

TECHNICAL PAPER

MINIMUM HOUSEHOLD ENERGY NEED



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A Vincentian Partnership for Social Justice Technical Paper

ABSTRACT

This paper demonstrates the impact of dwelling efficiency on household energy costs.

The degree to which the cost of household energy is a burden on a household is the product of multiple factors, the price of energy, the energy efficiency of the dwelling and the income of the household in question. To demonstrate the varying impact and interplay of these factors, this paper identifies the household energy need for three dwelling types at different levels of efficiency, and examines the burden of this energy need for three household types in multiple income scenarios.

The analysis presents the overall expenditure required for a Minimum Essential Standard of Living for three household types, examining each household type in two income scenarios. The paper demonstrates the impact the energy efficiency of the dwelling a household resides in, on the overall minimum expenditure need of a household, and on the household's vulnerability to energy poverty.



DISCLAIMER

This research was commissioned by the Society of St. Vincent de Paul.

The Vincentian Partnership for Social Justice is solely responsible for the views, opinions, findings, conclusions and recommendations expressed in the report and for the accuracy of the report.

The opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Society of St. Vincent de Paul.

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EXECUTIVE SUMMARY

This research commissioned by the Society of St. Vincent de Paul demonstrates that improving household energy efficiency is vital. However, improvements in energy efficiency alone will not enable vulnerable household types afford their minimum energy needs. Even at the highest efficiency level examined, social welfare dependent households tended to remain in energy poverty and all the households examined faced inadequate income.

Energy Poverty

Energy Poverty is defined as spending more than 10% of household net income on household energy need. In total, 18 scenarios are examined, representative of both the households visited and assisted by SVP, the type of housing they live in and the income levels they tend to have. Energy poverty is found in 13 of the 18 cases. Of the 13 cases of energy poverty, one is severe energy poverty (energy expenditure need is between 15% and 20% of net income) while seven are extreme energy poverty (energy expenditure need is over 20% of net income).

Energy Prices and Energy Supports

Home energy prices have increased by an average of 25% in the last five years. In the same period, social welfare supports available to assist vulnerable household afford energy have been reduced.

The findings of the paper demonstrate the inadequacy of social welfare supports to prevent energy poverty, and the vulnerability of household types solely reliant on social welfare supports to meet their minimum expenditure needs.

The burden of energy costs

The degree to which the cost of household energy is a burden on a household is the product of multiple factors: the price of energy, the income of the household, and the energy efficiency of the dwelling.

This research found that families in energy inefficient homes can pay over €4000 to keep their homes adequately warm. Improved energy efficiency measures can reduce such bills by €2000 or more.

The importance of energy efficiency

The cost of the minimum energy need in an efficient dwelling (Building Energy Rating or BER of B2) is half that of an inefficient dwelling (BER E to G). Measures to improve efficiency can result in lowering the occurrence and depth of energy poverty.

The value of social welfare supports

In the period 2009 to 2014 the real value of fuel supports such as the fuel allowance and household benefits package has not been maintained to offset energy price increases. Conversely the rates of payment for both the fuel allowance and the household benefits package have seen the value of the fuel allowance reduce since 2009. To restore social welfare energy supports to their 2009 purchasing power, the 2014 rates of payment would have to be as follows:

- › Fuel Allowance
 - €25 per week for 32 weeks of the year
- › Household Benefits Package
 - Electricity Allowance €47.30 per month
 - Natural Gas Allowance €43.32 per month

Key Findings

The overall adequacy of household income when dependent on social welfareⁱ and in minimum wage employmentⁱⁱ is examined for each household type, and scenario, as the cost of the energy need changes (with dwelling efficiency). In total, 18 cases are examined, and energy poverty is found in 13 of the 18 cases.

Of the 13 cases of energy poverty:

- › One is severe energy poverty (energy expenditure need is between 15% and 20% of net income)
- › Five are extreme energy poverty (energy expenditure need is over 20% of net income)
- › Social welfare dependent household scenarios demonstrate the greatest levels of energy poverty
- › In two of the five cases not in energy poverty, the energy expenditure need is over 9% of net income. In the context of ongoing energy price inflation these cases are precariously close to entering energy poverty.

In the scenarios examined, households without employment do not have an adequate income from social welfare supports, and therefore cannot afford all the elements required for a Minimum Essential Standard of Living.

Consequently, a household in such a scenario will have to choose to do without essential items and live below a socially acceptable minimum level.

Conclusion

In the wider context of low and inadequate household income, improvements in energy efficiency alone will not enable vulnerable household types afford their minimum energy needs.

Even at the highest efficiency level examined, social welfare dependent households tended to remain in energy poverty and all faced inadequate income. Consequently, policy must address both overall income adequacy and dwelling efficiency.

Summary Results – Social Welfare Dependent Household Scenarios

HOUSEHOLD TYPE	DWELLING TYPE	INCOME € PER WEEK	EFFICIENCY LEVEL	ENERGY € PER WEEK	ENERGY POVERTY
Two Parents & Two Children (Pre-School & Primary School Age)	Mid-Terraced House Urban, Gas Heating	434.32	BER E1	78.34	18.04% EP <i>severe</i>
			BER C3	58.28	13.42% EP
			BER B2	39.76	9.15% No
One Parent & One Child (Primary School Age)	Flat / Apartment Urban, Gas Heating	259.72	BER G	72.93	28.08% EP <i>extreme</i>
			BER C3	38.74	14.92% EP
			BER B2	30.34	11.68% EP
Pensioner, Living Alone <i>Non-Contributory Pension</i>	Mid-Terraced House Rural, Oil Heating	271.49	BER E1	83.71	35.37% EP <i>extreme</i>
			BER C3	58.19	24.58% EP <i>extreme</i>
			BER B2	35.12	14.84% EP

- i The Two Parent household type scenario is based on a Job Seeker Personal Rate, Qualified Adult and Qualified Child increases, and additional applicable social welfare supports.
The One Parent household type scenario is based on One-Parent Family Payment, Qualified Child Increase, and additional applicable social welfare supports (including the Fuel Allowance)
The Pensioner household type scenarios examine both the Non-Contributory and Contributory Pension, and also the Living Alone Allowance, Fuel Allowance and support from the Household Benefits Packaged.
- ii Scenarios based on one adult, employed full-time earning the national minimum wage are examined for a Two Parent and One Parent household type.
The additional supports of Family Income Supplement and One-Parent Family Payment are included as applicable.

INTRODUCTION

This paper demonstrates the impact of dwelling efficiency on household energy costs. The degree to which the cost of household energy is a burden on a household is the product of multiple factors, the price of energy, the energy efficiency of the dwelling and the income of the household in question. To demonstrate the varying impact and interplay of these factors, this paper identifies the household energy need for three dwelling types at different levels of efficiency, and examines the burden of this energy need for three household types in multiple income scenarios.

The analysis presents the overall expenditure required for a Minimum Essential Standard of Living for three household types, examining each household type in two income scenarios. The paper demonstrates the impact of the energy efficiency of the dwelling on the overall minimum expenditure need of a household, and on the household's vulnerability to energy poverty.

The VPSJ's 2014 Minimum Essential Standard of Living expenditure needs data is complimented by data from Energy Action on the energy needs of three dwelling types for heat and light, at three levels of energy efficiency.

- The paper first outlines the concept of Energy Poverty, and sets out the definition applied to the analysis carried out within the paper.
- The paper then briefly sets the current context, highlighting the trends in energy related deprivation from the most recent SILC data, and secondly the ongoing inflation in energy prices.
- The source of the Minimum Essential Budget Standards expenditure data is outlined, and the housing costs for each of the household types and income scenarios are explained.
- The methodology for calculating the energy costs for the three dwelling types examined is then detailed. The three dwelling types are:
 - › A mid-terrace house in an urban area, with gas central heating
 - › An apartment / flat in an urban area, with gas central heating
 - › A mid-terrace house in a rural town/village, with oil central heating
- The results for the three household types, one per dwelling type, are then presented, examining the overall expenditure and proportion of income spent on energy, at each dwelling efficiency level. The three household types are:
 - › Two parents and two children (pre-school and primary school age)
 - › One parent and one child (primary school age)
 - › A pensioner, living alone
- The results are then analysed for each household type and income scenario.

ENERGY POVERTY

Energy (or fuel) poverty is broadly understood as a situation where a household is unable to afford the necessary energy or heat for their home. While there is significant diversity in how this understanding is precisely defined and measured, it is generally recognised that energy poverty is not simply an issue of low income (McAvoy & Barrett, 2011).

This was acknowledged in the fuel poverty definition proposed by Brophy et al (1999) “The inability to heat one’s home to an adequate (safe and comfortable) standard owing primarily to low income and poor (energy inefficient) housing standards”. It was subsequently recognised that this definition did not duly note the role of rising energy prices on the incidence of fuel poverty (Scott, et al, 2008).

Consequently, more recent understandings of energy poverty regard it as the outcome of the interaction of three factors: household income, energy prices and the energy efficiency of the dwelling (Cotter, McAvoy, & Goodman, 2011). Additionally, the concept of energy poverty goes beyond just the fuel required for heat, to include the full range of energy services required by a household for heat, light, cooking, etc.

