KnowFife Briefing

Sharing data & information across the Fife Partnership

Fife Fuel Poverty Composite Index

Focus on North East Fife Area

Contact: sian.rennie@fife.gov.uk Version: 1 Date: 21/01/2025

This briefing sets out the findings for North East Fife Area from the Fife Fuel Poverty Composite Index 2024. It identifies the neighbourhoods with highest risk of fuel poverty based on the Overall index, and for Demand and Ability to Pay sub-indices.

Fuel Poverty

Fuel poverty relates to households that must spend a higher proportion of their household income to keep their house warm at a reasonable temperature. It is affected by three factors:

1) household income,
2) an increase in household fuel costs,
3) a household's energy use.

About the Index

The Research Team have developed a Fife Fuel Poverty Composite Index (CI). This is to answer the question:

'Where are neighbourhoods in Fife with increased risk of experiencing fuel poverty?'

Indices provide an interpretable metric for subjects that are difficult to measure, such as social vulnerability or risk. A commonly used composite index is the Scottish Index of Multiple Deprivation (SIMD) which ranks all datazones (DZ) in Scotland from most to least deprived.

The Fife Fuel Poverty Composite Index provides a more accurate measure of fuel poverty risk to enable services to target fuel poverty need more effectively. It takes account of both demand for fuel, and ability to pay for fuel, to assess the risk of fuel poverty in a neighbourhood.

The Fuel Poverty Composite Index ranks all datazones in Fife from 1 to 494 (where 1 is highest fuel poverty risk and 494 is lowest fuel poverty risk). Please note that like the SIMD, this is a relative index and does not show by how much more or less an area is at risk of fuel poverty.

Each rank corresponds to one of ten deciles (10% bands) which are used in the outputs of the research - such as the maps in this briefing - to show relative fuel poverty risk. The 20% highest fuel poverty risk is represented by decile 1 (rank 1 – 50) and decile 2 (rank 51 - 100), while the 20% lowest risk is represented by decile 9 (rank 396 – 445) and decile 10 (rank 446 to 494).

How to use the Index

The Fife Fuel Poverty Composite Index provides a more accurate measure of fuel poverty risk to enable services to target fuel poverty need more effectively.

Examples of how this approach can be used to improve targeting of support include:

- Proactively reach people in need, with a focus on prevention rather than responding to crisis. Engaging with communities within highlighted increased risk areas to provide energy advice to help residents stay warm, save energy and provide income maximisation advice regarding available grants and support channels.
- Tailoring local support. If areas are highlighted with increased risk that are not expected by services, the index can be used to understand what specific drivers are leading to fuel poverty risk in these neighbourhoods, and incorporate them into local support and future risk methodologies.
- Comparison between the risk areas identified through the Composite Index / sub-indices and by those highlighted by energy efficiency approaches, for example non-traditional properties that are harder to heat. This may provide clarity on areas that have increased risk and require support.
- Making it easier to access fuel poverty support through a no wrong door approach. Sharing results and insight with those leading on other poverty work in Fife, to inform them of areas for fuel poverty focus to enable them to reflect on their support priorities.
- Improve accessibility to warm welcome locations in Fife for areas identified with increased risk of fuel poverty.

Methodology

Geographic Information System (GIS) was used to integrate, weight and visualise indicators to show areas of low to high fuel poverty risk.

The Composite Index is divided into two domains:

1) Demand for fuel
2) Ability to pay for fuel

Demand is further divided into i) property and ii) people sub-indices representing the heating requirements of the building and increased heating requirements from specific demographics. Variables have been attributed to sub-indices to reduce the impact of correlation, as correlation among selected variables may lead to unintentional weighting.

The ability to pay sub-index includes household characteristics that have been associated with increased risk of fuel poverty. The results from the domains were combined to create an overall index, which is the average of the sub-indices.

In the absence of household level data primarily provided by surveys, the composite index approach outlined provides a method to replace income-based approaches, and compliment other methods of identifying fuel poverty risk including energy efficiency focused approaches.

The methodology outlined is in development, as can be further refined with the inclusion of relevant and robust fuel poverty risk indicators, indicator weighting updates and changes to home energy efficiency calculation.

Note: this approach is identifying risk on an aggregate scale, at datazone geography, and although this geography represents natural neighbourhoods, it will mask local and household variation.

Composite Index

A composite fuel poverty index was developed to capture the multidimensional nature of fuel poverty, taking account of both demand for fuel and the ability to pay for fuel.

