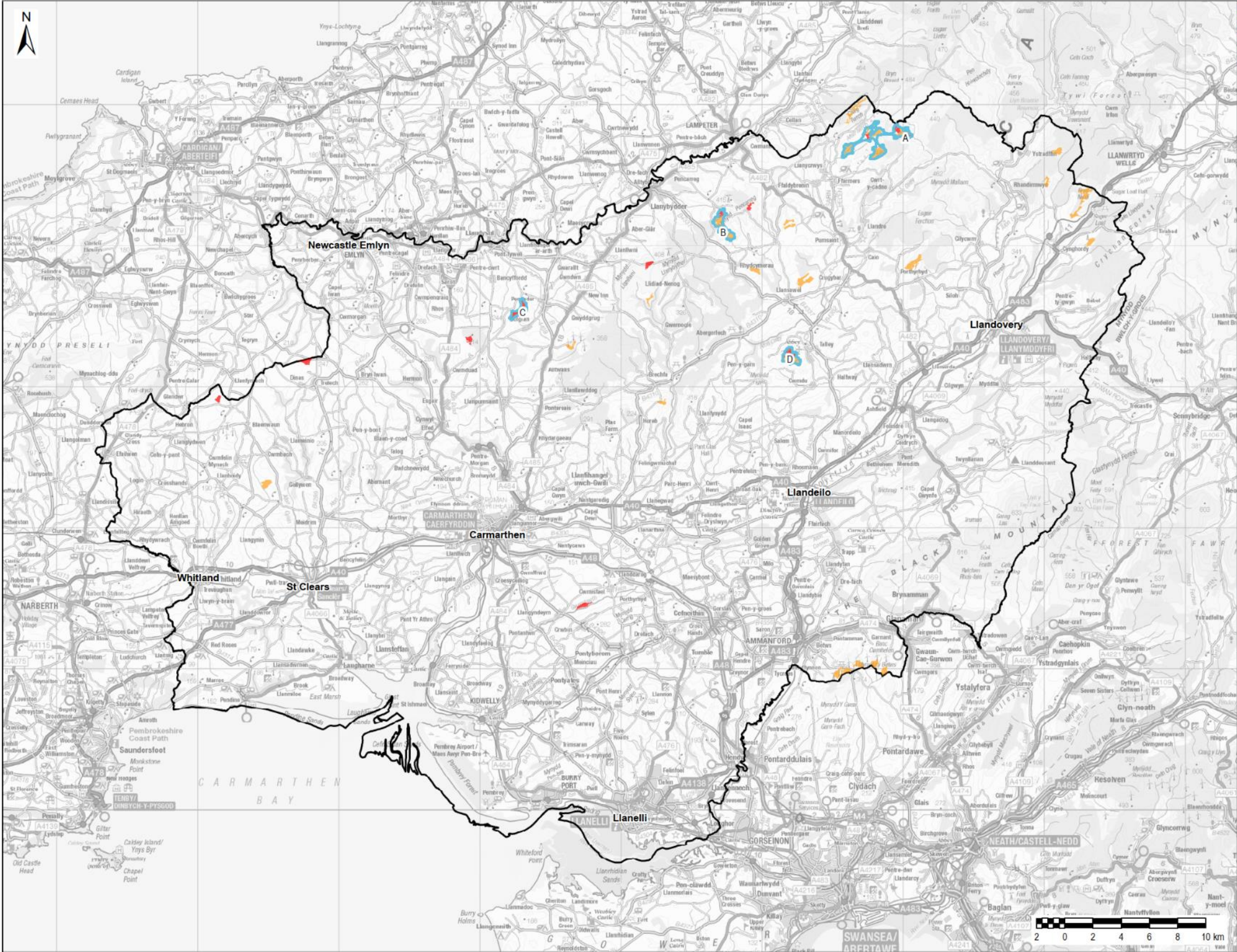
S6  
PV Resource Available within Grid Connection

19/08/19



# S7 – Solar PV Farm Land to be Assessed for Landscape Impact

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**LEGEND**

- ▨ PV LSAs
- Potential PV Resource - All Orientations
- Potential PV Resource - SE to SW Orientations
- Carmarthenshire County Council Boundary

LSA	LSA Area (km <sup>2</sup> )	Potential Installed Capacity (MW)
A	3.31	73.0
B	1.32	33.3
C	0.72	20.0
D	0.99	30.3

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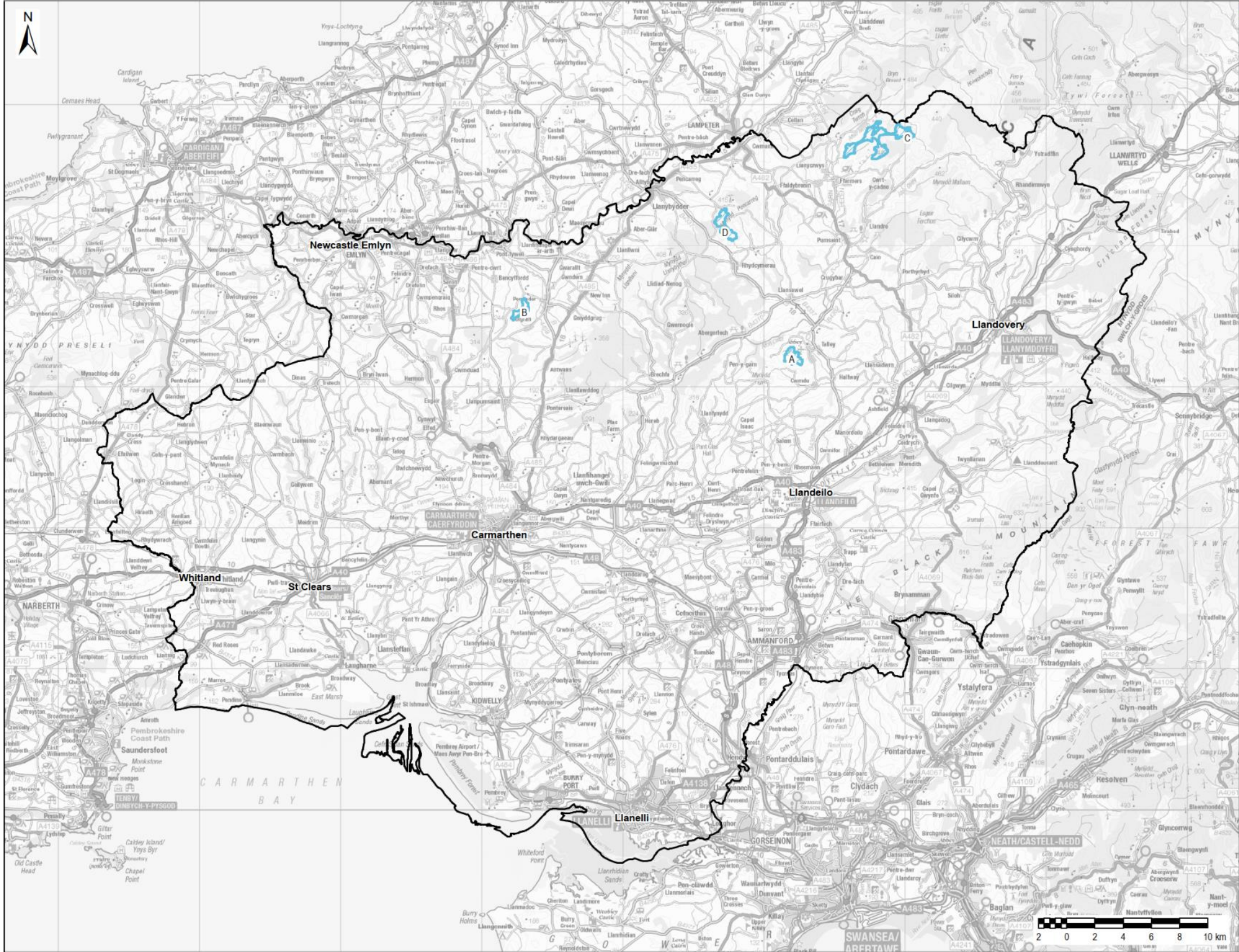
S7  
 PV land to be assessed for landscape impact

29/11/19



# S8 – Solar PV Farm Priority Post Landscape Impact Assessment

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**LEGEND**

- PV LSAs
- Carmarthenshire County Council Boundary

LSA	Landscape Sensitivity	Ranking
A	High	3
B	High	4
C	Medium High	2
D	Medium High	1

