

Derbyshire off-gas grid properties



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SUMMARY

The Cost-of-Living dashboard displays the percentages of properties not connected to the gas grid as published by the Department for Business, Energy & Industrial Strategy (BEIS). Discussions with Public Health colleagues highlighted that a wide range of values for the percentage of off-gas grid properties exists when comparing published statistics from different organisations, including the BEIS published figures.

The purpose of this document was therefore to provide Public Health colleagues with an understanding of the readily available data in relation to proportions of off-gas grid properties across Derbyshire and to identify the data discrepancies across various sources. These discrepancies were investigated by comparing data for Derbyshire as a whole and at district level using Derbyshire Dales as an exemplar. This work supplements the analysis of fuel poverty data linked with the broader developments of the Cost-of-Living dashboard and slide deck.

CONTENTS

1	Data available.....	2
1.1	Notes.....	5
1.2	Comparison of data	6
2	Focus on Derbyshire Dales	7
3	Census 2021 heating types	11
4	Recommendations.....	12

1 DATA AVAILABLE

Source	Statistic quoted	Link to statistic quoted	Date	Comments
1. Rural Action Derbyshire	Across Derbyshire, nearly 20% of properties are off the main gas network. This goes up to 40% in the Derbyshire Dales.	Oil Bank Rural Action Derbyshire Community Oil Buying Scheme Rural Action Derbyshire	<p>No date included on source</p> <p>Article is dated 18 April 2022 —no mention of relevant date to which stats refer not included</p>	<p>No details are included on source as to the source of the statistics not included.</p> <p>No details are included on source as to the source of the statistics not included.</p>
2. Non-gas map	<p>Interactive map.</p> <p>Downloading the data, the estimated proportion of properties across Derbyshire off-gas grid is 18.9% (67,337 out of 357,042 properties) and in Derbyshire Dales is 40.4% (13,574 out of 33,624 properties).</p>	Non-gas map (nongasmap.org.uk)	<p>Uses Census 2011 data and residential properties as recorded on AddressBase (AddressBase OS Products (ordnancesurvey.co.uk) as at end of April 2015.</p>	<p>Map was created by Kiln for Affordable Warmth Solutions, in conjunction with the Department for Business, Energy and Industrial Strategy.</p> <p>BEIS have estimated the percentage of non-gas properties at LSOA level using AddressBase and the location details of properties on the gas grid during 2013.</p> <p>The total number of residential properties as recorded on the AddressBase Premium</p>

				Product as at end of April 2015. <i>See Note i below</i>
3. Energy Trends December 2013 (Department of Energy and Climate Change (DECC))	From map on page 70, 15-30% of households in Derbyshire Dales are estimated to be not connected to gas network. All other districts are showing as 0-15% of households are estimated to be not connected to gas network.	et_dec_13.pdf (publishing.service.gov.uk)	First published estimates of households with LA/LSOA without a gas meter in December 2013.	There is no definitive source for the number of households not on the gas grid, so these estimates are calculated by subtracting the number of domestic gas meters (including non-consuming meters) from the estimated number of domestic properties. In this dataset, there is no differentiation between properties which do not have a gas meter because they are in an area which is off the gas grid and those which are in an area on the gas grid but have a property which is not connected to it (such as inner-city blocks of flats).
4. Department for Business, Energy & Industrial Strategy (BEIS)	<p>2015</p> <ul style="list-style-type: none"> Derbyshire - 8.0% Derbyshire Dales – 22.8% <p>2021</p> <ul style="list-style-type: none"> Derbyshire – 5.9% Derbyshire Dales – 21.2% 	<p>Sub-national estimates of properties not connected to the gas network - GOV.UK (www.gov.uk)</p> <p>Figures are also available at LSOA level - LSOA estimates of properties not connected to the gas</p>	2021 data added in December 2022.	Two methodological improvements have been made to the estimates of domestic properties not connected to the gas grid. One relates to Scotland data and the other relates to the classification of meters as either domestic or non-domestic – see

