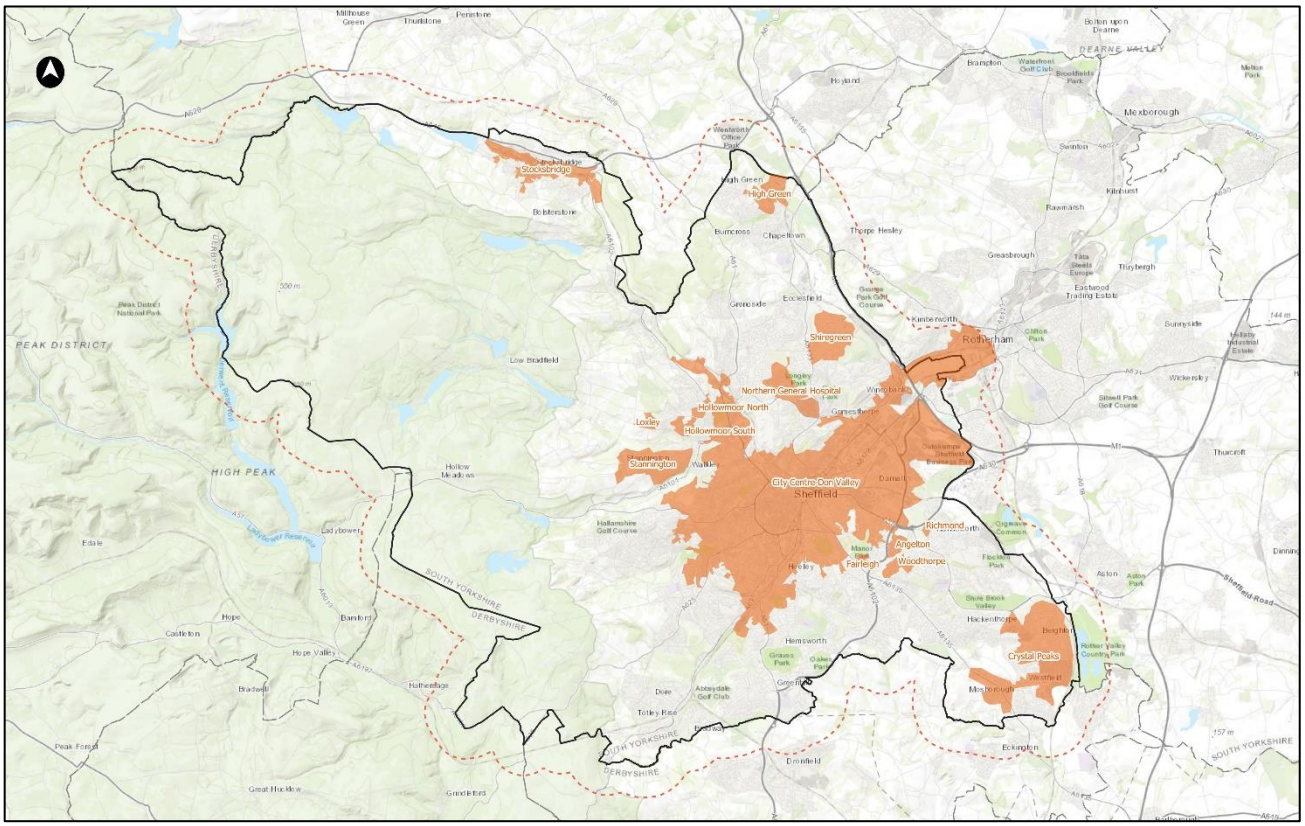
Department for Energy Security & Net Zero

Sheffield

Heat Network Zoning

Zone Opportunity Report



February 2025

Disclaimer

Please read the following licence conditions thoroughly to understand your responsibility for use of this report and data presented within it.

This report contains outputs from the Heat Network Zoning Pilot Programme. The Pilot was undertaken prior to full details of the Heat Network Zoning policy being available. Therefore, the contents, including data shown in maps, technical and economic data within the report, are likely to change and potentially sensitive information is withheld. No part of this report shall be relied upon for any business decisions.

Acknowledgements

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Contents

Executive Summary

About Sheffield: Sheffield is a unitary authority with a population of around 556,000, known for its green spaces and major manufacturing centre, producing high-quality steel.

Local Energy Policy: Sheffield City Council declared a climate emergency in 2019 and set a Net Zero target by 2030 for its own operations, followed by a 10-Point Plan for Climate Action in 2022.

Existing heat networks: Two significant heat networks (Sheffield District Energy Network and Blackburn Meadows) are both actively planning expansion of their networks. Sheffield is a prioritised Advanced Zoning Programme (AZP) city.

Zones identified: 14 potential heat network zones were identified in Sheffield, with an overall heat demand of 1,200GWh/yr for all buildings required to connect.

Strategic heat network zones: Two zones are considered strategic. The overall heat demand for all buildings required to connect these zones is 1,100GWh/yr.

Key heat demands: The overall heat demand for buildings connected to the initial zone opportunities is 550GWh/yr. Some of the largest buildings include the hospitals, and universities.

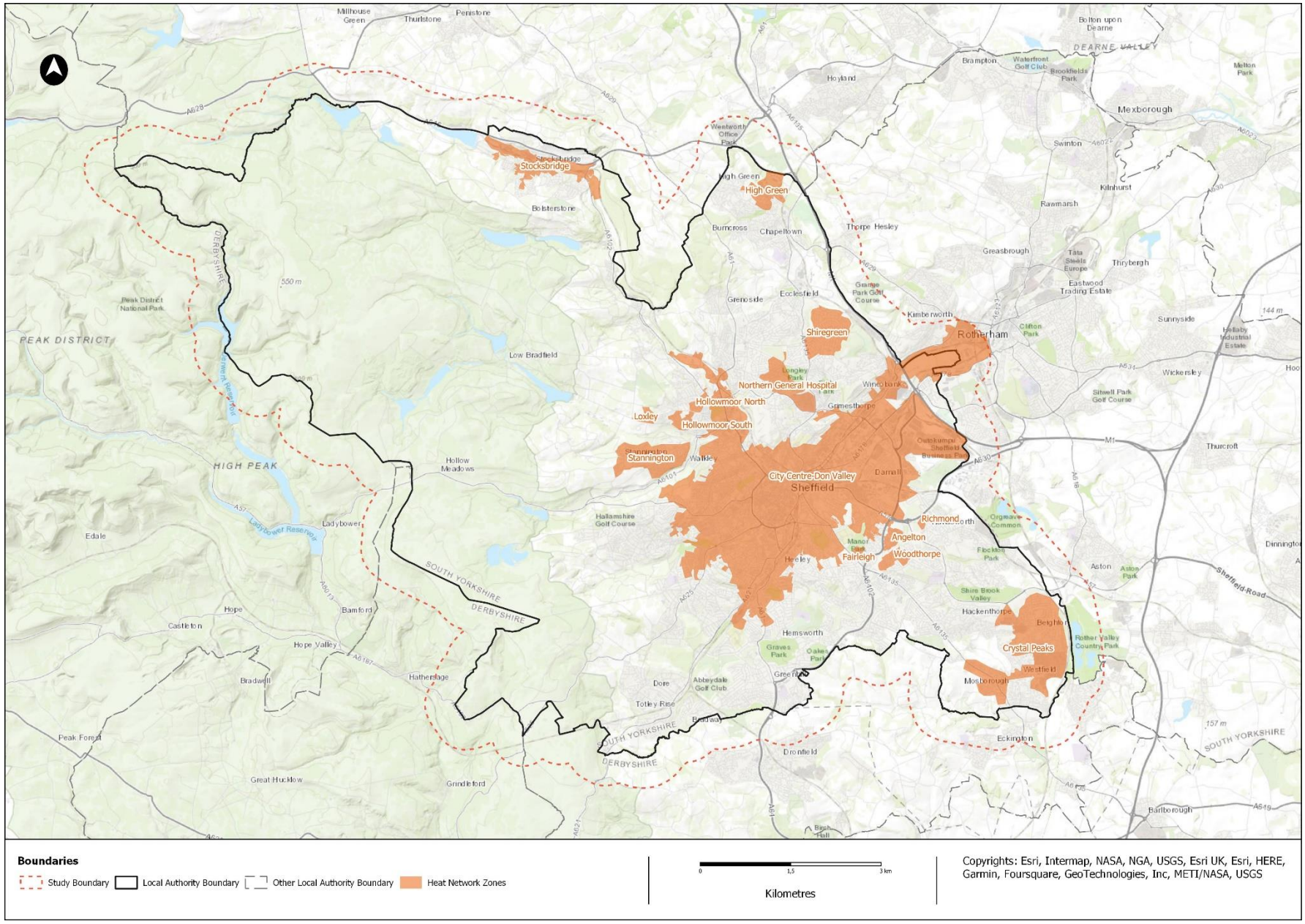
Key heat sources: Potential heat sources include the energy from waste plant, waste heat from industry, mine water, and air source heat pumps.

Estimated CapEx: The high-level estimate of capital expenditure to network all buildings required to connect in all zones is approximately £1.1bn, of which the initial zone opportunities amount to approximately £500m.

Other heat network zones: Smaller heat network zones were identified in areas such as Crystal Peaks, Shiregreen, Stannington, Stocksbridge and High Green.

Carbon savings: The initial zone opportunities identified could deliver carbon savings of more than 85ktCO_{2e} annually.

Figure 1: Overview of Heat Network Zones in Sheffield



1) Introduction

Heat networks will play a crucial role in decarbonising heat in buildings. Heat networks take heating, cooling or hot water from a central source(s) and deliver it to a variety of premises such as public buildings, shops, offices, hospitals, universities, and homes. They are also an important part of securing the UK's energy independence through local, low carbon heat sources and reducing the cost of living through efficient, affordable heating in densely populated areas. Analysis shows that heat networks could provide about 20% of total heat by 2050. They currently provide about 3%.

The Department for Energy Security and Net Zero (DESNZ) is enabling the development of heat network infrastructure through a range of targeted funding, policy and legislative support to de-risk projects and attract investment. The Energy Act 2023 establishes the regulatory framework for heat networks in Great Britain and provides powers to introduce heat network zoning in England through secondary legislation. A heat network zone (HNZ) is a formally designated geographical area in England where heat networks are expected to provide the lowest-cost solution for decarbonising heating.

Under heat network zoning, central and local government will work with industry and local stakeholders to identify and designate areas of England where heat networks are expected to be the lowest-cost solution to decarbonising heat. Heat network zoning will be essential to speeding up the development of new heat networks and we hope to catalyse growth where it's most needed.

Heat network zoning will significantly increase private sector investment in the sector by removing the barriers which currently limit the pace of developing large scale heat networks. It will also give local communities the tools to accelerate the development of heat networks in their own areas and ensure that more homes and businesses can have access to greener, cheaper heat. It also has the potential to create tens of thousands of jobs across the country.

This report shows the Pilot programme outputs for Sheffield and is intended to showcase potential heat network zones in the city. The report indicates the heat network investment opportunity at a city scale, the potential location of heat network zones, and key opportunities for initial heat network development within those potential zones

Please note that all information presented in this report, including the location of identified heat network zones, is subject to change. These are the findings of Pilot programme that were developed alongside the emerging Heat Network Zoning policy and therefore reflect our understanding at a moment in time. As the methodology improves, we will update these reports to improve our understanding of how heat network zoning may be rolled out in each area. Any potential zones that are identified fully, or partly, in an adjacent local authority area will need to be discussed further once local zone co-ordinators are established.

Heat Network Zoning Pilot Methodology

Heat network zones will be identified using a standardised national zoning methodology[1]. The Heat Network Zoning Pilot Programme (hereafter Pilot programme) set out to develop a process to identify potential zones in a consistent and standardised manner across a range of towns and cities in England. The programme was fully funded and led by DESNZ, working alongside 28 Local Authorities, and multiple consultancy firms, to develop and test this approach at a local level. Much of the underlying work was completed in 2023 to early 2024 and therefore will not be up to date and subject to change. Whilst the final outputs are supported by each Local Authority, they do not reflect an approved, endorsed, or adopted position on how zones may be delivered. DESNZ' involvement does not preclude open competition in the future and does not represent endorsement for the plans presented.

Lessons from the Pilot have been used to inform the development of the Heat Network Zoning policy. This includes improvements to the identification approach, wider policy design and the impacts of the policy on a range of stakeholders. Once the response to the heat network zoning consultation is published, we will update the methodology to reflect the final policy position. The key concepts, definitions and complementary workstreams relevant to this report are introduced below. For a fuller description of the Heat Network Zoning policy, and up to date information regarding its implementation, please visit https://www.gov.uk/government/collections/heat-network-zoning.

Heat Network Zone Identification

Heat network zones will be identified using a standardised national zoning methodology. The December 2023 consultation on Heat Network Zoning proposes that the methodology will consist of two stages:

1. a national mapping exercise (using a data-led spatial energy model – the National Zoning Model, (or NZM), to identify indicative heat network zones across England;
2. a refinement stage where relevant local stakeholders will input to the review and refinement of potential heat network zones prior to formal designation.

For the purposes of this study, indicative heat network zones have been identified using a prototype version of the NZM. Indicative zones were then refined by technical consultants with input from local stakeholders. The NZM outputs are already of considerably higher quality than those shared for this work and therefore these reports will improve over time.

This study split heat network zones into two different categories. These are **'strategic'** zones – the largest zones which are generally seen as strategically significant to developing heat networks in an area; and **'other'** zones – which are generally smaller and discrete. These are terms specific to the Pilot programme and the report focuses primarily on the strategic zones.