The overall index (average of the sub-indices) has been created by combining results from the Demand and Ability to Pay sub-indices.

North East Fife Area has no datazones in decile 1 (10% highest fuel poverty risk). The datazones with the highest overall fuel poverty risk are Colinsburgh Kilconquhar and Balcormo (rank 63), Auchtermuchty West (rank 66), Springfield West and Rankeilour (rank 72), Tayport South East (rank 86), Auchtermuchty East (rank 96) and Largoward Landward (rank 96), all of which are in decile 2 (20% highest risk).

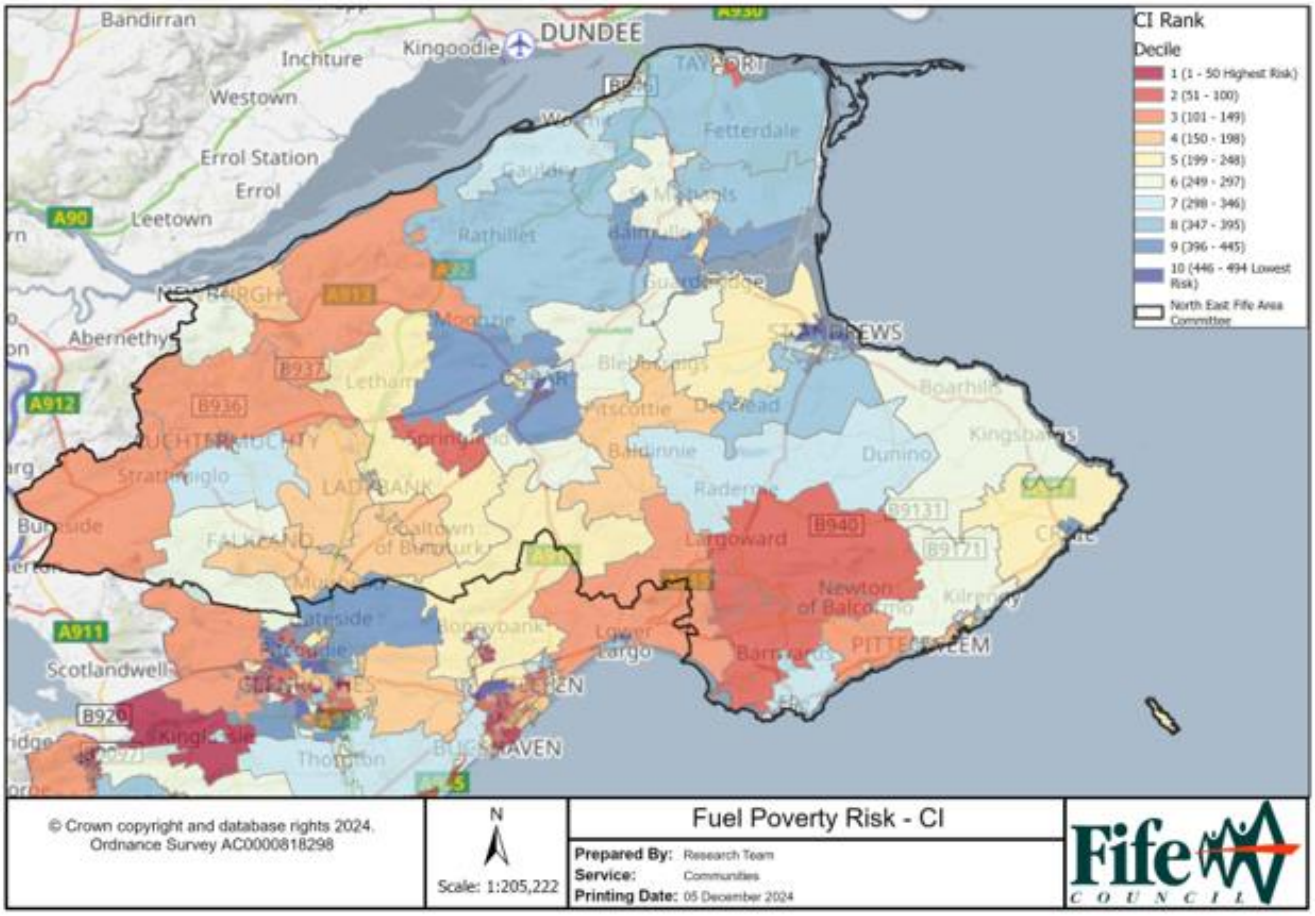

Figure 1 – Map showing deciles from highest to lowest fuel poverty risk on the Overall Composite Index (Fife Fuel Poverty Composite Index, 2024)

Increased fuel poverty risk highlighted within accessible rural areas in North East Fife due to increased demand risk linked to higher average properties EPC below C and estimated fuel bill. The areas rurality, reflected by increased time to specific services, further influencing the enhanced risk.