Derbyshire off-gas grid properties

		network - GOV.UK (www.gov.uk)		notes below. Statistics have been revised back to 2015 so all figures are on a comparable basis. <i>See Note ii below</i>
5. Derbyshire County Council	Derbyshire Spatial Energy Study reported that Derbyshire 6% of properties in Derbyshire are estimated to be off-gas-grid and 21% of properties in Derbyshire Dales are estimated to be off-gas-grid.	Renewable energy study - Derbyshire County Council	2022	No details of sources used for these figures
6. Department for Business, Energy & Industrial Strategy (BEIS)	Map on page 28 suggests that Derbyshire percentage is not greater than 25%	Sub national electricity and gas consumption summary report 2019 (publishing.service.gov.uk)		
7. Census 2021	354,243 properties (Derbyshire) Derbyshire Dales (all LSOAs) Mains gas only – 65.6% Carsington – E01019605 Mains gas only – 8.7%	Census 2021: how homes are heated in your area - Office for National Statistics (ons.gov.uk)	Census 2021 data	Provides a distinct perspective by reporting on heating types. There are 13 categories – <i>see Note iii below</i>
8. Department for Business, Energy & Industrial Strategy (BEIS)	2015 <ul style="list-style-type: none"> Derbyshire Dales – 22.8% 2021 <ul style="list-style-type: none"> Derbyshire Dales – 21.2% 	www.domesticenergymap.uk	2015-2021	Map representation of data in 4. above

1.1 Notes

- i. AddressBase Premium is the most current, comprehensive, and accurate geographic dataset available of addresses, properties and land areas where services are provided. The number of properties is shown at both LSOA and Local Authority level.
 - a. Distances from gas grid
 - b. BEIS has data on the location of the gas mains network (below 7 bar distribution network), provided by the gas network operators, and used this combined with location details of the non-gas grid properties to obtain an estimate of the distance of each 'non-gas' property from the gas mains network.
 - c. This data has subsequently been grouped by properties within 23 meters of the distribution network; within 50 meters; within 500 meters; within 2km; and greater than 2km.
- ii. Sub-national methodology and guidance - Sub-national methodology and guidance 2023 - GOV.UK (www.gov.uk)
 - a. In previous editions of these statistics the total number of domestic meters in each area was calculated as the sum of all consuming gas meters categorised as domestic (those consuming meters with a consumption less than 73,200 kWh) and the number of 22 non-consuming meters (implicitly all categorised as domestic). In this publication the non-consuming meters which gas shippers have labelled as non-domestic have been excluded from the domestic meter total. These made up around 0.3% of the previous total number of domestic meters.
 - b. Note that these figures are based on Valuation Office Agency (VOA) information on who the council tax billing authority is for the property. They are therefore not entirely consistent with the VOA figures used for the MSOA/LSOA levels, which are derived from matching the postcodes of each property to MSOAs/LSOAs using ONS's National Statistics Postcode Lookup.

	Derbyshire Dales	Derbyshire
2015	22.8%	8%
2016	22.2%	7.4%
2017	21.7%	7.0%
2018	20.9%	6.1%
2019	20.7%	6.1%
2020	20.9%	6.3%
2021	21.2%	5.9%

- iii. Census 2021 data - Heating categories are as follows:
- a. Does not apply
 - b. No central heating
 - c. Mains gas only
 - d. Tank or bottled gas only
 - e. Electric only
 - f. Oil only
 - g. Wood only
 - h. Solid fuel only
 - i. Renewable energy only
 - j. District or communal heat networks only
 - k. Other central heating only
 - l. Two or more types of central heating (not including renewable energy)
 - m. Two or more types of central heating (including renewable energy)

1.2 Comparison of data

The Non-gas map indicates that the proportion of off-gas grid properties across Derbyshire is 20% and for Derbyshire Dales district is 40%; these are the figures reflected in the Rural Action Derbyshire document. These figures were collated in conjunction with Department for Business, Energy, and Industrial Strategy (BEIS) and are based on 2011 census data and an estimate of off/on-gas grid properties using 2013 location details relative to the gas grid. All other sources reviewed, including more recent estimates, indicate that off-gas grid rates are not as high and that overall, less than 10% of properties in Derbyshire and just over 20% of properties in Derbyshire Dales are off-gas grid.