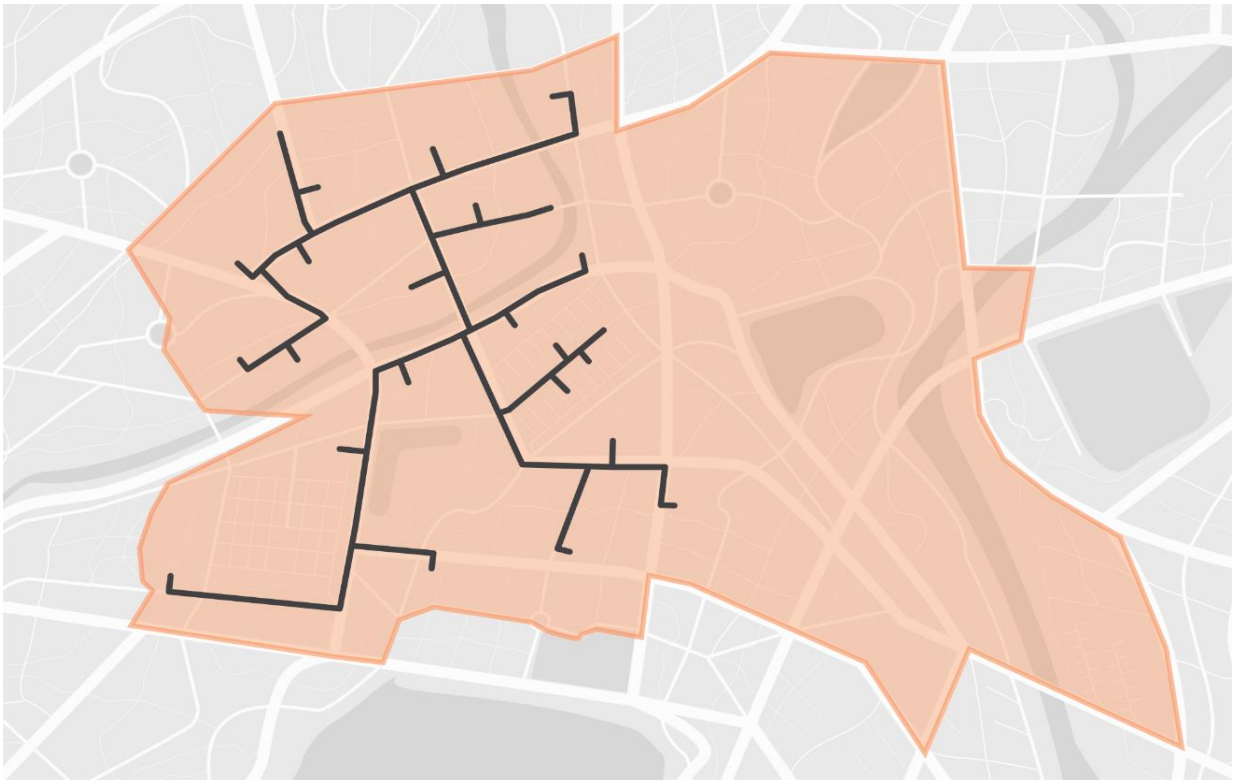
[1] More information can be found in the Heat Network Zoning Methodology Statements (Appendix 3, 4 & 5)

Initial Zone Opportunities

Alongside the identification of potential heat network zones, the Pilot programme has attempted to define areas within zones where the most attractive heat network development opportunities might exist. For the purposes of this programme *only* these are called an “initial zone opportunity” (or IZO). The approach considered economic viability, investment scale and returns, decarbonisation impact and deliverability. They were developed solely around buildings which could be required to connect[2] under the proposed Heat Network Zoning policy and did not consider potential voluntary connections.

Initial zone opportunity design targeted a linear heat density (LHD) of 4MWh/m/yr, for the existing built environment. This is considered a relatively low proxy for economic viability with the heat network sector in England. A more flexible approach was used for new development sites, where different economic success criteria are likely to be applied. To standardise the way opportunities were assessed, the IZOs presented in this report may differ from, or overlap with, existing or planned heat network infrastructure. Campus style heat networks (e.g. in hospitals or university campuses) were considered as potential heat loads with a single point connection. Figure 2 below shows an example of a heat network zone and an IZO.

Figure 2: Illustration of a Heat Network Zone (HNZ) and an Initial Zone Opportunity (IZO)



[2] The building categories being considered as required to connect include new developments, large non-domestic buildings, and communally heated residential blocks as described in Heat Network Zoning Consultation (2023)

Study Scope

This document is presented as a zone opportunity report as it was developed in advance of the final policy design. As such, the report does not include:

- references to the **central authority** or **zoning co-ordinator** roles;
- assumptions about rights of **existing heat networks,** or **zone delivery areas**;
- an options appraisal on which **routes to market** may be taken;
- calculations on the **cost of heat** (connection/tariffs) to specific buildings**;**
- any inferences as the suitability for **public/private sector delivery** unless it's matter of fact (existing network or Heat Network Investment Project/Green Heat Network Fund project);
- references to **local community benefit** or **consumer protection** (subject to a live consultation).

In the future, it is intended that a document, similar in style, will be produced to incorporate these policy design aspects and be used as a Zone Market Prospectus (ZMP) to market heat network zoning opportunities in an area. Further detail on the methodology and initial zone opportunity criteria is provided in Appendix 4 and Appendix 5.

Advanced Zoning Programme

The Advanced Zoning Programme (AZP) is working with 19 areas to support the construction of new zone scale heat networks as quickly as possible following the launch of heat network zoning in 2025. Amongst the programmes aims are to accelerate the delivery and construction of heat network zones; develop best practice guidance; provide project development support services; and promoting market transformation ready for the national rollout of Heat Network Zoning policy.

The programme builds upon lessons learnt from the Pilot programme and these outputs. In October 2024, DESNZ announced that ground-breaking heat network schemes in Leeds, Plymouth, Bristol, Stockport, Sheffield, and two more in London will receive prioritised support to advance to construction by the end of 2026.

AZP uses the latest zoning methodology (i.e. developed after the Pilot programme) and has undertaken further detailed development work with local stakeholders to further improve confidence and accuracy. The programme may also have applied local strategic and commercial considerations and therefore the opportunities may differ slightly from those presented here, using a national standardised approach. Where there is overlap, AZP studies should be considered more appropriate for use than the outputs from this Pilot programme.

2) Sheffield Heat Networks Context

2.1) Sheffield City Overview

Sheffield City Council (SCC) is the unitary authority for the metropolitan borough of Sheffield in South Yorkshire and part of the Yorkshire and Humber region. It is also one of the four areas that form the South Yorkshire Mayoral Combined Authority alongside Rotherham, Barnsley and Doncaster.

Sheffield has a population of 556,000, the fourth largest city population in England and is known for its natural beauty, with a third of its area in the Peak District National Park. Hills dominate the landscape linked by river valleys that provided power for the cutlery and tool makers at the start of the industrial transformation of the city. By the mid-19th century, Sheffield was regarded as the foremost steel manufacturing centre in the world. Sheffield continues to be a major steel manufacturer with a particularly strong reputation for producing high-quality 'special' steels.

Around 40,000 social housing properties are owned and rented by SCC with a further 18,000 properties provided by housing associations.

2.2) Sheffield Net Zero Targets and Commitments

SCC has set an ambitious target to reduce Council emissions by 2030. The commitment to achieve this goal is outlined in SCC's Climate Emergency Declaration, which was passed in 2019 and followed by its "10 Point Plan for Climate Action"[3] in 2022.

The 10-point plan for Climate Action has the following strategic objectives:

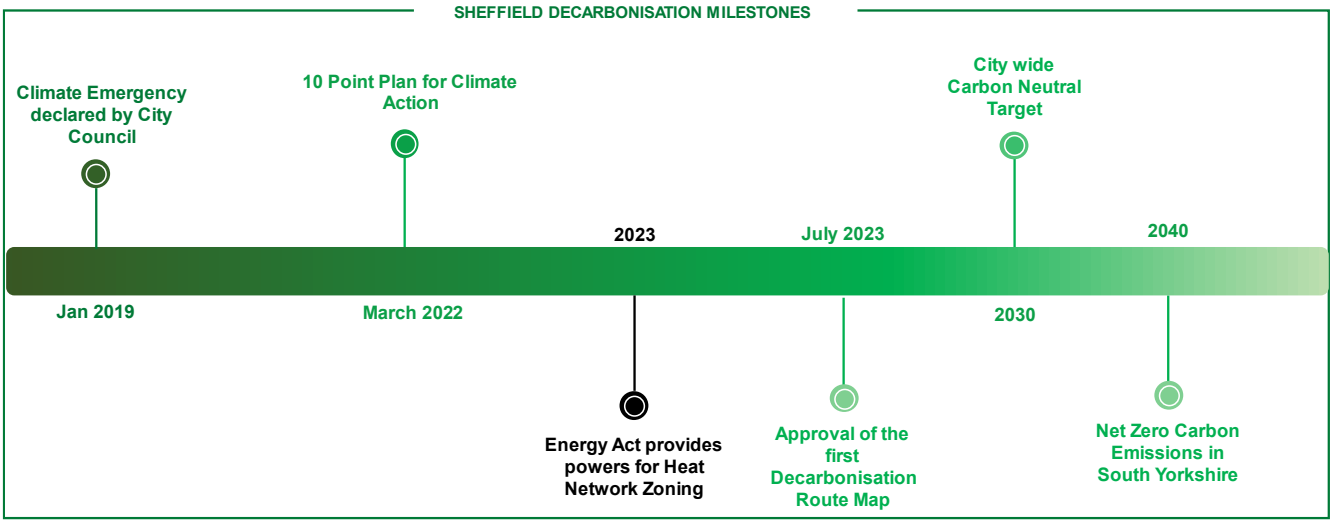
- We will put climate at the centre of our decision-making
- We will be proactive in finding ways to resource the action that is needed
- We will act in a way which supports social justice
- We will work towards reducing Council emissions to net zero by 2030
- We will work to bring the city together to make the changes we need
- We will work with the city to develop route maps for the areas where change needs to happen
- We will work with and support people, businesses and organisations to take the action that is needed
- We will work to build the skills and economy we need for the future
- We will work to ensure we have the planning and infrastructure we need for the future
- We will prepare the city to adapt for a changing climate

[3] Sheffield City Council (2021) Available at: https://democracy.sheffield.gov.uk/documents/s48339/10-Point%20Plan%20Appendix.pdf

SCC is committed to expanding heat networks as a key driver in achieving its decarbonisation targets. The growth of new or existing heating infrastructure will result in a significant shift from carbon-sourced heating to renewable-sourced heating in many buildings, leading to major carbon emission reduction.

Figure 3, below, summarises key dates in SCC's plans for decarbonisation and demonstrates their progress towards decarbonisation targets.

Figure 3: Sheffield Decarbonisation Milestones



2.3) Delivering Heat Networks in Sheffield

Two heat networks are established in the city, operated by Veolia and E.ON respectively.

Veolia currently operates the city's first heat network, established in the 1970s. It has since expanded across the city centre, connecting 125 buildings. However, numerous buildings remain unconnected, presenting significant opportunities for substantial and efficient network expansion. The network utilises the city's waste as its heat source, with Veolia also serving as the waste contractor. Veolia's concession contract for the heat network with SCC is set to expire in July 2038. Upon expiration, SCC is poised to take over as both the owner and operator of the network, unless an extension is negotiated with Veolia, or a new operator is appointed.

E.ON owns and operates its network which it intends to expand significantly. The E.ON network is served by burning waste wood at the Blackburn Meadows Biomass Power Plant.

Heat Network Expansion Plans: Both the existing E.ON and Veolia heat networks are actively planning for heat network expansion with significant heat demands close to their existing pipe routes. Additional heat sources will be required, with potential sources including local industry, public sector utilities and mine water heat.

Both universities in Sheffield have heat network connections and are interested in making further connections. Site visits through a Heat Network Development Unit (HNDU) feasibility

study have established energy centre locations and dimensions that might enable energy storage as well as provide space for heat exchangers or other necessary connection technologies.

SCC invested in match funding alongside contributions from both E.ON and Veolia to secure grants for HNDU feasibility studies. Council officers across departments have been supportive in progressing the Pilot programme, AZP and HNDU studies. Data for all the SCC housing stock has been supplied and the planning department has helped to validate potential energy centre locations and offered support in streamlining the route to construction.

SCC is actively promoting and supporting the development of heat networks in the city with DESNZ and its public and private sector partners, looking to accelerate the construction of networks in the strategic zones by the end of 2025. SCC's approach aims to leverage private sector expertise and resources to enhance the efficiency and reach of the heat networks, driving forward the city's commitment to sustainable and innovative energy solutions.

See Section 3.2.2 for more information related to the existing E.ON and Veolia existing heat networks. Please refer to Appendix 2: Data Room Resources for further information about the evidence compiled for heat network opportunities in Sheffield. This includes a stakeholder directory and records of interactions with those stakeholders as well key studies and reports.

2.4) Sheffield Heat Network Zones

A total of 14 potential HNZs were identified in Sheffield, with two considered Strategic HNZs. Figure 4 shows the study area boundary as well as the boundaries of all HNZs identified within Sheffield. The HNZs have been allocated a meaningful name agreed as relevant from a local perspective, these names are shown on the map.

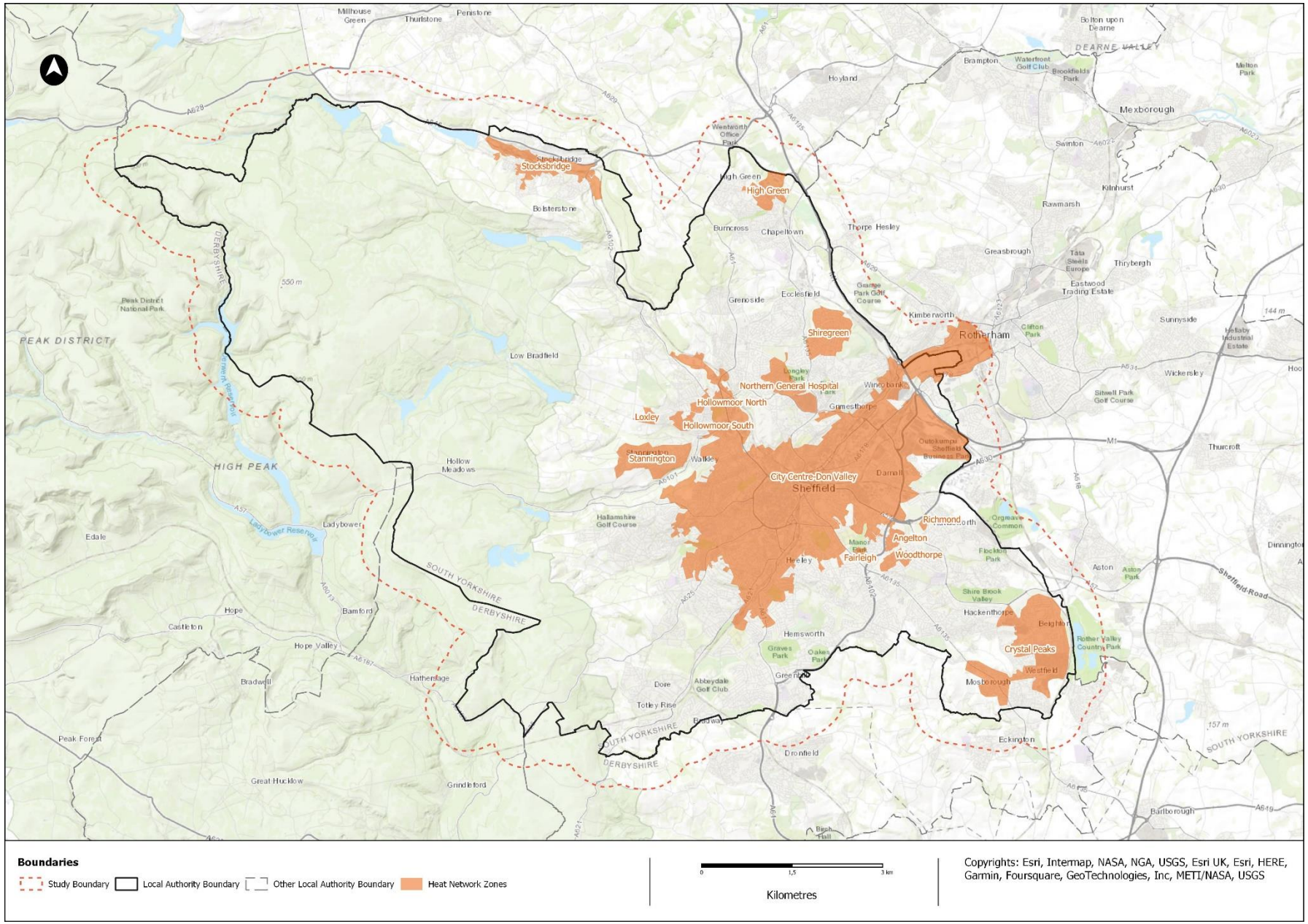
The maps in Appendix 1 illustrate the high potential for heat networks in Sheffield, in and around the city centre, the Don Valley, and the industrial area to the north-east of the city centre. The identified Strategic HNZs encompass areas of high heat demand density as well as key low carbon heat sources identified. Sheffield is well placed to accelerate the development of heat networks. The city's commitment to heat network expansion, evidenced by its active collaborations with established operators Veolia and E.ON, sets a solid foundation for further growth in this sector.