Further datazone breakdown is provided in Appendix 1.

Demand

The Demand sub-index considers the risk of fuel poverty associated with demand for fuel.

Demand is derived from averaging sub-indices for

- Property, representing the heating requirements of the building, and
- People, increased heating requirements from specific demographics.

Within North East Fife Area, the Demand sub-index highlights greatest risk (decile 1) in:

- Giffordtown to Lathrisk (rank 6),
- Colinsburgh Kilconquhar and Balcormo (rank 8),
- Largoward Landward (rank 11),
- Canongate (rank 23),
- Auchtermuchty West (rank 27),
- Gateside Landward (rank 27),
- Flisk Lindores and Luthrie (rank 43),
- Auchtermuchty East (rank 48)

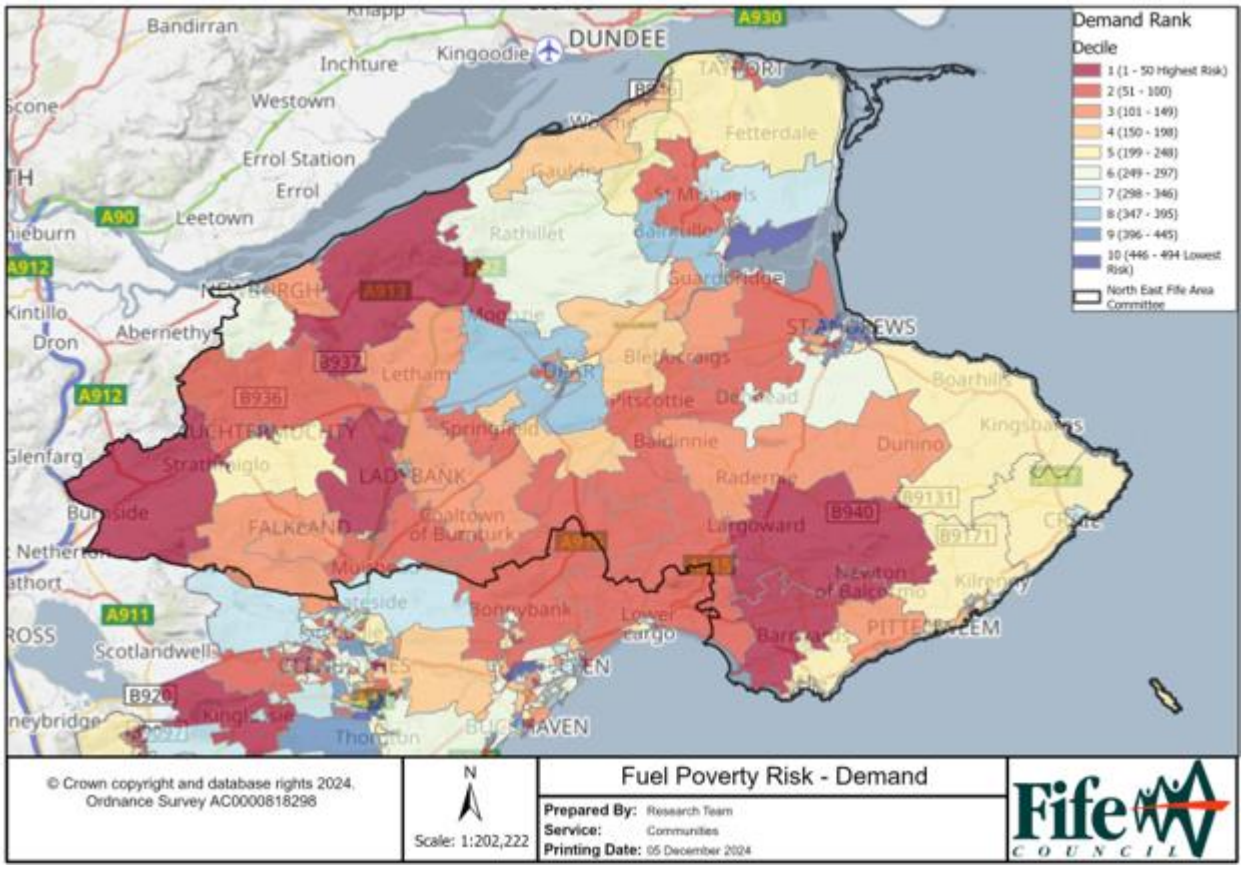

Figure 2 – Map showing deciles from highest to lowest fuel poverty risk on the Demand sub-index (Fife Fuel Poverty Composite Index, 2024)