The Government’s Warmer Homes strategy (DCENR, 2011a & 2011b) follows this wider concept of energy poverty. Defining energy poverty as follows:

“A household is considered to be energy-poor if it is unable to attain an acceptable standard of warmth and energy services in the home at an affordable cost”

(DCENR, 2011a: 22)

To put this definition into practice, it is necessary to define both what is ‘an acceptable standard’ for warmth and energy services, and what is affordable. To this end, the Warmer Homes strategy recognises that an expenditure measure of energy poverty must reflect the cost of required expenditure to “pre-defined heating and comfort levels” (DCENR, 2011b: 11). Consequently, the strategy proposes utilising the Building Energy Rating (BER) data on the energy need of a dwelling, which calculates the energy required to provide ‘adequate warmth’, as defined under World Health Organisation guidelines. Adequate warmth is defined as heating the main living area of the home to 21°C, and the rest of the dwelling to 18°C. (DCENR, 2011a: 24)

The strategy proposes a relative measure of energy poverty, where “a household is deemed as being unable to afford its energy need if it spends at a level greater than twice the national average (median) share (currently 10%) of disposable income spend on energy services” (DCENR, 2011b: 13). The 2009 estimate of this measure, based on adjusted data from the 2004/05 Household Budget Survey, equated to a threshold of 9.6% of income

(rounded to 10% for ease of application) or approximately €80 per week, on energy to achieve an acceptable level of warmth.

The strategy sets out three levels of energy poverty in order to measure the depth of energy poverty. These levels of core, severe and extreme energy poverty are the measures used in the calculations presented in this paper. The three levels of energy poverty are defined as:

1. The core indicator of energy poverty: whereby a household is considered to be experiencing energy poverty if, in any one year, it spends more than 10% of its disposable income on energy services in the home.
2. An indicator of severe energy poverty: whereby a household is considered to be experiencing severe energy poverty if, in any one year, it spends more than 15% of its disposable income on energy services in the home.
3. An indicator of extreme energy poverty: whereby a household is considered to be experiencing extreme energy poverty if, in any one year, it spends more than 20% of its disposable income on energy services in the home.

(DCENR, 2011a: 23)

CURRENT CONTEXT

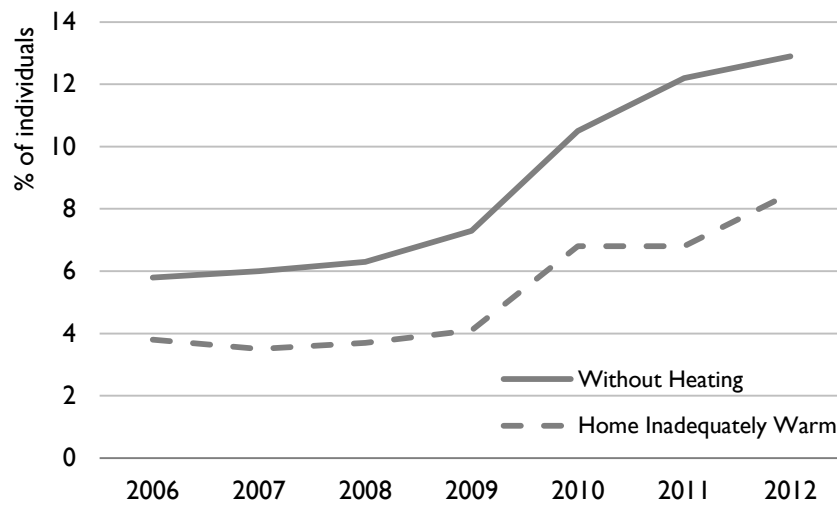
The unavailability of comprehensive data has limited the application of the Energy Poverty definition set forth in the Warmer Homes strategy. However, two of the eleven basic deprivation indicators in the CSO's *Survey on Income and Living Conditions* (SILC) relate to energy poverty. These ask households if they have been:

- Without heating at some stage in the last year (through lack of money)
- Unable to afford to keep the home adequately warm

In 2012 25.0% of all those at risk of poverty were without heating at some point in the last year, and 14.2% were unable to afford to keep their home adequately warm. Furthermore, the percentage of the population experiencing either of these forms of deprivation has more than doubled in the period between 2006 and 2012 (CSO, 2014b).

- The percentage of the population '*Without heating at some stage in the last year*' also more than doubled, from 5.8% in 2006 to 12.9% in 2012
- The percentage of the population '*Unable to afford to keep the home adequately warm*' has more than doubled, from 3.8% in 2006 to 8.5% in 2012

Graph I Per Cent of Individuals in Population Experiencing Energy Related Deprivation



These indicators are subjective, and are based on a household’s self-reported situation, and do not present a clearly defined definition of adequately warm, nor affordability. Consequently, the Warmer Homes strategy notes that there are issues regarding the consistency of the data, and that these rates of deprivation may not accurately reflect required energy services. Consequently, an energy poverty measure which is based on “the need to spend as opposed to actual experience” (DCENR, 2011a: 38) is regarded as preferable.

ENERGY PRICE INFLATION

The prices of energy for the home have generally been increasing, and despite sporadic dips in price, the average inflation for household energy has shown a 25% increase in the period from 2009 to 2014, and an 88% increase from 2004. An analysis of the Sustainable Energy Authority of Ireland (SEAI, 2014b) average price per unit (kWh) of energy for the same period shows similar results for each fuel type. Focusing on the change over the five years since 2009, the average inflation of 25% does not depict the full picture, as the change in prices varies greatly between fuel types. The CPI sub-indices inflation from 2009 to 2014 by fuel type is¹:

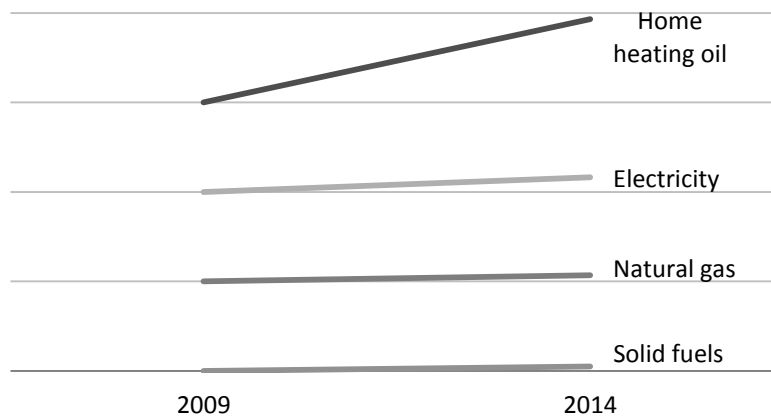
- › Solid fuels 5.2%
- › Natural gas 6.9%
- › Electricity 16.2%
- › Home heating oil 93.0%

The large differential in inflation by fuel type demonstrates not only rising energy prices, but also how the type of fuel a household uses for heating can greatly affect the household’s

¹ Analysis of CSO (2014a) CPI Detailed Sub-Indices ‘Electricity, gas and other fuels’, ‘Solid Fuels’, ‘Natural Gas’, ‘Electricity’ and ‘Liquid Fuels’, from March to March of each year.

vulnerability to energy poverty. The impact of this energy price inflation at a time of reduced social welfare supports is examined in further detail, below.

Graph 2 Rate of Energy Cost Inflation, by Fuel Type, 2009 to 2014



MINIMUM ESSENTIAL BUDGET STANDARDS

The Minimum Essential Budget Standards (MEBS) research establishes a consensus on what members of the public believe is a minimum standard of living that no individual or household should live below. Working with focus groups (and expert opinion where necessary e.g. nutrition), the cost of the minimum goods and services that everyone needs for a socially acceptable minimum standard of living are identified. Focusing on needs and not wants, the concern is with more than survival as this is a standard of living which must meet physical, psychological and social needs, at a minimum but acceptable level. It is not a standard for people in poverty; it is a standard for everyone, below which no one should be expected to live.

The research, conducted over multiple research projects, produces detailed itemised budgets establishing the actual cost of the over 2,000 goods and services required for a socially acceptable Minimum Essential Standard of Living. The work on establishing Minimum Essential Standards in Ireland was begun by the Vincentian Partnership for Social Justice (VPSJ) in 1999. Since then the VPSJ has continued to use and develop the Consensual Budget Standards methodology to establish Minimum Essential Standard of Living (MESL) expenditure budgets for a variety of household types.

The MESL data establishes the average weekly cost of all the essential goods and services required by households in Ireland. The dataset established the minimum expenditure and income needs of 90% of households in urban and rural Ireland.

The household expenditure data and income calculations are from the VPSJ 2014 update of the Minimum Essential Standard of Living data.

HOUSING COSTS

The MESL expenditure needs data does not specify housing costs, rather minimum housing costs appropriate to the household type in question are included when examining a particular household type and income scenario.

Research has found that tenant households have notably higher rates of fuel poverty than owner occupier households. It has been argued that this may, at least in part, be due to the inability of those living in rented housing to address issues of the efficiency of the dwelling and heating system (Scott, et al., 2008; Healy & Clinch, 2004).

