



Department for  
Energy Security  
& Net Zero

## Fuel Poverty Dataset Documentation – End User Licence

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# 1: Information and Background Information

The 2021 Fuel Poverty dataset is the outcome of analysis conducted to produce estimates of fuel poverty in England in 2020 undertaken by the Department for Energy Security & Net Zero (DESNZ).

Fuel poverty in England is measured using the Low Income Low Energy Efficiency (LILEE) indicator, which considers a household to be fuel poor if:

- The **number** of households that have both low incomes *and* low energy efficiency.<sup>1</sup>
- The **depth** of fuel poverty among these fuel poor households. This is measured through a **fuel poverty gap** which represents the difference between the required fuel costs for each household and the nearest fuel poverty threshold.<sup>2</sup>

The Low Income Low Energy Efficiency model is a dual indicator, which allows us to measure not only the *extent* of the problem (how many fuel poor households there are), but also the *depth* of the problem (how badly affected each fuel poor household is). The depth of fuel poverty is calculated by taking account of the **fuel poverty gap**. This is a measure of the additional fuel costs faced by fuel poor households compared to the non-fuel poor household thresholds.

Further information on this measure, including technical details of how to calculate whether a household is fuel poor or not, is available in the 2023 Annual Fuel Poverty Statistics Report (2021 data). This can be found here:

<https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2023>

The intention of this guide is to list and provide a basic description of the fuel poverty variables, so that they may be used to inform the user of the components of the Government's figures. This guidance should be supplemented with other relevant supporting documents and information available on the DESNZ website. This additional information includes the fuel poverty methodology handbook<sup>3</sup> and the Annual Fuel Poverty Statistics Report<sup>4</sup>.

The fuel poverty dataset is derived from the 2021 English Housing Survey (EHS) database created by the Department of Levelling Up, Communities and Local Government (DLUHC). This database is constructed from fieldwork carried out between April 2020 and March 2022. The midpoint of this period is April 2021, which can be considered as the reference date for this dataset. Full information about the EHS survey is available on the DLUHC EHS website (<https://www.gov.uk/government/collections/english-housing-survey>) and further information on

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<sup>1</sup> Fuel costs required to have a warm, well-lit home, with hot water and the running of appliances. An equivalence factor is applied to reflect that households require different levels of energy depending on who lives in the property. Further information on how fuel costs are calculated can be found in Section 5 of the Methodology Handbook:

<https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook>

<sup>2</sup> The poverty line (relative income poverty) is defined as an equivalised disposable income of less than 60% of the national median, more information on the methodology can be found in the following infographic:

<https://www.gov.uk/government/publications/how-low-income-is-measured>

<sup>3</sup> <https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook>

<sup>4</sup> <https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2022>

the EHS can be sought from [ehs@communities.gsi.gov.uk](mailto:ehs@communities.gsi.gov.uk). Guidance on use of EHS data provided by DLUHC should also be applied to the fuel poverty dataset.

All variables are presented for households and each case in the dataset is uniquely identified by the variable **serialanon**. This is the key variable used to link data when matching together more than one data file. The variables are presented in Table 1.1 below and are discussed in more detail in Section 2.

**Table 1.1: Fuel Poverty 2020 Dataset Variables**

Variable Name	Variable Label
serialanon	EHS case number
fpLILEEflg	Fuel poverty flag - Low Income Low Energy Efficiency measure
fpLILEEqdt	Low Income Low Energy Efficiency measure - quadrant
FPGAP_LILEE	Fuel poverty unequivalised gap - Low Income Low Energy Efficiency measure (£)
HousingCosts	Annual housing costs (£)
AHCIncomeEQ_LILEE	Equivalised After Housing Costs annual income (£)
FuelCosteqFactor	Fuel Costs equivalisation factor
fpbasinc	Annual basic household income (£)
fpfullinc	Annual full household income (£)
fuelexpn	Total fuel costs (£)
wathcost	Cost of energy to heat water (£)
spahcost	Total space heating cost (£)
litecost	Total cost for lights and appliance use (£)
cookcost	Total energy cost for cooking (£)
elecmop	Method of payment - electricity
gasmop	Method of payment - gas
AHCflg10	After housing costs 10% affordability flag (ratio defined as fuelexpn/[fpfullinc-HousingCosts]). Replaced fpflgb.
BHCflg10	Before housing costs 10% affordability flag ((ratio defined as fuelexpn/fpfullinc). Replaced fpflgf.

