

# A Review of Fuel Poverty and Low Income Housing



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## Table of Contents

<b>Executive Summary</b>	<b>02</b>
<b>Chapter 1 Introduction</b>	<b>06</b>
1.1 Background	06
1.2 Objectives of the Review	06
1.3 Method	07
1.4 Report Structure	07
<b>Chapter 2 Literature Review</b>	<b>10</b>
2.1 Introduction	10
2.2 Defining Fuel Poverty	10
2.3 Measuring Fuel Poverty	11
2.4 Housing Conditions	12
2.5 Income	12
2.6 Thermal Efficiency	13
2.7 Greenhouse Gas	13
2.8 Winter Mortality	14
2.9 Policies to Address Fuel Poverty in Other Countries	15
<b>Chapter 3 Fuel Poverty Data Analysis</b>	<b>18</b>
3.1 Introduction	18
3.2 Data Sources	18
3.3 National Results: ECHP	19
3.4 Urban Institute Ireland Household Survey	27
3.5 Summary	37
<b>Chapter 4 Analysis of Existing Services</b>	<b>40</b>
4.1 Introduction	40
4.2 Services Provided by Non-Governmental Organisations	40
4.3 Government Policies Impacting on Fuel Poverty	46
4.4 Conclusions	51
<b>Chapter 5 Impact of Economy-wide Instruments on Fuel Poverty</b>	<b>54</b>
5.1 Introduction	54
5.2 National Climate Change Strategy	54
5.3 Economy-Wide Instruments	55
5.4 Impact of Economy-wide instruments on Fuel Poverty	57
<b>Chapter 6 Sustainable Energy Ireland's National Programme</b>	<b>62</b>
6.1 Introduction	62
6.2 Factors to be Considered In Relation to Disbursement of Funds	62
6.3 Guidelines for Fund Disbursement	62
6.4 Government and Community Response to Fuel Poverty	66
<b>Annexes</b>	<b>70</b>

# Executive Summary

## Background and Objectives

This report has been prepared for Sustainable Energy Ireland by Fitzpatrick Associates, in conjunction with the Urban Institute, UCD. The overall purpose of the study is to present a situation review of fuel poverty and low-income housing, and to assist Sustainable Energy Ireland in making the best use of resources available to address the problem.

The study utilises two different data sources (Eurostat and a custom designed survey carried out by UCD) to assess the nature and scale of fuel poverty in Ireland. Consultations were also undertaken with Government Departments and community groups involved in addressing the problem. Previous research work which has examined the issue of fuel poverty was also examined.

## Previous Research

A number of approaches have been applied in assessing the level of fuel poverty in Ireland and elsewhere. Some methods were based solely on the proportion of houses that were deemed to be adequately warm. Subsequently an approach based on the level of household expenditure on fuel was used to measure fuel poverty levels. More recent research has advocated the use of a 'consensual' approach to measuring fuel poverty whereby a broad range of energy related deprivation indicators are amalgamated in order to obtain a single composite measurement of fuel poverty. The 'consensual' approach has been used in this review in order to assess the nature and scale of fuel poverty in Ireland. Previous research on fuel poverty in Ireland ('Homes for the 21st Century') indicated that fuel poverty levels in Ireland are amongst the highest in northern Europe.

## Quantifying Fuel Poverty in Ireland

Eurostat data were used to measure the level of fuel poverty over the period 1994-97 (most recent period for which data are available) while data from a UCD household survey was used to provide a 'snapshot' of fuel poverty levels in 2001.

Results from the Eurostat data indicate that:

- an average of 91,000 households experienced fuel poverty in Ireland over the period 1994-1997;
- the incidence of fuel poverty declined over this period as a result of rising household income levels and improved housing standards;
- those experiencing fuel poverty are more likely to live in semi-detached or terraced houses than in other house types;
- while the incidence of fuel poverty is higher amongst tenants than owner-occupiers, in absolute terms a greater number of those experiencing fuel poverty are owner-occupiers than other housing tenure types.

The UCD data allow a distinction to be made between those who experience 'persistently' and those who experience it 'intermittently'. The results from the Eurostat data and UCD data are somewhat different as the level of fuel poverty measured by the former is considered to be that of a 'persistent' or 'chronic' nature only.

The main results from the UCD data are:

- 62,000 households (4.7%) were found to persistently experience fuel poverty;
- an additional 165,000 households (12.7%) were found to experience fuel poverty intermittently. The total number of households found to be experiencing fuel poverty in 2001 was 227,000;
- the incidence of fuel poverty was found to be marginally higher in the BMW Region than in the S&E Region;
- single person households experience a higher incidence of fuel poverty than other household types;
- a linear relationship was found between the incidence of fuel poverty and household income levels. A marked decline in fuel poverty levels was found once household incomes exceeded about €30,000.

## Community and Government Responses to Fuel Poverty

There are currently six community groups delivering thermal efficiency services to a total of circa 3,000 homes annually in Ireland. The majority of groups are mainly funded by FÁS (through employment schemes) and the most active groups are based in the Dublin area – 70% of all houses serviced in 2001 were located in the Dublin area. A number of additional groups have experience in addressing fuel poverty in the past or envisage doing so in the future.

## Economic Instruments and Fuel Poverty

The introduction of economic instruments (carbon taxes or emissions trading) is likely to have both negative and positive impacts on fuel poverty. The negative impact would be that fuel prices would increase and if corrective action is not taken fuel poverty levels could rise considerably. Those most at risk from fuel poverty use dirtier and less economic fuels and would therefore suffer proportionally greater from the introduction of economic instruments. Either carbon taxes or the auctioning of tradable permits would offer the potential for revenue recycling.

## Study Recommendations:

Sustainable Energy Ireland's Fund Disbursement Programme

In order to make the most effective use of Sustainable Energy Ireland's available resources the following recommendations are made:

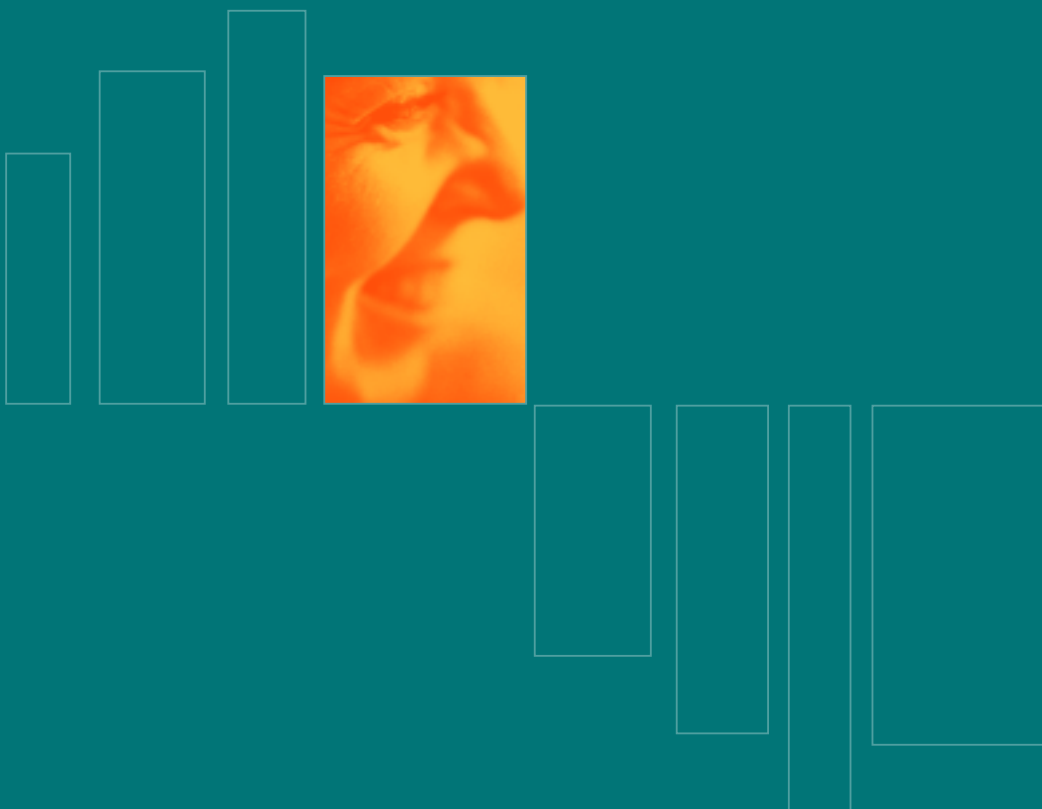
- about 20 community groups should be selected to deliver the programme at national level. It is believed that this number of groups is required in order to achieve a reasonable level of geographic coverage;

- a target of 18,000 homes has been set for the period 2000-2006. It is recommended that the majority of these should receive a relatively 'basic' package of thermal efficiency measures while 400 homes should receive a 'whole house' approach to energy conservation. For budgetary reasons it is not considered possible to deliver the 'whole house' approach to a greater number of houses;
- adequate geographical coverage should be sought and in particular groups operating outside the greater Dublin area should be encouraged to deliver thermal efficiency services. At least 65% of the available funding should be allocated to groups operating outside the greater Dublin area. A greater focus should also be placed on targeting those experiencing fuel poverty in the private housing sector as interventions to date have tended to focus on local authority housing;
- the total level of funding allocated to each group should be based on business plans submitted, the groups' capacity to deliver the services and factors such as geographical dispersion;
- a maximum of €250 per house should be allocated per house but in some exceptional circumstances additional funding to cover travel costs could be allocated to groups operating in very remote areas;
- groups without experience in delivering thermal efficiency measures should receive once-off grants at start-up for the purpose of capacity building and equipment purchase.

### Other Issues

- while the actions of a number of Government Departments impact on the issue of fuel poverty, no individual Department has specific responsibility for addressing the problem. It is therefore recommended that an Inter-Departmental Working Group be established in order to co-ordinate the activities of Government Departments in relation to this important issue;
- revenue generated from the introduction of economic instruments could be used in a number of ways in order to alleviate the negative impacts of fuel poverty. Such mechanisms would include: increasing social welfare payments; upgrade grants to tenants and owner-occupiers; conversion grants to enable a shift to more efficient fuels and tax credits for improving the thermal efficiency of dwellings;
- Sustainable Energy Ireland should play a leading role in promoting the level of awareness of fuel poverty at government and community level. It should also provide support, advice and detailed guidelines on the standards to which thermal efficiency services should be delivered to community groups (if the programme is delivered via community groups).

# Chapter 01: Introduction



## 1.1 Background

This is a Report of the situation review of fuel poverty and low-income housing carried out on behalf of SEI by Fitzpatrick Associates, in conjunction with the Urban Institute, UCD.

Fuel poverty is defined in this report as the inability to heat ones home to an adequate (safe and comfortable) temperature owing to low income and poor (energy inefficient) housing. Consideration is also given to the issue of fuel use for lighting, cooking and other appliance use. Previous research has shown that fuel poverty can have a significant impact on human health and leads to higher levels of winter mortality.

SEI has a budget of €7.62m over the period 2000-2006 to the address the issue of fuel poverty. It has established a target to fund the provision of thermal efficiency services in 18,000 homes over this period.

## 1.2 Objectives of the Review

The overall objective of this review is to:

- “identify the optimum use of SEI’s limited funds towards the achievement of the specified targets and furthering the government’s policy objective with regard to fuel poverty”; and
- “make clear recommendations on the composition and content of the guidelines and fund disbursement plan”.

The specific Terms of Reference of the review are outlined in Figure 1.1.

### FIGURE 1.1: STUDY TERMS OF REFERENCE

The requirements of the review are to:

- a) “review existing, relevant studies and reports;
- b) review current levels of fuel poverty in Ireland with consideration of household income, tenure, type and regional diversity;
- c) consider how economy wide instruments, if applied, could impact on the levels of fuel poverty in the country including recommendations for avoiding such negative impacts;
- d) identify financial supports currently available in addressing all aspects of fuel poverty;
- e) compile an inventory of current agencies involved in implementing energy efficiency measures for fuel poor, the scale of their activities, their funding structures/sources, training and standards in the area;
- f) identify what agencies in the state sector are addressing the issues and to what degree do they co-operate and are their activities complementary. (This refers typically to local authorities, health boards, ADPs, Combat Poverty Agency, FÁS).

### 1.3 Method

The study method incorporates a combination of data analysis, survey work, literature review and consultations. Two data sets have been used in order to assess the nature and scale of fuel poverty in Ireland. These are the European Community Household Panel (ECHP) and a household survey undertaken by the Urban Institute in University College Dublin. The former of these is a time series data set and allows an examination of fuel poverty trends over time. The UCD data set facilitates a more detailed examination of socio-economic and demographic factors impacting on fuel poverty levels.

Questionnaires were completed by all community groups involved in the delivery of thermal efficiency services to fuel poor households. Consultations were also held with a number of government departments, community groups and state agencies.

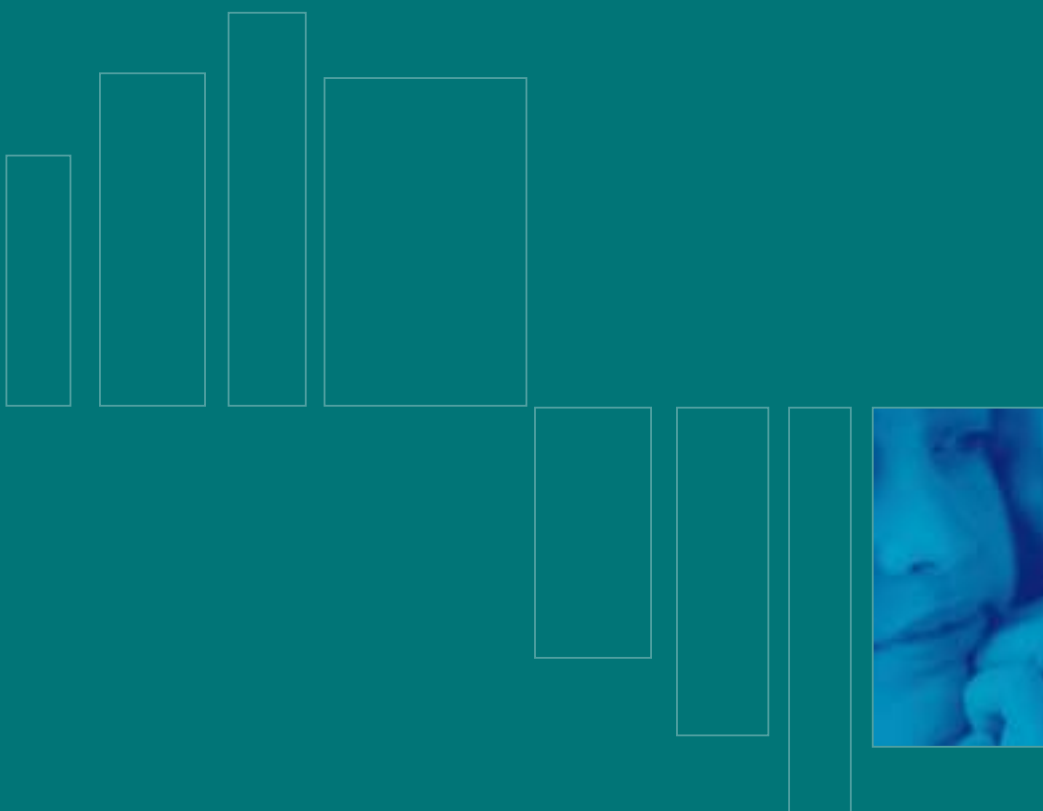
### 1.4 Report Structure

The following chapters of the report are structured as follows:

- Chapter 2 contains a review of previous research on fuel poverty. It examines relevant literature and provides an overview of government responses to fuel poverty in other countries;
- Chapter 3 examines the nature and scale of fuel poverty in Ireland. It presents a detailed analysis from the ECHP and the UCD survey work.
- Chapter 4 provides an overview of the activities of community groups addressing the issue of fuel poverty and the impact of government policies on the problem;
- The issue of how economy-wide instruments might impact on the levels of fuel poverty, and programmes to address it, is reviewed in Chapter 5,
- Chapter 6 provides recommendations in relation to the fund disbursement plan.