Increased risk in North East Fife linked to the building sub-index, with 29 of the 50 decile 1 datazones in Fife compared to 1 for the people sub-index. 60% of the top 50 datazones with the highest estimated fuel bills in Fife are within North East Fife. The North East Fife area presents the highest average percentage of properties below EPC C and estimated median fuel bill. Kilmany, Rathillet and Logie details the highest percentage of properties below EPC C in Fife. Although increased risk shown primarily in accessible rural areas, Canongate in St Andrews ranked the highest urban area in North East Fife due to high percentage EPC below C, estimate median fuel bill and 65+ population. Although North East Fife presents the lowest average ratio for chronic disability contributions, it presents the highest average 65+ years population. Overall, there is an increased over 65 population within East Neuk, Howe of Fife and Cupar, with pockets in St Andrews and the Tay Bridgehead area.

Ability to Pay

The Ability to pay sub-index, takes account of household income and ability to pay for fuel.

The datazone with the highest fuel poverty risk according to the Ability to Pay sub-index is Cupar North West (rank 22).

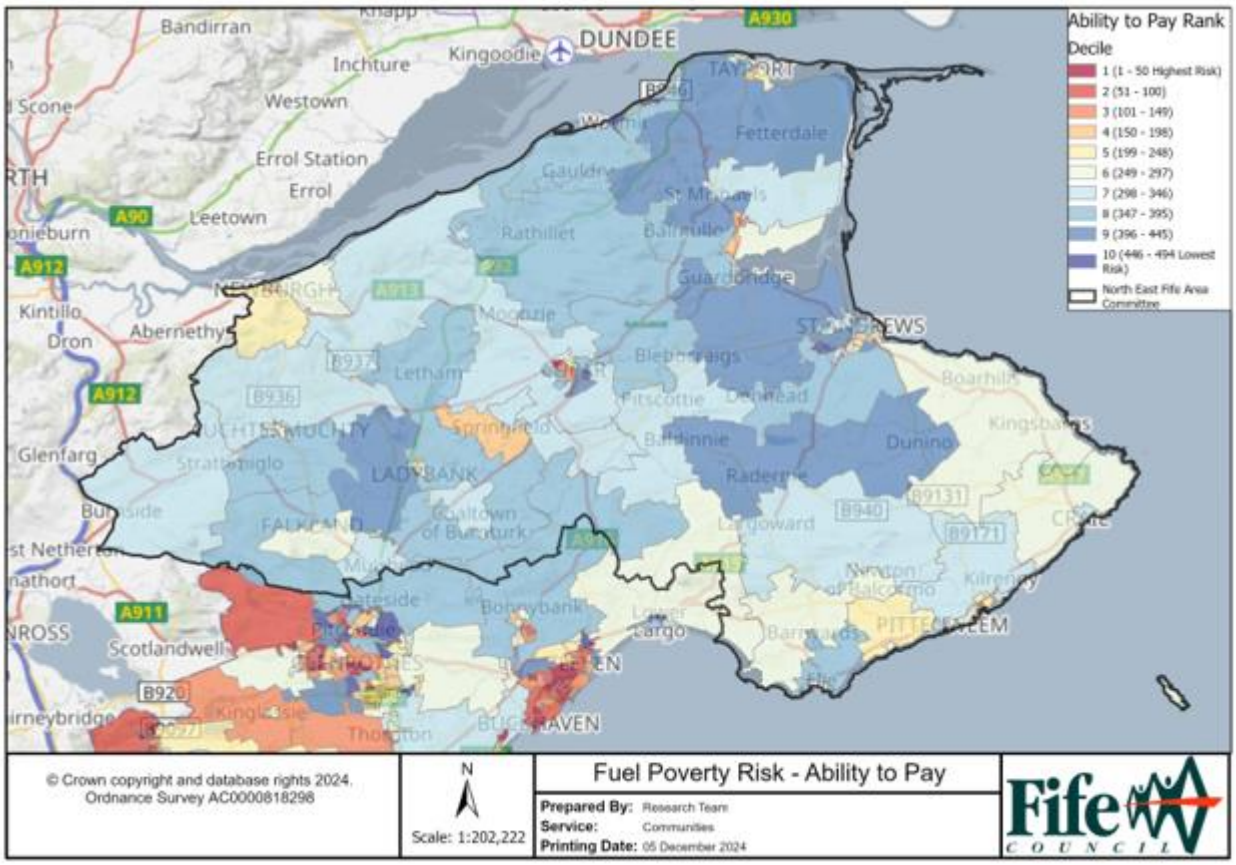

Figure 3 – Map showing deciles from highest to lowest fuel poverty risk on the Ability to Pay sub-index (Fife Fuel Poverty Composite Index, 2024)

Reduced ability to pay risk within North East Fife due to increased median income, with North East Fife indicating the highest average income, followed by the City of Dunfermline.

Although it has the highest 65+ population it highlights reduced percentage of older people on low incomes, with the lowest average percentage guarantee pension credit. Pockets of increased pension credit claimants, with 2 times the Fife average in St Andrews data zone Kinness Burn East, Anstruther Waid and Cupar West. Average universal credit claimants are also the lowest in Fife.

