Local Heat and Energy Efficiency Strategy (LHEES)

Delivery Plan and Appendices

Fife Council

PLAN 4 FIFE

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Glossary

ABS	Area-Based Schemes
ASHP	Air Source Heat Pump
BGS	British Geological Survey
CCZW	Climate Change and Zero Waste Team
DNO	Distribution Network Operator
ECO	Energy Company Obligation
EES:ABS	Energy Efficient Scotland: Area Based Schemes
EESSH	Energy Efficiency Standard for Social Housing
EPC	Energy Performance Certificate
ESP	Energy Skills Partnership
EST	Energy Saving Trust
FVA	Fife Voluntary Action
GIS	Geographic Information System
GSHP	Ground Source Heat Pump
HEEPS:ABS	Home Energy Efficiency Programmes for Scotland: Area Based Schemes
HES	Historic Environment Scotland
HiBS	Heat in Buildings Strategy
HNZ	Heat Network Zones
LA	Local Authority
LAEP	Local Area Energy Plan
LDP	Local Development Plan
LEAR	Local Energy Asset Representation
LHEES	Local Heat and Energy Efficiency Strategy
LPG	Liquefied Petroleum Gas
LTS	Local Transmission System
MoD	Ministry of Defence
NPF4	National Planning Framework 4
OVHA	Ore Valley Housing Association
PEAT	Portfolio Energy Analysis Tool
RIIO-ED (2/3)	Revenue = Incentives + Innovation + Outputs – Electricity Distribution
RSL	Registered Social Landlord
SAP	Standard Assessment Procedure
SDS	Skills Development Scotland
SRUC	Scotland's Rural College
SME	Small, Medium Enterprise
Solar PV	Solar Photovoltaic
STEM	Science, technology, engineering, and mathematics
TAHP	Transitional Affordable Housing Programme
UoSA	University of St Andrews
UPRN	Unique Property Reference Number

1. Delivery Plan

A high-level summary of actions to take forward in the first delivery plan are detailed below (Table 1). Actions are placed into seven categories[1]. 'Sub-actions' are being identified and assigned against stakeholders for delivery, with an initial action to finalise and publish a detailed 5-year delivery plan by early 2025. This will include timescales, delivery partners, and key performance indicators. Sub-actions in the plan will include retrofits scheduled for implementation, new building level actions, supporting measures (e.g. communications, skills & jobs, etc.), and further analysis.

Table 1: Summary of Actions

Building Level[2]	• Building level studies to understand the specific energy efficiency and heat decarbonisation measures required. • Planned projects to decarbonise buildings' internal heat sources. • Planned projects improving buildings' energy efficiency.
Heat Networks	• Identify opportunities for new heat networks. • Expand and optimise (smart grids/networks) existing heat networks and explore changing to decarbonised heat sources. • Explore heat network delivery model options.
Energy System	• Identify existing electricity grid capacity to meet heat decarbonisation requirements. • Explore potential opportunities for expansion of energy systems to meet heat decarbonisation requirements. • Development of pilot Dunfermline & Rosyth area energy plan.
Skills & Jobs	• Skills and jobs baseline. • Training of existing providers. • National and regional coordination to tackle the skills gap. • Transitioning skills. • Fostering and feeding the skills pipeline. • Supply chain development.
Funding	• Help inform the direction of new funding sources. • Identify and promote existing funding sources. • Explore alternative funding sources to support retrofit/heat decarbonisation. • Maximize existing energy spend to benefit Fife.
Knowledge & Awareness Raising	• Raise Awareness of the Local Heat and Energy Efficiency Strategy. • Improve knowledge of how to improve energy efficiency of buildings and decarbonise heat sources.
Data, Modelling & Methodology	• Publish detailed delivery plan. • Review methodology to inform future versions. • Data collection to inform future iterations and identify high certainty actions. • Modelling to inform analysis and identify high certainty actions. • Improve insight of smart energy solutions to support the heat transition.

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[1] Some actions may apply to multiple categories and have been assigned where most appropriate.

[2] To ensure quality of delivery, building level actions have only been included they are most likely to be possible, minimising potential damage to buildings, rising energy costs, or fuel poverty.

The Local Heat & Energy Efficiency Strategy guidance, states delivery plans should identify areas for "targeted interventions and early, low regrets measures." To help achieve this, the Council will develop an optioneering model to identify suitable and deliverable building level actions.

> **What are low regret measures?**
> The Heat in Buildings Strategy defines low regret measures as "*technological solutions where cost uncertainty is low, and we already understand (a) the costs of installation and (b) running costs for Consumers*." The strategy specifically references:
> - installation of cost-effective energy efficiency first improvements (e.g. roof, windows, wall, and floor insulation).
> - Heat pumps – see Chapters 4.3 and 6.8 for comments on potential challenges.
> - Low and zero emissions heat networks in areas deemed suitable.
>
> **What is optioneering?**
> A process to analyse and evaluate different options to help solve a problem.

To help prioritise areas for delivery, this model will analyse various retrofit scenarios for different building types and/or geographic areas. It will include multiple indicators and measure positive/negative impacts a scenario may have on each. Proposed indicators will be based on stakeholder need, and may include:

- Ability to meet national targets and this strategy's priorities.
- Certainty of success[3] – where measures are most likely to be possible, minimising potential damage to buildings, rising energy costs, or fuel poverty.
- Estimated cost of retrofit, funding approaches, and cost savings.
- Grid capacity, proximity to heat network zone, energy use, carbon savings.
- Just transition, including fuel poverty, skills, and jobs.

Each indicator will be scored based on the potential impact. This will help stakeholders understand how proposed actions align with their priorities.

A summary of the outline optioneering approach is detailed in Figure 1.

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[3] Once published our detailed delivery plan will only include measures/actions where we are sure the recommended measures will not damage buildings, increase energy costs, or fuel poverty.

1. Define scenarios

Develop retrofit scenarios for buildings based on strategic priorities and national targets.

Private housing which could reach energy performance certificate band B with energy efficiency measures and decarbonised heat sources.

2. Identify buildings

Based on the scenario identify the buildings to be targeted.

Apply filters and show spatially - owner-occupied & privately rented; can achieve energy performance certificate B, suitable for heat pump.

3. Summary statistics

Apply 100m x 100m grid and summarise statistics (indicators) of properties in each grid section.