# Chapter 02: Literature Review



## 2.1 Introduction

This Chapter provides an overview of previous research on fuel poverty. The level of fuel poverty is linked to an interplay between the following variables: income/affluence, the prioritisation of expenditure, the thermal efficiency of housing structures, heating equipment and fuel costs. Greenhouse gas emissions/control and seasonal mortality are affected by the level of fuel poverty. The issues stemming from the literature on these core topics are covered below.

## 2.2 Defining Fuel Poverty

Fuel Poverty was initially identified in the 1970s when income levels were generally lower than today, fuel prices were higher, in part due to the oil crisis, and housing structures/conditions were seen as inadequate. Lewis (1982) provided a relatively early definition of fuel poverty in a seminal study conducted in the early 1980s. His definition was succinct: "The inability to afford adequate warmth in the home". Later, Boardman (1991), in her widely regarded doctoral thesis on fuel poverty, went one step further and included the crucial energy-efficiency component into the definition:

*"The inability to afford adequate heat because of energy inefficiency in the home"*

Clinch and Healy (2001) give a comprehensive definition of fuel poverty:

*"The inability to heat ones home to an adequate (safe and comfortable) temperature owing to low income and poor (energy inefficient) housing"*

Moreover, 'ones home' could be occupied by individuals in different socio-economic groupings, eg pensioner couple, single pensioner or lone parent. This level of occupancy will impact upon the heating standard to be obtained. Similarly, the type of heating system or fuel source, eg gas, electricity, solar or coal also impacts upon the heating standard to be obtained.

Fuel poverty essentially arises out of an interaction between low incomes, expenditure prioritisation, fuel prices, high fuel expenditure on uneconomic fuels, poor insulation, inefficient heating methods and low capital investments in building structures. The interaction of these variables means residents are unable to afford warmth in their home. Research to-date<sup>1</sup> has indicated that fuel poverty has negative impacts on human health and in particular the health of children, the old, the sick and infirm.

The adverse effects on the overall quality of life of the residents, leads to an "opportunity cost" (DETR, 1999) where residents use a larger proportion of their income to keep warm. Research emerging from the European Union Joule<sup>2</sup> programme is contributing to our understanding of fuel poverty within Europe.

Research to-date suggests that an effective way to lessen fuel poverty is through capital investment, not income support as is the case for traditional poverty. Poor housing conditions often add to social deprivation (Pringle et al 1999). Furthermore, "it is recognised that a wide range of policy initiatives in the areas of housing, health and social inclusion can have a positive impact on households suffering from fuel poverty" (NEA 2001). It is a decision for policy makers whether or not to allocate scarce resources to energy efficiency programmes to assist low-income residents experiencing fuel poverty.

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<sup>1</sup> Healy, J. Housing Standards and Excess Winter Mortality in Journal of Epidemiology & Community Health (2000).

<sup>2</sup> JOULE - Joint Opportunities for Unconventional or Long-term Energy supply: Specific research and technological development programme in the field of non-nuclear energy, 1990-1998, particularly energy saving, fossil fuels and renewable sources of energy. Now administered under the Fifth Framework Programme (1999-2002).

## 2.3 Measuring Fuel Poverty

Fuel poverty can be measured in a number of ways and three major approaches are explored here.

### Temperature

The earliest research on fuel poverty based its discussion of fuel poverty on “adequate home-heating” and “adequate warmth” (e.g. Lewis, 1982 and Boardman, 1986). The term ‘adequate warmth’, however, is problematic, as various researchers and disciplines regard varying temperatures as adequate for human health and comfort. The World Health Organisation, for instance, takes 21°C as a benchmark temperature for those more vulnerable, such as the elderly and handicapped. Boardman generally advocates a temperature of 18°C. Most medical literature favours a minimum temperature of 16°C for able-bodied, healthy people, but recommends a minimum of 18°C for sedentary activities and 21°C for the more vulnerable. These guidelines are taken in this paper as appropriate measurements of ‘adequate warmth’.

By this definition, fuel poverty may be calculated by quantifying those households which fail to achieve minimum ‘adequate’ levels of household warmth. Such an approach, though theoretically simple, is problematic for a number of reasons, chiefly because of the inadequacy and unreliability of data on household temperatures. Milne and Boardman (2000) have found, for example, that living-room temperature is not a good indicator of whole-house average temperature, as a warm living room may be found in an otherwise cold house, especially in low-income households without central heating. In addition, occupancy plays an important factor in household warmth. A partially heated home (with a low mean whole-house temperature) may be classified incorrectly as ‘fuel-poor’ if, say, only one person inhabits the house and only part of the house is occupied and heated. Furthermore, intermittent occupancy (e.g. the house is only occupied for a few hours in the evening and at night) may also distort the results.

### Expenditure

Another approach to measuring fuel poverty involves a more precise, quantitative method. Households spend varying proportions of their income on fuel; Clinch and Healy (1999) demonstrated that low-income households in Ireland spend three times more on energy in the home relative to their income than high-income households. As such, a ‘fuel-poverty line’ can be set – similar to that in poverty research – where households are considered fuel poor if they spend more than ‘X%’ of their income on energy in the home. Boardman advocates a 10% threshold based on net income excluding housing costs.

Such an approach, while worthwhile, nevertheless fails to capture the deprivation and social-exclusion elements of fuel poverty. There does not appear to be any substantial rationale behind setting the budget line at 10% of net income, and, therefore, this approach has been seen by many as wholly lacking in any scientific basis. Studies using this method to calculate fuel poverty in the UK (e.g. the Department of the Environment, Transport and the Regions, 1999) have reported levels far greater than those using a Consensual (social indicators) approach. A further difficulty with the expenditure approach is that many households simply cannot afford adequate fuel and their level of expenditure on fuel therefore does not accurately indicate the extent to which they experience fuel poverty.

### Consensual

This approach follows the method pioneered by leading poverty and deprivation researcher, Peter Townsend. Certain goods and services are considered to be necessary, not just by academics and ‘experts’

but by society at large. Some of these necessities fall under the umbrella of fuel poverty; the absence of certain items regarded as essential household attributes may be considered indications of fuel poverty. For example, possession of central heating in the home is considered by almost everyone in the UK and Ireland to be a necessity, as is double-glazing (Callan et al., 1993, Gordon et al., 2000). The lack of either of these household features acts as an indicator of fuel poverty using an approach founded on consensual social indicators. Such 'absolute' approaches attempt to capture the wider components of fuel poverty, such as social exclusion and material deprivation, as opposed to approaches based solely on expenditure or household temperature.

## 2.4 Housing Conditions

Results of a provisional analysis by Healy (2001), assessing housing conditions and fuel poverty in Europe shows that "southern Europe suffers from the poorest housing conditions and the highest levels of fuel poverty (due to, in part, the high levels of inadequate heating facilities and inadequate household income), with Portugal demonstrating the highest incidence overall, while in northern Europe Belgium, France and Ireland are demonstrating relatively high rates of fuel poverty. Such results are remarkable when it is considered that these three countries all enjoy living standards considerably above the EU-average."

Patterns of housing tenure differ in these countries also. Empirical data or policy documents from northern European countries or Canada (these countries were looked at as they were considered to have somewhat similar climatic and economic characteristics) are difficult to find due to fact that fuel poverty is not a significant problem. In these countries, houses are well protected from the cold (ie high domestic thermal efficiency), otherwise there would be a high proportion of cold related deaths.

Extensive research work<sup>3</sup> was commissioned by Energy Action Ltd in 1999 in which the link between housing conditions and fuel poverty in Ireland was examined. The Report – Homes for the 21st Century – examined in detail the costs and benefits of retro-fitting the Irish housing stock. The key findings of the report were:

- "fuel poverty in Ireland is among the highest in Europe;
- Irish housing standards are amongst the lowest in Northern Europe from the point of thermal efficiency;
- the least well off tend to live in the worst of these houses, and the share of income they devote to heating is three times higher than the expenditure share of the average household;
- excess morbidity and mortality in Ireland due to poor housing standards is amongst the highest in Europe;
- Ireland will have great difficulty in meeting its agreed targets for greenhouse gas emissions, which are mainly associated with energy consumption."

The report found that there would be considerable long-term economic, environmental, health and social benefits if the thermal efficiency of the Irish housing stock was increased to the requisite level.

## 2.5 Income

Income is one of the key factors influencing the level of warmth in homes. Evidence indicates that the least affluent tend to live in the worst houses, spending a disproportionate amount on fuel relative to the average family (Clinch

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<sup>3</sup> Brophy, V., Clinch P., Convery F., Healy, J., King, C., Lewis, O. Homes for the 21st Century - the Costs and Benefits of Comfortable Housing for Ireland. (1999).

and Healy, 1999). The purchase of fuel involves a transaction; this transaction is determined by prices and incomes. When purchasing warmth, the price depends upon housing conditions, such as the technical characteristics of, for example, the central heating system or the building fabric, as well as the type of fuel purchased.

The level of income of the resident also impacts upon their ability to make capital investment improvements to their homes. The government's responsibility to this group of people, therefore, covers both income support and capital investment. If fuel becomes more expensive, households find it increasingly difficult to heat their homes adequately, and, as such, fuel poverty emerges as a serious political, environmental, social and public-health issue. A recent study by the UK Government (DEFRA and DTI, 2001)) and other recent research (Brophy et al., 1999; Healy, 2001a; and Milne and Boardman, 2000) confirmed both the persisting nature and considerable scale of the problem. In addition, fuel poverty has many attendant effects, most notably on human health (Clinch and Healy, 1999, 2000a). Yet, the net benefits to society (in terms of reduced energy consumption and environmental emissions and improvements in health and comfort) of eradicating fuel poverty through implementing domestic energy-efficiency programmes are very substantial (Clinch and Healy, 2001).

## 2.6 Thermal Efficiency

The thermal efficiency of the Irish dwelling stock is amongst the lowest in Europe. In order to alleviate this social problem, a ten-year program of retro-fitting the existing housing stock to improve its thermal standards has been suggested. The results of a detailed cost-benefit analysis have indicated that such a project would result in a clear net benefit to society (Clinch and Healy, 1999).

Previously, income subsidies were stressed as a key element in alleviating fuel poverty. When home income levels remain static, the current research shows that:

- placing warmth in a thermally inefficient home is a bad investment;
- a long term solution to fuel poverty revolves around removing house thermal inefficiencies;
- gradually, thermal inefficiencies are being removed and are becoming integrated into national (for example, the Home Energy Efficiency Scheme – HEES in Britain) and regional standards systems (for example within the European Union), integrating energy efficiency into house structures;
- the more vulnerable segments of the population tend to live in properties with higher incidence of thermal inefficiencies.

The research suggests that in order to improve thermal/energy efficiency in houses, behavioural changes will assist, but ultimately, investment in capital stock is key. Nevertheless, the budget constraints faced by government departments and the lack of a focus to co-ordinate their activities, hampers the delivery of capital investments.

## 2.7 Greenhouse Gas

“Ireland is having extreme difficulty in meeting its target for stabilisation of greenhouse gas emissions” (Clinch & Healy, 1999). The National Climate Change Strategy notes that “climate change is identified as the most significant and threatening global environmental problem facing humanity today”.

The issue stemming from the research is to ensure that low-income homes are provided with affordable warmth at the same time as achieving environmental objectives. Research has found that there are few

cases that have been monitored and analysed to the level necessary to undertake this sort of analysis, thus enabling energy efficient schemes to achieve environmental standards.

The research indicates that the poor spend twice as much on fuel, as a proportion of income, and are more likely than better off families to be in all electric homes or using electricity for heating. Because of high emission levels from electricity, there needs to be an awareness of the varying emission levels when attempting to provide poor households with affordable warmth. The imposition, for example of a carbon tax or another fuel substitution method, should therefore not penalise the poor, nor adversely affect their consumption. The relative values of policies based on revenue issues (taxes, income support) versus those using direct capital investment is likely to be the foundation of further research in relation to greenhouse gas emissions.

A noteworthy paragraph by the Watt Committee (1994) sums up the issue at hand:

*“Upgrading and additional income for fuel will not, initially, result in large reductions of fuel use. The conflict with policies of CO<sub>2</sub> reduction has to be resolved in favour of upgrading and additional income support, where the CO<sub>2</sub> effects countered by other policies aimed, in part, at non domestic users and, in part, at those domestic users who have sufficient resources both to buy the amount of fuel they need and to invest some resources, as tenants or owners, in energy improvements. If it is assumed that adequate additional income for warmth is made available, then any improvements to houses will yield immediate fuel savings and CO<sub>2</sub> reductions. If this is not assumed, then the fact that improvements to the houses of low-income households will yield little in the way of fuel savings and CO<sub>2</sub> reductions in the short term should be viewed alongside the urgent need to improve living conditions. In the medium and long term they, together with all houses, will make a significant contribution to these reductions. Investment in domestic appliances that are more energy efficient will have immediate economic benefits to households as well as reducing CO<sub>2</sub> emissions (Markus, 1994).”*

## 2.8 Winter Mortality

In Ireland, “excess winter mortality due to poor housing standards is among the highest in northern Europe” (Clinch and Healy, 1999).

Winter peaks in mortality have been shown to relate to cold stress in a number of countries. House energy inefficiencies linked to mortality rates predominately affect the vulnerable (sick, old etc) and are concentrated among lower social classes. The research shows that the number of winter deaths is reducing. Annually, there are between 1,500-2,000 excess winter deaths in Ireland. Clinch and Healy’s (2000) work hypothesises a “link between poor housing standards (in terms of thermal efficiency and heating systems) and high rates of excess winter mortality in Ireland.” Specifically, “relative excess winter mortality from cardiovascular disease in Ireland is 2.1 times that in Norway and for respiratory disease it is 1.4 times the Norwegian figure.” The authors suggest that the differences shown stem from the fact that Irish housing standards are lower than Norway’s, “allowing falls in outdoor temperature to have a greater impact on internal temperatures”. Increasingly, the research acknowledges that both indoor and outdoor temperatures are relevant to seasonal mortality.

Inconclusive evidence from a seasonal mortality study carried out on the USA, Europe and Japan suggested that the wider use of central heating was responsible for a decrease in the “size and seasonal variation in mortality” (Henwood, 1997). Furthermore, another suggestive relationship says that respiratory illnesses usually peak in winter and dip in summer, with the peak in winter being unusually large in Britain when compared to other countries with comparable climates. Other issues surrounding seasonal mortality are the

effects of damp buildings, humidity, fungal growth and exposure to carbon monoxide due to poor ventilation. These all place pressures on human health, especially when occurring in colder environments. The downward trend in the level of seasonal mortality has been linked to the expansion of central heating, with for example, research in the Netherlands highlighting causal evidence. Countries with higher insulation standards, such as those in Scandinavia, have lower “seasonal variations in mortality than in warmer more Southerly countries which have less central heating” (Henwood, 1997). The insulation of British and Irish housing stock lags in this respect.

## 2.9 Policies to Address Fuel Poverty in Other Countries

In order to outline the approach of a European country, policies introduced by Denmark, to tackle the issue of fuel poverty are highlighted in Table 2.1. In addition, Table 2.2 highlights the policies introduced in the UK to tackle fuel poverty.

**TABLE 2.1 DENMARK FUEL POVERTY POLICIES  
(INSTITUTE OF LOCAL GOVERNMENT STUDIES – DENMARK 1998)**

The first subsidies aimed at the energy sector were introduced in 1977. These subsidies were initially aimed at industry, and by the beginning of the eighties, subsidies directed at households were also introduced. Subsidies aimed at the housing sector mainly focus on reducing the consumption of energy for space heating. Some of the schemes aim to support the installation of more energy-efficient heating systems whereas others support investments in energy efficiency.

