

## Updates and modifications to fuel poverty methodology for the 2005 fuel poverty analysis.

The modelling of fuel poverty has been updated, modified and improved for the 2005 analysis. The changes have affected both the modelling of fuel costs and income.

The modifications listed below support and amend the full fuel poverty methodology documentation which has been published on the DTI website as an annex to the fourth annual progress report. These changes have only been applied to portion of the dataset corresponding to the financial year 2005/6 .

### Modifications to the modelling of fuel costs:

*Thermal Bridging:* The new algorithm which accounts for non-repeating thermal bridges, as published in the SAP 2005 specification, has been included in the calculation of heating costs for the first time. Fuel poverty numbers increased significantly (>100,000 households) due to the implementation of this algorithm.

*Dimensions modelling:* The EHCS dimensions model has been revised at the request of the Department of Communities and Local Government. The outputs from this model provide the dimensions inputs to the BREDEM-12 fuel cost model as used in the 2005 fuel poverty modelling. Floor areas and exposed wall areas increased, resulting in a small increase (<20,000) in the number of households in fuel poverty.

*SAP 2005 fuel prices:* The price paid for wood, 10-hr and 24-hr electricity and communal heating are partially derived from the prices as published in the SAP specification. As anticipated, these prices have been revised following the publication of the SAP 2005 specification. The revised fuel prices produced a negligible change in fuel poverty numbers.

Modifications to the modelling of incomes:

*Additional data cleaning:* In order to minimise the amount of missing data imputation which is required, additional data cleaning routines have been implemented prior to the income calculation. This enables a greater proportion of the reported data to be utilised successfully.

*Median income used in imputation:* Median incomes are now used in the imputation of missing data in all cases where use of an average is specified (mean incomes were used previously).

*Civil partnerships:* Information on civil partnerships has been included in the income modelling for the first time in 2005.

*Winter Fuel Payments:* Additional age related payments made in 2005 have been included. These were a £200 payment towards council tax for those aged 70+ or a £50 living expenses payment for those aged 65+.

*Treatment of missing data on income from 'other sources' and 'other work':* Where these data are missing they are set to zero (rather than set to missing). This prevents un-necessary low income imputation taking place for these cases.

*Plausibility criteria removed for all benefits:* The plausibility criteria have been removed for all benefit income amounts, using the data as it has been reported and minimising any income imputation.

The net affect of implementing all of the above modification to the income modelling process resulted in a small rise in the number of households in fuel poverty.