4. Initial delivery areas

Prioritise grids for further analysis based on indicators.

*Prioritise **grids** with highest positive fuel poverty change and low cost of retrofit.*

5. Building prioritisation

Score indicators for each building based on potential impact.

*Identify **buildings** with highest positive fuel poverty change and low cost of retrofit.*

6. Engage stakeholders

Present data visually to help understanding of how actions may support stakeholder priorities and agree building level actions for delivery plan.

7. Building level actions agreed

New building level actions are included in the detailed delivery plan.

Figure 1: Outline Optioneering Approach

2. Appendix 1 – Stakeholders

Table 2: Internal Stakeholders

Fife Council Stakeholders
Councillors
Sustainable Growth & City Deal Board
Enterprise & Environment Board
Addressing the Climate Emergency Board
Housing Services
Business & Employability
Property Services
Planning Service
Communities & Corporate Development
Protective Services
Communications and Customer Insight
Legal Services
Procurement
Financial Services

Table 3: External Stakeholders

National	• Scottish Government • Energy Saving Trust • Coal Authority • Ministry of Defence • Historic Environment Scotland • Scottish Environmental Protection Agency • NatureScot • National Trust for Scotland
Energy/Utility	• SP Energy Networks • SGN • Scottish Water • Vital Energi • Brockwell Energy • RWE • Vattenfall
Housing Associations	• Ore Valley Housing Association • Kingdom Housing Association • Link Housing
Developers	• Homes for Scotland • Scottish Property Federation
Public Sector Partners	• Local Authority Led Forum • Fife Environmental Partnership • NHS Fife • University of St Andrews • Fife College • Scottish Rural College • Perth & Kinross Council • Dundee City Council • The Highland Council
Third Sector Partners	• Fife Communities Climate Action Network • Fife Historic Buildings Trust • Fife Voluntary Action • Greener Kirkcaldy • St Andrews Environmental Network
Skills & Supply Chains	• Concrete Scotland-ExpLearn • Energy Skills Partnership • Kingdom Works • Scottish Enterprise • Tay Cities Deal
Public	• Private Landlord Forum • Sustainable Cupar
Other	• John Gilbert Architects • Star Refrigeration • ZUoS

3. Appendix 2 – Policies

Table 4: Summary of Policies Reviewed

National	- Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 - Climate Change (Scotland) Act 2009 - Securing A Green Recovery on a Path to Net Zero: Climate Change Plan (2018–32) and update (2020) - Programme for Government 2021-22 and 2022-23 - Heat in Buildings Strategy (2021) - Energy Efficient Scotland (2018) - Heat Networks (Scotland) Act 2021 - Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 - Best Start, Bright Futures Tackling Child Poverty Delivery Plan (2022-26) - EESSH1 (2014) and EESSH2 (2019) - Scottish Energy Strategy (2017) and draft Energy Strategy and Just Transition Plan (2023) - National Planning Framework 4 (2023) - Hydrogen Policy Statement (2020) - Hydrogen Action Plan (2022) - Heat Policy Statement (2015) - Scotland's Sustainable Housing Strategy (2013) - Housing to 2040 (2021) - Tenements (Scotland) Act 2004 - Historic Environment Policy Scotland (2019) - The Planning (Listed Building Consent and Conservation Area Consent Procedure) (Scotland) Regulations 2015 - Planning (Scotland) Act 2019 - Scotland's National Strategy for Economic Transformation (2022)
Regional	- Tay Cities Region Economic Strategy 2019-2039 - Edinburgh and South-East Scotland City Regional Deal - Scottish Cities Alliance Transition to Net Zero Carbon Action Plan
Local	- Plan 4 Fife: Local Outcome Improvement Plan (2017-27) and - Recovery and Renewal: Plan 4 Fife 2021-24 Update - FIFEplan (adopted 2017) - Making Fife's Places Supplementary Guidance (2018) - Low Carbon Fife: Supplementary Guidance (2019) - Fife's Economic Strategy (2017-27) - Local Housing Strategy (2022-27) - Strategic Housing Investment Plan (SHIP) (2021/22-2025/26) - Climate Fife: Sustainability and Climate Action Plan (2020-30) (shortened version) - Climate Fife: Sustainable Energy and Climate Action Plan (2020-2030) - Fife Council Carbon Management Plan (2017-50) - Fife's Fuel Poverty Covid-19 Recovery Plan (2021-22) - Fife Development Plan Scheme - 2020 - Strategic Plan for Fife 2019-2022 - Fife College Climate Change Strategy (2022-28) - Fife College Net Zero Action Plan (2022-28) - Kingdom Group Net Zero Strategy (2022-27) - University of St Andrews Environmental Sustainability Strategy - NHS Scotland climate emergency and sustainability strategy (2022-26)

3.1. Key National Policies

Climate Change (Emissions Reduction Targets) (Scotland) Act 2019[4] - In 2019, the Scottish Government introduced an amendment to the **Climate Change (Scotland) Act 2009[5]**. This changed the net zero emissions target year from 2050 to 2045 and set interim targets of: 56% by 2020; 75% by 2030; and 90% by 2040.

Securing A Green Recovery on a Path to Net Zero: Climate Change Plan 2018–2032[6] - Details proposals and policies for meeting greenhouse gas emissions reduction targets up to 2032, and was updated[7] in 2020 for the new 2045 target, and has the following vision for buildings:

"Majority of … homes will have achieved a good energy efficiency rating, meaning that they are better insulated and have lower demand for heat … we will have made significant progress in removing poor energy efficiency as a driver for fuel poverty."

The vision also notes: the accelerated deployment of zero emissions heating; expansion of low carbon heat networks; new buildings from 2024 using zero emissions heating and be highly energy efficient; and green skills and jobs. Reference is also made to Local Heat & Energy Efficiency Strategies being a key enabler of the vision.

Heat in Buildings Strategy[8] - Published in October 2021, presents the pathway Scotland is to take to have zero emissions from buildings by 2045 (focussing on space and water heating), alongside ensuring poor energy performance is removed as a driver for fuel poverty. It details a vision:

"By 2045 our homes and buildings are cleaner, greener and easy to heat, with our homes and buildings no longer contributing to climate change, as part of the wider just transition to net zero."

