

## Quality and Methodology Information (QMI)

### Continuous Household Survey (CHS) – Heat and Insulation

**Energy Intelligence Team**

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## General information

<p><b>Area:</b> Northern Ireland</p> <p><b>Theme:</b> Energy, Environment and Climate Change</p> <p><b>Source:</b> Continuous Household Survey</p> <p><b>Frequency:</b> Annual</p> <p><b>Contact:</b> Energy Intelligence Team (EIT), Energy Group, Department for the Economy (DfE)</p> <p><b>Email:</b> <a href="mailto:energyintelligence@economy-ni.gov.uk">energyintelligence@economy-ni.gov.uk</a></p> <p><b>Variables:</b> Proportion of Households, Primary Heating Method, Secondary Heating Method, Solid Fuel Burnt, Household Tenure, Accommodation Type, Insulation Method, Primary Heating Control, Oil Purchasing Behaviour</p>	<p>The <a href="#">Continuous Household Survey (CHS)</a> is an annual survey of households in Northern Ireland carried out by the Central Survey Unit (CSU) of the Northern Ireland Statistics and Research Agency (NISRA). The survey has been running since 1983 and is designed to provide a regular source of information on a wide range of social and economic issues relevant to Northern Ireland.</p> <p>This QMI report focuses on the household heat and insulation questions, including the types of heating systems used, the presence of insulation measures, and related energy efficiency characteristics. The findings support policy development and monitoring in areas such as housing quality, energy efficiency, and environmental sustainability.</p> <p>The CHS Heat results were previously published by the <a href="#">Department for Agriculture, Environment and Rural Affairs</a> (DAERA) for the years 2015/16 and 2016/17.</p> <p>The Department for the Economy's (DfE) Energy Intelligence Team (EIT) published the CHS results for household heat and insulation in 2023/24, and the 2024/25 report was the second published by the team.</p>
<p>Official Statistic Status</p>	<p>The CHS Heat and Insulation Results for 2024/25 have been published as an Official Statistic and therefore adhere to the UK Statistics Authority's <a href="#">Code of Practice for Statistics</a>, ensuring that outputs are trustworthy, of high quality, and valuable to users. The National Statistician has provided <a href="#">guidelines on measuring the quality of statistical output</a> requiring a consideration of a number of dimensions in relation to quality: Relevance, Accuracy, Timeliness, Punctuality, Coherence and Comparability. These dimensions of quality are addressed in this report.</p>

## Methodology

<p>Sampling Design</p>	<p>NISRA’s CSU carry out the sampling for the Continuous Household Survey by conducting a systematic random sample drawn from the NISRA Address Register.</p> <p>Communal establishments (e.g. care homes, hostels) are excluded from the sampling frame.</p> <p>Approximately 8,940 households annually are surveyed.</p> <p>Response rates are monitored and reported to assess data quality. 3,790 households took part in the 2024/25 survey; the overall response rate was 46% with ineligible addresses being removed.</p>
<p>Data Collection</p>	<p>The questionnaire has two distinct parts: a household schedule and an individual schedule. One person on behalf of the household answers the household schedule, while all participating adults in the household answer the individual schedule.</p> <p>NISRA CSU conduct the data collection and provide training and notes to each interviewer prior to going out into the field.</p> <p>Conducted through face-to-face interviews, or CAPI (Computer Assisted Personal Interviewing). Interviews are spread equally over 12 months from April to March.</p> <p>Interviewers use structured questionnaires to ensure consistency and minimize interviewer bias.</p>
<p>Weighting</p>	<p><b>Data collected at household level is not weighted, as the sample design provides equal probability of selection and responses are considered representative of the target population.</b></p> <p>Survey weights are applied at the individual level by sex and age to ensure results are representative of the Northern Ireland population.</p>
<p>Data Processing</p>	<p>Responses are validated during data collection by NISRA’s CSU. Heat and insulation household responses are sent to NISRA statisticians within DfE’s Energy Group working in the Energy Intelligence Team (EIT). Data are analysed using Reproducible Analytical Pipelines (RAP) before publication on the DfE website.</p>

