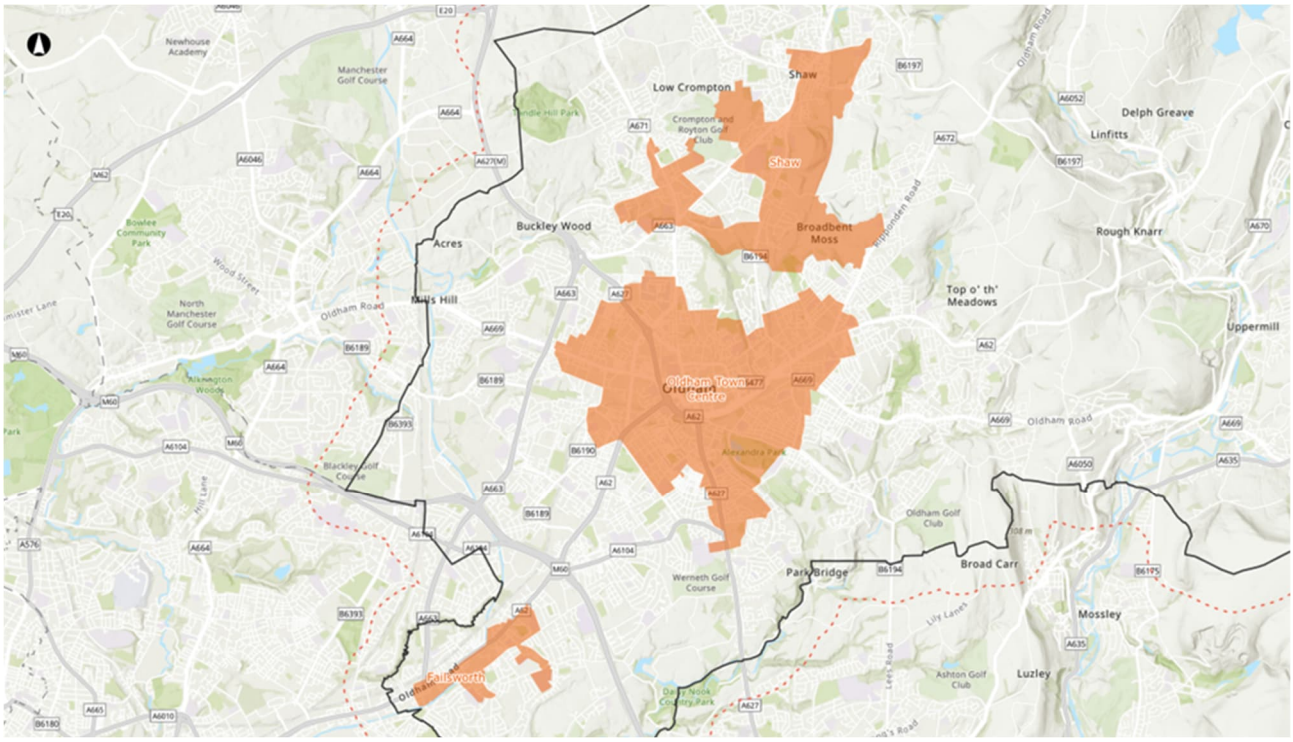
Department for Energy Security & Net Zero

Oldham

Heat Network Zoning

Zone Market Prospectus



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This document contains outputs from the Advanced Zoning Programme 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

Oldham Town Centre: Over 170GWh/yr of heat from 272 buildings were identified for Oldham Town Centre Zone Network. The estimated CapEx is approximately £250m and the network length is approximately 35km.

About Oldham: The Metropolitan Borough of Oldham is a medium sized industrial town in Greater Manchester and covers an area of around 150km². Oldham is in the Advanced Zoning Programme (AZP).

Local Energy Policy: Oldham declared a climate emergency in 2019 and aims for carbon neutrality by 2038. The Green New Deal Strategy targets carbon neutrality for council buildings by 2025.

Existing heat networks: St Mary's provides heating and hot water to 1,400 dwellings in Oldham Town Centre and is served by gas boilers.

Zones identified: Three potential heat network zones were identified, with a total annual heat demand of around 250GWh for all buildings potentially required to connect.

Heat Network Zone Opportunities: One potential zone network opportunity was identified: Oldham Town Centre is a zone covering the town centre, Chadderton to the west and Derker to the east.

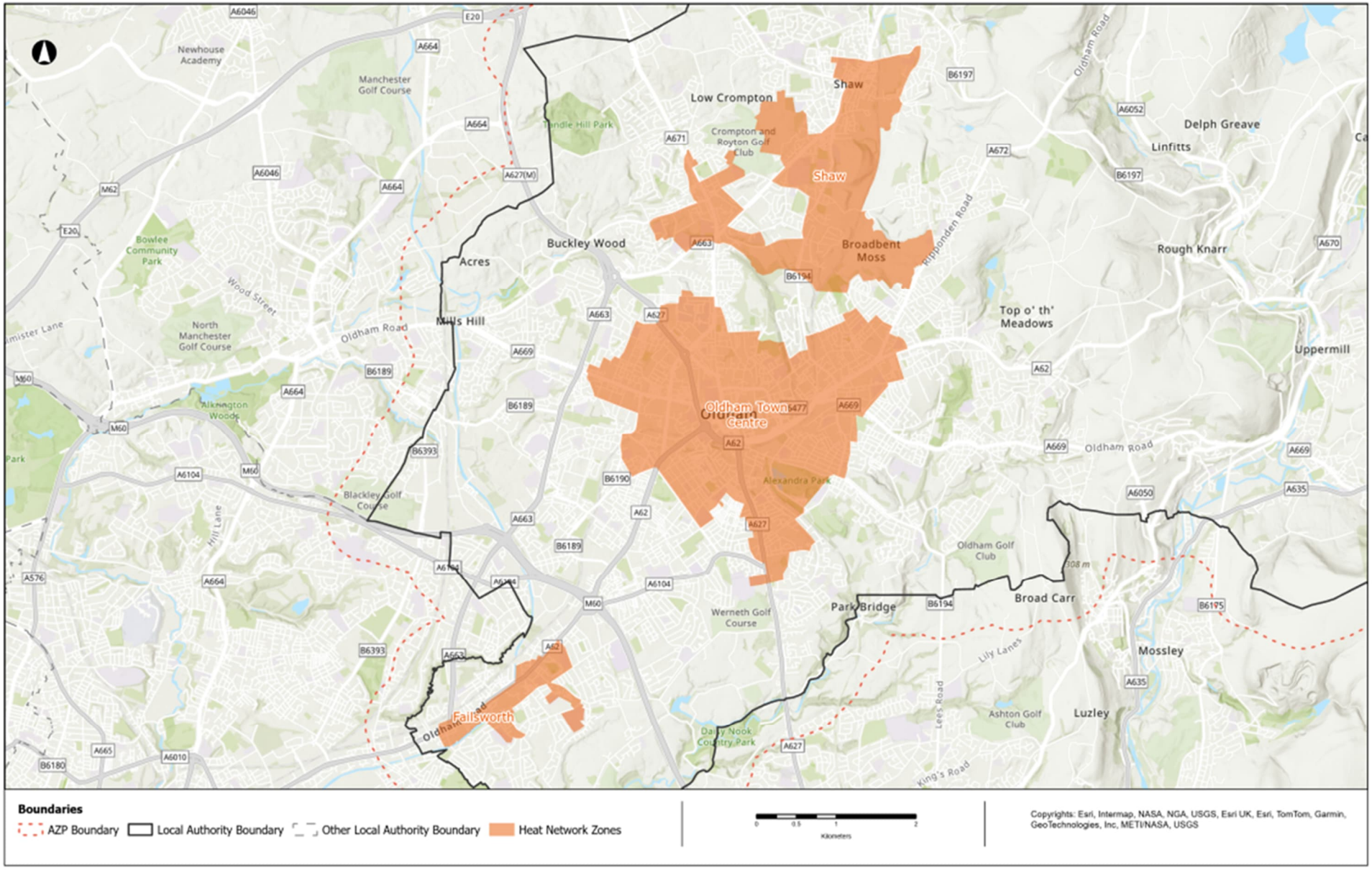
Key heat demands: Oldham Town Centre would connect about 170GWh/yr of heat. Key connections include Royal Oldham Hospital, the St Mary's heat network and Spindles Shopping Centre.

Key heat sources: Potential heat sources include biomass boilers, air source heat pumps and wastewater (sewer source heat pumps).

Estimated CapEx: The estimated capital expenditure for the full rollout of heat networks within identified zones is up to £325m, of which Oldham Town Centre accounts for approximately £250m.

Carbon savings: Oldham Town Centre could deliver carbon savings of about 22ktCO_{2e} annually.

Figure 1 Overview of Heat Network Zones



The Opportunity

Three potential heat network zones have been identified in Oldham. The largest is Oldham Town Centre, followed by two smaller zones in Shaw and Failsworth. Figure 1Figure 1 Overview of Heat Network Zones

illustrates the location and size of these zones.

Oldham Town Centre is the heat network zone being brought to market with the support of AZP. Oldham Council is seeking a **strategic energy partner** using a Contractual Joint Venture model to set up a **long-term partnership** to address multiple energy vectors, including heat decarbonisation.

Oldham Town Centre

The zone covers the town centre and extends from Chadderton in the west to Derker in the east. The Royal Oldham Hospital is in the of north of the zone and Hathershaw College is in the south. The zone includes a diverse mix of commercial, retail, residential, and educational buildings.

The zone has been considered in five phases with a CAPEX of around **£250 million**. It intends to deliver over **170GWh/year** to **272** buildings by 2038 with a network of around **35km**. Table 1 below summarises Oldham Town Centre metrics.

Phase One is based on the **Oldham Low Carbon Heat Network** 'reference scheme' in the town centre. This is a planned heat network targeting several public sector and council owned buildings alongside planned future residential developments. Oldham Low Carbon Heat Network was awarded £8.7m GHNF funding in 2024. This reference scheme intends to: connect to the existing St Mary's heat network; utilise existing underutilised biomass boilers at St Mary's; and establish a new energy centre at Rhodes Bank for air-source heat pumps (ASHPs). Key heat demands include Oldham Civic Centre and the Queen Elizabeth Hall. Phase One would deliver about **30GWh/yr** of heat, connecting **25 buildings** with an estimated **CapEx** of around **£25m**. The reference scheme is currently being commercialised, and the council is considering a joint venture special purpose vehicle (SPV) between Oldham Council and a private sector delivery partner to deliver this first phase of the network.

This reference scheme has expanded with **four more phases**, maximising the use of forthcoming Heat Network Zoning. A Zone Outline Business Case (ZOBC) has outlined an indicative masterplan for this network expansion across the zone and has optimised technical feasibility and financially viability. **Phases two – five** provide an additional **247 connections**. Key heat demands include Spindles Shopping Centre and Early Mill. Potential heat sources include **2MW** sewer source heat pumps connected to a sewer pipe located just south of the town centre, and **22MW** ASHPs, as well as utilising **1,250m^3** of thermal storage. The main network spine would connect the existing St Mary's energy centre to the proposed Rhodes Bank energy centre.

