

Measuring Fuel Poverty in Northern Ireland

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- Measuring & Estimating Fuel Poverty
- Ready Reckoner
- 2017 & 2018 estimates of Fuel Poverty

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Measuring and Estimating Fuel Poverty

- The Warm Homes and Energy Conservation Act 2000 gives the following definition of the term ‘fuel poverty’:

A person is to be regarded as living ‘in fuel poverty’ if he is a member of a household living on a lower income, in a home which cannot be kept warm at reasonable cost.

- Fuel poverty has been measured in Northern Ireland since 2001.
- Measurement takes place using National House Condition Surveys.

1970

- Recognised some low income and vulnerable households not heating their homes to sufficient level of warmth

1979

- Report by Department of Health and Social Security by Isherwood and Hancock identified 'households with high fuel expenditure'

1991

- Brenda Boardman published the book *Fuel Poverty*
- 'Affordable Warmth' assessed in EHCS report

2000

- Warm Homes and Energy Conservation Act 2000

2001

- UK Fuel Poverty Strategy formalises fuel poverty definition
- Northern Ireland Fuel Poverty statistics

2004

- Peer review by Sefton and Chesshire (2004/5) leading to methodology changes
- Northern Ireland Fuel Poverty statistics

2006

- Northern Ireland Fuel Poverty statistics

2009

- Northern Ireland Fuel Poverty statistics

2011

- Northern Ireland Fuel Poverty statistics

2015

- LIHC definition adopted by England – applied to the 2013 Fuel Poverty statistics for England
- FPEER introduced

2016

- Northern Ireland Fuel poverty statistics

– Two definitions used across the UK currently:

– 10 % methodology

– Low Income High Costs methodology

(Scotland are due to publish under a new definition next year)

- The principal method of measuring fuel poverty in Northern Ireland is the 10% definition

$$\text{Fuel Poverty Ratio} = \frac{\text{Fuel Price} \times \text{Fuel Consumption}}{\text{Income}}$$

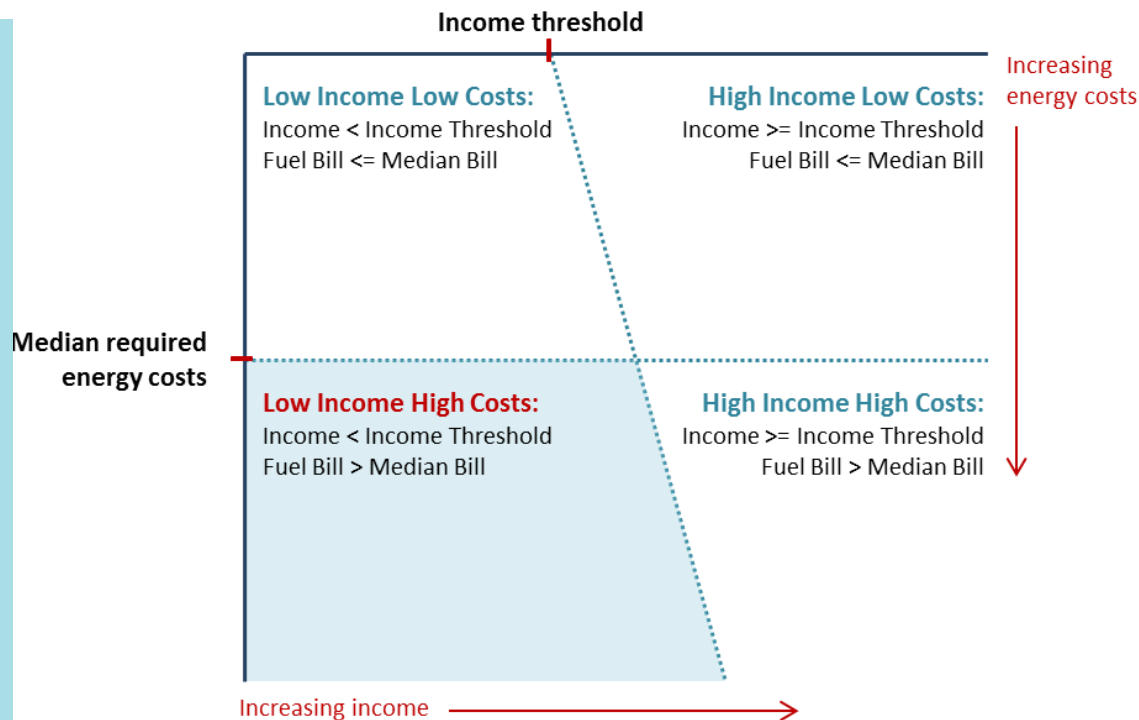
- If the fuel poverty ratio is > 0.1 the household is required to spend more than 10% of its income on fuel.
 - » This household is considered fuel poor.
- Definition also used in Wales and currently in Scotland

Under the Low Income High Cost (LIHC) definition a household is fuel poor if:

1. They have required fuel costs that are above average (the national median level),

and

2. were they to spend that amount, they would be left with a residual income below the official poverty line

