

Maps

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Map 5: District-wide Map showing the long-list of clusters

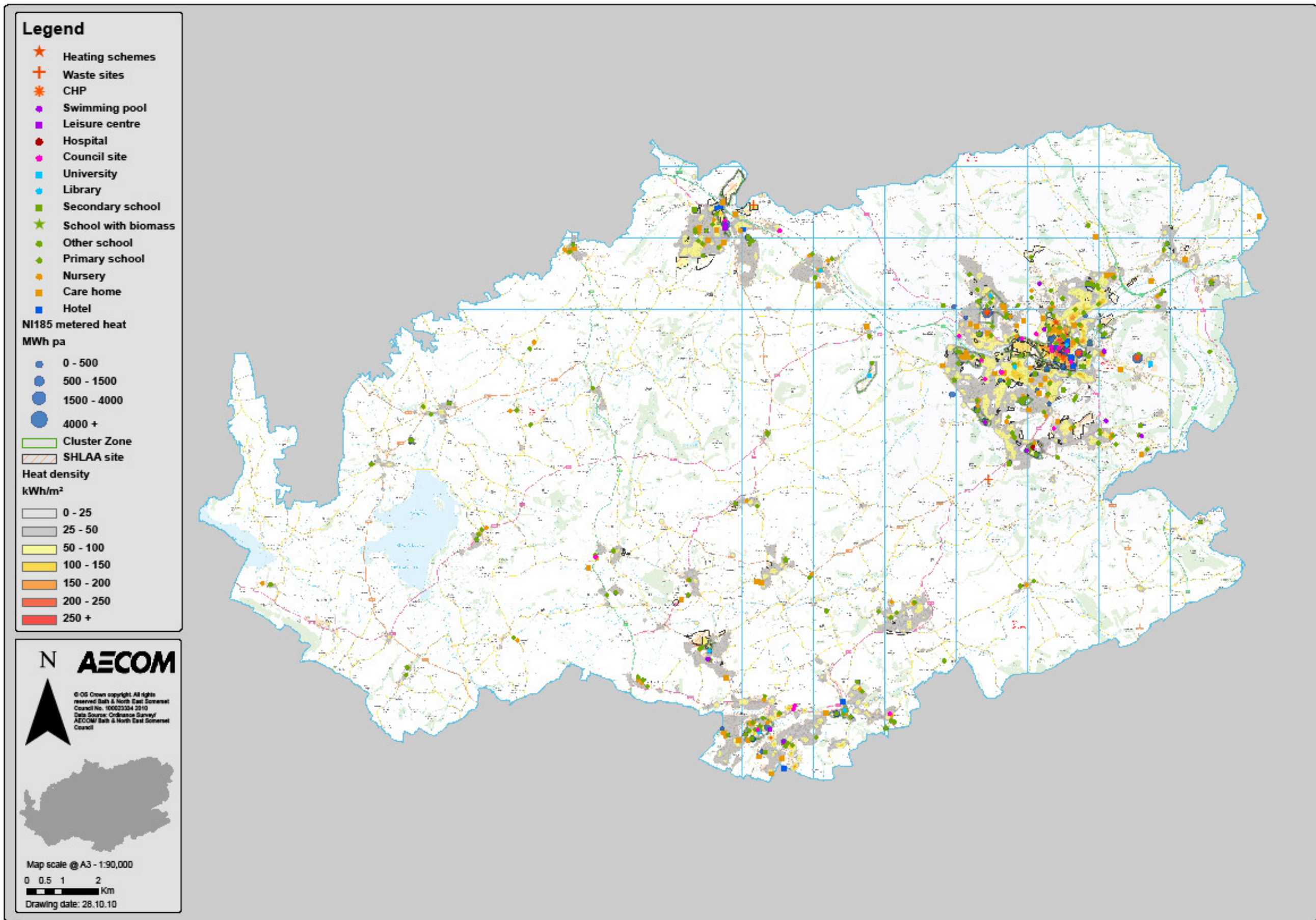
Map 6: Network Map for Bath City Centre

Map 7: Network Map for Bath Riverside Corridor

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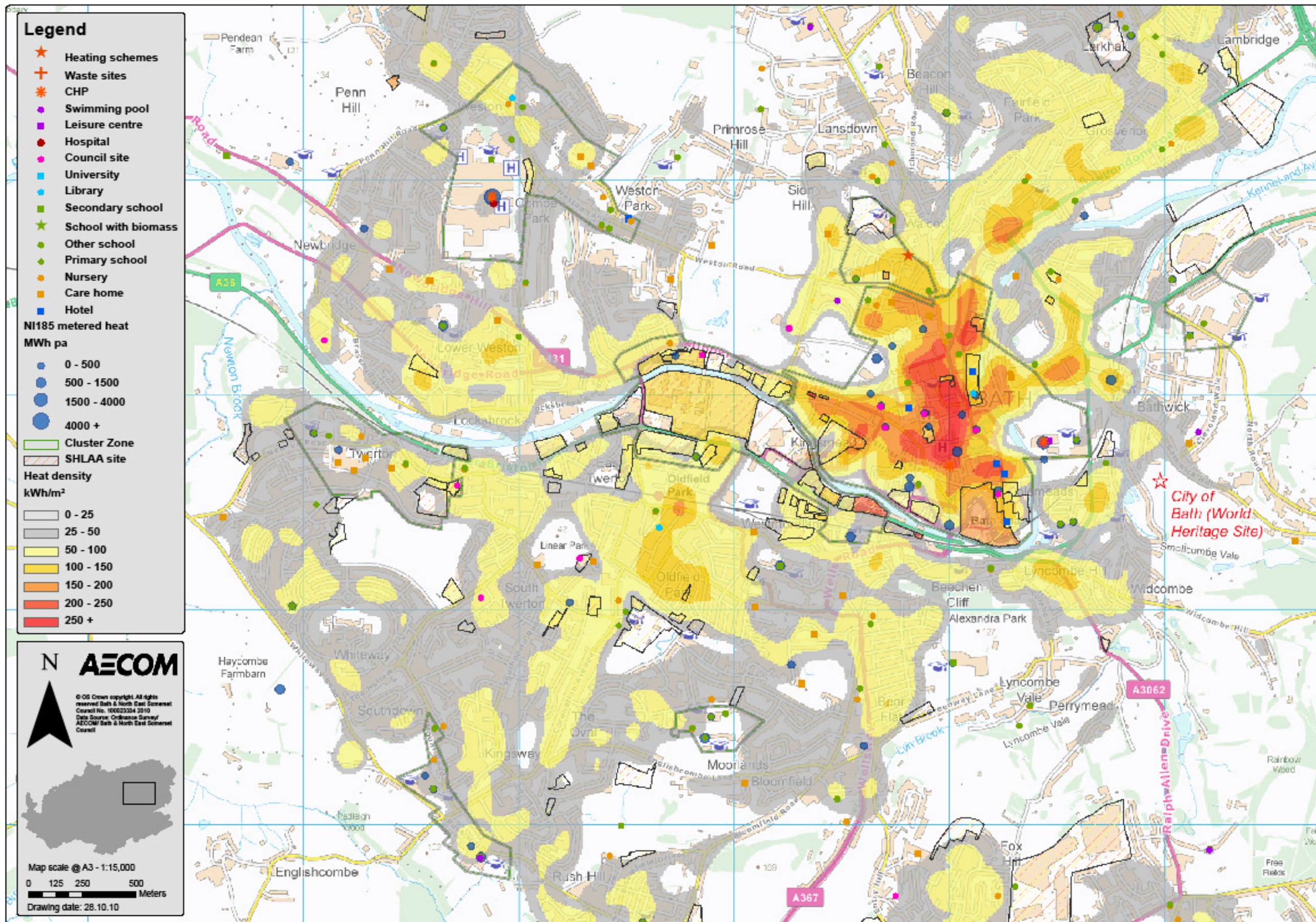
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Map 1: District-wide DH Opportunity Map