<p>Quality Assurance</p>	<p>The heat and insulation questions are reviewed annually within DfE’s Energy Group. Statisticians in the Energy Intelligence Team work collaboratively with heat and energy efficiency policy colleagues to ensure the questions remain relevant, clearly defined and aligned with current policy evidence needs.</p> <p>To support accurate data collection, Energy Group provides explanatory notes for interviewers on more technical concepts (for example, definitions of heat pumps or distinctions between roof and loft insulation). This helps ensure both interviewers and respondents have a consistent understanding of the questions being asked.</p> <p>CSU provides training and supporting materials for CHS interviewers in the data collection phase, which include information to support respondent engagement and understanding of the survey.</p> <p>Heat and insulation household data are supplied to statisticians within DfE’s Energy Intelligence Team. Analysis is carried out using reproducible analytical pipelines (RAP) implemented in R.</p> <p>Automated validation and checking routines are used to review data consistency and trends over time, including identification of potential outliers or unexpected movements. Outputs are subject to manual review prior to publication.</p> <p>The use of scripted, version-controlled code ensures that the analytical process is transparent, repeatable and auditable.</p>
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## Strengths and limitations of the data and methodology

<p>Strengths</p>	<p>A clearly defined user need and well-established survey design support the production of policy-relevant statistics.</p> <p>Random sampling from the NISRA Address Register provides representative coverage of private households in Northern Ireland.</p> <p>Data collection via face-to-face interviews allows clarification of questions and helps reduce item non-response.</p> <p>Provides robust, representative data on household characteristics through a large sample.</p> <p>Comprehensive quality assurance processes and adherence to reproducible analytical pipeline (RAP) principles enhance transparency, reproducibility and efficiency.</p> <p>Consistent methodology over time enables robust trend analysis.</p> <p>Enables trend analysis across survey years, supporting monitoring of changes in household heating and insulation.</p> <p>Supports evidence-based policymaking in housing and energy efficiency.</p>
<p>Limitations</p>	<p>Communal establishments (such as care homes, hostels and student halls) are excluded from the sampling frame, limiting coverage of some population groups.</p> <p>As with all sample surveys, results are subject to sampling error due to finite sample size, as well as non-sampling error.</p> <p>Smaller sub-group estimates are subject to greater variability and should be interpreted with caution.</p> <p>Annual data collection limits the ability to capture rapid changes in household energy behaviour between survey waves.</p>

## Dimensions of Quality

<p>Relevance</p>	<p>The CHS heat and insulation questions provide data that meet the needs of government departments and the public for monitoring housing and energy efficiency trends. The analysis is carried out for the benefit of the heat and energy efficiency teams within DfE’s Energy group to help inform policy on energy efficiency programs and sustainability targets. EIT statisticians work closely with heat and energy efficiency teams in drafting the survey questions. This ensures that the data collected is specifically designed to meet their policy and operational evidence needs. The statistics in the CHS report are also produced to provide the public and media with an understanding of the changes in energy usage and use of insulation.</p> <p>By focusing on housing and energy efficiency, this report contributes to wider policy areas that include climate change and fuel poverty reduction.</p>
<p>Accuracy and reliability</p>	<p>The CHS is conducted by NISRA, the official statistical agency for Northern Ireland. NISRA’s CSU collect the data and carry out training for their interviewers. NISRA has been collecting household data for decades and adhere to the Code of Practice for Statistics. Quality assurance checks are carried out on the dataset post-collection and prior to publication.</p> <p>Users should note that with all sample surveys, results are subject to both sampling and non-sampling errors. Sampling error occurs simply due to a specific number (sample) of households being asked questions as opposed to every household. Non-Sampling error can occur through misreporting errors, interviewer errors, non-response bias, survey design errors or processing errors. Users should keep this in mind when interpreting the data. Sampling error has been mitigated by CSU in the random sampling phase of the data collection process and EIT statisticians have further calculated confidence intervals to charts to help users assess if changes are statistically significant or within the limits of sampling. Commentary has also been added to support the visuals.</p> <p>EIT data validation includes a series of checks that have been automated in R-code and are aligned with RAP principles. Trend data are reviewed to check for outliers or inconsistencies. The automation of the quality assurance and analysis processes helps to reduce human error that may otherwise occur through manual intervention in working with the data. In addition, the use of version-controlled code and scripted workflows ensures that every step of the data transformation process is transparent, repeatable, and fully auditable. This reduces the likelihood of inconsistencies arising between different iterations of the analysis and enables efficient identification and correction of any anomalies. The structured workflow also supports better governance, as each stage of the process - from data ingestion to output creation - can be reviewed, quality-assured, and refined over time.</p>