fpvuln	Vulnerable flag - fuel poverty definition
Unoc	Under occupancy
FullincDeciles	Full income deciles
EqAHCincDeciles_LILEE	After Housing Costs equivalised income deciles
FPEERrating	Fuel Poverty Energy Efficiency Rating <sup>5</sup>
FPEERband	Fuel Poverty Energy Efficiency Rating Band <sup>5</sup>
sap12	Energy efficiency rating (SAP 2012)
EPC	Energy performance certificate band (SAP 2012)
gorehs	Government Office Region EHS version
Ongas	Whether dwelling is on the gas grid
tenure4x	Tenure
DWtype	Dwelling type
DWage	Dwelling age
FloorArea	Total floor area
CentralHeating	Central heating type
Mainfueltype	Main fuel type
WallType	Wall type
Loftins	Loft insulation
boiler	Type of boiler
hhcompx	Household composition
emphrp3x	Working status of household reference person <sup>6</sup>
ethhrp2x	Ethnic origin of household reference person <sup>6</sup>
Ageyng	Age of the youngest member of the household
Ageold	Age of the oldest member of the household

<sup>5</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/332236/fpeer\\_methodology.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332236/fpeer_methodology.pdf)

<sup>6</sup> Usually, the HRP is the 'householder' in whose name the accommodation is owned or rented.

hhszie	Number of members of the household
hhsick	Does anyone in the household have a long term illness or disability?
HTHG	Eligible for ECO Help to Heat Group
WHDBroad	Eligible WHD Broader Group criteria
ECO_AW	Primary benefit unit: Eligible for ECO Affordable Warmth support (HRP and partner)
aagph2021	Household weight (core cases 2020-21 & 2021-22)

The EHS builds a picture of the English housing stock by surveying a sample of dwellings from around the country. A weighting factor needs to be applied to the data to obtain figures that reflect the whole English stock. Fuel poverty is a condition experienced by dwelling *occupants* and so the weighting factor used is the *household* weighting factor (**aagph2021**), which is present in the fuel poverty dataset. Once the weighting factor is applied, the total number of households in England for 2021 in the EHS is 24,070,861. Generally, this and other estimates from the dataset are rounded so as not to imply a false sense of precision when presenting results.

## 2: The 2021 Fuel Poverty Variables

A brief summary of each of the variables included in the 2021 fuel poverty dataset is given below. More detailed information on how these variables are calculated is available in the fuel poverty methodology handbook which is available to download here:

<https://www.gov.uk/government/publications/fuel-poverty-statistics-methodology-handbook>

### **serialanon** - EHS case number

This variable is the unique identifier of the survey unit. As well as identifying the dwelling/household it enables the fuel poverty dataset to be matched with EHS datasets, ensuring that the integrity of the dataset is maintained. The variable is an eleven-digit code. Codes beginning with 2021 denote surveys conducted in the survey year 2020/21, whereas those beginning with 2122 denote surveys conducted in the survey year 2021/22.

### **Low Income Low Energy Efficiency Fuel Poverty Indicator**

The following variables relate to the fuel poverty statistics under the Low Income Low Energy Efficiency (LILEE) measure of fuel poverty. Additional details on how the LILEE measure is calculated and each of the different components can be found in the annual fuel poverty report<sup>7</sup>.

#### **fpLILEEflg** - Fuel poverty flag - Low Income Low Energy Efficiency measure

This variable indicates whether a household is in fuel poverty under the Low Income Low Energy Efficiency measure. A value of one indicates that the household *is* in fuel poverty, zero indicates that they are *not* in fuel poverty.

#### **fpLILEEqdt** - Low Income Low Energy Efficiency measure - quadrant

This variable shows which quadrant of the Low Income Low Energy Efficiency matrix a household falls into. The four quadrants are as follows:

- Low Income Low Energy Efficiency (LILEE) – **fuel poor households**
- Low income and High Energy Efficiency (LIHEE)
- High income and High Energy Efficiency (HIHEE)
- High income and Low Energy Efficiency (HILEE)

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<sup>7</sup> See Annex C in the annual fuel poverty report: <https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2023>

## **FPGAP\_LILEE** - Fuel poverty unequivalised gap - Low Income Low Energy Efficiency measure (£)

This variable shows the unequivalised fuel poverty gap for a household, derived by multiplying the fuel poverty equivalised gap by the applicable fuel cost equivalisation factor. In cases where the household does not have low incomes and high costs, this value is zero. In cases where they do, this value represents the difference between their modelled costs, and what these would need to spend on fuel in order for them not to be fuel poor. The resulting gap for each individual household can be summed across all fuel poor households to produce an aggregate fuel poverty gap.