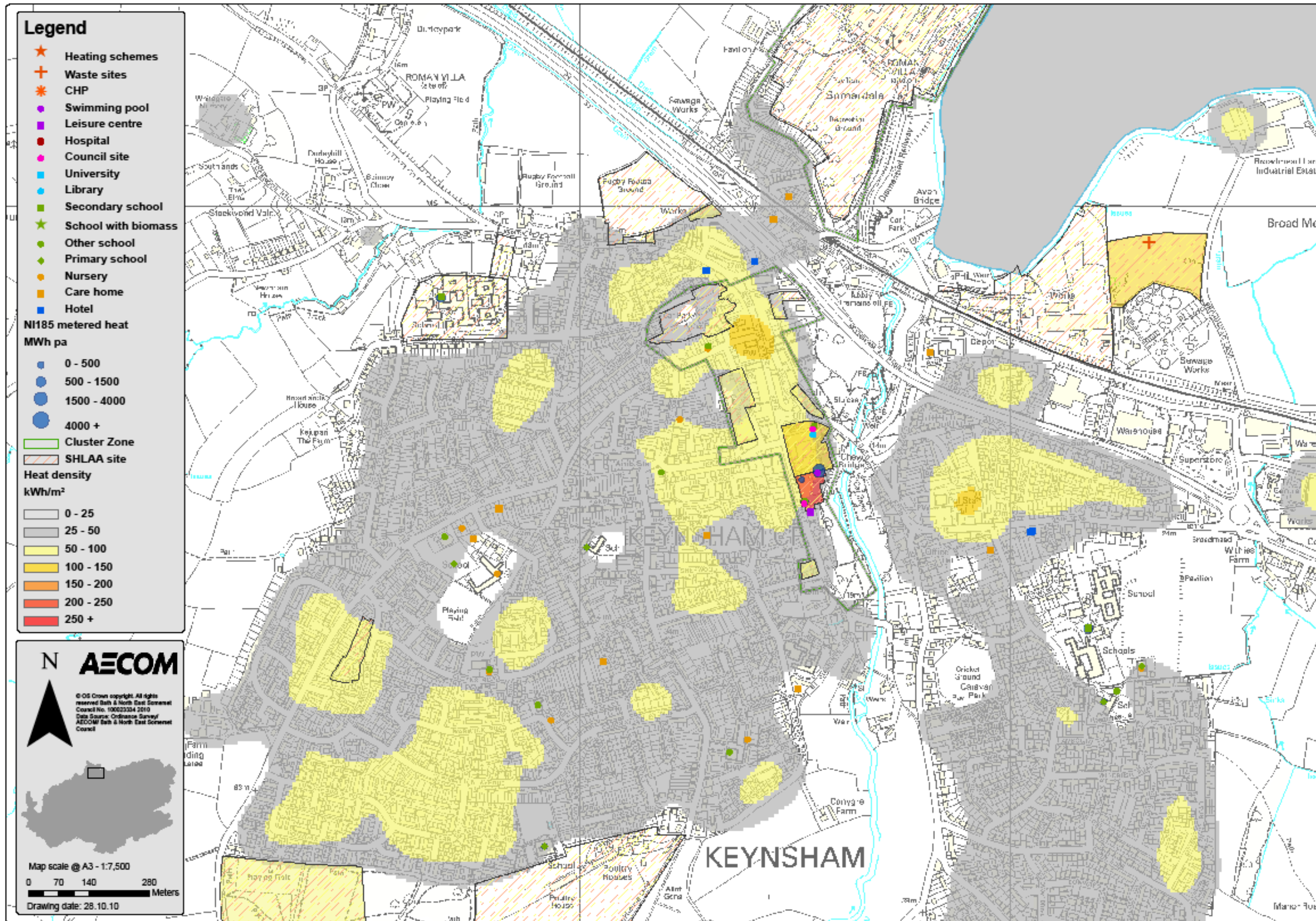
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Map 2: Bath City District Heating Opportunity Map



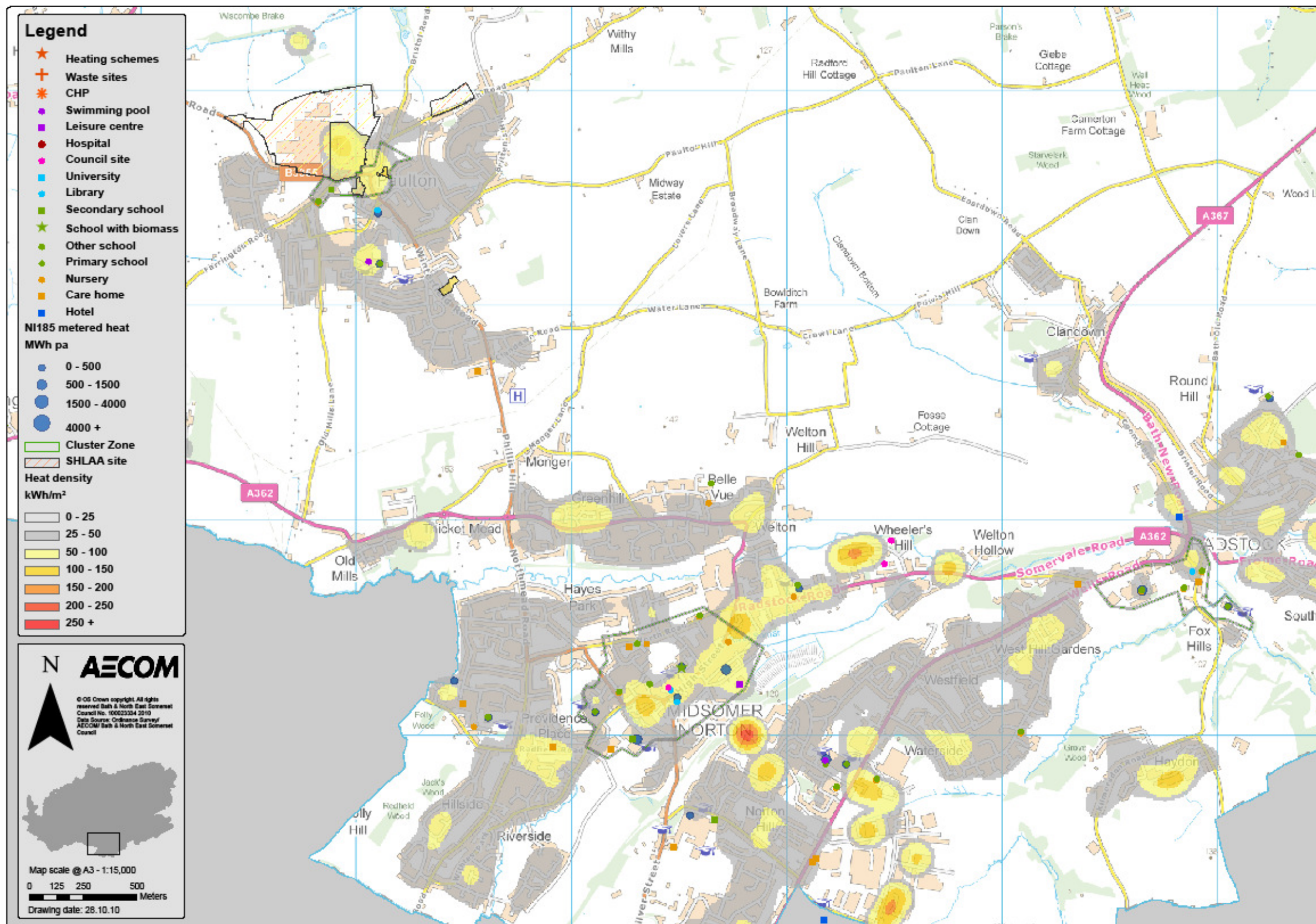
Capabilities on project:
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Map 3: Keynsham District Heating Opportunity Map