The highest incidence of fuel poverty has been found amongst households in housing rented from a local authority (Scott, et al., 2008). However, the depth of fuel poverty has been found to be higher amongst households in private rented accommodation, with a greater level of chronic fuel poverty amongst households in this tenure (Healy & Clinch, 2004: 214). Furthermore, recent research has found that private rented dwellings are the most likely to be energy inefficient, with a higher proportion of low BER dwellings (E, F or G) than either local authority or owner occupied housing (Curtis, et al., 2014).

For these reasons, the analysis carried out in this paper focuses on household scenarios in rented dwellings. Furthermore, in the context of the current low availability of social housing, the two household types with children are located in private rented housing, and the pensioner household type in local authority housing.

The pensioner household type's housing cost is based on the average differential rent² payable in social housing in three rural areas.

In the cases of the two household types with children, the housing cost is based on the current Rent Supplement maximum limits for Dublin, as appropriate to each household type³. The household types are each examined in two income scenarios, one dependent on social welfare and the second with one adult employed full-time and earning the national minimum wage. In the social welfare dependent scenarios the Rent Supplement entitlement is calculated for each household type. In the case of the employed scenario, continued entitlement to Rent Supplement is assumed (e.g. a situation of returning to work, and the household having been assessed as in housing need by their local authority).

² Tenants in social housing pay a 'differential rent'. A system in which the level of rent payable is calculated on the basis of household income.

³ Concerns regarding the availability of housing within the current Rent Supplement limits have been highlighted in research by Focus Ireland, which also highlighted the issue of 'top-up' payments by tenants to landlords (Lalor & Doyle, 2012). Threshold (2014) are also critical of the Rent Supplement limits as they have become increasingly out of line with the inflation in rents in urban areas. Furthermore, the SVP (2014) have highlighted the inappropriateness of setting limits which follow local authority boundaries, noting that rents in areas near Dublin (e.g. North Kildare and Wicklow) can be as high as in Dublin, but have notably lower Rent Supplement limits.

The Rent Supplement and income calculations are detailed in the appendices at the end of this paper. The tables in the main body of the paper summarising the household types MESL expenditure needs include the cost of housing net of Rent Supplement. While Rent Supplement may be regarded as income, it is a social welfare payment paid specifically to households who cannot afford the full cost of rented accommodation. The level of Rent Supplement paid is determined by the part of the country the household is resident in, and the actual rent paid. Furthermore, the payment is only available to households in particular circumstances when in private rented accommodation. Given these reasons, and to avoid the appearance of artificially distorted incomes, the value of the Rent Supplement payment is not counted as income, but is instead reflected by reducing the rent to that amount which must be paid from the rest of the household's income.

CALCULATING MINIMUM ENERGY NEED

This paper uses data supplied by Energy Action on the energy requirement for a variety of household types. Research undertaken by Energy Action has established the energy requirements for heat and light as defined by the *Domestic Energy Assessment Procedure* (DEAP), the official method used in the BER (*Building Energy Rating*) assessment of a dwellings energy performance⁴.

The Energy Action research calculates the energy requirement of the dwelling in its original state, and the reductions in energy requirement which would be brought about through various efficiency upgrades. These upgrades include measures such as draft proofing and switching to CFL light bulbs, and more substantial changes such as improving wall and attic insulation, upgrading of windows, and installing a high efficiency condensing boiler.

The analysis presented in the following tables summarises the average weekly cost of the minimum energy required for three dwelling types. The three dwelling types selected each have a low energy efficiency (BER rating of E, F or G) in their original state. This corresponds to ratings most commonly found in rental dwellings (Curtis, et al., 2014). The analysis examines the energy required in the original state, and then what the energy requirement would be at two levels of efficiency upgrade. Firstly, upgrades which would bring the dwellings up to an efficiency standard equivalent to a BER of C3 (the median rating currently in the BER database). Secondly, further upgrading of the dwelling to an efficiency level equivalent to a BER of B2. The three dwelling types examined are:

1. A mid-terrace house in an urban area, with gas central heating
2. An apartment / flat in an urban area, with gas central heating
3. A mid-terrace house in a rural town/village, with oil central heating

⁴ The publication of this data is forthcoming, and the VPSJ wishes to thank Energy Action for facilitating the research in this paper by supplying the data.

HEATING

The energy need calculations for heating follow the BER method and are based on maintaining adequate warmth in the dwelling throughout the year. Adequate warmth is defined as heating the main living area of the home to 21°C, and the rest of the dwelling to 18°C. The BER method calculates the energy required for heating on a monthly basis, defining the ‘heating season’ as running from October to May, with a heating schedule of 8 hours per day (56 hours per week) spread between morning and evening (SEAI, 2012).

The Warmer Homes strategy (DCENR, 2011a), follows the same standard definition of ‘adequate warmth’ which follows WHO guidelines, which equates adequate to a temperature of 21°C in the main living area and 18°C in the rest of the dwelling. However, it notes that fuel poverty calculations in England vary the number of heating hours required to maintain adequate warmth for different occupancy patterns of the dwelling, allowing a 16 hour per day heating schedule for those likely to be in the home throughout the day (DCENR, 2011b).

To reflect the varying heating schedule requirements for different occupancy patterns, the base DEAP energy requirement calculation of an 8 hour heating schedule is adjusted to the following:

- 8 Hours All members of household away from house throughout the day
- 12 Hours All members of household away from house for part of the day
- 16 Hours Members of household likely to be in the home throughout the day

ELECTRICITY

The energy need data based on the BER method includes electricity costs for heating of water and lighting. It does not include electricity for other activities, such as cooking, laundry, the use of various household appliances, or entertainment. However, the MESL research has established the minimum electricity needed for these activities, for various household types.

The electricity component of the household energy need presented here uses a combination of the electricity requirements from the BER method DEAP calculations for each dwelling type, and the MESL data on the electricity requirements of each household type for other activities such as cooking, laundry, etc. The two data sources provide total number of units of electricity required in each scenario examined.

RESULTS

This section of the paper presents the cost of the minimum energy needs of each household type, when located in a specific dwelling type. The variation in the cost of the energy need is demonstrated for three different levels of overall dwelling efficiency.

- DWELLING LEVEL 1** The original state of the dwelling type, a low energy efficiency of BER E to G
- DWELLING LEVEL 2** The dwelling upgraded to an efficiency standard equivalent to a BER of C3
- DWELLING LEVEL 3** Further upgrading of the dwelling to an efficiency level equivalent to a BER of B2

The cost of the energy required by the household is calculated using the SEAI average price per unit from April 2014 (SEAI, 2014).

The overall cost of energy required, is presented in the context of the minimum expenditure need and net household income for each of the three household types. Each household type is examined for two income scenarios. The expenditure data and income calculations are based on the most recent MESL data from the VPSJ (2014).

THE HOUSEHOLD TYPES, DWELLING TYPE & INCOME SCENARIOS ARE AS FOLLOWS

TWO PARENTS & TWO CHILDREN (PRE-SCHOOL & PRIMARY SCHOOL AGE)

Dwelling Type	Urban, mid-terraced house, gas heating
Housing Tenure	Private Rented
Income Scenario 1	An Unemployed Job Seeker & A Stay-At-Home Parent The household income is made up of a full Job Seeker's payment, with Qualified Adult and Qualified Child increases, and additional social welfare supports.
Income Scenario 2	One Adult in Full-Time Employment & A Stay-At-Home Parent Salary is based on earning the National Minimum Wage, working 37.5 paid hours per week. The household income is comprised of net salary and additional social welfare supports including Family Income Supplement and Child Benefit

ONE PARENTS & ONE CHILD (PRIMARY SCHOOL AGE)

Dwelling Type	Urban, flat / apartment, gas heating
Housing Tenure	Private Rented
Income Scenario 1	Stay-At-Home Parent The household income is made up of the One-Parent Family Payment and Qualified Child increases, and additional social welfare supports, including Fuel Allowance.
Income Scenario 2	Adult in Full-Time Employment Salary is based on earning the National Minimum Wage, working 37.5 paid hours per week. The household income is comprised of net salary and additional social welfare supports including One-Parent Family Payment, Family Income Supplement and Child Benefit

PENSIONER, LIVING ALONE

Dwelling Type	Rural town or village, mid-terraced house, oil heating
Housing Tenure	Social Housing
Income Scenario 1	Non-Contributory Pension The household income is made up of the full personal rate of the Non-Contributory Pension, Living Alone Increase, and Fuel Allowance.
Income Scenario 2	Contributory Pension The household income is made up of the full personal rate of the Contributory Pension, Living Alone Increase, and Fuel Allowance.

Full details of the household income for each household type and scenario are provided in the Appendix; see Table 2 to Table 4 (pages 36 to 37).

A category by category breakdown of the Minimum Essential Standard of Living core expenditure need (expenditure excluding housing & energy), is provided for each household type and income scenario in Table 1 of the Appendix (page 35).