## **HousingCosts** - Annual housing costs (£)

This variable represents the total annual housing costs in £/year. It consists of annualised mortgage payments based upon the variable "mortwrx" from the EHS interview file and annualised rent payments (excluding the cost of services) based upon the variable "rentExS" from the EHS interview file. Mortgage payments apply to owners and shared owners that are buying with a mortgage. Owner occupiers that own their home outright have no annual housing costs. Rent payments apply to households that rent their home, including shared owners.

## **AHCIncomeEQ\_LILEE** - Equivalised after housing costs annual income (£)

For the Low Income Low Energy Efficiency fuel poverty indicator, incomes are calculated after housing costs. This is to reflect the fact that money spent on housing costs cannot be spent on fuel. Therefore, mortgage and rent payments are deducted from the full income of each household to give an after housing costs measure of income. Once housing costs have been deducted, incomes are also equivalised, to reflect the fact that different types of households have different spending requirements.

## **FuelCosteqFactor** - Fuel costs equivalisation factor

The Fuel cost equivalisation factor is used in the derivation of the equivalised required annual fuel costs for the household. The EHS data is used to determine the household size for each sample case in the dataset. This provides the necessary information to derive the Fuel Costs equivalisation factors presented below.

**Table 1.1: Equivalisation factors for fuel costs**

Number of people in the household	Equivalisation factor
1	0.82
2	1.00
3	1.07
4	1.21
5+	1.32

Note: additional adult household members reported during the EHS interview survey to be living in Halls of Residence are excluded from the analysis.

The required fuel costs (variable “fuelexpn”) are divided by the equivalisation factor to obtain the equivalised required fuel costs for that household. Equivalising effectively increases the bills of single person households, and decreases the bills of multiple person households, with the aim of making them comparable.

## **Income and Fuel Costs**

### **fpbasinc** - Annual basic household income (£)

This variable is used in the derivation of ‘fpflgb’. It describes the basic annual income of the household, which is net income, excluding housing benefit, Support for Mortgage Interest (SMI), Mortgage Payment Protection Insurance (MPPI) and net council tax payments. This measure of income takes as its base the income of the household representative person (HRP) and partner and adds the reported incomes of any additional benefit units and income from the Winter Fuel Payment if appropriate.

### **fptfullinc** - Annual full household income (£)

This variable is used in the derivation of ‘**fpflgf**’ and ‘**AHCIncomeEQ\_LILEE**’. It describes the full annual income of the household, which is based on the net income, including housing benefit, SMI, MPPI and net council tax payments. This includes income for the whole household from all sources, including benefits and savings and investments.

### **fuelexpn** - Total fuel costs (£)

This variable gives a value in £/year for the cost to the household of the fuel they use for space heating, water heating, lights & appliances energy use and cooking energy use. Energy consumption is estimated using the BRE's Domestic Energy Model (BREDEM 2012). The fuel cost is based on BREDEM modelled consumption and fuel prices, which vary by region and method of payment. Variables detailing amounts for each of these components and the different methods of payment used are included in the dataset (see below). The fuel cost includes the Warm Homes Discount where this is assigned for a case.

### **wathcost** - Cost of energy to heat water (£)

This variable gives a value in £/year for the modelled cost to the household of heating their hot water.

### **spahcost** - Total space heating cost (£)

This variable gives a value in £/year for the modelled cost to the household of space heating. This value includes standing charges for gas if present in the dwelling and any additional standing charge for off-peak electricity (if present), over and above the standard rate electricity standing charge. It should be noted that the application of standing charges in this simplified way may, in some unusual cases, result in the standing charge cost for a particular fuel being assigned against space heating despite this fuel not being assigned for this usage. These cases are, however, rare and this method of assigning standing charges is done to simplify the dataset. For more information, refer to the fuel poverty methodology handbook.