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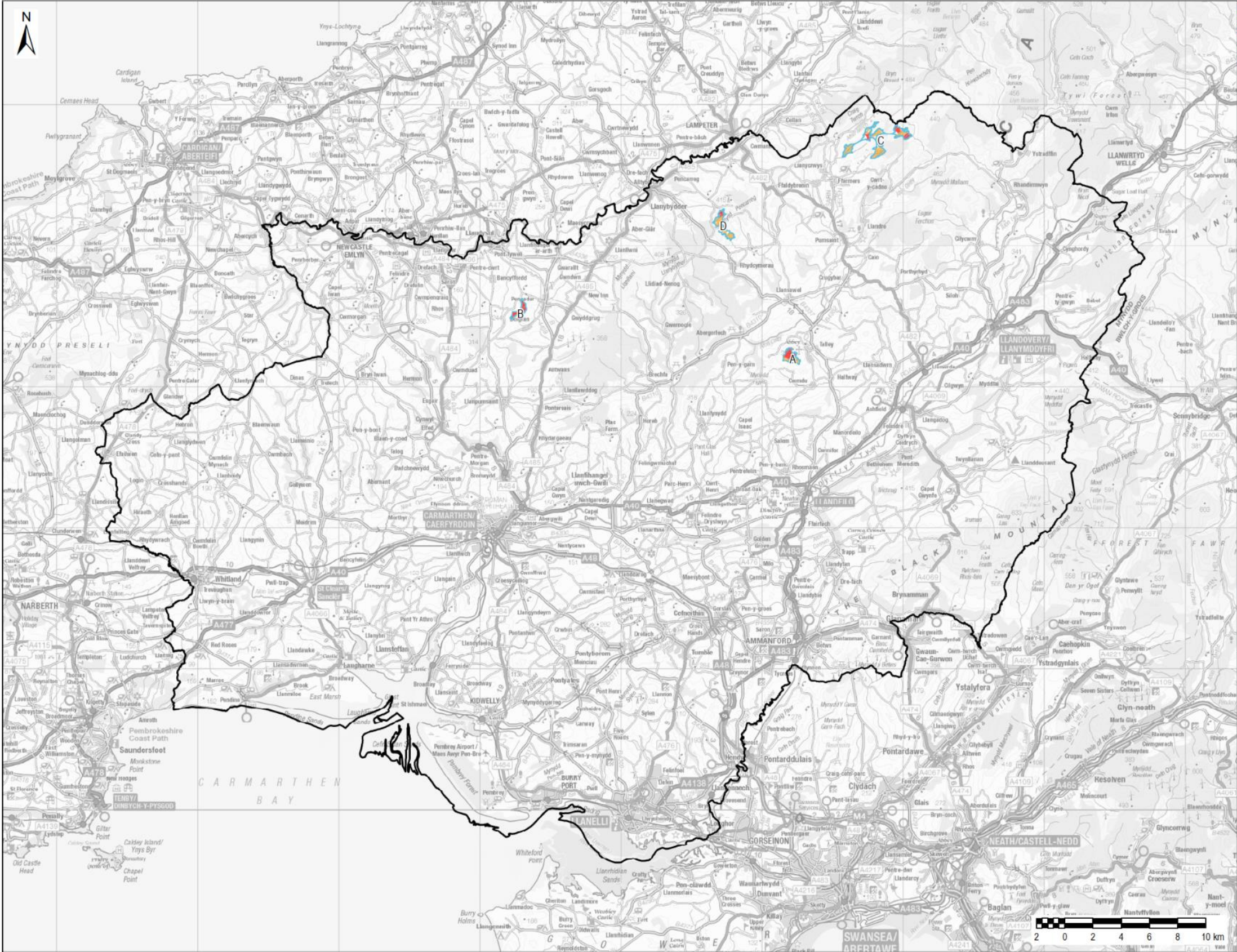
S8  
 PV land  
 priority post  
 landscape impact  
 assesment

29/11/19



# S9 – Solar PV Farm Local Search Areas

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**LEGEND**

- PV LSAs
- Potential PV Resource - All Orientations
- Potential PV Resource - SE to SW Orientations
- Carmarthenshire County Council Boundary

LSA	Priority	LSA Area (km <sup>2</sup> )	Potential Installed Capacity (MW)
A	3	3.31	73.0
B	4	1.32	33.3
C	2	0.72	20.0
D	1	0.99	30.3

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S9  
 PV  
 Local Search Areas

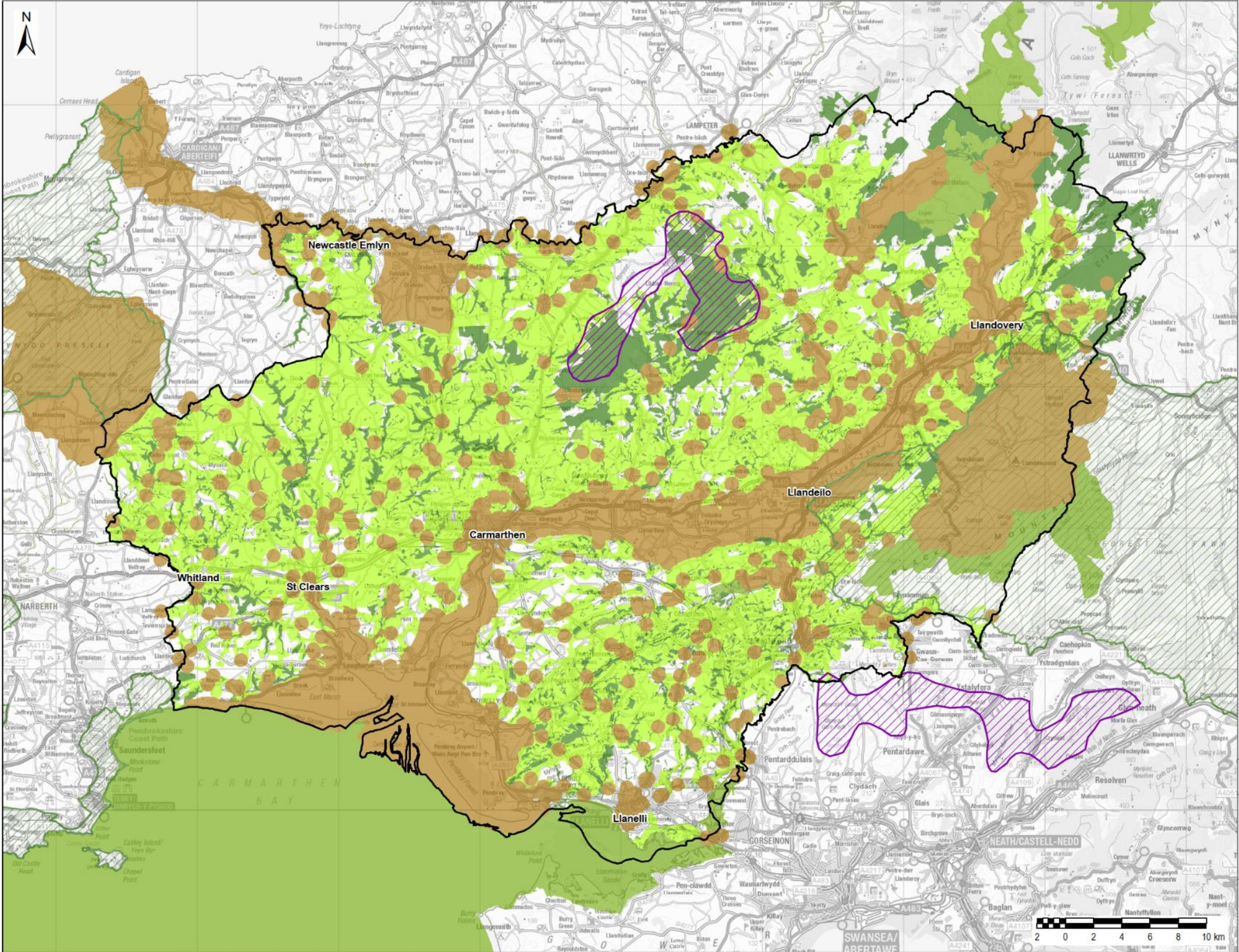
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# B1 – Biomass Constraints Map

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**LEGEND**

- Carmarthenshire County Council Boundary
- Strategic Search Area (TAN 8)
- National Park
- Statutory Historic Constraints and Registered Historic Landscapes
- Woodlands
- Statutory Environmental Constraints
- ALC Classifications**
- Grade 4