It notes even though fabric first approaches are critical for the transition by minimising energy demands whilst making buildings warmer, easier to heat, and preparing them for zero emissions technologies, this will not help Scotland achieve net zero targets by itself. A focus on heating system change is also required. The strategy contains several key targets (Table 5). However, these are yet to be put into legislation.

Table 5: Key Heat in Buildings Strategy Targets

2028	2030	2033	2040	2045
• Private rented homes to be energy performance certificate band C.	• Emissions from buildings must be 68% lower than 2020 levels. • Zero emissions heating in the equivalent of 50,000 non-domestic buildings.	• All homes to be energy performance certificate band C. • Zero emissions heating in 170,000 off-gas fossil fuel heated homes, and 1 million on-gas homes.	• All homes in fuel poverty to be energy performance certificate band B.	• Buildings no longer contribute to climate change.

[4] Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 (legislation.gov.uk)
[5] Climate Change (Scotland) Act 2009 (legislation.gov.uk)
[6] Executive Summary - Climate Change Plan: third report on proposals and policies 2018-2032 (RPP3) - gov.scot (www.gov.scot)
[7] Erratum - Securing a green recovery on a path to net zero: climate change plan 2018–2032 - update - gov.scot (www.gov.scot)
[8] Heat in Buildings Strategy - achieving net zero emissions in Scotland's buildings - gov.scot (www.gov.scot)

Energy Efficiency Standard for Social Housing 2 (EESSH2)[9] – Aims to improve the energy efficiency of social housing in Scotland, based on a minimum Energy Performance Certificate rating. Energy Efficiency Standard for Social Housing 2 was confirmed in 2019, and states "*all social housing meets, or can be treated as meeting, Energy Performance Certificate Band B (Energy Efficiency rating), or is as energy efficient as practically possible, by the end of December 2032 and within the limits of cost, technology and necessary consent.*" Energy Efficiency Standard for Social Housing 2 is currently under review by Scottish Government.

Heat Networks (Scotland) Act 2021[10] - Encourages greater use of heat networks and puts in place rules and regulations including applications; exemptions; granting licenses; and setting up heat network zones. The Local Heat & Energy Efficiency Strategy helps Fife Council meet part of its duty within the Act (paragraph 47 (1)) to review heat network zoning by considering areas where it is more likely to be particularly suitable for the construction and operation of a network. Other duties not included in this strategy, are:

- Identify potential non-domestic building connections (Building Assessment Reports).
- Designate areas for heat network zones.
- Set up process for permitting, regulation, and licencing (as regulator and licensee).
- Developing a cost strategy to take on agreed duties.

Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019[11] - In 2019, the Scottish Government introduced an Act of the Scottish Parliament to set targets focussed on eradicating fuel poverty; to define fuel poverty; to require the production of a fuel poverty strategy; and to make provision about reporting on fuel poverty. The act sets the following targets for 2040:

- No more than 5% of households in Scotland are in fuel poverty.
- No more than 1% of households in Scotland are in extreme fuel poverty.
- The median fuel poverty gap of households in Scotland in fuel poverty is no more than £250 adjusted in accordance with section 5(5) to take account of changes in the value of money.

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[9] Energy efficiency in social housing - Home energy and fuel poverty - gov.scot (www.gov.scot)
[10] Heat Networks (Scotland) Act 2021 (legislation.gov.uk)
[11] Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019 (legislation.gov.uk)

3.2. National Planning Framework 4

Scotland's national spatial strategy has transformed the way in which planning, and climate change are viewed together, and sets spatial principles, regional priorities, national developments, and national planning policy. Spatial planning priorities have been developed to help guide the preparation of regional spatial strategies and local development plans. Fife is included in the Central Region which has three priorities (Table 6).

Table 6: National Planning Framework 4 Central Region Priorities

Deliver **sustainable places**	Deliver **liveable places**	Deliver **productive places**
Regional Spatial Strategies and Local Development Plans in this area should support net zero energy solutions including extended heat networks and improved energy efficiency, together with urban greening and improved low carbon transport.	Regional Spatial Strategies and Local Development Plans in this area should pioneer low carbon, resilient urban living by rolling out networks of 20-minute neighbourhoods, future proofing city/town centres, accelerating urban greening, investing in net zero homes, and managing development on the edge of settlements.	Regional Spatial Strategies and Local Development Plans in this area should target economic investment and build community wealth to overcome disadvantage and support a greener wellbeing economy.

Across these priorities, there is a need for greater investment in, and development of, net zero homes and places supporting green jobs. Local Development Plans and strategies like Local Heat & Energy Efficiency Strategies will focus on decarbonising heat and energy networks, and moving away from fossil fuels towards greener, low carbon heat generation. Liveable Places reiterates the need for a 68% reduction in emissions by 2030 for all existing domestic properties, and for new properties to be net zero – requiring "*improved energy efficiency and zero emissions heating solutions*".

Below provides a breakdown of the relevant National Planning Framework 4 policies against relevant Local Heat & Energy Efficiency Strategy priorities, and highlights any gaps not covered in National Planning Framework 4.

Table 7: Being Climate Friendly and Ready

Policy 1 - When considering all development proposals significant weight will be given to the global climate and nature crises.	• Outcomes include a focus on zero carbon emissions. • Has a Local Development Plan outcome (could be incorporated into wider strategies) of addressing global climate and nature crises, while reducing emissions and implementing adaptation measures. • Local Heat & Energy Efficiency Strategies adhere to this through decarbonisation of heat, benefitting the climate now and in future.
Policy 2a - Development proposals will be sited and designed to minimise lifecycle greenhouse gas emissions as far as possible.	• Focuses on emissions reduction methods through the siting and design of a building throughout its lifecycle. • Includes the emissions associated with any energy or heating systems as part of the construction, use and decommissioning phases of development. • Compared to other policies and National Planning Framework 3, this is the first strategic document to mention the full lifecycle of emissions associated with new developments and retrofitting existing properties.
Policy 2b - Development proposals will be sited and designed to adapt to current and future risks from climate change.	• All development proposals should support the current climate as well as be able to adapt to the future climate. • Adaption could include installation of low/zero carbon heat technology, appropriate levels of insulation for predicted hotter and cooler temperatures, and double/triple glazing. • Adapting existing properties and preparing new developments supports a just transition, making sure all properties are suitable for continued use as the planet warms.