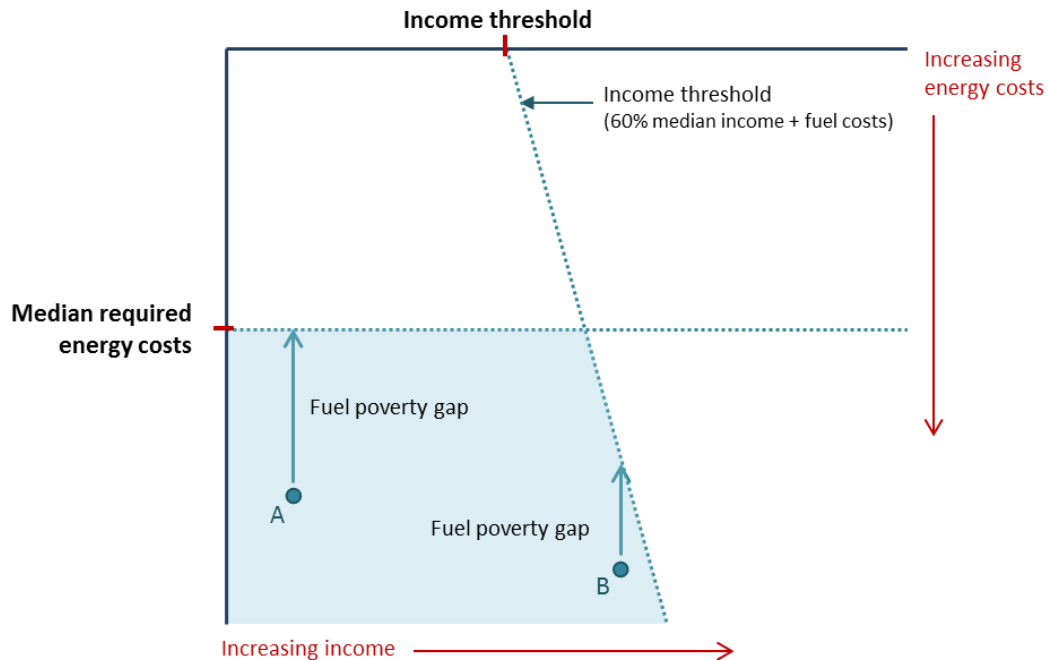


The LIHC indicator is a twin indicator consisting of:

1. The number of households that have both low incomes and high fuel costs (LIHC)

and

2. The depth of Fuel Poverty amongst these fuel poor households (the fuel poverty gap)



A new definition is currently working through the Scottish Parliament:

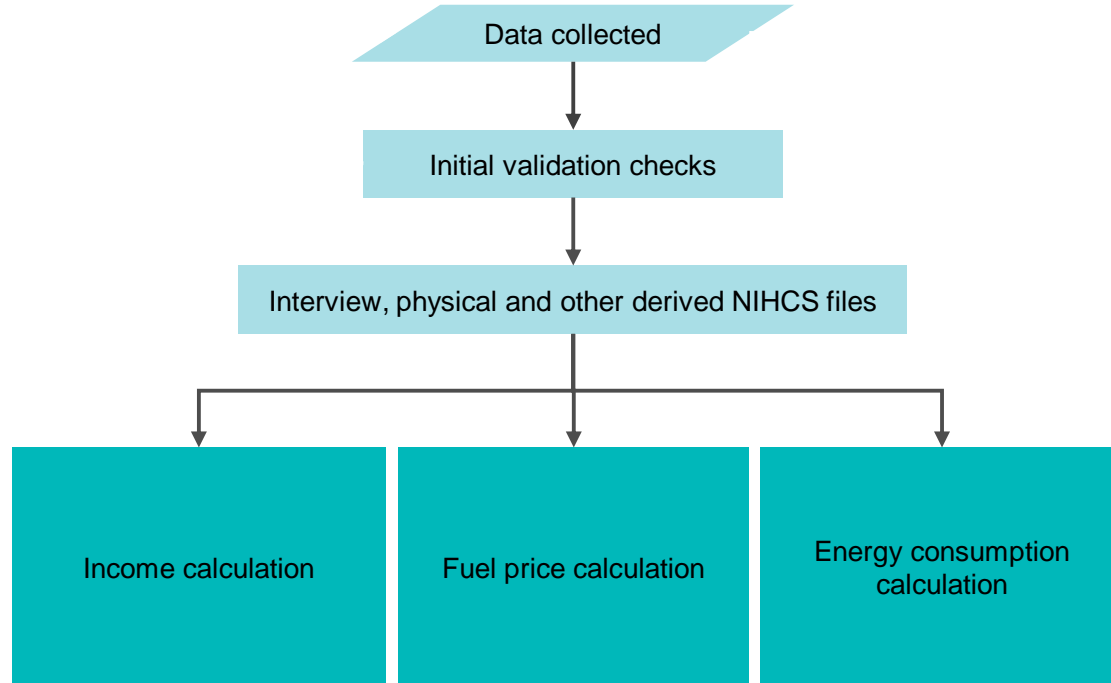
To be fuel poor:

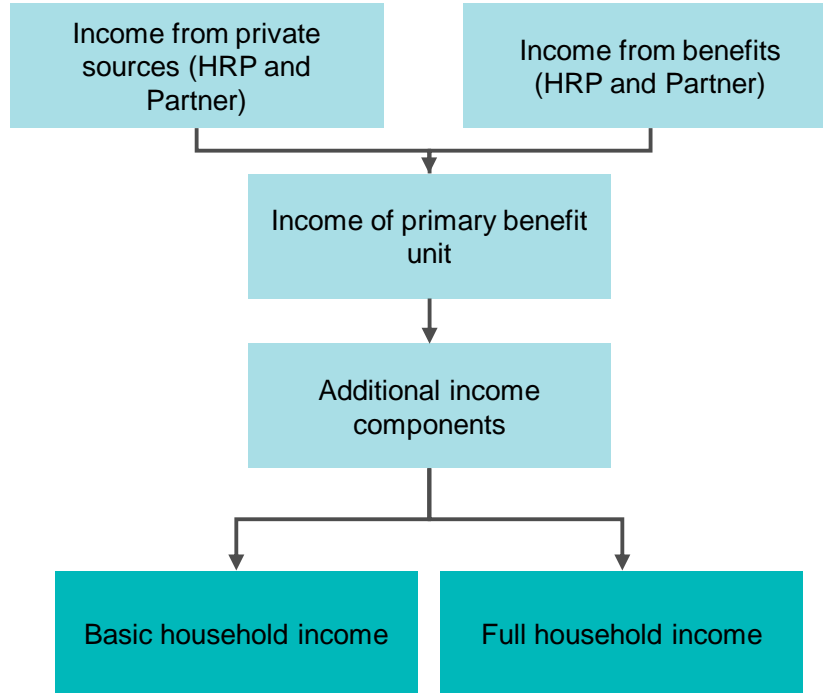
- 1.They need to be fuel poor under a 10% definition (i.e. be required to spend > 10% of income on fuel)