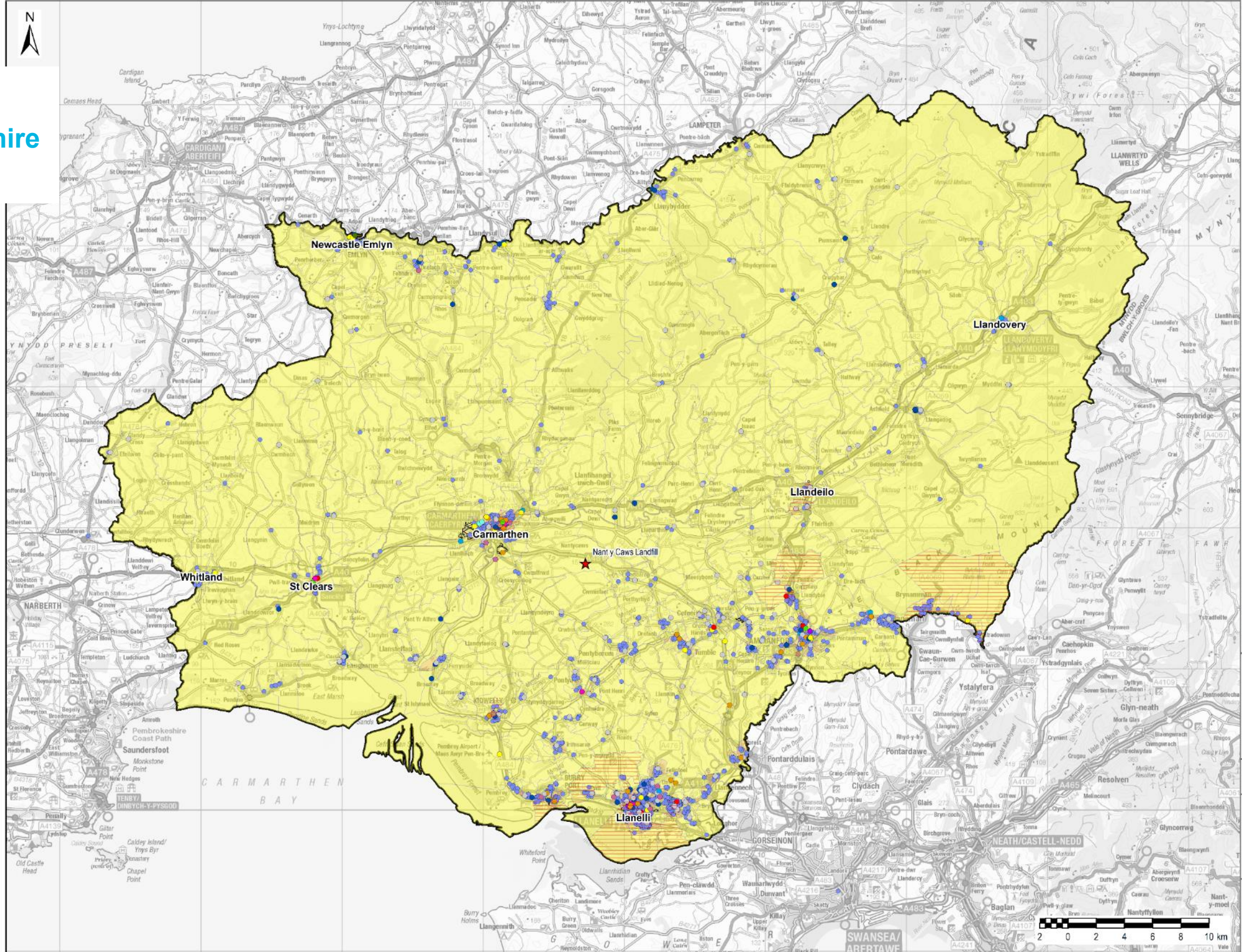
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Biomass Resource Constraints Map

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# DHN1 – Carmarthenshire Heat Map

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**LEGEND**

- Carmarthenshire County Council Boundary
- Heat Generator
- Existing Social Housing
- Existing Non-Domestic Buildings
  - Care Home
  - Council Buildings
  - Emergency Services
  - Health Centre
  - Hospital
  - Hotel
  - Leisure Centre
  - Library
  - Museum
  - Place of Worship
  - Primary School
  - Secondary Schools
  - Theatre
  - University
- Mixed Use
- Equalised Fuel Poverty Basic Income above 19%
- Residential Heat Density - MW/km2
  - <0.5
  - 0.5-1.4
  - 1.4 - 2.4
  - 2.4 - 3.7
  - >3.7

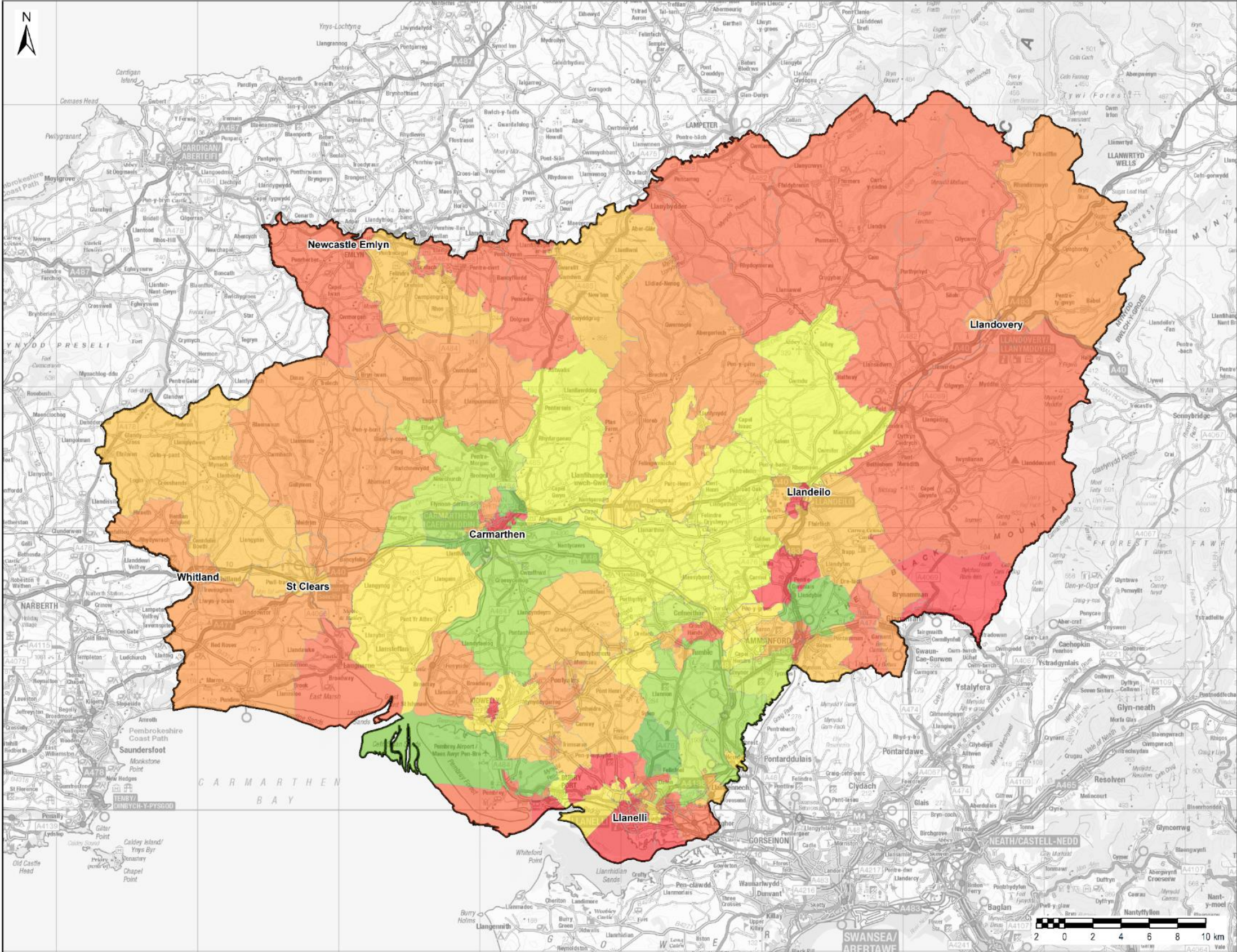
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DHN 1  
Carmarthenshire  
Heat Map

02/12/19

# DHN2 – Equivalised Fuel Poverty Basic Income Map

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**LEGEND**

Carmarthenshire County Council Boundary

Equivalised Fuel Poverty Basic Income

- >9
- 9 - 11
- 11 - 12
- 12 - 13
- 13 - 14
- 14 - 15
- 15 - 16
- 17 - 18
- 18 - 19
- >19