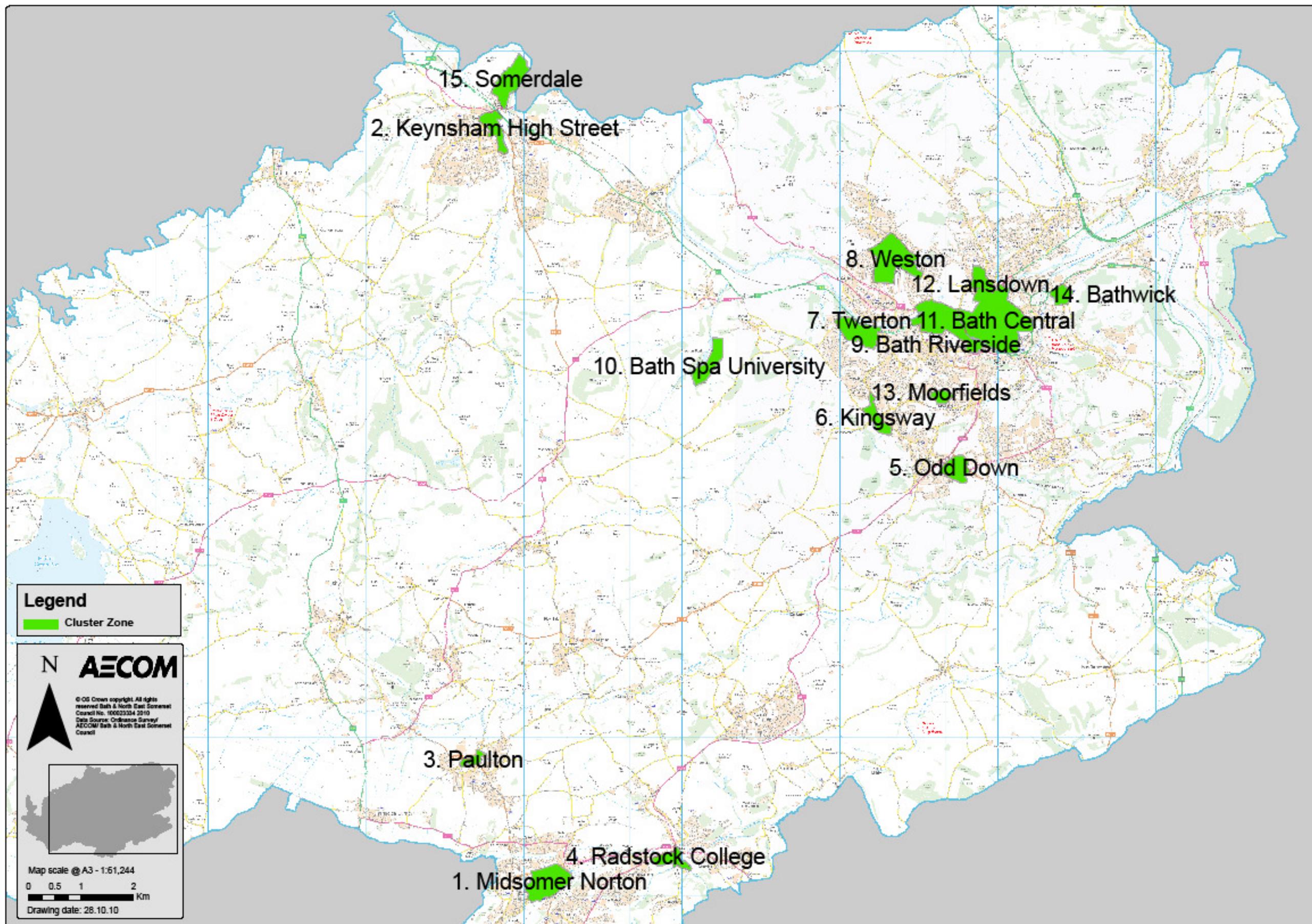


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Map 4: Midsomer-Norton/Radstock Area District Heating Opportunity Map