In 1998, subsidies aimed directly at the housing sector included:

- Exploitation of renewable energy sources (The majority of the support is granted for systems exploiting solar energy)
- Conversion of heating systems in old houses into district heating (A maximum of 50% of the expenses for installation are covered by this scheme. The scheme started in 1992 and will finish in 2002);
- Subsidy for energy savings in old-age pensioner dwellings (The scheme started in 1992 with no time limit. The background to the scheme was an investigation showing that old-age pensioners had higher expenses for heating than a typical household. The building must have been built before February 1979. Efficiency improvements in both space heating and hot water are included. Both owners and tenants can apply. The subsidy covers up to 50% of the investment.);
- Installation of central heating in houses with electricity-based heating systems (subsidy was introduced in 1996. It is aimed at private and public buildings with electricity-based heating situated in areas without collective heat supply systems. This subsidy ended in the year 2000. Subsidies were granted for one family dwellings, multi-family dwellings, institutions and public owned buildings. Financial assistance was given to the purchase and installation of the distributional part of a central heating system.);
- Electricity Saving Trust (This subsidy is the newest. The purpose of the subsidy is to promote reductions in the consumption of electricity in dwellings and public sector institutions. It is primarily aimed at converting the heating system in dwellings situated in areas with district heating. The subsidy has no time limit.).

Increasingly, taxes have also begun to play a more important role in the government’s policy on energy matters.

**TABLE 2.2 UK POLICIES AND ACTIVITIES DIRECTED TOWARDS FUEL POVERTY**

**UK Fuel poverty activity**

**UK**

- Home Energy Conservation Act 1996
- Fuel Poverty Strategy 2001
- Energy Efficiency Commitment (formerly Standards of Performance scheme) – deregulated gas and electricity suppliers
- Housing Green Paper
- Winter Fuel Payments
- Cold weather payments
- Health Action Zones
- £375m spent on fuel poverty between 1999 and 2002
- UK strategy for sustainable development – “A better quality of life”
- Local Agenda 21 strategies required by all local authorities
- Transco Affordable Warmth – central heating scheme
- Energy Savings Trust Programmes: HECAAction schemes; Energy Efficiency Partnership for Homes; Energy Efficiency Advice Centres; Community Energy Programme; Energy Services; Light switch; School Energy; Future Energy; and Transport Action
- HECAAction: A programme of grants for local authorities to assist them in meeting commitments under the Home Energy Conservation Act, a local authority support programme and a national network of energy advice centres providing advice and support to local communities. Approximately £3.5 million was available annually (from 1996 to 2001) from the Energy Savings Trust to pump prime schemes implementing HECA. The funding is available on a competitive bidding basis. HECAAction is primarily intended to kick-start schemes that encourage householders to invest their own money in measures, and therefore most of the schemes target the private sector. Grants from £20k to £300k are available. The first five years of funding saw a total of £18.5 million awarded to 77% of the UK’s energy conservation authorities.
- Energy Efficiency Advice Centre
- Warm Zones Initiative

**Variations**

**England**

Warm Front Team – insulation, heating and central heating

**Northern Ireland**

Warm Homes Scheme & Warm Homes Plus – insulation, heating and central heating  
 Energy Planning Pathfinder Initiatives  
 Electricity Energy Efficiency Levy Programme  
 Housing Executive (Regional Housing Authority): Heatsmart Advice

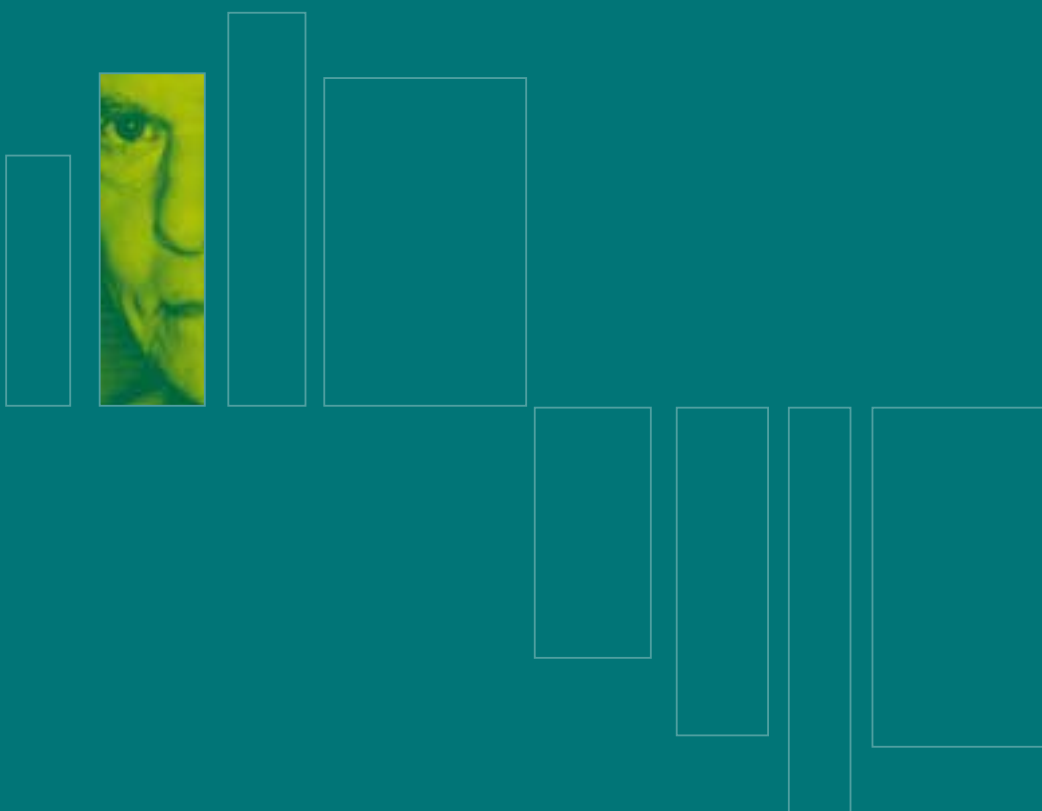
**Scotland**

Warm Deal for Scotland - insulation, heating and central heating for all pensioners

**Wales**

HEES and HEES Plus – insulation, heating and central heating

# Chapter 03: Fuel Poverty Data Analysis



## 3.1 Introduction

This Chapter presents an analysis of the nature and scale of fuel poverty in Ireland. The European Community Household Panel (ECHP) and a household survey undertaken by the Urban Institute in University College Dublin are the data sources used. A detailed analysis of the socio demographic and economic factors impacting on fuel poverty is also set out.

## 3.2 Data Sources

### 3.2.1 Introduction

Two data sources are used in this analysis. The European Community Household Panel (ECHP) is used to derive a composite measurement of fuel poverty across time, while a domestic household survey, developed and commissioned by the Urban Institute, University College Dublin, is also employed to calculate the most up-to-date estimate of fuel poverty. The UCD survey also allows for more disaggregation of data by socio-demographic and socio-economic variables and for the severity of fuel poverty to be calculated.

The total number of households and the total population in Ireland for the years 1994-2001 were obtained through the Census of Population and the subsequent Quarterly National Household Surveys (formerly Labour Force Surveys) conducted by the CSO. Disaggregated results pertaining to specific population/household groups were cross-checked with published CSO data where available.

### 3.2.2 The ECHP

The ECHP is a standardised, multi-purpose and longitudinal survey, providing comparable information across EU countries on income, work and employment, poverty and social exclusion, housing, health and other diverse social indicators regarding the living conditions of private households and persons. The ECHP provides harmonised methodology and results, by using a centralised questionnaire. During the first Wave of the questionnaire, the collection of data occurred in 12 countries in Europe (all EU Member States in 1994); this increased to 13 in 1995 (when Austria joined), 14 in 1996 (with the inclusion of Finland), and 15 in 1997. Consequently, some flexibility was granted to each participating country to adapt common procedures to adjust for their own local situations. High response rates (more than 70%) were obtained for the three waves of the survey, and some 60,000 households and 130,000 adults were interviewed successfully in each Wave. The data used in this paper come from the first four Waves of the ECHP, undertaken during the 1994 to 1997 period. The sample sizes for each year in Ireland are as follows:

- Wave I (1994): 4,048 households (margin of error +/- 1.54);
- Wave II (1995): 3,584 households (margin of error +/- 1.63);
- Wave III (1996): 3,173 households (margin of error +/- 1.74);
- Wave IV (1997): 2,945 households (margin of error +/- 1.80).

The sample sizes decline as certain households cannot be found as a result of a death, the household moving etc. Nevertheless, the statistical significance of the results is impressive as can be seen by the margins or error reported above.

### 3.2.3 UCD Survey

A survey commissioned developed by the Urban Institute, UCD, is also used. This is a statistically representative, face-to-face household survey of 1,500 homes in Ireland (margin of error of +/-2.53). It was conducted in Spring 2001.

## 3.3 National Results: ECHP

### 3.3.1 Introduction

The ECHP data provide a (albeit short) time series so we can detect a reduction in the indicators of fuel poverty. It is important to recognise, however, that the data do not allow for a distinction to be made between persistent and intermittent fuel poverty<sup>4</sup>. The data are comprised of the three main components of the fuel-poverty equation: social indicators which pertain to household finances (fuel and utility bills), the building fabric (presence of damp, rot, etc.) and the heating system fitted in the house. The six indicators are split into two sub-groups: subjective indicators (based on householders' declarations) and objective indicators (based on factual characteristics or conditions of the dwelling). The results of each fuel-poverty indicator is discussed in detail, starting with the subjective indicators and followed by objective indicators. Many of the indicators, when examined independently, would not be adequate indicators of fuel poverty. However, taken together, they provide a reflection of the extent of some of the problems caused by inadequate warmth in the home.

### 3.3.2 Subjective Indicators

'Subjective' indicators of fuel poverty are self-reported indicators based on householders' declarations. There are three 'subjective' variables contained in the ECHP suitable for deriving estimates of fuel poverty, and the results of these indicators are now presented. All results are illustrated in Table 3.1.

**TABLE 3.1 SUBJECTIVE INDICATORS OF FUEL POVERTY: INCIDENCE AND NUMBERS AFFECTED 1994-97**

	1994	1995	1996	1997	Mean Incidence	Mean N
Unable to adequately heat home*	8.0	5.9	6.5	5.1	6.4	70,400
Unable to pay scheduled utility bills	8.4	6.3	6.1	4.9	6.4	70,400
Inadequate heating facilities	9.6	7.4	7.6	7.0	7.9	86,900

\* Due to any one or a combination of a number of factors.

SOURCE: HEALY AND CLINCH (2002)

<sup>4</sup> The UCD Survey ascertained whether respondents experienced fuel poverty constantly or only intermittently / occasionally e.g. during very cold weather.

## Households Unable to Afford Adequate Heat in the Home

Using data from 1994-97, an average of 6.4% of Irish households (70,000 homes) are found to be unable to adequately heat their home. There is a downward trend for those unable to heat their home, with 36% fewer households unable to do so in 1997 than in 1994. This result (and many of those below) is most likely a combination of an improving housing stock and the increase in per capita income over the 1990s.

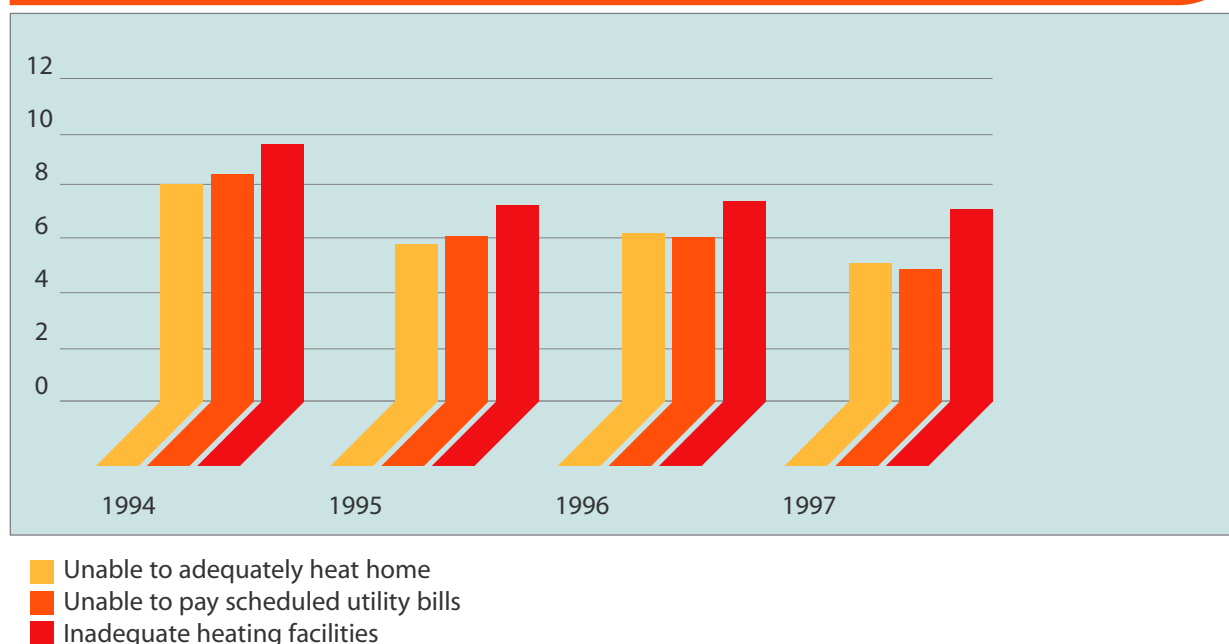
### Households Unable to Pay Utility Bills on Time

A household which has been unable to pay an utility (gas or electric) bill on time over the previous 12 months is likely to find it difficult to keep the home adequately heated and, as such, this indicates the potential existence of fuel poverty. In Ireland an average of 6.4% (70,000) of households over the years 1994-1997 were unable pay their utility bills in the previous 12 months. Data from the first survey wave (1994) reveal the highest incidence (8.4%), and there is a significant downward trend with this social indicator: a reduction of 42% is calculated between 1994 and 1997. It is worth noting that it may be that some people will pay their bills on time as a matter of principle but forgo other necessities.

### Households Declaring a Lack of Adequate Heating Facilities

A household declaring a lack of heating facilities cannot heat their home satisfactorily and efficiently and this is therefore a good indicator of fuel poverty. Approximately 87,000 homes in Ireland (7.9%) declare to have inadequate heating systems which is considerably less than the 21.3% which lack central or electric-storage heating; this finding is given some discussion later. In 1997, 27% fewer households reported inadequate heating facilities compared with 1994. The national results for of the survey are outlined in Figure 3.1.

**FIGURE 3.1 SUBJECTIVE INDICATORS OF FUEL POVERTY (% OF HOUSEHOLDS, 1994-97)**



### 3.3.3 Objective Indicators

'Objective' indicators of fuel poverty are based on fact or evidence and are not skewed by potential subjective biases, a. Although it is important to note that the data are self-reported by the householders rather than being objectively reported by, for example, quantity surveyors. There are three 'objective' variables contained in the ECHP suitable for deriving estimates of fuel poverty, and the results of these indicators are now presented. All results are illustrated in Table 3.2.