Please see Appendix 1 for the following maps giving more detail:

- A: City Typology Map – shows building typologies which dominate by area.
- B: Key Heat Loads Map – highlights key buildings required to connect by heat demand.
- C: Key Heat Sources Map – highlights key heat sources by type and potential energy centre locations as well as any existing district heat network energy centres.
- D: Existing / Planned Heat Networks Map – shows existing heat networks, planned extensions, and planned networks at an advanced development stage

- E: Key Constraints Map – shows key topographical constraints identified.
- F: Off-gas Grid Areas – presents areas with differing levels of properties off the gas grid within the study area.
- G: Coal Mine Authority Map - shows area where coal mine water may be a possible heat source.

Figure 4: Heat Network Zones Identified within the Sheffield Study Area



3) Strategic Heat Network Zones

Strategic HNZs in Sheffield

This section examines the two strategic HNZs and the IZOs identified within each. This covers the key heat demands, heat sources, energy centre locations and potential constraints for each IZO identified. Heat network distribution routes are conceptual and designed to illustrate the potential size and scale of the heat network opportunity that may be realised as part of the upcoming Heat Network Zoning policy. Other heat network zones are listed in Section 4.

Table 1 below presents a high-level estimate of the scale of opportunities across Sheffield. Please refer to Appendix 4 for more detail.

Table 1: Annual Heat Demand for Buildings in All Zones, Strategic Zones and IZOs

Scope	Annual heat demand (GWh/yr)
All buildings required to connect in all zones[4]	1,200
All buildings required to connect in strategic zones	1,100
All buildings connected to the IZOs	550

Existing/planned heat networks that overlap with IZOs are described, though their locations may vary due to different approaches. The Pilot programme applied a standard set of technical and economic assumptions across each of the 28 areas that participated in the programme and uses a proxy for economic viability (see Section 1 and Appendix 4 for more detail). Existing and planned networks will often be based on more detailed design work and have taken account of strategic and commercial considerations that were relevant at the time of their development. Future iterations of this report will consider how to better align local studies whilst retaining a nationally consistent approach.

The two strategic zones are summarised below. Figure 5 illustrates the size of each, alongside the key potential heat source and the proportion of buildings that may be required to connect.

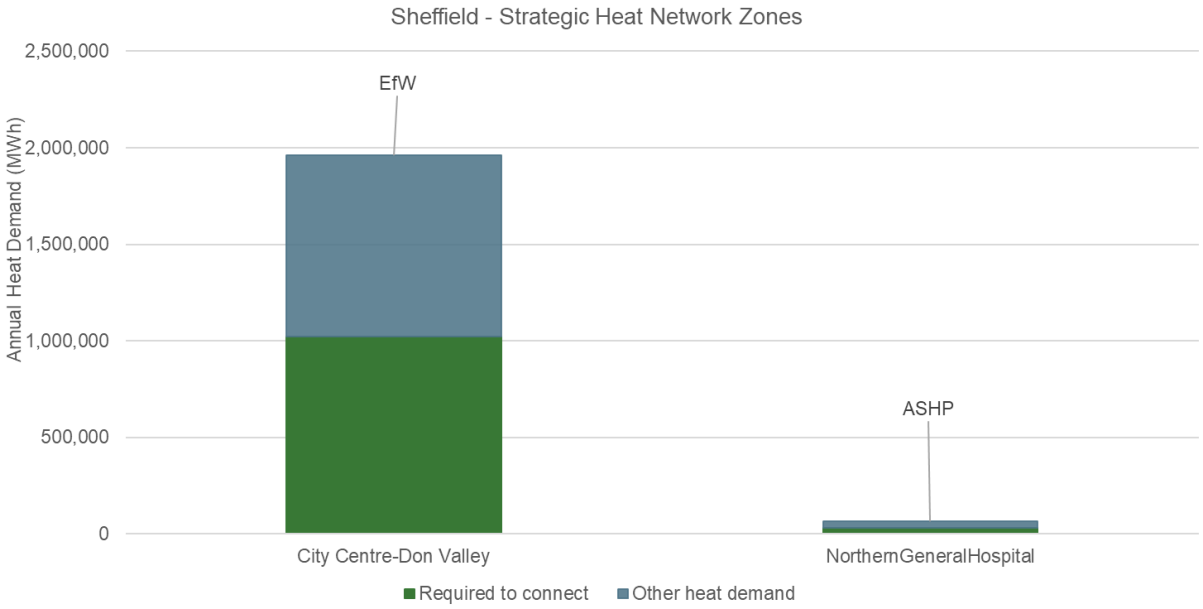
Northern General Hospital is a large zone to the northeast of the city centre, where a single IZO has been identified. The main heat demands within the HNZ include the Northern General Hospital and local authority owned social housing. Sheffield Teaching Hospitals Northern General Hospital are part of E.ON's planned and GHNF-supported network expansion and

[4] Row 1 is an estimate of heat demand across buildings required to connect in all zones identified. Row 2 is as per row 1, but only within strategic zones. Row 3 includes buildings connected to the IZOs described and largely comprise of buildings potentially required to connect. Figures are generally rounded up to the nearest 25 or 50GWh/yr.

therefore this zone may be included within other heat network zones in Sheffield in the future. For more details, please see Section 3.1.

City Centre - Don Valley is the largest potential HNZ identified and includes two IZOs, covering the city centre and Don Valley respectively. The zone includes two existing heat networks, operated by Veolia and E.ON, and several major heat sources including the Veolia Energy Recovery Facility, Blackburn Meadows Biomass Power Plant, potential mine water energy sources and industrial waste heat. For more information, please see Section 3.2.

Figure 5: Summary of Heat Demands in all Strategic HNZs Identified



3.1) Sheffield Northern General Hospital

3.1.1) Sheffield Northern General Hospital – HNZ Summary

The Northern General Hospital, located north of the city centre, is the primary load identified in the Sheffield Northern General Hospital HNZ. This zone, alongside the hospital, includes many private and local authority-owned social houses, educational buildings, and over 50 buildings potentially required to connect under the Heat Network Zoning policy.

3.1.2) Sheffield Northern General Hospital - Existing Heat Networks

Proposed Heat Networks – Early stage

Northern General Hospital

Sheffield Teaching Hospitals Northern General Hospital are part of E.ON's planned and GHNF-supported network expansion and therefore this zone may not remain a separate zone in the future. Further work will need to be undertaken to revisit all zones in Sheffield.

3.1.3) Sheffield Northern General Hospital - Initial Zone Opportunities

A single IZO was identified in the Sheffield Northern General Hospital zone. Potential routing[5] for the IZO is shown in Figure 6 and summary statistics provided in Table 2. As before, this routing was developed for the purposes of the Pilot Programme and therefore will not reflect current or future proposals.

Table 2: Sheffield Northern General Hospital - Summary Statistics for Initial Zone Opportunities[6]

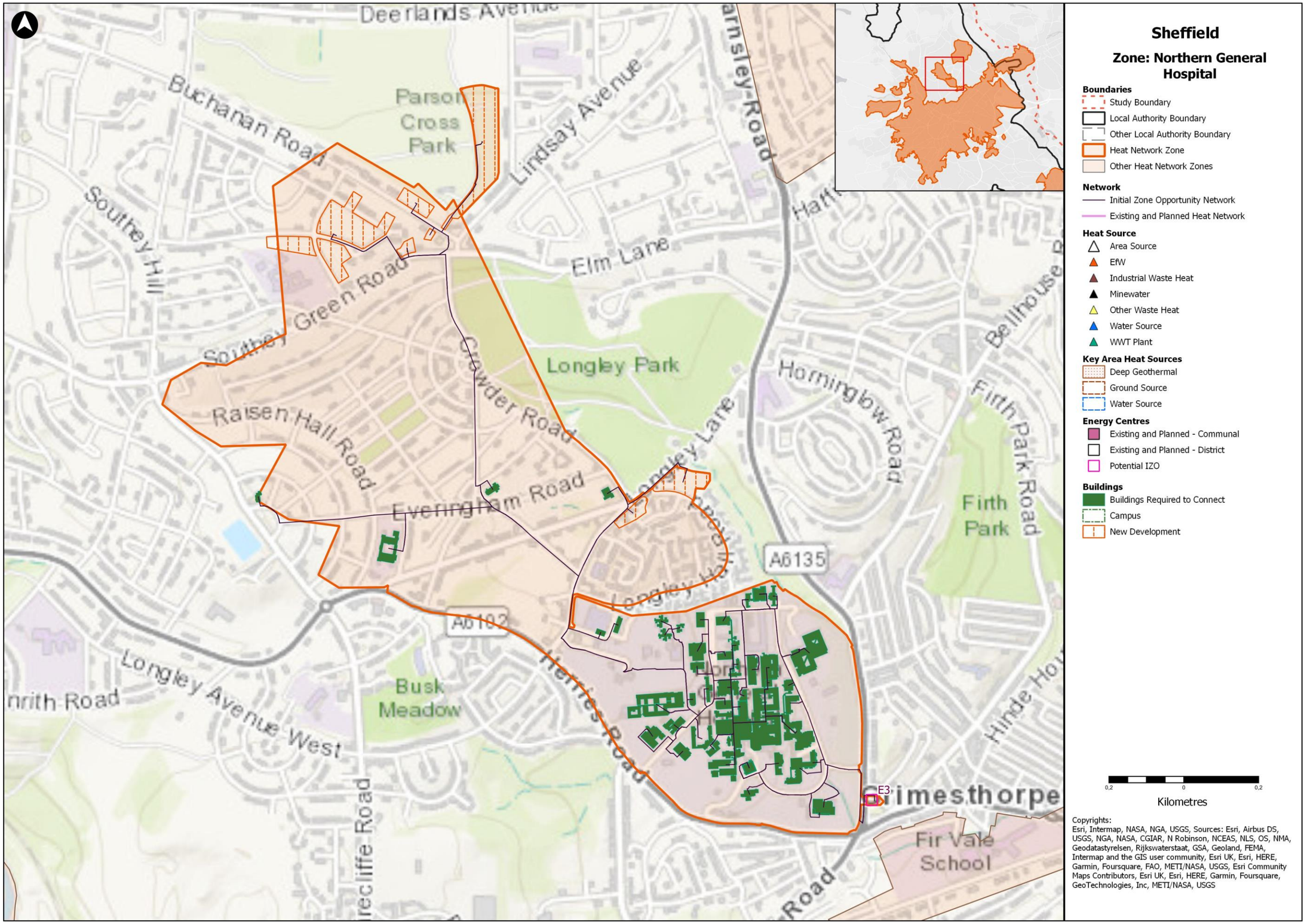
CapEx	Heat	Network	CO_{2e} savings	Linear Heat Density	Heat Sources
~£50m	~35GWh/yr	~10km	>5ktCO_{2e}/yr	3.4MWh/m	ASHPs

The identified IZO covers almost all the zone. It is situated in a dense urban area including the hospital, residential homes, educational institutions, offices, industrial and public buildings. The hospital has many buildings, some dating from 1811, spread widely across a campus of around 100 acres. Together with residential housing, it forms the major heat demand for this IZO. The total annual heat demand connected is approximately 35GWh/yr.

For the purposes of the Pilot Programme, an air source heat pump (ASHP) is identified as the primary heat source for the IZO. Alternative heating solutions may prove to be viable in current or future work being undertaken. On the Northern General Hospital campus, existing gas boiler plants are available for use as peaking plant. There are no major physical constraints identified in this zone, except for its high topography. The hydraulic design of any heat network will need to incorporate technology to address the implications of this.

[5] Routes can be expected to change as a better understanding of local constraints is developed through design.
[6] Please see Appendix 3 – Glossary, “Specific definitions” of the main report for definitions related to this table.