TWO PARENTS & TWO CHILDREN (PRE-SCHOOL & PRIMARY SCHOOL AGE)

MID-TERRACED HOUSE IN AN URBAN AREA

Scenario

I Job Seeker & I Home

Core MESL Expenditure	390.27
Housing (after Rent Supplement)	42.00
MESL (Core + Housing)	432.27
Net Household Income	434.32
DWELLING LEVEL 1	BER E1
Energy Expenditure	78.34
MESL Expenditure	432.27
Total Expenditure	510.61
Energy as % of Income	18.04%
Energy as % of Expenditure	15.34%
DWELLING LEVEL 2	BER C3
Energy Expenditure	58.28
MESL Expenditure	432.27
Total Expenditure	490.55
Energy as % of Income	13.42%
Energy as % of Expenditure	11.88%
DWELLING LEVEL 3	BER B2
Energy Expenditure	39.76
MESL Expenditure	432.27
Total Expenditure	472.03
Energy as % of Income	9.15%
Energy as % of Expenditure	8.42%

Scenario

I Full-Time & I Home

Core MESL Expenditure	394.92
Housing (after Rent Supplement)	50.60
MESL (Core + Housing)	445.52
Net Household Income	550.18
DWELLING LEVEL 1	BER E1
Energy Expenditure	78.34
MESL Expenditure	445.52
Total Expenditure	523.86
Energy as % of Income	14.24%
Energy as % of Expenditure	14.95%
DWELLING LEVEL 2	BER C3
Energy Expenditure	58.28
MESL Expenditure	445.52
Total Expenditure	503.80
Energy as % of Income	10.59%
Energy as % of Expenditure	11.57%
DWELLING LEVEL 3	BER B2
Energy Expenditure	39.76
MESL Expenditure	445.52
Total Expenditure	485.28
Energy as % of Income	7.23%
Energy as % of Expenditure	8.19%

TWO PARENTS & TWO CHILDREN (PRE-SCHOOL & PRIMARY SCHOOL AGE)

The two employment / income scenarios examined for this household type both require a heating schedule which allows for members of the household to be in the home throughout the day. The first scenario is based on one adult being unemployed and the other a stay-at-home parent. The second scenario is based on one adult being in full-time employment, and the second adult a stay-at-home parent. Therefore, the cost of the household energy need is the same in both income scenarios.

The cost of household energy for this household type varies from €4,000 to €2,000 per annum, depending on the efficiency of the dwelling. The weekly cost presented in the tables reflects the average weekly cost over the course of a year, the actual cost varies over the course of the year reflecting the greater need for heat and light in winter months and reduced need in summer months.

At the original efficiency level for this dwelling type the average weekly expenditure on the energy need is €78.34. Where a dwelling of this type is improved to bring it to an efficiency level equivalent to a C3 BER, the expenditure need reduces by €20.06 per week (a reduction of over €1,000 per annum) to €58.28 per week. Further improvements to the dwelling efficiency, can result in a halving of the energy costs for this dwelling type. With an efficiency rating level equivalent to a B2 BER, the average weekly energy expenditure need for this dwelling is €39.76 (an overall reduction of over €2,000 per annum).

AN UNEMPLOYED JOB SEEKER & A STAY-AT-HOME PARENT

When this household type is dependent on social welfare, in this scenario, the average weekly household income is €434.32. The minimum expenditure need for this household type (including housing costs, net of rent supplement⁵) before energy costs, is €445.52.

The daily heating schedule is 16 hours, as at least some members of the household are likely to be in the home during the day.

› Dwelling Efficiency Level 1

BER E1

At the original efficiency level the average weekly energy costs are 18% of income, indicating severe energy poverty for this household type when in an energy inefficient dwelling. In this situation, energy accounts for 15% of minimum expenditure need. Weekly household income is inadequate in this scenario; the household type has an income shortfall of €76.29 per week.

› Dwelling Efficiency Level 2

BER C3

At the second efficiency level the average weekly energy costs are reduced by €20.06

⁵ This is the weekly cost of the MESL budget for this household type, and includes the effect of the medical card (reducing the required health expenditure).
Housing costs are based on private rented accommodation, and are net of Rent Supplement.

per week, and are 13% of income, indicating energy poverty for this household type in this scenario. In this situation, energy accounts for over a tenth (11.88%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €56.23 per week.

› Dwelling Efficiency Level 3

BER B2

At the third efficiency level the average weekly energy costs are reduced by €38.58 per week from the original state. Energy costs are 9% of income; this is close to the 10% (of income) energy poverty threshold, indicating that further increases in the cost of energy could bring about energy poverty for this household scenario. In this situation, energy accounts for under a tenth (8.42%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €39.76 per week.

In each of the dwelling efficiency levels examined household income is insufficient for the total minimum expenditure need, leaving an income shortfall of between €37.71 and €76.29 per week. While energy poverty is only indicated at the first two dwelling efficiency levels, the third is very close to the energy poverty threshold.

ONE ADULT IN FULL-TIME EMPLOYMENT & A STAY-AT-HOME PARENT

In this income / employment scenario, household income is comprised of a single salary income from full-time earning the National Minimum Wage, and social welfare supports including Family Income Supplement and Child Benefit. The average weekly household income (net salary + social welfare payments) in this scenario is €550.18. The minimum expenditure need for this household type (including housing costs, net of rent supplement⁶) before energy costs, is €445.52.

› Dwelling Efficiency Level 1

BER E1

At the original efficiency level the average weekly energy costs are 14% of income, indicating energy poverty for this household type when in an energy inefficient dwelling. In this situation, energy accounts for 15% of minimum expenditure need.

Household weekly income is adequate in this scenario; the household type can afford the expenditure required for a Minimum Essential Standard of Living.

› Dwelling Efficiency Level 2

BER C3

At the second efficiency level the average weekly energy costs are reduced by €20.06

⁶ This is the weekly cost of the MESL budget for this household type, and includes the effect of the medical card (reducing the required health expenditure).

Housing costs are based on private rented accommodation, and are net of Rent Supplement. Due to the higher income in this scenario, the household qualifies for a lower amount of Rent Supplement.

per week, and are 11% of income, indicating energy poverty for this household type in this scenario. In this situation, energy accounts for over a tenth (11.57%) of minimum expenditure need.

Household weekly income is adequate in this scenario; the household type can afford the expenditure required for a Minimum Essential Standard of Living.

› Dwelling Efficiency Level 3

BER B2

At the third efficiency level the average weekly energy costs are reduced by €38.58 per week from the original state. Energy costs are 7% of income (this is below the 10% of income threshold) indicating that the household is not in energy poverty. In this situation, energy accounts for 8% of minimum expenditure need.

Household weekly income is adequate in this scenario; the household type can afford the expenditure required for a Minimum Essential Standard of Living.

In each of the dwelling efficiency levels examined household income is sufficient for the total minimum expenditure need. However, the amount of discretionary income left for the household, after meeting the cost of a MESL, varies between the different efficiency levels. In fact, there is a difference of over €2,000 per annum, in the level of discretionary income for a household in a dwelling at the original efficiency level and a household in the dwelling upgraded to a B2 BER efficiency level.

However, while the income from employment and social welfare is adequate at all three efficiency levels, a household of this type in this scenario would face energy poverty due to the cost of energy at the first two dwelling efficiency levels.

ONE PARENT & ONE CHILD (PRIMARY SCHOOL AGE)

FLAT / APARTMENT IN AN URBAN AREA

SCENARIO

Stay-at-Home (OFP)

Core MESL Expenditure	240.81
Housing (after Rent Supplement)	32.00
MESL (Core + Housing)	272.81
Net Household Income	259.72
DWELLING LEVEL 1	BER G
Energy Expenditure	72.93
MESL Expenditure	272.81
Total Expenditure	345.74
Energy as % of Income	28.08%
Energy as % of Expenditure	21.09%
DWELLING LEVEL 2	BER C3
Energy Expenditure	38.74
MESL Expenditure	272.81
Total Expenditure	311.55
Energy as % of Income	14.92%
Energy as % of Expenditure	12.43%
DWELLING LEVEL 3	BER B2
Energy Expenditure	30.34
MESL Expenditure	272.81
Total Expenditure	303.15
Energy as % of Income	11.68%
Energy as % of Expenditure	10.01%

SCENARIO

Employed Full-Time

Core MESL Expenditure	298.35
Housing (after Rent Supplement)	145.15
MESL (Core + Housing)	443.49
Net Household Income	513.06
DWELLING LEVEL 1	BER G
Energy Expenditure	48.04
MESL Expenditure	443.49
Total Expenditure	491.53
Energy as % of Income	9.36%
Energy as % of Expenditure	9.77%
DWELLING LEVEL 2	BER C3
Energy Expenditure	29.87
MESL Expenditure	443.49
Total Expenditure	473.36
Energy as % of Income	5.82%
Energy as % of Expenditure	6.31%
DWELLING LEVEL 3	BER B2
Energy Expenditure	24.02
MESL Expenditure	443.49
Total Expenditure	467.51
Energy as % of Income	4.68%
Energy as % of Expenditure	5.14%

ONE PARENT & ONE CHILD (PRIMARY SCHOOL AGE)

The two employment / income scenarios examined for this household type require different heating schedules. The first scenario is based on the adult being a stay-at-home parent, and therefore a heating schedule based on household members being in the home during the day is required. The second scenario is based on the adult being in full-time employment, and the child being in childcare outside of school hours. Therefore the heating schedule in the second scenario is based on the use of heat in the morning and evenings only.