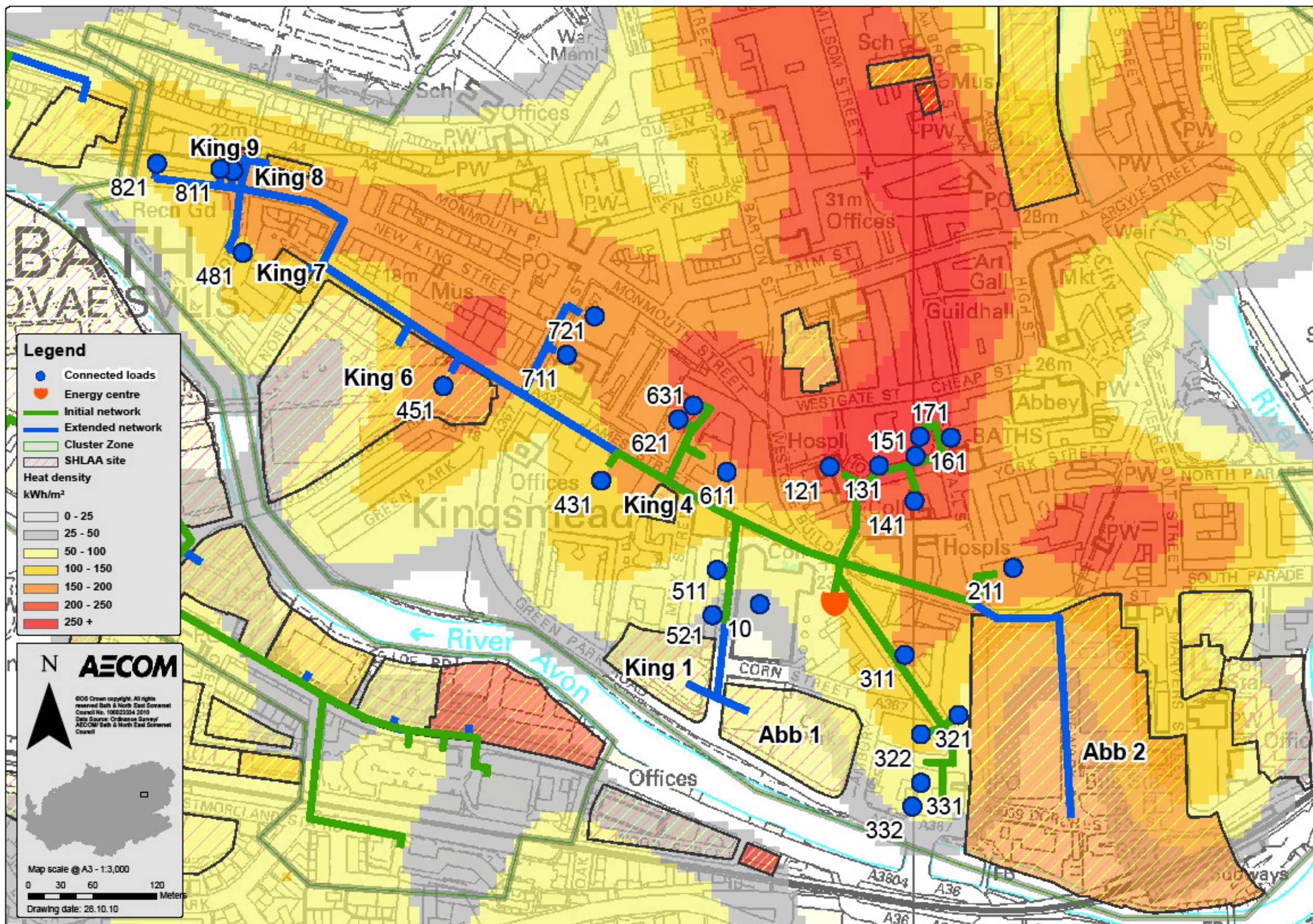


Map 5: District-wide Map showing the long-list of clusters



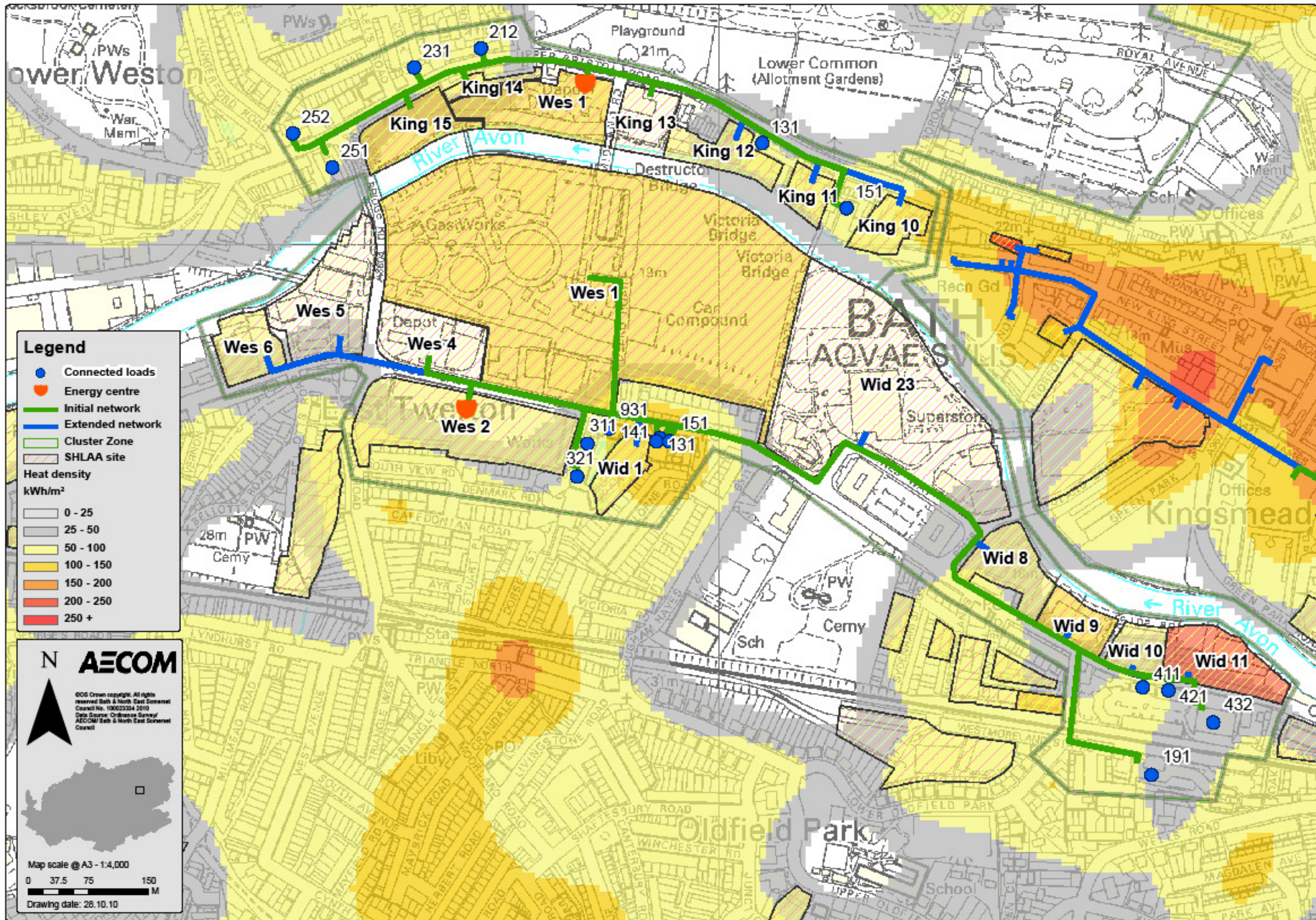
Capabilities on project:
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Map 6: Network Map for Bath City Centre