Figure 6: Initial Zone Opportunities in Sheffield Northern General Hospital HNZ



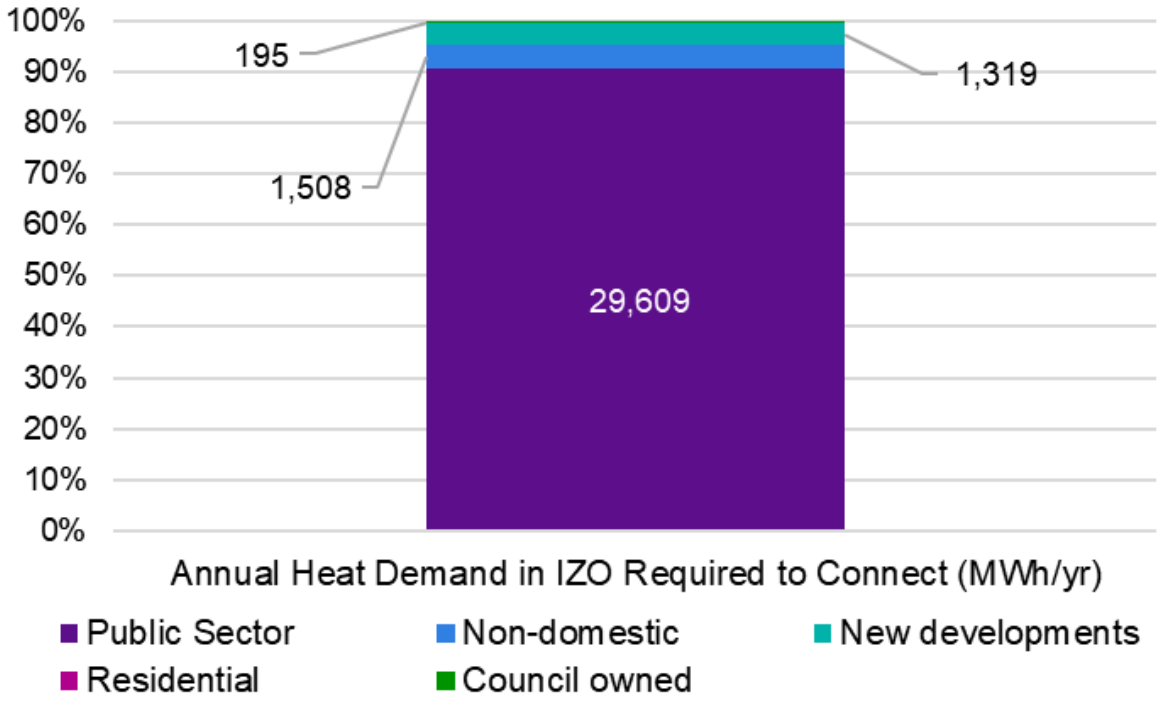
3.1.4) Sheffield Northern General Hospital – IZO Heat Demands

The heat demands identified within the IZO are described below. The Pilot programme used several sources including local data collected from building owners; national energy demand datasets; benchmarks applied via the National Zoning Model (NZM); and a standardised approach to estimate the potential heat demands of new development sites. More information is provided in Appendix 4.

Where there are different values between datasets, the methodology prioritised the use of the early prototype version of the National Zoning Model, for consistency. This has led to an overestimation of some commercial and light industrial heat demands presented in this report. Large anchor loads that are already connected to existing district-scale heat networks are not listed.

The key anchor load identified for connection to the IZO is the Northern General Hospital that has 1,100 beds and employs more than 6,000 people. Surrounding the hospital are extensive social housing estates, much of which is owned by SCC. This could provide an opportunity for later phases of a heat network as many of the properties are owned by the local authority as a single stakeholder. At this stage, this area of housing has not been included on the IZO.

Figure 7: Sheffield Northern General Hospital - Categorisation of Heat Demand for Buildings Required to Connect in the IZO



As illustrated in Figure 7, the hospital is the main heat demand connected to the IZO. The remaining 10% of the heat demand belongs to the new development buildings and non-domestic buildings such as Southey Methodist Church (118MWh/yr) and St Leonards Church (276MWh/yr). Further details of the key heat demand for buildings potentially required to connect in the IZO are provided in Table 3.

Table 3: Sheffield Northern General Hospital - Key Heat Demands Required to Connect in the IZO[7]

Building name	Building category	Number of connections	Annual Heat Demand (MWh)	Data Source
Northern General Hospital	Public sector	45	29,600	Benchmark (NZM)
Southey Green Road	New Development (Domestic)	4	1,300	Pilot Methodology

3.1.5) Sheffield Northern General Hospital – IZO Heat Sources

An ASHP is assumed to provide the primary heat supply for the IZO. It is assumed that this would be located in the boiler room of the Northern General Hospital. Table 4 and Table 5 summarise the key heat sources and potential energy centre locations identified. These are also shown in Figure 6 in Section 3.1.3 above and Appendix C: Map 1.

Table 4: Sheffield Northern General Hospital - Key Heat Source Opportunities

Heat source type	Supplied Capacity (kWp)	Temperature (ºC)	Potential Energy Centre (Ref number)
ASHP	17,000	70 ºC[8]	E3

Table 5: Sheffield Northern General Hospital - Potential IZO Energy Centre Locations

EC Ref #	Site type	Size (m^2)	Ownership	Heat Source
E3	Existing boiler room	100	Northern General Hospital	ASHP

3.1.6) Sheffield Northern General Hospital – IZO Heat Distribution

The approach to developing the heat network route considered economic viability, investment scale and returns, decarbonisation impact and deliverability. These criteria were applied in a standardised manner across all opportunities identified in the Pilot programme and therefore may not reflect detailed designs or proposed routes identified in more detailed feasibility work. Routing within the site boundary of a building or campus may not have been included if insufficient information was available. The IZO routing was developed solely around buildings which could be required to connect and did not consider potential voluntary connections.

[7] Please refer to Appendix 3 for definitions related to building categories in this table.
[8] The temperature at which heat will be distributed to heat offtakers, after upgrade

The purpose of the concept heat network route is to define the scale, potential routing and identified associated constraints within the zone. Further work will be required to undertake a more detailed route assessment to take account of the buried utilities, building connections and other local strategic and local planning considerations. Table 6 below, shows the statistics for the IZO network route including the network length and associated cost. Please see Appendix 5 for related methodology statements and assumptions.

The estimated IZO heat distribution network length is 10km and surrounds the hospital and buildings to the north.

Table 6: Sheffield Northern General Hospital - Indicative Heat Network Statistics for the IZO

IZO Heat Network description	Network length (km)	Network cost (£m)
Sheffield Northern General Hospital	10	35

3.1.7) Sheffield Northern General Hospital – IZO Key Constraints and Mitigations

There are no major constraints identified for the proposed IZO network route.

3.2) City Centre – Don Valley

3.2.1) City Centre – Don Valley – HNZ Summary

City Centre – Don Valley is the largest zone in the city by area (approximately 42km^2) and heat demand from buildings potentially required to connect. It covers most of the city's heat-dense areas and includes two existing heat networks, one operated by Veolia in the city centre and the other by E.ON in the Don Valley.

Key anchor loads include two universities, several hospitals, significant industrial heat demand and new developments to the north-east and south-west of the zone. In the south-west, the new developments include significant groups of properties owned by registered social landlords (RSLs) such as Yorkshire Housing Ltd and Guinness Partnership Ltd.

In total, there are 1,800 buildings potentially required to connect in the zone with a total heat demand of over 1,000GWh/yr. Of this, roughly half has been proposed for connection to the IZOs presented, as shown in Section 3.2.3.

The primary heat sources supplying the existing networks are Veolia's ERF and E.ON's Blackburn Meadows Biomass Power Plant. Other heat sources in this zone include mine water in the Don Valley, waste heat from the Blackburn Meadows Waste Water Treatment Works (WWTW), waste heat from steel works, as well as waste heat from data centres.

3.2.2) City Centre - Don Valley - Existing Heat Networks

Operational Heat Networks and Planned Expansions

The following operational heat networks, and planned expansions, have been identified within this heat network zone (see Appendix 1: Map D). Both Veolia and E.ON are exploring expansion opportunities.

Sheffield District Energy Network
The Veolia network (Sheffield District Energy Network) is one of the UK's largest heat networks, spanning a significant part of Sheffield City Centre, connecting 125 major buildings with over 45km of pipework reaching Netherthorpe, Western Bank, the Heart of the City, Moorfoot and Park Hill. Established in the 1970s and operated by Veolia under a concession agreement, its ownership will transfer back to SCC in 2038. The network is mainly supplied by the ERF operated by Veolia. Introduced in 2006, it uses just 20% of ERF's annual heat generation capacity, indicating potential for expansion. A feasibility study for further expansion of the Veolia heat network is currently being conducted.

Blackburn Meadows Heat Network
The E.ON network (Blackburn Meadows Heat Network) is supplied by Blackburn Meadows Biomass Power Plant, which has a 25MWth heat capacity and 30MWe electrical capacity. The plant, fully operational since 2015, uses recycled waste wood to generate both electrical and thermal energy. The existing 8km heat network serves 9 commercial connections in the Lower

Don Valley area. These include IKEA, Ice Sheffield, Sheffield Arena and Forgemasters' Steel Works.

E.ON has plans to extend the heat network. Discussions are ongoing with the University of Sheffield regarding a potential connection to the heat network, but no formal agreement has been signed. E.ON has conducted RIBA Stage 4 design and surge testing, demonstrating that a connection to Northern General Hospital is technically feasible despite topographical challenges. No additional energy generation technology is proposed to supply the demand for the extension as the existing network has a spare peak capacity of over 16MWth.

Proposed Heat Networks – Late Stage

Lower Don Valley Heat Network

Advanced Zoning Programme:

The Lower Don Valley Heat Network is a proposed network in and around the existing Blackburn Meadows Heat Network (owned and operated by E.ON). It will be supplied by either the existing heat source (Blackburn Meadows Biomass Power Plant) and/or alternative heat sources that exist in the area. The current proposals explore the feasibility of supplying heat to buildings such as the University of Sheffield's Advanced Manufacturing Innovation District, SCC's Darnall estate and the Northern General Hospital, amongst others.

SCC is collaborating with DESNZ and local stakeholders to determine the most appropriate commercial and technical approach to deliver zone scale opportunities in the Lower Don Valley and Northern General Hospital area.

3.2.3) City Centre – Don Valley – Initial Zone Opportunities

Two discrete IZOs were identified in the City Centre – Don Valley zone. Potential routing[9] for the IZOs is shown in Figure 8 and summary statistics provided in Table 7.

Table 7: City Centre – Don Valley - Summary Statistics for Initial Zone Opportunities[10]

CapEx	Heat	Network	CO_{2e} savings	Linear Heat Density	Heat Sources
~£500m	>500GWh/yr	>55km	~80ktCO_{2e}/yr	10.3MWh/m	ERF, Biomass and WWTW

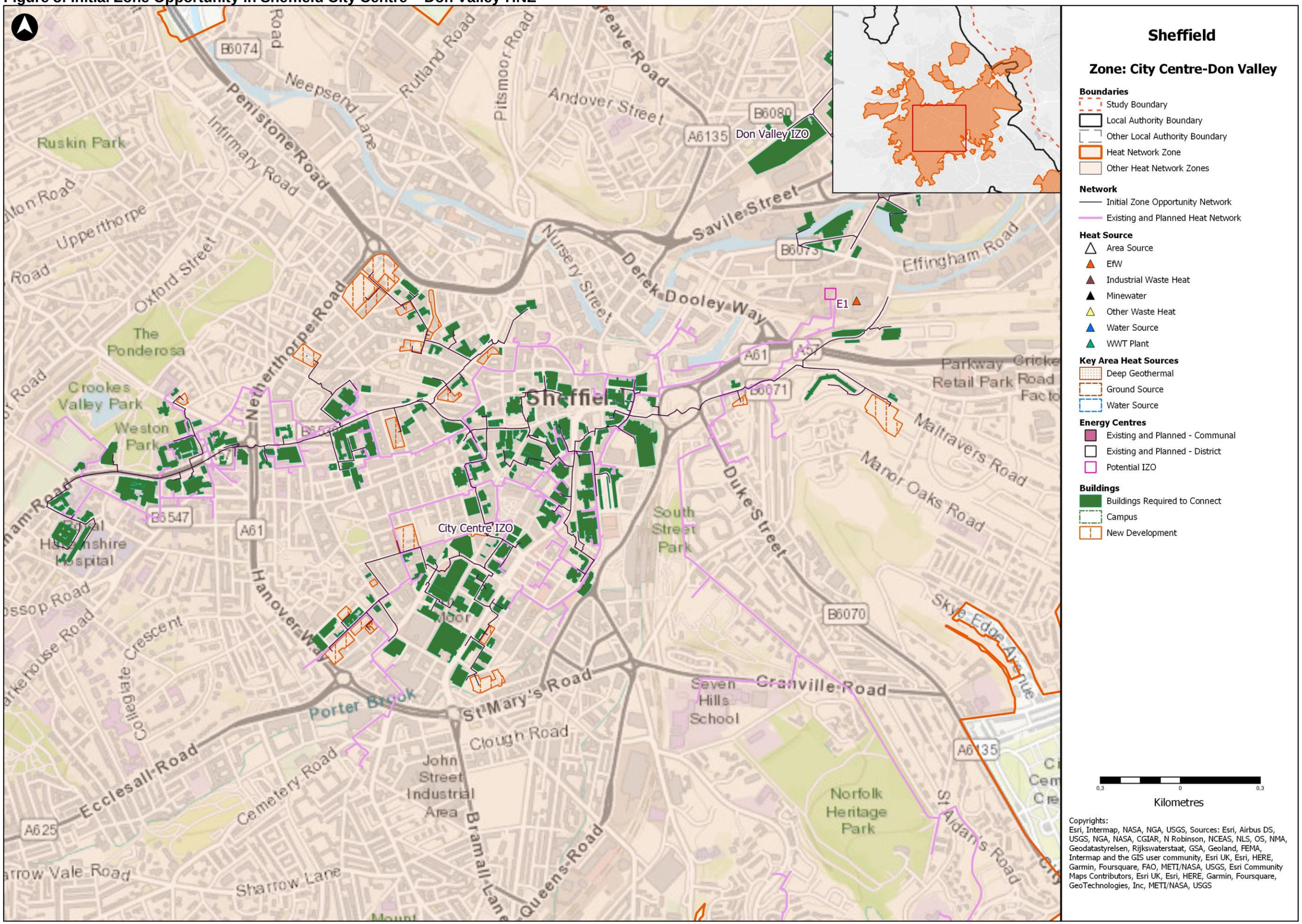
The **City Centre IZO** includes a large area of the city centre and the existing Veolia heat network. Major heat loads include Sheffield University, Sheffield Hallam University, Hallamshire Hospital, Weston Park Hospital, Children's Hospital and Dental Hospital, with a

