

## **A ready reckoner looking at the effect on fuel poverty of various price and income changes**

1. An evaluation of the impact of energy prices and incomes on fuel poverty is an important consideration when formulating the policies that will aim to eradicate fuel poverty in vulnerable households by 2010. The DTI has produced such an analysis for Defra's Fuel Poverty Action Plan, based on its estimates of how prices are likely to move between 2003 and 2005, and 2003 and 2010. This paper, which draws on work carried out by the Building Research Establishment, allows users to ascertain how different price and income assumptions affect the total number of households in fuel poverty and the number of vulnerable households in fuel poverty.
2. The effect on the number of households in fuel poverty has been simulated for England under a number of price and income scenarios. Data from the 2001 English House Condition Survey has been used as the starting point for the analysis so all results are related to the 2001 base position.
3. In broad terms, we have estimated that a 1 per cent real change in both gas and electricity prices would imply an increase of 40,000 households in fuel poverty, with a 1 per cent increase in income reducing the number of vulnerable households in fuel poverty by about 40,000 households.
4. This can be compared to the Fuel Poverty Advisory Group's First Annual Report, which stated that 'For every 1 per cent real change in both gas and electricity prices the number of vulnerable households in fuel poverty changes by about 50,000 (full income definition)'. This was based on DTI work on the 1998 Energy Follow Up Study.
5. There are some issues with work based on 1998 data. Most importantly, the 1998 data shows 2.7 million vulnerable households were in fuel poverty, whereas the more recent English House Condition Survey, based on data covering 2001, showed 1.4 million vulnerable households in fuel poverty. As well as the 1998 survey showing more people in fuel poverty than the 2001 survey, there are also a higher proportion of households who are close to fuel poverty than for the 2001 data set. This means that work using the 1998 data overestimates the effect of increasing prices on fuel poverty figures. Note also that the 1998 data set was based on a far smaller sample. About 2,500 households were questioned in 1998. This compares to 17,000 households in 2001.
6. The results are presented in table 1 below and show the numbers in fuel poverty, as both a percentage and in absolute household numbers, for the whole stock, and for vulnerable households only. The percentage figure for vulnerable households relates to the proportion of all vulnerable households that are in fuel poverty.
7. It has been necessary to make various assumptions in order to undertake this analysis. The main assumptions are set out below:

- Fuel price inflators apply only to gas and electricity. Further work is needed to ascertain how the price of non-metered fuels may move between 2003 and 2010, and so for this analysis non-metered fuel prices have been assumed to remain at 2001 prices in real terms.
- Both the standing charges and unit prices for gas and electricity have been inflated by the amounts given in each scenario.
- All components of income have been inflated by an equal amount.
- Changes to benefit eligibility or tax band due to increases in income have not been included.
- The household composition is assumed to remain the same, for instance it is assumed that households continue to have the same number of dependant children.
- The number of households is assumed to remain constant.
- All numbers have been rounded to the nearest 100,000.

**Table 1: Numbers of households in fuel poverty in England under various scenarios**

	Gas price	Electricity price	Income	Full income definition			
				All Households		Vulnerable Households	
				%	N (m)	%	N (m)
2001 Base	0%	0%	0%	-	~1.7	-	~1.4
Scenario 1	0%	5%	0%	~8.7	~1.8	~10.3	~1.5
Scenario 2	5%	0%	0%	~8.7	~1.8	~10.3	~1.5
Scenario 3	5%	5%	0%	~9.1	~1.9	~10.9	~1.6
Scenario 4	0%	10%	0%	~9.1	~1.9	~10.9	~1.6
Scenario 5	10%	0%	0%	~9.2	~1.9	~11.0	~1.6
Scenario 6	10%	10%	0%	~10.2	~2.1	~12.2	~1.8
Scenario 7	20%	10%	0%	~11.2	~2.3	~13.5	~1.9
Scenario 8	10%	20%	0%	~11.1	~2.3	~13.4	~1.9
Scenario 9	20%	20%	0%	~12.2	~2.5	~14.6	~2.1
Scenario 10	0%	5%	10%	~6.6	~1.4	~7.8	~1.1
Scenario 11	5%	0%	10%	~6.6	~1.4	~7.8	~1.1
Scenario 12	5%	5%	10%	~6.9	~1.4	~8.2	~1.2
Scenario 13	0%	10%	10%	~7.0	~1.4	~8.2	~1.2
Scenario 14	10%	0%	10%	~6.9	~1.4	~8.2	~1.2
Scenario 15	10%	10%	10%	~7.6	~1.6	~9.0	~1.3
Scenario 16	20%	10%	10%	~8.4	~1.7	~10.0	~1.4
Scenario 17	10%	20%	10%	~8.5	~1.7	~10.1	~1.4
Scenario 18	20%	20%	10%	~9.5	~1.9	~11.3	~1.6
Scenario 19	0%	5%	16%	~5.7	~1.2	~6.7	~1.0
Scenario 20	5%	0%	16%	~5.7	~1.2	~6.7	~1.0
Scenario 21	5%	5%	16%	~5.9	~1.2	~7.0	~1.0
Scenario 22	0%	10%	16%	~5.9	~1.2	~7.0	~1.0
Scenario 23	10%	0%	16%	~6.0	~1.2	~7.1	~1.0
Scenario 24	10%	10%	16%	~6.6	~1.4	~7.8	~1.1
Scenario 25	20%	10%	16%	~7.2	~1.5	~8.6	~1.2
Scenario 26	10%	20%	16%	~7.3	~1.5	~8.6	~1.2
Scenario 27	20%	20%	16%	~8.0	~1.6	~9.4	~1.4