



Fife Fuel Poverty Composite Index

Focus on South and West Fife Area

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This briefing sets out the findings for South and West 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.

Areas of highest fuel poverty risk (decile 1) on the overall index include:

- Oakley East (rank 18), and
- Oakley North (rank 32).

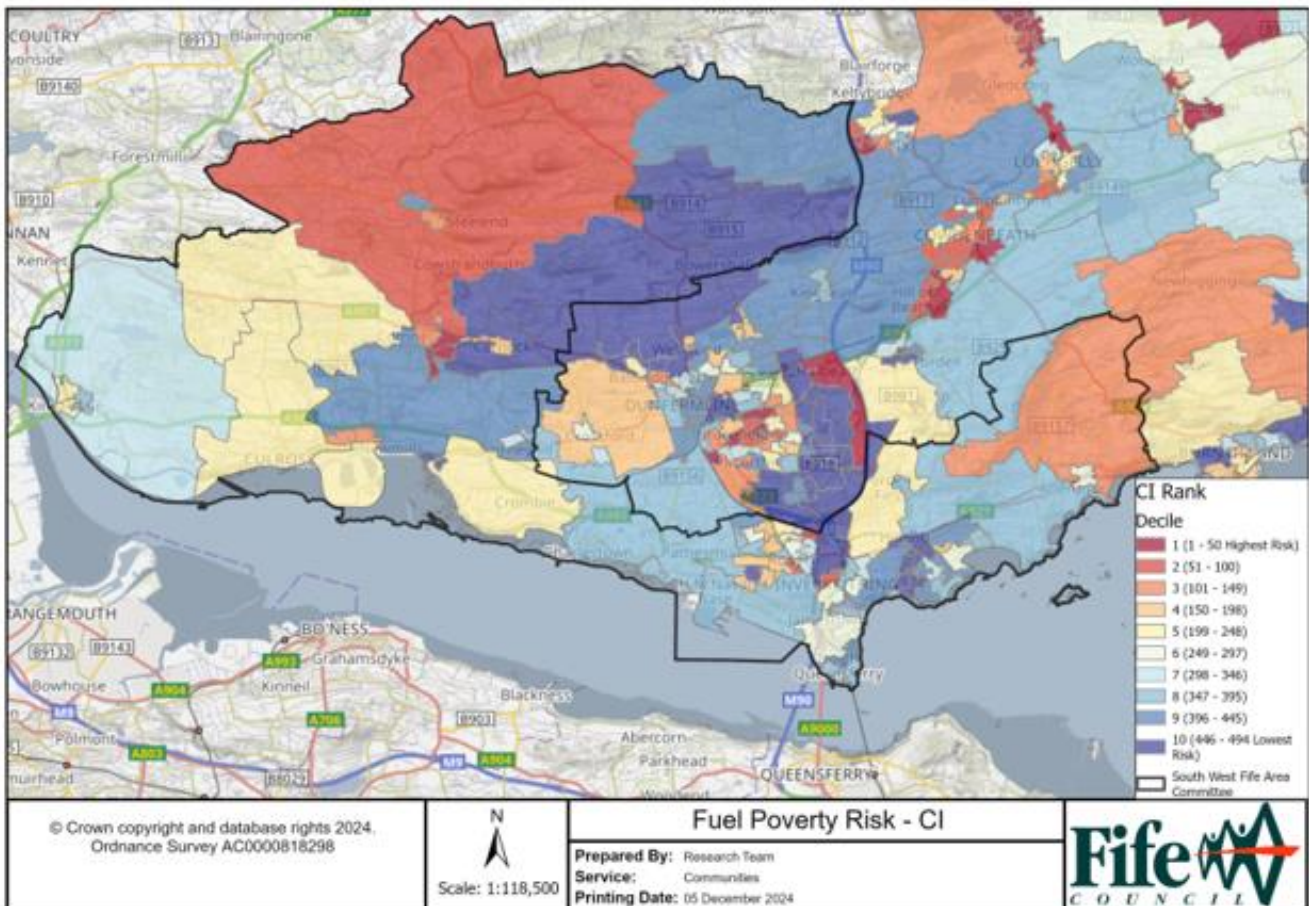


Figure 1 – Map showing deciles from highest to lowest fuel poverty risk on the Overall Composite Index (Fife Fuel Poverty Composite Index, 2024)

No datazones within South West Fife area are within the highest risk group (decile 1) for both demand and ability to pay sub-indices.