and

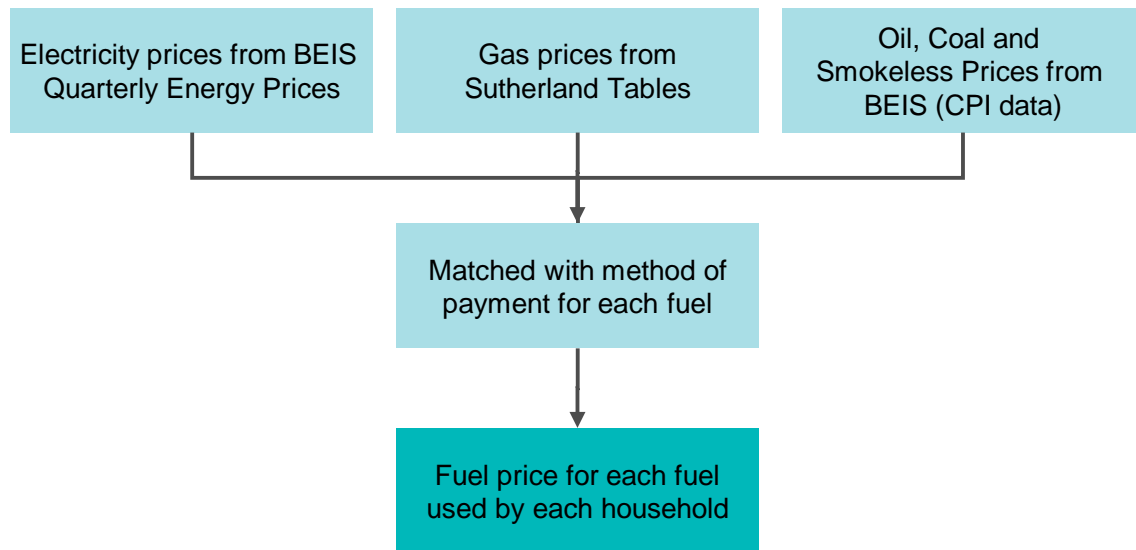
- 2.Their income (after housing costs, fuel costs and childcare costs) needs to be below the “Minimum Income Standard” which is a set of minimum standards defined for different household types.

Processing the fuel poverty data



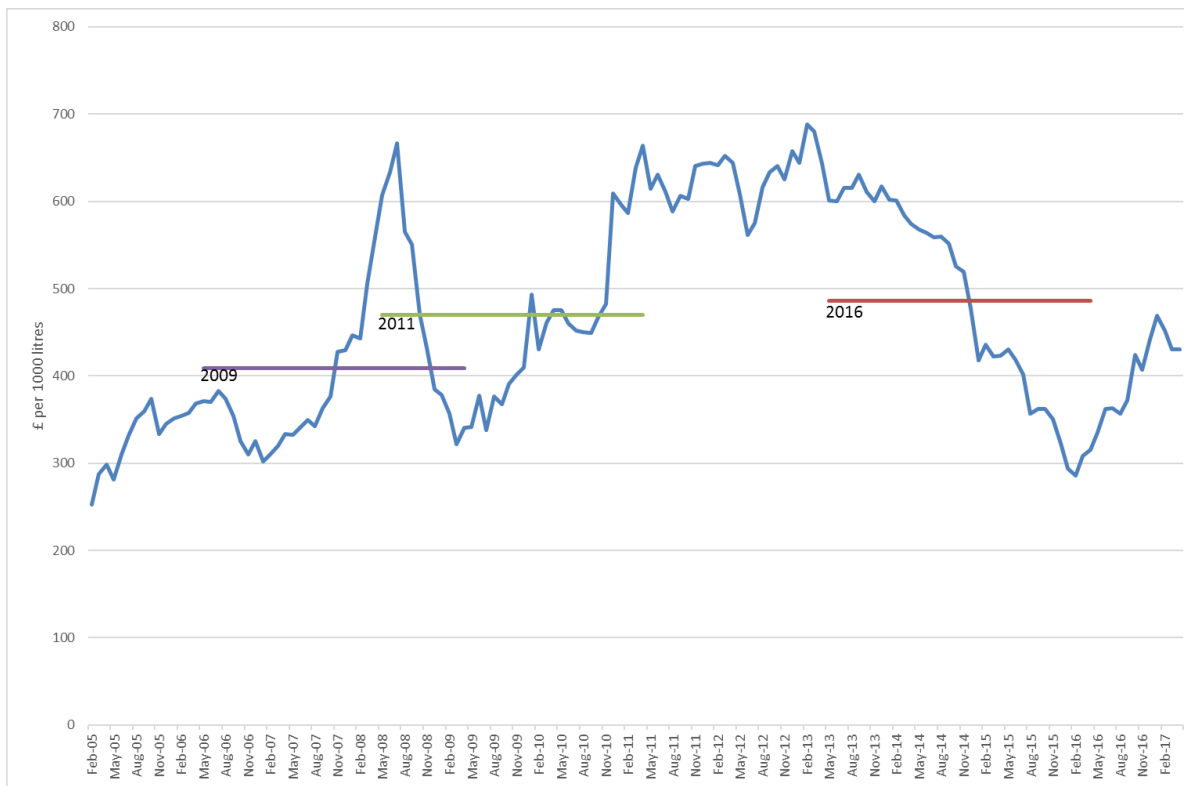


$$\text{Fuel Poverty Ratio} = \frac{\text{Fuel Price} \times \text{Fuel Consumption}}{\text{Income}}$$