Table 8: Tackling Fuel Poverty, Health, and the Just Transition

Policy 16 outcome 3 - More energy efficient, net zero emissions homes, supporting a greener, fairer, and more inclusive wellbeing economy and community wealth building, tackling both fuel and child poverty.	• An expected policy outcome under policy 16 Quality Homes and refers to new developments. • Vision is for zero emission homes that in turn support a cleaner, greener future. • Also references reducing inequalities and rates of fuel poverty for a just transition.

Table 9: Supporting an Inclusive Economy, Jobs & Skills

Policy 11c - Development proposals will only be supported where they maximise net economic impact, including local and community socio-economic benefits such as employment, associated business, and supply chain opportunities.	• Policy does not entirely relate to green jobs. • Although it encourages all forms of renewable/low carbon energy generation, transmission, storage etc., it also includes current energy types. • However, it still encourages more employment opportunities in the energy sector as it decarbonises.
Policy 25a - Development proposals which contribute to local or regional community wealth building strategies and are consistent with local economic priorities will be supported.	• Through decarbonising heat we are supporting community resilience and helping communities reduce their emissions and adapt to the future climate. • Improving the energy efficiency of domestic and commercial buildings increases community resilience and helps reduce fuel poverty, while bringing in local green jobs.
Policy 25b - Development proposals linked to community ownership and management of land will be supported.	• If future iterations of the Local Heat & Energy Efficiency Strategy support creation of Local Place Plans this would further support community wealth building and encourage more community-led proposals around heat and energy efficiency.

Table 10: Decarbonising Heat Sources

Policy 11e - Significant weight will be placed on the contribution of the proposal to renewable energy generation targets and on greenhouse gas emissions reduction targets.	• Does not specifically focus on heat networks. However, it supports proposals for renewable energy generation infrastructure which help meet emissions reduction and renewable energy generation targets. This in turn supports the decarbonisation of the grid and thereby decarbonised heating.
Policy 16 - To encourage, promote and facilitate the delivery of more high quality, affordable and sustainable homes, in the right locations, providing choice across tenures that meet the diverse housing needs of people and communities across Scotland. **Policy 17 - to encourage, promote and facilitate the delivery of more high quality, affordable and sustainable rural homes in the right locations.**	• Transitioning from heating oil and Liquefied Petroleum Gas in off-gas areas, and decarbonising on-gas heat should be identified under Policies 16 and 17. • These address quality homes and rural homes, however there is limited mention of heat generation methods. Each policy mentions sustainable homes but not how to make them sustainable.
Policy 19b - Proposals for retrofitting a connection to a heat network will be supported.	• Assuming the heat source of a heat network is decarbonised, properties could be connected to a network to help transition away from oil and gas to low/zero carbon heating.
Policy 33a - Development proposals that seek to explore, develop, and produce fossil fuels (excluding unconventional oil and gas) will not be supported other than in exceptional circumstances.	• National policy direction will require properties to transition to low/zero carbon heating. • This supports the need for a Local Heat & Energy Efficiency Strategy to support resilience and adaptation of buildings and communities for a just transition to net zero.

Table 11: Improving the Energy Efficiency of Buildings

Policy 2c - Development proposals to retrofit measures to existing developments that reduce emissions or support adaptation to climate change will be supported	• National Planning Framework 4 supports the retrofit of buildings with poor energy efficiency ratings, therefore reducing emissions in turn. • This will also help buildings adapt to the current climate and future temperature predictions.
Policy 7 outcome 1 - the historic environment is valued, protected, and enhanced, supporting the transition to net zero and ensuring assets are resilient to current and future impacts of climate change.	• This supports the need for the Local Heat & Energy Efficiency Strategy to consider historical and traditional buildings.
Policy 7c - Development proposals for the reuse, alteration or extension of a listed building will only be supported where they will preserve its character, special architectural or historic interest and setting. Development proposals affecting the setting of a listed building should preserve its character, and its special architectural or historic interest.	• In the case of enhancing and adapting historic structures, Policy 7c would support proposals for decarbonised heat and retrofitting measures where it does not impact/alter the unique character of the historic building and its surroundings.
Policy 16 outcome 3 - More energy efficient, net zero emissions homes, supporting a greener, fairer, and more inclusive wellbeing economy and community wealth building, tackling both fuel and child poverty.	• This is an expected policy outcome under policy 16 Quality Homes and refers to new developments. • The vision is for zero emission homes that in turn support a cleaner, greener future.
Policy 18 outcome 2 - Existing infrastructure assets are used sustainably, prioritising low-carbon solutions.	• Prioritises the reuse and retrofit of existing structures in a sustainable way. • Supports retrofitting which prioritises emissions reduction through decarbonisation and adapting to the future climate.

3.3. Key Local Policies

Plan4Fife (Local Outcome Improvement Plan) 2017-2027[12] - outlines national and local community planning outcomes based on the requirements of the Community Empowerment (Scotland) Act 2015. It details a vision by 2027 Fife will: *"be a place where all residents live good lives, make informed choices and have a sense of control so that they can reach their full potential, and where all children are safe, happy and healthy … Fife to be a place where we make best use of our assets and facilities, while sustaining them for future generations."* Following a 3-year review and the COVID-19 pandemic, a post-COVID response was produced[13] and includes new recovery and renewal priorities up to 2024:

- Community wealth and wellbeing.
- Leading economic recovery.
- Tackling poverty and preventing crisis.
- Addressing the climate emergency.

FIFEplan[14] **-** Fife's Local Development Plan was published in 2017 and details the policies and proposals for the development and use of land across Fife. The policies in the Plan and supplementary guidance are used to determine planning applications and give guidance to communities and investors on where development can and cannot take place, what type of development is allowed, how it should be laid out and designed and how environmental and cultural assets will be protected. For the Local Heat & Energy Efficiency Strategy there are several relevant policies:

- Policy 2: Homes – Increase the availability of homes of a good quality to meet local needs.
- Policy 3: Infrastructure and Services – Low carbon measures including local energy generation and heat networks must be addressed as part of development proposals.
- Policy 10: Amenity – Places in which people feel their environment offers them a good quality of life.
- Policy 11: Low Carbon Fife – Energy resources are harnessed in appropriate locations and in a manner where the environmental and cumulative impacts are within acceptable limits.

Further policies and priorities are detailed in the **Making Fife's Places**[15] and **Low Carbon Fife**[16] Supplementary Guidance documents. Fife's second local development plan is in development.