Predominantly reduced risk within coastal areas including Dalgety Bay, North Queensferry, Charlestown and Limekilns with increased risk within areas such as Oakley, Crombie, High Valleyfield, Kincardine, and Culross/Low Valleyfield.

Dalgety Bay Letham areas and Gowkhal and Landward datazones indicate the lowest risk in the South West Fife area.

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.

The Demand sub-index highlights higher risk (decile 1) in the following areas:

- Oakley East (rank 19),
- Rosyth Pease Hill South (rank 29),
- Carnock (rank 46), and
- Saline South (rank 50).

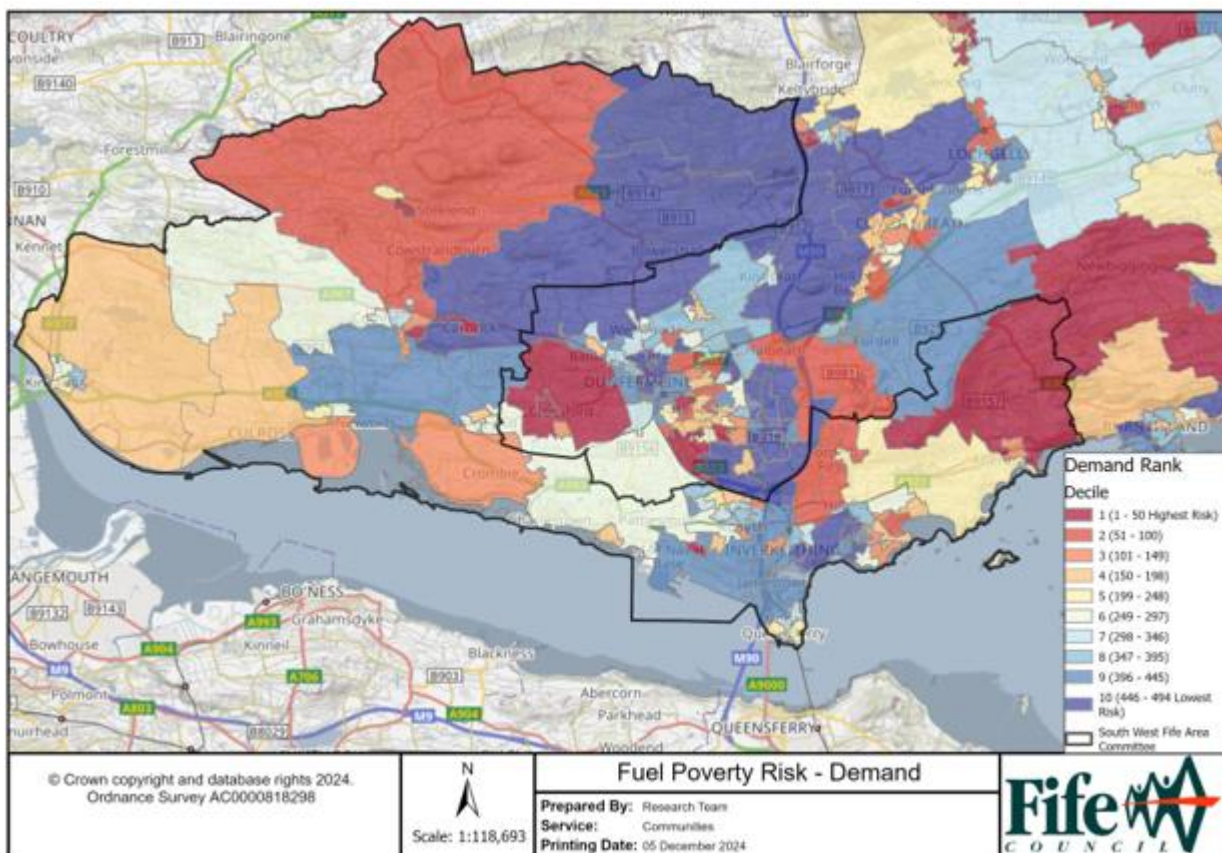


Figure 2 – Map showing deciles from highest to lowest fuel poverty risk on the Demand sub-index (Fife Fuel Poverty Composite Index, 2024)

South West Fife area details the second highest fuel bill estimates, following North East Fife, due to increased estimates within accessible rural areas and small towns. Higher demand risk in this rural area, particularly West Fife and Coastal Villages due increased distance to services. No datazones in South West Fife within the highest risk group (decile 1) for property and people sub-indices, with increased demand risk in this area linked to the building risk as opposed to people.