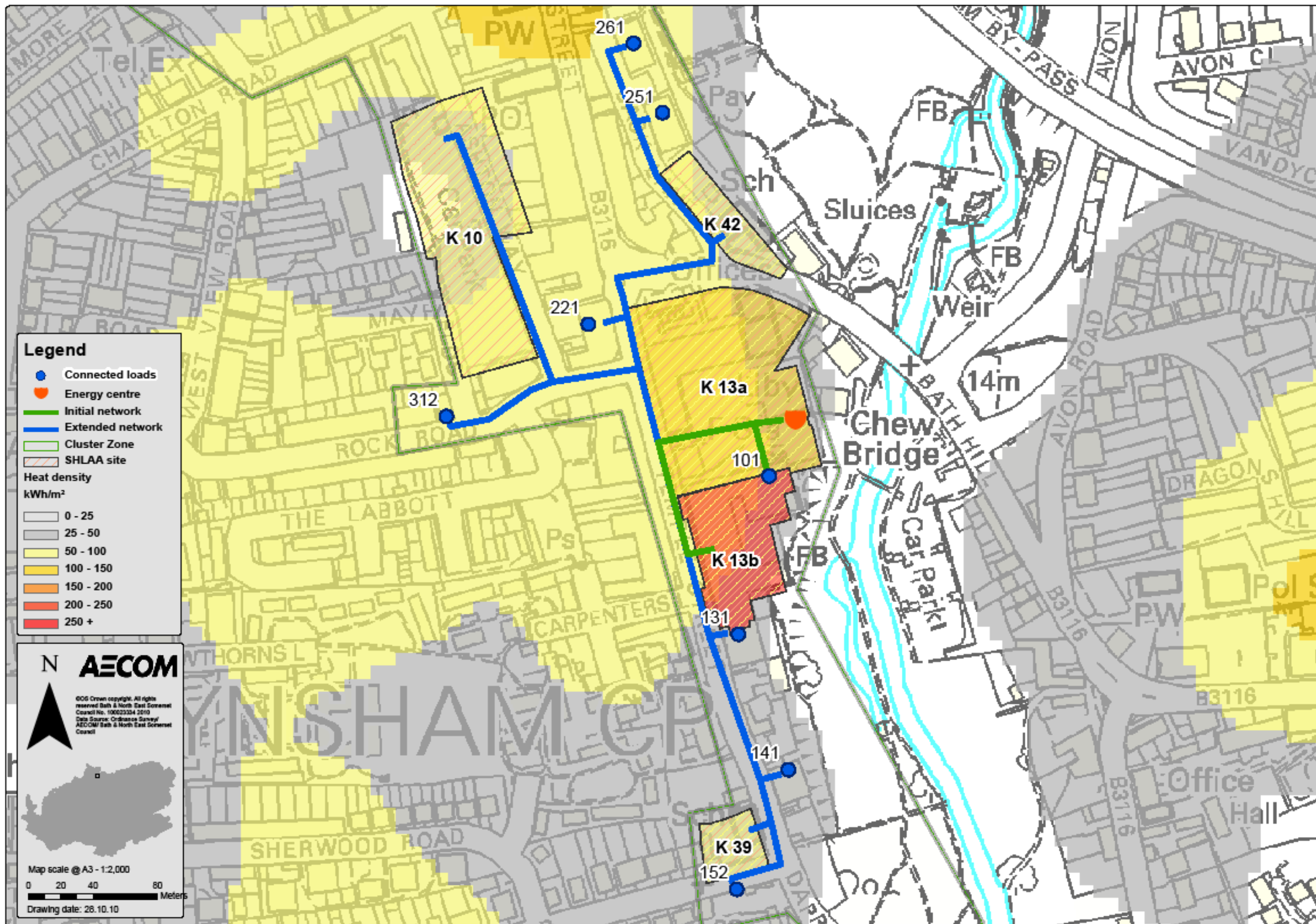
Capabilities on project:
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Map 7: Network Map for Bath Riverside Corridor



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Map 7: Network Map for Keynsham



Appendices

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Appendix A: Meetings and Consultations

Project Team

The following service areas were represented on the Project Team for this study:

- Planning Policy & Environment;
- Sustainability;
- Property; and
- Economic Development & Regeneration.

The Carbon Trust also provided B&NES Council with additional technical support on this Project

Project Meetings

The following meetings were held during the course of the study:

Initial Meeting – 2nd August 2010

Interim Meeting – 31st August 2010

Stakeholder Workshop – 10th September 2010

Presentation to the Project Team and Environmental Sustainability Partnership – 13th October 2010.

A Site Visit to review the route of the network suggested for Bath Central was undertaken on 13th October. Present were members of the Project Team, AECOM and Carbon Trust as well as a representative from Property Services who was able to provide advice on the subsurface

Stakeholder Workshop

Interim findings for this study were tested with stakeholders at a workshop held at the Guildhall on 10th September 2010 which formed part of the Low Carbon Future day. Its aims were to present initial results and identify the areas with the most potential to take forward for further study of financial viability.

The following list outlines the some of the key stakeholders, both within the Council and external, who were represented at the workshop:

From B&NES

- Corporate Sustainability;
- Planning Policy & Environment;
- Property Services;
- Energy Managers;
- Historic Environment;
- Housing;
- Transport;
- Economic Development & Regeneration;
- Libraries; and
- Councillors from the LDF Steering Group and Cabinet

Other key stakeholders

- Bath Spa University;
- B&NES PCT;
- Royal United Hospital,
- Bath University,
- Somer Housing,
- Bath Community Energy,
- Avon Fire & Rescue,
- City of Bath College,
- various B&NES LSP reps including Federation of Bath Residents Associations and Parish Council rep.

Attendees at the workshop were asked to comment on the primary heat clusters that had emerged from detailed spatial analysis of the district heating potential in B&NES. These comments have been summarised below. In addition further follow-up conversations were undertaken with some

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of the key stakeholders who attended, as well as those that were unable to attend on the day, these details are presented in Appendix C.

Bath central

- B&NES is a major land owner and therefore has both a direct and indirect influence on many of the buildings within the centre of the city
- B&NES sits on a board of major city landowners. This could potentially be an influential group.
- Bath City College has an energy centre serving the college site. This contains relatively new plant but does not have a significant amount of additional space.
- Bath City College was due to be refurbished/replaced but this is now currently on hold
- A technical study on the potential to use the hot spring was undertaken – it may be possible to obtain a copy of this report. If possible it would be good to show possible locations where the spring could potentially be an option to consider.
- There are a significant number of vaults underneath much of the city centre which could have a significant impact on the potential routes for subsurface pipes.
- Geothermal heating system is proposed for the abbey using the heat from the thermal springs

Bath city-wide

- St Marks in Larkhall is no longer a development site. Surrounding area comprised of Victorian and social housing.
- A residual waste treatment facility is planned, but not within the City limits.
- Weston gas CHP 2MW will be installed next year. Heating to main building with secondary buildings fired by individual gas CHP units.
- North Bath an area (marked) which has Victorian housing with alleyways running between backs of

houses. “Ideal for installing heating networks”. Grouped garages could site energy centre.

- Fire and ambulance station near Bathwick cluster has a 30kW heating system and may consider installing small CHP system.
- Bath Quays South is at a very early stage, and will be approx. 60-70,000m² of commercial and office space
- A number of new hotel developments in Bath Central
- Vaults underneath large portions of central bath. Services distributed via vaults or beneath flagstones. Major constraint to installing pipework.
- Using river path as conduit difficult due to transco pipes already alongside towpath. Heavily congested service corridor.
- Spring heating study – underfloor heating system proposed for the Abbey. Existing spring at Kingshead.
- City of Bath College undergoing long term redevelopment project – potential to use their energy centre as CHP location.
- Council own approximately 65% of the properties in Bath Central. A GIS layer is available.

Keynsham

- Plans for new town hall include mixed retail use + council offices + library. Expected to be highly thermally efficient, with high IT loads and occupancy. Cooling dominated thermal strategy.
- New council offices are due to open in town centre in early 2012; this could be a prime opportunity to install a network. Old offices over leisure centre will be vacant.
- Possible sites for energy centres include Ashton Way car park or primary school that closed 2-3 years ago.
- There are a number of privately owned care homes behind Ashton Way car park that could benefit from a network.

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- There are many estates with council owned housing west of Keynsham.
- There are 3 fire stations in the area which could provide anchor loads for district heating networks,
- There is an application for expansion of a TESCO store on the edge of Midsommer Norton which includes a proposal for CHP, this is in close proximity to the Old Mills development site.

Midsomer-Norton and Radstock

- New developments in and around Paulton but these are of low density
- A number of development sites coming forward outside of the areas identified: Welton Bibby Baron, Alcan, Old Mills and NRR.