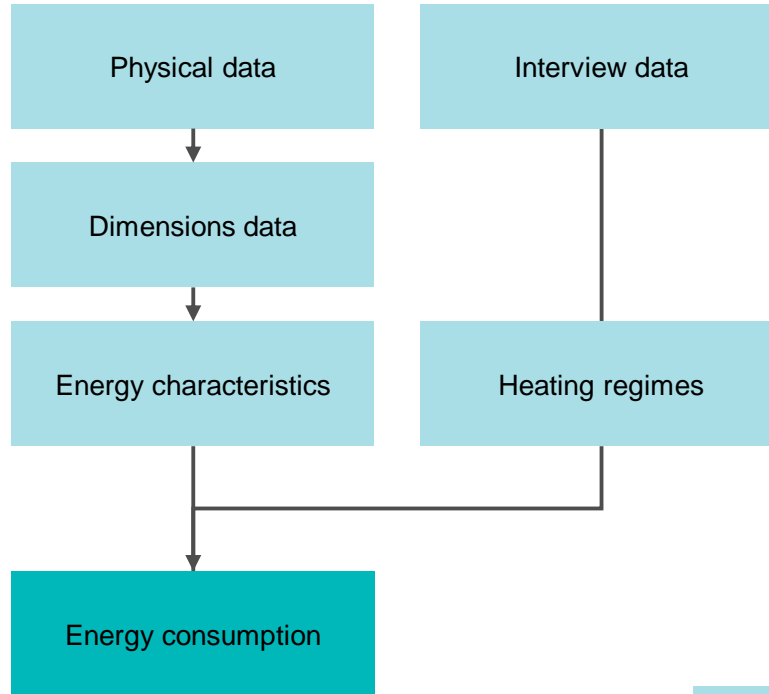
$$\text{Fuel Poverty Ratio} = \frac{\text{Fuel Price} \times \text{Fuel Consumption}}{\text{Income}}$$

The oil price period used in Northern Ireland

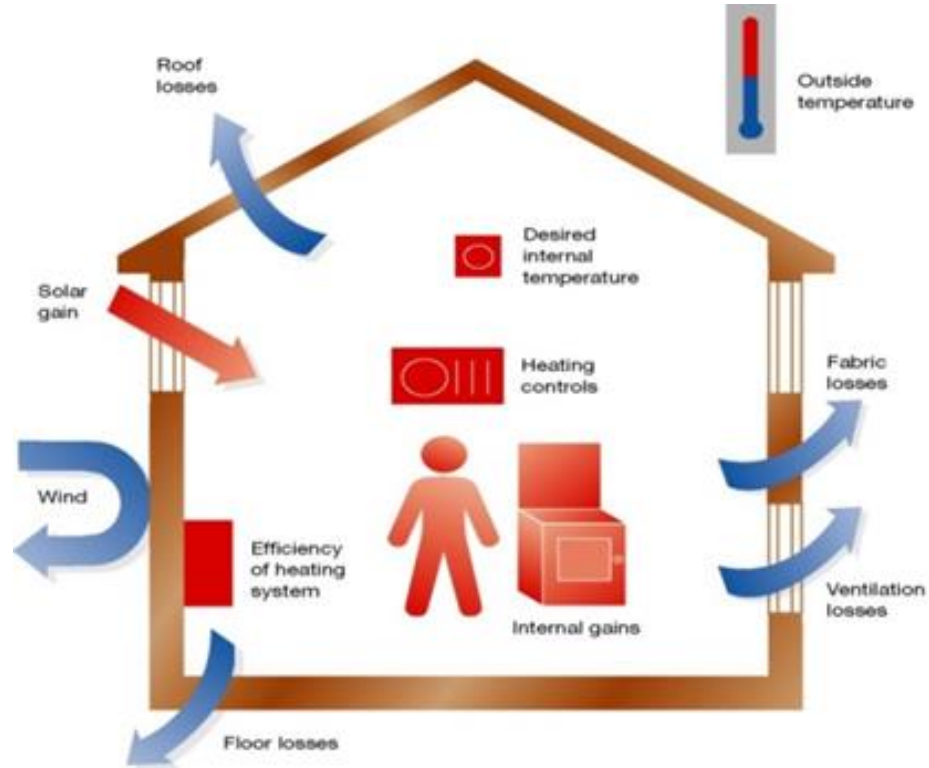


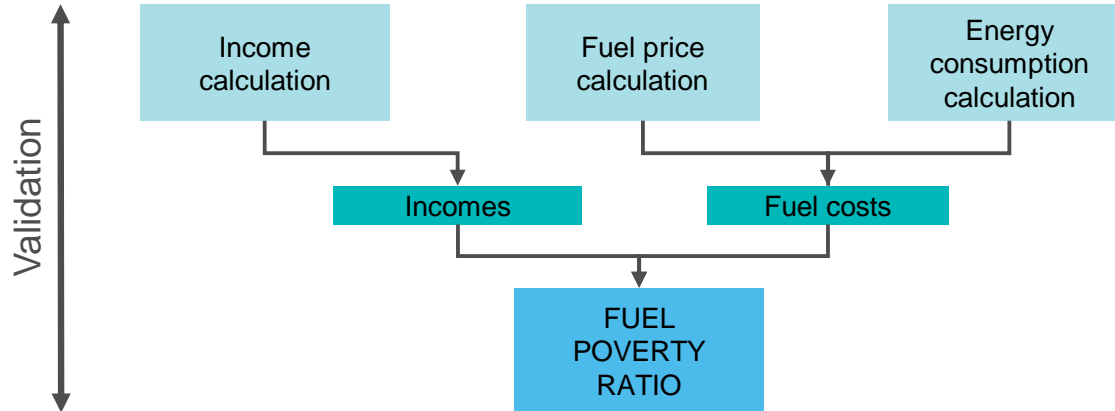
n.b. data shown in chart is UK, but NI specific data is used in all calculations and follows an identical pattern