Reduced 65+ years population within the Rosyth area compared to Inverkeithing and Dalgety Bay and West Fife and Coastal Villages. Although the average percentage for contributions for chronic disability are the second lowest, following North East Fife, Rosyth presents significantly higher contributions than the Inverkeithing and Dalgety Bay area and West Fife and Coastal Villages.

Ability to Pay

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

Areas with highest risk of fuel poverty (decile 1) on the Ability to Pay sub-index include:

- Comrie East (rank 30), and
- Inverkeithing Spittalfield (rank 50).

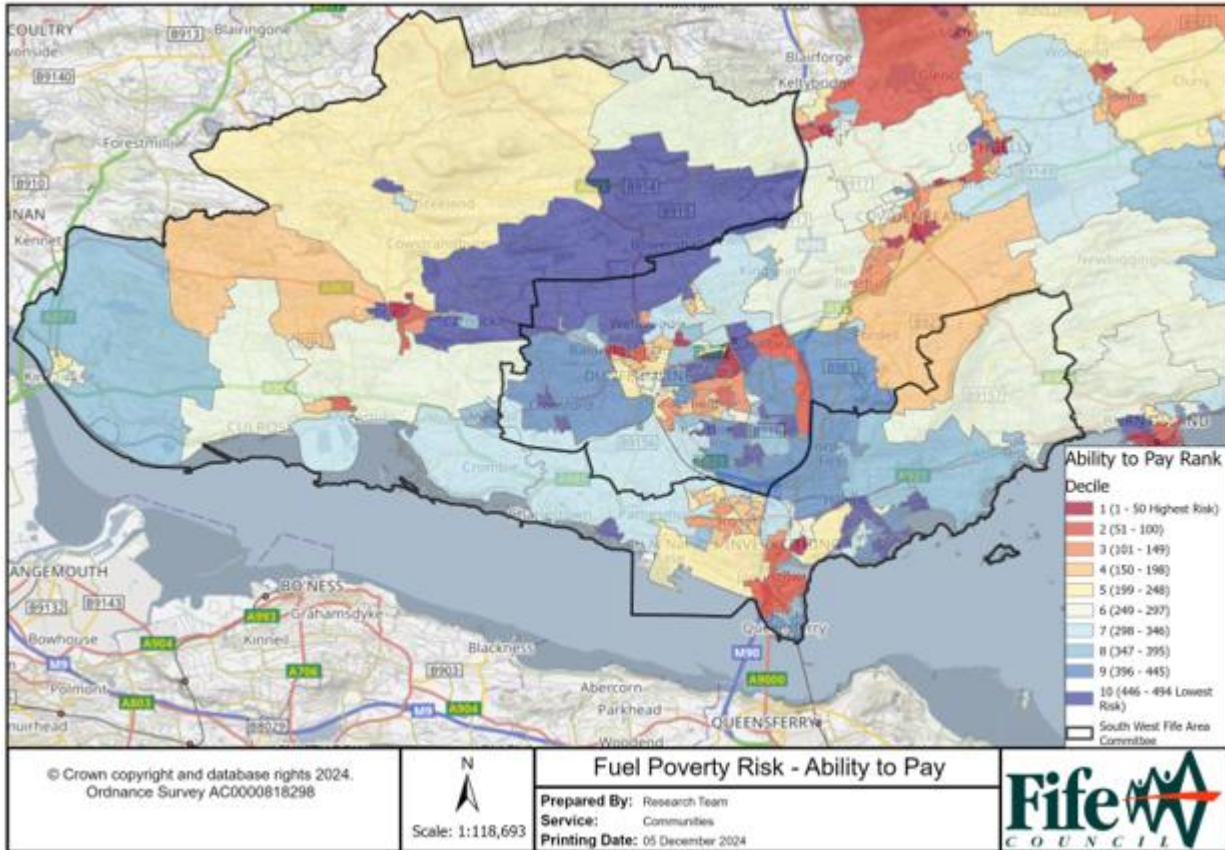


Figure 3 – Map showing deciles from highest to lowest fuel poverty risk on the Ability to Pay sub-index (Fife Fuel Poverty Composite Index, 2024)

South West Fife details the third highest average median income, following North East Fife and the City of Dunfermline. Below average lone parents with dependent children and older people with low income, reflected by guarantee pension credit. Although a lower average, pockets of increased guarantee pension credit is detailed, with two times the Fife average within Oakley East and Comrie East.