Cupar North West datazone is the highest fuel poverty risk linked to ability to pay in North East Fife due to lower income, significantly higher universal credit claimants and percentage lone parents with dependent children compared to North East Fife and Fife, with higher percentage social housing. This datazone is also within the 15% most deprived in Scotland (SIMD 2020).

Increased risk linked to private rented housing, with North East Fife presenting significantly higher levels than other areas, particularly in St Andrews centre, due to increased student accommodation and tourism, Leuchars linked with the army base, and tourism/second homes within the East Neuk area. These areas do not present the highest ability to pay risk due to generally increased income, lower universal credit and guarantee pension credit claimants.

Patterns of Fuel Poverty Risk

There are 96 datazones that make up the North East Fife Area.

The chart below shows how these datazones are distributed across deciles 1 to 10 for each of the Composite Index and Demand and Ability to Pay sub-indices.

In North East Fife Area, in terms of what is driving fuel poverty risk, demand and ability to pay show quite different distributions.

On the overall index, only 6 of the 96 datazones are in the 20% highest fuel poverty risk (decile 2 only), while 16 are in the 20% lowest fuel poverty risk (deciles 9 and 10).

In terms of the demand sub-index, 22 datazones are in the 20% highest fuel poverty risk (deciles 1 and 2), while 13 are in the 20% lowest fuel poverty risk (deciles 9 and 10).

In terms of the ability to pay sub-index, only 1 datazone is in the 20% highest fuel poverty risk (decile 1 only), while 18 are in the 20% lowest fuel poverty risk (deciles 9 and 10).