The applicable daily heating schedules are:

- 16 Hours Members of household likely to be in the home throughout the day
- 8 Hours All members of household away from house throughout the day

STAY-AT-HOME PARENT

When this household type is dependent on social welfare (One-Parent Family Payment) the average weekly household income is €259.72. The minimum expenditure need for this household type (including housing costs, net of rent supplement⁷) before energy costs, is €272.81.

The heating schedule in this scenario is 16 hours. The cost of household energy varies from €3,800 to €1,600 per annum, depending on the efficiency of the dwelling. The weekly cost presented in the tables reflects the average weekly cost over the course of a year, the actual cost varies over the course of the year reflecting the greater need for heat and light in winter months and reduced need in summer months.

At the original efficiency level for this dwelling type the average weekly expenditure on the energy need is €72.93. Where a dwelling of this type is improved to bring it to an efficiency level equivalent to a C3 BER, the expenditure need reduces by €34.19 per week (a reduction of over €1,750 per annum) to €38.74. Further improvements to the dwelling efficiency, can reduce energy costs by over half for this dwelling type. With an efficiency rating level equivalent to a B2 BER, the average weekly energy expenditure need for this dwelling is €30.34 (an overall reduction of over €2,200 per annum).

› Dwelling Efficiency Level 1



At the original efficiency level the average weekly energy costs are 28% of income, indicating extreme energy poverty for this household type when in an energy inefficient dwelling. In this situation, energy accounts for over a fifth (21.09%) of minimum expenditure need.

⁷ This is the weekly cost of the MESL budget for this household type, and includes the effect of the medical card (reducing the required health expenditure).
Housing costs are based on private rented accommodation, and are net of Rent Supplement.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €86.02 per week.

› Dwelling Efficiency Level 2

BER C3

At the second efficiency level the average weekly energy costs are reduced by €34.19 per week, and stand at almost 15% of income, indicating energy poverty for this household type in this scenario (energy costs are 14.92% of net income, this level is only marginally below the level of severe energy poverty). In this situation, energy accounts for over a tenth (12.43%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €51.83 per week.

› Dwelling Efficiency Level 3

BER B2

At the third efficiency level the average weekly energy costs are reduced by €42.59 per week from the original state. Energy costs are 12% of income, indicating energy poverty for this household type in this scenario. In this situation, energy accounts for a tenth (10.01%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €43.43 per week.

In each of the dwelling efficiency levels examined household income is insufficient for the total minimum expenditure need, leaving an income shortfall of between €43.43 and €86.02 per week. Energy poverty is indicated at the three dwelling efficiency levels. Furthermore, the cost of energy required when the dwelling is in its original state, puts the household into a position of very extreme energy poverty. With the dwelling efficiency upgraded to C3 BER level the scenario examined still presents a situation where the household is on the threshold of severe energy poverty.

ONE ADULT IN FULL-TIME EMPLOYMENT

In this income / employment scenario, household income is comprised of a single salary income from full-time earning the National Minimum Wage, and social welfare supports including One-Parent Family Payment, Family Income Supplement and Child Benefit. The average weekly household income (net salary + social welfare payments) in this scenario is €513.06. The minimum expenditure need for this household type (including housing costs, net of rent supplement⁸) before energy costs, is €443.49. Due to the higher household income in this scenario the household qualifies for a reduced level of Rent Supplement, this combined with the requirement for childcare are the primary reasons for the increase in the minimum expenditure needs for the household type in this scenario.

⁸ This is the weekly cost of the MESL budget for this household type, and includes the effect of the medical card (reducing the required health expenditure).
Housing costs are based on private rented accommodation, and are net of Rent Supplement.

The heating schedule in this scenario is 8 hours. The cost of household energy varies from €2,500 to €1,250 per annum, depending on the efficiency of the dwelling. The weekly cost presented in the tables reflect the average weekly cost over the course of a year, the actual cost varies over the course of the year reflecting the greater need for heat and light in winter months and reduced need in summer months.

At the original efficiency level for this dwelling type the average weekly expenditure on the energy need is €48.04. Where a dwelling of this type is improved to bring it to an efficiency level equivalent to a C3 BER, the expenditure need reduces by €18.17 per week (a reduction of over €945 per annum) to €29.87. Further improvements to the dwelling efficiency, can reduce energy costs by half for this dwelling type. With an efficiency rating level equivalent to a B2 BER, the average weekly energy expenditure need for this dwelling is €24.02 (an annual reduction of €1,250 per annum).

- › Dwelling Efficiency Level 1 **BER G**

At the original efficiency level the average weekly energy costs are 9% of income; this is only marginally below the 10% energy poverty threshold, indicating that further increases in the cost of energy could bring about energy poverty for this household scenario. In this situation, energy accounts for almost a tenth (9.77%) of minimum expenditure need.

Household weekly income is adequate in this scenario; the household type can afford the expenditure required for a Minimum Essential Standard of Living.
- › Dwelling Efficiency Level 2 **BER C3**

At the second efficiency level the average weekly energy costs are reduced by €18.17 per week. Energy costs are 6% of income; this is below the 10% threshold, indicating that the household is not in energy poverty. In this situation, energy also accounts for 6% of minimum expenditure need.

Household weekly income is adequate in this scenario; the household type can afford the expenditure required for a Minimum Essential Standard of Living.
- › Dwelling Efficiency Level 3 **BER B2**

At the third efficiency level the average weekly energy costs are reduced by €24.02 per week from the original state. Energy costs are 5% of income; this is half of the 10% threshold, indicating that the household is not in energy poverty. In this situation, energy accounts for a twentieth (5.14%) of minimum expenditure need.

Household weekly income is adequate in this scenario; the household type can afford the expenditure required for a Minimum Essential Standard of Living.

In each of the dwelling efficiency levels examined household income is sufficient for the total minimum expenditure need. However, the amount of discretionary income left for the

household, after meeting the cost of a MESL, varies between the different efficiency levels. In fact, there is a difference of €1,250 per annum, in the level of discretionary income for a household in a dwelling at the original efficiency level and a household in the dwelling upgraded to a B2 BER efficiency level.

The cost of energy at the original efficiency level is only marginally below the energy poverty threshold, with 9.36% of income required to afford the cost of energy. Given the trend of rising energy prices, the household type in this income scenario may be vulnerable to energy poverty in the future, when living in an inefficient dwelling.

PENSIONER, LIVING ALONE

MID-TERRACED HOUSE IN A RURAL AREA

Scenario

Non-Contributory Pension

Core MESL Expenditure	246.82
Housing (Local Authority Rent)	24.67
MESL	271.49
Net Household Income	236.70
DWELLING LEVEL 1	BER E1
Energy Expenditure	83.71
MESL Expenditure	271.49
Total Expenditure	355.20
Energy as % of Income	35.37%
Energy as % of Expenditure	23.57%
DWELLING LEVEL 2	BER C3
Energy Expenditure	58.19
MESL Expenditure	271.49
Total Expenditure	329.67
Energy as % of Income	24.58%
Energy as % of Expenditure	17.65%
DWELLING LEVEL 3	BER B2
Energy Expenditure	35.12
MESL Expenditure	271.49
Total Expenditure	306.61
Energy as % of Income	14.84%
Energy as % of Expenditure	11.45%

Scenario

Contributory Pension

Core MESL Expenditure	246.82
Housing (Local Authority Rent)	25.17
MESL	271.99
Net Household Income	248.00
DWELLING LEVEL 1	BER E1
Energy Expenditure	83.71
MESL Expenditure	271.99
Total Expenditure	355.70
Energy as % of Income	33.75%
Energy as % of Expenditure	23.53%
DWELLING LEVEL 2	BER C3
Energy Expenditure	58.19
MESL Expenditure	271.99
Total Expenditure	330.17
Energy as % of Income	23.46%
Energy as % of Expenditure	17.62%
DWELLING LEVEL 3	BER B2
Energy Expenditure	35.12
MESL Expenditure	271.99
Total Expenditure	307.11
Energy as % of Income	14.16%
Energy as % of Expenditure	11.44%

PENSIONER, LIVING ALONE

This household type is examined when living in a rural area. The dwelling is a mid-terraced house in a rural / town or village. The heating system is fuelled by oil, unlike the previous two dwelling types which used gas.

The two income scenarios examined for this household type both require a heating schedule which allows for the member of the household to be in the home throughout the day. Therefore, the cost of the household energy need does not vary between the two income scenarios.

The scenarios are based on being in receipt of the state pension. The first scenario is based on the Non-Contributory Pension, and it is assumed that the individual is under 80, and that the household's means are at a level which qualifies the individual for the highest rate of payment. The second scenario is based on the Contributory Pension, and it is assumed that the individual is entitled to the full personal rate.

The calculations for this household type also take account of the Household Benefits Package. The Household Benefits Package (HBP) includes an allowance for electricity or natural gas. The value of this allowance has reduced in recent years and currently stands at €35.00 per month.

The allowance is paid either in cash, or as a credit on the household's energy bill. In the scenarios examined for this household type the HBP electricity allowance is included. The required energy expenditure figures for this household type reflect the HBP allowance. The cost of the required energy is reduced by the weekly value of the allowance (€8.07). Therefore, the listed figures for Energy Expenditure are net of the Household Benefits Package electricity allowance.