**TABLE 3.2 OBJECTIVE INDICATORS FUEL POVERTY: INCIDENCE AND NUMBERS AFFECTED, 1994-97**

	1994	1995	1996	1997	Mean Incidence	Mean N
Presence of damp	10.5	9.4	8.9	9.4	9.6	105,600
Presence of rot in windows	8.9	6.4	7.0	6.7	7.3	80,300
No central heating	23.8	20.8	19.8	16.4	20.2	222,200
SOURCE: HEALY AND CLINCH (2002)						

#### Damp Walls and/or Floors

The presence of damp may indicate that a dwelling is energy inefficient, or that it is ineffectively heated. In both cases, it is an indicator of fuel poverty. Households are checked for patches of damp on the walls, floors or foundations in their home. The results indicate that mould spores (damp patches) appear to be problematic in Ireland, with 9.6% of households (106,000 homes) experiencing damp. There is a decline in the incidence of this indicator across time, with 10% fewer households demonstrating damp problems in 1997 than in 1994. These results are particularly important from a public-health perspective, as the presence of damp is strongly associated with ill health in medical literature (e.g. Rudge and Nicol, 2000).

#### Rotten Window Frames

In this part of the survey, respondents are asked to check their windows for condition. Window frames which have become rotten are not energy efficient and, as such, can be considered a good indicator of fuel poverty. In Ireland 7.3% of households exhibited rotten window frames between 1994 and 1997, which amounts to 80,000 homes. Between 1994 and 1997, there was a quarter fewer households declaring this problem.

#### Lacking Central or Electric-Storage Heating

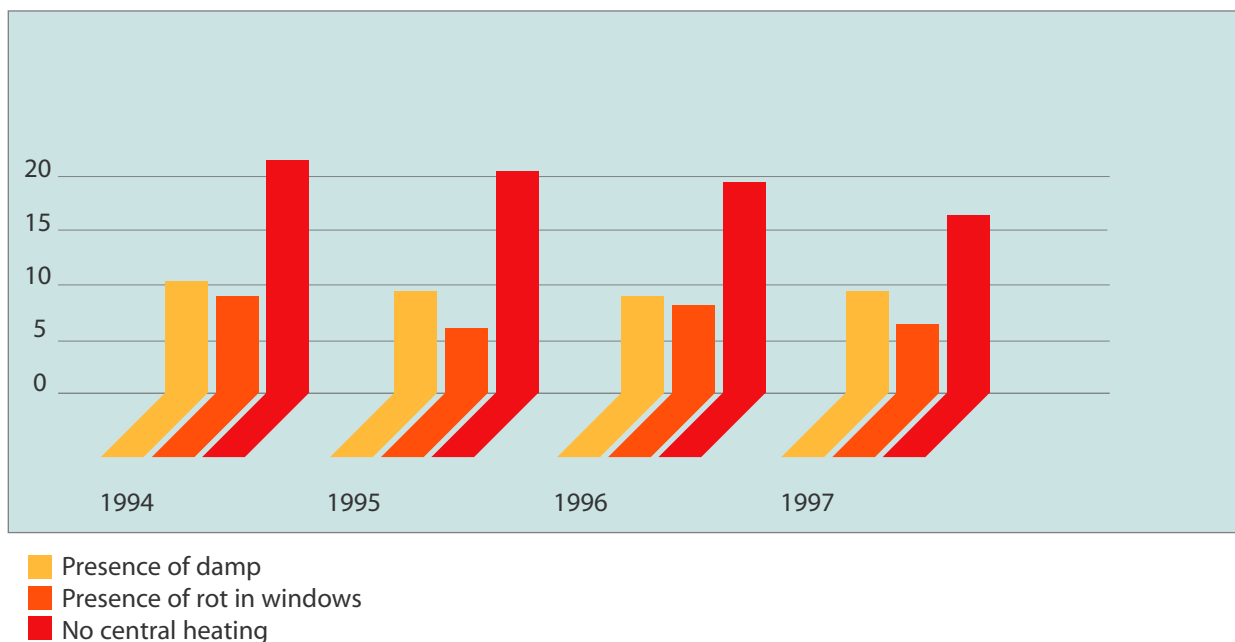
The lack of either central heating or electric-storage heating is a good objective indicator of fuel poverty. This indicator acts as an interesting comparison with the subjective indicator of fuel poverty, 'Households Declaring a Lack of Adequate Heating Facilities'. Some 20.2% of households in Ireland (222,000 homes) did not possess central heating or electric storage heaters between 1994 and 1997. Some 31% fewer households declared this objective indicator of fuel poverty in Ireland in 1997 than in 1994. This indicator of

fuel poverty is reported at a repeatedly higher incidence than any other indicator across all countries in the study; yet, the provision of central heating is one of the most effective measures in eliminating fuel poverty.

When these results are cross checked with the corresponding subjective indicator regarding ‘adequate heating facilities’ they imply that about 135,000 Irish households (12.3%) have “inadequate” heating facilities. Clinch and Healy (1999) showed that other heating methods such as solid fuel open fires are dirtier and less efficient, and are generally possessed by low-income households. The difference between what the public believes to be an adequate heating system and what actually is adequate demonstrates one key cause of market failure: the ‘information gap’ in the market for domestic energy-efficiency measures. Households’ not being aware of the full benefits of energy-efficiency measures is considered to be a major explanation for this market failure. The presence of central heating is not sufficient to ensure the home is adequately heated; the household must be able to afford to use it. The effect that a lack of central heating will have on household temperatures depends on the level of insulation in the home.

The national results for the ‘objective’ indicators of fuel poverty are illustrated for each year in Figure 3.2.

**FIGURE 3.2 OBJECTIVE INDICATORS FUEL POVERTY (% OF HOUSEHOLDS, 1994-97)**



SOURCE: HEALY & CLINCH (2002)

### 3.3.4 Composite Measurement of Fuel Poverty & Sensitivity Analysis

After discussion with experts in the field, the preferred measure of composite fuel poverty was derived by giving the key indicator of fuel poverty (‘being unable to afford adequate heating in the home’) the largest weighting of 0.5 while the other indicators were weighted as 0.1<sup>5</sup>. Under this analysis, the incidence of fuel poverty during the 1994-97 period was 8.3% (or 91,000 households). The results of the sensitivity analysis show that, depending on the weighting, this figure could lie between 7% and 9.5%.

<sup>5</sup> A number of scenarios using different weightings are set out in Annex 1.

### 3.3.5 Socio-Economic & Socio-Demographic Results: ECHP

A socio-demographic and socio-economic profile of those households unable to afford adequate heat in their home – the key indicator of fuel poverty – is outlined in the following Section. This isolates those groups in society most vulnerable and at risk of experiencing fuel poverty.

#### Socio-Demographic Analysis

Some households need more fuel than others because their home must be heated for longer intervals or because they require higher temperatures (e.g. households occupied by the elderly or those with very young children). For some households, heating costs may be disproportionately high because these costs may fall on one person (e.g. single-adult households). Furthermore, there are some households that are known to have a higher incidence of financial hardship (e.g. single-parent households). All of these factors affect the probability of certain household groups enduring fuel poverty. The socio-economic and socio-demographic analysis in this section examines 15 types of households ranging from an elderly man/woman living alone to couples with three or more children. The results are available on a longitudinal basis for the 1994-97 period, but we present the mean figures for sake of clarity<sup>6</sup>.

#### House Type

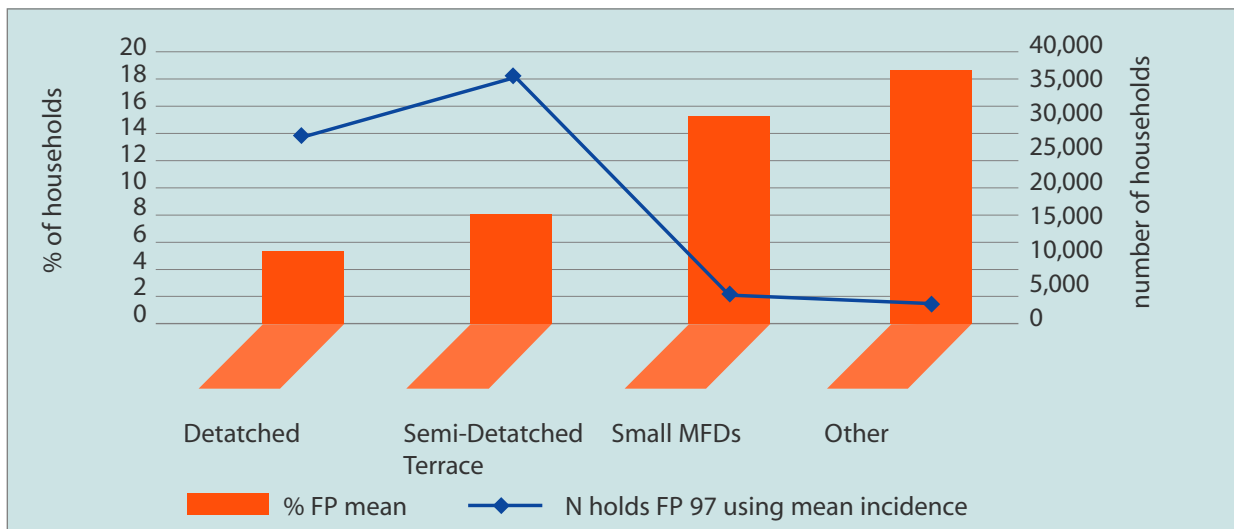
Some 26,800 detached houses and 34,800 semi-detached and terraced houses are experiencing fuel poverty in Ireland. This compares with 3,500 apartment units in small complexes. 'Other' households refers primarily to mobile homes and some categories of collective housing; the lodging house, for instance, might be a detached house, but the 'household' would have access to only part of it. Approximately 2,900 such households are declaring fuel poverty. Large multi-family dwellings (MFDs) make up a very small portion of the Irish housing stock, and this is reflected in the sample size captured in the ECHP. A sample size below 30 is considered too small to report results with any degree of robustness, and the ECHP team stipulate that such results be omitted for confidentiality reasons. The highest incidence of fuel poverty occurs in the (MFD) category and for 'other' types of housing, with relatively small incidences reported in detached dwellings (a mean of 4.7%)<sup>7</sup>. However, housing type is not distributed proportionately in Ireland and, as seen below, when the analysis is extended so that absolute numbers affected are estimated, the results are reversed. These findings reflect that a significant proportion of the less well off live in mid-terraced and semi-detached dwellings. Figure 3.3 illustrates the incidence of fuel poverty by house type.

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<sup>6</sup> Incidences of fuel poverty by social group and the absolute numbers affected in each social group in Ireland are derived using an amalgamation of Eurostat's taxonomies for Sociological Typology and Economic Typology; this allows for maximum disaggregation of the results.

<sup>7</sup> Small MFDs (Multi-Family Dwellings) are apartment households in relatively small blocks/complexes (less than 10 units); large MFDs are those in relatively large blocks (10 or more units).

**FIGURE 3.3 FUEL POVERTY BY HOUSE TYPE**



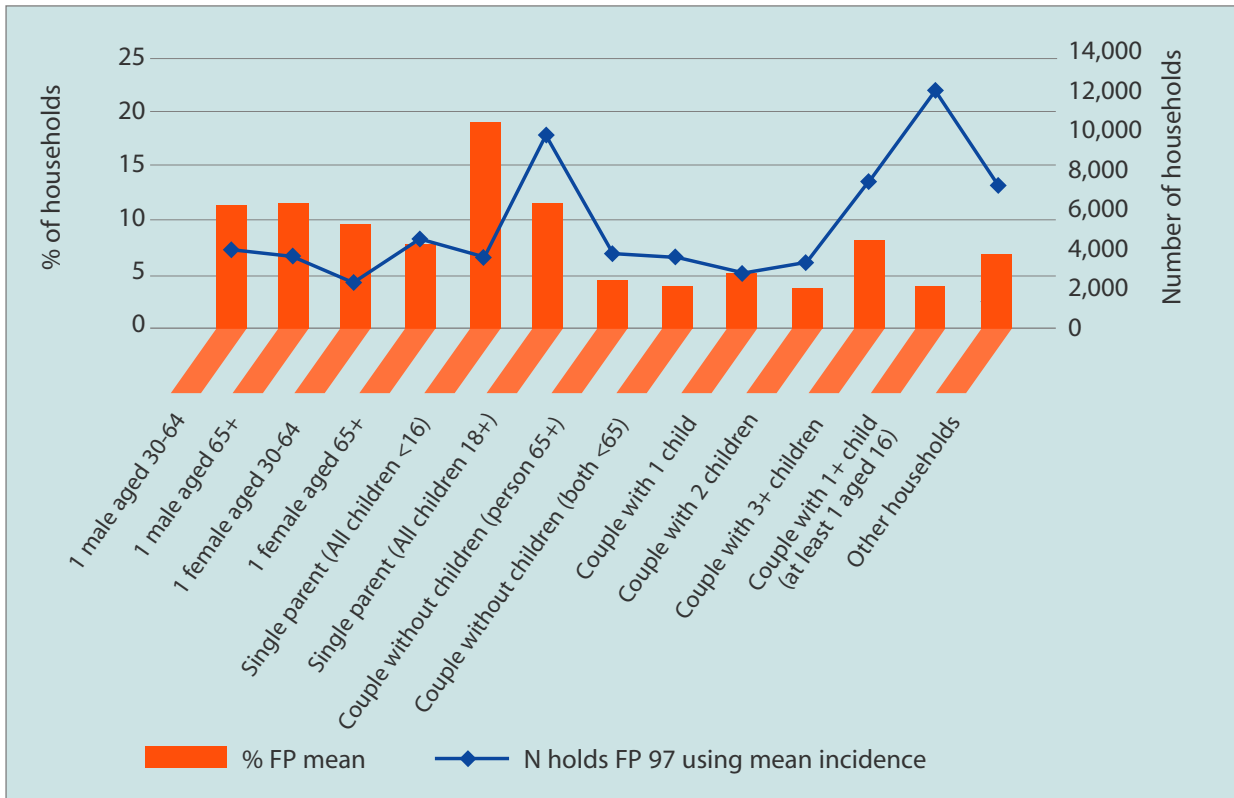
SOURCE: HEALY & CLINCH (2002)

## Social Group

The highest incidence of fuel poverty in Ireland is found among lone parents. One-in-five or 19.3% (3,600) lone-parent households where all children are aged less than 16 years are unable to afford adequate warmth in their homes. For lone-parent households where at least one child is aged under 16, the proportion drops to 11.8%, (10,100) which is the (joint-) second-highest incidence, and the second-largest group affected by fuel poverty.

The next social group most at risk in Ireland is the male lone pensioner. Over one-in-nine such households (3,700) experience fuel poverty. The female lone-pensioner household is less affected in incidence (7.8%), but when considered in absolute terms is worse off (4,600). Couples with one or more children where at least one child is no longer a dependent (i.e. over 16 years) are affected in very large numbers, with 12,500 households experiencing fuel poverty, while couples with three or more dependent children also fare badly, with 7,600 such households affected (Figure 3.4).

**FIGURE 3.4 FUEL POVERTY BY SOCIAL GROUP**



SOURCE: HEALY & CLINCH (2002)

## Socio-Economic Analysis

### Housing Tenure

Housing tenure is an important dynamic of fuel poverty because it gives households varying levels of control over their home, heating systems and their energy consumption. Owner-occupiers may be considered as fully autonomous, while tenants may be more limited in what they feel they can afford to do to improve their housing, or even what they are authorised to do.