### **litecost** - Total cost for lights and appliance use (£)

This variable gives a value in £/year for the modelled cost to the household of powering their lights and appliances and incorporates any electrical generation from energy saving technologies where applicable. This value includes standing charge amounts for electricity not related specifically to heating (i.e. all standard rate standing charges). The £140 Warm Home Discount received by some households and is subtracted from this cost where applicable.

### **cookcost** - Total cost for cooking (£)

This variable gives a value in £/year for the modelled cost to the household of cooking.

### **elecmop** - Method of payment - electricity

This variable indicates which method the household specifies they use to pay for electricity. Possible values are Direct Debit, Standard Credit and Pre-Payment.

### **gasmop** - Method of payment - gas

This variable indicates which method the household specifies they use to pay for gas. Possible payment methods are Direct Debit, Standard Credit, Pre-Payment and No Gas.

## **10% Fuel Poverty Indicator**

The following variables relate to fuel poverty statistics under the 10% income definition. Please note that fuel poverty in England is no longer measured using the 10% indicator and these variables are included for reference. The Low Income Low Energy Efficiency indicator was adopted as the official measure of fuel poverty in the 2020 fuel poverty publication.

### **AHCflg10** - After housing costs 10% affordability flag (LILEE full income). Replaced fpflgb.

This is a boolean (i.e. true/false) variable. A value of one indicates that the household *is* in fuel poverty, zero indicates that they are *not* in fuel poverty. This is derived as the ratio of **fuelexpn** and **(fpfullinc-HousingCosts)**.

### **BHCflg10** - Before housing costs 10% affordability flag (LILEE full income). Replaced fpflgf.

This is a boolean (i.e. true/false) variable. A value of one indicates that the household *is* in fuel poverty, zero indicates that they are *not* in fuel poverty. This is derived as the ratio of **fuelexpn** and **fpfullinc**.

## **Additional Fuel Poverty Variables**

### **fpvuln** - Vulnerable flag - fuel poverty definition

This is a Boolean (i.e. true/false) variable. A value of one indicates that the household *is* vulnerable, zero indicates that it is *not* vulnerable. As set out in the Government response to the consultation, the definition of vulnerability has been changed in the recent fuel poverty strategy. A household is now counted as vulnerable in these statistics if it contains at least one household member who is 65 or older, younger than 5 or living with a long-term health condition affecting mobility, breathing, heart or mental health condition.

### **Unoc** - Under Occupancy

This is a Boolean (i.e. true/false) variable. A value of one indicates that the dwelling *is* under occupied, zero indicates that it is *not* under occupied. A household is considered to be under-occupying if the dwelling is more than large enough for the number (and type) of occupants living there.

### **FullincDeciles** - Full income deciles

The full income deciles are a banded version of 'fpfullinc'. The income deciles are created by splitting the dataset according to each respective year. Each half of the combined year dataset is weighted by the corresponding single year grossing factor. The fuel poverty full income is ranked in ascending order for each half of the weighted dataset and divided into ten equal categories. The first decile relates to the households with the lowest 10% of annual fuel poverty full incomes and the tenth decile relates to the households with the highest 10% of annual fuel poverty full incomes.

### **EqAHCincDeciles\_LILEE** - After Housing Costs equivalised income deciles

The After Housing Costs equivalised income deciles are a banded version of '**AHCIncomeEQ\_LILEE**'. The income deciles are created by splitting the dataset according to each respective year. Each half of the combined year dataset is weighted by the corresponding single year grossing factor. The After Housing Costs equivalised annual income is ranked in ascending order for each half of the weighted dataset and divided into ten equal categories. The first decile relates to the households with the lowest 10% of After Housing Costs equivalised annual income and the tenth decile relates to the households with the highest 10% of After Housing Costs equivalised annual income.

## **FPEERrating – Fuel Poverty Energy Efficiency rating**

Fuel Poverty Energy Efficiency Rating (FPEER) is a measure of the energy efficiency of a property based on the Standard Assessment Procedure (SAP) but accounts for policies that directly affect the cost of energy<sup>8</sup>. Similar to SAP, the FPEER methodology generates a rating between 1 and 100, which is then translated into an energy efficiency Band from G (lowest) to A (highest).