The Cost-of-Living dashboard uses the BEIS published statistics of properties not connected to the gas grid. The earliest available BEIS figures are from 2015 (figures were revised and retrospectively recalculated back to 2015) and indicate that the proportion of off-gas grid properties across Derbyshire was 8% and for Derbyshire Dales district was 22.8% in 2015. BEIS provided me with links to gas consumption and property statistics. Using these, the proportion of off-gas grid properties in Derbyshire Dales ranges from 23% in 2010 to 22% in 2022. The other sources of data reviewed provide comparable statistics, of a similar order of magnitude, to those provided by BEIS, and so the Non-gas map figures would appear to be inconsistent.

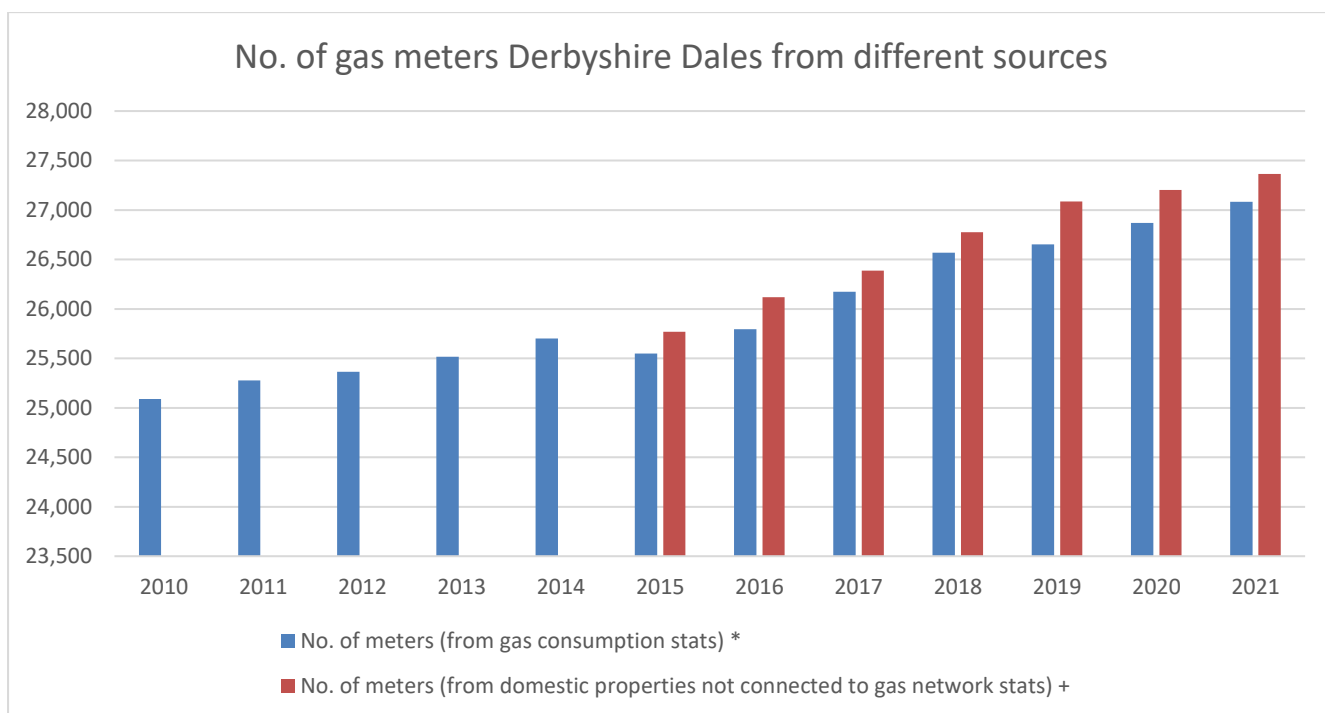
2 FOCUS ON DERBYSHIRE DALES

Looking in more detail at the data, it could be hypothesised that if the number of off-gas grid properties in a specific district has fallen, then it would be expected that:

1. the number of properties on the gas grid will have increased (measured by the number of gas meters) and,
2. consumption of gas in that district will have increased proportionately (due to the higher number of gas meters).