**TABLE 3.3 FUEL POVERTY BY HOUSING TENURE: INCIDENCE AND NUMBERS OF HOUSEHOLDS AFFECTED**

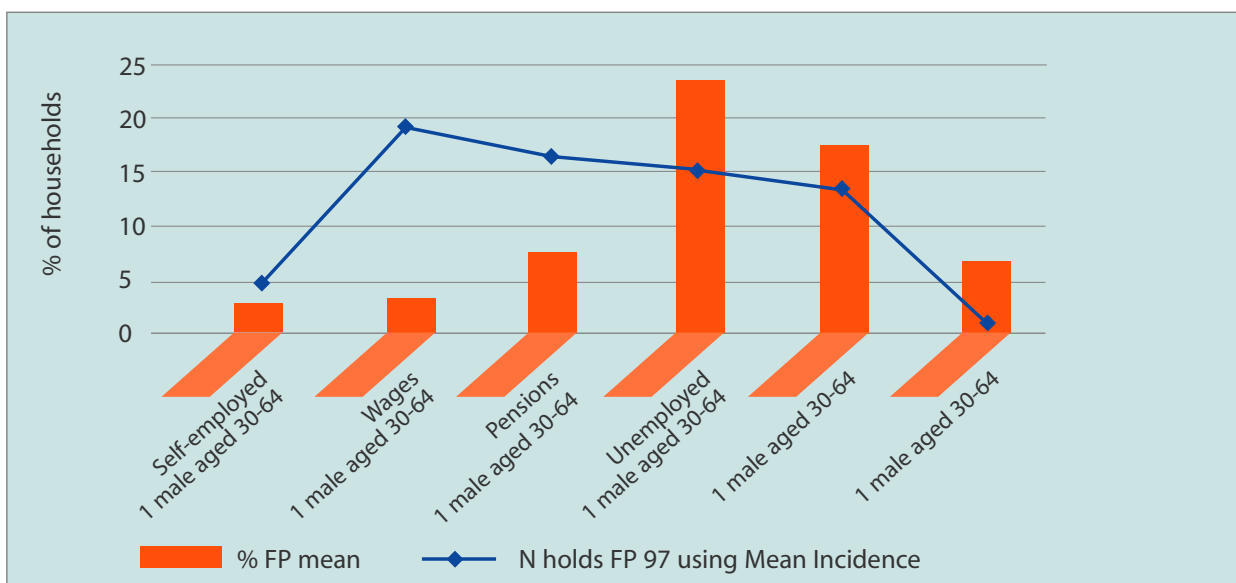
TENURE	% FP Mean	No. of fuel-poor households in 97 using mean incidence
Owner	4.1	37,900
Tenant	20.9	31,148
Rent-Free	9.2	1,930
SOURCE: HEALY AND CLINCH (2002)		

From Table 3.3, it can be seen that the highest incidence of fuel poverty among housing tenures occurs with tenant households, with some 20.9% (31,100) affected; However, owner-occupiers experiencing fuel poverty are the largest group affected in terms of actual numbers, with 37,900, notwithstanding the lowest incidence (4.1%).

**Main Income Source**

Dependence on unemployment assistance, state pension or other social transfers implies that such households live on a modest level of household income. Such income may preclude households from heating their home adequately through not being able to afford fuel bills, or energy-efficiency improvements.

**FIGURE 3.5 FUEL POVERTY BY MAIN INCOME SOURCE**



SOURCE: HEALY & CLINCH (2002)

The highest incidence of fuel poverty by income source occurs among the unemployed, where 23.3% (15,100) are experiencing the problem. Those whose main source of income comes from other social welfare payments also display very high levels of fuel poverty, with an incidence of 17.4%, or 13,300 households. Salaried employees are the largest group in absolute numbers, with 19,100 affected. While the incidence of fuel poverty appears low for pensioner households (7.5%), the level of fuel poverty in absolute numbers is very substantial, with 16,300 households affected. Self-employed householders, farmers and those on private incomes are less affected by fuel poverty, both in incidence and in absolute terms (Figure 3.5).

## 3.4 Urban Institute Ireland Household Survey

### 3.4.1 Introduction

This section presents the results of an analysis of a household survey carried out by the Urban Institute Ireland (at UCD) in 2001. This survey enables estimates of fuel poverty to be calculated across more socio-economic and socio-demographic variables, as well by the severity of experience of fuel poverty. This allows us to refine the results presented in Section 3.3.

### 3.4.2 Fuel Poverty by Severity

It is very useful to identify those experiencing persistent fuel-poverty against those whose problems are more intermittent<sup>8</sup>. To address this important issue, the survey asked all households in the sample to state how often they were unable to adequately heat their home on a four-point response variable. The results, reported in Table 3.4, show that some 12.7% or 165,000 Irish households experience suffer occasional or intermittent fuel poverty and 4.7% or 62,000 experience persistent fuel poverty. Therefore, a total of 18.4% or 227,000 Irish households are declaring some level of fuel poverty in 2001. This compares with 9% using the ECHP data. The lower incidence in the ECHP data is believed to be caused by a large portion of the those experiencing intermittent fuel-poverty sufferers not declaring fuel poverty. The ECHP data from the 1990s appears to capture mostly persistent, as opposed to intermittent, fuel poverty. It is important to recognise this factor when comparing the varying levels of fuel poverty identified.

**TABLE 3.4 FUEL POVERTY BY SEVERITY: INCIDENCE & NUMBERS AFFECTED, 2001**

<b>Question Asked: ARE YOU ABLE TO ADEQUATELY HEAT YOUR HOME?</b>			
<b>Responses Given:</b>		<b>%</b>	<b>N</b>
1	No, not at all	2.2	29,000
2	Usually not	2.5	33,000
3	Usually, some difficulties ('intermittent')	12.7	165,000
	Persistent Fuel Poor (1+2)	4.7	62,000
	Intermittent Fuel Poor (3)	12.7	165,000
	Total Fuel Poor (1+2+3)	17.4	227,000

SOURCE: HEALY AND CLINCH (2002)

<sup>8</sup> The UCD Survey ascertained whether respondents experienced suffered from fuel poverty constantly or only intermittently / occasionally eg during very cold weather.

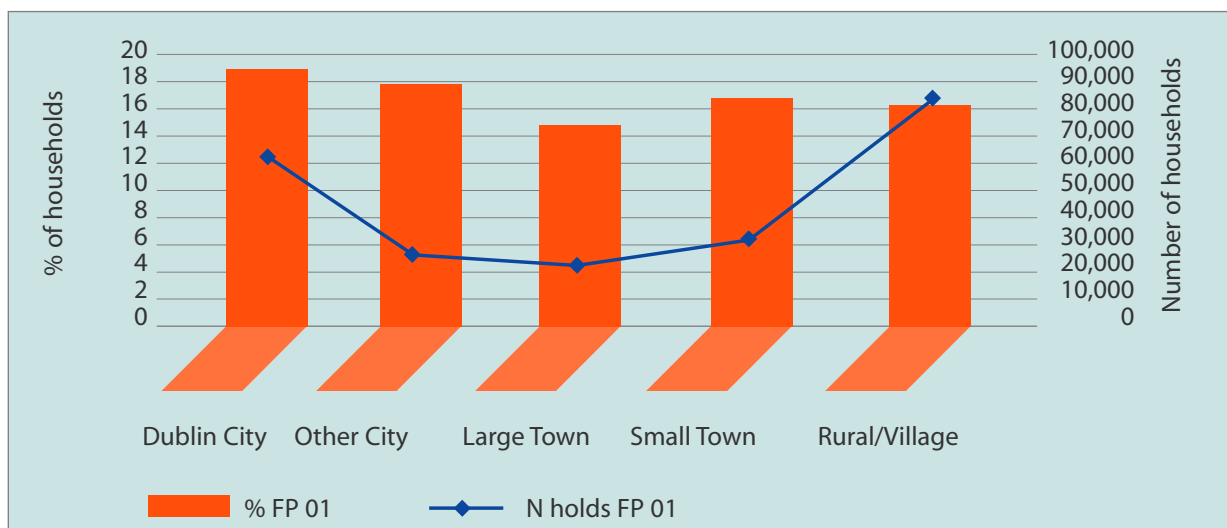
### 3.4.3 Fuel Poverty: Socio-Demographics

The socio-demographic analysis in this section is more extensive than with the ECHP analysis and allows for more risk groups to be identified as those experiencing fuel poverty.

#### Region

There is very little difference in the incidence of total fuel poverty by region: between 15% and 18.9% of households are identifiable as either experiencing intermittent or persistent fuel-poverty. In absolute numbers, however, 87,000 households reported an inability to heat the home in rural areas compared with 22,000 in large towns and 26,000 in cities outside Dublin (Figure 3.6). Regional variations between persistent and intermittent fuel poverty are not significant.

**FIGURE 3.6 FUEL POVERTY BY REGION**



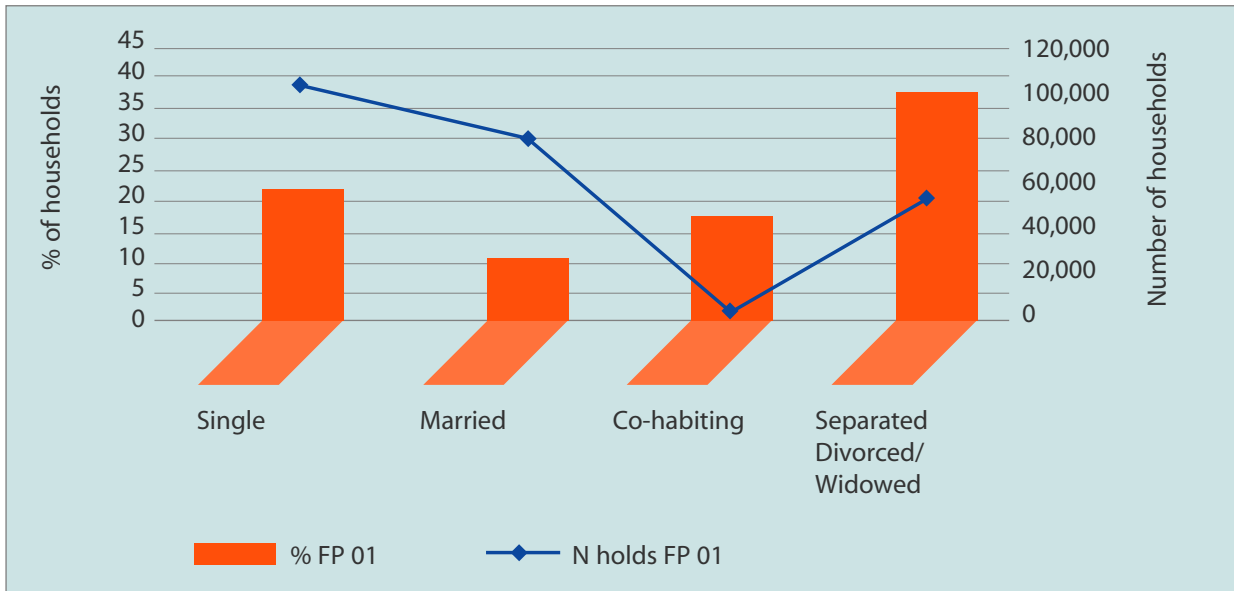
SOURCE: HEALY & CLINCH (2002)

The incidence of fuel poverty in the Border Midlands West (BMW) Region was 19.0%, compared with 16.9% in the South and East (S&E) Region. The BMW Region accounts for 30% of all households in the sample, and therefore, an incidence of 19% accounts for 74,000 households, while the incidence of 16.9% in the S&E Region represents some 154,000 households.

#### Marital Status

The highest incidence is found amongst separated, divorced and widowed households, with 28.2% affected by fuel poverty, followed by single persons, with an incidence of 22.6%. Single people also account for the highest group experiencing fuel-poverty in absolute numbers, with 104,000 households affected, compared with 85,000 married or cohabiting households and 37,000 widowed, divorced or separated households (Figure 3.7). Single people appear to have the highest levels of persistent fuel poverty, with 32.3% declaring persistent fuel poverty, compared with 19.1% of widows, divorcees and separated persons. Overall, it was found that single-person households experience a higher incidence of fuel poverty than other household types.

**FIGURE 3.7 FUEL POVERTY BY MARITAL STATUS**



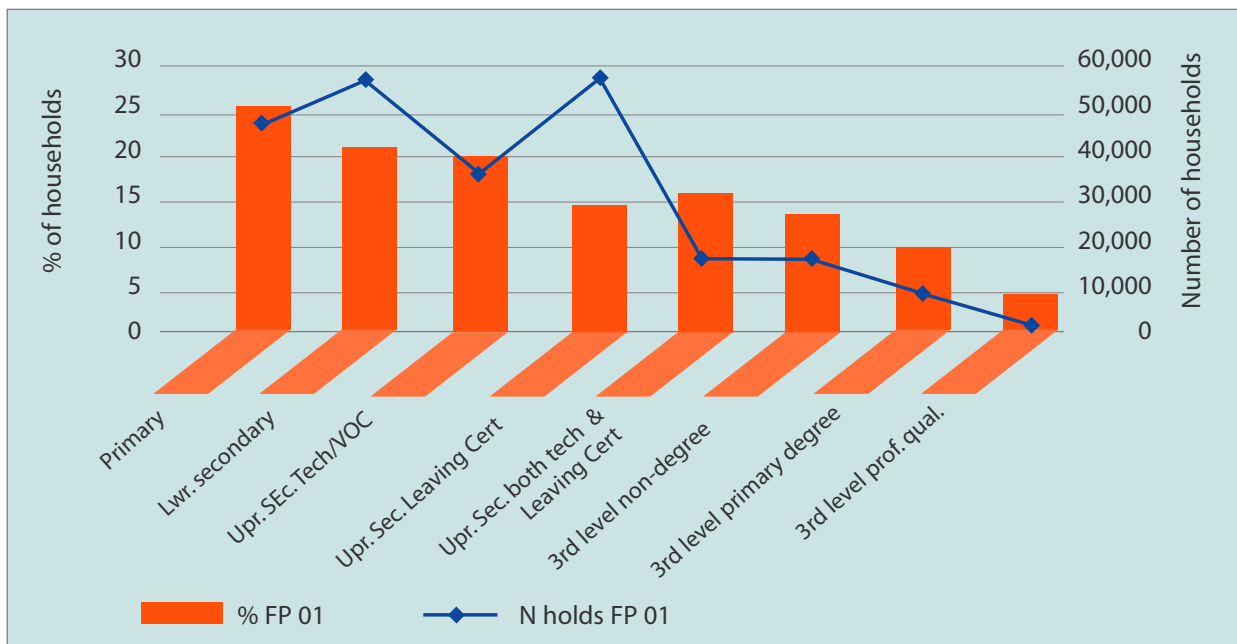
SOURCE: HEALY AND CLINCH (2002)

### Educational Attainment

The highest level of fuel poverty is found in those groups with low levels of educational attainment. For instance, primary school-leavers have an incidence of some 25.6% (47,000). In addition, those who left secondary school before Leaving Cert/Tech-equivalent, have high levels of fuel poverty (incidence of 21.9% and 55,000 households, making this group the largest in absolute terms). Conversely, those with third-level qualifications have very low levels of fuel poverty; only 3.6% (2,000) of those households with a primary or postgraduate degree experience fuel poverty (Figure 3.8). A vicious circle can exist whereby those with lower income and educational attainment experience a greater level of fuel poverty and, living in an inadequately heated home, may result in their children having a lower educational attainment, for example, as a result of having nowhere warm and quiet to do their homework.

Persistent fuel poverty is highest proportionately among those who left school at Tech/VEC-level, with 38.7% of households in this group living in fuel poverty.