Calculating energy consumption



$$\text{Fuel Poverty Ratio} = \frac{\text{Fuel Price} \times \text{Fuel Consumption}}{\text{Income}}$$



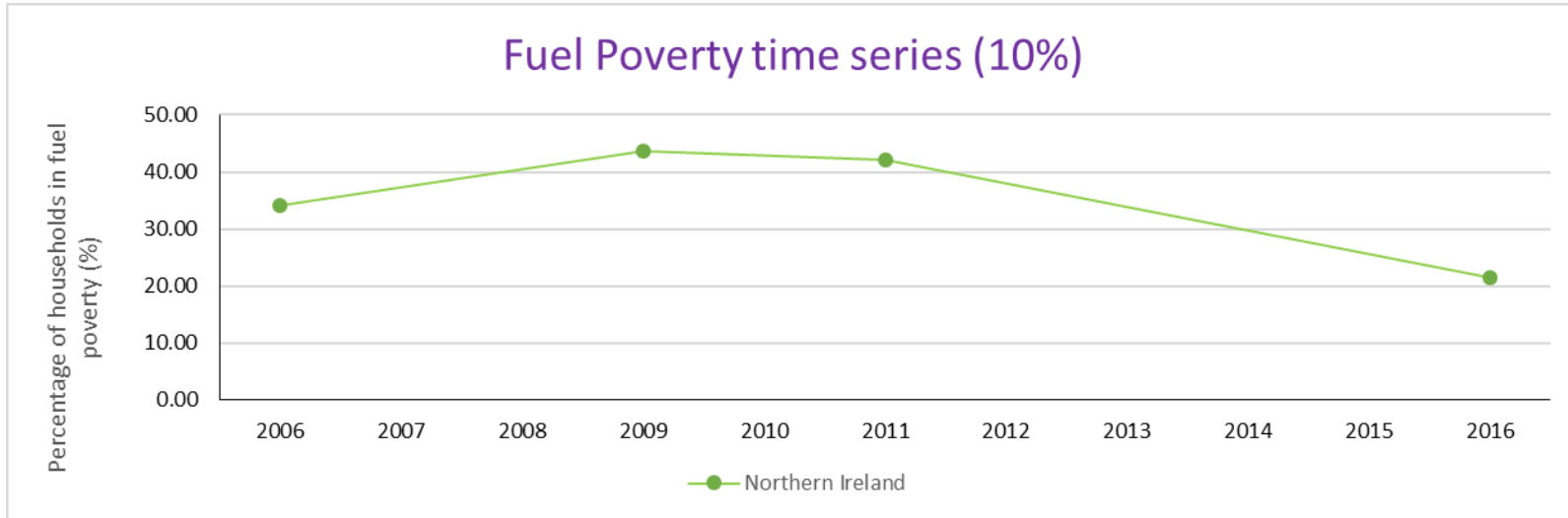


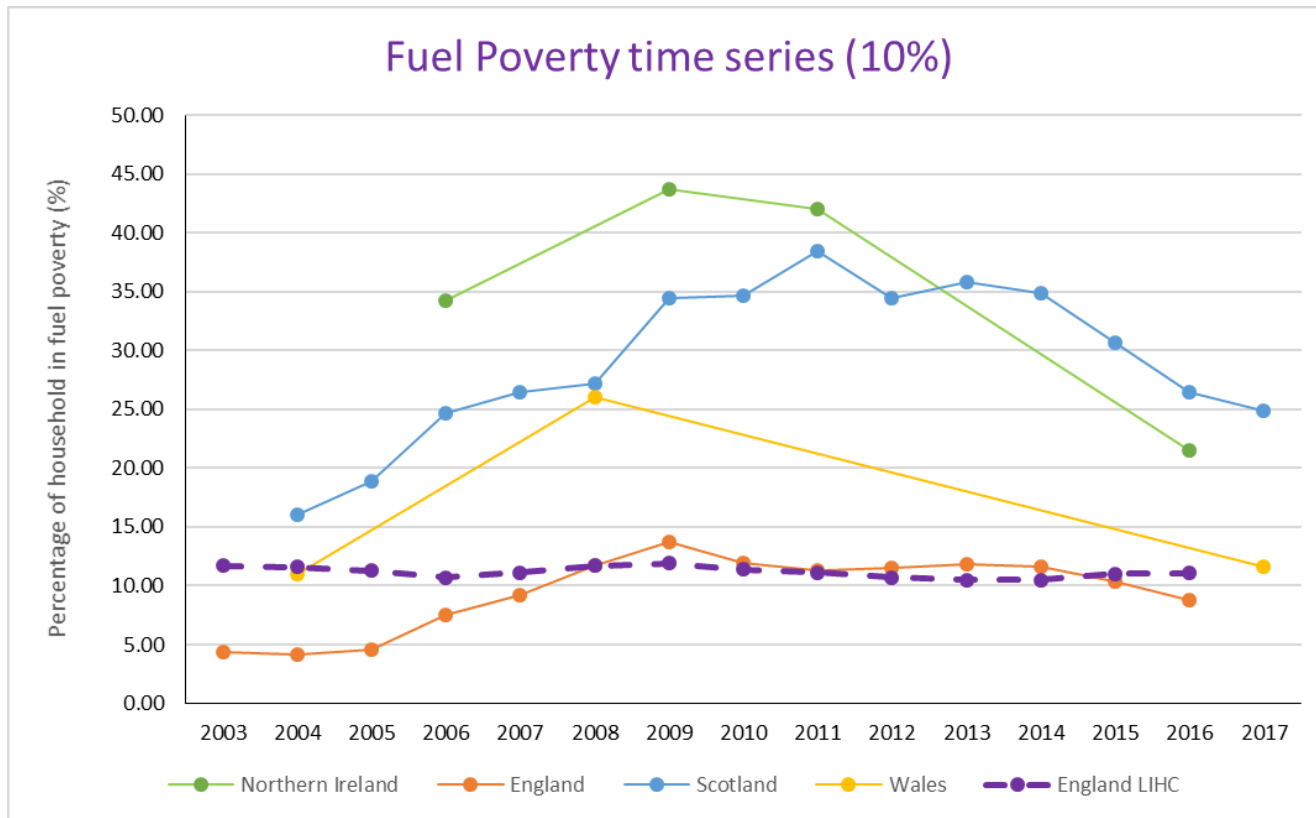
- In 2016, 160,000 households were fuel poor.
- This is 22% of the population.