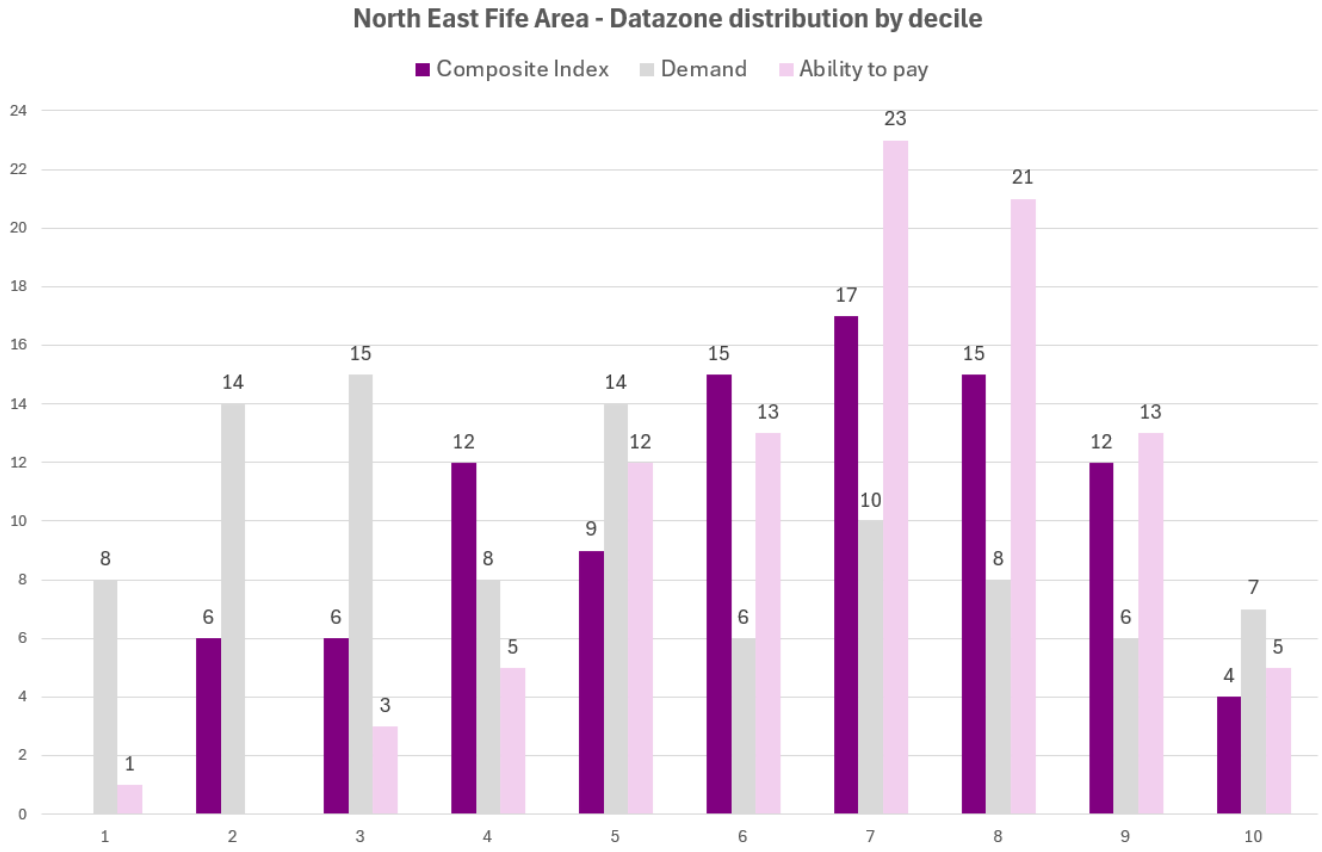

Figure 4 – Distribution of datazones by deciles 1-10 for Overall Index, and Demand and Ability to Pay sub-indices (Fife Fuel Poverty Composite Index, 2024)

Local Share

If the risk of fuel poverty was distributed equally across each of the Areas of Fife, then each Area would have 20% of its datazones in the 20% highest fuel poverty risk for Fife.

The chart below shows that Cowdenbeath and Glenrothes Areas have a higher local share of Fife's highest risk datazones on the overall index. While Levenmouth is just below what would be expected for Fife as a whole, Kirkcaldy, Dunfermline, North East Fife and South West Fife Areas have lower local share of fuel poverty risk on the overall index.

North East Fife has a higher local share of fuel poverty risk based on Demand, but this like Glenrothes Area is in line with what might have been expected. Cowdenbeath, Dunfermline, Kirkcaldy and South West Fife Areas have a lower local share of fuel poverty risk in terms of demand for fuel.

By contrast, the Kirkcaldy and Levenmouth Areas have a higher local share of the ability to pay sub-index, while Cowdenbeath Area mirrors Fife, and Glenrothes, Dunfermline, South West Fife and North East Fife Areas have a lower share of fuel poverty risk in terms of ability to pay.

In terms of local share of neighbourhoods with the highest risk of fuel poverty, North East Fife Area has 6% of Fife's 20% highest risk datazones on the overall index, 21.8% of highest risk for Demand sub-index, and 1% of the Ability to Pay sub-index.