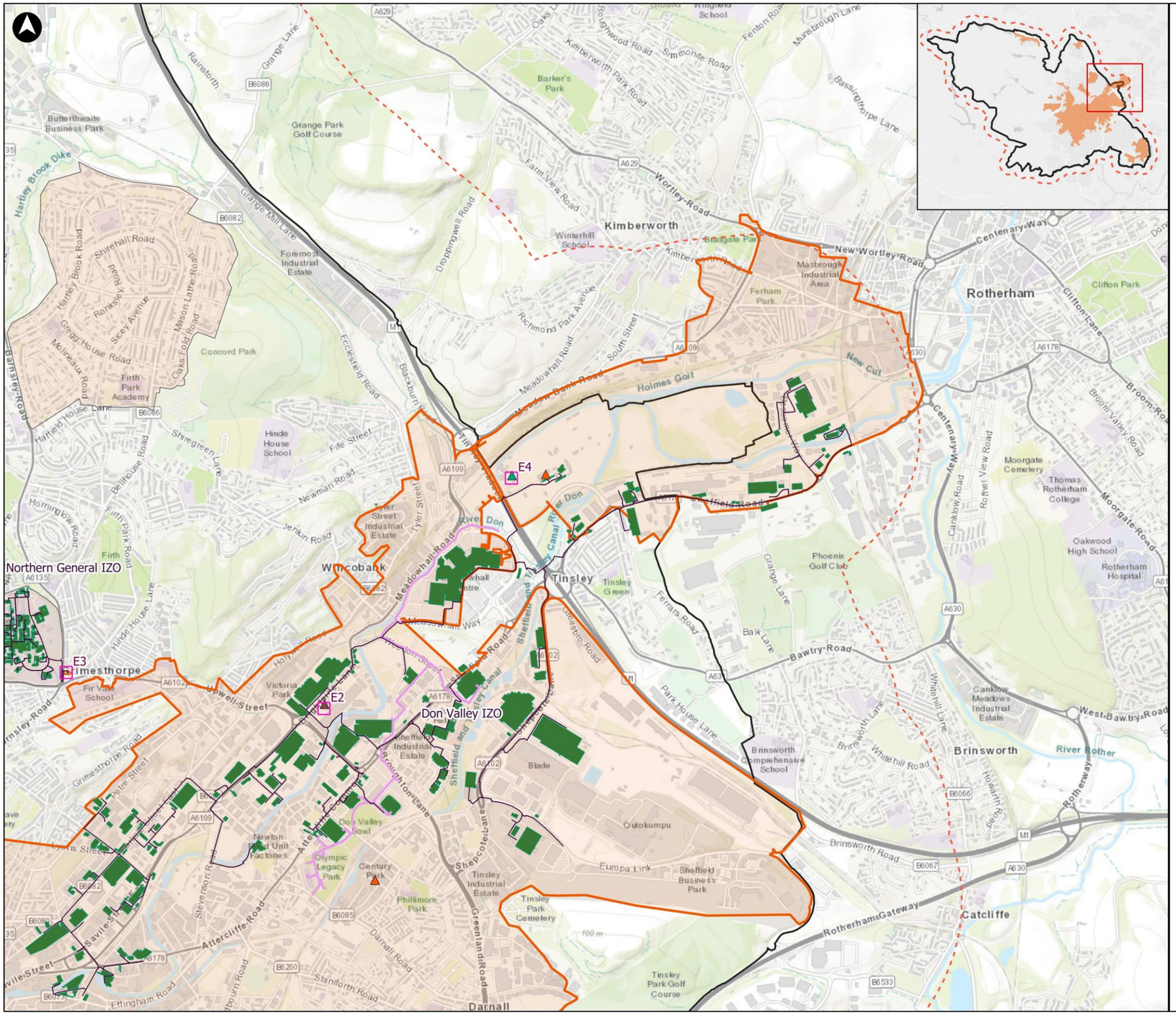
[9] Routes can be expected to change as a better understanding of local constraints is developed through design.
[10] Please see Appendix 3 – Glossary, "Specific definitions" of the main report for definitions related to this table.

total annual heat demand connected to the IZO of 200GWh/yr. The heat source currently supplying the existing heat network, the ERF, has capacity to facilitate an expansion to the IZO. The estimated CapEx for the delivery of the IZO is £200m.

The **Don Valley IZO** includes considerable heat loads throughout the Don Valley, and the existing E.ON heat network. The potential network connections for the Don Valley area primarily consist of industrial, retail, and office buildings, with a total annual heat demand connected to the IZO of 300GWh/yr. Surplus heat from Blackburn Meadows Biomass Power Plant along with potential low carbon heat from the Blackburn Meadows WWTW, could fulfil the supply needs. The estimated CapEx for the delivery of the IZO is £250m.

Figure 8: Initial Zone Opportunity in Sheffield City Centre – Don Valley-HNZ





Sheffield

Zone: City Centre-Don Valley

Boundaries
- Study Boundary
- Local Authority Boundary
- Other Local Authority Boundary
- Heat Network Zone
- Other Heat Network Zones

Network
- Initial Zone Opportunity Network
- Existing and Planned Heat Network

Heat Source
- Area Source
- EfW
- Industrial Waste Heat
- Minewater
- Other Waste Heat
- Water Source
- WWT Plant

Key Area Heat Sources
- Deep Geothermal
- Ground Source
- Water Source

Energy Centres
- Existing and Planned - Communal
- Existing and Planned - District
- Potential IZO

Buildings
- Buildings Required to Connect
- Campus
- New Development

Kilometres

3.2.4) City Centre – Don Valley – IZO Heat Demands

The heat demands in the two IZOs are substantial. The energy demand of the hospitals plays a significant role in the total energy demand of the zone, as illustrated in Figure 9. Public sector loads in the **City Centre IZO** contributes notably more to the total heat demand than in the **Don Valley IZO**. Council-owned buildings are also present in both IZOs, although do not represent a significant proportion of the total demand. Further details of the key heat demands for buildings potentially required to connect to the IZOs are provided in Table 8.

The two IZOs have distinct variations in building types. Hospitals and educational buildings represent a large proportion of the demand for the **City Centre IZO**, whilst the **Don Valley IZO** primarily connects to industrial and commercial buildings. The heat demand associated with the industrial buildings require further investigation and hence are excluded from Table 8.

Figure 9: City Centre - Don Valley - Categorisation of Heat Demand for Buildings Required to Connect in IZOs

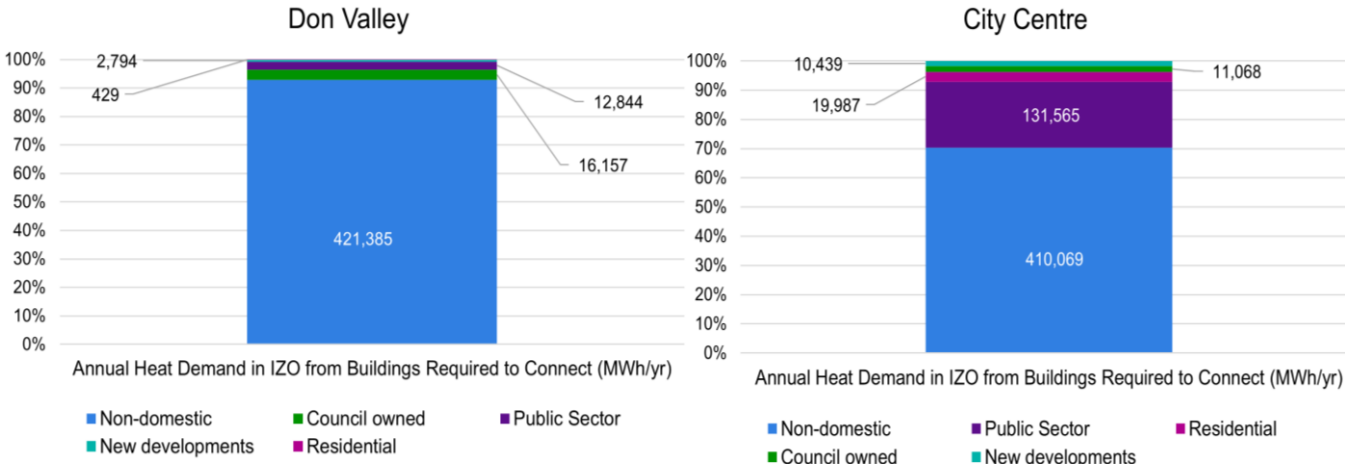


Table 8: City Centre – Don Valley - Key Heat Demands Required to Connect in the IZOs[11]

Building name	Building category	Number of connections	Annual Heat Demand (MWh)	Data Source
City Centre				
Royal Hallamshire Hospital	Public sector	1	33,222	ERIC[12]
Sheffield Wednesday Football Club	Non-domestic	2	18,175[13]	Benchmark (NZM)
Sheffield Hallam University	Public sector	22	17,800	DEC
The Children's Hospital	Public sector	7	15,130	ERIC
Davy Industrial Park	Non-domestic	5	8,400	Benchmark (NZM)
Parkway works	Non-domestic	4	6,819	Benchmark (NZM)
University of Sheffield	Public sector	3	5,100	Benchmark (NZM)
Odeon Cinema	Non-domestic	3	4,700	Benchmark (NZM)
Cadbury Basset LTD	Non-domestic	2	4,100	Benchmark (NZM)
Weston Park Hospital	Public sector	3	2,070	DEC

[11] Please refer to Appendix 3 for definitions related to building categories in this table.
[12] Hallamshire boiler house also serves Weston Park Hospital (source: site visit report). Weston Park heat demand has been subtracted from ERIC data for Hallamshire
[13] Some building heat demands are likely to have been overestimated by the prototype version of the NZM. This is due to the large footprint of some buildings multiplied by the relevant benchmark.

Building name	Building category	Number of connections	Annual Heat Demand (MWh)	Data Source
Don Valley				
Meadowhall Centre	Non-domestic	1	33,000	Benchmark (NZM)
Pretty Little thing	Non-domestic	1	28,000	Benchmark (NZM)
Cineworld Sheffield	Non-domestic	1	13,400	Benchmark (NZM)
Magna Science Adventure Centre	Non-domestic	1	11,900	Benchmark (NZM)
Forged Solutions Group LTD, River Don site	Non-domestic	2	11,400	Benchmark (NZM)
Betafence	Non-domestic	1	8,200	Benchmark (NZM)
ATI specialty materials	Non-domestic	2	4,900	EPC
English Institute of Sport, Sheffield City Trust Arena	Non-domestic	1	3,200	DEC
ROM Ltd	Non-domestic	3	1,900	EPC

3.2.5) City Centre – Don Valley – IZO Heat Sources

Both IZOs are proposed to use the heat source currently supplying the existing heat networks. Additional heat source opportunities identified are detailed below. Table 9 and Table 10 summarise the key heat sources and potential energy centre locations identified. These are also shown in Figure 8 in Section 3.2.3 above and Appendix 1: Maps C & G.

City Centre IZO

The primary heat source identified to supply the City Centre IZO is the existing Veolia ERF. This source is currently used by Veolia for its heat network and possesses sufficient capacity

to support network expansion. For future stages of the zone's development, other waste heat sources are available in the area, such as mine water or waste heat from data centres.

Don Valley IZO

The Blackburn Meadows Biomass Power Plant is the main heat source identified to supply the Don Valley IZO. This heat supply is currently being used by the E.ON network. Other waste heat sources, such as the Blackburn Meadows WWTW with heat upgrade via a water source heat pump (WSHP) and the Forgemasters, will be required for full delivery of this IZO. The WWTW and Biomass Plant are located on the same site and therefore a single potential energy centre has been considered for both sources.

Table 9: City Centre – Don Valley - Key Heat Source Opportunities for the IZOs

Heat source type	Supplied Capacity (kWp)	Temperature (ºC)	Potential Energy Centre (Ref number)
Waste Heat			
Veolia ERF	60,000	110 ºC[14]	E1
Forgemasters	10,000	100 - 200 °C	E2
Biomass			
Blackburn Meadows Biomass Power Plant	25,000	> 90 ºC[14]	E4
WSHP			
Blackburn Meadows WWTW	30,000	> 15 ºC	E4

Table 10: City Centre – Don Valley - Potential IZO Energy Centre Locations

Ref #	Site type	Size (m^2)[15]	Ownership	Heat Source
E1	Industrial	1200	SCC	Veolia ERF
E2	Industrial	150	Forgemasters	Forgemasters
E4[16]	WWTW/Industrial	1075	Yorkshire Water/E.ON	Biomass or WSHP

[14] The temperature at which existing energy centre plant supplies heat to heat offtakers

[15] The assumptions used for determining the energy centre size have been based on the following: Boiler Plant: 10-15 m² per MW, CHP Plant: 15-25 m² per MW, Biomass Plant: 20-30 m² per MW. These assumptions account for space requirements for the boiler area, CHP area, fuel storage, buffer tanks, and ancillary areas.

[16] Assumptions used for sizing the total space required for the energy centre: CHP plant size of 25 m² per MW and wastewater source plant size of 15 m² per MW.

3.2.6) City Centre – Don Valley – IZO Heat Distribution

Table 11 shows the network statistics for the IZO network route including the network length and associated costs. Please refer to Section 3.1.6 and Appendix 5 for the assumptions used.

The city has significant topographical variations that will impact hydraulic design. The **City Centre IZO** is mostly in the city centre with constraints such as the railway line to the east and the River Don and its tributaries. The **Don Valley IZO** is also constrained in a similar way, but with the addition of the M1 motorway which is already crossed by the existing network.

Table 11: City Centre – Don Valley - Indicative Heat Network Statistics for IZOs

IZO Heat Network description	Network length (km)	Network cost (£m)
City Centre – Don Valley	55	145

3.2.7) City Centre – Don Valley – IZO Key Constraints and Mitigations

City Centre IZO:

[C5] Rail crossing: To improve the efficiency and resilience of the proposed network, at least one crossing of the main railway line to the north will be required. This risk can be mitigated if there is adequate room above tunnels to the north of the railway station to bury heat network pipes without damaging the rail infrastructure. An options assessment involving Network Rail, followed by feasibility assessment, will be required.

Don Valley IZO:

[C3, C12, C4] River and Canal crossing: This includes crossings of the River Don and the Sheffield and Tinsley Canal. Whilst they are not wide waterways, both are significant barriers that would require crossing permits. These risks could be mitigated through a feasibility study and detailed design involving the Canals and Rivers Trust.

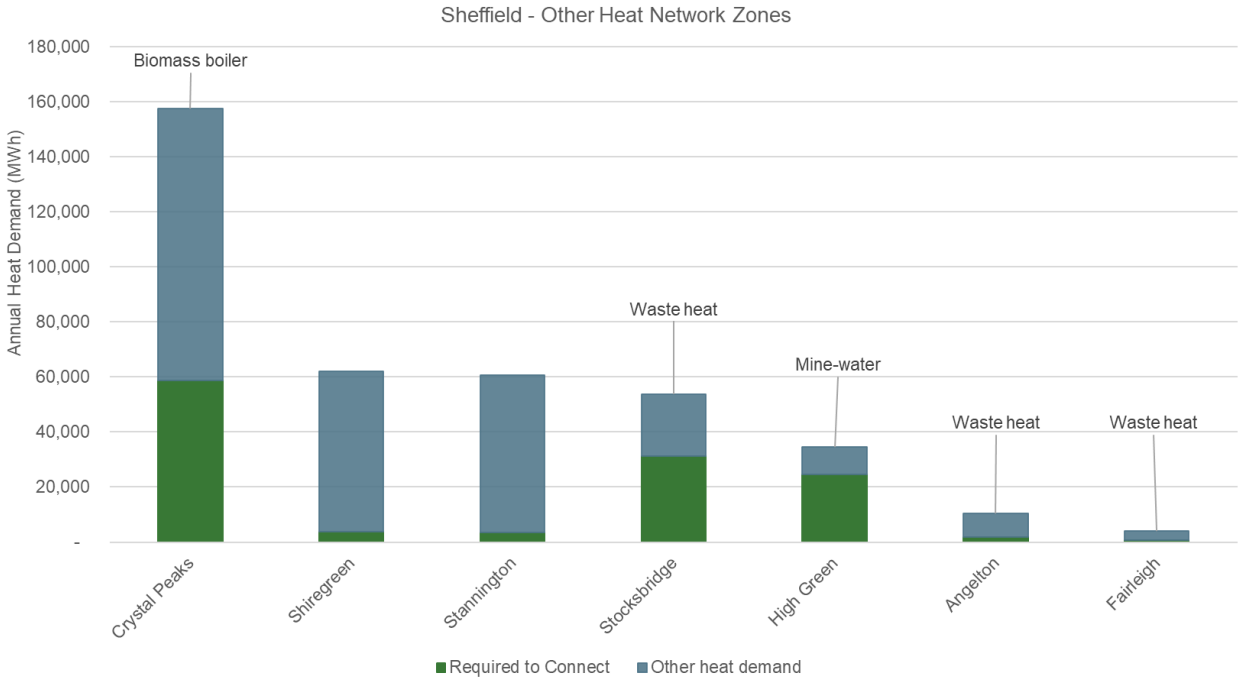
[C2] Rail crossing: Branching out from a single tunnel network to the north of Sheffield station, the railway lines separate to the north and east and follow routes through the Don Valley. This risk could be mitigated through an options assessment study to find the most cost-effective point to cross or identifying routes in the highway to avoid a rail crossing. Further studies will need to engage with local Highways and Network Rail as key stakeholders.