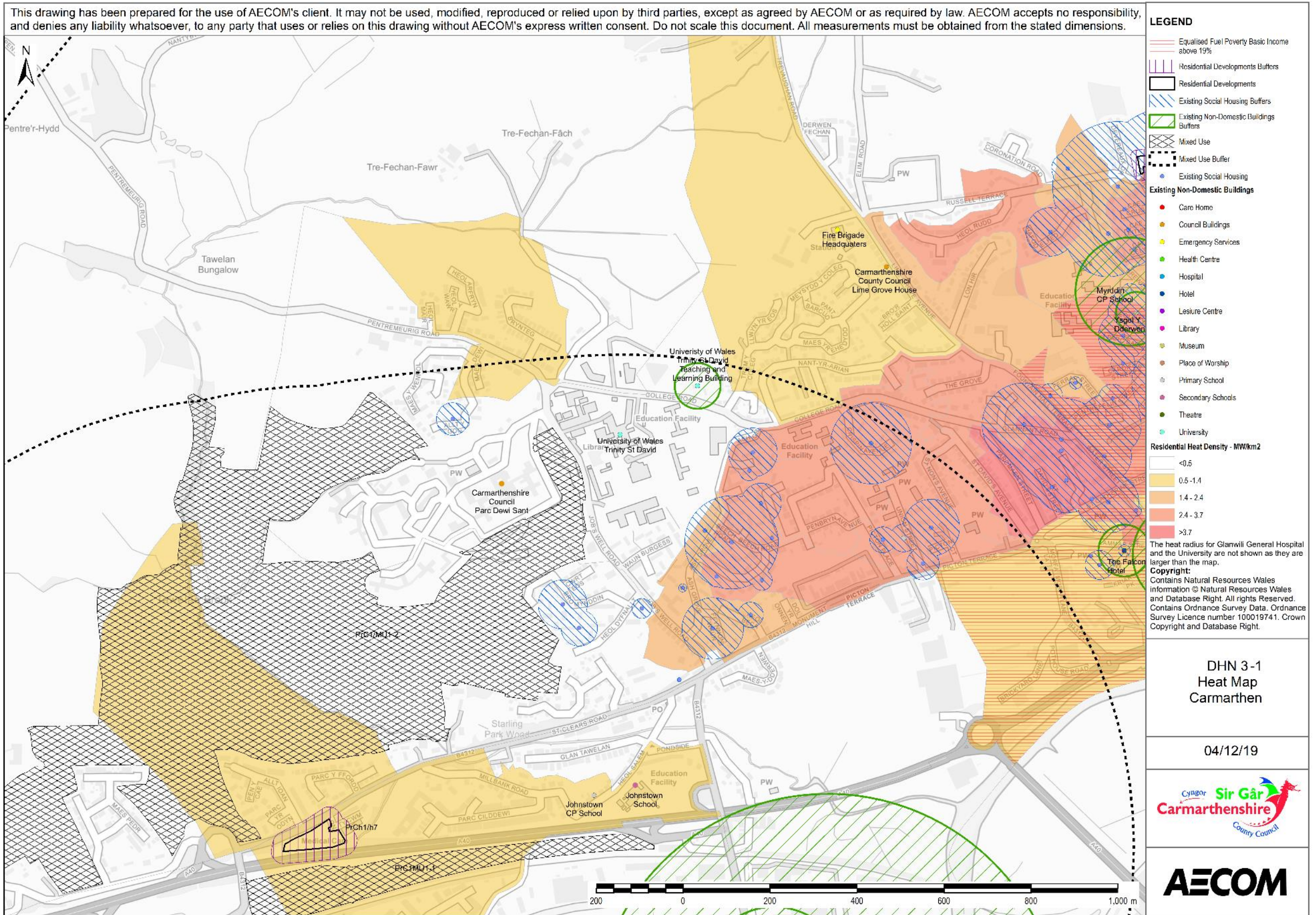
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DHN 2  
Equivalised Fuel  
Poverty  
Basic Income

29/11/19

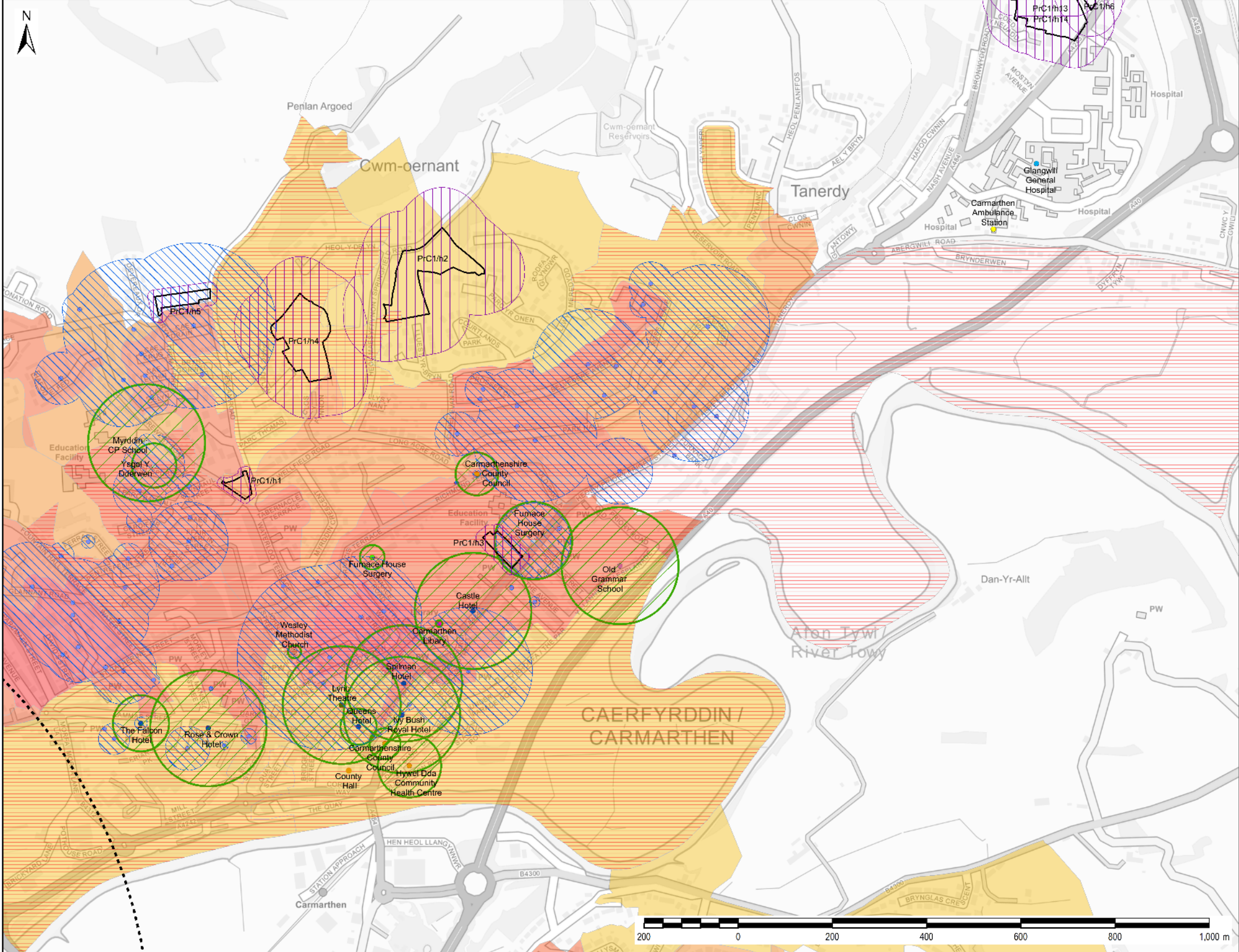


# DHN3-1 – Carmarthen West Heat Map



# DHN3-2 – Carmarthen East Heat Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5 - 1.4
- 1.4 - 2.4
- 2.4 - 3.7
- >3.7

The heat radius for Glangwili General Hospital and the University are not shown as they are larger than the map.

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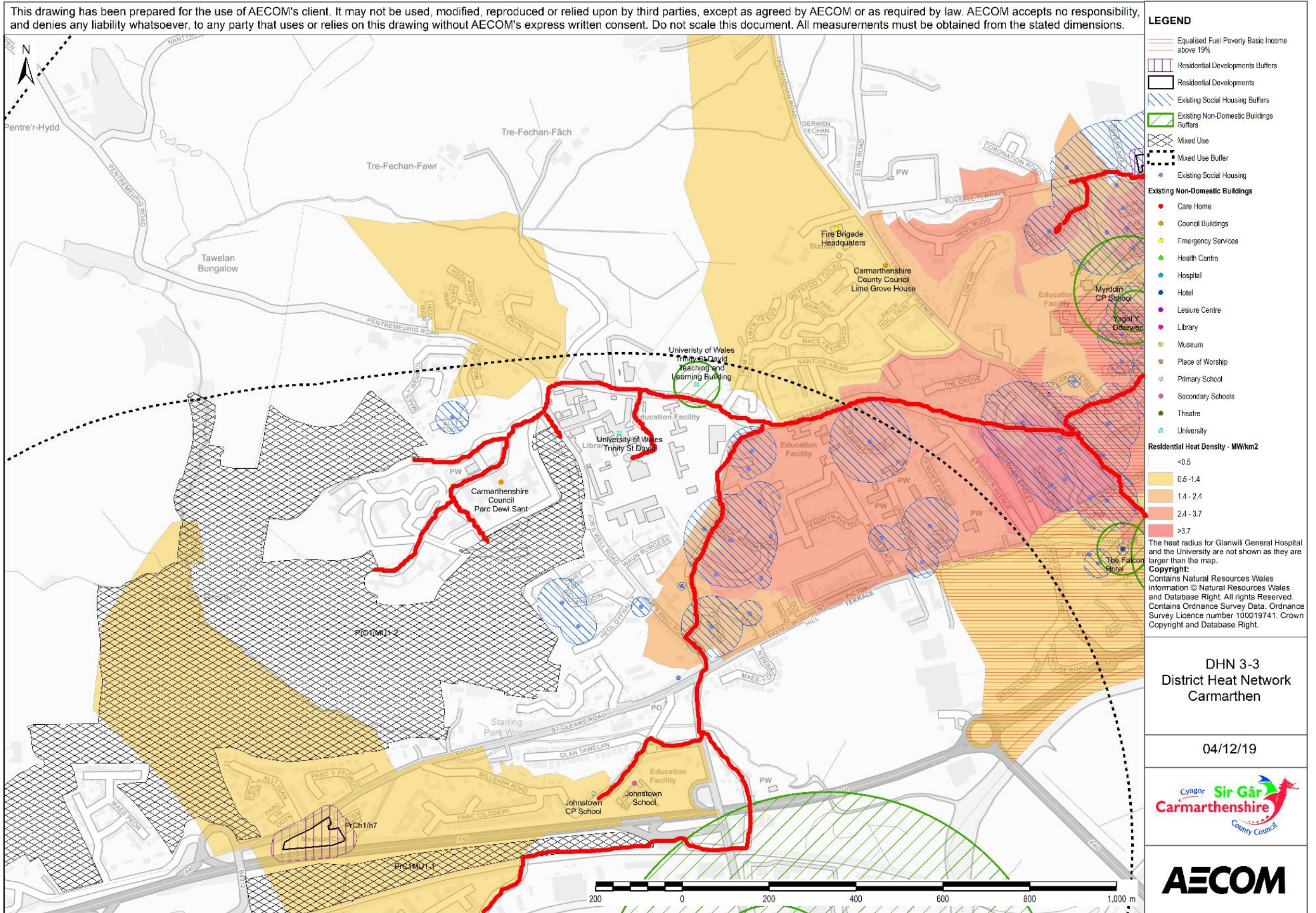
DHN 3-2 Heat Map Carmarthen