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Appendix B: Methodology and assumptions

Calculating Energy Demands from New developments

Residential

Projected figures for the location, scale and phasing of new residential were taken from the SHLAA database. Heat demands from new residential development was modelled using benchmarks which take into account proposed changes to Building Regulations Part L requirements expected in 2010, 2013 and 2016.

Unit	Area	Source*
Detached	101.61	CLG Zero C. RIA (Hurstwood)
Semi	76.32	CLG Zero C. RIA (Wessex)
End- Terrace	76.32	CLG Zero C. RIA (Wessex)
1 bed flat	43.4	EST NBO Sirocco
2 bed flat	76.6	EST NBO Sirocco
3 bed flat	100.9	EST NBO Sirocco

*Refers to models created by AECOM for other schemes

Non-residential

Projected figures for location, scale and phasing of new non-domestic development were taken from the SHLAA database and from discussion with the project team. CIBSE TM46 benchmarks were used to model the energy demands from these buildings.

CO₂ Emissions Factors

Conversion factors used to calculate CO₂ emissions are shown below. These are based on the emissions factors included in the 2010 Building Regulations Part L, Conservation of fuel and power.

Fuel	CO ₂ emissions kgCO ₂ /kWh delivered
Gas	0.198
Grid Supplied Electricity	0.517

Grid Displaced Electricity	0.521
Biomass*	0.028

*We have used the CO₂ emission factor associated with biomass pellets in this study.

Capital cost assumptions

Capital cost assumptions have been based on recent quotes from suppliers and costs from similar recent schemes.

Element	CO ₂ emissions kgCO ₂ /kWh delivered
CHP	£700-1000/kWe depending on size
Gas Boilers	£100/kW
Biomass Boilers	£100/kW
HIU& Heat meters	Residential - £1000/unit Commercial - £15/kW
Energy Centre costs	Indicative figure based on experience of similar sized schemes
Network costs (pipe/civils/mechanical)	Varies from £500-1200 per metre depending on scheme
Developer contributions	£2000 per dwelling £10/sqm for non-residential.

Fuel prices

Fuel prices have been based on the following reports: "Valuation of Energy Use and Greenhouse Gas Emissions for Appraisal and Evaluation" (January 2010) and "Biomass prices in the heat and electricity sectors in the UK" (January 2010) both produced by DECC and the Treasury.

Some of the key figures are summarised below:

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Fuel	
Electricity domestic	12.3p/kWh in 2010 rising to 18.7p/kWh in 2035
Electricity commercial	9.0/kWh in 2010 rising to 13.7p/kWh in 2035
Gas (commercial)	3.2/kWh in 2010 rising to 3.7p/kWh in 2035
Gas (bulk)	2.3/kWh in 2010 rising to 2.7p/kWh in 2035
Wood Pellets	3.9/kWh in 2010 rising to 4.6p/kWh in 2035
Wood Chips	2.1/kWh in 2010 rising to 2.9p/kWh in 2035

Exported electricity	4.5p/kWh
Heat sales	Set at 20% above commercial gas price to account for the offset of system efficiencies of the gas boilers that would be replaced
RHI	Where assumed this has been taken based on the figures in the February 2010 Consultation document

Energy Sales

Energy sales prices have been set based on the same set of data as the fuel prices but also include some assumptions as detailed below.

Fuel	
Direct Electricity sales	<p>Set at commercial electricity price</p> <p>Keynsham – 1MWh assumed for Town Hall</p> <p>Bath Central – 1MWh assumed for Bath City College</p> <p>BWRS – 10%</p> <p>BWRN – 10%</p>

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Appendix C: Record of contact with key stakeholders

As part of the project numerous stakeholders were contacted to acquire information. A record of the key contacts, details of the discussions and further information is presented below.

Royal United Hospital	
Contact:	Andy House
Details:	andy.house@ruh.nhs.uk
<p>Andy House has confirmed that the heating system on the RUH site is connected to a number of buildings from a central energy centre. There are plans to install a 2MW gas-fired CHP engine which have recently been approved.</p> <p>Andy attended the workshop and suggested that the potential to explore expansion of the RUH network to adjacent buildings could be considered.</p>	

University of Bath	
Contact:	Peter Phelps
Details:	
<p>Peter Phelps was contacted to provide the energy demands for Bath University and confirmed that there is an existing DHN served by gas-fired CHP.</p> <p>Peter has subsequently provided details of the locations and heating demands of University owned student halls of residence within the centre of Bath and suggested that the University would be supportive of connection to a district heating network.</p>	

Bath Spa University	
Contact:	Unknown
Details:	
<p>A representative from Bath Spa attended the workshop and was able to provide some further information on the proposed developments at the main Bath Spa campus. They confirmed that the designs would be seeking to reduce energy consumption and CO₂ emissions and would be aiming to achieve BREEAM Excellent. An energy strategy is being prepared and CHP is being considered.</p>	

Keynsham Town Hall Redevelopment	
Contact:	Derek Quilter (B&NES)
Details:	
<p>Derek Quilter is heading up the proposals for the redevelopment of the Town Hall in Keynsham.</p> <p>He has suggested that the planned design is unlikely to have a significant heating demand due to the nature of the building use although the cooling demands will still be high.</p>	

City of Bath College	
Contact:	Sean Stephenson
Details:	stephensons@citybathcoll.ac.uk 01225328644
<p>City of Bath College have an energy centre located adjacent to the main college building which contains relatively new plant but a significant amount of unused space. It also has an existing flue and space around it (for a carpark).</p> <p>Sean Stephenson attended the stakeholder workshop and suggested that the potential to use the energy centre for a wider network could be explored. He also suggested that it would be possible to provide details of the energy consumption of the college and plans of the energy centre.</p> <p>Following the workshop we returned contact to obtain this information but have not yet received a response.</p>	

Buro Happold	
Contact:	Steve Macey
Details:	
<p>Steve Macey is working on behalf of Crest Nicholson to produce the Energy Strategy for the Bath Western Riverside Site.</p>	

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Steve was able to confirm that the current proposals are to install three energy centres on the site in line with the proposed phasing of the development.

He also confirmed that the potential to connect sites on the north and south of the river had been explored but that the constraints appeared to be too

Carbon Trust

Contact: Barry Knight

Details:

AT a project meeting Barry Knight confirmed that the Carbon Trust is currently in discussions with some of the major supermarkets to encourage them to support and connect to district energy networks.

There are a number of supermarkets planned for development in the district and a number of these are located within or near the key opportunity areas (e.g. the planned TESCO in the Bath Riverside corridor).

Aquaterra

Contact: Jamie Brown (via Michaela Basford)

Details: 01225 486918

Aquaterra have provided details of the energy consumption of their leisure centres within the district to B&NES, who provided this information to us to be taken

Vaults

Contact: Derek Rowe (BATHNES)

Details: Derek.Rowe@BATHNES.GOV.UK

Derek was sent a copy of the network route used for the Bath Centre network assessment and asked to provide comments on the location of the network.

Derek highlighted a number of potential constraints on the identified route, particularly the branch that extends up to the roman baths. Most of the remainder of the route is expected to be largely free of vaults.

Derek has also provided copies of the maps prepared for Property Services which indicate the known vaults in the city.

Archaeology

Contact: Richard Sermon (BATHNES)

Details: 01225 477651

Richard was sent a copy of the network route used for the Bath Centre network assessment and asked to provide comments on the potential constraints presented by archaeological and historical infrastructure.