A new version of RdSAP (v9.93)<sup>9</sup> was introduced in November 2017 with a number of improved assumptions to better estimate heat loss, which in turn has an impact on the energy consumption estimates of dwellings affected. DESNZ have a commitment to use the latest RdSAP assumptions when producing their national statistics to monitor progress against the statutory fuel poverty target<sup>10</sup>.

## **FPEERband - Fuel Poverty Energy Efficiency Rating band**

Fuel Poverty Energy Efficiency Rating (FPEER) is a measure of the energy efficiency of a property based on the Standard Assessment Procedure (SAP) but accounts for policies that directly affect the cost of energy<sup>8</sup>. Similar to SAP, the FPEER methodology generates a rating between 1 and 100, which is then translated into an energy efficiency Band from G (lowest) to A (highest).

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## **sap12 - Energy efficiency (SAP12) rating**

The SAP rating is based upon the energy costs associated with space heating, water heating, ventilation, and lighting in a dwelling. It is adjusted for floor area so that it is essentially independent of floor area for a given built form. SAP ratings are expressed on a scale of 1 to 100+, and the higher the number, the higher the energy performance.

The Department of Levelling Up, Housing and Communities (DLUHC) publish SAP figures to monitor the efficiency of the housing stock in England, with the new version of RdSAP implemented into their statistics from their 2018 data, to align with when this would have come into effect for surveyors issuing EPCs<sup>11</sup>.

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<sup>8</sup> At present this relates to the Warm Home Discount.

<sup>9</sup> [https://www.bre.co.uk/filelibrary/SAP/2012/RdSAP-9.93/RdSAP\\_2012\\_9.93.pdf](https://www.bre.co.uk/filelibrary/SAP/2012/RdSAP-9.93/RdSAP_2012_9.93.pdf)

<sup>10</sup> For more information on the fuel poverty target, see section 2.2 of the annual fuel poverty report:

<https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2023>

<sup>11</sup> <https://www.gov.uk/buy-sell-your-home/energy-performance-certificates>

### **EPC - Energy efficiency rating band (EHS SAP 2012)**

The energy efficiency rating of the dwelling - groups from A to G that are used in the Energy Performance Certificate. 'A' is the most efficient and 'G' is the least efficient. Based on the most recent Sap 2012 methodology.

The Department of Levelling Up, Housing and Communities (DLUHC) publish SAP figures to monitor the efficiency of the housing stock in England, with the new version of RdSAP implemented into their statistics from their 2018 data, to align with when this would have come into effect for surveyors issuing EPCs.

### **gorehs - Government Office Region EHS version**

Government office region

### **Ongas - Whether dwelling is on the gas grid**

This variable consists of a yes / no flag indicating whether or not a dwelling has a current connection to mains gas. The flag is based on the observations made by the surveyor as to whether the dwelling has mains gas connection combined with the types of fuels recorded for the space and water heating systems.

## **EHS variables**

### **tenure4x – Tenure**

This variable indicates whether the property is owner occupied, private rented, owned by the local authority or housing association.

### **DWtype - Dwelling type**

The type of dwelling includes end terrace, mid terrace, semi-detached, detached, bungalow, converted flat, purpose built flat (low rise), and purpose built flat (high rise).

### **DWage - Dwelling age**

This variable indicates the age of the oldest part of the building, giving the period in which it was built.

### **FloorArea - Total floor area**

This variable is the modelled floor area used in the BREDEM 2012 energy model.

### **CentralHeating - Central heating type**

Type of main or primary space heating system.

**Mainfueltype** - Main fuel type

Type of fuel used for main or primary space heating system.

**WallType** – Wall type

Summary variable indicating whether the external walling is predominantly cavity or solid and whether it is insulated or uninsulated.

In alignment with current SAP assumptions and as an improvement to the methodology, dwellings built in 1996 or after with cavity walls with no evidence of insulation in the survey have been assumed to be insulated. More information can be found in the EHS housing stock tables:

<https://www.gov.uk/government/statistics/english-housing-survey-2020-to-2021-headline-report>

**Loftins** – Loft insulation

Thickness of loft insulation. Values are imputed where the amount of insulation is unknown or the dwelling has a flat roof directly above.

**Boiler** - Type of boiler

This variable indicates what type of boiler is present in the property, for example combination boiler, condensing boiler, etc.