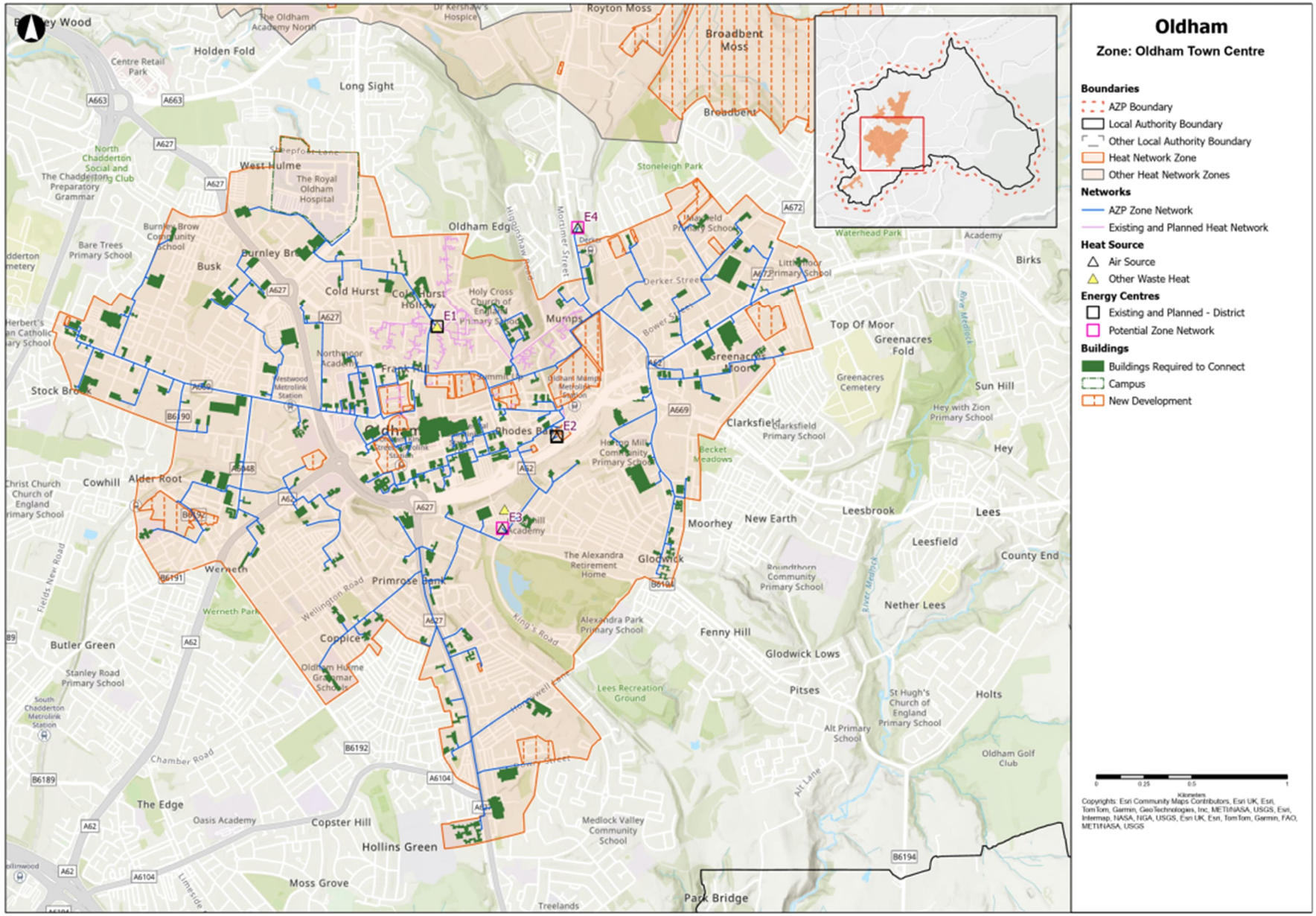
Table 1: Summary Statistics for Oldham Town Centre[1]

Key Metric	Unit	Reference Scheme	Full Zone Build Out
CapEx	£m	~£25m	~£250m
Heat Demand	GWh/yr	~30GWh/yr	~170GWh/yr
No. of Connections	N/A	25	272
Linear Heat Density	MWh/m/yr	5.9	4.9
Network Length	km	4.5	35

The rest of this Zone Market Prospectus summarises **Oldham Council's, plans and priorities** in Section 2. Section 3 summarises **Oldham Town Centre** in more detail, and Section 4 summarises **additional heat network zone opportunities** identified.

[1] Please see Appendix 3 – Glossary, "Specific definitions" of the main report for definitions related to this table.

Figure 2 Oldham Town Centre Network in Oldham Town Centre HNZ



1) Background & Policy Context

1.1) Introduction

This Zone Market Prospectus is intended to showcase potential heat network zones within Oldham that have been developed as part of the Advanced Zoning Programme (AZP). The document summarises the heat network investment opportunity for **Oldham Town Centre**.

Oldham was identified by the Department for Energy Security and Net Zero (DESNZ) through the AZP as an area with more advanced heat network plans and which are ready to deliver at pace and scale. This opportunity offers a chance to be involved in a leading national initiative supporting the decarbonisation of heat in England, and represents an exciting opportunity to invest in local area.

The prospectus summarises key information about the potential heat network connections, heat sources, commercial delivery models, and the economic viability of the opportunity. Information presented in this document reflects work undertaken as part of a DESNZ funded programme and aligns to the latest information that is available in relation to the heat network zoning policy. Information may change as opportunities are better understood over time.

1.2) Advanced Zoning Programme

AZP is a Government-backed programme designed to accelerate the development of heat networks zones. The areas that are part of the Advanced Zoning Programme have been identified as those which are further developed around their planning and thinking of heat network development and are ready to deliver at pace and scale.

The programme is working with 19 areas to support the construction of new zonal-scale heat networks. The Programme aims to support up to 10 large scale heat networks in likely zones to begin construction by the end of 2026. In addition, the programme will support the development of best practice guidance, provide project development support services, and promote market transformation ready for the national rollout of Heat Network Zoning policy. Therefore, inclusion in this programme represents an opportunity to participate in a flagship national programme of major heat decarbonisation projects.

Each local area has worked with DESNZ to align development of local projects to the forthcoming introduction of new policy and legislation. Whilst there remain risks that the final policy design may continue to evolve and change from stated public documents, there will be specific AZP sections of the regulations that acknowledge how this project has been developed to date to mitigate these risks. Specifically, the procurements undertaken prior to the regulations will constitute the equivalent of the competed process under zoning regulations. Documents made available as part of these procurements have been standardised with the intended approach that once the zone is designated, the zone coordinator would be able to direct award the area covered by the AZP procurement to the successful bidder of that procurement. Furthermore, it standardises three governance

options and included standardised documents and templates that are part of this procurement back. The three governance options are:

1. the Development Agreement model
2. the Golden Share model, and
3. the Joint Venture model with reserved matters.

Further information on the proposed model for this area is listed in the prospectus.

1.3) Wider National Policy Context

Heat networks will play a crucial role in decarbonising heat in buildings. They 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 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 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[2] establishes the regulatory framework for heat networks in Great Britain and provides powers to introduce heat network zoning in England through secondary legislation. These new rights and powers will transform the development of heat networks in towns and cities across England.

DESNZ have undertaken two public consultations in relation to the design of the heat network zoning proposals. The most recent consultation closed in February 2024, with a response due later this year. This shall be followed by the introduction of the Statutory Instruments (SIs), which are form of secondary legislation, which will detail how the zoning policy will be implemented. The information contained within this document is subject to the final policy design.

A heat network zone is a formally designated geographical area where heat networks are expected to provide the lowest-cost solution for decarbonising heating. Local and central government will work with industry and local stakeholders to identify heat network zones and provide the tools required to accelerate the development of heat networks to ensure that more homes and businesses can have access to greener, cheaper heat. Heat network zoning aims to give developers and investors more certainty about the number of likely connections to the networks that they build, and remove barriers to accessing low carbon heat sources which currently limit the pace of developing large scale heat networks. It also has the potential to create tens of thousands of jobs across the country and embed local benefits within the communities where heat networks are developed.

[2] Energy Act 2023 https://www.legislation.gov.uk/ukpga/2023/52

Figure 3 Conceptual illustration of a heat network zone in England

The policy will establish local Zone Coordinators who will be responsible for co-ordinating heat network zoning activity in an area. Local government and DESNZ (as the Central Authority) will work together to decide who will be the zone coordinator for each zone. The latest description of the roles and responsibilities each entity are available in the latest consultation proposals[3]. A more detailed description will be outlined in the SIs.

Heat network zones will be identified using a standardised national zoning methodology. The methodology will consist of two stages: 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; and a refinement stage where relevant local stakeholders will input to the review and refinement of potential heat network zones prior to formal designation.

Certain buildings within designated zones will be required to connect to the heat network to ensure sufficient demand and viability for the network. As per the most recent consultation proposals, these may include new buildings, existing communally heated buildings, and existing non-domestic buildings with heat demand over 100 MWh/yr. There are two types of exemptions for buildings that cannot meet the connection requirements: conditional exemption for buildings that meet specific long-term criteria, such as having an existing low-carbon heat source, prohibitive costs, or if connection is not technically feasible, and temporary exemption for buildings that cannot viably connect to the heat network within the specified connection window. These proposals aim to ensure that heat networks are effectively utilised and that buildings within designated zones contribute to the overall efficiency and sustainability of the network. 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.

[3] Heat Network Zoning Consultation: https://www.gov.uk/government/consultations/proposals-for-heat-network-zoning-2023

1.4) Regulation and Consumer Protection

Alongside heat network zoning, comprehensive consumer protection regulation[4] of the heat network sector will be put into place through the Heat Network Market Framework. Ofgem is taking on the role of regulator, from 2026, and will have new powers to regulate prices in the sector and investigate disproportionate pricing across all heat networks.

Within the sector, this will secure fair pricing for domestic customers as well as ensuring transparency, guaranteed standards of performance and other protections, providing market assurance and encouraging investment in the industry. Regulations also extend to technical and performance standards, to ensure that heat networks provide the highest levels of service and reliability for connected consumers. For a fuller description and up to date information regarding its implementation, please visit: https://www.ofgem.gov.uk/consultation/heat-networks-regulation-implementing-consumer-protections.

[4] Heat Networks (Market Framework) (Great Britain) Regulations 2025: https://statutoryinstruments.parliament.uk/instrument/oxH7ZINs

2) Oldham Plans & Priorities

2.1) Oldham Overview

Oldham is a medium-sized town within Greater Manchester in the north-west of England. Local government in Oldham is two-tier, with Oldham Metropolitan Borough Council responsible for local services and Greater Manchester Combined Authority (GMCA) overseeing regional services.

Oldham features a mix of urban, sub-urban and rural areas. The town centre has a prominent industrial history. The River Medlock and the River Irk both flow through the borough. The population is approximately 242,000, and the local authority covers an area of around 150km[5]. Social housing accounts for about 21% of the total housing stock and Oldham Council manages about 40% of social housing.

The GMCA publication “Places For Everyone”[6] outlines a strategy to focus investment and growth in the town centres of northern areas of Greater Manchester, including Oldham, to deliver improved transportation links and attract high-quality businesses, jobs and housing development.