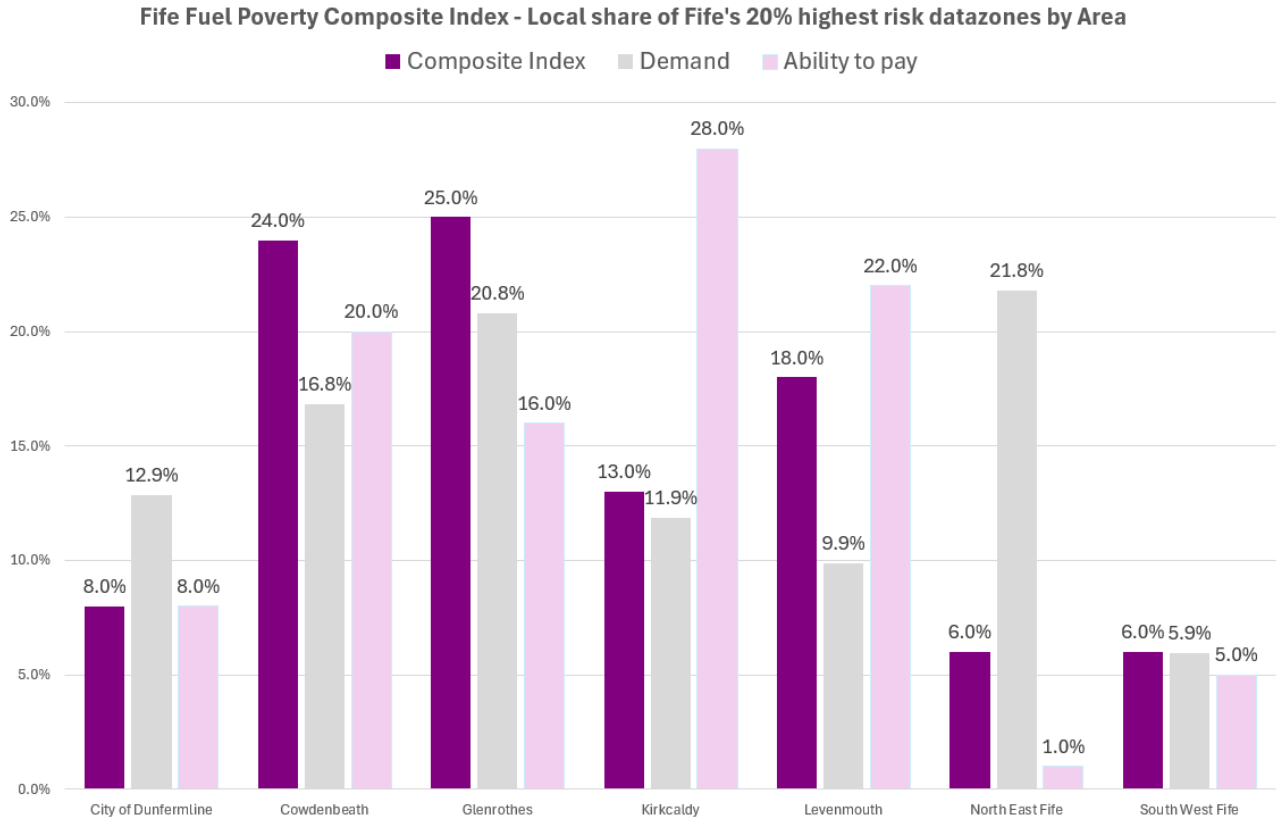

Figure 5 – Local share of Fife's 20% highest risk datazones by Area (Fife Fuel Poverty Composite Index, 2024)

Appendix 1

Table 1 – Relative ranking of datazones for fuel poverty risk in Fife for Overall Index and Demand and Ability to pay sub-indices (Fife Fuel Poverty Composite Index, 2024)

Note 1 is highest risk, 494 is lowest risk. Shaded areas show where a datazone is in 20% highest risk in Fife.

DZ code	Datazone Name	Overall	Demand	Ability to Pay
S01009700	Colinsburgh Kilconquhar and Balcormo	63	8	269
S01009672	Auchtermuchty West	66	27	252
S01009685	Springfield West and Rankeilour	72	90	195
S01009751	Tayport South East	86	99	199
S01009673	Auchtermuchty East	96	48	264
S01009702	Largoward Landward	96	11	301
S01009676	Gateside Landward	106	27	298
S01009706	St Monans East and Abercrombie	108	107	224
S01009740	Leuchars North	120	227	126
S01009687	Cupar Northern	129	100	263
S01009677	Flisk Lindores and Luthrie	130	43	322
S01009674	Collessie and Pitmedden Landward	147	72	313
S01009695	Ceres East and Pitscottie	150	61	327
S01009705	St Monans West	154	143	249
S01009666	Ladybank	156	125	268
S01009678	Newburgh North East and Braeside of Lindores	160	104	293
S01009753	Newport Central	160	83	314
S01009669	Freuchie South and Muirhead	163	72	329
S01009709	Anstruther South West	178	160	257
S01009662	Kettlebridge and Rameldry	179	64	354
S01009670	Falkland East and East Lomond	183	137	286
S01009667	Giffordtown to Lathrisk	188	6	424
S01009663	Kingskettle and Balmalcolm	194	102	332
S01009703	Pittenweem East	196	177	262
S01009749	Tayport Central	201	81	368
S01009683	Cupar Westfield	205	82	372
S01009731	Canongate	207	23	433
S01009711	Anstruther West	211	222	235
S01009713	Crail South and Fife Ness	218	205	260
S01009734	Strathkinness and Craigton	222	56	413
S01009688	Cupar North West	228	452	22
S01009737	Leuchars West	234	287	189
S01009664	Monimal Pitlessie and Cults	243	130	351
S01009744	Balmullo North	249	66	419
S01009715	Boarhills and Kingsbarns	253	205	285
S01009679	Newburgh East	254	311	181
S01009756	Wormit East	259	111	385
S01009681	Springfield East	263	175	324
S01009754	Newport East	265	166	334