(Full income definition)		2016
	Number of households	160,000
	% of households	22%

Fuel poverty (10% definition) over time in NI

(Full income definition)		2006	2009	2011	2016
	Number of households	226,000	302,000	294,000	160,000
	% of households	34%	44%	42%	22%





Country	% Fuel Poor 2016
Northern Ireland	22
England	9 (11% LIHC)
Wales (2017 data)	12
Scotland	27

Values using 10% definition

Data collection

- Northern Ireland and Wales = Occasional surveys
- Scotland and England = Rolling surveys
- Northern Ireland incomes are collected by surveyors (not linked surveys)
- Physical survey data collection forms similar (Scotland more differences).

Assumptions & methodology

- England, Wales and Northern Ireland all use the same heating regimes, internal temperatures and heated areas.
- Scotland has increased demand temperatures for some households and no underoccupancy.
- Northern Ireland uses a 3-year fuel price average; other nations 1-year.
- Scotland doesn't include income from additional adults (reducing income and increasing FP).

Indicator definitions

- 10% in Northern Ireland, Scotland and Wales.
- LIHC in England.
- Scotland due to change next year.

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Ready Reckoner

- Changes to fuel prices have a large impact on the level of fuel poverty seen in Northern Ireland.
- Closely linked to changing price of oil.
- Increasing natural gas market.
- Requirement to understand how these changes affect fuel poverty

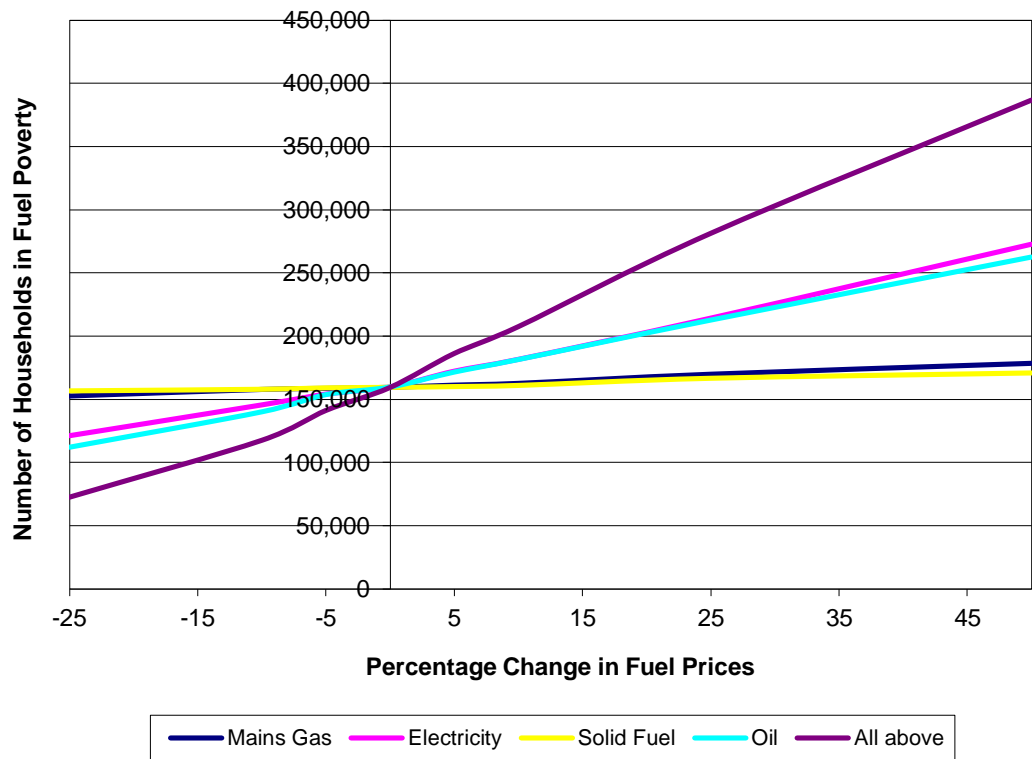
- Using 2016 data
- Apply changes to fuel price and assess changes to fuel poverty
- 35 fuel prices scenarios
- Range from -25% to +50% for electricity, oil, mains gas and solid fuel
- Results analysed to give a ‘ready reckoner’ value