2.2) Oldham Net Zero Targets and Commitments

Oldham Council declared a climate emergency in July 2019. Proceeding this, the council published its Green New Deal Strategy, outlining two key targets: carbon neutrality for the council by 2025; and carbon neutrality for the borough by 2030[7].

At city region level GMCA declared a climate emergency in 2019, and published a Five-Year Environment Plan (2019-2024). This Plan, outlines ambitions to become a carbon neutral city region by 2038. The first Five-Year Plan successfully implemented a range of energy innovations, environmental projects, emission reduction initiatives and investment in infrastructure. Building on this, the GMCA’s recently published second Five-Year Environmental Plan (2025-2030)[8], focuses on increasing renewable energy generation and storage, increasing the number of operational heat networks and increasing the resilience and capacity of the electricity network. It continues to target carbon neutrality by 2038 for the city region.

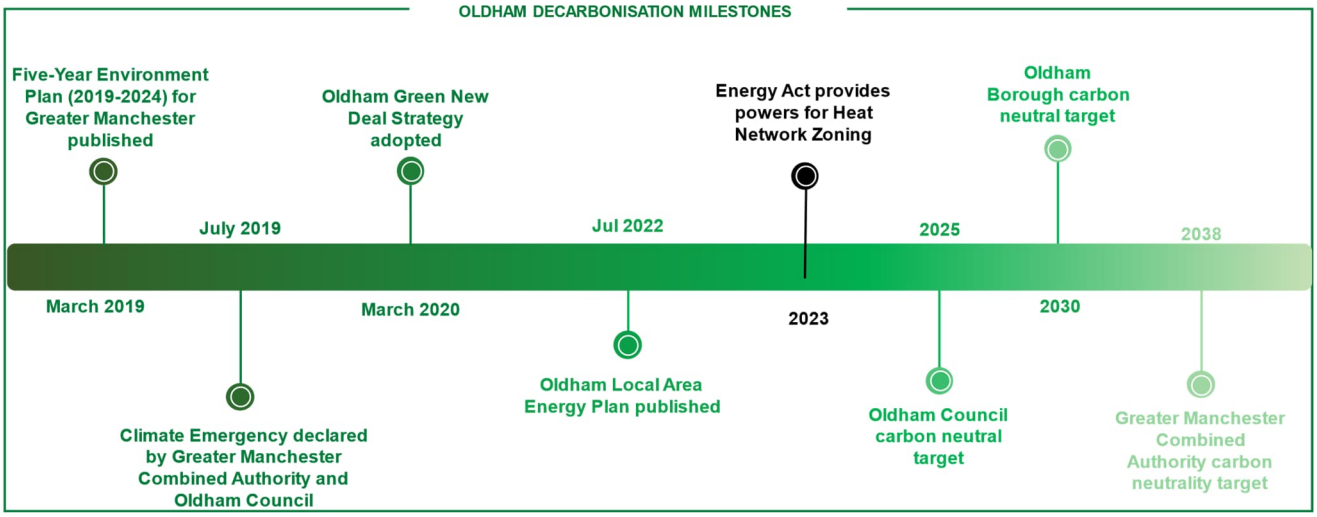
GMCA worked with the Tyndall Centre for Climate Research to develop a carbon budget for Greater Manchester that would be compatible with the Paris Agreement and limit global temperature rise this century to below 2°C and preferably 1.5°C.

[5]https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates/bulletins/populationandhouseholdestimatesenglandandwales/census2021
[6]http://www.greatermanchester-ca.gov.uk/what-we-do/planning-and-housing/strategic-planning/places-for-everyone/
[7]https://www.oldham.gov.uk/info/201249/green_new_deal/3002/oldham_green_new_deal_strategy
[8] https://www.greatermanchester-ca.gov.uk/media/alnl0fsy/gmca_5-year-plan_final_digital_v3-ua.pdf

In addition to this, Oldham Council have developed a Local Area Energy Plan (LAEP)[9] which outlines several scenarios for achieving carbon neutrality in Oldham, highlighting the benefit of district heat networks.

Figure 4 below, summarises key dates in Oldham Council's plans for decarbonisation and demonstrates their progress towards decarbonisation targets.

Figure 4 Oldham and relevant GMCA (city region) Decarbonisation Milestones



2.3) Delivering Heat Networks in Oldham

Oldham Town Centre has been identified as the area with highest potential for heat networks. Oldham's Local Plan[10], includes Policy OTC1 to support heat network development in the context of the development and regeneration of Oldham Town Centre. Equally Oldham's Local Area Energy Plan identifies the town centre as an area to target for heat network delivery.

There is one operational heat network, St Mary's in Oldham. Existing and planned heat networks are introduced below and shown in Map D. Existing and planned heat networks in Appendix 1. Oldham Town Centre is being supported in AZP is introduced in more detail in Section 3.

St Mary's

St Mary's provides heat to around 1,400 homes. It was built in the 1960's and a gas-fired system was installed in 1997 replaced a coal-fired boiler. It is managed by First Choice Homes Oldham. It was intended that the network would be heated using a 3.5MW wood chip biomass boiler with gas boilers as backup. However the gas boilers meet the entire demand of the network, and the biomass boiler is not currently operational.

[9] https://committees.oldham.gov.uk/documents/s129736/OS%20Feb%2022%20-%20OGND%20Appx%20C_Oldham%20LAEP.pdf
[10] https://www.oldham.gov.uk/download/downloads/id/7825/draft_local_plan_december_2023.pdf

2.4) Heat Network Zones in Oldham Summary

This summary introduces the zones identified, provides estimated **heat demand** and describes the provisional position about the expected **Zone Coordinator**. Section 0 then provides more detailed information about **Oldham Town Centre** being brought to market with AZP support. Section 0 provides more information about additional heat network zone opportunities identified.

A total of three HNZs were identified in Oldham, as shown in Figure 1Figure 1 Overview of Heat Network Zones

. Table 2 presents a high-level estimate of the scale of these opportunities. Please refer to Appendix 4 for more detail.

Table 2: Annual Heat Demand for Buildings Identified to Connect to a Heat Network Zone

Scope	Heat demand	CapEx
All buildings connected to the Oldham Town Centre Network[11]	~170GWh/yr	~£250m
All buildings within Oldham Town Centre Zone	~180GWh/yr	-
All buildings within zones	~250GWh/yr	~£325m

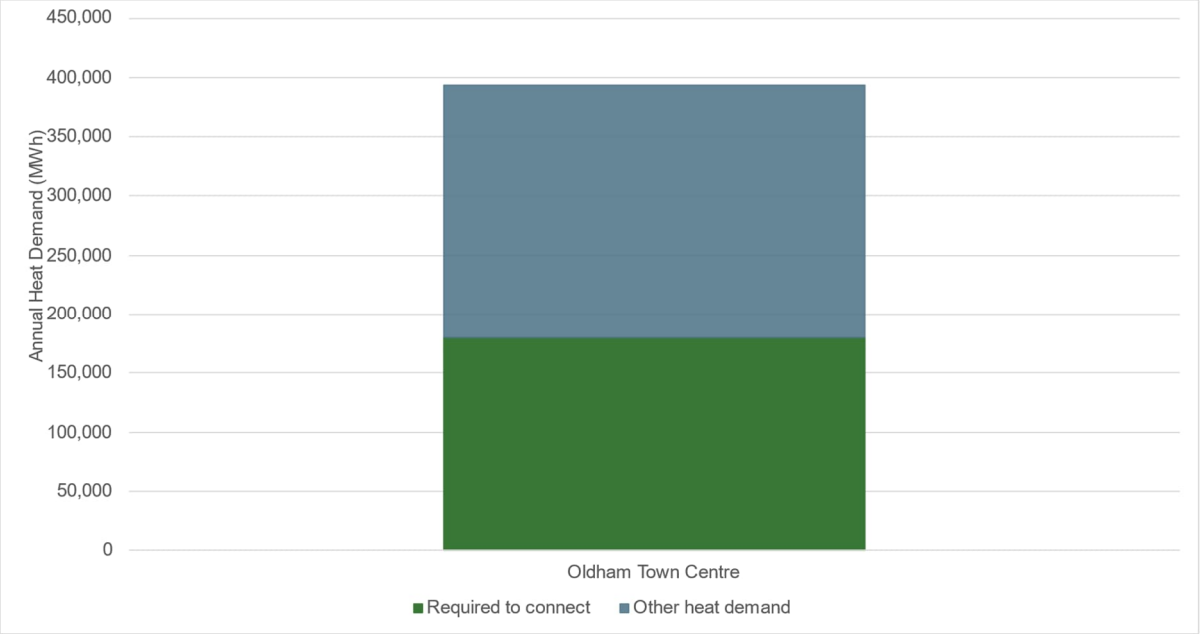
Existing/planned heat networks that overlap with zone networks are described, though their locations may vary due to different approaches. Existing and planned networks will often be based on more detailed design work and have taken account of strategic and commercial considerations that were relevant at the time of their development.

Oldham Town Centre contains 35km of network pipe trench, covering Oldham Town Centre. It will deliver over 170GWh of heat per year by 2038 at full build-out to 272 connections. This builds on the Oldham Low Carbon Heat Network ‘reference scheme’ (described in more detail in Section 3). Oldham Council intends to secure a long-term partner to decarbonise Oldham across multiple energy vectors, including heat decarbonisation. The preferred route to market and delivery model is a Contractual Joint Venture model, utilising a Strategic Energy Partnership. For more information, please see Section 018. Figure 56illustrates the size of this zone and the proportion of buildings that may be required to connect.

[11] Row 1 is an estimate of heat demand connected to the network in the first heat network zone being brought to market with AZP support. Row 2 is an estimate of heat demand across buildings required to connect in this zone. Row 3 includes buildings connected to the zone networks described and is largely comprised of buildings potentially required to connect. Figures are generally rounded up to the nearest 25 or 50GWh/yr.

Two smaller heat network zone opportunities were also identified. For more information, please see Section 0.

Figure 56: Summary of Heat Demands



Zone Coordinator

Oldham Council is in the process of deciding their ideal level of involvement in the Zone Coordinator role. Oldham could take on all responsibilities of the role, share it with GMCA, or GMCA could act as the Zone Coordinator across the city region. Discussions between the GMCA and constituent local authorities are ongoing as are discussions within Oldham Council.

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 Demands Map** – highlights key buildings potentially 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 advanced stages of development.
- **E: Key Constraints Map** – shows key topographical constraints identified.
- **F: Off Gas Grid** – presents areas with differing levels of properties off the gas grid within the study area.
- **G: Coal Mine Water Map** – shows area where coal mine water maybe a possible heat source.

Please refer to Appendix 2: Data Room Resources for further information about the evidence compiled during AZP. This includes a stakeholder directory and records of interactions with those stakeholders as well key studies and reports.

3) Oldham Town Centre

3.1) Oldham Town Centre Summary

Section 3 examines the heat network zone being brought to market with the support of AZP in Oldham. This section covers the key **heat demands**, **heat sources**, proposed **energy centre location(s)**, **potential constraints** and **zone delivery** for Oldham Town Centre. Heat network distribution routes are conceptual. They are 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 to prospective heat network developers. More detailed information about the heat network is found in the suit of documents in the procurement pack. Information about additional heat network zone opportunities in Oldham is found in Section 4.