<p>Timeliness and punctuality</p>	<p>CHS data are collected continuously throughout the year, with reports published annually according to the pre-announced dates on gov.uk. Data for the CHS Heat and Insulation questions 2024/25 were received in June 2025, with production on the report beginning in September 2025 and the release of the publication taking place on 11th November 2025. The date of publication is pre-announced on gov.uk in line with the code of practice.</p> <p>The timeline for production of the report was effectively reduced by the implementation of RAP principles and the streamlining/automation of work processes. EIT aim to release the statistical report for the 2025/26 within 3 months of receipt of the final dataset from NISRA’s CSU.</p> <p>The increased automation and improved workflow structure help ensure that the release timetable is more resilient to operational delays, allowing the team to maintain punctual publication even during periods of high workload or competing analytical priorities.</p>
<p>Accessibility and clarity</p>	<p>The CHS Heat and Insulation results are published on the DfE website in accessible formats in line with <a href="#">DfE accessibility policies</a>. The release includes interactive charts within the statistical report (html), downloadable datasets (excel and ODS), technical report and a copy of the heat and insulation survey questions. Alternative text has been provided for every visual and chart within the report.</p> <p>Publications comply with DfE accessibility standards and include alternative text for charts and visuals. Accessible <a href="#">colour schemes</a>, clear labelling and explanatory commentary are used to support user understanding.</p> <p>The explanatory commentary uses plain language explanations alongside technical terms support interpretation of charts and tables. This helps users understand the results, their limitations, and the appropriate use of the statistics</p>
<p>Coherence and comparability</p>	<p>The CHS heat and insulation data are collected using consistent definitions and methodology across survey waves, ensuring coherence over the time series. Where changes occur, these are clearly documented to maintain transparency and support accurate interpretation.</p> <p>When comparing the CHS Heat and Insulation results with similar statistics across the UK, users should exercise caution due to several methodological differences. Variations in survey design, sampling approaches, data collection methods, question wording, reference periods, and analytical definitions may affect the degree of comparability between data. In particular, the CHS relies on self-reported data collected through household interviews, whereas many GB and ONS sources use administrative data (such as Energy Performance Certificates) or inspection-based assessments. Differences in the measurement of insulation, heating system classification, and the treatment of multi-fuel households may also influence observed results.</p>

	<p>However, given these differences with wider UK data, the CHS results are still broadly comparable with similar surveys conducted across the UK. These comparable sources include the <a href="#">Scottish House Condition Survey</a>, the <a href="#">Welsh Housing Conditions Survey</a> and the <a href="#">ONS Energy Efficiency of Housing in England and Wales</a>, which together provide the closest UK-wide equivalents for analysis of heating and insulation in households.</p>
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## **Useful Links**

[Continuous Household Survey Heat and Insulation Results, 2024/25](#)

[Continuous Household Survey 2024/25 Technical Report](#)

[Heating Statistics from the Continuous Household Survey, 2015/16 and 2016/17, DAERA](#)

[Background Information: Continuous Household Survey, NISRA](#)

## Annex

### Heat and Insulation Questions

**[HEAT]** Due to the environmental impacts which can result from using different types of fuels, there is considerable interest in what fuels people in Northern Ireland use to heat their homes. I would like to ask you some questions about your heating and use of fuel.

Even if you don't actually use it, what is the primary method of heating in your home.