Looking at the Derbyshire Dales district, the data suggests that the number of off-gas grid properties has fallen from 40% in 2013 (figures from the Non-gas map) to 23% in 2015 (figures calculated from BEIS data). From the hypothesis above, it is therefore expected that the both the number of gas meters and consumption of gas would have increased within Derbyshire Dales district.

Using the subnational gas consumption figures and going back to 2010, a summary of the available statistics is as follows:

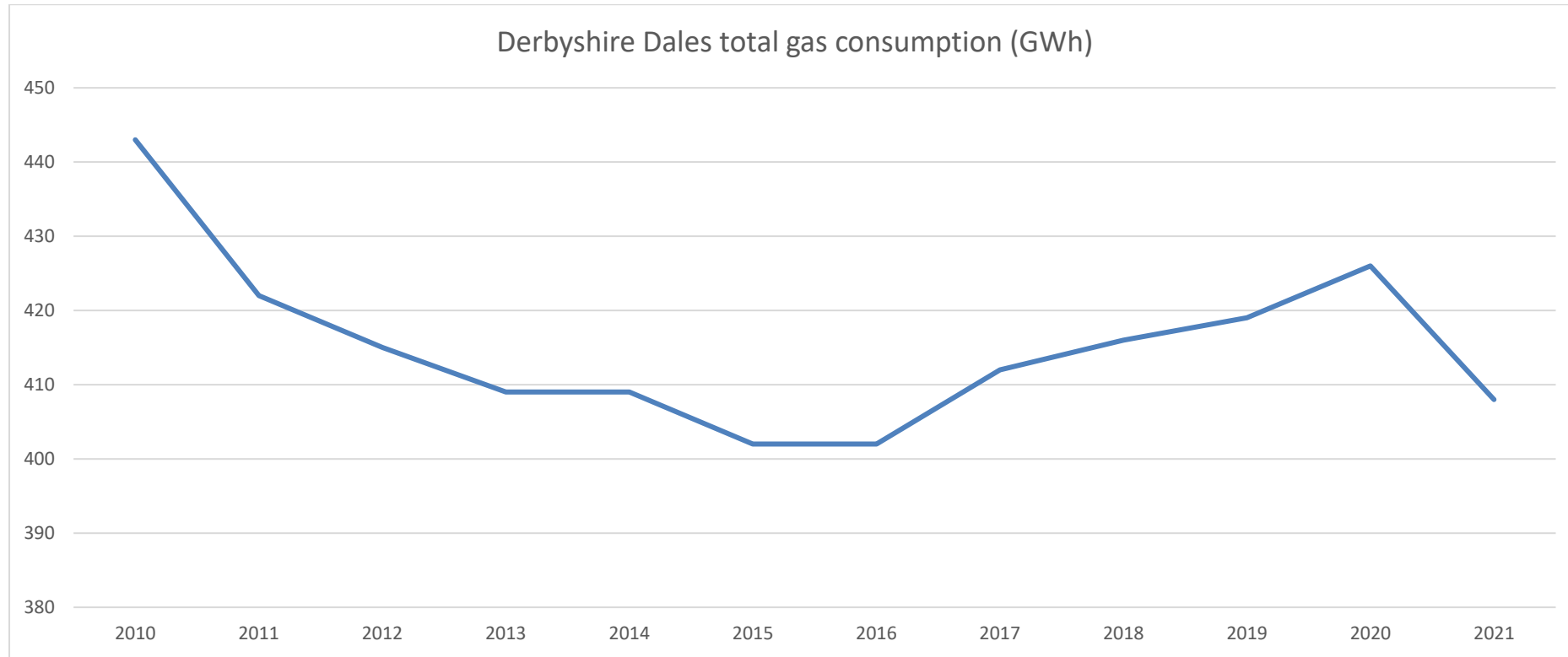


Sources: [Regional and local authority gas consumption statistics - GOV.UK \(www.gov.uk\)](https://www.gov.uk)
[Sub-national estimates of properties not connected to the gas network - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