Climate Fife: Sustainable Energy and Climate Action Plan[17] - Launched in 2020, Climate Fife details the next phase of a Fife-wide approach to tackling the Climate Emergency, and actions to limit its most harmful impacts. Underpinning the plan are three core principles, that by 2045 Fife will be:
- **Climate Friendly** having transformed the economy, infrastructure, land use and energy system to decarbonise how we live.
- **Climate Ready** with plans and projects to increase the resilience of Fife communities and the economy to help minimise the impacts from unavoidable climate change.
- **Climate Just** ensuring that all Fifers and the environment can benefit from this transition.

Climate Fife states multiple priorities and actions across 8 themes, including:
- **Energy Efficiency** – deliver energy efficiency measures across buildings within Fife.
- **Low Carbon Energy** – decarbonise the heat and power generated and used in Fife.
- **Move, store, and transform energy** – address the challenge of decarbonisation, and the advocacy by Scottish Government to use a whole energy system approach including transport and travel.

[12] A Plan for Fife | Our Fife - Creating a successful, confident, and fairer Fife
[13] Plan for Fife 2021-24 | Our Fife - Creating a successful, confident, and fairer Fife
[14] Local Development Plan (FIFEplan) | Fife Council
[15] Making-Fifes-Places-Supplementary-Guidance-August-2018.pdf
[16] Adopted Low Carbon Fife SG Jan 2019
[17] Microsoft Word - Climate Fife FINAL

Local Housing Strategy 2022-2027[18] - sets out the strategic vision of Fife Housing Partnership for the delivery of housing and housing related services. It lists five priorities of which "A Warm Low Carbon Home" is relevant to the Local Heat & Energy Efficiency Strategy, noting the desired outcomes of ensuring people: do not live in fuel poverty, live in energy efficient homes, and reduce carbon emissions.

Fife's Fuel Poverty Covid-19 Recovery Plan[19] - Fife's Fuel Poverty Strategy was aimed to be published in 2020 alongside the national Strategy but was delayed by the COVID-19 pandemic. In the interim, a plan was published addressing fuel poverty during the pandemic, with five objectives. The Local Heat & Energy Efficiency Strategy supports the objective of considering long term recovery plans contributing to the Strategy.

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[18] Local Housing Strategy | Fife Council
[19] Fifes-Fuel-Poverty-Covid-19-Recovery-Plan-2021-22-Final-1.pdf

4. Appendix 3 – Scottish Climate and Energy Targets

Table 12: Targets

Climate and energy targets (Scotland)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Combined supply of thermal energy by heat networks to reach 2.6 TWh of output.				■																		
Private rented homes to be Energy Performance Certificate band C.					■																	
75% cut in greenhouse gas emissions.							■															
Most buildings achieve a good standard of energy efficiency.							■															
Emissions from buildings must be 68% lower than 2020 levels.							■															
At least 22% of non-electrical heat in buildings to be directly supplied by renewables.							■															
The combined supply of thermal energy by heat networks to reach 6 TWh of output.							■															
All fuel poor households to be Energy Performance Certificate band C.							■															
Zero emissions heating in the equivalent of 50,000 non-domestic buildings.							■															
All social housing to be Energy Performance Certificate band B.								■														
All homes have the equivalent of Energy Performance Certificate band C.									■													
Zero emissions heating in the vast majority of 170,000 off-gas fossil fuel heated homes.									■													
Zero emissions heating in at least one million on-gas homes.									■													
90% cut in greenhouse gas emissions.																	■					
All fuel poor households to be Energy Performance Certificate band B.																	■					
No more than 5% of households in Scotland are in fuel poverty.																	■					
No more than 1% of households in Scotland are in extreme fuel poverty.																	■					
Median fuel poverty gap of households in fuel poverty is no more than £250.																	■					
Buildings no longer contribute to climate change.																						■
Net zero greenhouse gas emissions.																						■

5. Appendix 4 – Potential Heat Network Zones Summary Tables

Table 13: Stringent Zones Summary Table

Zone ID	Zone location	Anchor loads	Total heat demand (MWh/year)	Non-domestic properties with high suitability for heat network connection	Heat demand from non-domestic properties with high suitability for heat network connection (MWh/year)	Houses in fuel poverty	Heat demand from houses in fuel poverty (MWh/year)	Social housing	Heat demand from social housing (MWh/year)
1	Rosyth Waterfront West	11	18,098	8	11,158	0	0	0	0
2	Pitreavie Business Park, Pitreavie	9	13,859	6	5,380	2	37	0	0
3	Dunfermline	15	49,758	18	14,114	374	3,029	38	2,261
4	Kirkcaldy	15	45,067	16	12,525	169	2,043	35	708
5	Whitehill and Southfield Industrial Estates, Glenrothes	11	19,622	8	8,643	1	21	1	14
6	Viewfield Industrial Estate and Fife College, Glenrothes	13	20,409	12	13,419	22	267	0	0
7	North Glenrothes (Queensway Industrial Estate)	7	12,966	5	3,893	11	153	7	112
8	Methil	7	14,501	7	11,538	56	425	8	435
9	St Andrews	22	67,830	24	22,442	497	6,449	63	1,827
10	Mitchelson Industrial Estate	12	26,079	10	11,876	0	0	0	0
11	East Glenrothes (Eastfield Industrial Estate)	10	19,673	2	1,796	4	46	4	34
N/A	**Total**	**132**	**307,861**	**116**	**116,783**	**1,137**	**12,471**	**156**	**5,391**

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Table 14: Baseline Zones Summary Table