04/12/19

**Cyngor Sir Gâr Carmarthenshire County Council**

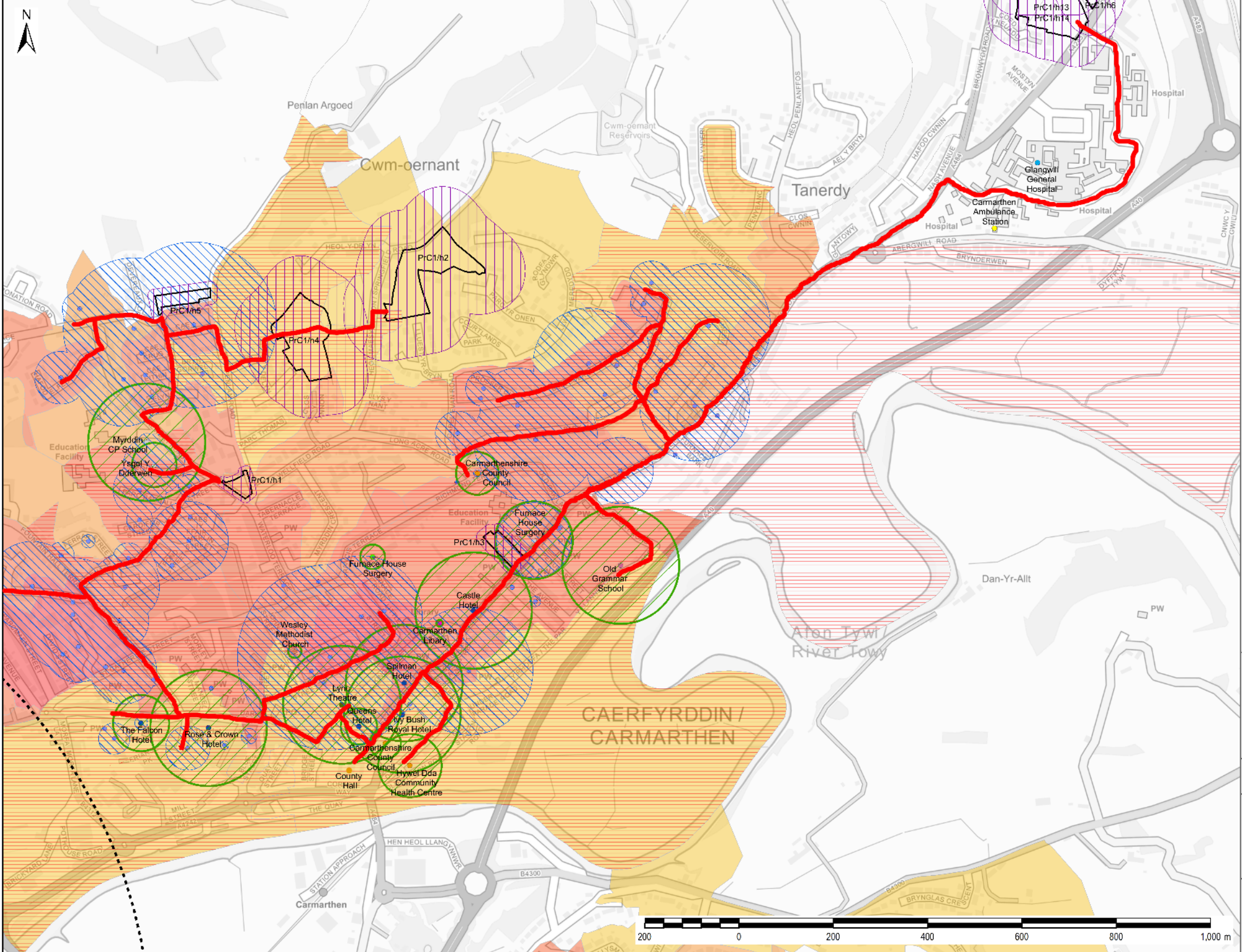
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# DHN3-3 – Carmarthen West Proposed Heat Network Map



# DHN3-4 – Carmarthen East Proposed Heat Network Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5 - 1.4
- 1.4 - 2.4
- 2.4 - 3.7
- >3.7

The heat radius for Glanwilli General Hospital and the University are not shown as they are larger than the map.

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**DHN 3-4  
District Heat Network  
Carmarthen**

04/12/19

**Cyngor Sir Gâr  
Carmarthenshire  
County Council**

**AECOM**

# DHN3-5 – Llanelli Cluster 1 Heat Map

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### LEGEND

- Equalised Fuel Poverty Basic Income above 19%
  - Residential Developments Buffers
  - Residential Developments
  - Existing Social Housing Buffers
  - Existing Non-Domestic Buildings Buffers
  - Mixed Use
  - Mixed Use Buffer
  - Existing Social Housing
- Existing Non-Domestic Buildings**
- Care Home
  - Council Buildings
  - Emergency Services
  - Health Centre
  - Hospital
  - Hotel
  - Leisure Centre
  - Library
  - Museum
  - Place of Worship
  - Primary School
  - Secondary Schools
  - Theatre
  - University
- Residential Heat Density - MW/km<sup>2</sup>**
- <math><0.5</math>
  - 0.5 - 1.4
  - 1.4 - 2.4
  - 2.4 - 3.7
  - >3.7

The heat radius for the Prince Philip Hospital is not shown as it is larger than the map

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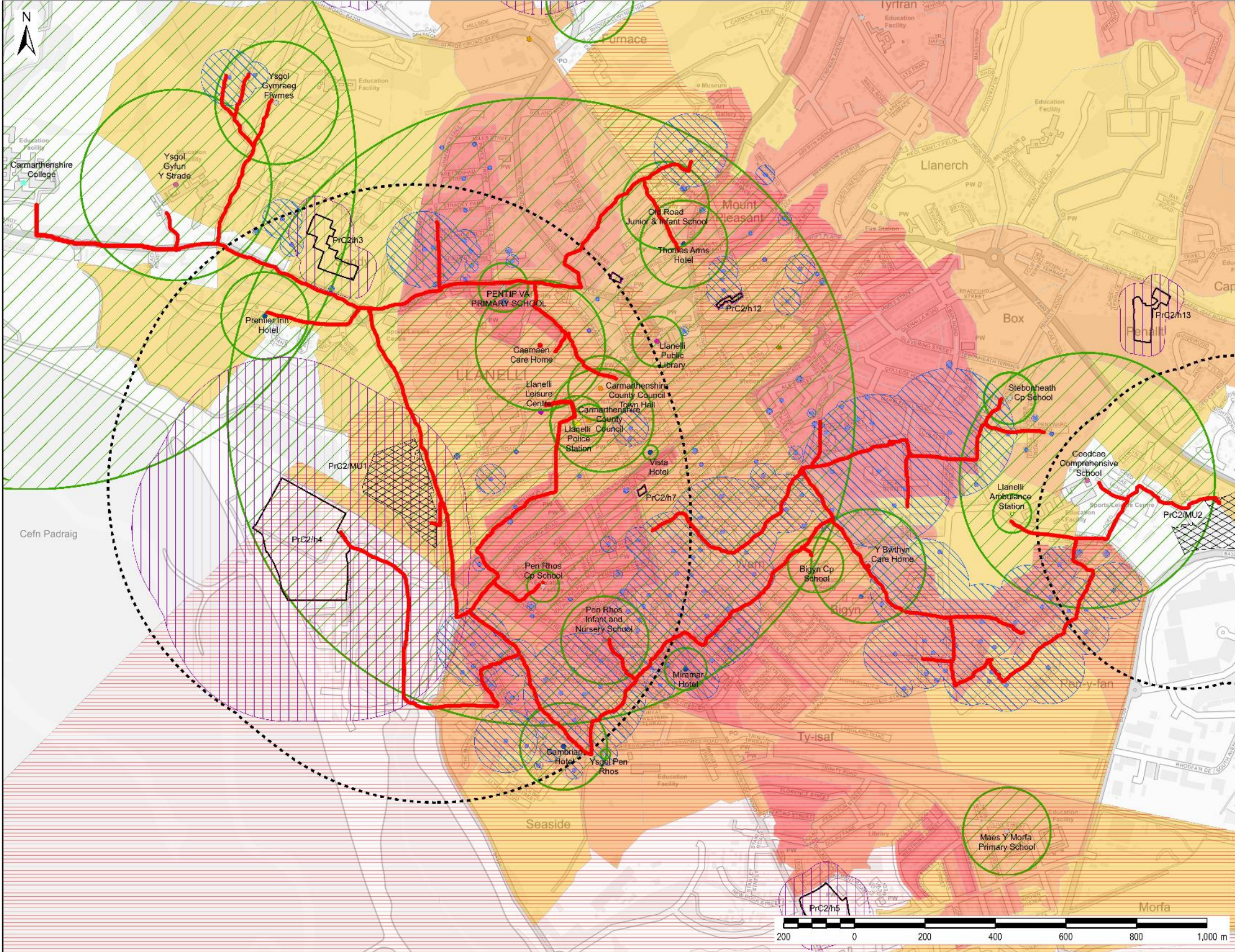
DHN 3-5  
Heat Map  
Llanelli  
Cluster 1