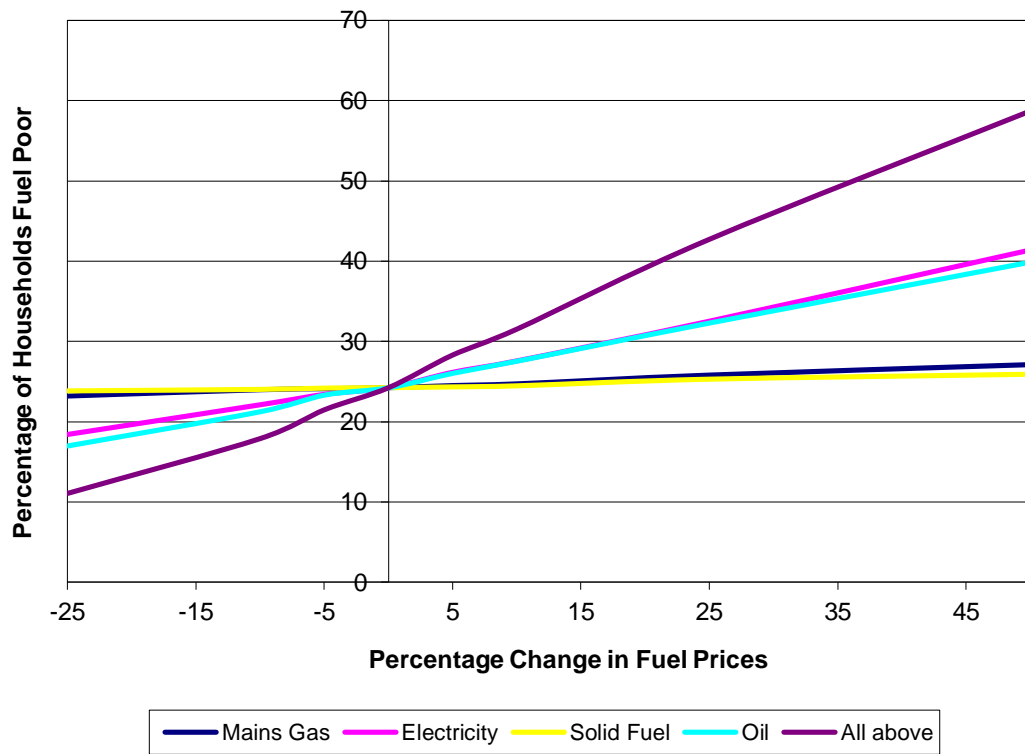
		Percentage Change in Fuel Price							
		-25%	-10%	-5%	BASE	5%	10%	25%	50%
Fuel Type	Mains Gas**	S1	S2	S3	BASE	S4	S5	S6	S7
	Electricity	S8	S9	S10	BASE	S11	S12	S13	S14
	Solid Fuel***	S15	S16	S17	BASE	S18	S19	S20	S21
	Oil*	S22	S23	S24	BASE	S25	S26	S27	S28
	All Above	S29	S30	S31	BASE	S32	S33	S34	S35

*Includes LPG and bottled gas

** Includes communal

*** Including coal, wood, anthracite and smokeless fuels





- From the above scenario analysis, broadly speaking, a *10% rise in all fuel prices implies a rise in the annual figures of 44,000 households in fuel poverty.*
- This estimate takes into account all fuel prices rising by this amount.
- If only certain fuels were to rise the effect seen would be smaller.

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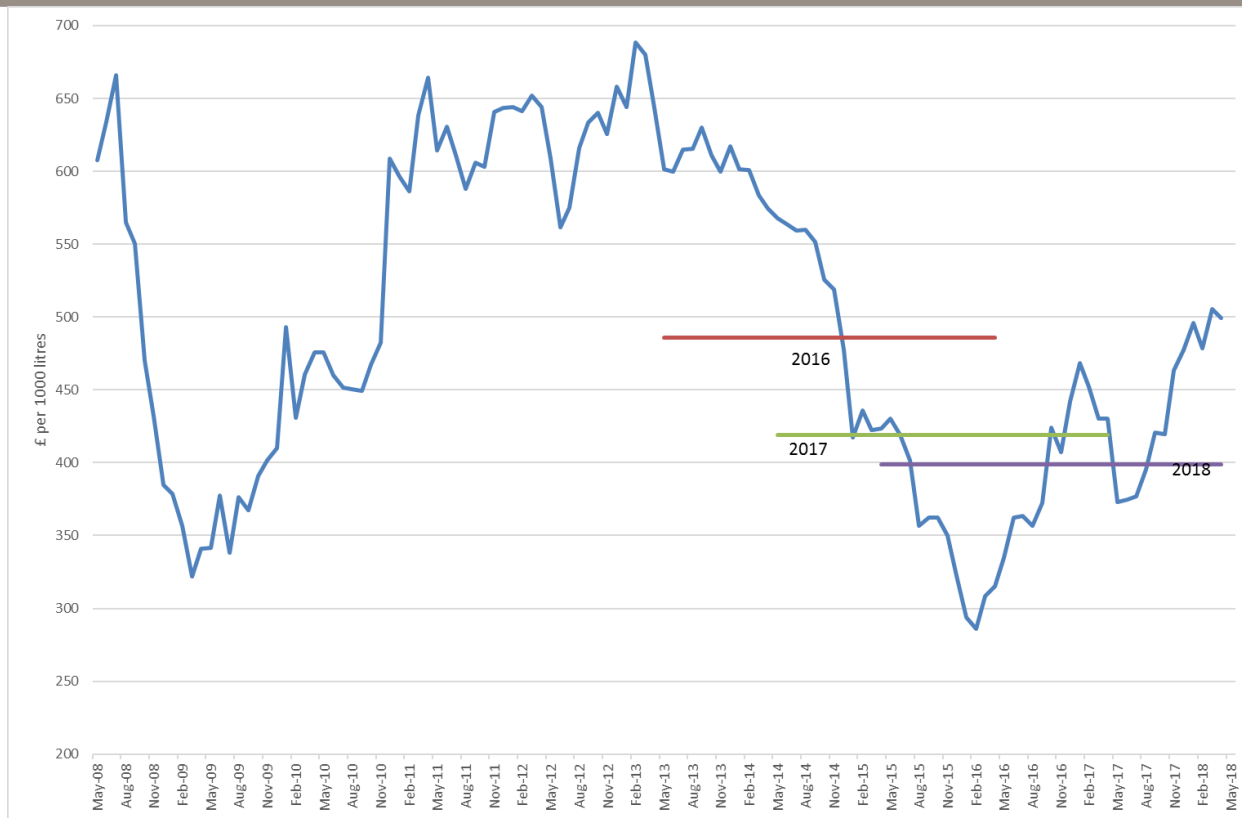
2017 & 2018 estimates of Fuel Poverty