Zone ID	Zone location	Anchor loads	Total heat demand (MWh/year)	Non-domestic properties with high suitability for heat network connection	Heat demand from non-domestic properties with high suitability for heat network connection (MWh/year)	Houses in fuel poverty	Heat demand from houses in fuel poverty (MWh/year)	Social housing	Heat demand from social housing (MWh/year)
1	Rosyth Waterfront East	5	6,530	3	2,866	0	1	1	9
2	Rosyth Waterfront West	11	19,475	8	11,158	3	56	0	0
3	Rosyth	4	7,508	5	4,060	43	441	25	303
4	Belleknowes Industrial Estate	3	6,892	0	0	2	30	0	0
5	Dalgety Bay Industrial Estate	6	22,858	8	6,824	55	722	42	438
6	Pitreavie	11	28,372	11	7,947	98	1,332	39	471
7	Duloch Schools	4	8,760	6	3,824	17	211	1	9
8	Woodmill High School	3	17,417	3	3,663	371	3,773	436	5,632
9	Dunfermline	16	74,988	20	14,980	772	7,420	115	3,793
10	Halbeath	6	17,338	3	4,705	81	1,074	76	1,162
11	Fife Leisure Park	5	9,807	5	3,645	4	91	2	65
12	Kirkcaldy South	4	16,289	2	986	339	3,190	137	4,318
13	Cowdenbeath Centre	3	14,881	2	734	85	1,019	42	544
14	Beath High School	3	11,448	3	4,596	104	1,412	71	995
15	Kirkcaldy Centre	23	101,412	29	18,269	739	8,953	252	3,421
16	Lochgelly Industrial Park	4	3,042	0	0	0	0	0	0
17	Kirkcaldy North West (Victoria Hospital)	5	53,572	5	44 ,564	65	830	62	939
18	Fife Central Retail Park	3	9,302	1	1,310	49	420	57	387

Zone ID	Zone location	Anchor loads	Total heat demand (MWh/year)	Non-domestic properties with high suitability for heat network connection	Heat demand from non-domestic properties with high suitability for heat network connection (MWh/year)	Houses in fuel poverty	Heat demand from houses in fuel poverty (MWh/year)	Social housing	Heat demand from social housing (MWh/year)
19	Lochgelly High School	3	5,208	2	2,192	19	276	16	455
20	Westwood Park Industrial Estate	4	4,242	3	3,017	5	62	1	4
21	Glenrothes South West	34	70,192	27	30,004	30	388	1	14
22	Glenrothes North	18	43,743	22	14,169	202	2,095	102	2,583
23	Methil – Links Drive	7	16,929	7	11,538	129	1,074	34	1,083
24	Levenmouth Campus	4	10,212	4	7,743	37	465	57	640
25	Methil	3	12,957	2	2,577	258	2,589	229	3,512
26	Innerleven	4	15,250	2	1,516	102	1,428	52	931
27	Leven	3	21,325	5	3,894	191	2,124	102	1,643
28	South Markinch	3	6,753	4	1,729	30	335	12	177
29	Anstruther	4	18,309	5	2,835	121	1,746	42	675
30	Gilliesfaulds (Elmwood Campus)	3	7,597	0	0	30	635	2	47
31	Prestonhall Industrial Estate	4	10,020	2	1,427	1	20	0	0
32	St Andrews	24	91,862	26	24,701	836	10821	143	2928
33	Kirkcaldy (St Clair Street)	8	31,899	3	2,903	560	5589	259	6365
34	Mitchelston Industrial Estate	15	46,407	13	15,207	235	2349	145	2437
35	Eastfield Industrial Estate	14	33,349	5	3,596	36	542	24	298
N/A	**Total**	**274**	**876,146**	**246**	**263,178**	**5,653**	**63,517**	**2,579**	**46,277**

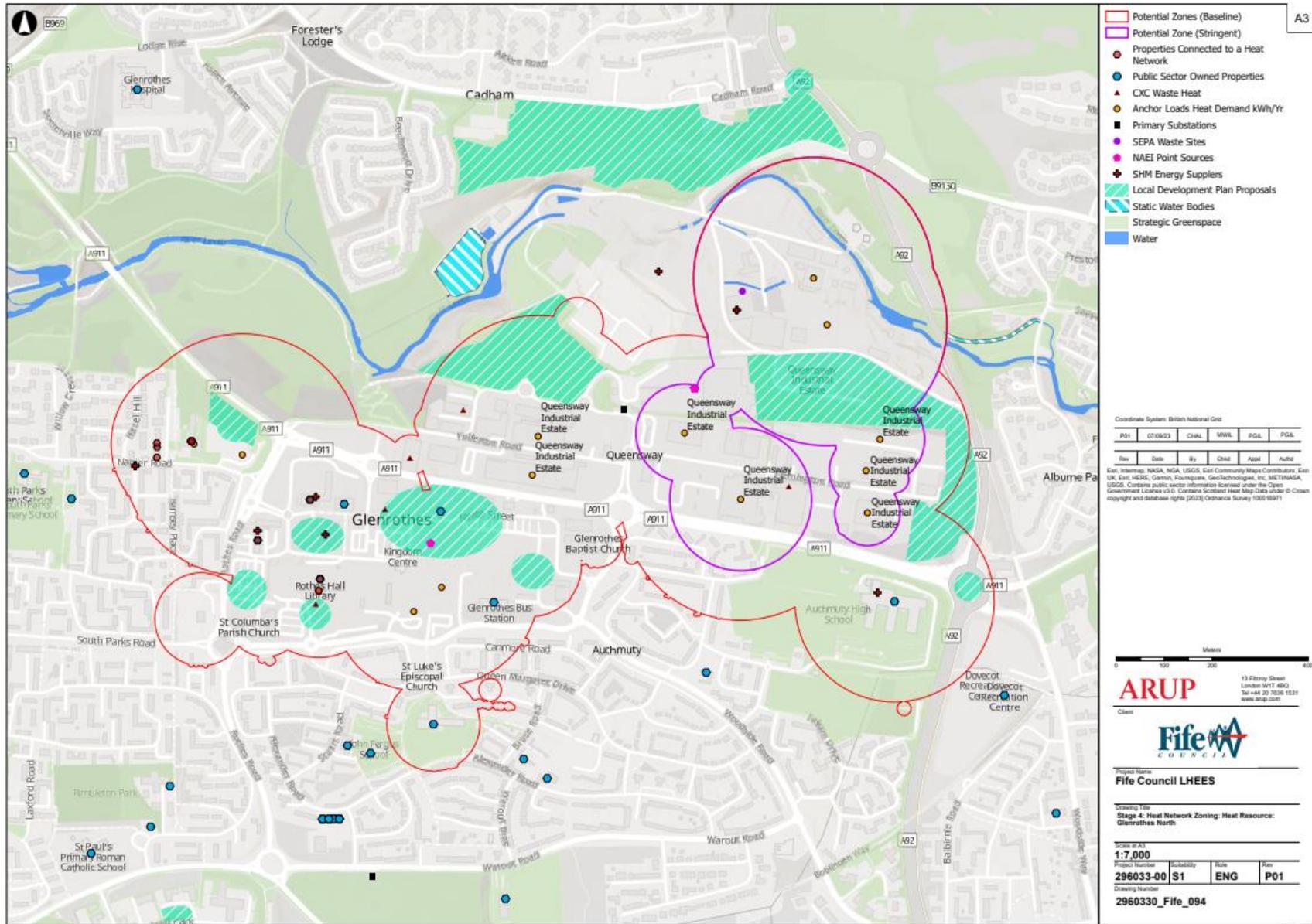# 6. Appendix 5 – Potential Heat Network Zones – Level 2 Analysis Maps