Oldham Town Centre Zone covers an area spanning from Chadderton in the east to Derker in the west, and from The Royal Oldham Hospital near Oldham Edge in the north down to Hathershaw College and Hollins in the south. The Oldham Town Centre Zone contains a mix of building types. The town centre in the middle of the zone is predominantly commercial and retail urban areas, transitioning outward to sub-urban residential areas with some industrial mill sites toward the zone boundary. The Oldham Town Centre Zone also contains several education establishments, including Oldham College, Oldham Sixth Form College, and Bluecoat School.

The **Oldham Town Centre Network** is being considered across **five phases**. **Phase One** is based on the Oldham Low Carbon Heat Network ‘reference scheme’ in the town centre which is a planned heat network targeting several public sector and council owned buildings in the town centre alongside planned future residential developments. Oldham Low Carbon Heat Network was awarded £8.7m GHNF funding in 2024. This reference scheme (Phase One of Oldham Town Centre) would deliver about 30GWh/yr of heat. Four further phases expand this opportunity with an additional 272 connections. The length of the network across all five phases (full build out) is around **35km**. The main network spine would connect the existing St Mary’s network energy centre site to the proposed Rhodes Bank energy centre site. Potential heat sources include the existing **3.5MW** biomass boilers at St Mary’s, **2MW** sewer source heat pumps connected to a sewer pipe located just south of the town centre, and **22MW** air source heat pumps, as well as utilising **1,250m^3** of thermal storage. It will deliver over **170GWh/year** to **272** buildings by 2038.

The Royal Oldham Hospital is a **key heat demand** for Oldham Town Centre, being a public sector building with a substantial heat demand. Other key heat demands include the Spindles Shopping Centre, St Mary’s heat network and the Civic Centre and Queen Elizabeth Hall planned development.

Oldham Town Centre thus aims to demonstrate the technical feasibility, financial viability and additional benefits of expanding the Oldham Low Carbon Heat Network ‘reference scheme’ using the anticipated powers within the forthcoming Heat Network Zoning policy. It supports Oldham Council’s Net Zero ambitions through reduced carbon emissions and improved air

quality in the town centre due to the replacement of gas boilers. The proposed network also supports the prosperous vision outcome through the creation of new job opportunities and skills growth as well as through the support of town centre regeneration and attraction of investment / development. It also provides a significant contribution towards the delivery of the Local Area Energy Plan.

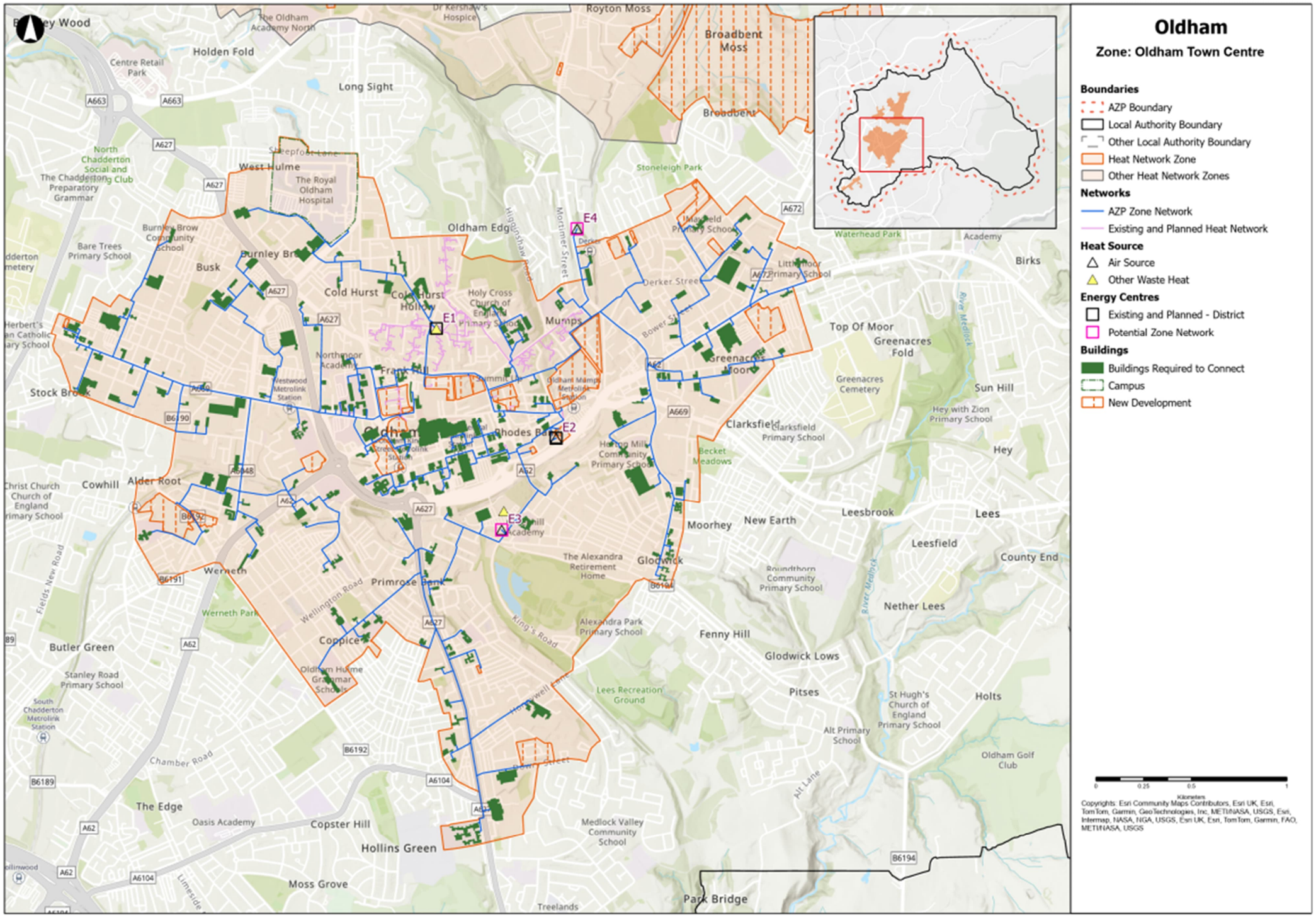
Summary statistics for the Oldham Town Centre Network are summarised in Table 3.

Table 3: Summary Statistics for Oldham Town Centre[12]

Key Metric	Unit	Reference Scheme	5 Phase Zone Build Out
CapEx	£m	~£25m	~£250m
Heat Demand	GWh/yr	~30GWh/yr	~170GWh/yr
No. of Connections	N/A	25	272
Linear Heat Density	MWh/m/yr	5.9	4.9
Network Length	km	4.5	35

[12] Please see Appendix 3 – Glossary, “Specific definitions” of the main report for definitions related to this table.

Figure 78: Oldham Town Centre Network in Oldham Town Centre HNZ

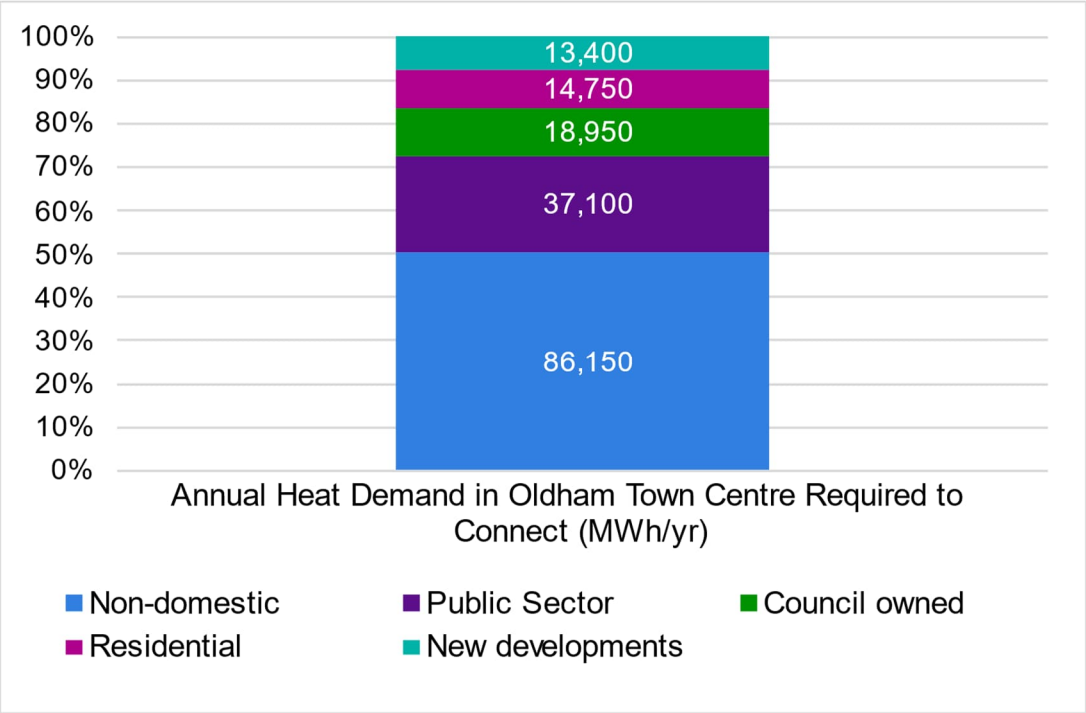


3.2) Oldham Town Centre Heat Demands

The AZP used several sources of heat demand data including local data collected from building owners; national energy demand datasets; benchmarks applied via the National Zoning Model[13]; and a standardised approach to estimate the potential heat demands of new development sites.

There are 425 buildings potentially required to connect in the Oldham Town Centre, and 272 assumed to be connected to the Oldham Town Centre Network. The type of heat demand in Oldham is varied with a range of potential customers. Figure 910 presents the buildings typologies in the Oldham Town Centre Network. The majority of the hospital heat demand comes from Royal Oldham Hospital, with a demand of over 26GWh/yr. Royal Oldham Hospital campus is also considered as one connection targeted for connection in Phase 2.

Figure 910: Categorisation of Heat Demand for Buildings Required to Connect to Oldham Town Centre



Key buildings potentially required to connect include the Royal Oldham Hospital, Spindles Shopping Centre, St Mary's existing heat network, Earl Mill, Civic Centre and Queen Elizabeth Hall future developments, Ribble Packaging, Green Acres Shopping Centre, Prospect House, Sainsbury's (Union Street) and Werneth Ring Mills. Information about these key heat demands is provided in Table 4.

[13] Early outputs from the National Zoning Model (National Model Run 3 completed September 2024) have been used for the purposes of the AZP while the model is undergoing development and DESNZ quality assurance.

Table 4: Oldham Town Centre - Key heat demands for Buildings Required to Connect in Oldham Town Centre

Building name	Building category	Connected to Existing Network	Number of connections	Annual Heat Demand (MWh)	Data Source
Royal Oldham Hospital	Public Sector	No	1	26,500	ERIC
Spindles Shopping Centre	Non-domestic	No	1	13,300	NZM
St Mary's heat network	Residential	Yes	1	11,700	Metered data
Earl Mill	Non-domestic	No	1	4,250	NZM
Civic Centre and Queen Elizabeth Hall	New developments	No	6	3,600	Other benchmark[14]
Ribble Packaging	Non-domestic	No	1	3,550	NZM
Green Acres Shopping Centre	Non-domestic	No	1	3,500	NZM
Prospect House	Non-domestic	No	1	3,400	NZM
Sainsbury's	Non-domestic	No	1	2,600	NZM
Werneth Ring Mills	Non-domestic	No	1	2,600	NZM

The total required to connect heat demand within Oldham Town Centre is estimated to be around **170GWh/yr**. The top 10 heat demands in Table 4 represents about **44%** of the total

[14] CIBSE TM64 (https://www.cibse.org/knowledge-research/knowledge-portal/tm46-energy-benchmarks)

demand. These connections are key to the development of Oldham Town Centre and are considered key stakeholders.