Derbyshire Dales			
Year	No. of meters (from gas consumption stats) *	Gas consumption (GWh)	No. of meters (from domestic properties not connected to gas network stats) +
2010	25,090	443	
2011	25,277	422	
2012	25,365	415	
2013	25,516	409	
2014	25,701	409	
2015	25,550	402	25,770
2016	25,794	402	26,117
2017	26,175	412 [^]	26,388
2018	26,567	416	26,776
2019	26,654	419	27,087
2020	26,869	426	27,204
2021	27,083	408	27,363

* Gas meters classified as being either domestic or non-domestic according to (weather-corrected gas consumption)
 Those with annual consumption < 73,200 classified as domestic

+ Number of consuming domestic meters plus number of non-consuming meters from subnational gas consumption statistics



Notes:

New data collection system with effect from 2017. Due to this a substantial proportion of meters which had not reported for some time had their details updated resulting in increased gas consumption reported.

The Department for Business, Energy, and Industrial Strategy (BEIS) confirmed that data was not available for 2013 and 2014 on the latest calculation basis but provided links to data on number of properties and gas consumption to allow the percentage of properties off-gas grid in Derbyshire Dales district to be calculated as follows:

Derbyshire Dales				
Year	No. of meters (from gas consumption stats) *	no. of properties	estimated no. of properties off-gas grid	estimated % of properties off-gas grid
2010	25,090	32,590	7,500	23.01
2011	25,277	32,830	7,553	23.01
2012	25,365	32,970	7,605	23.07
2013	25,516	33,100	7,584	22.91
2014	25,701	33,230	7,529	22.66
2015	25,550	33,390	7,840	23.48
2016	25,794	33,580	7,786	23.19
2017	26,175	33,720	7,545	22.38
2018	26,567	33,870	7,303	21.56
2019	26,654	34,140	7,486	21.93
2020	26,869	34,390	7,521	21.87
2021	27,083	34,700	7,617	21.95