**FIGURE 3.8 FUEL POVERTY BY EDUCATIONAL ATTAINMENT**



SOURCE: HEALY AND CLINCH (2002)

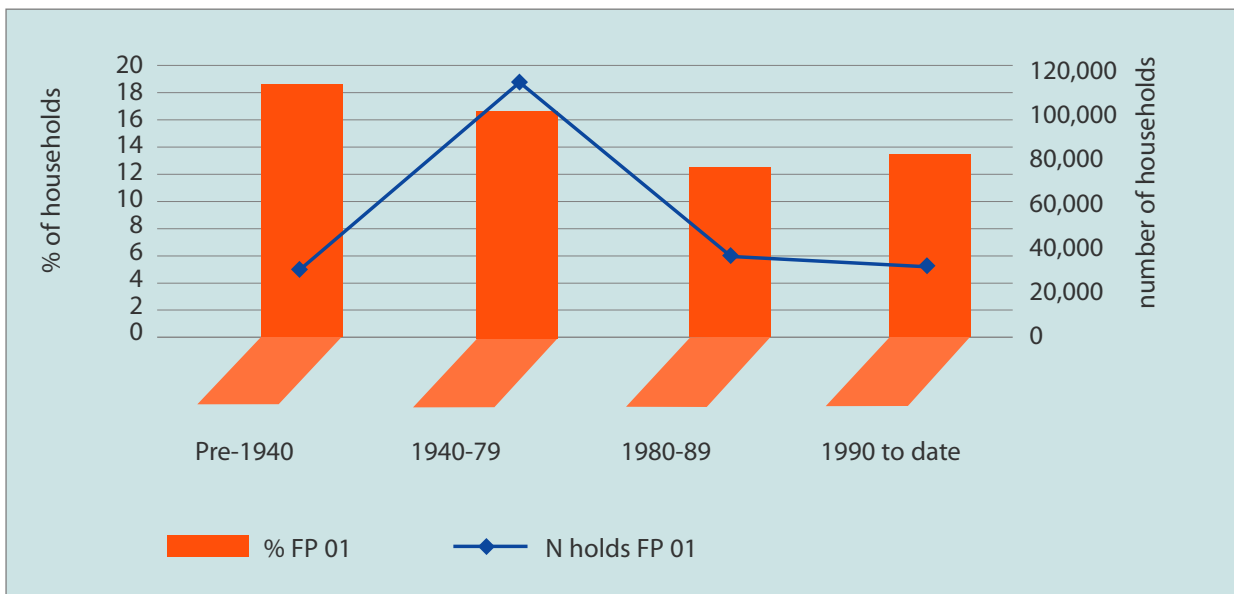
### Dwelling Age

Data relating to dwelling age has been grouped into four distinct categories on the basis of energy-efficiency characteristics. Pre-1940 dwellings (which account for about 13% of all dwellings in the sample) were mainly solid-wall construction, while during the 1940s through to the 1970s, cavity-wall construction was implemented. During the 1980s, improved U-values for both walls and attics were introduced in various building regulations, increasing the thermal efficiency of the dwelling, and these U-values have been further enhanced in the 1990s with the introduction of more stringent building regulations, especially those in 1997<sup>9</sup>.

Improvements in housing construction are reflected in the results, which show that older dwellings are more likely to be occupied by those experiencing fuel poverty than newer dwellings, with the highest absolute numbers found in homes built in the 1940s-70s, where some 111,000 households are affected; this group also demonstrates a very high incidence of fuel poverty (18.5%). As might be expected, those in newer homes experience a lower level of fuel poverty, both proportionately and in absolute numbers (Figure 3.9). Houses built between 1940 and 1979 demonstrate the highest level of persistent fuel poverty; some 31.9% of fuel-poor households in this group declare persistent fuel poverty

<sup>9</sup> Further amendments to the Building Regulations have been introduced in January 2003. are expected to be introduced in 2002.

**FIGURE 3.9 FUEL POVERTY BY DWELLING AGE**



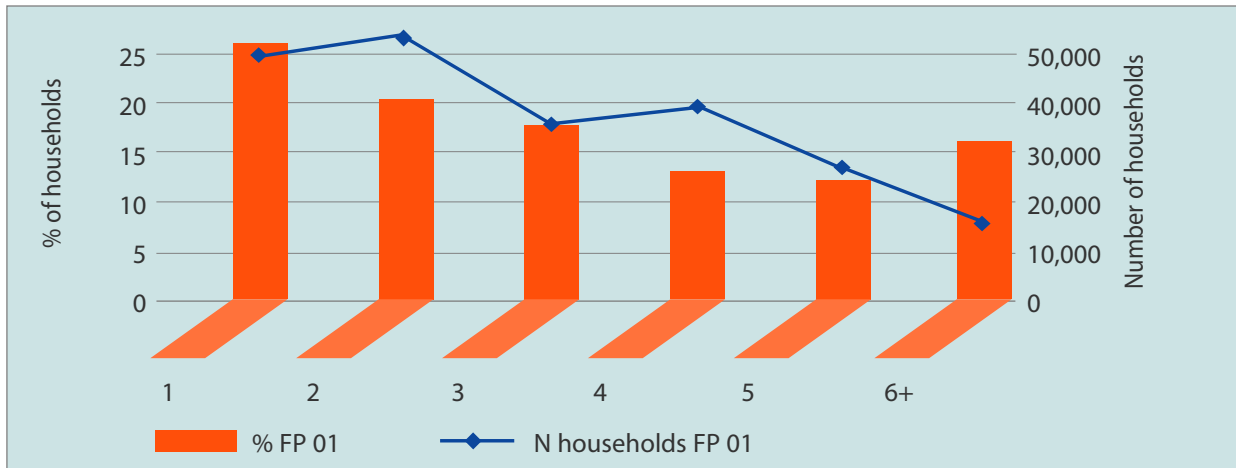
SOURCE: HEALY AND CLINCH (2002)

**Occupancy**

The highest levels of fuel poverty (both in incidence and in absolute numbers) occur in smaller households, especially one- and two-person occupied houses. Some 106,000 one- and two—person households are declaring either intermittent or persistent fuel poverty, and almost three-in-ten single-person occupied households experience this level of fuel poverty. However, the results also point to a U-shape relationship (one where the relationship between variables initially weakens but subsequently strengthens when moving right to left on the X axis), with an increasing incidence of fuel poverty (15.7%) in very large households (those with six or more persons), as Figure 3.10 illustrates.

Persistent fuel poverty is proportionately highest in households with six or more occupants. Some 38.9% of fuel-poor households in this group are persistently fuel-poor.

**FIGURE 3.10 FUEL POVERTY BY OCCUPANCY**



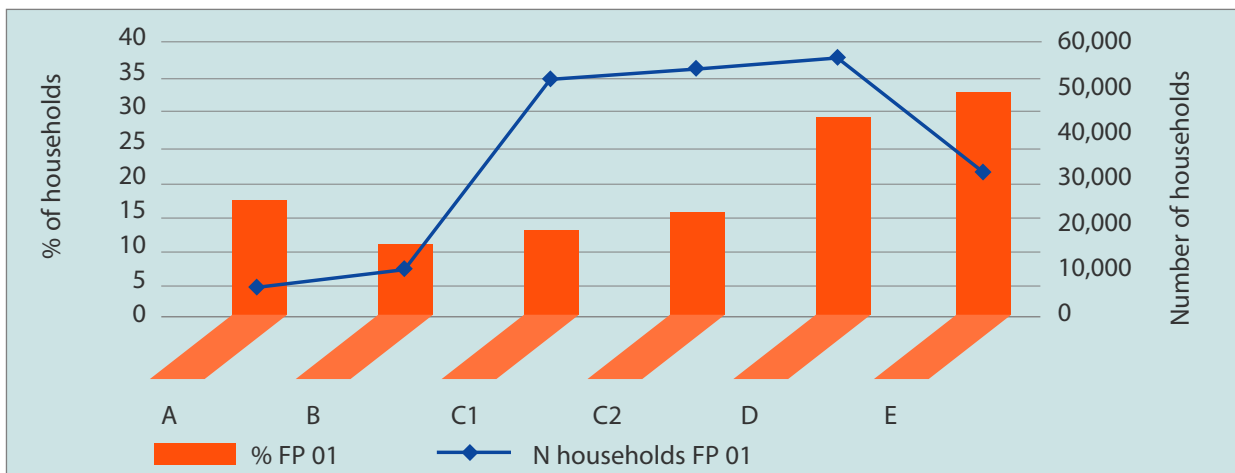
SOURCE: HEALY & CLINCH (2002)

### 3.4.4 Fuel Poverty: Socio-Economic Analysis

#### Social Class

A very strong relationship is found between the incidence of fuel poverty and social class. As might be expected, the more affluent groups (A, B, C1, C2) have lower levels of fuel poverty than the less well-off groups (D and E); one-in-three households in social group E declare fuel poverty. The relationship between fuel poverty and social class in absolute numbers is characterised by an inverted-U shape (Figure 3.11), with the highest overall levels found in the most populous social groups (i.e. C1, C2 and D); these three group account for 161,000 fuel-poor households, or three-quarters of all fuel poverty in Ireland. Thirty-seven per cent of the fuel-poor in group C1 are demonstrating persistent levels of fuel poverty, compared with 0% in group A.

**FIGURE 3.11 FUEL POVERTY BY SOCIAL CLASS**



SOURCE: HEALY & CLINCH (2002)

### Main Income Source

The survey found that those whose main income source is social welfare are almost three times more likely to be fuel-poor than those whose income source is paid employment. In absolute numbers, the two groups experiencing fuel-poverty are split, with 102,000 on social welfare and 125,000 in waged employment (Table 3.5). Those experiencing persistent and intermittent fuel poverty are proportionately similar in both groups.

**TABLE 3.5 ABILITY TO HEAT THE HOME ADEQUATELY BY MAIN INCOME SOURCE: INCIDENCE AND NUMBERS AFFECTED, 2001**

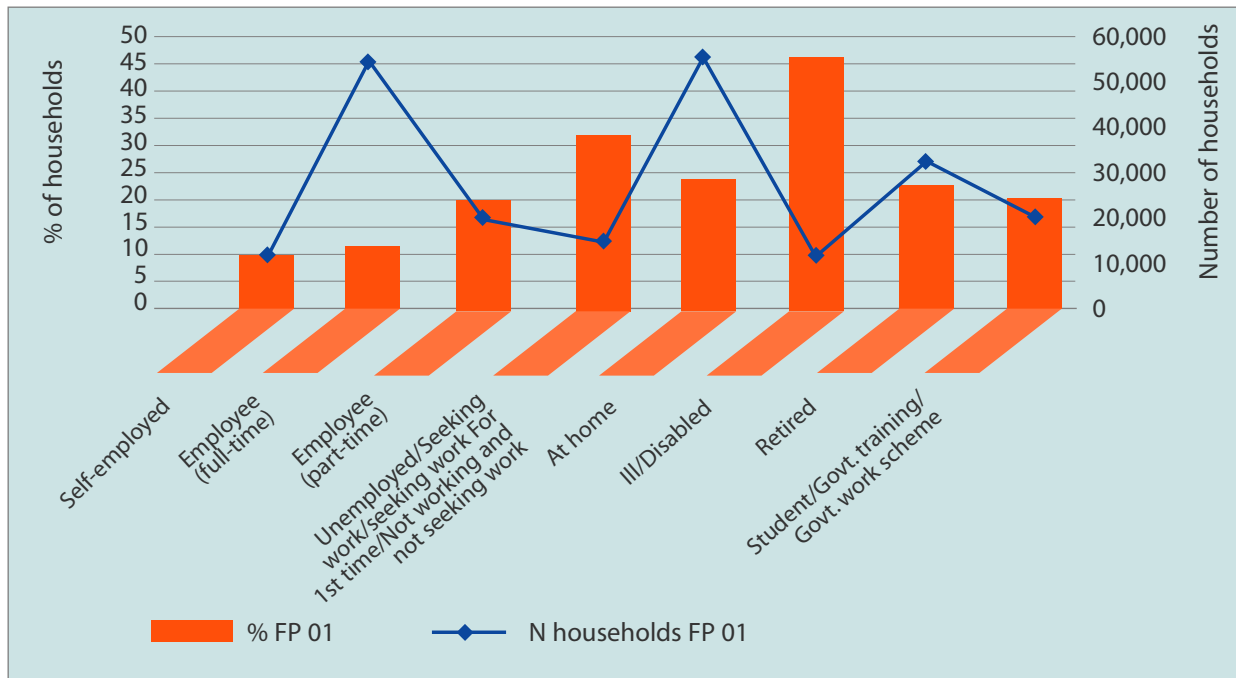
Income Source	Wages	Social Welfare
No. of households in sample	1,129	307
Usually, some difficulties (%)	8.9	25.1
Usually not (%)	1.5	5.2
No, not at all (%)	1.8	3.3
Total % FP 01	12.2	33.6
No of households fuel poor	124,700	101,800
SOURCE: CLINCH AND HEALY (2002)		

### Employment Status

The highest incidence of fuel poverty is found among the long-term ill and disabled, where 44.8% are fuel-poor but this is not a significant result due to the small sample size. The unemployed also fare badly, with some 30.5% declaring fuel poverty. In absolute numbers, those working at home are demonstrating striking levels of fuel poverty; some 56,000 such households are fuel-poor (the highest group in this section), followed by full-time employees (53,000). Conversely, the self-employed appear to have far less difficulty heating their homes adequately (Figure 3.12).

Some 42% of those fuel-poor households whose employment status is 'Student/Government Training/Government Employment Scheme' are demonstrating long-term fuel poverty, compared with just 13% of fuel-poor householders whose employment status is part-time.

**FIGURE 3.12 FUEL POVERTY BY EMPLOYMENT STATUS**



SOURCE: HEALY AND CLINCH (2002)

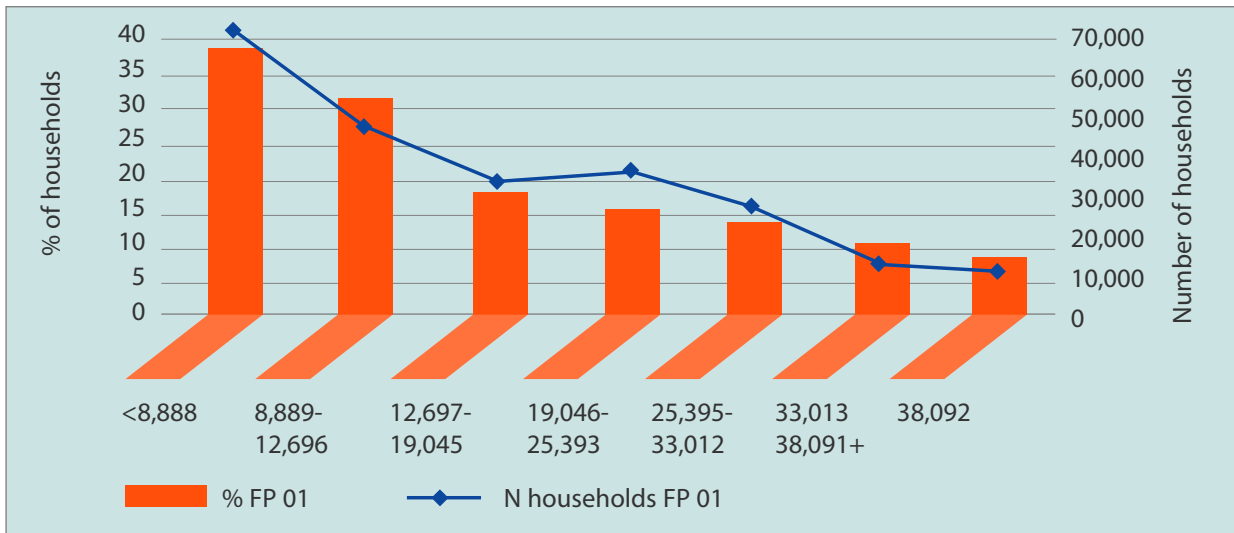
**Whether Householder Ever Had Paid Employment**

Households which have not had a paid position (10% of the sample) report substantially higher levels of both persistent and intermittent fuel poverty, with some 24.2% overall (28,000 households) in fuel poverty. This compares with 16.7% for those who have had paid employment, however this smaller incidence accounts for a much higher number of households (195,000). Persistent fuel poverty is highest among those who have not had paid employment; persistent fuel-poor households account for 36.4% of all those experiencing fuel-poverty in this group, compared with 25.1% among those who have had paid employment.

**Income**

The incidence and actual numbers affected by fuel poverty show a very similar linear relationship with gross household income (Figure 3.13). Some 73,000 households under €8,888 are experiencing fuel poverty, which represents 50% of such households. Those on incomes between €8,889 and €12,696 also report very high levels of fuel poverty, with some 31.2% in fuel poverty, or 48,000 households.