**hhcompx** - Household composition

This variable shows the type of people who live in the household. The categories include 'Couple with dependent child(ren)', 'Couple, no dependent children, aged 60 or over', 'Couple, no dependent child(ren), under 60', 'Lone parent with dependent child(ren)', 'One person under 60', 'One person 60 or over' and 'Other multi-person households'. The EHS also contains other different categorisations of household composition.

**emphrp3x** Working status of HRP

This variable indicates whether the Household Reference Person (HRP) was employed, inactive (for example retired) or unemployed at the time of the survey.

**ethhrp2x** - Ethnic origin of HRP

The Household Reference Person (HRP) ethnicity. This variable is grouped into 2 categories white or ethnic minority.

**Ageyng** – age of youngest householder

The banded age of the youngest person who resides in the household.

**Ageold** – age of oldest householder

The banded age of the oldest person who resides in the household.

**hysize** - Number of members of the household

Number of members of the household banded.

## **hhsick** - Does anyone in the household have a long term illness or disability?

Whether anyone in household has long term illness or disability that limits their activities.

## **Policy Eligibility Flags**

The variables below indicate whether the HRP and their partner are eligible or likely to be eligible for a range of DESNZ policies based upon benefit receipt as recorded in the EHS survey.

### **ECO\_AW** - Primary Benefit Unit: Eligible for ECO3 Affordable Warmth support (HRP and partner)

This is a categorical variable that is based upon theoretical benefit receipt of the HRP and any partner (note that this variable is not based upon benefit receipt as recorded on the EHS interview survey). Receipt of each qualifying benefit/allowance has been modelled for each household based on the HRP and any partner's theoretical entitlement to the benefit, with the numbers fixed to keep them in line with DWP/HMRC reported caseload figures for England. ECO Affordable Warmth support is available to private sector households (owner occupier or private rented) in receipt of a qualifying benefit. The ECO Affordable Warmth variable for the 2018 dataset has four categories. These provide additional detail about the reason why a household is not eligible:

1. Eligible - Receives qualifying benefit and in private sector
2. Not eligible - Receives qualifying benefit but not in private sector
3. Not eligible - Does not receive qualifying benefit but is in private sector
4. Not eligible - Does not receive qualifying benefit and is not in private sector

The ECO\_AW variable is based upon the following criteria:

- Pension credit
- Income based Job Seeker's Allowance or Income Support, modelled to be responsible for a child under the age of 16 (or aged 16-19 and in full time education), or modelled to be in receipt of a qualifying component (referring to the household being in receipt of a pensioner premium, disability or severe disability premium or an award of Child Tax Credit that also includes an element for a disabled, or severely disabled, child or young person).
- Income related Employment and Support Allowance, modelled to be responsible for a child under the age of 16 (or aged 16-19 and in full time education), or modelled to be in receipt of a work-related activity or support component.
- Child Tax Credit where the HRP and any partner had a relevant gross income of around £16,480 or less in 2020/21 and in 2021/22 (this income limit is irrelevant if they receive other eligible benefits).<sup>12</sup> Note, the relevant income threshold used in the modelling of the ECO Affordable Warmth eligibility Child Tax Credit criteria has been aligned with the income threshold provided in the applicable OFGEM guidance.

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<sup>12</sup> More information on Child Tax Credit and Working Tax Credit eligibility can be found on:

<https://www.gov.uk/government/publications/rates-and-allowances-tax-credits-child-benefit-and-guardians-allowance/tax-credits-child-benefit-and-guardians-allowance>

- Working Tax Credit, there's no set limit for income because it depends on HRP circumstances (and those of the partner). For example, £18,000 for a couple without children or £13,100 for a single person without children in 2020/21 to 2022/23 - but it can be higher if they have children, pay for approved childcare or one of them is disabled. Note, the relevant income threshold used in the modelling of the ECO Affordable Warmth eligibility Working Tax Credit criteria has been aligned with the income threshold provided in the applicable OFGEM guidance.
- Universal Credit where the HRP and any partner had a monthly earned income of £1,250 or less and modelled to either be responsible for a child under 16 (or aged 16-19 and in full time education), or in receipt of Disability Living Allowance or Personal Independence Payment. Note, the relevant income threshold used in the modelling of the ECO Affordable Warmth eligibility Universal Credit criteria has been aligned with the income threshold provided in the applicable OFGEM guidance. Also note that additional Universal Credit criteria that relates to 'have limited capability for work, or limited capability for work and work-related activity' has not been included in the modelling as DWP statistics on Universal Credit showed that in 2018, less than ten percent of Universal Credit claimants were in receipt of the Limited Capability for Work Entitlement.