4) Other Heat Network Zones

This section describes the 'Other' potential heat network zones that were identified in Sheffield. These are areas where heat networks were deemed to offer the lowest carbon route to decarbonising heat but are often much smaller or discrete in nature than the 'Strategic' heat network zones identified. The approach taken in the Pilot programme did not apply a minimum threshold for zone identification and therefore future work will need to consider factors such as size and aggregation to ensure efficient and effective delivery of heat networks in the area.

Figure 10 illustrates the total annual heat demand, and the proportion of which is associated with buildings that may be required to connect within each zone. Where potential heat sources have been identified these are labelled against each bar. A map of all zones can be found in Figure 4.

Figure 10: Total Heat Demand and Proportion Required to Connect in Other HNZs



Crystal Peaks: is situated to the far south-east of Sheffield. The area is a mixture of industrial, commercial and residential buildings and contains key anchor loads such as East Mall, Olympic Sawmills and a Morrisons Supermarket. The biomass boiler of the Holbrook Renewable Energy Centre might be able to provide this area with heat if it was to be expanded. Alternatively, the area could potentially use heat recovered from former coal mines (see Appendix 1: Map G).

Stocksbridge: is situated to the far north-west of Sheffield City Centre and is a major centre of steelmaking. The area is a mixture of residential dwellings, industry, commerce and education buildings. It includes key anchor loads such as Speciality Steel UK (a major potential heat

demand and source of heat), Stocksbridge Community Leisure Centre and Physical Culture Gym. It may be feasible to recover heat from steel manufacturing for the network.

High Green: is situated to the far north of Sheffield. The area is a mixture of industrial, office, education and residential buildings and contains key anchor loads such as Thorncliffe Park Estate, Sheffield 35A Business Park, and Paces High Green School. A possible heat source could be heat recovered from former coal mines.

Shiregreen and **Stannington:** both largely comprise of social housing. No significant direct heat sources have been identified in the neighbourhoods.

Angelton and **Fairleigh:** are both areas of the Manor estate that is largely comprised of social housing.

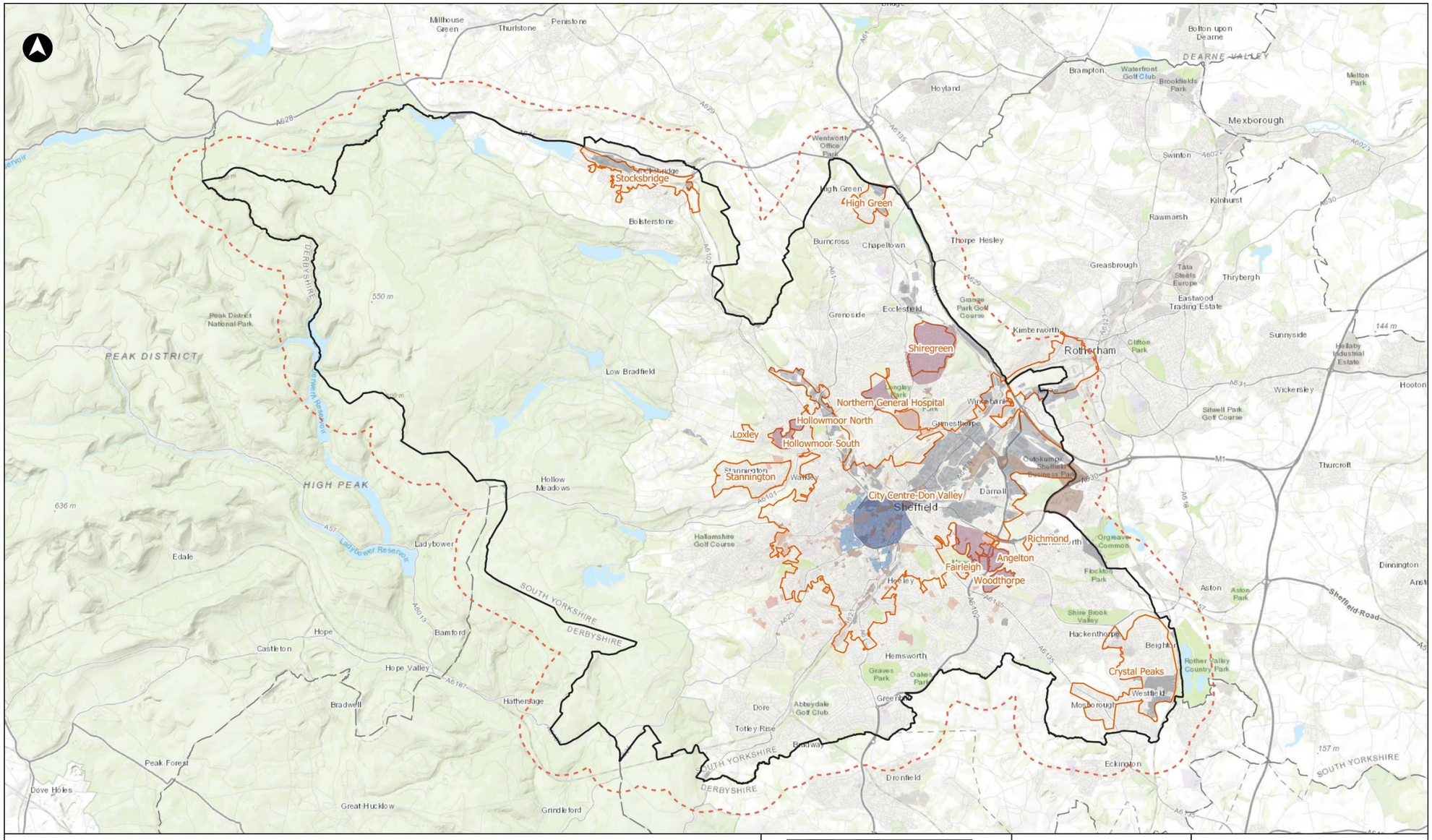
Appendix 1: Maps and Legends

This section provides guidance on interpreting the icons and legends used throughout this report and Maps A-G that follow:

Legend / icon	Relevant map(s)	What this represents on the map	Comments on interpretation
	Report maps	Study boundary	Extends 1km beyond Local Authority boundary to include cross boundary opportunities
	Report maps	Local Authority boundary	
	Report maps	Other Local Authority boundary	
	Report maps	Heat network zones	This includes both Strategic HNZs and Other HNZs.
	Report maps	Other heat network zones	Smaller or discrete heat network zone opportunities
	Report maps	New developments	New development within heat network zones and IZOs that will still be in construction post-2025
Gates Hill	Report maps	Heat network zone name / reference number	‘Strategic’ zones are named; ‘Other’ zones are represented by a reference number
	Report maps	Buildings potentially required to connect	Buildings that could be required to connect (as described in the HNZ Consultation 2023)
	Report maps	Campuses	Multiple buildings owned and operated by the same organisation (e.g. Universities, Hospitals)
	Report maps	Initial Zone Opportunity concept network route	Conceptual heat network pipe routes between buildings that could be required to connect
	Report maps	Existing and Planned Heat Networks	Known existing or planned heat network pipe routes as provided by local stakeholders
	Report maps	Potential energy centre - IZO	Potential energy centre location for an IZO (see section 3)
	Report maps	Existing/planned energy centre - Communal HNs	‘Communal’ energy centres are those operated within a single building or across a campus
	Report maps	Existing/planned energy centre - District HNs	‘District’ energy centres supply multiple buildings across multiple sites
Appendix 1: A – Typology map			
	Appendix 1: Map A	Dense City Centre	Locally recognised as the City or Town centre, where buildings development is most dense
	Appendix 1: Map A	City Centre Fringe	Around the City or Town Centre or at its outskirts, where both building density reduces
	Appendix 1: Map A	Mixed Use District	A variety of building typologies, with no single typology prevailing in the area
	Appendix 1: Map A	Social Housing	Public, private and third sector social housing
	Appendix 1: Map A	Campus (health / education)	Buildings that are owned and operated together (e.g. Universities, Hospitals)

	Appendix 1: Map A	Commercial / business office	Public & private office space
	Appendix 1: Map A	Industrial areas	Primarily used for manufacturing, engineering, and warehousing
Appendix 1: B – Key heat demands			
	Appendix 1: Map B	Top 10 Heat Demands	The largest (anchor) heat loads within the Pilot programme study area (see Section 3)
	Appendix 1: Map B	Local Authority	Buildings owned or operated by the Local Authority
	Appendix 1: Map B	Other public sector	Other buildings owned or operated by the public sector (e.g. hospital, universities, Govt. estates)
	Appendix 1: Map B	Residential with existing communal heating	Residential buildings with existing communal heating systems installed
	Appendix 1: Map B	Non-domestic private	Non-domestic private buildings (e.g. commercial, offices)
	Appendix 1: Map B	Industrial	Mixed industrial sites (e.g. light or heavy industry, manufacturing, warehouses and distribution)
400 - 600	Appendix 1: Map B	Building heat demand (MWh/yr)	Circle size increases with size of heat demand
Appendix 1: C – Key Heat Sources and Potential Energy Centres			
	Appendix 1: Map C	EfW plant	**Point heat sources** have known or likely points of heat offtake/abstraction Mine water and water source ‘points’ indicate potential abstraction points. Other waste heat sources include sewers, electrical substations and other sources of heat. See section 3 for more detail on heat source capacities, where known. On the City-level Map C only, the heat waste symbol is sized according to its scale in GWh/yr
	Appendix 1: Map C	Industrial Waste Heat	
	Appendix 1: Map C	Mine water	
	Appendix 1: Map C	Other Waste Heat	
	Appendix 1: Map C	Water Source	
	Appendix 1: Map C	Waste Water Treatment	
	Appendix 1: Map C	Deep geothermal or mine water heat	**Area heat sources** differ from point-heat sources in that the exact location for extracting heat from the resource is not yet determined
	Appendix 1: Map C	Ground source	
	Appendix 1: Map C	Water source	
Appendix 1: D – Existing and planned heat networks			
	Appendix 1: Map D	Existing and planned heat networks	At this scale the route of an existing HN cannot be displayed, so an area outline is used instead
Appendix 1: E – Physical constraints			
	Appendix 1: Map E	Key constraints	Key heat network routing constraints as described in section 3

A. Sheffield Typology Map



Boundaries
- Study Boundary
- Local Authority Boundary
- Other Local Authority Boundary
- Heat Network Zones

Key Typologies
- Dense city centre
- City centre fringe
- Mixed use district
- Social housing
- Campus (health/education)
- Commercial / business office district
- Industrial areas

3 0 3 Kilometres

Scale: 1:110,000

Coordinate System: OSGB36 / British National Grid

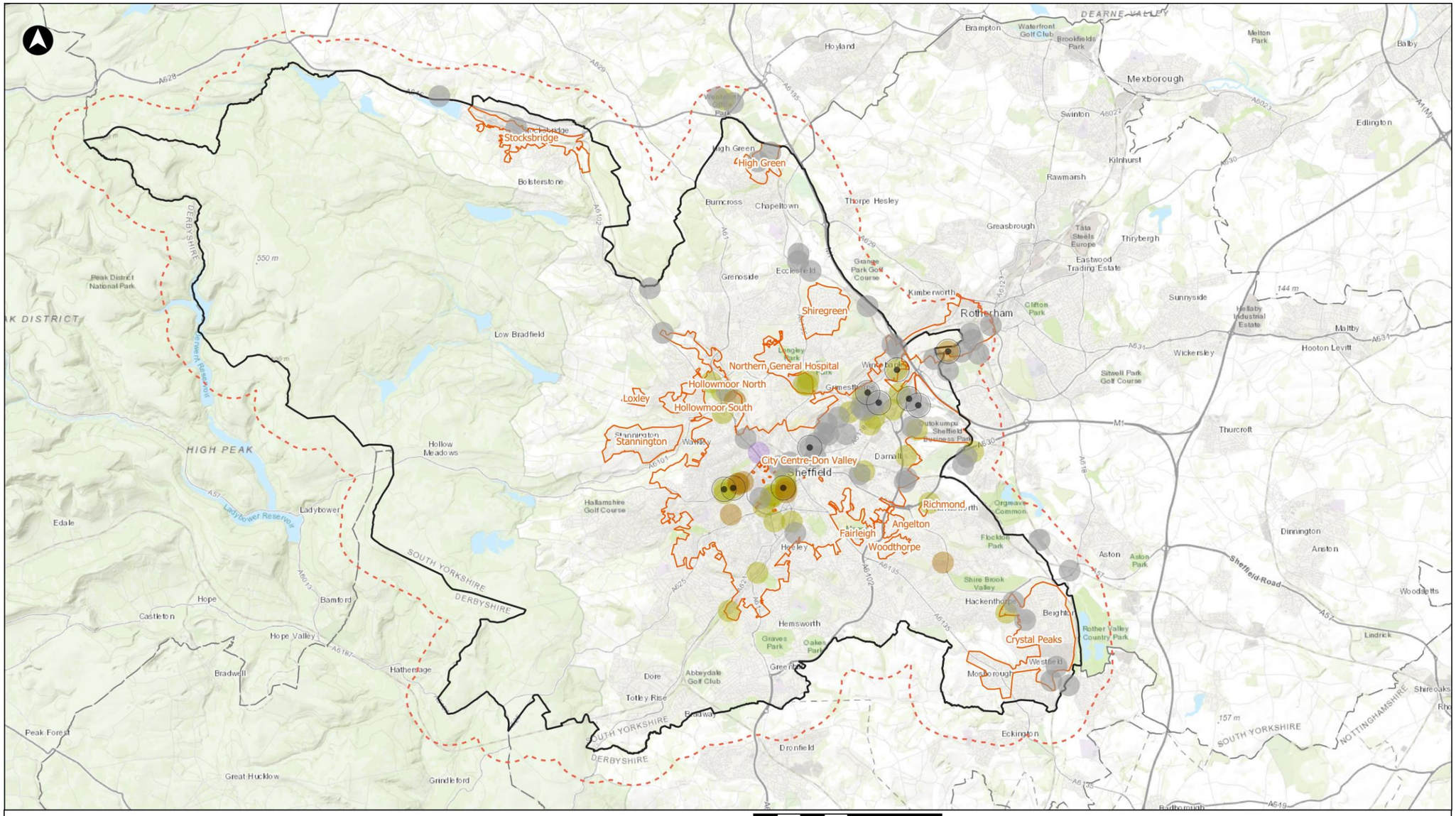
Department for Energy Security & Net Zero