#### **RUNNING PROMPT/ SHOWCARD 3**

INTERVIEWER NOTE: PRIMARY METHOD REFERS TO THE MOST OFTEN USED METHOD OF HEATING THE HOME

- |   |                     |
|---|---------------------|
| 1. Gas Central Heating (mains gas only)                               | → <b>[HEATSEC1]</b> |
| 2. Oil Central Heating  | → <b>[HEATSEC1]</b> |
| 3. Electric -Electric storage (e.g. Economy 7)                        | → <b>[HEATSEC1]</b> |
| 4. Electric – Other (includes Electric fire/heater/Dimplex radiators) | → <b>[HEATSEC1]</b> |
| 5. Open/Closed Fire or stove (with or without back boiler)            | → <b>[FUEL1]</b>    |
| 6. Other  | → <b>[HEAText]</b>  |
| 7. None?  | → <b>[INSUL1a]</b>  |

**[HEAText]** Which of the other methods of heating do you use.

#### **RUNNING PROMPT/ SHOWCARD 4**

- |                               |                       |
|-------------------------------|-----------------------|
| 1. Liquid Petroleum Gas (LPG) |                       |
| 2. Biomass (wood pellets)     |                       |
| 3. Air Source Heat Pump       |                       |
| 4. Ground Source Heat Pump    |                       |
| 5. Other? (Please specify)    | → <b>[HEATextOTH]</b> |

**[HEATextOTH]** Please specify other primary method of heating home.

*If HEAT=5*

**[FUEL1]** Could you please tell me which of the following solid fuels you burn.

**RUNNING PROMPT/CODE ALL THAT APPLY/SHOWCARD 5**

1. Ordinary household coal (i.e. smoky)
2. Smokeless coal (i.e. low smoke)
3. Peat briquettes
4. Peat (sod, peat or turf)
5. Wood (logs – fully seasoned/dry)
6. Wood (logs – unseasoned/wet)
7. Other wood products
8. Other (Please specify)?

→ **[FUEL1oth]**

**[FUEL1oth]** Please specify the other type of solid fuel you burn.

*If FUEL1 = more than one response*

**[RANK1FUEL]** And could you please tell me which of the following solid fuels you burn most often..

**RUNNING PROMPT/SHOWCARD 5**

1. Ordinary household coal (i.e. smoky)
2. Smokeless coal (i.e. low smoke)
3. Peat briquettes
4. Peat (sod peat or turf)
5. Wood (logs – fully seasoned/dry)
6. Wood (logs – unseasoned/wet)
7. Other wood products
8. Other (Please specify)?

→ **[RANK1oth]**

**[RANK1oth]** Please specify the other type of solid fuel you burn most often.

If HEAT=5

**[HEATOFT]** When you burn solid fuel as your primary method of heating, may I ask how often you do this.

**RUNNING PROMPT/ SHOWCARD 6**

1. Daily
2. Evenings only
3. Weekends only
4. Winter months
5. Special occasions only e.g. Christmas
6. Other? (Please specify)

→ **[HEATOFToth]**

**[HEATOFToth]** Please specify how often

**[HEATSEC1]** How do you control the central heating in your home?

**RUNNING PROMPT/ SHOWCARD 7**

1. Manual On/Off switch only
2. A timer or programmer
3. Boiler thermostat (located on the boiler)
4. Room thermostats (one or more throughout dwelling)
5. Smart Heating Controls
6. Other? (Please specify)

→ **[HEATSEC1OTH]**

**[HEATSEC1OTH]** Please specify?

**[HEATSEC2]** Do your radiators have thermostatic radiator valves?

**[Interviewers note: Thermostatic radiator valves detect the temperature of the room, once the temperature you want is reached the valve will shut the radiator off and cool down, they typically have a numerical dial to allow the temperature of a room to be set at the preferred level.]**