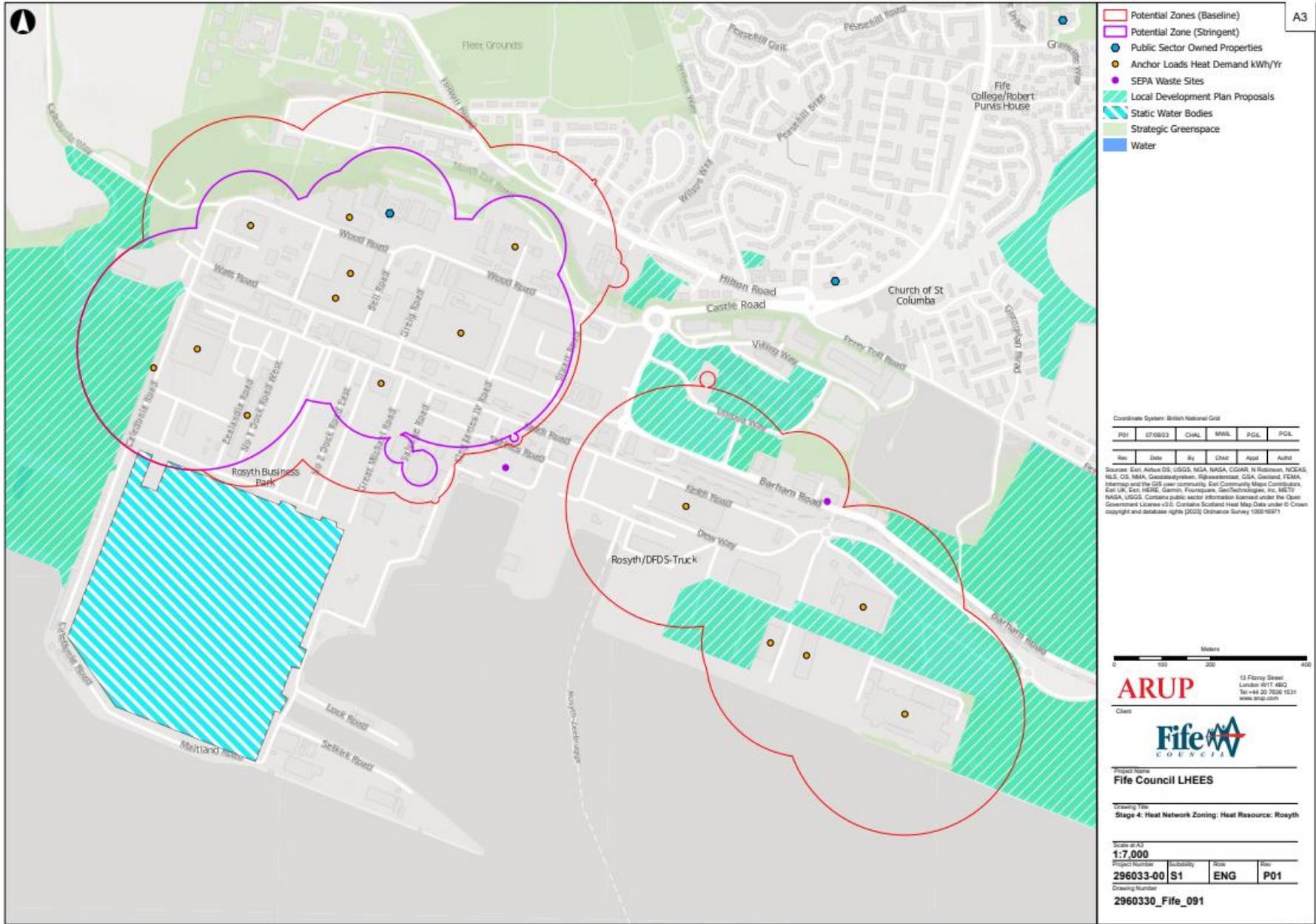**Figure 2: Glenrothes North zone - heat resource map**