St Mary's heat network and the Civic Centre and Queen Elizabeth Hall development site are both connected to the proposed reference scheme and would be connected during Phase 1 of Oldham Town Centre. The Royal Oldham Hospital campus is the largest heat demand and alone represents about 16% of the network demand. Following discussions between Oldham Council and the Royal Oldham Hospital it is understood that the hospital has an aged system that needs retrofit works to enable connection to a heat network and as such the hospital connection has been allocated to a later phases of the network development.

3.3) Oldham Town Centre Heat Sources

Heat sources for Phase 1 correspond with the Oldham Town Centre reference scheme, including the biomass boilers housed at the St Mary's heat network plant room, ASHPs housed in the new Rhodes Bank energy centre, and thermal storage. There are existing biomass boilers at the St Mary's energy centre. At end-of-life this would be replaced with ASHPs.

The demand of the subsequent phases has been matched with increased ASHP capacity, utilising thermal storage, as well as additional heat from sewer-source heat pumps (SSHP). Due to the limited low carbon heat available around Oldham Town Centre, location-agnostic ASHP centralised energy centres have been selected as the optimal solution. Sewer-source waste heat is considered to generate higher and more constant temperatures than ambient air or river water, providing overall greater efficiency and a more diverse supply of heat. Woodstock Street potentially provides access and proximity to the sewer and a site large enough to accommodate ASHPs required. There has been significant engagement with United Utilities around the use of heat from sewers across Greater Manchester and work has been undertaken by GMCA to develop draft Heads of Terms and a charging methodology for sewer heat offtake.

Table 5 summarises the key heat sources and potential energy centre locations identified for Oldham Town Centre. These are also shown in Figure 78, the zone-level map, 20and on the city-level Map C in Appendix 1.

Table 5: Oldham Town Centre Network Heat Sources and Energy Centres

EC Ref number	Site type	Size (m^2)	Ownership	Heat Source	Capacity (kWp)
E1	Existing energy centre	650	First Choice Homes Oldham	Biomass	3,500
E2	Land	1,600	Oldham Council	ASHP	6,600

E3	Land	4,500	Oldham Council	SSHP	2,000
E3	Land	4,500	Oldham Council	ASHP	7,700
E4	Land	3,200	Unknown	ASHP	7,700

E1 is the existing St Mary's energy centre and will be connected in Phase 1 as part of the reference scheme. E2 is a new planned energy centre at Rhodes Bank and will also be connected during Phase 1. E3 is a new planned energy centre on Woodstock Street and will use waste heat from the sewer that runs south of Oldham Town Centre. E4 is a new planned energy centre at Shaw Road, currently vacated land, that will connect air-source heat pumps to the network after the biomass boilers at E1 come to the end of life. The space required for the large capacity of ASHPs is too large for the current St Mary's heat network plant room.

3.4) Oldham Town Centre Heat Distribution

The approach to developing the Oldham Town Centre Network routing considered economic viability, investment scale and returns, decarbonisation impact and deliverability. AZP standardised opportunities and therefore may not reflect detailed designs. Routing within the site boundary of a building or campus may not have been included if insufficient information was available.

The purpose of the concept heat network route is to define the scale, potential routing and identified associated constraints within the zone. Further work may 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.

A strategic main spine will connect energy centres E1, E2, and E3. It will run south from E1 at St Mary's plant room to E2 at Rhodes Bank, crossing the A62 to E3 at Woodstock Street. Spines run off between E1 and E2 eastwards into Derker and westwards crossing the Oldham Way into Chadderton. After E3, the pipework runs south into Hathershaw. These spines are the basis of the phases in which the network will be built out. Only buildings which could be required to connect were considered during the routing.

Table 6 shows network length and associated costs. Please see Appendix 5 for related methodology statements and assumptions.

Table 6: Indicative Heat Network statistics for Oldham Town Centre

Zone Network	Network length (km)	Network cost (£)
Oldham Town Centre Network	~35km	~£75m

3.5) Oldham Town Centre Key Constraints and Mitigations

[C1] Tram line crossing: The Oldham and Rochdale Line (ORL) is a light rail/tram line that runs through Oldham. The Oldham Town Centre Network crosses the line in two areas; once at Prince Street and Yorkshire Street near Oldham Mumps stop, and once at Winterbottom Street near Westwood stop. A feasibility study could determine the best location to cross, as well as coordination between Metrolink, Transport for Greater Manchester and Oldham Council.

[C2] Road crossing: The A669, Middleton Road, is a main road linking the town centre and Chadderton. The network route follows a portion of this road to reach the western regions of the zone. A feasibility study could determine the best location to cross, as well as coordination between the developer and Oldham Council transport department.

[C3] Road crossing: The A669, Lees Road, is a main road linking the town centre and Lees to the east of zone. The network route crosses this road at a junction with Glodwick Road. A feasibility study could determine the best location to cross, as well as coordination between the developer and Oldham Council transport department.

[C4] Road crossing: The A62 is a 4-6 lane dual carriageway that crosses through the town centre and spans out over several junctions, made up of Oldham Way, Manchester Street, Huddersfield Road and more. The network route crosses the A62 at several points. A feasibility study could determine the best location to cross, as well as coordination between the developer and Oldham Council transport department.

[C5] Road crossing: The A627 is a main road linking Rochdale and Oldham and feeds Oldham Way at a junction slightly west of Oldham town centre. A feasibility study could determine the best location to cross, as well as coordination between the developer and Oldham Council transport department.

3.6) Oldham Town Centre Delivery

The reference scheme, Oldham Low Carbon Heat Network, is currently being commercialised and is expected to be in the form of a Joint Venture Special Purpose Vehicle (SPV) between Oldham Council and a private sector delivery partner.

For the expanded zone, Oldham Council's preference is for a Contractual Joint Venture model, utilising a Strategic Energy Partnership as the approach to secure a long-term partner across energy vectors, including heat decarbonisation.

This will give the Council control over the commercialisation through the contractual agreement terms. The aim is that the Strategic Energy Partnership will develop Phase 1, and potentially Phases 2-5, to meet Oldham's mandatory requirements once heat zoning policy is in place.

A Zone Outline Business Case has been developed for Oldham to demonstrate that developing a zone-scale heat network using the powers in the Heat Network Zoning policy, is both technically feasible and financially viable. Furthermore it will deliver greater benefits than the alternative option for decarbonising the buildings within the zone using individual heat pumps. Further information can be found in the procurement pack.

4) Additional Heat Network Zone Opportunities

Section 3 examines additional heat network zone opportunities that were identified in Oldham, covering **total heat demand** and potential **heat sources**, and a short commentary about **key features of the zones**. In Oldham these are **'smaller'** zones – generally smaller and discrete, and below 50GWh. Future work will need to consider factors such as size and aggregation to ensure efficient and effective delivery of heat networks in the area.

4.1) Smaller Heat Network Zone Opportunities

There were two smaller heat network zones identified in Oldham with a combined heat demand of about 75GWh/yr. Figure 11 Error! Reference source not found. **illustrates the total annual heat demand, and the proportion of which is associated with buildings that may be required to connect within each zone. A map of all zones can be found in Figure 1Figure 1 Overview of Heat Network Zones**

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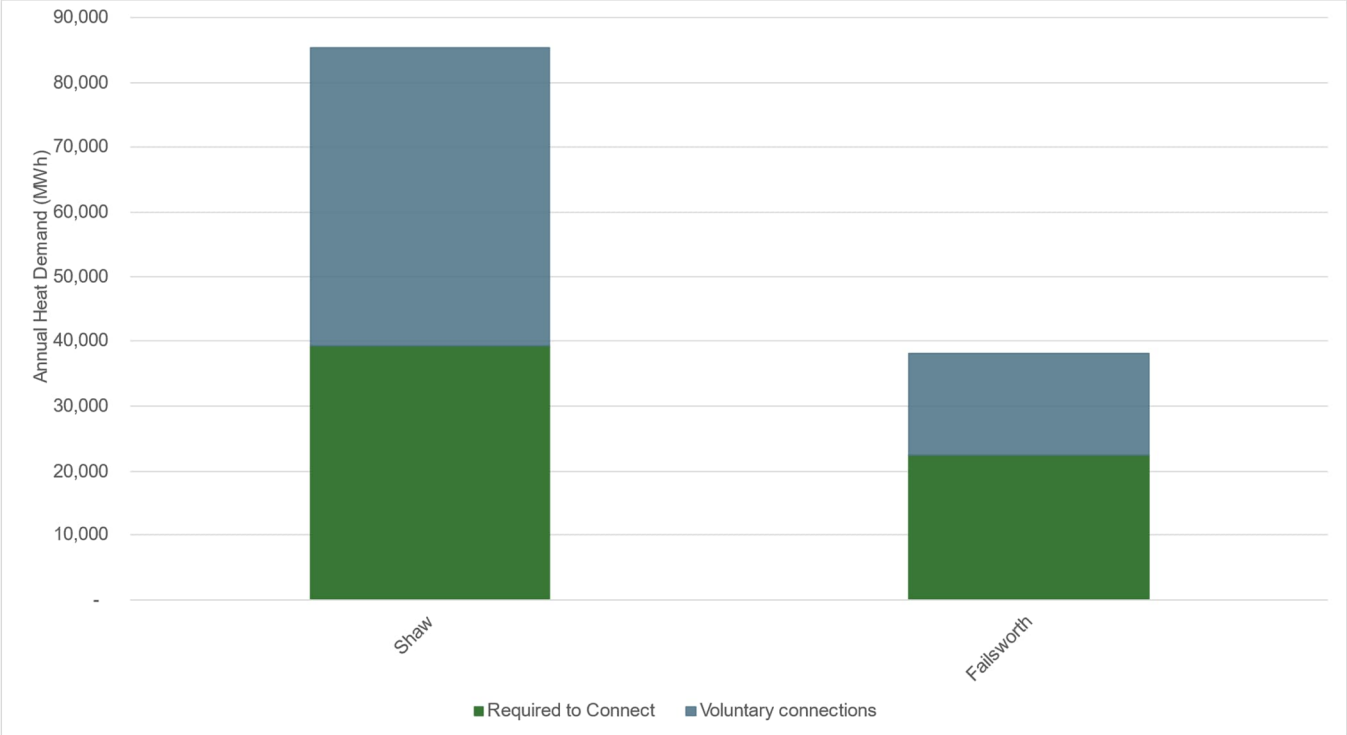
Figure 11: Total heat demand, proportion of Required to Connect in Smaller HNZs in Oldham



Shaw This zone is situated north of the town centre and is predominantly a residential area, with three large residential future developments planned that would be required to connect. The area is dominated by buildings of a low-rise residential nature. Key heat demands include Laurel Trading Estate, Broadbent Moss development, Beal Valley development and Cowlishaw development.