**FIGURE 3.11 FUEL POVERTY BY SOCIAL CLASS**



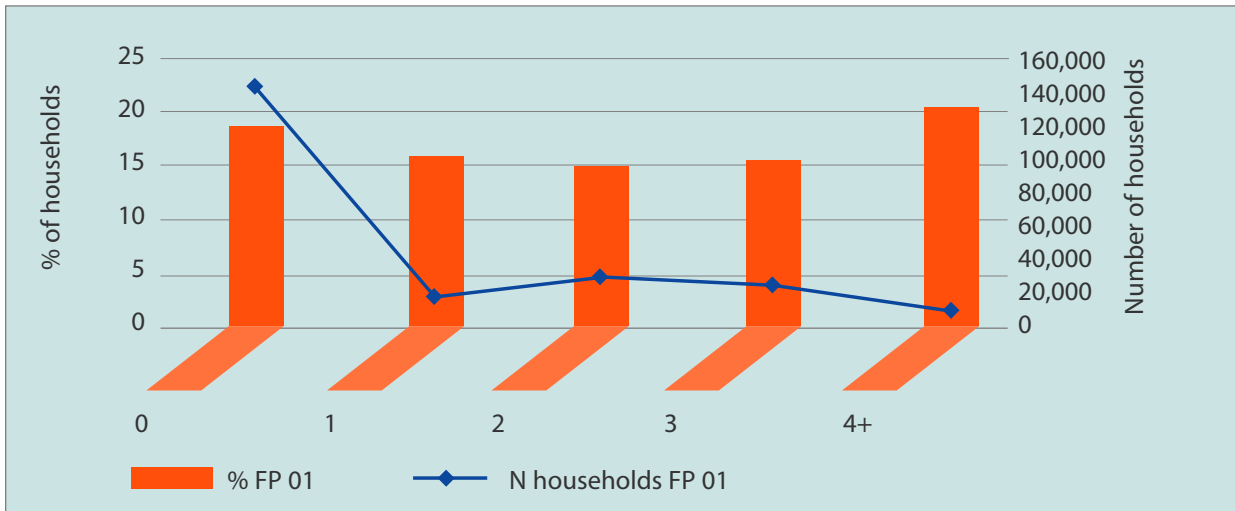
SOURCE: HEALY & CLINCH (2002)

Conversely, those on relatively high incomes experience a much lower degree of fuel poverty. Those on over  $\approx$  38,092 demonstrate an incidence of just 6.1%, with 9,000 households affected. People on relatively high incomes may continue to experience fuel poverty due to the fact that they may live in particularly old houses or expenditure on fuel is not rated highly in terms of expenditure priorities.

**Number of Dependent Children**

The incidence of fuel poverty does not appear to be very substantially affected by the number of dependent children. However, the actual number of households affected varies very significantly. The largest group experiencing fuel-poverty are those without any dependent children; some 143,000 households are either persistent or intermittently fuel poor. A very high incidence of persistent fuel poverty is found among households with four or more dependent children; some 11.6% of the 20.9% declaring fuel poverty in this group of householders (i.e. 55.5%) fall into the persistent fuel-poor group.

**FIGURE 3.14 FUEL POVERTY BY NUMBER OF DEPENDENT CHILDREN**

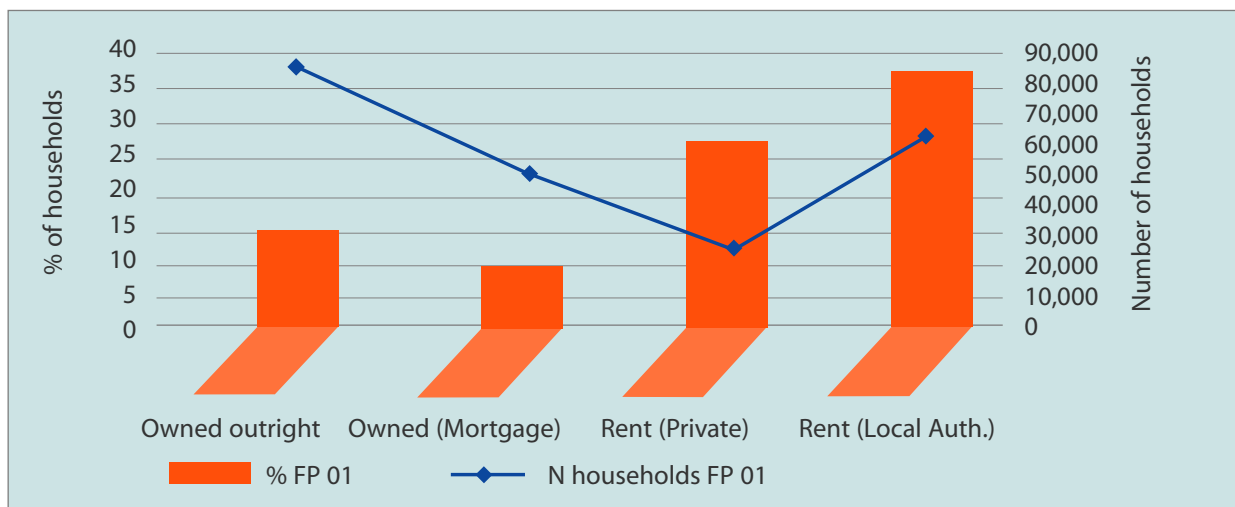


SOURCE: HEALY & CLINCH (2002)

**Housing Tenure**

High rates of fuel poverty are calculated for tenant households, but especially those who rent from a Local Authority, where one-in-three such households are unable to adequately heat their home, compared with just one-in-ten owner-occupier (mortgaged) households. In absolute numbers, the highest levels of fuel poverty are found among those who own outright their home (85,000 households), followed by local authority-rented households (57,000) (Figure 3.15). Some 44.1% of privately rented fuel-poor households experience persistent fuel poverty, compared with 19.3% of the fuel-poor renting from local authorities.

**FIGURE 3.15 FUEL POVERTY BY TENURE**



SOURCE: HEALY & CLINCH (2002)

Because the ECHP data are primarily capturing persistent fuel poverty, the aggregate and disaggregated results are lower than those reported in the UCD national household survey data, which capture wider (persistent and intermittent) fuel poverty. Taking the case of fuel poverty by housing tenure, it can be seen that the European data demonstrate lower incidences of fuel poverty across all housing tenures than the UCD data. Table 3.3 demonstrates that 4.1% of owner-occupiers are persistently fuel-poor, while 20.9% of tenants experience this level of fuel poverty. Fig. 3.15 demonstrates that 16% of owner-occupiers (or 10% of mortgage-holders) are fuel-poor (either persistently / intermittently), while 33% of local-authority tenants experience fuel poverty.

### 3.5 Summary

The objective of this chapter was to investigate quantitatively the levels of fuel poverty in Ireland and to explore those groups who experience it the most. Data from a Eurostat survey was presented to show a temporal picture of fuel poverty between 1994 and 1997. This shows that, on average across that period, the incidence of fuel poverty was about 8.3% (or 91,000 households). However, the figure has declined as incomes have risen during the economic boom and housing standards have improved. To give an up to date snapshot of the incidence of fuel poverty and to elaborate on whether it is persistent or intermittent, data from a household survey carried out in Spring 2001 was used. Based on the principal indicator of fuel poverty, namely whether a household is unable to heat the home adequately, the results show that the incidence of persistent fuel poverty is 4.7%, in other words, 62,000 Irish households live in persistent fuel poverty. A further 12.7% or 165,000 households experience intermittent fuel poverty. The combined results suggest that the incidence of persistent fuel poverty has fallen by about 30% since 1994.

**TABLE 3.6 FUEL POVERTY BY SEVERITY: INCIDENCE & NUMBERS AFFECTED, 2001**

	%	No.
Persistent Fuel Poor	4.7	62,000
Intermittent Fuel Poor	12.7	165,000
Total Fuel Poor	17.4	227,000

SOURCE: HEALY AND CLINCH (2002)

In 2001, those social groups experiencing the highest incidence of fuel poverty included:

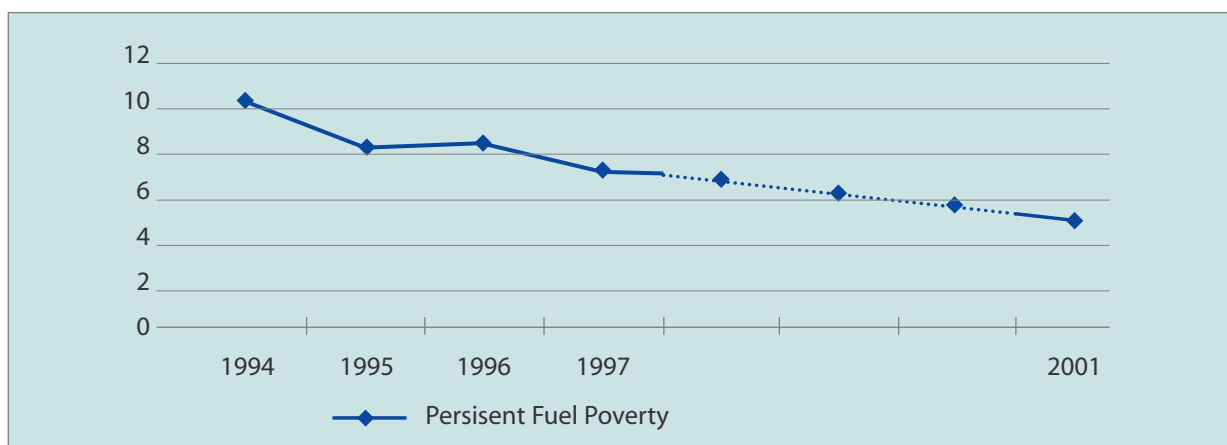
- low-income households (an incidence of 39.5% and 31.2% for those whose gross household income is less than €8,888 and €8,889-12,696 respectively);
- households in social classes D (partly skilled) (23%) and E (unskilled) (34.6%);
- households renting from local authorities (33.8%);
- households whose main income source is social welfare (33.6%);
- unemployed households and those seeking work (30.5%);

- single-person households (28.4%);
- separated, widowed and divorced households (28.2%);
- poorly educated households (25.6% incidence among those who left school at primary level, and 21.9% for those who left at lower-secondary level);
- privately rented dwellers (24.5%);
- those who have never had a paid job (24.2%).

In physical numbers, the highest levels of fuel poverty are found among households without dependent children (143,000 households), single people (104,000), households in dwellings built between 1940 and 1979 (111,000), owner-occupiers (85,000) and households on incomes below €8,888 (73,000).

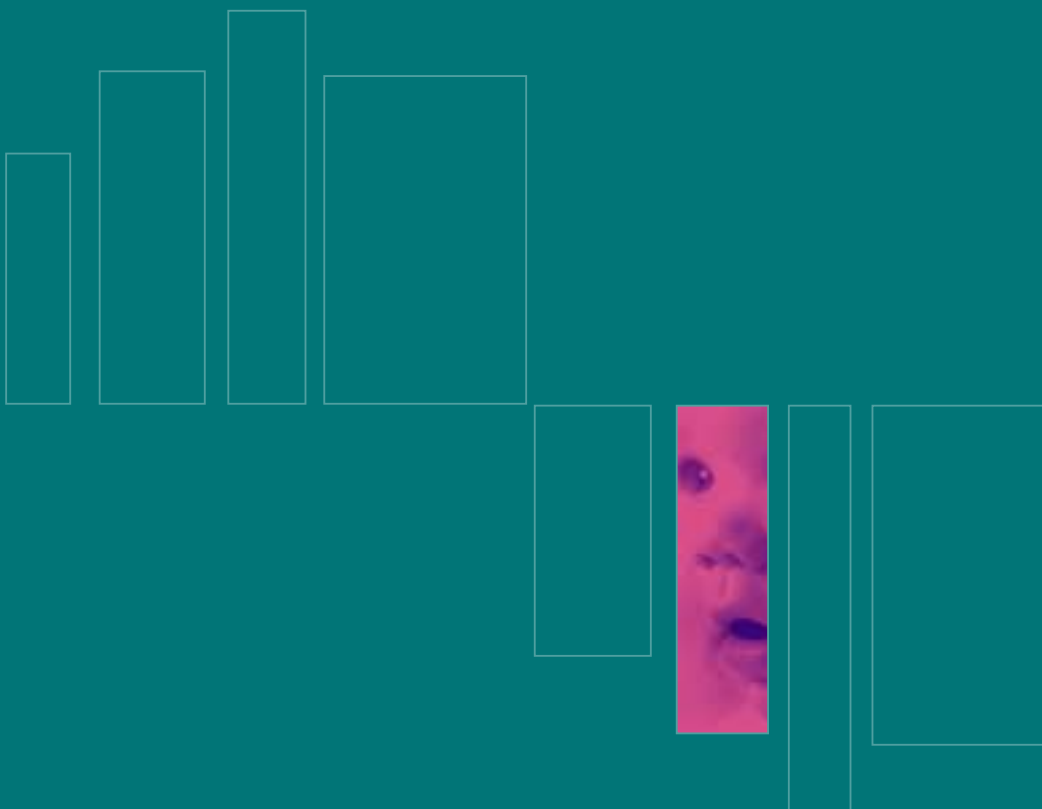
Figure 3.16 shows the level of persistent fuel poverty from 1994 to 1997 (ECHP data set) and the level recorded in 2001 (UCD data set).

**FIGURE 3.16 PERSISTENT FUEL POVERTY, 1994-1997 AND 2001.**



SOURCE: HEALY AND CLINCH (2002)

# Chapter 04: Analysis of Existing Services



## 4.1 Introduction

This Chapter presents an analysis of the services currently being delivered in order to address the problem of fuel poverty. Section 4.2 includes an examination of the activities undertaken by charitable and community groups. It reviews the quality standards applied and the level of training provided to staff. The section also examines the sources of funding available to community groups and the typical costs of service delivery. Section 4.3 provides a description of how government policies address the issue of fuel poverty and provides an assessment of the level of co-operation and co-ordination of government responses to fuel poverty.

## 4.2 Services Provided by Non-Governmental Organisations

### 4.2.1 Overview

A number of charitable and community based organisations provide thermal efficiency services to those experiencing fuel poverty. These organisations receive funding from a number of sources and predominantly employ staff supported through FÁS employment schemes. This section examines the services provided by these organisations, the sources of funding available to them, training provided to employees and the standards under which they operate. It also sets out the costs of the various thermal efficiency measures that they deliver.

### 4.2.2 Organisations Delivering Thermal Efficiency Services

In total there are six charitable and community based organisations currently<sup>10</sup> providing thermal efficiency services to those experiencing fuel poverty in Ireland. A further three organisations have provided these services in the past and plan to resume delivery in the future. An additional organisation recently approved under the FÁS Social Economy Programme have stated that they intend to address the issue of fuel poverty and are in the process of commencing operations. Table 4.1 provides an overview of the involvement of charitable or community based organisations with fuel poverty initiatives.

**TABLE 4.1 CHARITABLE/COMMUNITY BASED ORGANISATIONS ADDRESSING FUEL POVERTY**

Status	Currently Active	Previously Active	In Start-Up
Action Inishowen		✓	
Athlone Home Comforts	✓		
Clondalkin Home Insulation Project	✓		
Cumas Teo (Rosmuc, Galway)		✓	
Cunamh Energy Action (Tralee)	✓		
Energy Action (Dublin)	✓		
HEAT (Dublin)	✓		
Secure and Fix-It Enterprises Ltd (Cork City)		✓	✓
Southhill Community Services Board Ltd (Limerick City)		✓	
Waterford Energy Programme	✓		

<sup>10</sup> Findings presented here are based on a survey mailed to community groups in April 2002 and consultations with key stakeholders.

<sup>11</sup> Findings presented here are based on a survey mailed to community groups in April 2002 and consultations with key stakeholders.