04/12/19



# DHN3-6 – Llanelli Cluster 1 Proposed Heat Network Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5-1.4
- 1.4 - 2.4
- 2.4 - 3.7
- >3.7

The heat radius for the Prince Philip Hospital is not shown as it is larger than the map

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DHN 3-6  
District Heat Network  
Llanelli  
Cluster 1

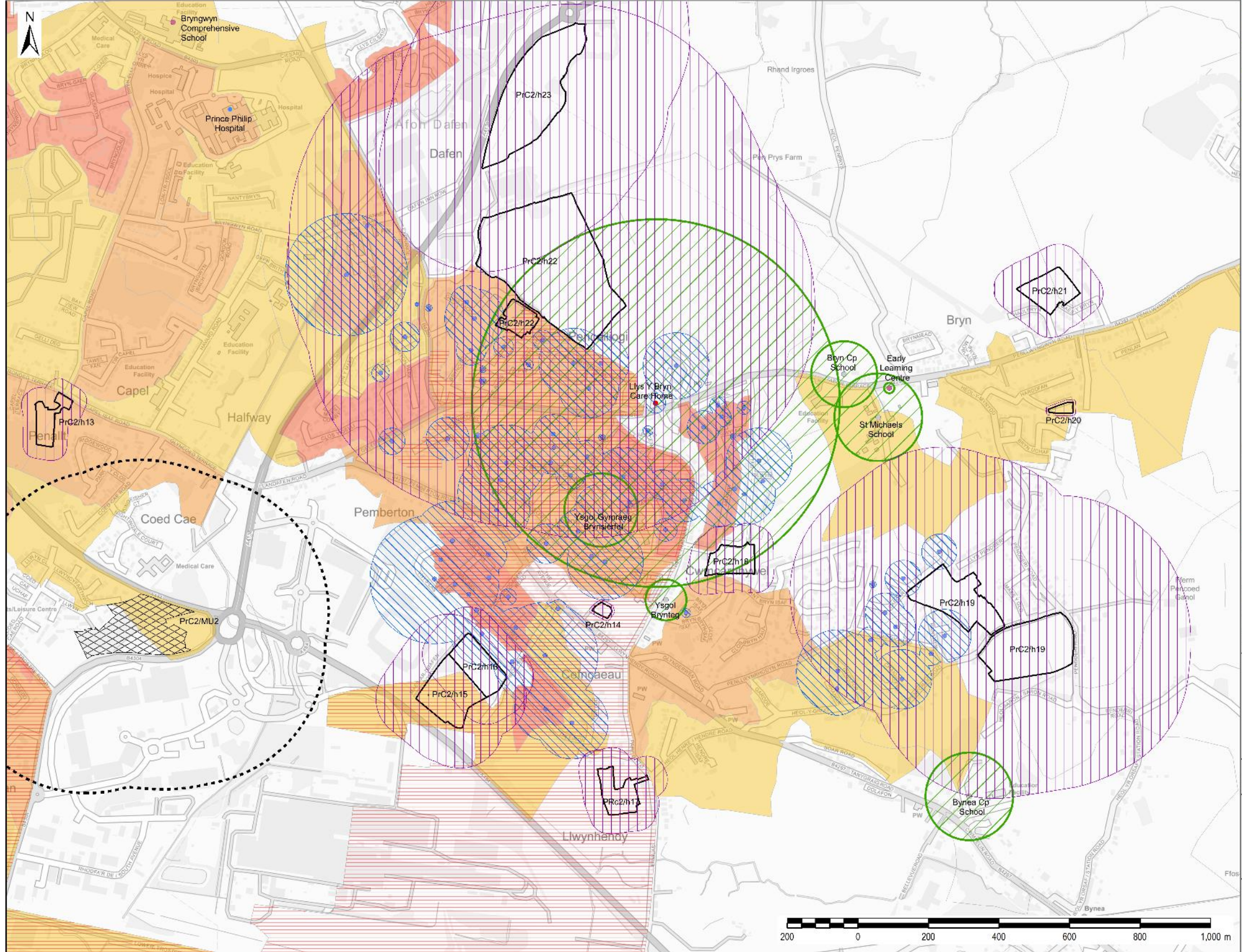
04/12/19

**Cyngor Sir Gâr Carmarthenshire County Council**

**AECOM**

# DHN3-7 – Llanelli Cluster 2 Heat Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5-1.4
- 1.4-2.4
- 2.4-3.7
- >3.7

The heat radius for the Prince Philip Hospital is not shown as it is larger than the map.

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DHN 3-7  
Heat Map  
Llanelli.  
Cluster 2

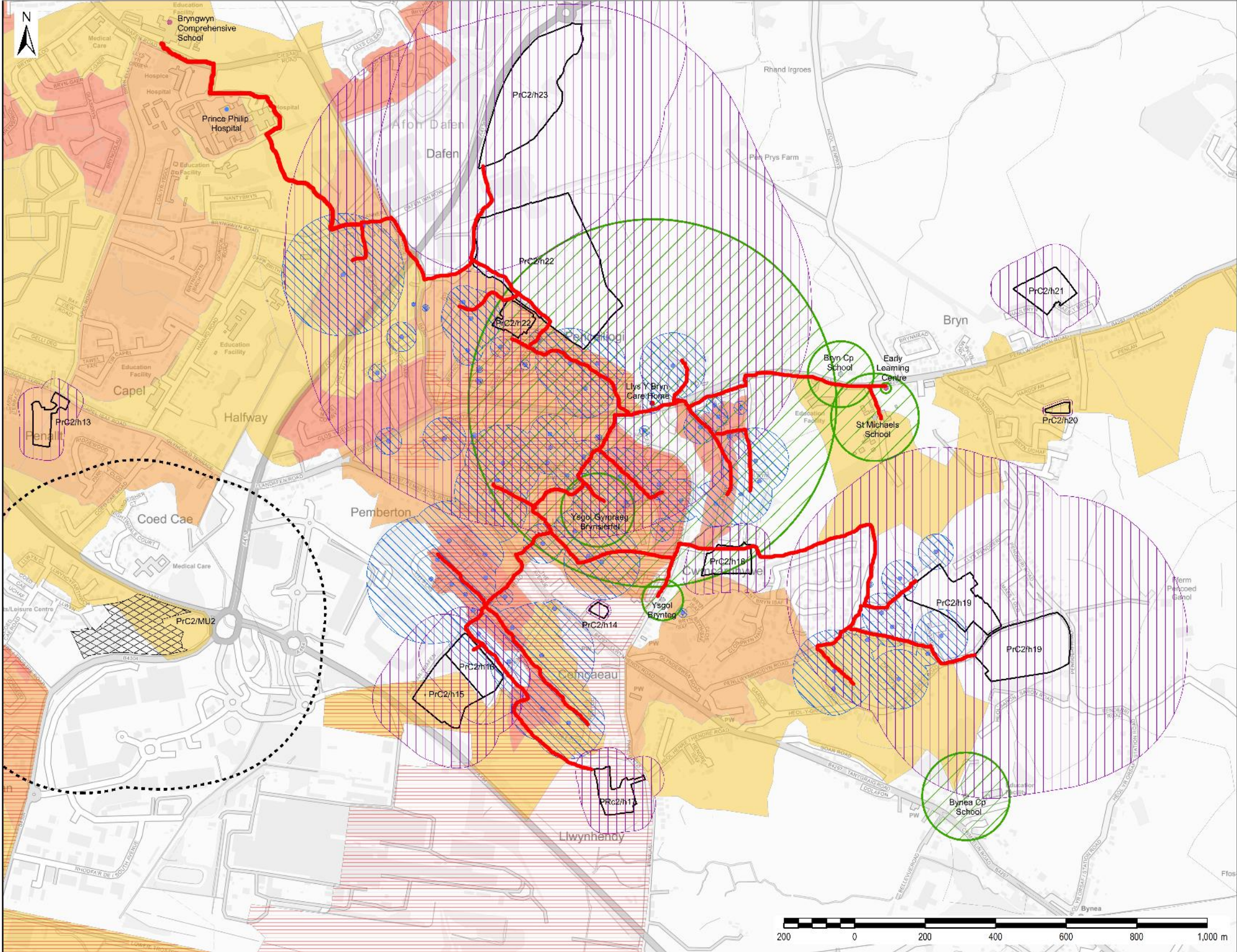
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**Cyngor Sir Gâr  
Carmarthenshire  
County Council**

**AECOM**

# DHN3-8 – Llanelli Cluster 2 Heat Network Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5-1.4
- 1.4-2.4
- 2.4-3.7
- >3.7

The heat radius for the Prince Philip Hospital is not shown as it is larger than the map.