Sheffield

Map A

City Typologies

B. Key Heat Demands



Boundaries
- Study Boundary
- Local Authority Boundary
- Other Local Authority Boundary
- Heat Network Zones
- New Development

Key Heat Demand
- Local authority loads
- Other public sector loads
- Residential with communal heating
- Non-domestic private buildings
- Industrial
- Top 10 heat demands

Heat Demand (MWh/Year)
- 100 - 200
- 200 - 400
- 400 - 600
- 600 - 1000

6 0 6
Kilometres
Scale: 1:110,000

Coordinate System: OSGB36 / British National Grid

Department for Energy Security & Net Zero

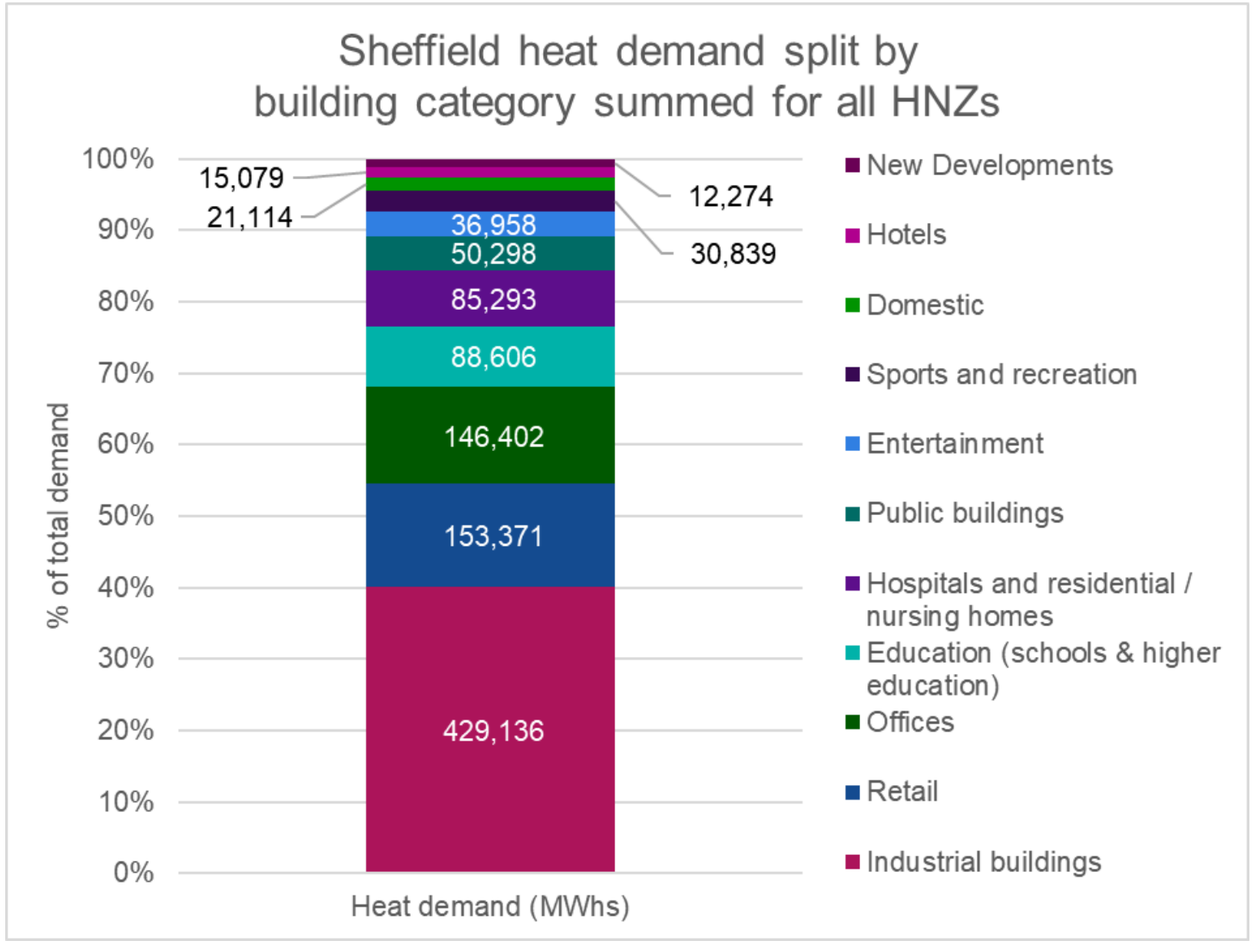
Sheffield

Map B

Key Heat Demand

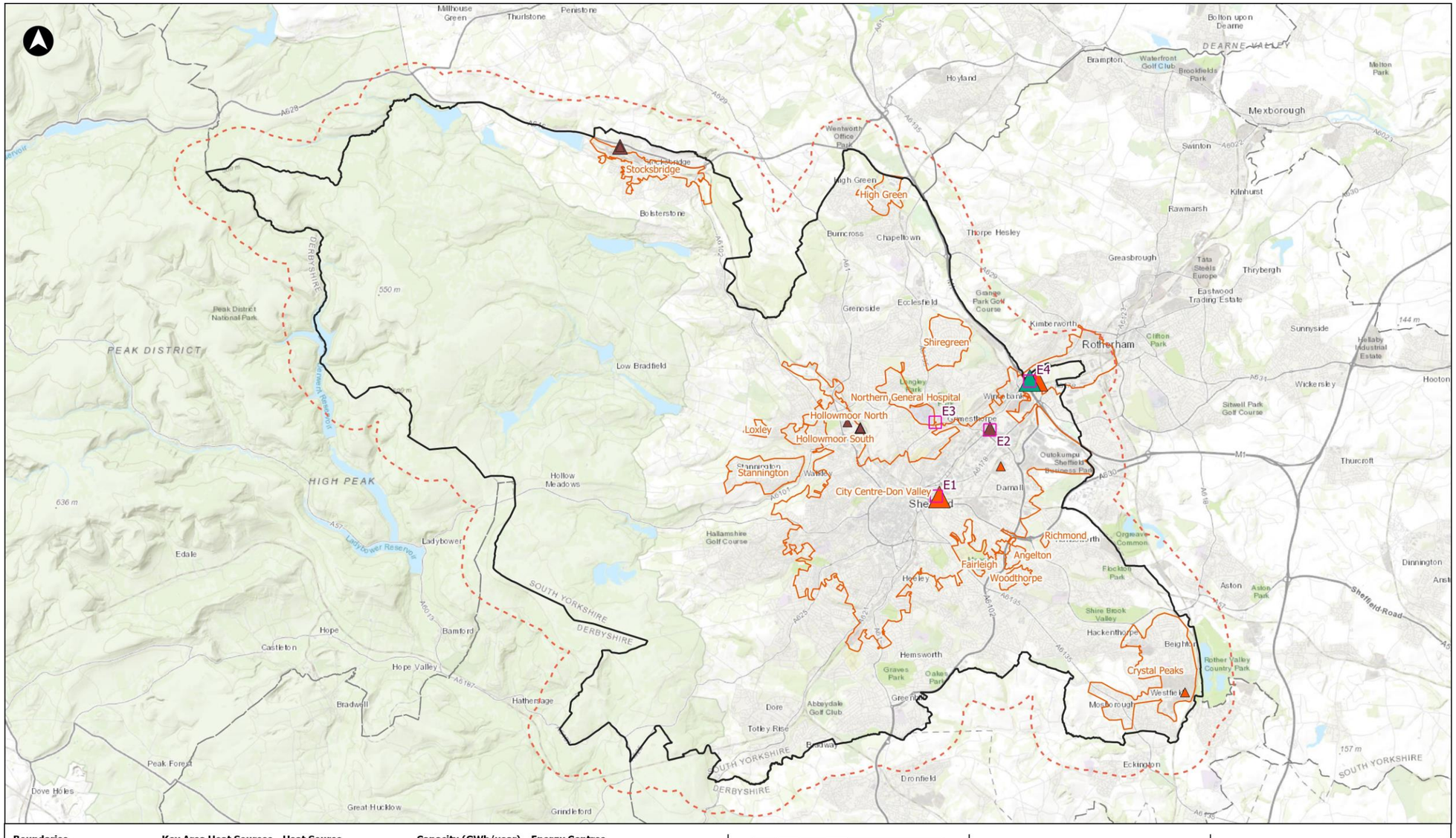
Table 12: Heat Demand split further by Building Categories across all Initial Zone Opportunities identified in Strategic HNZs in the Study Area

Building category	Number of buildings required to connect in this category	Annual Heat Demand of buildings required to connect across Strategic Zones (MWh)
Domestic	96	21,100
Education (schools & higher education)	171	88,600
Entertainment	36	37,000
Hospitals and residential / nursing homes	75	85,300
Hotels	23	15,100
Industrial buildings	666	429,100
Offices	401	146,400
Public buildings	137	50,300
Retail	235	153,400
Sports and recreation	48	30,900
New Developments	24	12,300
Totals	**1,888**	**1,069,500**



Note: In Sheffield there are two Strategic HNZs with a total of three IZOs identified across them. The table and graph above summarise and categorise the heat demand for buildings required to connect within the Strategic HNZs.

C. Key Heat Sources and Potential Energy Centres



Boundaries
- Study Boundary
- Local Authority Boundary
- Other Local Authority Boundary
- Heat Network Zones

Key Area Heat Sources
- Deep Geothermal
- Ground Source
- Water Source

Heat Source
- Area Source
- EfW
- Industrial Waste Heat
- Minewater
- Other Waste Heat
- Water Source
- WWT Plant

Capacity (GWh/year)
- 0 - 2
- 2 - 4
- 4 - 6
- 6 - 8

Energy Centres
- Potential IZO

3 0 3
Kilometres
Scale 1:110,000
Coordinate System: OSGB36 / British National Grid

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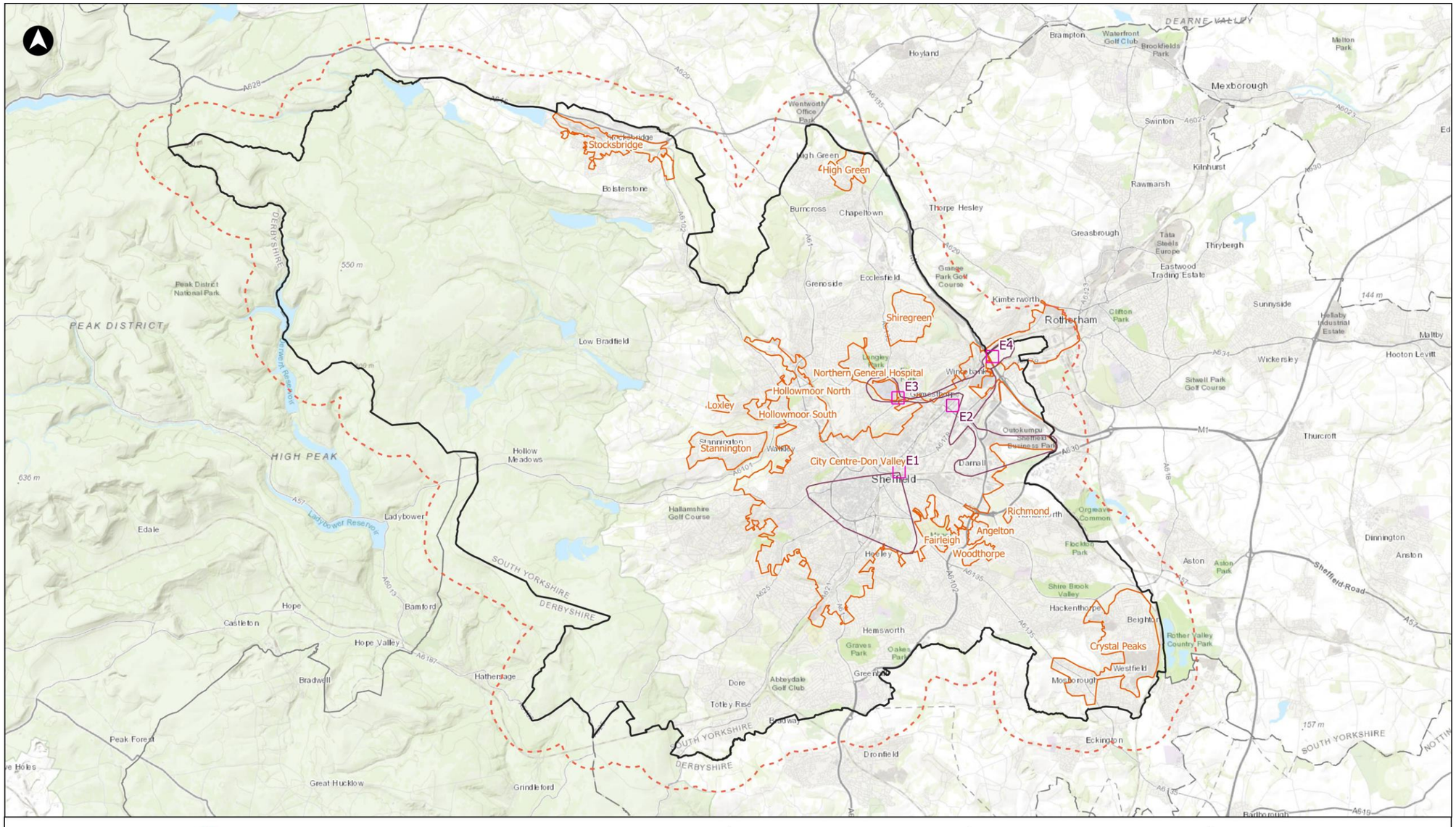
Sheffield