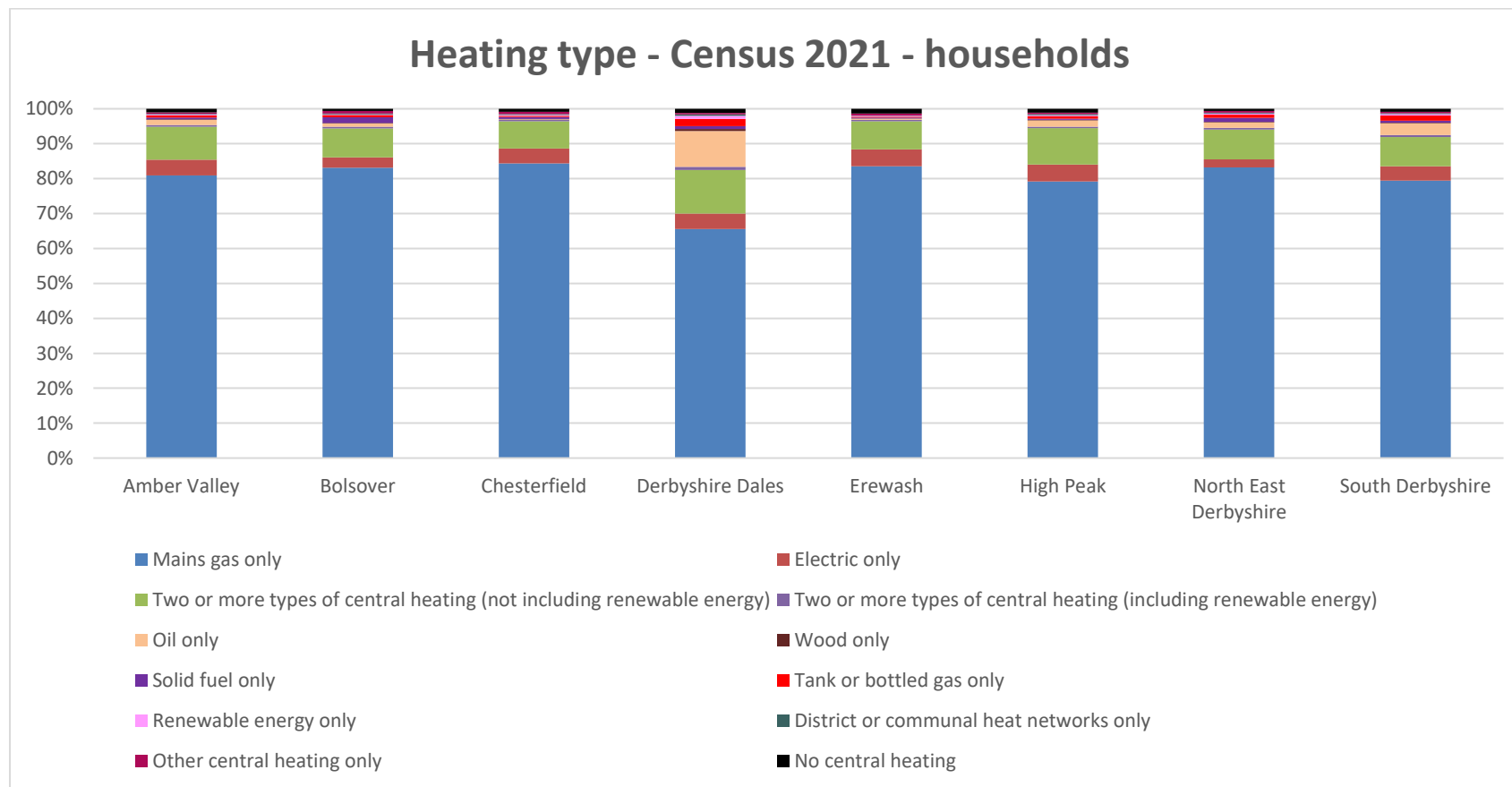
Note: The Department for Business, Energy, and Industrial Strategy (BEIS) was split in 2023 to form the Department for Energy Security and Net Zero and the Department for Business and Trade.

These figures show a small decrease, 4.61%, in the estimated proportion of off-gas grid properties from 2010 to 2021 for the Derbyshire Dales district. This would suggest a slight increase in the number of properties on the gas grid with a corresponding increase in gas consumption (according to the above hypothesis). However, as can be seen from the graph on page 9, total gas consumption has decreased in Derbyshire Dales between 2010 and 2021.

From the above table, the proportion of off-gas grid properties in Derbyshire Dales has been estimated to fluctuate between 21% and 23% which would suggest that the proportions published on the Non-gas map and by Rural Action Derbyshire may have been calculated using different source data and have been overstated.

3 CENSUS 2021 HEATING TYPES

How a home is heated affects energy costs and what financial support is available. Census 2021 data show how heating sources vary across England and Wales



Source: [Census 2021: how homes are heated in your area - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk/census/2021/how-homes-are-heated-in-your-area) Published 05.01.23

Using the latest Census 2021 figures, the proportion of properties in Derbyshire Dales who have mains gas only is almost 67% with an additional 13% of properties having two or more types of central heating.

4 RECOMMENDATIONS

Using a consistent source of data (i.e., the data published and provided by BEIS) for the Derbyshire Dales district, there has been a small reduction in the proportion of off-gas grid properties between 2010 and 2021, with annual proportions falling within a range of 21.5% to 23.5%. We recommend that any figures quoted for proportions of off-gas grid properties refer to the statistics published by the BEIS in line with those reported within the Cost-of-Living dashboard.