Failsworth This zone is situated southwest of the town centre and is mainly a residential area with some commercial and retail buildings. The area is dominated by buildings of a low-rise residential nature. Key heat demands include such as Marlborough Mill, Ivy Mill, Morrisons and the Co-op Academy Failsworth.

Appendix 1: Standard City-level Maps

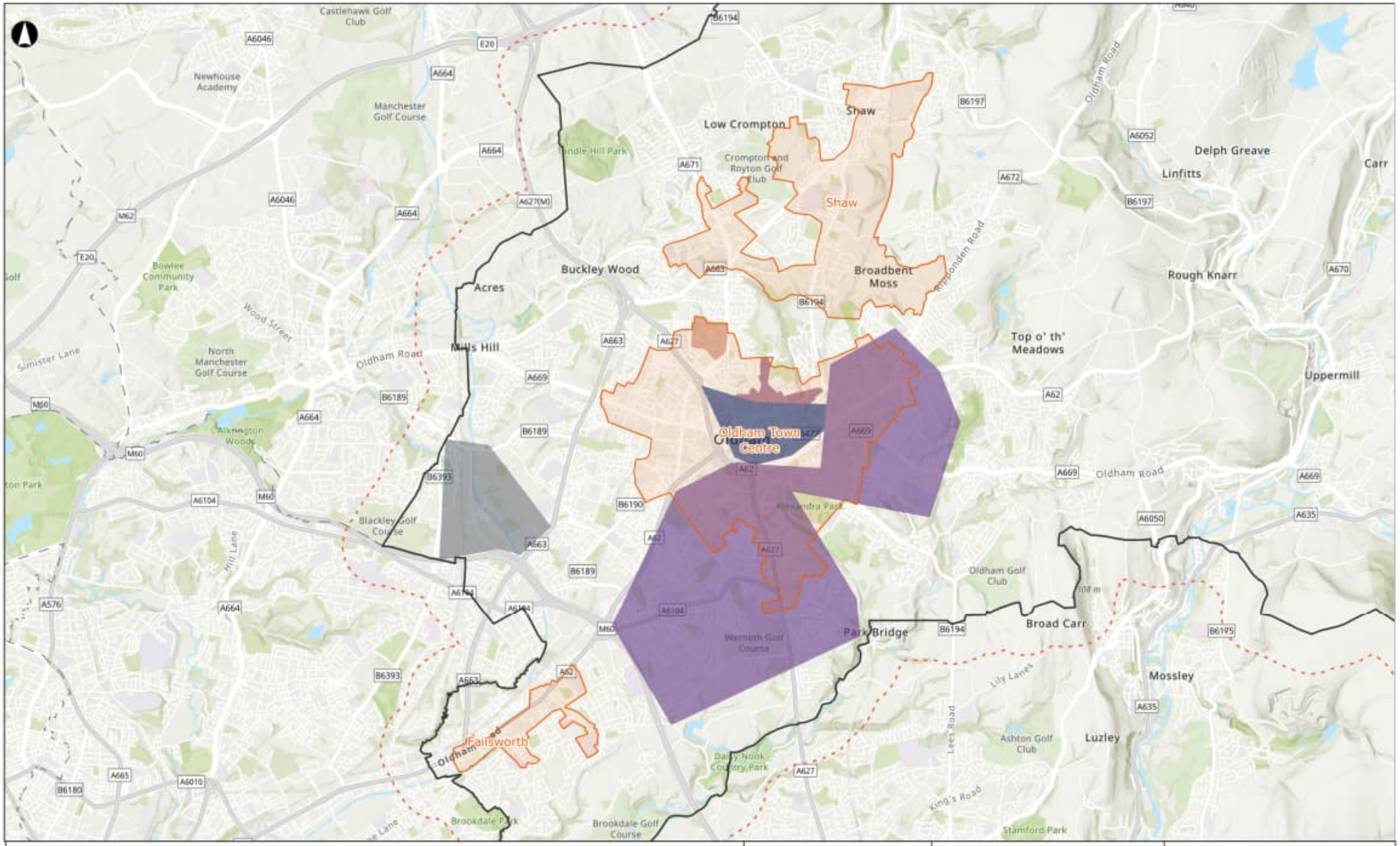
Please find below some guidance on interpreting key the icons (legends) used on the city-level maps that follow this page.

Many readers will be familiar with the Ordnance Survey maps and their legends. These maps use the Ordnance Survey background layers as provided by GIS data providers specified in the Copyright information on each one. This background map is then overlaid this with information about the HNZs identified. The HNZ iconography (legends) used in these city-level maps are described below:

Legend / icon	Relevant map(s)	What this represents on the map	Comments on interpretation
	Report maps	AZP boundary	Extends 1km beyond Local Authority Boundary.
	Report maps	Local Authority boundary	
	Report maps	Other Local Authority boundary	
	Report maps	Heat network zones	This includes heat network zone opportunities identified in the city.
	Report maps	New developments	New development within heat network zones and zone networks that will still be in construction post-2025.
Gates Hill	Report maps	Names of heat network zones	Smaller 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	AZP zone network	AZP heat network pipe routes between buildings proposed to connect.
	Report maps	Zone network	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	Potential energy centre location for a zone network (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 demands within the ZMP. (Note more detail is provided on top heat demands in each zone network identified within Section 3.)
Appendix 1: C – Key Heat Sources and Potential Energy Centres			
	Appendix 1: Map C	Air Source Heat Pump	**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	EfW plant	
	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 Heat Pump	
	Appendix 1: Map C	Waste Water Treatment	
	Appendix 1: Map C	Ground Source Heat Pump	
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. Oldham Typology



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

Key Typologies
- Dense city centre
- Mixed use district
- Social housing
- Campus (health/education)
- Industrial areas

Department for Energy Security & Net Zero

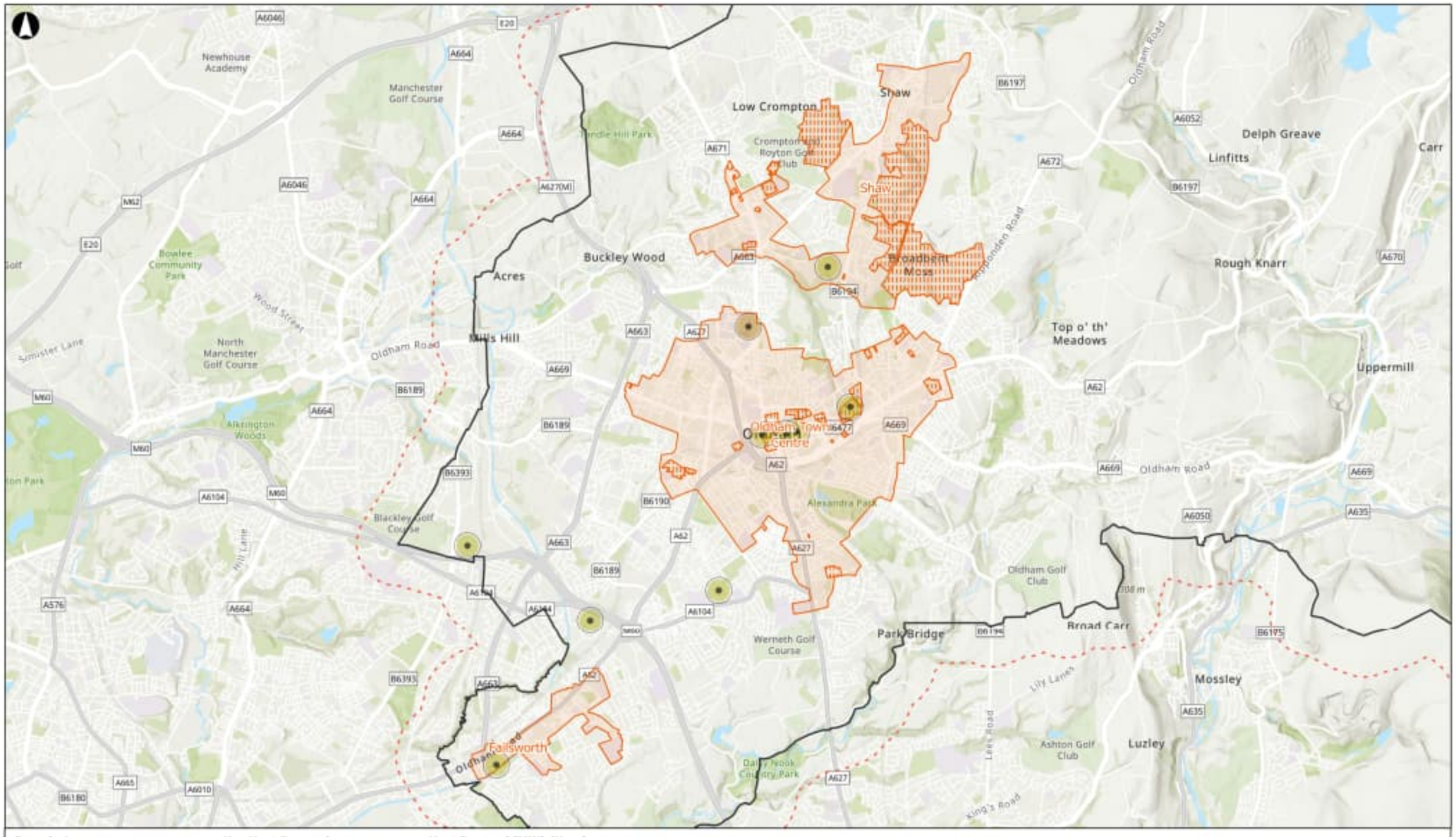
Kilometers
Scale: 1:45,000
Coordinate System: British National Grid

Oldham

Map A

City Typologies

B. Key Heat Demands



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

Key Heat Demand
- Other public sector
- Non-domestic private buildings
- Industrial
- Top 10 heat demands