### **HTHG – Help to Heat Group Eligibility Flag<sup>13</sup>**

This is a yes / no variable that is derived based upon a combination of DESNZ theoretical means tested benefit and tax credit flags, and tenure and other non-means tested benefits as reported on the English Housing Survey (EHS). The HTHG applies to somebody in the household in receipt of the specific benefits and is only applicable to private sector households.

Eligible households for the HTHG are identified by their entitlement to certain state benefits and tax credits in accordance with Schedule 2 of the Electricity and Gas (Energy Company Obligation) Order 2018 (the legislation for ECO3). The HTHG variable for the 2018 dataset is based upon receipt of one of the following qualifying criteria:

- Somebody in the household (PBU/ABU) selected for the DESNZ theoretical eligibility flags for the following qualifying benefits: Child Tax Credit, Working Tax Credit, Guarantee Pension Credit, Income Support, income-based Jobseeker's Allowance, income-based Employment and Support Allowance and Universal Credit.
- PBU selected receipt of the following qualifying benefits on the EHS (not possible to include ABUs as this information is not collected on the EHS): Attendance Allowance, Carer's Allowance, Disability Living Allowance, Industrial Injuries Disablement Benefit, Personal Independence Payment and Severe Disablement Allowance.
- Somebody in the household (PBU/ABU) selected receipt of Child benefit on the EHS with a gross income threshold that does not exceed the amount corresponding to the number of children/whether a partner is present as specified in Schedule 2 of the ECO 2018 Order.

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<sup>13</sup> The HTHG eligibility flag is based upon the DESNZ theoretical means tested benefit flags. Therefore, there will be cases where the householder responded 'yes' to a means tested benefit in the EHS interview survey but have not been put into the HTHG eligibility flag. The theoretical means tested benefit flags are randomly assigned and are constructed independent of the reported receipt on the EHS. Those that selected 'yes' to a means tested benefit in the EHS but are not assigned a theoretical means tested benefit tend to be cases with higher incomes given the household composition.

**WHDBroad** - eligible for receipt of the £140 Warm Homes Discount (WHD) rebate, in the WHD broader group (Note this is applicable to WHD prior to the reform of the scheme in 2022/23)

Broader group rebates are provided by each supplier in the scheme, and suppliers can choose how to best implement this by determining their own eligibility criteria for households vulnerable to fuel poverty. This must include mandatory conditions as set by Ofgem and supplemented by Additional Criteria.

#### Mandatory criteria

- 1) a low net gross household income of around £16,480 or less and in receipt of child tax credit, with either a disability element or who are responsible for a child under the age of 5.
- 2) household in receipt of Income Support (IS) OR income-based Job Seekers Allowance (JSA) OR income-based Employment Support Allowance (ESA) OR Universal Credit (UC), and in receipt of vulnerability component (e.g. pensioner premium for IS, JSA or ESA).
- 3) disability premium, which is also known as the 'Limited Capability for Work' premium under UC, disabled child premium (or Child Tax Credit (CTC) with disability element), or a child living with them under the age of 5 for whom they are responsible for.

#### Additional criteria

To determine household's eligible for WHD under the broader group more accurately, a method has been developed based on information from the main 7 suppliers, the number of customers, and the money spent on the broader group rebates.

The additional criteria from each supplier was ranked, and the total eligible customers was calculated so as to determine an estimate for the most important eligibility criteria.

Following this process the following 'Additional Criteria' were identified:

1. Savings element of pension credit
2. Eligible for disability premiums
3. Pensionable age (based on PC age)
4. Child < 5
5. Registered disabled/sick
6. Fuel poverty (10% definition)
7. ESA, work or support group, with no added vulnerability

#### Weights

**Aagph2021** - Household weight (core cases 2020-21 & 2021-22)

This weighting factor is a weighting applied to each case to make the dataset representative of the national level of fuel poverty, taking account of the sampling techniques used and issues of non-response within the English Housing Survey.