

Modelling Assumptions

ESTIMATED NUMBER OF HOUSEHOLDS IN FUEL POVERTY 2021-2025

- English Housing Survey 2019 fuel poverty dataset (most recent) usedⁱ
- Gas and electricity prices estimated using Ofgem direct debit price caps (see table below), assuming a typical bill comprises the same proportion of gas and electricity costs as in the Jan 2019 price capⁱⁱ
- Price caps have been applied across the relevant energy use period, assuming different proportion of annual energy use occurs in the relevant months, using a heating and hot water energy demand profile from academic researchⁱⁱⁱ. Price caps used:

Price cap	Value	Source
Winter 2020-21 direct debit dual fuel price cap	£1,042	Ofgem ^{iv}
Summer 2021 direct debit dual fuel price cap	£1,138	Ofgem ^v
Winter 2021-22 direct debit dual fuel price cap	£1,277	Ofgem ^{vi}
Announced Summer 2022 direct debit dual fuel price cap	£1,971	Ofgem ^{vii}
Estimated Winter 2022-23 cap	£2,800	Ofgem suggestion ^{viii}
Estimated Summer 2023 cap	£2,050	Cornwall Insight ^{ix}
Estimated Winter 2023-24 cap	£2,000	Cornwall Insight ^x

- Assume non-gas/electricity prices remain at 2019 levels (e.g. oil, LPG etc.), since how these would be affected by price cap changes is uncertain
- No changes to FPEER bands (assume relative SAP fuel price differences between fuel types will make minimal difference to FPEER ratings, and that the effect of absolute SAP fuel price changes is negated by the cost deflation applied in the FPEER methodology)
- If main heating fuel is gas, amount of cooking energy assumed to be equal between gas and electricity, otherwise assumed to be electricity only
- Upgrades assumed to be carried out each year to the extent of the amount of manifesto funding (see table below) estimated for that year, adjusted for that spent on fuel poor homes in England. Upgrades assumed to be from bands D/E/F/G to Band C, for average costs estimated for the EHS 2019-20^{xi}, with upgrades from each band in the same proportions as happened 2018-19.
- Assumed manifesto funding for energy efficiency upgrades in England, 2019-2030:

Government policy/strategy	Total funding for England, 2019-2030, in manifesto commitments (£mn)	Assumed % of funding to be spent on fuel poor homes	Assumed funding to be spent on fuel poor homes (£mn)
ECO3	1879	29%	545
ECO4	3356	29%	973
Home Upgrades Grant	2500	50%	1250
Social Housing Decarbonisation Fund	3800	18.44%	701
Green Homes Grant, LAD	500	50%	250

- All household incomes assumed to change at an average mid-year rate as predicted by the Office for Budget Responsibility in Mar 22 (real household disposable income per person, decreases by 2023 and increase by 2025)^{xii,xiii}
- Private rented sector housing cost assumed to have increased by 4% between 2019 and 2022, based on ONS data^{xiv}. Other housing costs assumed to remain the same as in 2019.
- Assumes no additional government fuel bill support (Warm Homes Discount was found to make minimal difference in modelling. Supported by BEIS fuel poverty projection estimate that the Government's £9.1 billion energy bills rebate support package only changes the proportion of English households in fuel poverty from 12.9% to 12.5% (in 2022).^{xv})

ESTIMATED MINIMUM NUMBER OF HOUSEHOLDS MISSING THE 2025 INTERIM FUEL POVERTY TARGET

- Assumptions as above, apart from for the "best-case" scenario, where it is assumed upgrades are carried out to Band D and not beyond. Upgrade costs to Band D are therefore used instead of to Band C. These are assumed to be the difference between upgrade costs from a lower band and the upgrade cost from Band D to C

EXTRAPOLATED NUMBER OF HOUSEHOLDS IN FUEL POVERTY FROM 2025 TO 2030

- Extrapolated from estimation of no. of households estimated to be in fuel poverty in 2025 (according to assumptions above)
- The annual decrease in no. of fuel poor households used is the average annual difference in the no. of homes estimated to be brought out of fuel poverty due to (manifesto-promised) energy efficiency funding from 2019 to the relevant year (using our modelling assumptions as above), for 2022 to 2025. This gives an effective average no. of homes brought out of fuel poverty each year 2022-2025 due to (manifesto-promised) energy efficiency funding

ⁱ<https://beta.ukdataservice.ac.uk/datacatalogue/studies/study?id=8891>

ⁱⁱhttps://www.ofgem.gov.uk/sites/default/files/docs/2018/11/decision_-_default_tariff_cap_-_overview_document_0.pdf

ⁱⁱⁱhttps://www.researchgate.net/publication/344046525_Operational_and_embodied_energy_analysis_of_8_single-occupant_dwellings_retrofit_to_nZEB_standard

^{iv}<https://www.ofgem.gov.uk/publications/energy-price-cap-increase-april-consumers-should-switch-save-money>

^v<https://www.ofgem.gov.uk/publications/energy-price-cap-increase-april-consumers-should-switch-save-money>

^{vi}<https://www.ofgem.gov.uk/publications/price-cap-increase-ps693-april>

^{vii}<https://www.ofgem.gov.uk/publications/price-cap-increase-ps693-april>

^{viii}<https://www.theguardian.com/business/2022/may/24/energy-bills-likely-to-rise-by-800-in-october-says-ofgem-chief>

^{ix}<https://www.current-news.co.uk/news/winter-price-cap-could-jump-by-further-600-warns-cornwall-insight>

^x<https://www.current-news.co.uk/news/winter-price-cap-could-jump-by-further-600-warns-cornwall-insight>

^{xi}https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fassets.publishing.service.gov.uk%2Fgovernment%2Fuploads%2Fsystem%2Fuploads%2Fattachment_data%2Ffile%2F1000780%2FEnergy_Chapter_3_Annex_Tables_v2.ods&wdOrigin=BROWSELINK

^{xii}<https://obr.uk/efo/economic-and-fiscal-outlook-march-2022/>

^{xiii}https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fobr.uk%2Fdocs%2FdIm_uploads%2FChapter_2_charts_and_tables_March_2022.xlsx&wdOrigin=BROWSELINK

^{xiv}<https://www.ons.gov.uk/economy/inflationandpriceindices/bulletins/indexofprivatehousingrentalprices/february2022>

^{xv}https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/105677/annual-fuel-poverty-statistics-lilee-report-2022-2020-data.pdf