- Attempt to bring the 2016 figures up to date.
- Modelling uses 2016 NIHCS data as a base

Apply estimated and observed changes to 2017 and 2018 levels :

- 1) fuel prices
- 2) household incomes
- 3) energy efficiency.

Fuel	% change between 2016 and 2017	% change between 2016 and 2018
Oil	-14	-16
Coal	+2	+3
Gas	+8	+18
Electricity (standard)	-3	+6

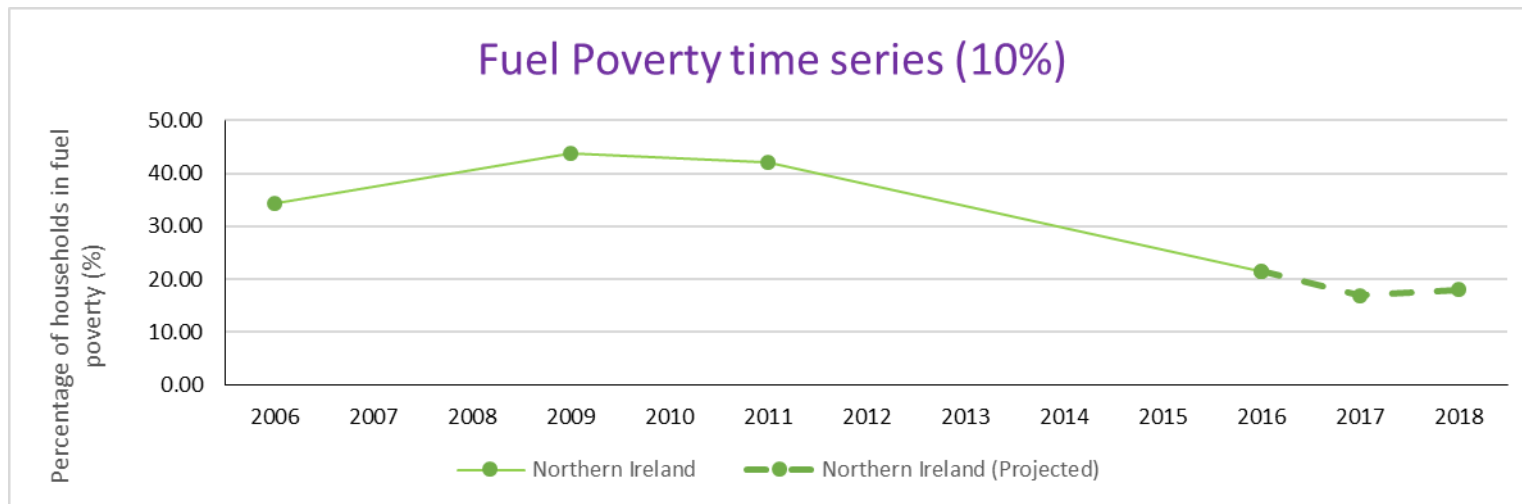


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Income component	2017 and 2018 projections
Estimated employment income	Use data from the Annual Survey of Hours and Earnings (ASHE) data
Benefit income	Frozen (no change)
Winter Fuel Payment (WFP)	Frozen (no change)
Rates (deduction from household income)	Update to 2017 and 2018 domestic poundages.
Rates rebate	Update to 2017 and 2018 rates rebate amounts
Additional adult income	Inflated in line with the change in the net income of the HRP and partner of the household.

Improvement measure	Number of installations modelled - 2016 to 2017	Number of installations modelled - 2016 to 2018
Cavity Wall Insulation (CWI) – added to households with unfilled cavity walls	3,000	6,000
Loft insulation – added to households with a suitable loft space and where there is less than or equal to 150mm of insulation present	22,000	44,000
Gas/oil condensing boiler – added to households that require a heating system upgrade	38,000	76,000

Fuel poor households		2016	2017	2018
		(Base position from NIHCS)	(modelled estimates)	(modelled estimates)
Full income definition	Number of households	160,000	128,000	131,000
	% of households	22	17	18



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- Fall in fuel poverty under both scenarios
 - 2016 = 160,000 households
 - 2017 = 128,000 households
 - 2018 = 131,000 households
 - Energy efficiency, income and fuel prices acting to reduce fuel poverty
 - 2017 = 28,000 households price and income
= 4,000 households energy efficiency
 - 2018 = 20,000 households price and income
= 9,000 households energy efficiency

- NIHCS. Main report, reckoner and projections

<https://www.nihe.gov.uk/Working-With-Us/Research/House-Condition-Survey>

- EHS fuel poverty statistics

<https://www.gov.uk/government/collections/fuel-poverty-statistics>

- SAP & BREDEM methodology

<https://www.bre.co.uk/filelibrary/bredem/BREDEM-2012-specification.pdf>

<https://www.bregroup.com/sap/standard-assessment-procedure-sap-2012/>

- Measuring fuel poverty (BRE publication FB 83, 2016)



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Thank you

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