The cost of household energy for this household type varies from €4,350 to €1,825 per annum, depending on the efficiency of the dwelling. The weekly cost presented in the tables reflects the average weekly cost over the course of a year, the actual cost varies over the course of the year reflecting the greater need for heat and light in winter months and reduced need in summer months.

At the original efficiency level for this dwelling type the average weekly expenditure on the energy need is €83.71. Where a dwelling of this type is improved to bring it to an efficiency level equivalent to a C3 BER, the expenditure need reduces by €25.52 per week (a reduction of over €1,325 per annum) to €58.19 per week. Further improvements to the dwelling efficiency, reduce energy costs by over half for this dwelling type. With an efficiency rating level equivalent to a B2 BER, the average weekly energy expenditure need for this dwelling is €35.12 (an overall reduction of over €2,525 per annum).

NON-CONTRIBUTORY PENSION

When this household type is in receipt of the Non-Contributory Pension, the average weekly household income is €236.70. The household income is comprised of the full personal rate for the Non-Contributory Pension, the Living Alone Increase, and the Fuel Allowance. The minimum expenditure need for this household type (including housing costs⁹) before energy costs is €271.49.

The daily heating schedule is 16 hours, as the individual is likely to be in the home during the day.

› Dwelling Efficiency Level 1

BER E1

At the original efficiency level the average weekly energy costs are 35% of income, demonstrating extreme energy poverty for this household type when in an energy inefficient dwelling. In this situation, energy accounts for almost a quarter (23.57%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €118.50 per week.

› Dwelling Efficiency Level 2

BER C3

At the second efficiency level the average weekly energy costs are reduced by €25.52 per week, and are 25% of income, indicating extreme energy poverty for this household type in this scenario. In this situation, energy accounts for over a 18% of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €92.27 per week.

› Dwelling Efficiency Level 3

BER B2

At the third efficiency level the average weekly energy costs are reduced by €48.59 per week from the original state. Energy costs are almost 15% of income, indicating energy poverty for this household type in this scenario (energy costs are 14.84% of net income, this level is only marginally below the level of severe energy poverty). In this situation, energy accounts for over a tenth (11.45%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €69.91 per week.

In each of the dwelling efficiency levels examined household income is insufficient for the total minimum expenditure need, leaving an income shortfall of between €69.91 and

⁹ This is the weekly cost of the MESL budget for this household type, and includes the effect of the medical card (reducing the required health expenditure).
Housing costs are based on the differential rent charged by to local authority tenants.

€118.50 per week. Extreme energy poverty is indicated at the first two dwelling efficiency levels, and the third is very close to the severe energy poverty threshold.

The income provided from the Non-Contributory Pension and secondary supports which include the Fuel Allowance and Household Benefits Package, are inadequate for this household type to afford all the elements required for a Minimum Essential Standard of Living (in this scenario).

CONTRIBUTORY PENSION

When this household type is in receipt of the Contributory Pension, the average weekly household income is €248.00. The household income is comprised of the full personal rate for the Contributory Pension, the Living Alone Increase, and the Fuel Allowance. The minimum expenditure need for this household type (including housing costs¹⁰) before energy costs, is €271.99.

The daily heating schedule is 16 hours, as the individual is likely to be in the home during the day.

› Dwelling Efficiency Level 1

BER E1

At the original efficiency level the average weekly energy costs are 34% of income, demonstrating extreme energy poverty for this household type when in an energy inefficient dwelling. In this situation, energy accounts for almost a quarter (23.53%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €107.70 per week.

› Dwelling Efficiency Level 2

BER C3

At the second efficiency level the average weekly energy costs are reduced by €25.52 per week, and are 23% of income, indicating extreme energy poverty for this household type in this scenario. In this situation, energy accounts for over a 18% of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €82.17 per week.

› Dwelling Efficiency Level 3

BER B2

At the third efficiency level the average weekly energy costs are reduced by €48.59 per week from the original state. Energy costs are over 14% of income, indicating energy poverty for this household type in this scenario (energy costs are 14.14% of net income,

¹⁰ This is the weekly cost of the MESL budget for this household type, and includes the effect of the medical card (reducing the required health expenditure). Housing costs are based on the differential rent charged by to local authority tenants.

this level is only marginally below the level of severe energy poverty). In this situation, energy accounts for over a tenth (11.44%) of minimum expenditure need.

Weekly household income is inadequate in this scenario; the household type has an income shortfall of €59.11 per week.

In each of the dwelling efficiency levels examined household income is insufficient for the total minimum expenditure need, leaving an income shortfall of between €59.11 and €107.70 per week. Extreme energy poverty is indicated at the first two dwelling efficiency levels, and the third is close to the severe energy poverty threshold.

The income provided from the Contributory Pension and secondary supports which include the Fuel Allowance and Household Benefits Package, are inadequate for this household type to afford all the elements required for a Minimum Essential Standard of Living (in this scenario).

DISCUSSION

ENERGY POVERTY

Cost of Minimum Energy Need as Percentage of Net Household Income

<i>Household</i>	<i>Scenario</i>	DWELLING EFFICIENCY		
		LEVEL 1	LEVEL 2	LEVEL 3
Two Parent	Unemployed	18.04%	13.42%	9.15%
	I Full-Time & I Home	14.24%	10.59%	7.23%
One Parent	One-Parent Family Payment	28.08%	14.92%	11.68%
	I Full-Time	9.36%	5.82%	4.68%
Pensioner	Non-Contributory	35.37%	24.58%	14.84%
	Contributory	33.75%	23.46%	14.16%

The table above presents the cost of the minimum energy need for each household type, by income scenario and dwelling efficiency level, as a percentage of net household income. In total, 18 cases were examined, and energy costs are greater than 10% of net income in 13 of the 18 cases. Of the 13 cases of energy poverty, one is severe energy poverty (energy expenditure need is between 15 and 20% of net income), and five are extreme energy poverty (energy expenditure need is over 20% of net income). Additionally, of the five cases not in energy poverty, the energy expenditure need for two is over 9% of net income, and therefore these cases are in danger of entering energy poverty if energy prices continue to rise.

SOCIAL WELFARE SCENARIOS

In total, 12 cases of social welfare dependent scenarios were examined; six in the case of the Pensioner household type and three with each of the household types with children. All but one of these scenarios demonstrated energy poverty at some level. The six cases of extreme energy poverty and severe energy poverty, all occurred in social welfare dependent scenarios.

WORKING AGE HOUSEHOLD TYPES

In the two working age household types with children, extreme or severe energy poverty was demonstrated when the household type was residing in the least energy efficient dwelling type (Dwelling Level 1). Energy poverty persisted for these same household types in social welfare dependent scenarios, when residing in a moderately efficient dwelling type (Dwelling Level 2). However the improvement in efficiency reduced the degree of energy poverty to a level where the energy expenditure need was less than 15% of net household income. The situation of these households when in an efficient dwelling type (Dwelling Level

3) differs, the One Parent household type remains in energy poverty, and the cost of the required energy for the Two Parent household type is marginally below the energy poverty level.

PENSIONER HOUSEHOLD TYPE

The Pensioner, living alone, household type has persistent energy poverty across all levels of dwelling efficiency, in the scenario examined. This household type is the only case examined in a dwelling using oil for heating fuel. On average, the energy costs for heating by oil are approximately 30% higher than heating by natural gas¹¹. However, even when using Natural Gas as heating, this household type is also found to be consistently in energy poverty.

When residing in the least energy efficient dwelling type (Dwelling Level 1), the energy expenditure need for this household is far in excess of the 20% of net household income which indicates extreme energy poverty. With energy costs at over a third of income, the average weekly expenditure required for energy is greater than the MESL weekly expenditure budget for Food and Clothing combined. Extreme energy poverty persisted for this household type when residing in a moderately efficient dwelling type (Dwelling Level 2) as energy expenditure need is still a quarter of income.

The situation of the pensioner living alone household type demonstrates the inadequacy of the State Pension, Living Alone Allowance and secondary supports, for households of this type to afford minimum energy needs and maintain a Minimum Essential Standard of Living.

INCOME ADEQUACY

In all of the social welfare dependent scenarios examined, the household types do not have an income which adequately meets the cost of a Minimum Essential Standard of Living. As the efficiency level of the dwellings examined improves, and the accompanying required energy cost reduces, the depth of the income inadequacy faced by the household types lessens.

When in the least efficient dwelling types the average weekly income shortfall is between €76 (Two Parent household type) and €118 (Pensioner, living alone household type) per week. However, even in the hypothetical scenario of residing in an energy efficient dwelling, with comparatively low energy costs, each of these household types do not have an adequate income when dependent on social welfare, with the income shortfall ranging from €38 to €70 per week.

The income provided from social welfare supports is inadequate for these household types to afford all the elements required for a Minimum Essential Standard of Living. Therefore, a household in such a scenario will have to choose to do without essential items and live

¹¹ The delivered energy cost per kWh for Natural Gas is €0.0723, and for Oil is €0.0953 (SEAI, 2014). Therefore, the delivered energy cost per kWh of Oil is 131.81% that of Natural Gas.

below a socially acceptable minimum level, these choices may mean not maintaining adequate warmth, doing with inadequate food, and not participating fully in normal social activities.