S01009752	Newport West	266	55	446
S01009712	Kilrenny	274	202	310
S01009671	Falkland West and Craigmead	279	134	381
S01009680	Newburgh West and Lochmill	284	293	225
S01009696	Craigrothie and Ceres West	286	184	335
S01009750	Tayport South	289	346	177
S01009733	Clayton and Clatto	290	116	408
S01009697	Dairsie and Kemback	291	149	376
S01009701	Earlsferry	297	171	362
S01009719	Kilrymont East	299	304	232
S01009698	Peat Inn and Dunino	299	119	417
S01009689	Cupar West	308	420	127
S01009686	Cupar South West	309	434	115
S01009743	Gauldry and Balmerino	309	188	361
S01009735	Lawhead and Northbank	309	106	443
S01009668	Freuchie North and New Inn	313	209	342
S01009728	Hallow Hill South	319	94	462
S01009690	Cupar North	323	356	207
S01009693	Cupar Tarvit	326	114	455
S01009675	Strathmiglo South and Dunshalt	328	219	352
S01009699	Elie	331	229	348
S01009707	Anstruther	333	213	367
S01009692	Cupar East	334	219	363
S01009710	Anstruther Waid	336	365	221
S01009704	Pittenweem West	338	244	343
S01009682	Cupar Westfield South	340	219	370
S01009718	Langlands West	355	392	216
S01009739	Leuchars North East and St Michaels	358	298	315
S01009746	Kilmany Rathillet and Logie	363	250	368
S01009757	Wormit West	365	141	479
S01009755	Newport North East	366	263	358
S01009738	Guardbridge	368	309	315
S01009665	Ladybank Woods	370	389	236
S01009729	Hallow Hill	377	165	473
S01009708	Anstruther East and Cellardyke	380	340	302
S01009727	Feddinch and The Grange	380	293	349
S01009748	Tayport West	382	312	331
S01009724	Kinness Burn East	387	487	160
S01009720	Kilrymont West	388	429	219
S01009742	St Fort and Pickletillem	390	236	416
S01009716	Kilrymont and Langlands	395	244	421
S01009714	Crail North	397	320	346
S01009684	Bow of Fife Tarvit and Balgarvie	402	360	326
S01009732	Kinness Burn West	402	282	404
S01009717	East Sands	407	449	240
S01009725	Kinness Burn	412	336	364
S01009723	St Andrews Abbey	421	405	305

S01009747	Tayport North	424	476	241
S01009745	Balmullo South	428	351	372
S01009726	The Scores	431	330	397
S01009730	Cairnsmill	433	428	304
S01009721	St Andrews Town Centre	435	359	375
S01009741	Leuchars East	441	479	281
S01009736	North Haugh	451	473	318
S01009694	Cupar South South East	458	395	415
S01009691	Cupar Station and Meadowside	464	418	414
S01009722	Madras and St Leonards	469	494	366

Explore the data

All outputs

Signposting to the package of research outputs relating to Fife Fuel Poverty Composite Index, including local fuel poverty briefings for each of the seven areas:

https://know.fife.scot/research-and-knowledge/topics/poverty-and-deprivation

Interactive mapping application

The composite index, demand and ability to pay sub-indices - including the indicators which have been used to create the index - can be explored further through an interactive mapping application:

https://experience.arcgis.com/experience/c1d8c505cf1d438a970c943c72996a3b/

Spreadsheet

Download a spreadsheet - with the underlying data used to construct the index - to explore both domain and indicator results from the Fuel Poverty Composite Index:

https://know.fife.scot/__data/assets/excel_doc/0037/649873/FPCI_Results_2024.xlsx

Technical note

A technical paper setting out the methodology used to develop and refine the Fife Fuel Poverty Composite Index is available from the KnowFife Hub:

Fuel-Poverty-Composite-Index-2024-Methodology.pdf