1. Yes
2. No
3. No, there are no radiators in this property

**[HEATSEC3]** Do you use more than one method of heating?

1. Yes
2. No

→ **[HEAT2]**

→ **[INSUL1a]**

**[HEAT2]** What is the secondary method of heating in your home..

**RUNNING PROMPT/ SHOWCARD 3**

1. Gas Central Heating (mains gas only)
2. Oil Central Heating
3. Electric -Electric storage (e.g. Economy 7)
4. Electric – Other (includes Electric fire/heater/Dimplex radiators)
5. Open / Closed Fire or stove (with or without back boiler) → **[FUEL2]**
6. Other → **[HEAT2ext]**

**[HEAT2ext]** Which of the other methods of heating do you use..

**RUNNING PROMPT/ SHOWCARD 4**

1. Liquid Petroleum Gas (LPG)
2. Biomass (wood pellets)
3. Air Source Heat Pump
4. Ground Source Heat Pump
5. Other? (Please specify) → **[HEAT2extOTH]**

**[HEAT2extOTH]** Please specify other secondary method of heating home

*If HEAT2=5*

**[FUEL2]** Could you please tell me which of the following solid fuels you burn..

**RUNNING PROMPT/CODE ALL THAT APPLY/ SHOWCARD 5**

1. Ordinary household coal (i.e. smoky)
2. Smokeless coal (i.e. low smoke)
3. Peat briquettes
4. Peat (sod peat or turf)
5. Wood (logs – fully seasoned/dry)
6. Wood (logs – unseasoned/wet)
7. Other wood products
8. Other (Please specify)? → **[FUEL2oth]**

**[FUEL2oth]** Please specify the other type of solid fuel you burn.

*If FUEL2= more than one response*

**[RANK2FUEL]** And could you please tell me which of the following solid fuels you burn most often..

**RUNNING PROMPT/ SHOWCARD 5**

1. Ordinary household coal (i.e. smoky)
2. Smokeless coal (i.e. low smoke)
3. Peat briquettes
4. Peat (sod peat or turf)
5. Wood (logs – fully seasoned/dry)
6. Wood (logs – unseasoned/wet)
7. Other wood products
8. Other (Please specify)?

→ **[RANK2oth]**

**[RANK2oth]** Please specify the other type of solid fuel you burn most often

*If HEAT2=5*

**[HEATOFT2]** When you burn solid fuel as your secondary method of heating, may I ask how often you do this  
...

**RUNNING PROMPT/ SHOWCARD 6**

1. Daily
2. Evenings only
3. Weekends only
4. Winter months
5. Special occasions only e.g. Christmas
6. Other? (Please specify)

→ **[HEATOFT2oth]**

**[HEATOFT2oth]** Please specify how often

*If HEAT or HEAT2 = 2*

**[HOUSOIL]** When you need to order oil, do you ever shop around i.e. check oil prices with more than one oil company so you can order the cheapest option?

1. Yes → **[INSUL]**
2. No

**[HOUSOILno]** Are there any particular reasons why you do not?

**CODE ALL THAT APPLY - RUNNING PROMPT - SHOWCARD 8**

1. There isn't much difference in prices between companies
2. I like to use my local supplier as they are reliable
3. I can't be bothered / too much hassle
4. I don't have time
5. It's too complicated and I am unsure how to do this
6. I didn't know that I could shop around
7. Other- please specify
8. None

→ **[HOUSOILOTH]**

**[HOUSOILOTH]** Please specify other reason for not checking oil prices

**[INSUL1a]** What form(s) of insulation are in your house..

**RUNNING PROMPT/ CODE ALL THAT APPLY/SHOWCARD 9**

1. Windows double glazed – more than one
2. Windows double glazed – whole house
3. Windows double glazed – more than one but not whole house
4. Windows triple glazed – more than one
5. Windows triple glazed – whole house
6. Windows triple glazed – more than one but not whole house
7. Wall insulation (cavity or solid)
8. Loft insulation (depth known e.g. 120mm,270mm)
9. Loft insulation (depth not known)
10. Roof insulation
11. Floor insulation
12. Other (please specify) → **[INSULoth]**
13. None?

**[INSULoth]** Please specify other form of insulation