EMPLOYMENT SCENARIOS

In total, six cases of full-time minimum wage employment were examined. For both the Two Parent and One-Parent household types, the household income included appropriate social welfare supports such as Child Benefit, Family Income Supplement and One-Parent Family Payment. However, in the employment scenarios neither household is eligible for an energy related support, e.g. Fuel Allowance.

TWO PARENT, TWO CHILD HOUSEHOLD TYPE

In this income scenario, this household type faces energy poverty in two of three cases examined. When residing in the least energy efficient dwelling type (Dwelling Level 1), the household type is in energy poverty. Furthermore, as the energy expenditure need is at 14.24% of net household income, rising energy prices may lead to severe energy poverty in this case. Energy poverty persisted for this household types in this income scenario, when residing in a moderately efficient dwelling type (Dwelling Level 2). However, when residing in an efficient dwelling (Dwelling Level 3), this household type would not experience energy poverty in this scenario.

ONE PARENT, ONE CHILD HOUSEHOLD TYPE

In this income scenario, this household does not face energy poverty in any of the three cases examined. When residing in the least energy efficient dwelling type (Dwelling Level 1), the energy expenditure need is 9.36% of net household income. In this case the household type is precariously close to experiencing energy poverty if inflation in energy prices continues.

In this income scenario, this household type does not experience energy poverty when residing in more efficient dwelling types, at Dwelling Level 2 or 3.

INCOME ADEQUACY

In all of the employment scenarios examined, the household types have an income which adequately meets the cost of a Minimum Essential Standard of Living. This demonstrates the important role of social welfare supports to these household types when in low paid employment. Targeted social welfare payments such as Family Income Supplement and the One-Parent Family Payment account for almost a third of the net household income for both of the household types examined, when earning the National Minimum Wage.

As the efficiency level of the dwellings examined improves, and the accompanying required energy cost reduces, the level of income adequacy improves, putting the household types in a more secure position. However, even when experiencing income adequacy in terms of

meeting the cost of a Minimum Essential Standard of Living, the burden of high energy costs when in less efficient dwelling types, does create situations of energy poverty.

ENERGY RELATED SOCIAL WELFARE SUPPORTS

As discussed above, energy costs have increased by an average of 25% in the last five years. In the same period the supports that are intended to assist some vulnerable households afford energy have been reduced.

The Fuel Allowance and the Household Benefits Package are the two primary social welfare payments for assisting households with the cost of household energy (but notably not all low-income households, not all households at risk of fuel poverty).

In the period 2009 to 2014 the real value of these supports has not been maintained, as the rate of payment has not kept track with the rising cost of household energy. Conversely, the rates of payment for the Fuel Allowance and the Household Benefits Package have both been reduced over this period.

FUEL ALLOWANCE

Fuel Allowance is a means-tested targeted payment, made to people on long-term social welfare, paid on a household basis. To qualify for the payment a person must be in receipt of a long term payment (e.g. State Pension, Disability Allowance, One-Parent Family Payment, Jobseeker's Allowance for over 15 months), live alone or with dependents and pass a means test.

The Fuel Allowance is a weekly payment, paid for only part of the year. Adjustments have been made to the overall value of the Fuel Allowance through changes to both the weekly rate of payment, and the number of weeks paid in the year. To examine the actual value of the Fuel Allowance the annual value must be calculated: (Weekly Payment x Weeks Paid).

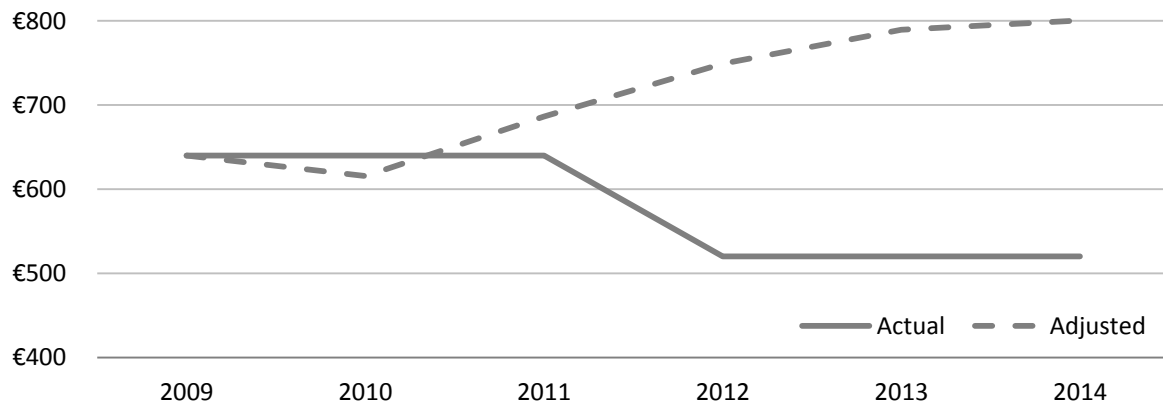
Fuel Allowance from 2006 to 2014

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Payment	€14.00	€18.00	€18.00	€20.00	€20.00	€20.00	€20.00	€20.00	€20.00
Weeks Paid	29	29	30	32	32	32	26	26	26
Annual Value	€406.00	€522.00	€540.00	€640.00	€640.00	€640.00	€520.00	€520.00	€520.00

Through a combination of increasing the weekly payment and increasing the number of weeks paid, the annual value of the Fuel Allowance increased until 2009. This level of payment was then maintained until 2012, when the number of weeks paid was reduced from 32 to 26, reducing the annual value of the Fuel Allowance by €120. The annual paid value of the Fuel Allowance has remained static at €520 since 2012.

The reduction of the paid value of the Fuel Allowance is compounded by the increasing cost of energy. The combination of the reduction in the rate of payment and rising fuel costs have resulted in a reduction of 28% (Gas) to 55% (Oil) in the purchasing power of the Fuel Allowance. For example, in 2009 the Fuel Allowance would have enabled the purchase of approximately 10,000 units of natural gas, whereas in 2014 this has reduced to 7,200 units¹².

Graph 3 Fuel Allowance, 2009 to 2014



The overall inflation in the cost of electricity and home heating fuels has been 25% since 2009 (the last time the Fuel Allowance was increased).¹³ In order for the Fuel Allowance to have maintained its purchasing power in the face of inflating energy prices, it should have been at least increased in line with rising prices. The graph above illustrates the gap that has grown between the annual value of the Fuel Allowance paid, and the rate at which it would need to be paid to maintain the purchasing power of the allowance. The solid line shows the actual annual value paid each year from 2009 to 2014, the broken line shows the 2009 rate adjusted for inflation until 2014.

In 2014, the Fuel Allowance should be paid at a rate of €25 per week for 32 weeks in the year, to have an annual value of €800. This would maintain the Fuel Allowance at its 2009 purchasing power.

HOUSEHOLD BENEFITS PACKAGE

The Household Benefits Package is a targeted package of measures which includes an allowance for Electricity or Natural Gas. It is primarily available to older people and people with a disability.

Until 2013 the Household Benefits Package offered unit based allowances, in this way it guaranteed to cover a prescribed amount of electricity or gas, irrespective of changes in the

¹² Calculation based on SEAI (2014b) Archived Domestic Fuel Costs – Average Price per Unit

¹³ Analysis of CSO Consumer Price Index Detailed Sub-Indices 'Electricity, gas and other fuels'. Percentage change over 12 months for March of each year

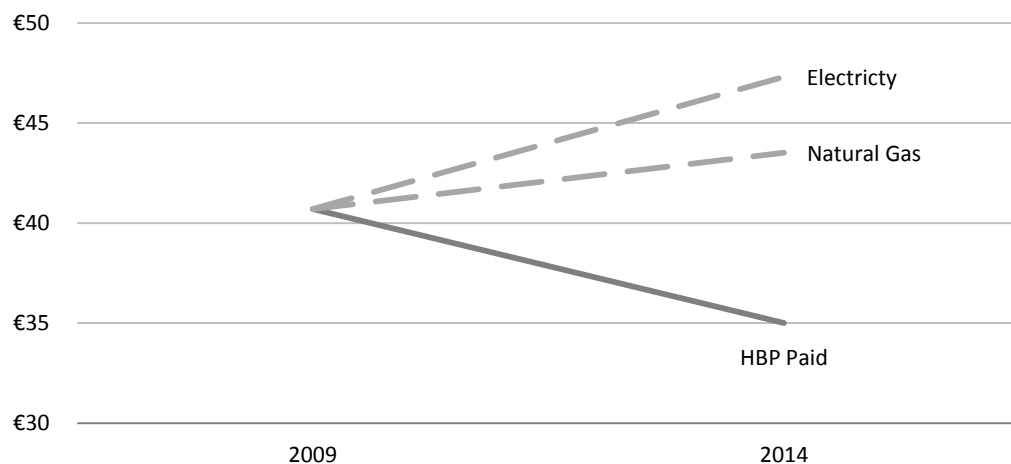
unit price. However from 2013 this has changed to a flat allowance of a €35.00 credit per month. A cash allowance was also offered in place of the unit allowance in certain circumstances. In 2009 this cash allowance equivalent was €40.70 per month.