Datazones showing low demand risk and high ability to pay risk (deciles 1&2) include High Valleyfield East, Comrie East, Inverkeithing Spittalfield and Inverkeithing Jamestown. These areas primarily have increased social housing.

Patterns of Fuel Poverty Risk

There are 67 datazones that make up the South and West 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.

The chart below shows that in the South and West Fife Area its datazones tend to be skewed towards lower fuel poverty risk.

On the overall index, only 6 of the 67 datazones are in the 20% highest fuel poverty risk (deciles 1 and 2), while 20 are in the 20% lowest fuel poverty risk (deciles 9 and 10).

In terms of the demand sub-index, only 6 datazones are in the 20% highest fuel poverty risk (deciles 1 and 2), while 15 are in the 20% lowest fuel poverty risk (deciles 9 and 10).

In terms of the ability to pay sub-index, only 5 datazones are in the 20% highest fuel poverty risk (deciles 1 and 2), while 16 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, South and West Fife Area has 6% of Fife's 20% highest risk datazones on the overall index, 5.9% of highest risk for Demand sub-index, and 5% of the Ability to Pay sub-index.

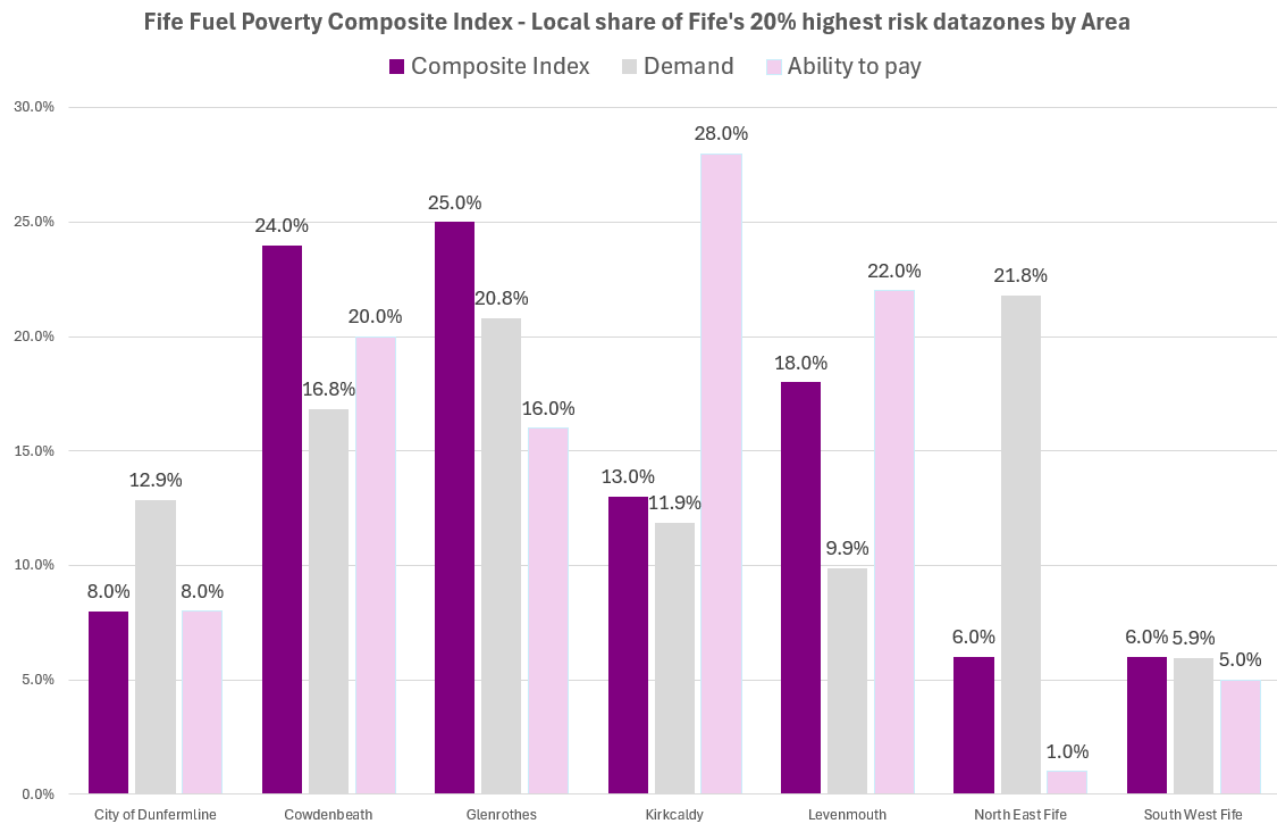


Figure 5 – Local share of Fife's 20% highest risk datazones by Area (Fife Fuel Poverty Composite Index, 2024)

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
S01009272	Oakley East	18	19	121
S01009269	Oakley North	32	104	90
S01009382	Inverkeithing West	67	142	140
S01009376	Admiralty South	76	138	151
S01009275	Knock Hill Landward	90	71	233
S01009368	Rosyth Wilderness East	99	107	208
S01009270	Comrie East	111	307	30
S01009280	High Valleyfield East	116	262	82
S01009281	High Valleyfield West	138	213	163
S01009274	Saline South	140	50	328
S01009378	Rosyth Pease Hill East	150	191	197
S01009380	Rosyth Pease Hill South	150	29	359
S01009400	Dalgety Donibristle South	158	128	267
S01009374	Admiralty South West	180	273	148
S01009366	Rosyth Kings North	184	209	215
S01009276	Carnock	187	46	382
S01009373	Rosyth Kings South	196	328	111
S01009283	Crombie	199	135	309