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

Kilometers

Scale: 1:45,000

Coordinate System: British National Grid

Department for Energy Security & Net Zero

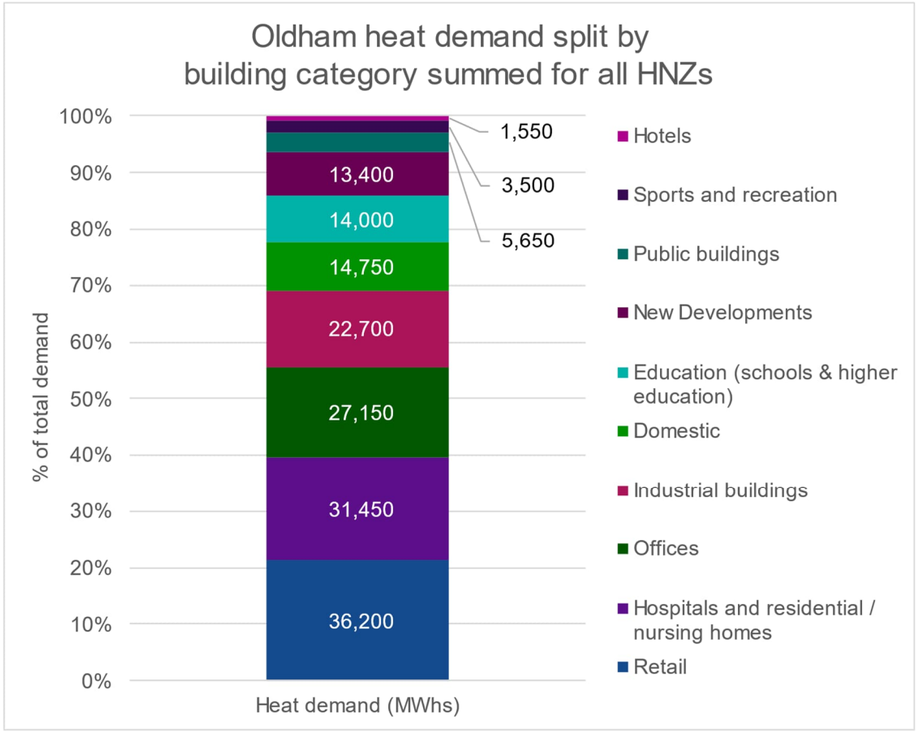
Oldham

Map B

Key Heat Demand

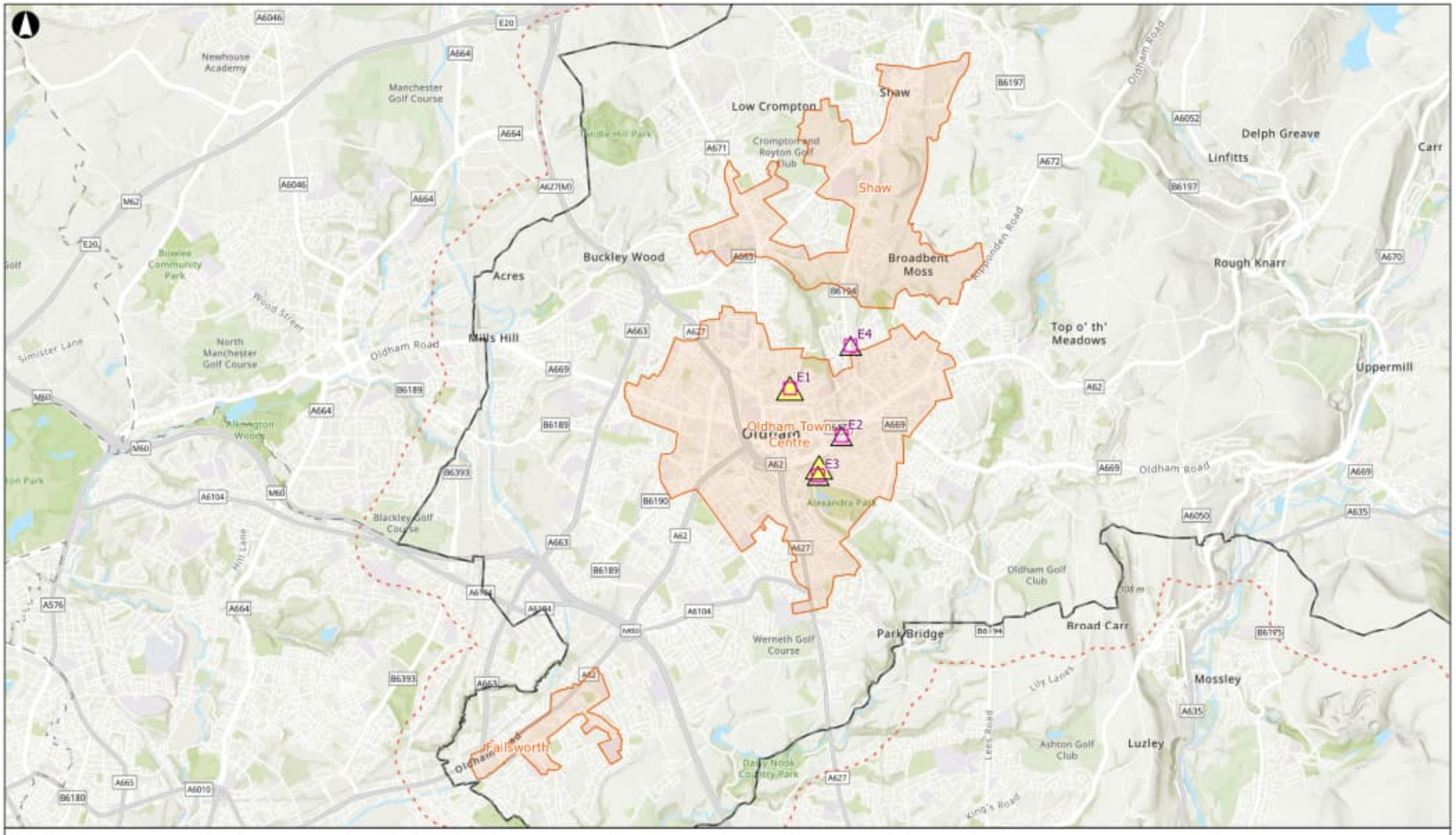
Table 7: Annual heat demand of buildings required to connect split by building category in zone networks

Building category	Number of Buildings Required to Connect	Annual Required to Connect Heat Demand (MWh)
Retail	48	36,200
Hospitals and residential / nursing homes	13	31,450
Offices	69	27,150
Industrial buildings	25	22,700
Domestic	24	14,750
Education (schools & higher education)	41	14,000
New Developments	25	13,400
Public buildings	21	5,650
Sports and recreation	4	3,500
Hotels	2	1,550
Entertainment	0	0
Totals	**272**	**170,350**

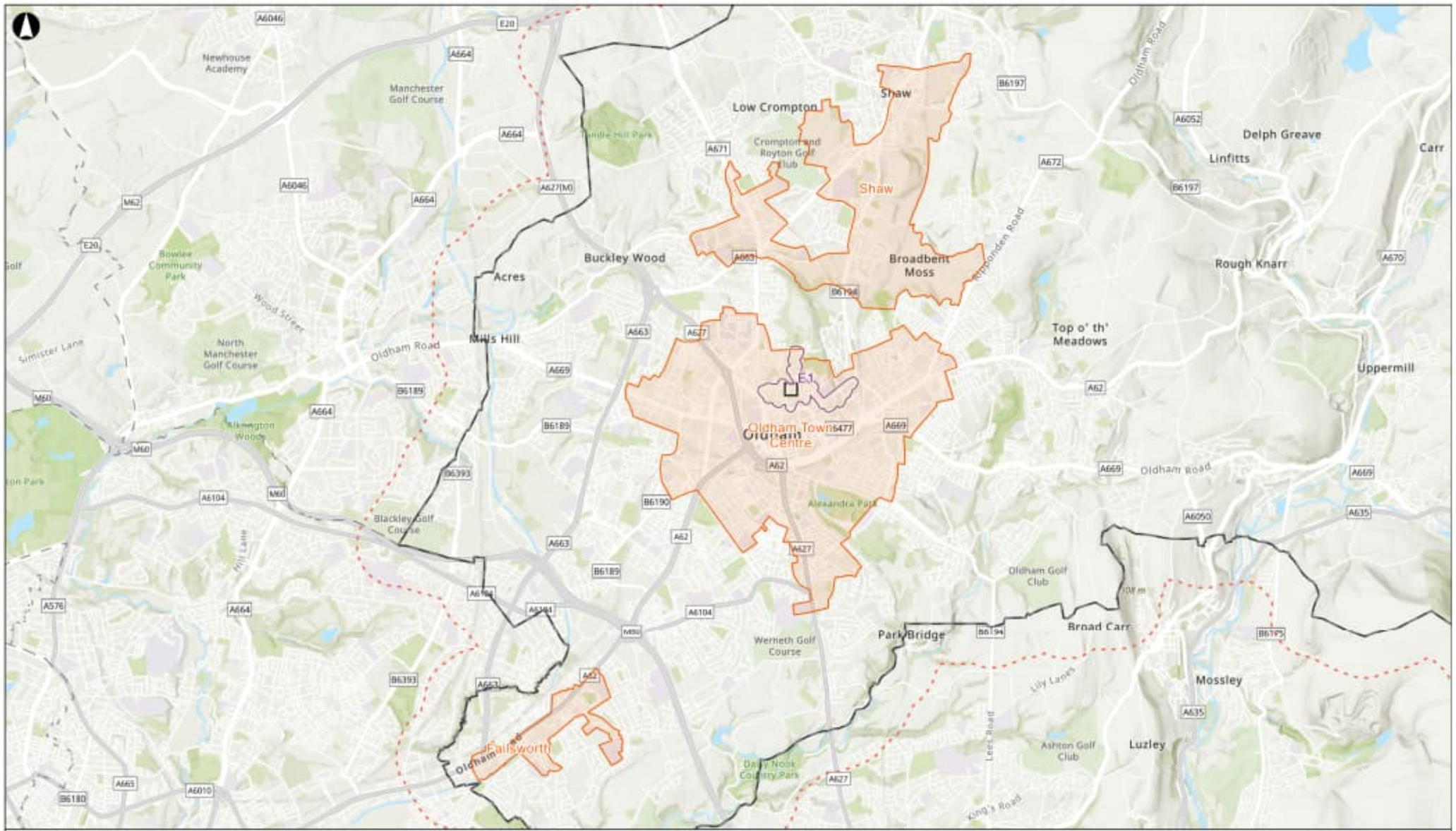


Note: In Oldham there are **3** HNZs in which a total of **1** zone network has been provisionally identified. The table above summarises the heat demand for buildings potentially required to connect to this zone network. The graph shows the heat demand for buildings in all HNZs identified.

C. Key Heat Sources and Potential Energy Centres



D. Existing and planned heat networks



Boundaries

- AZP Boundary
- Local Authority Boundary
- Other Local Authority Boundary
- Heat Network Zones