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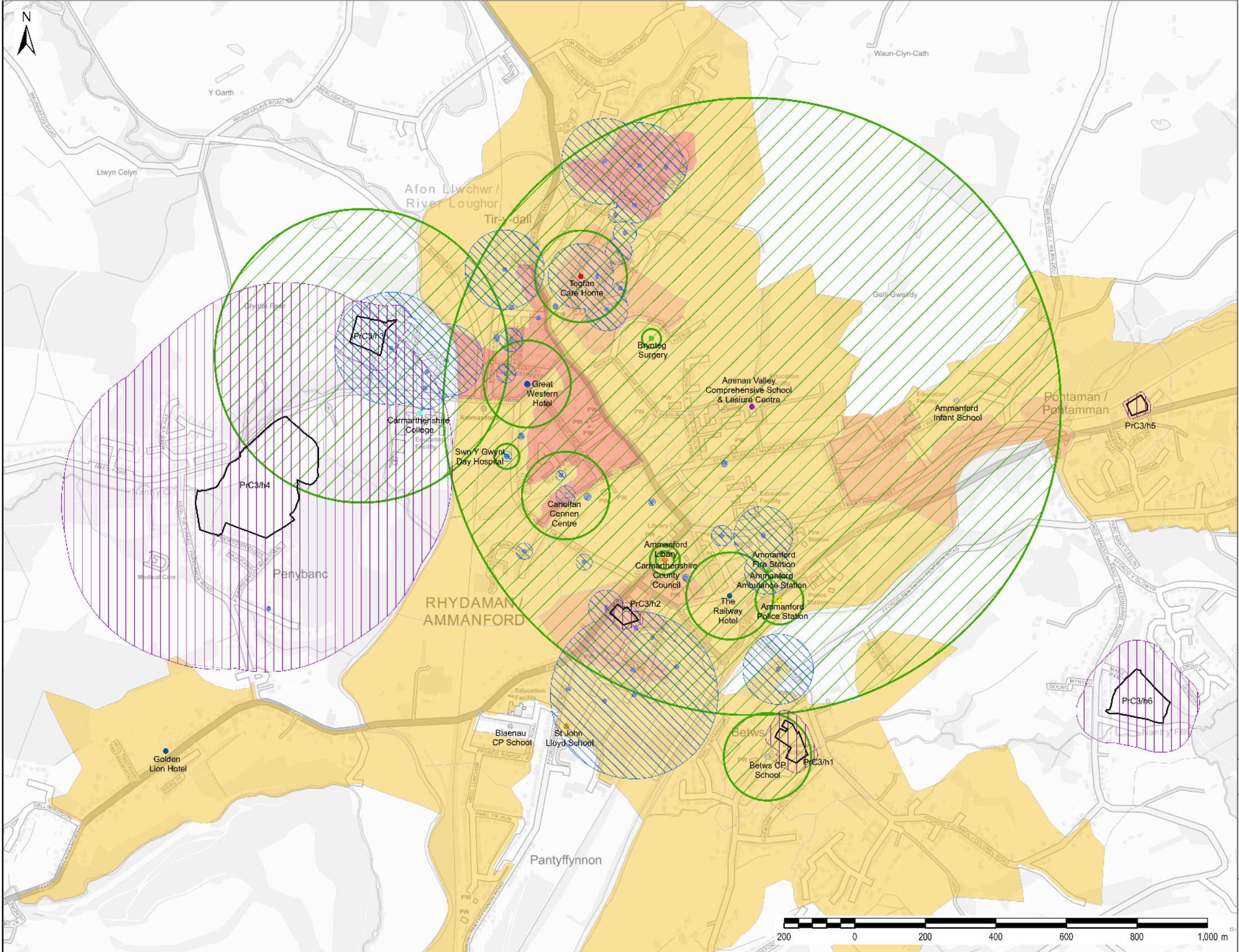
DHN 3-8  
District Heat Network  
Llanelli.  
Cluster 2

04/12/19

**AECOM**

# DHN3-9 – Ammanford Heat Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5 - 1.4
- 1.4 - 2.4
- 2.4 - 3.7
- >3.7

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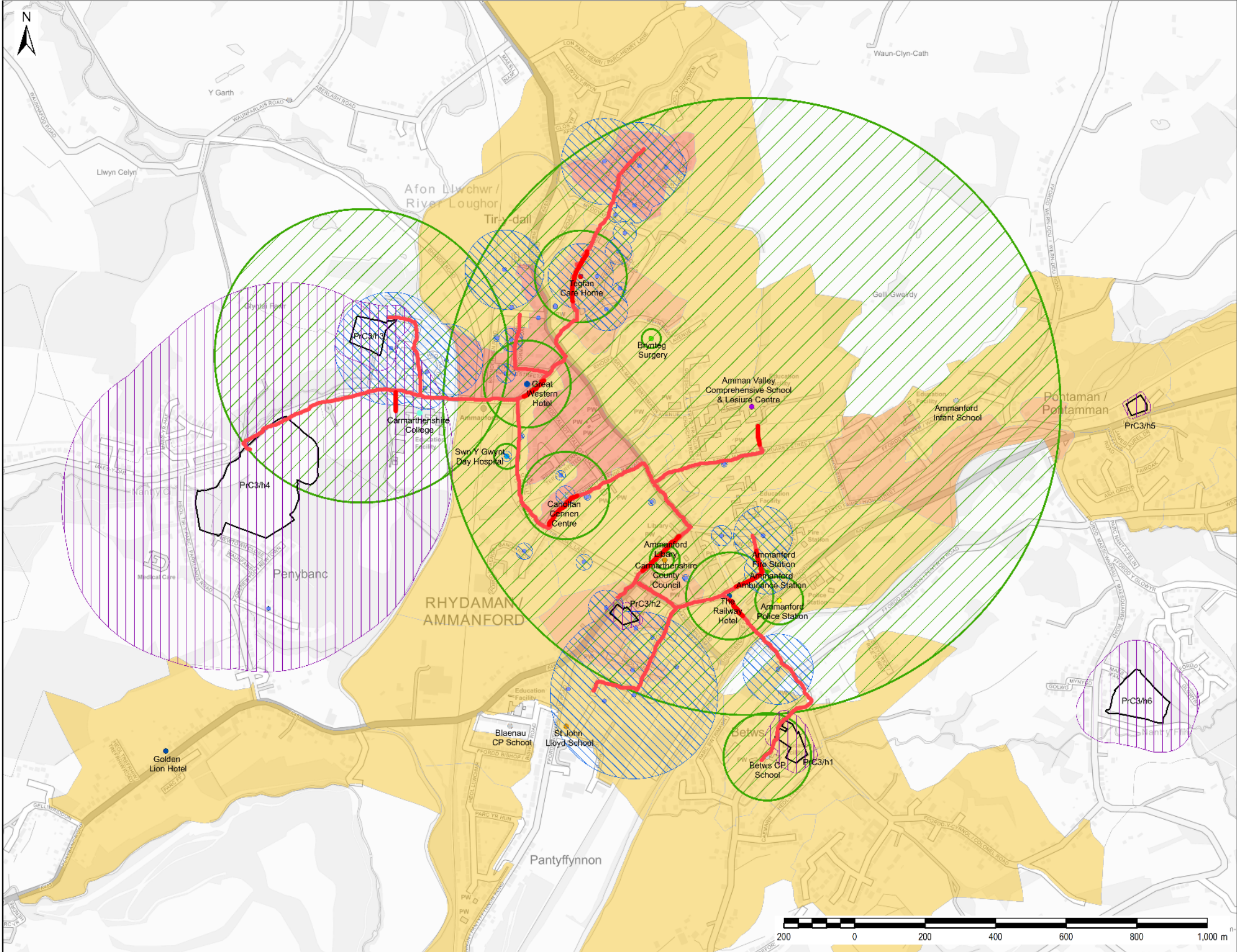
DHN 3-9  
Heat Map  
Ammonford