S01009268	Blairhall and Landward	207	269	187
S01009267	Kincardine South	227	203	270
S01009370	Rosyth Wilderness North	228	163	311
S01009282	Culross and Low Valleyfield	234	185	291
S01009369	Rosyth Kings East	243	302	179
S01009265	Kincardine West	243	278	203
S01009383	Inverkeithing Jamestown	266	406	95
S01009401	Dalgety Ross Plantation	270	75	434
S01009454	Aberdour	273	146	365
S01009363	Rosyth Camdean	278	318	196
S01009388	Inverkeithing Spittalfield	282	467	50
S01009367	Admiralty North	282	363	154
S01009399	Dalgety Longhill Park	302	136	401
S01009371	Admiralty North East	304	379	161
S01009264	Kincardine North and Tulliallan	314	181	371
S01009285	Cairneyhill North	324	191	374
S01009386	Inverkeithing Spencerfield North	328	321	250
S01009375	Admiralty South East	342	425	169
S01009288	Charlestown and Bellknowes	350	260	341
S01009372	Admiralty Central	351	380	222
S01009396	Dalgety Bay South East	355	122	486
S01009455	St Colme and Aberdour West	360	232	383

S01009365	Pattiesmuir	372	404	227
S01009384	North Queensferry	373	228	405
S01009266	Kincardine East	374	375	259
S01009287	Limekilns	376	181	456
S01009402	Dalgety Crow Hill	379	180	460
S01009389	Inverkeithing North East	393	390	271
S01009377	Rosyth Dockyard and Castle	394	434	229
S01009403	Dalgety Donibristle and Hillend	398	290	378
S01009286	Cairneyhill West	399	287	386
S01009395	Dalgety Bay East	400	196	481
S01009397	Dalgety St Davids Clump	404	290	398
S01009273	Saline North	409	231	465
S01009279	Newmills	415	408	295
S01009364	Dunfermline Business Park	415	370	333
S01009385	North Queensferry Ferryhills	417	318	387
S01009387	Inverkeithing Spencerfield South	424	470	247
S01009284	Cairneyhill East	427	282	439
S01009271	Comrie West	430	255	471
S01009398	Dalgety Bogend Wood	442	443	320
S01009381	Inverkeithing Belleknowes	449	440	344
S01009379	Rosyth Pease Hill North	454	437	356
S01009394	Dalgety Steeple Clump	457	466	339
S01009278	Torryburn	460	414	407
S01009393	Hillend	462	357	470
S01009390	Dalgety Letham Hill South	482	411	493
S01009391	Dalgety Letham Hill	486	469	450
S01009392	Dalgety Letham Farm	492	460	480

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](#)