The value of the allowance for Electricity or Gas has reduced by 14% (from the 2009 cash allowance value) to €35.00 per month in 2014. This reduction, combined with increasing energy prices, has reduced the amount of energy provided by the allowance by a quarter¹⁴. For example, in 2009 the HBP electricity allowance provided 2,400 units per annum, however in 2014 the €35 credit per month enables the purchase of approximately 1,750 per annum.

For the allowances to maintain their real value in terms of the cost of household energy, the following rates of payment would be required:

- › Electricity €47.30 per month
- › Natural Gas €43.42 per month

Chart 1 Paid value of Household Benefits Package compared to 2009 value adjusted by CPI



SCENARIO – IF FUEL ALLOWANCE & HBP HAD MAINTAINED PURCHASING POWER

In the scenarios examined in this paper the Pensioner, Living Alone, household type is in receipt of both the Fuel Allowance and the Household Benefits Package electricity allowance. The purchasing power of these payments has been cut over recent years, and at a time of rising energy prices.

If the purchasing power of the supports had been maintained at the 2009 level, as detailed above, there would be two immediate effects for the Pensioner household type. Firstly, average weekly income would increase due to the Fuel Allowance being paid at a higher

¹⁴ The HBP allowance in 2014 purchases 27% less Electricity and 24% less Natural Gas, than in 2009. Calculation based on SEAI (2014b) Archived Domestic Fuel Costs – Average Price per Unit

rate. The increase would equate to €5.38 per week over a year, and would bring total weekly household income to €242.08 (Non-Contributory Pension) and €253.38 (Contributory Pension). Secondly, the increased electricity allowance of €47.30 per month would reduce the average weekly cost of energy by €2.84. While both these changes appear minor, the cumulative impact over a year is an additional €430 for a vulnerable household type.

In this scenario, the Pensioner household type remains vulnerable to fuel poverty at all three dwelling efficiency levels. For example, in the case of the most efficient dwelling type, the proportion of income required for energy is still 13%. This household type continues to face income inadequacy and energy poverty, demonstrating that addressing both dwelling efficiency and low income are vital in any approach to energy poverty.

CONCLUSION

This paper has presented scenarios which demonstrate the effect of dwelling efficiency on vulnerability to energy poverty, for low income tenant households. The paper has focused on households in rented accommodation as these households have the least ability to address the energy efficiency of their dwelling.

In total, 18 cases were examined, and energy costs are greater than 10% of net income in 13 of the 18 cases. Of the 13 cases of energy poverty, one is severe energy poverty (energy expenditure need is between 15 and 20% of net income), and five are extreme energy poverty (energy expenditure need is over 20% of net income). Moreover, it is the social welfare dependent household scenarios which demonstrate the greatest levels of energy poverty.

Additionally, of the five cases not in energy poverty, the energy expenditure need for two is over 9% of net income in 2014. In the context of ongoing energy price inflation these cases are precariously close to entering energy poverty.

For households without employment, the income provided from social welfare supports is inadequate for the household types examined to afford all the elements required for a Minimum Essential Standard of Living. Therefore, a household in such a scenario will have to choose to do without essential items and live below a socially acceptable minimum level, these choices may mean not maintaining adequate warmth, being unable to afford adequate food, not participating fully in normal social activities, or not paying rent.

This paper has highlighted the issue of reductions in energy related social welfare supports being implemented at a time of ongoing increases in energy costs. Using the example of the Pensioner household type, the analysis demonstrated the rate at which these supports should be paid in order to maintain the purchasing power in the context of energy price

inflation. However, in the hypothetical scenario examined, with the Fuel Allowance and Household Benefits Package restored, the pensioner living alone household type remained in a situation of energy poverty. This demonstrates the inadequacy of social welfare supports for older people living alone, and the vulnerability of household types solely reliant on social welfare supports to meet their minimum expenditure needs.

This paper has demonstrated that improving dwelling efficiency is vital, as it undoubtedly lowers the minimum energy required. Consequently, measures to improve efficiency can result in lowering the occurrence and depth of energy poverty. However, in the wider context of low and inadequate household income, improvements in energy efficiency alone will not enable vulnerable household types afford the minimum energy required. Even at the highest efficiency level examined, social welfare dependent households tended to remain in energy poverty and all faced inadequate income. Consequently, policy must address both overall income adequacy and dwelling efficiency.

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APPENDIX

EXPENDITURE

Table I Minimum Essential Standard of Living Expenditure Budget
(Excluding housing costs)

2014	TWO PARENT Pre-School & Primary School		ONE PARENT Primary School		PENSIONER Living Alone		
	Adult(s) Income / Employment Scenario	Unemployed, I Stay-at-home	Employed FT, I Stay-at-home	Stay-at-home	Employed FT	Non-Contributory	Contributory
Food		125.19	125.19	72.32	72.32	67.80	67.80
Clothing		24.82	24.82	14.12	14.12	11.57	11.57
Personal Care		18.88	18.88	9.84	9.84	10.02	10.02
Health		1.31	1.31	0.81	0.81	0.81	0.81
Household Goods		20.76	20.76	16.94	16.94	17.87	17.87
Household Services		6.46	6.46	6.46	6.46	8.00	8.00
Communications		13.77	13.77	9.18	9.18	12.79	12.79
Social Inclusion & Participation		71.76	71.76	45.52	45.52	37.80	37.80
Education		8.70	8.70	8.70	8.70
Transport		62.30	62.30	31.15	31.15	55.25	55.25
Personal Costs		4.06	8.71	3.54	8.19	7.08	7.08
Childcare		52.89
Insurance		2.28	2.28	2.28	2.28	7.21	7.21
Savings & Contingencies		29.98	29.98	19.93	19.93	10.64	10.64
Core Expenditure		390.27	394.92	240.81	298.35	246.82	246.82

HOUSEHOLD INCOMES

Table 2 Two Parents & Two Children (Pre-School & Primary School Age)

I Unemployed, I Stay-at-home		I Employed Full Time, I Stay-at-home	
PRIMARY SOCIAL WELFARE		TAXABLE INCOME	
JobSeekers Personal Rate	188.00	Gross Salary	324.38
Qualified Adult	124.80	Income Tax	...
Qualified Child Increase	59.60	USC	9.12
		PRSI	...
Primary Social Welfare	372.40	Net Salary	315.26
SECONDARY SOCIAL WELFARE		SOCIAL WELFARE	
Child Benefit	60.00	Child Benefit	60.00
		Family Income Supplement	173.00
BSCFA	1.92	BSCFA	1.92
Fuel Allowance	...	Fuel Allowance	...
Total Income	434.32	Total Income	550.18

Table 3 One Parent & One Children (Primary School Age)

I Stay-at-home		I Employed Full Time	
PRIMARY SOCIAL WELFARE		TAXABLE INCOME	
One-Parent Family Payment	188.00	Gross Salary	324.38
Qualified Child Increase	29.80	One-Parent Family Payment	107.80
		Income Tax	...
		USC	9.12
		PRSI	...
Primary Social Welfare	217.80	Net Income	423.06
SECONDARY SOCIAL WELFARE		SOCIAL WELFARE	
Child Benefit	30.00	Child Benefit	30.00
		Family Income Supplement	50.00
BSCFA	1.92	BSCFA	...
Fuel Allowance	10.00	Fuel Allowance	10.00
Total Income	259.72	Total Income	513.06

Table 4 Pensioner, Living Alone

Non-Contributory Pension		Contributory Pension	
INCOME		INCOME	
Non-Contributory Pension	219.00	Contributory Pension	230.30
Living Alone Allowance	7.70	Living Alone Allowance	7.70
Fuel Allowance	10.00	Fuel Allowance	10.00
OTHER SUPPORTS		OTHER SUPPORTS	
Household Benefits Package	Yes	Household Benefits Package	Yes
Medical Card	Full	Medical Card	Full
Total Income	236.70	Total Income	248.00

RENT SUPPLEMENT

Table 5 Calculation of Rent Supplement & Tenant Contribution

2014	TWO PARENT		ONE PARENT	
	Pre-School & Primary School		Primary School	
	I Unemployed, I Stay-at-home	I Employed FT, I Stay-at-home	Stay-at-home	Employed FT
Gross Assessable Income	372.40	497.38	217.80	482.18
ASSESSABLE INCOME				
- PRSI
- Travel Costs	...	28.38	...	28.38
- SWA Rate	370.40	370.40	215.80	215.80
Excess Income	2.00	98.59	2.00	237.99
ADDITIONAL INCOME DISREGARD				
Gross Salary + FIS	...	497.38	...	374.38
Other Social Welfare	372.40	...	217.80	107.80
Additional Income	...	126.98	...	266.38
Additional Disregard	...	87.99	...	122.84
TENANT CONTRIBUTION				
Contribution from means	2.00	10.60	2.00	115.15
Min household contribution	40.00	40.00	30.00	30.00
Total weekly contribution	42.00	50.60	32.00	145.15
RENT SUPPLEMENT PAYABLE				
Weekly Rent	225.00	225.00	219.23	219.23
Weekly Contribution	42.00	50.60	32.00	145.15
Rent Supplement Payable	183.00	174.40	187.23	74.08