- Existing and Planned Heat Networks

Energy Centres

- Existing and Planned - District

0 0.45 0.9 1.8
Kilometers

Scale: 1:45,000

Coordinate System: British National Grid

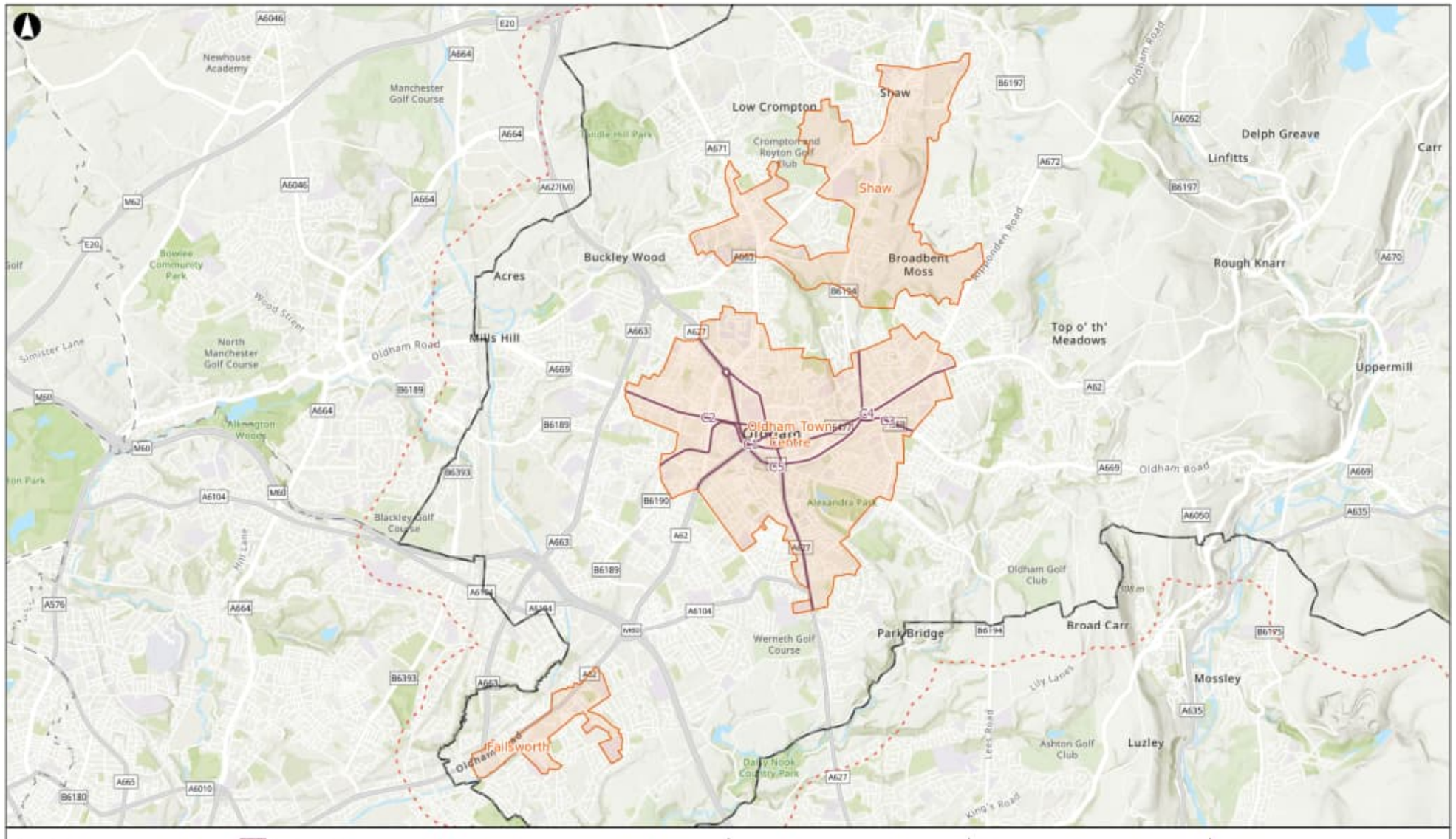
Department for Energy Security & Net Zero

Oldham

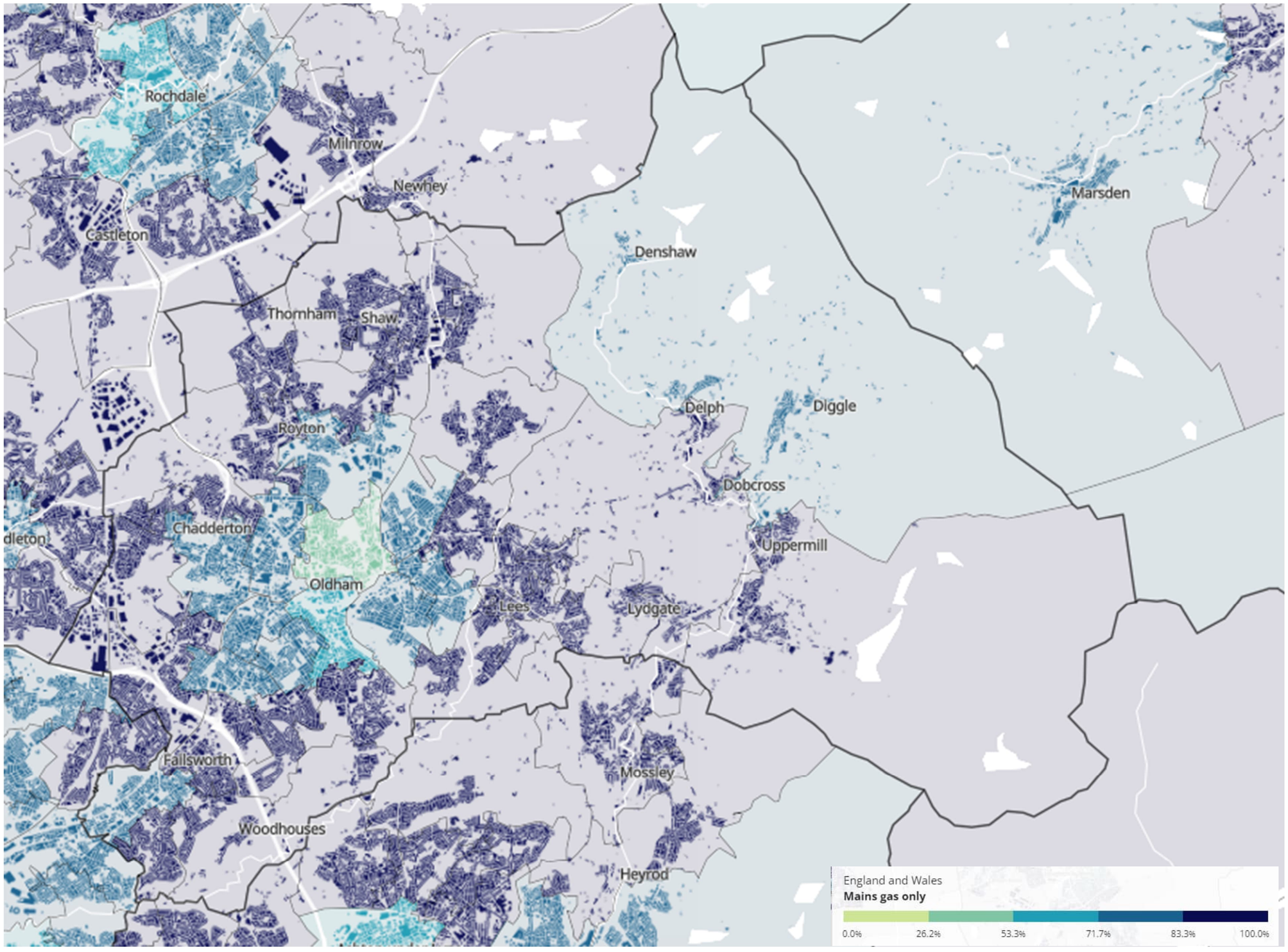
Map D

Existing Heat Networks

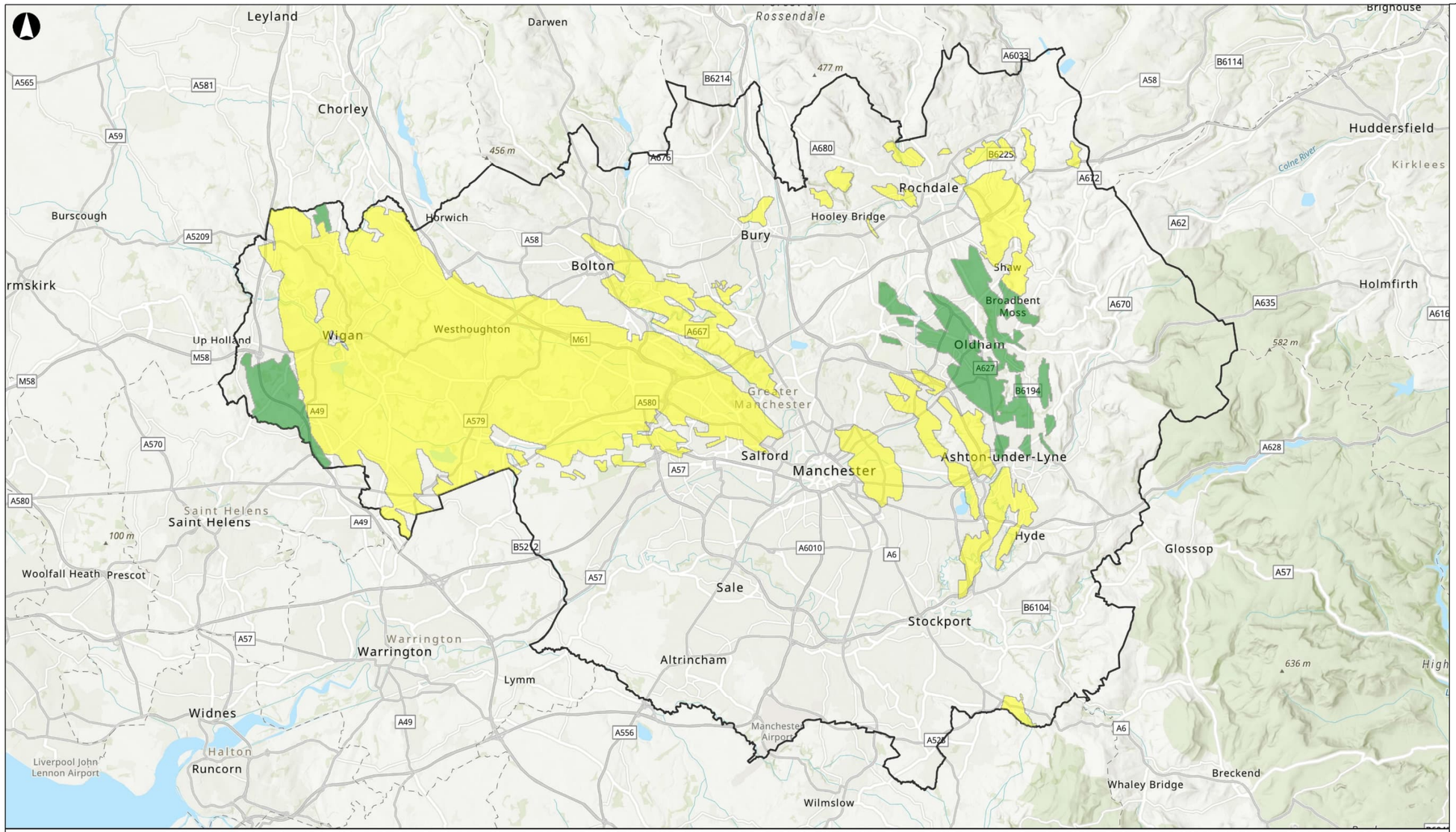
E. Physical constraints



F. Off-Gas Grid areas in Oldham



G – Coal Mine Water areas in GMCA



This mine-water 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 a number of 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 AZP, information resources have been compiled for use during future DESNZ-led activities related to the national rollout of HNZ Policy and progression of current and planned heat network developments.

These resources will remain restricted to DESNZ and the local authority. This is to ensure 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 12: AZP standardised information resources

Information resource	Description of resource
Stakeholder Directory	A directory listing key stakeholders identified and approached during AZP, 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 13: AZP Study-area-specific information resources

Information resource	Description of resource
Oldham_AZP_OBC_V01	Information regarding the AZP Zonal Outline Business Case
Oldham Low Carbon Heat Network OBC Final	Information regarding the OLCHN reference scheme
Greater Manchester Heat Decarbonisation Delivery Plan-Appendix B-Detailed Assessment 6 Oldham Heat Network	Previous feasibility study for a strategic heat network in Oldham

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