Richard indicated that the network branch that crosses the line of the old city walls would potentially be constrained by existing archaeological feature. However, he has suggested that this could be avoided if existing interventions, such as existing utility corridors, were used.

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Appendix D: Financial Incentives and Sources of Funding

Renewable Obligations Certificates

The Renewables Obligation requires licensed electricity suppliers to source a specific and annually increasing percentage of the electricity they supply from renewable sources. The current level is 9.1% for 2008/09 rising to 15.4% by 2015/16. The types of technology and the number of ROCs achieved per MWh are outlined in the table below. The value of a ROC fluctuates as it is traded on the open market.

Technology	ROCs/ MWh	Technology	ROCs/ MWh
Hydro	1	Energy from Waste with CHP	1
Onshore wind	1	Gasification/Pyrolysis	2
Offshore wind	1.5	Anaerobic Digestion	2
Wave	2	Co-firing of Biomass	0.5
Tidal Stream	2	Co-firing of Energy crops	1
Tidal Barrage	2	Co-firing of Biomass with CHP	1
Tidal Lagoon	2	Co-firing of Energy crop with CHP	1.5
Solar PV	2	Dedicated Biomass	1.5
Geothermal	2	Dedicated energy crops	2
Geopressure	1	Dedicated Biomass with CHP	2
Landfill Gas	0.25	Dedicated Energy Crops with CHP	2 ⁹
Sewage Gas	0.5		

⁸ What is the Renewables Obligation? (department for Business, Innovation and Skills website <http://www.berr.gov.uk/energy/sources/renewables/policy/renewables-obligation/what-is-renewables-obligation/page15633.html>, accessed August 2009)

⁹ Renewable Obligation Certificate (ROC) Banding (DECC websites <http://chp.defra.gov.uk/cms/roc-banding/>, accessed August 2009)

Feed-in-tariffs

Feed-in-Tariffs were introduced in April 2010 with the aim of providing additional incentive to the uptake of technologies generating electricity in order to overcome the barriers to investment.

The following table shows the technologies that have been included, the tariff levels and the tariff lifetime:

Technology	Scale	Tariff level for new installations in period (p/kWh) [inflated annually]			Tariff lifetime (years)
		Year 1*	Year 2	Year 3	
Anaerobic digestion	<500kW	11.5	11.5	11.5	20
	>500kW	9	9	9	20
Hydro	<15 kW	19.9	19.9	19.9	20
	>15-100 kW	17.8	17.8	17.8	20
	>100 kW-2 MW	11	11	11	20
	>2 MW-5 MW	4.5	4.5	4.5	20
MicroCHP pilot (limited)	<2 kW	10	10	10	10
PV	<4 kW (new build)	36.1	36.1	33	25
	<4 kW (retrofit)	41.3	41.3	37.8	25
	>4-10 kW	36.1	36.1	33	25
	>10-100 kW	31.4	31.4	28.7	25
	>100kW-5MW	29.3	29.3	26.8	25
	Stand alone system	29.3	29.3	26.8	25
Wind	.1.5kW	34.5	34.5	32.6	20
	>1.5-15kW	26.7	26.7	25.5	20
	>15-100kW	24.1	24.1	23	20
	>100-500kW	18.8	18.8	18.8	20
	>500kW-1.5MW	9.4	9.4	9.4	20
	>1.5MW-5MW	4.5	4.5	4.5	20
Existing systems		9	9	9	to 2027

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**Year 1 starts April 2010, after April 2012 tariff levels are set to degress annually although the tariff is fixed from when the system is installed.*

The electricity produced by these technologies will be bought by the utilities at above market prices. These prices will decrease over time to reflect the impact of increasing installation rates on end prices charged to consumers, the goal being to enable industries to “stand alone” at the end of the tariff period.

Renewable Heat Incentive

The Renewable Heat Incentive (RHI) is a parallel scheme to the FIT, which aims to provide a financial incentive for the delivery of heat from low or zero carbon sources.

The following table, taken from the consultation document issued in February 2010, sets out the technologies, tariff levels and tariff lifetimes that have been proposed to date:

Technology	Scale	Proposed tariff (pence/kWh)	Tariff lifetime (years)
Solid biomass	Up to 45 kW	9	15
	45-500	6.5	15
Bioliquids	Up to 45 kW	6.5	15
Biogas on-site combustion	Up to 45 kW	5.5	10
	45-200 kW	5.5	10
Ground source heat pumps	Up to 45 kW	7	23
	45-350	5.5	20
Air source heat pumps	Up to 45 kW	7.5	18
	45-350	2	20
Solar thermal	Up to 20 kW	18	20
	20-100 kW	17	20

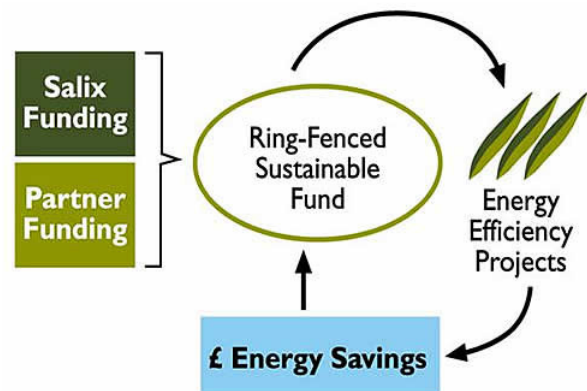
The Government’s Spending Review in October 2010 confirmed that the RHI would be taken forward but the

exact details of the scheme are not expected to be released until Spring 2011.

Salix Finance

This is a publicly funded company designed to accelerate public sector investment in energy efficiency technologies through invest to save schemes. Funded by the Carbon Trust, Salix Finance works across the public sector including Central and Local Government, NHS Trusts and higher and further education institutions. It will provide £51.5 million in interest free loans, to be repaid over four years, to help public sector organisations take advantage of energy efficiency technology .

Salix launched its Local Authority Energy Financing (LAEF) pilot scheme in 2004. The success of this programme has allowed the pilot to be rolled out into a fully fledged local authorities programme.



The Community Infrastructure Levy

The CIL is expected to commence in April 2010 and unlike Section 106 contributions can be sought ‘to support the development of an area’ rather than to support the specific development for which planning permission is being sought.

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Therefore, contributions collected through CIL from development in one part of the charging authority can be spent anywhere in that authority area. This makes CIL potentially an ideal mechanism for operating a carbon fund.

Carbon Emission Reduction Target (CERT)

The Carbon Emissions Reduction Target is a legal obligation on the six largest energy suppliers to achieve carbon dioxide emissions reductions from domestic buildings in Great Britain. Local authorities and Registered Social Landlords (RSL) can utilise the funding that will be available from the energy suppliers to fund carbon reduction measures in their own housing stock and also to set up schemes to improve private sector housing in their area.

The main different types of measures that can receive funded under CERT are:

- Improvements in energy efficiency
- Increasing the amount of electricity generated or heat produced by microgeneration
- Promoting community heating schemes powered wholly or mainly by biomass (up to a size of three megawatts thermal)
- Reducing the consumption of supplied energy, such as behavioural measures.