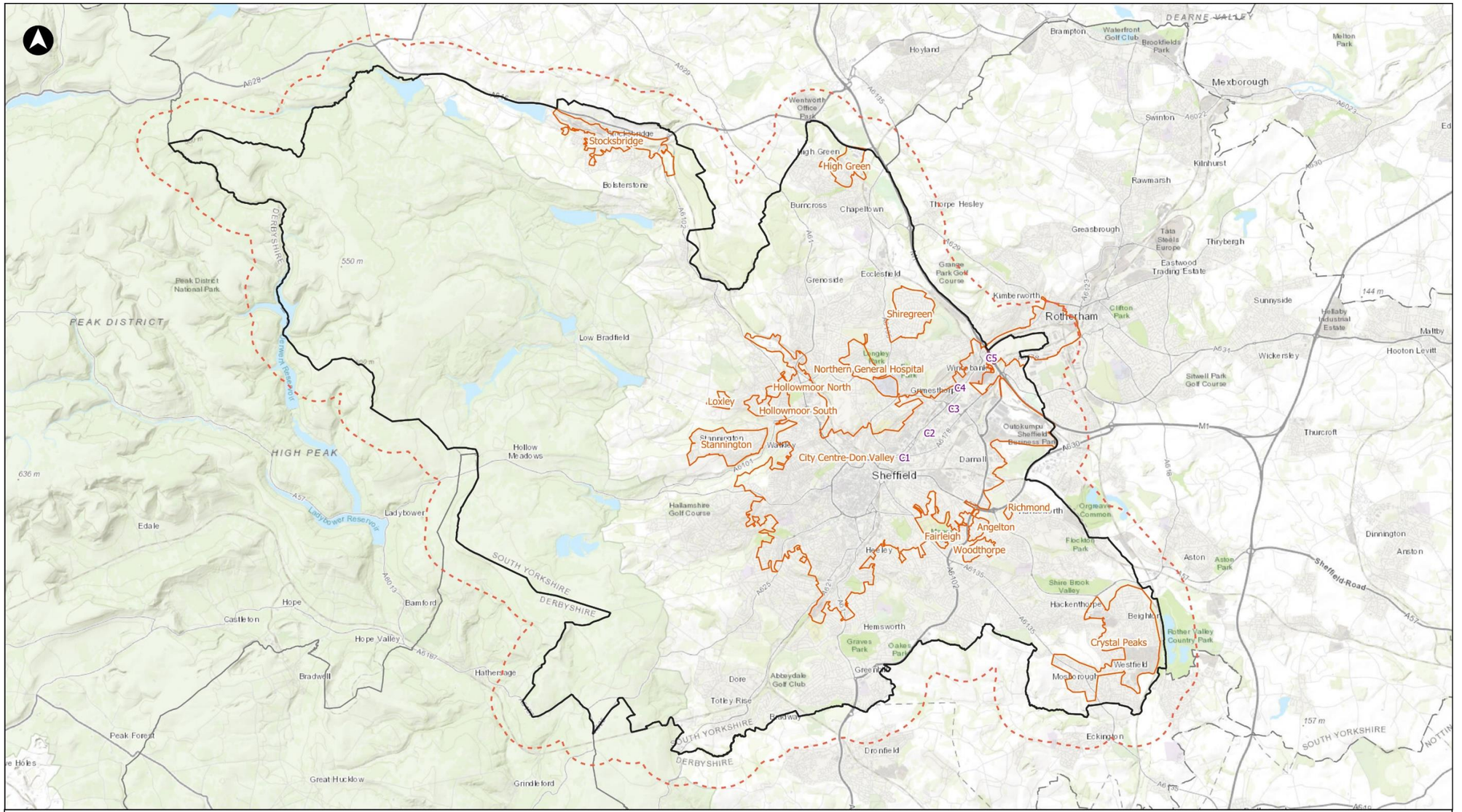
Map C

Key Heat Sources and Energy Centres

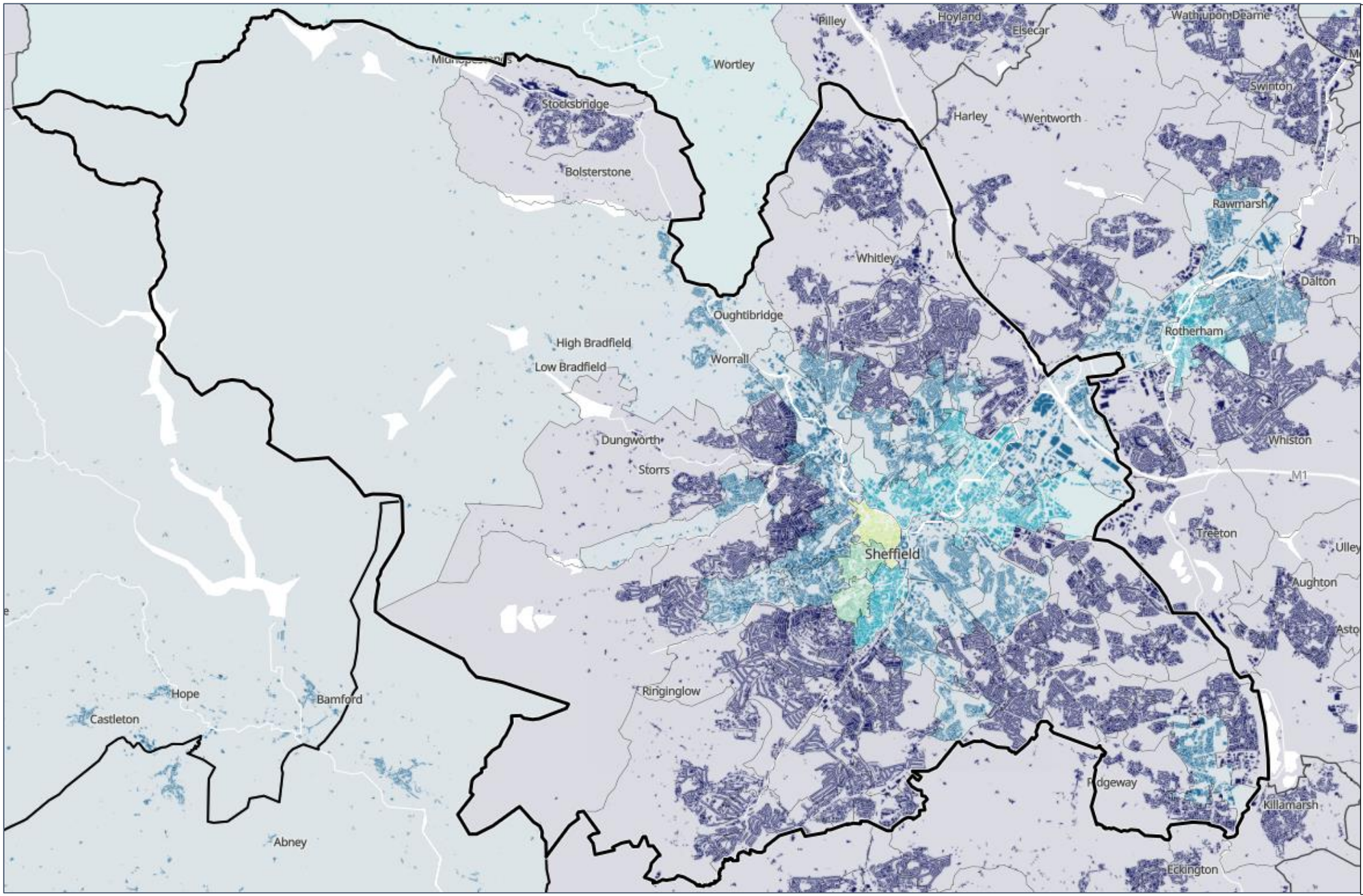
D. Existing and Planned Heat Networks



E. Physical Constraints

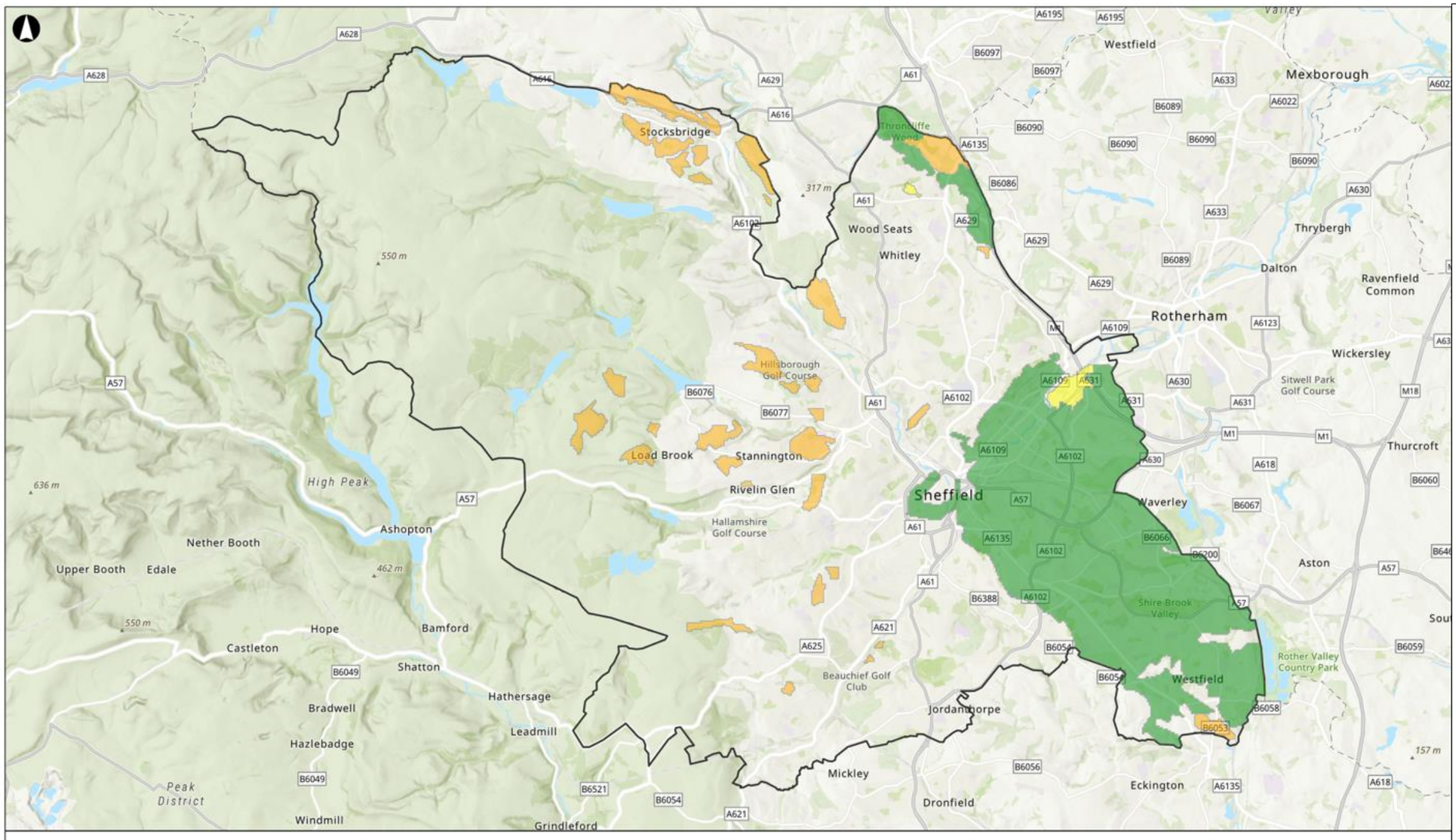


F. Off-Gas Grid Areas in Sheffield



Credit: This is an excerpt from the ONS Census Maps 2021 which is available to explore online. The data shown is subject to Crown copyright protection, is published under the Open Government Licence (OGL) and embeds map data which is copyright of Ordnance Survey and Street maps.

G. Coal Mine Water Map



This Minewater heat opportunity map, developed by The Coal Authority, provides an indication of where water from former mine workings could potentially be extracted to provide a source of heat to supply heat networks. The areas of historic coal mine workings within the Local Authority boundary were assessed and several factors, such as depth to workings and water levels, were analysed to identify areas of potential opportunity and classified as either 'Good', 'Possible' or 'Challenging'. This opportunity map can be used in combination with plans for heat network projects to identify specific locations where more detailed feasibility studies could be undertaken.

Appendix 2: Data Room Resources

Throughout the delivery of the Pilot programme, information resources have been compiled for future use in relation to the development of heat network zones.

These resources will remain restricted to DESNZ and the local authority. This is to ensure that the department remains within its Data Privacy Notice as shared with stakeholders providing the information. GIS outputs are not being published alongside the report as they are subject to change.

Table 13: Pilot Programme Standardised Information Resources

Information resource	Description of resource
Stakeholder Directory	A directory listing key stakeholders identified and approached during the Pilot programme, including organisation name, address, or website, contact names, work title and contact details.
Stakeholder meetings log and records	A log of key meetings held and related meeting records.
Datasets Directory	A list of datasets / reports shared by stakeholders cross-referencing who provided the item from the stakeholder directory and a description of the dataset.
Geospatial packages and related geo-coded datasets	Geo-coded datasets and descriptions related to maps produced in this report.

Table 14: Pilot Programme Study-Area-Specific Information Resources

Information resource	Description of resource
Fletchers Waste	High level data and information – protected by NDA
Forgemasters Steel works	High level data and information – protected by NDA
Marcegaglia Steel works	High level data and information – protected by NDA
Yorkshire Water	Detailed flow rate data for all YW sites – protected by NDA
Sheffield City Trust	Peak heating and cooling demands for Sheffield's leisure and sports facilities
Sheffield Hallam University	Detailed data and information from Cantor building. Information and data about other parts of the estate.

Information resource	Description of resource
University of Sheffield	Detailed datasets for all the University buildings including the Advanced Manufacturing Research Centre
South Yorkshire Police	Detailed datasets for all the South Yorkshire Police buildings
Supa Ltd	Detailed gas and electricity consumption
Canals and Rivers Trust	Data and information supplied for the whole of the UK
Coal Authority	Data and information regarding the mine shafts on the Outokumpu steelworks site
Sheffield College	Data and information regarding Hillsborough and Olive Grove sites
Sheffield City Council	Detailed datasets for all the council owned properties. Information about Heart of the City development and Castlegate
Urbo/Bolsterstone Development – West Bar	Information about West Bar development – some data.
Citu – Attercliffe development	Information about plans for development of 1000 homes in the Don Valley
Housing Associations	Detailed information from Great Places and Together Housing. Generalised information from other RSLs.

This publication is available from: https://www.gov.uk/government/collections/heat-networks

If you need a version of this document in a more accessible format, please email alt.formats@energysecurity.gov.uk. Please tell us what format you need. It will help us if you say what assistive technology you use.