04/12/19



# DHN3-10 – Ammanford Proposed Heat Network Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5 - 1.4
- 1.4 - 2.4
- 2.4 - 3.7
- >3.7

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**DHN 3-10 District Heat Network Ammanford**

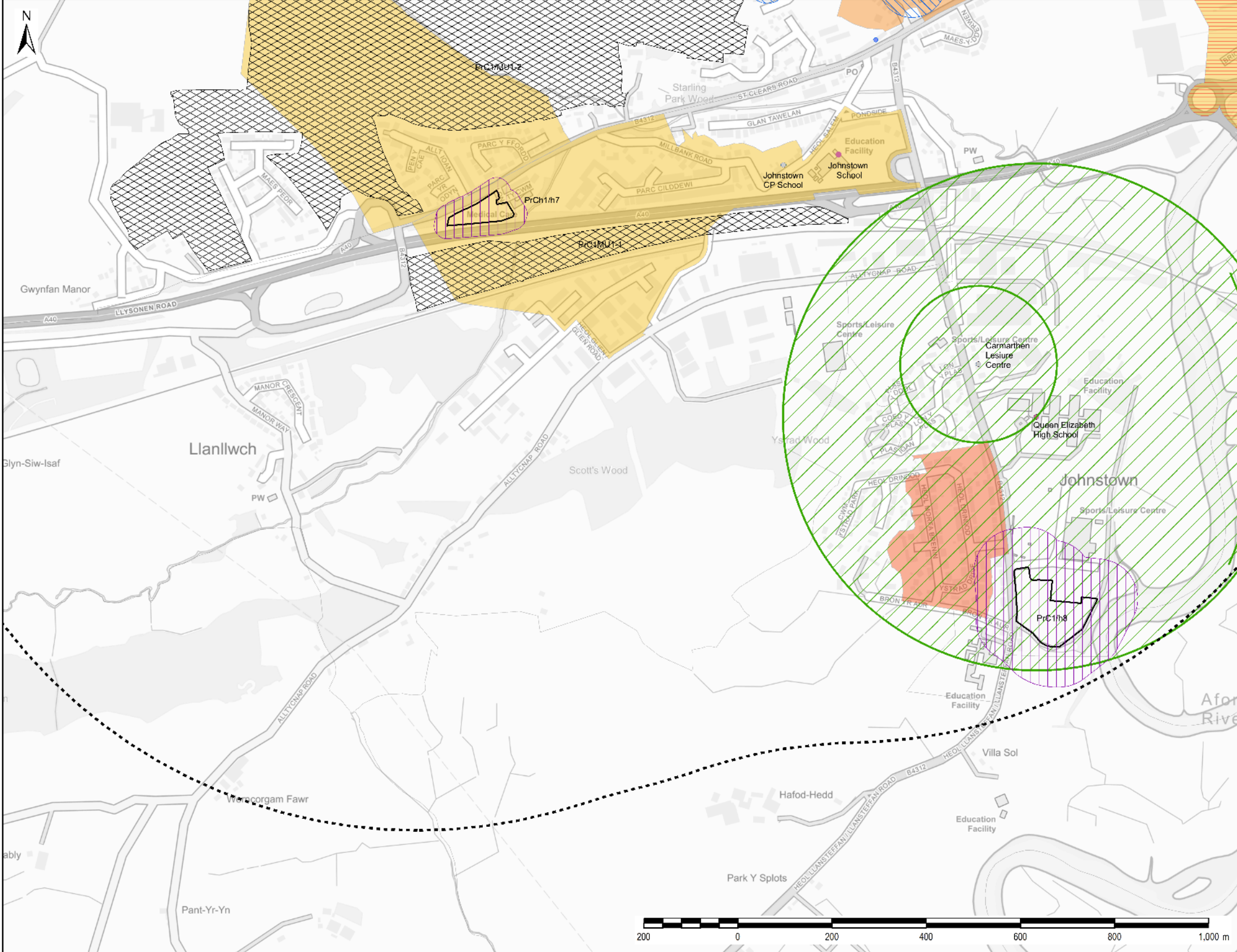
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**Cyngor Sir Gâr Carmarthenshire County Council**

**AECOM**

# DHN3-11 – Carmarthen South Heat Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5-1.4
- 1.4-2.4
- 2.4-3.7
- >3.7

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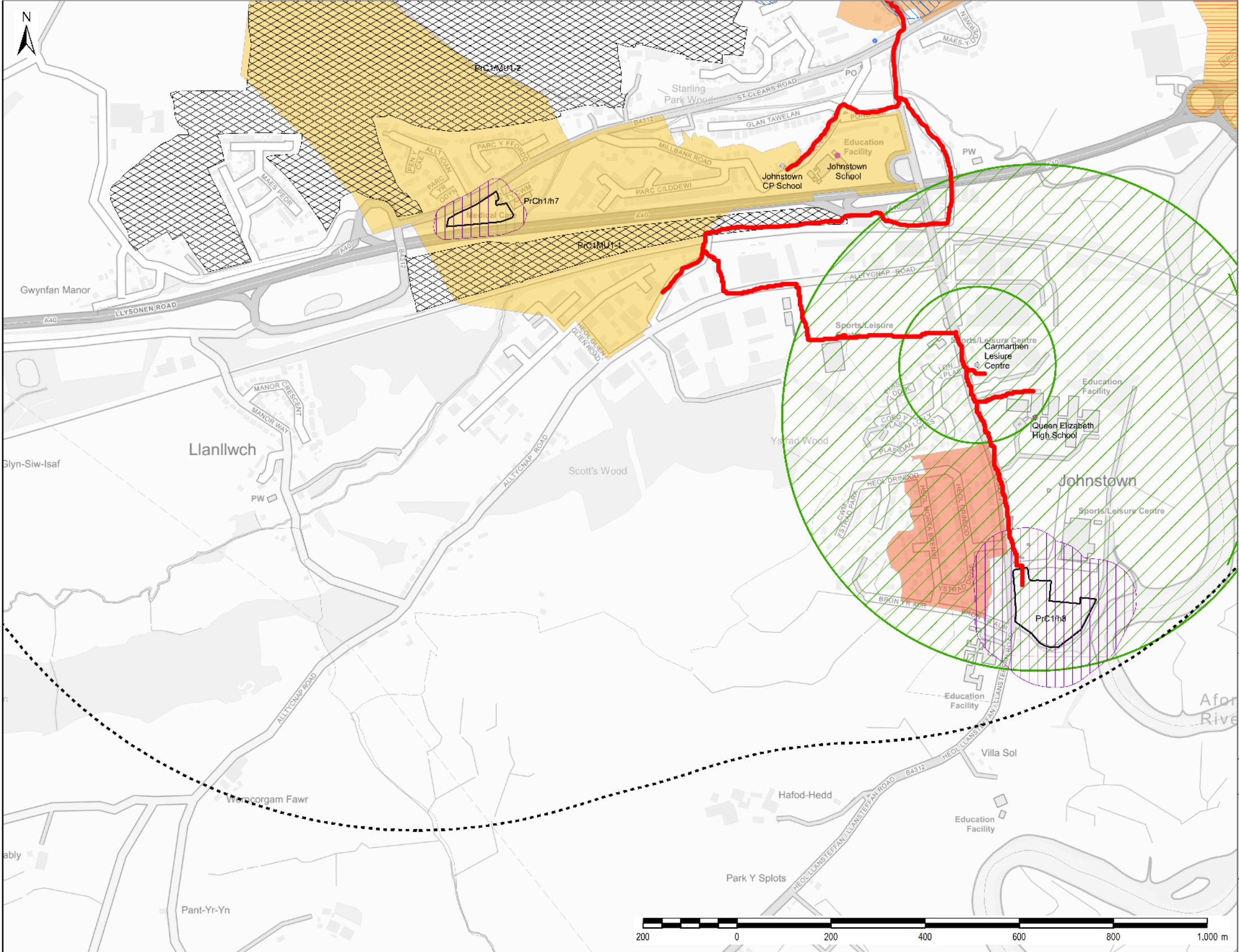
DHN 3-11  
Heat Map  
Carmarthen

10/12/19

**AECOM**

# DHN3-12 – Carmarthen South Proposed Heat Network Map

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**LEGEND**

- Equalised Fuel Poverty Basic Income above 19%
- Residential Developments Buffers
- Residential Developments
- Existing Social Housing Buffers
- Existing Non-Domestic Buildings Buffers
- Mixed Use
- Mixed Use Buffer
- Existing Social Housing

**Existing Non-Domestic Buildings**

- Care Home
- Council Buildings
- Emergency Services
- Health Centre
- Hospital
- Hotel
- Leisure Centre
- Library
- Museum
- Place of Worship
- Primary School
- Secondary Schools
- Theatre
- University

**Residential Heat Density - MW/km<sup>2</sup>**

- <0.5
- 0.5 - 1.4
- 1.4 - 2.4
- 2.4 - 3.7
- >3.7

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DHN 3-12 District Heat Network Carmarthen

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