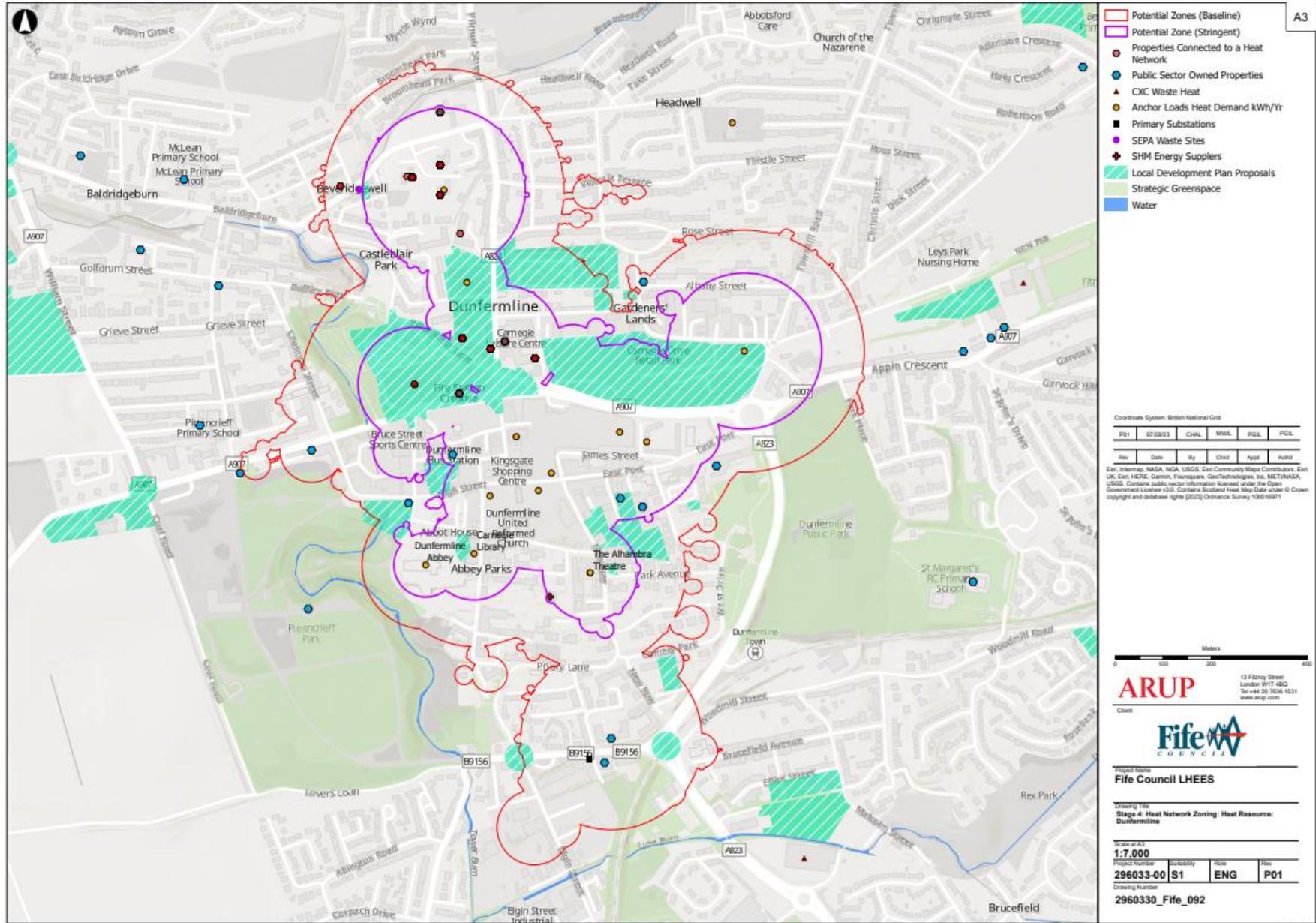**Figure 3: Rosyth Waterfront zone - heat resource map**

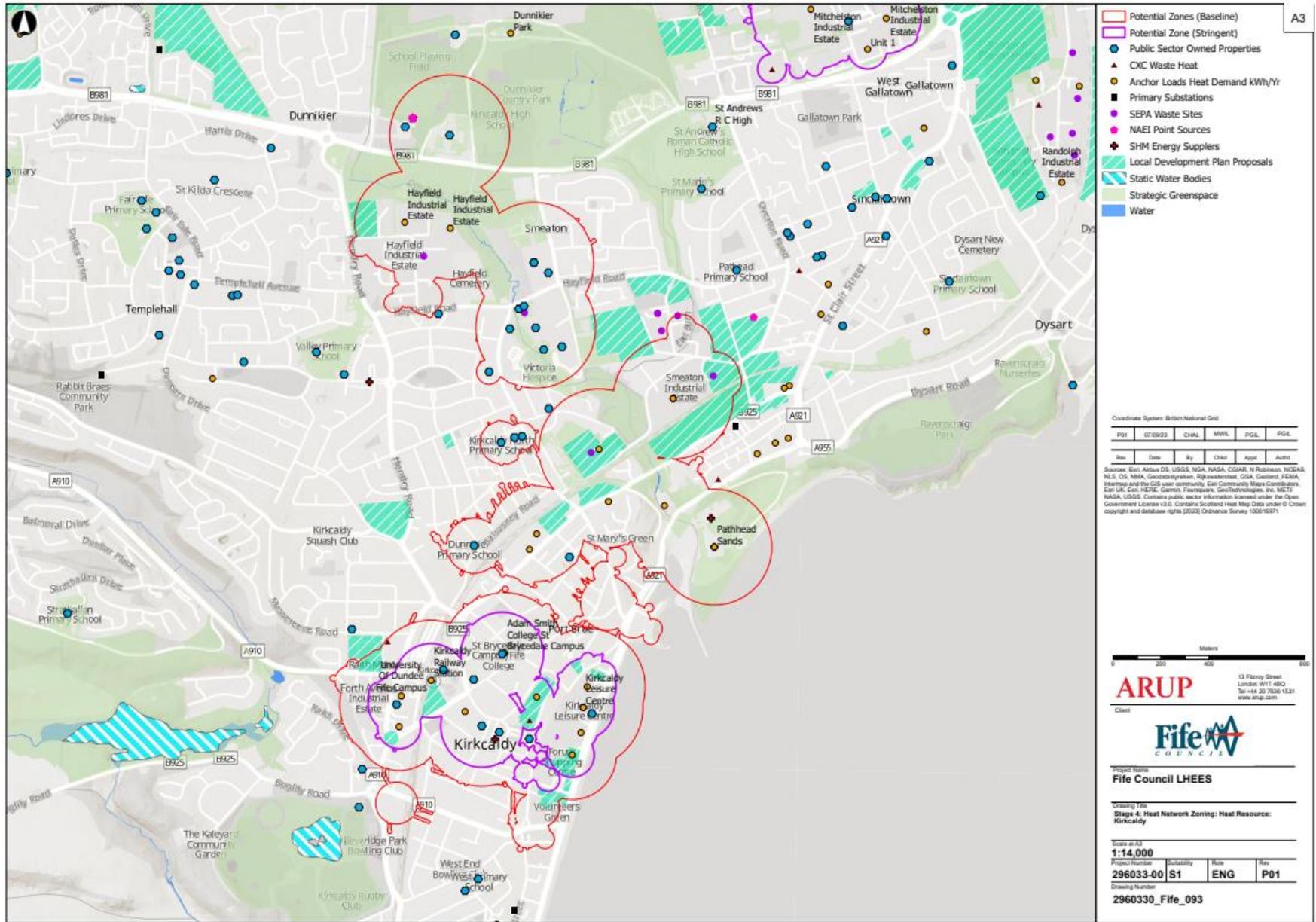**Figure 4: Dunfermline zone - heat resource map**

Figure 5: Kirkcaldy Centre and Kirkcaldy North West (Victoria Hospital) zone - heat resource map