Section 106 Agreements

Section 106 agreements are planning obligations in the form of funds collected by the local authority to offset the costs of the external effects of development, and to fund public goods which benefit all residents in the area

The Community Energy Saving Programme (CESP)

This is a £350million programme for delivering “whole house” refurbishments to existing dwellings through community based projects in defined geographical areas.

This will be delivered through the major energy companies and aims to deliver substantial carbon reductions in dwellings by delivering a holistic set of measures including solid wall insulation, microgeneration, fuel switching and connection to a district heating scheme. Local authorities are likely to be key delivery partners for the energy companies in delivering these schemes.

CESP has two grant initiatives, both are available to not-for-profit community based organisations in England.

Prudential borrowing and bond financing

The Local Government Act 2003 empowered Local Authorities to use unsupported prudential borrowing for capital investment. It simplified the former Capital Finance Regulations and allows councils flexibility in deciding their own levels of borrowing based upon its own assessment of affordability. The framework requires each authority to decide on the levels of borrowing based upon three main principles as to whether borrowing at particular levels is prudent, sustainable and affordable. The key issue is that prudential borrowing will need to be repaid from a revenue stream created by the proceeds of the development scheme, if there is an equity stake, or indeed from other local authority funds (e.g. other asset sales).

Currently the majority of a council’s borrowing, will typically access funds via the ‘Public Works Loan Board’. The Board’s interest rates are determined by HM Treasury in accordance with section 5 of the National Loans Act 1968. In practice, rates are set by Debt Management Office on HM Treasury’s behalf in accordance with agreed procedures and methodologies. Councils can usually easily and quickly access borrowing at less than 5%.

The most likely issue for local authorities will be whether or not to utilise Prudential Borrowing, which can be arranged at highly competitive rates, but remains ‘on-balance sheet’ or more expensive bond financing which is off-balance

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sheet and does not have recourse to the local authority in the event of default.

Best Value

Local authorities have the right to apply conditions to sales of their own land, whereby a lower than market value sale price is agreed with the developer in return for a commitment to meet higher specified sustainability standards. Rules governing this are contained within the Treasury Green Book which governs disposal of assets and in within the Best Value - General Disposal Consent 2003 'for less than best consideration without consent'. It is our understanding that undervalues currently have a cap of £2 million without requiring consent from Secretary of State.

Local Asset-Backed Vehicles

LABVs are special purpose vehicles owned 50/50 by the public and private sector partners with the specific purpose of carrying out comprehensive, area-based regeneration and/or renewal of operational assets. In essence, the public sector invests property assets into the vehicles which are matched in case by the private sector partner.

The partnership may then use these assets as collateral to raise debt financing to develop and regenerate the portfolio. Assets will revert back to the public sector if the partnership does not progress in accordance with pre-agreed timescales through the use of options.

Control is shared 50/ 50 and the partnership typically runs for a period of ten years. The purpose and long term vision of the vehicle is enshrined in the legal documents which protect the wide economic and social aims of the public sector along with pre-agreed business plans based on the public sector's requirements.

Many local authorities are now investigating this approach, with the London Borough of Croydon being the first LA to establish a LABV in November 2008. LABVs are still

feasible if adapted to suit the current macro economy. The first generation of LABVs were largely predicated on a transfer of assets from the public sector to a 50/50 owned partnership vehicle in which a private sector developer/investor partner invested the equivalent equity usually in cash. The benefits were in some instances compelling.

This transfer of assets suited the public sector given yields and prices had never been stronger. There is now a need for a second generation of LABVs that deliver many of the recognised benefits of LABVs as set out above but protect the public sector from selling 'the family silver' at the bottom of the market.

The answer may lie in LABV Mark 2 – a new model that is emerging based on the use of property options that will act as incentives. A better acronym would be LIBVs (Local Incentive Backed Vehicle) in which the public sector offers options on a package of development and investment sites in close 'place-making' proximity. The private sector partner is procured, a relationship built, initial low cost 'soft' regeneration is commenced such as; understanding the context, local consultation, masterplanning, site specific planning consents etc. Thereafter, as and when the market returns, the sites and delivery process will be ready to respond, options will be exercised, ownership transferred and a price paid that reflects the market at the time.

JESSICA

The Joint European Support for Sustainable Investment in City Areas (JESSICA) is a policy initiative of the European Commission and European Investment Bank that aims to support Member States to exploit financial engineering mechanisms to bring forward investment in sustainable urban development in the context of cohesion policy.

Under proposed new procedures, Managing Authorities in the Member States will be allowed to use some of their

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Structural Fund allocations, principally those supported by ERDF, to make repayable investments in projects forming part of an 'integrated plan for sustainable urban development' to accelerate investment in urban areas. Funds will be invested in the form of equity, loans or guarantees, and returns arising from successful investments will be returned to the fund.

Intelligent Energy Europe

The objective of the Intelligent Energy – Europe Programme aims to contribute to secure, sustainable and competitively priced energy for Europe. It covers action in the following fields:

- Energy efficiency and rational use of resources (SAVE)
- New and renewable energy resources (ALTENER)
- Energy in transport (STEER) to promote energy efficiency and the use of new and renewable energies sources in transport

The amount granted will be up to 75% of the total eligible costs for projects and the project duration must not exceed 3 years.

European Local Energy Assistance (ELENA) technical assistance facility

To facilitate the mobilisation of funds for investments in sustainable energy at local level, the European Commission and the European Investment Bank have established the ELENA technical assistance facility financed through the [Intelligent Energy-Europe](#) programme. ELENA support covers a share of the cost for technical support that is necessary to prepare, implement and finance the investment programme, such as feasibility and market studies, structuring of programmes, business plans, energy audits, preparation for tendering procedures – in short,

everything necessary to make cities' and regions' sustainable energy projects ready for EIB funding.

Many EU cities and regions have recently started to prepare or are initiating large energy efficiency and renewable energy proposals to tackle energy and climate change challenges. However, most of them are still at the conceptual stage and their implementation is proving difficult because many regions and cities, particularly medium to small ones, often do not have the technical capacity to develop large programmes in this area. ELENA helps public entities to solve such problems by offering specific support for the implementation of the investment programmes and projects such as retrofitting of public and private buildings, sustainable building and energy-efficient district heating and cooling networks.

Biomass Grants

If grown on non-set-aside land then energy crops are eligible for £29 per hectare under the Single Farm Payment rules (set-aside payments can continue to be claimed if eligible). The Rural Development Programme for England's Energy Crops Scheme also provides support for the establishment of SRC and Miscanthus. Payments are available at 50% of actual establishment costs, and are subject to an environmental appraisal to help safeguard against energy crops being grown on land with high biodiversity, landscape or archaeological value.

Local Authorities Carbon Management Programme

Through the Local Authority Carbon Management Programme, the Carbon Trust provides councils with technical and change management guidance and mentoring that helps to identify practical carbon and cost savings. The primary focus of the work is to reduce emissions under the control of the local authority such as buildings, vehicle fleets, street lighting and waste.

Capabilities on project:
Building Engineering

Participating organisations are guided through a structured process that builds a team, measures the cost and carbon baseline (carbon footprint), identifies projects and pulls together a compelling case for action to senior decision makers. Carbon Trust consultants are on hand throughout the ten months. Direct support is provided through a mixture of regional workshops, teleconferences, webinars and national events. The Programme could provide a useful mechanism for the Council to address its carbon emissions of which energy planning and delivery will be an important part.