Energy Action is the largest of the organisations involved in the delivery of thermal efficiency services to households experiencing fuel poverty. It was established as a charitable organisation in 1988 and has since delivered thermal efficiency services to over 18,000 (as of end 2001) homes in the Dublin area. Energy Action has played a leading role in increasing the level of government and public awareness of fuel poverty. It also assisted many of the organisations listed in Table 4.1 in establishing services to address fuel poverty in locations throughout the country. As a result of a pilot programme operated by SEI in 1996 four organisations were established with training and advice provided by Energy Action. An additional four organisations were established in 1998. The locations of the groups involved in addressing fuel poverty are outlined in Map 1.



### 4.2.3 Funding Sources and Scale of Activities

All of the organisations listed in Table 4.1 provide their services on a charitable basis to fuel poor households. Financial resources are obtained from a number of sources in order to fund these activities. The installation of thermal efficiency services is very labour intensive and labour costs form a large proportion of total expenditure. All of the organisations currently delivering services are in receipt of funding from FÁS. This is provided through either the Community Employment (CE) Scheme or the Social Economy Programme (SEP) and to a lesser extent the Jobs Initiative Scheme.

The CE Scheme was launched in 1994 for the purpose of providing the long-term unemployed with training and development and work experience on specific projects designed to meet community needs. The objectives of the CE Scheme, as contained in the Employment and Human Resources Operation Programme, are to:

- “provide temporary opportunities for long-term unemployed and socially excluded persons;
- provide opportunities for individual training and personal development;
- provide clear economic and social benefits to communities;
- increase participants subsequent job/income prospects.”

In line with changes in the economic environment, the level of participation in the CE Scheme has declined substantially in recent years. Long-term unemployment has declined from 5.6% in 1997 to 1.2% in 2001 while over the same period the level of participation in CE Schemes has fallen from 39,000 to 28,000. While the Programme for Prosperity and Fairness (PPF) provides for 28,000 places to be supported through the scheme, the Irish National Organisation of the Unemployed (INOU)<sup>12</sup> has recently stated that the Department of Enterprise Trade and Employment plan to reduce the number of places by a further 4,000. Under the CE Scheme FÁS pay a wages grant and a contribution towards full-time supervision and material costs. Eligible groups can employ CE participants for up to three years.

The SEP was launched in 2000 and a number of organisations that previously benefited from funding through the CE Scheme or the Jobs Initiative Scheme have received assistance from the SEP. The SEP shares a number of the characteristics of the CE Scheme but a key objective of SEP is that organisations should be economically viable within three years of start-up. Funding may be awarded for an additional three years, however, subject to a review. As at the end of 2001, 490 people were participating in the SEP. The target for the level of participants for end 2003 is 2,500. Applicant organisations are initially awarded a grant of circa €5,000 for the purpose of undertaking a business plan prior to being considered for full grant assistance. In excess of 400 organisations have been awarded grants for the purpose of undertaking business plans while just over 100 enterprises were approved for full grant funding by the end of 2001. It therefore appears that there may be limited opportunities for social economy enterprises to secure funding if they have not yet applied for funding.

The following organisations engaged in the provision of thermal efficiency services have been awarded grants for the purpose of undertaking business plans:

- Energy Action;
- HEAT;
- Clondalkin Home Improvement Project;

- Action Inishowen;
- Cunamh Energy Action.

The following social economy enterprises (involved in the provision of thermal efficiency services) have been awarded grant assistance for three years<sup>13</sup>:

- Clondalkin Home Improvement Project (€ 146,000 p.a);
- Cunamh Energy Action (€ 174,000 p.a);
- Heat (€ 197,317 p.a);
- St. Vincent DePaul, Castleisland (€ 108,000 p.a);
- Secure and Fix-It Enterprises Ltd, Cork (€ 157,000 p.a);
- Action Inishowen (€ 94,000 for the 1st year).

Secure and Fix-It Enterprises plan to carry out a number of other activities in addition to addressing fuel poverty. St. Vincent DePaul, Castleisland, will not deliver services themselves but will fund organisations such as Cunamh Energy Action that carry them out on their behalf.

In addition to FÁS funding, many of the community groups questioned stated that they received funding from up to eight other agencies. All but two of the groups currently providing thermal efficiency services receive funding from local authorities. Most of the groups work closely with the local authorities in relation to household selection and in general local authorities pay a set fee for each of its units that are provided with insulation services. Much of the funding available under the Remedial Works Scheme (see Section 4.4) is channelled through local authorities to the community groups. Area Development Management (ADM) and Partnership Companies have also provided grants for training and set-up to a number of the groups. The health boards work with some of the groups for the purpose of delivering thermal efficiency services to the elderly. Some of the activities funded under the Special Housing Aid for the Elderly scheme are delivered in this manner.

A number of community groups also receive funding from the Department of Social and Family Affairs (DSFA), Department of the Environment and Local Government (DoELG), and St Vincent DePaul. DSFA provided almost € 23m grant aid to community and family support groups in 2000 and groups providing thermal efficiency services would have received funding under this category. Other funding sources for the groups include Leader groups, private companies and patrons and the URBAN<sup>14</sup> Community Initiative.

The most important funding sources for community groups, ranked in order of the number of groups which each source supports, are shown in Table 4.2.

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<sup>13</sup> As at April 2002

<sup>14</sup> An EU Initiative that targets urban areas of extreme deprivation to address problems of isolation, poverty and social exclusion. The initiative originally operated from 1994-1999 and is also in operation for the 2000-2006 period.

**TABLE 4.2 FUNDING SOURCES**

1. FÁS
2. Local Authorities
3. DoELG
4. DSFA
5. ADM, Partnership Companies or Leader Groups
6. Health Boards
7. St Vincent DePaul
8. URBAN and other EU Programmes.
9. Others including private companies and patrons.

The groups reviewed vary greatly in size and in the scale of their activities. Some of those examined provide thermal efficiency services to less than 100 households per year while Energy Action services almost 1,600 homes annually. Table 4.3 provides details of the number of fuel poor households that have received thermal efficiency services from each community group since they were established and in 2001. Of the total number of 21,568 households serviced since the community groups were established, 18,600 were in the Greater Dublin Area while only 2,968 were elsewhere in the county. The corresponding breakdown for 2001 was 2,275 in Dublin and 636 elsewhere.

**TABLE 4.3 SCALE OF ACTIVITIES**

	Total Since Start-up	2001
Action Inishowen	480	80
Athlone Home Comforts	250	20
Clondalkin Home Insulation Project	1,200	250
Comas Teo	38	0
Cunamh Energy Action	1,000	396
Energy Action	18,000	1,600
HEAT	1,400	425
Southhill Community Services Board Ltd	200	0
Waterford Energy Programme	1,000	140
Total Households Serviced	21,568	2,911

The level of measures installed by the community groups varies greatly between them and is continuously evolving and changing. All of them generally provide a 'basic package' of attic insulation, draught proofing and hot water lagging jackets. One group also installs central heating on behalf of local authorities (Athlone Home Comforts).

#### 4.2.4 Standards and Training

Given the fact that the vast majority of the community groups' employees are participants in either the FÁS Community Employment Scheme, Full Time Job Initiative Programme or the Social Economy Programme a strong emphasis is placed on the provision of training. While for the most of the groups the overall goal is to alleviate the level of fuel poverty, the training and up-skilling of previously long-term unemployed, or other marginalised members of society, is an equally important objective.

Energy Action is an accredited training centre for National Vocational Certification and City and Guilds. Training in domestic insulation (NVQ levels 1 and 2) is available through City and Guilds while under NVQ, energy awareness training (NVQ levels 1 and 2) is provided. Energy Action is also the national training centre for Irish Home Energy Rating (IHER) and training in energy surveys and audits to NVQ level 3 is available through this. Further Education and Training Awards Council (FETAC) courses are also available in thermal insulation and energy management in domestic buildings. All of the training is certified and participants undertake external examinations. Energy Action also provides its staff with European Computer Driving Licence Training (ECDL) and in-house training in cavity wall insulation<sup>15</sup>, home security and surveying for draught proofing.

Energy Action also plays an important role in the provision of training to other community groups. All of the groups currently delivering thermal efficiency services stated that their staff had received either City and Guilds, NVQ or FETAC training in energy awareness and draught proofing. One group also stated that its staff had received training in cavity wall insulation from a certified UK company.

All of the groups reviewed have a detailed system of quality control in place. Quality control is carried out at two or three different levels, depending on groups' individual circumstances. Groups have quality control mechanisms at the following levels:

- team leader/quality officer on site at all times;
- quality control officer checks work after it is completed;
- local authority clerk of works undertakes quality checks on completed jobs, where work is carried out on their behalf.

While it was not possible to inspect the exact nature of the quality checks undertaken by each group, it is believed that there are differences between them in both specification and implementation e.g. the percentage of houses selected for quality checks may vary depending on whether the work was carried out on behalf of a Local Authority or another organisation.

#### 4.2.5 Cost Models

This section reviews the cost of installing a 'basic package' of thermal efficiency measures in a typical 3 bedroom local authority terraced house. This type of dwelling was chosen for analysis as it represents the majority of houses serviced by the community groups.

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<sup>15</sup> Energy Action plan to employ a UK based company to deliver this training in the future.

The 'basic package' of measures refers to attic insulation, lagging jacket, hot water pipe insulation, draught proofing, and energy saving light bulbs.

Details of costs were received from six groups in total. The total average cost per house was found to be €470. One of the costings received was significantly higher than the other five and when this is excluded the average cost drops to €430 per house. The groups were asked to provide a breakdown of their materials, labour and overheads costs. Material costs ranged from €190 to €330 and the average cost was found to be €250. There was also a significant variance in labour costs which averaged at €184 per house. A number of groups were unable to provide a breakdown of overhead costs but from the data available it is estimated that they are in the region of 10% to 15% or €50 per house.

When considering the above costs it should be recognised that there are a number of reasons why costs would vary between groups. One of the most important factors impacting costs is the quality of the materials used. Another consideration is the geographic location of the group and size of the area serviced. A group operating in a large rural county would have much greater travel costs than a group operating solely in an urban area.

A number of private operators were also questioned in order to ascertain their fee for the house type described above. Although most were reluctant to quote a price without viewing a property, an average price of €330 was given for attic insulation only. It was not possible to determine costs for other measures but it estimated that the cost of the total package from the private sector would be substantially greater than that for the community groups. While it is difficult to make precise cost comparisons within the confines of this review, the cost of attic insulation only (for the house type described above) delivered by the community groups is estimated to be between €50 and €70 lower than that in the private sector<sup>16</sup>.

## **4.3 Government Policies Impacting on Fuel Poverty**

### **4.3.1 Overview**

No single government department has overall responsibility for addressing the issue of fuel poverty in Ireland. A number of departments, however, provide supports that address some of the causes of fuel poverty. The most significant government response to fuel poverty is in the form of social welfare payments. Funding is also allocated by the DoELG for investment in both the public and private housing stock. The National Anti Poverty Strategy (NAPS) contains a specific reference to the eradication of fuel poverty but it does not outline the mechanisms through which it will be addressed. The government's response to poverty in general through the NAPS could also be deemed to address the issue of fuel poverty while not specifically designed to do so.

### **4.3.2 Social Welfare Payments**

The Department of Social and Family Affairs (DSFA) pays a number of supplementary welfare payments for the purpose of assisting those on low incomes with the cost of meeting heating needs. The most significant of these is the Fuel Allowance which provides a seasonal income supplement to long-term social welfare recipients whom meet certain qualifying criteria. Fuel allowances are paid weekly from October to April and are integrated with existing welfare payments. In total, 30%, or 274,000<sup>17</sup>, of welfare recipients are paid a fuel allowance.

<sup>16</sup> For comparable standards of work.

<sup>17</sup> As at December 2001.

The standard<sup>18</sup> weekly Fuel Allowance payment had remained unchanged at €6.35 between 1985 and 2001 but was increased to €9.00 from January 2002. The DSFA does not envisage that Fuel Allowances would meet a household's entire heating requirements. They are paid in recognition of the fact that low income households experience additional heating costs in the winter period. The eligibility criteria for the allowances do not take into consideration a person's heating requirements or the energy efficiency of the dwellings in which they reside. The Fuel Allowances scheme is therefore not designed in order to address the issue of fuel poverty. It provides additional social welfare to low income households that may or may not be experiencing fuel poverty but it is likely that many people experiencing fuel poverty do not receive the allowance. Total expenditure on Fuel Allowances in 2001 was €61.3m but this is expected to increase to €85.6m in 2002 as a result of the increased payment rate introduced in January 2002.

In addition to the Fuel Allowances the DSFA provides a number of other fuel related social welfare benefits. Free electricity and gas are available to existing social welfare recipients whom meet certain criteria. The Free Electricity Allowance provides for free electricity of up to 1,500 units annually and also covers normal standing charges. It is paid directly by the DSFA to the utility company. The Free Natural Gas Allowance is provided as an alternative to the Free Electricity Allowance. A Free Bottled Gas Refill Allowance is available for those who mainly use gas but are not connected to a natural gas supply. Total expenditure on free allowances in 2001 was €54.4m. Table 4.4 sets out the number of recipients and total expenditure by allowance in 2001.

**TABLE 4.4: TOTAL EXPENDITURE AND NUMBER OF ALLOWANCE RECIPIENTS, 2001.**

	No. Of Recipients	Expenditure (€ m)
Free Electricity Allowance	264,407	51.8
Free Natural Gas Allowance	18,600	2.5
Free Bottled Gas Refill Allowance	442	0.1
SOURCE: DSFA		

In cases where recipients of Supplementary Welfare Allowances have exceptional heating needs due to ill health, the DSFA provides Heating Supplements. In 2000, there were 1,562 recipients of Heating Supplements at a total cost of just under €1m.

### 4.3.3 Investment in Housing

A total of €7.6 billion has been provided for investment in social housing in the NDP. It is envisaged that between 2000 and 2006 the multi-annual local authority housing programme will provide 35,500 new dwellings. Significant resources are also available from the Department of the Environment and Local Government for the refurbishment of both local authority and private housing. Area-based regeneration initiatives will play an important role in the redevelopment of flat complexes such as those in Ballymun and in the inner-city. The Remedial Works Scheme provides funding to local authority housing residents for housing refurbishment including the installation of heating systems. The scheme, introduced in 1985, is implemented through the local authorities. Since then approximately 14% of the local authority housing

<sup>18</sup> A higher amount of €12.90 is paid in built-up areas where the sale of bituminous coal is banned.

stock has been refurbished. Guidelines are issued by the DoELG to local authorities in relation to the nature of work to be carried out. These include recommendations on the provision of efficient and affordable heating systems. Local authorities also provide funding from their own resources for the refurbishment of their housing stock including the installation of central heating and thermal efficiency measures.

The Special Housing Aid for the Elderly grant scheme provides funding for residents of private housing. The scheme is managed by the DoELG but is implemented by the health boards. Funding is allocated by health boards to elderly people in poor housing conditions who may otherwise require residential care. Additional funding has been provided under the scheme since 2000 in order to facilitate the installation of central heating. Expenditure under the scheme has increased from  $\approx$  5.2 m in 1997 to  $\approx$  11.0 m in 2001. The type of work undertaken includes provision of bath/shower and the installation of electricity and hot water systems. A total of 3,601 jobs were undertaken in 2000 and the figure is estimated to have increased in 2001<sup>19</sup>. The recent amendment to the scheme which permits the installation of central heating provides a vital source of funding for many experiencing fuel poverty. A similar scheme is also operated for disabled persons.

The Essential Repairs Grant Scheme, operated by the DoELG, is available to elderly residents of sub-standard private housing. The objective of the scheme is to prolong the life of houses for elderly occupants whom might otherwise require local authority housing or residential care. The scheme provides for general house refurbishment and basic structural improvements including thermal efficiency measures. The size of grants awarded normally range between  $\approx$  5,000 and  $\approx$  10,000.

#### 4.3.4 Housing Standards

A central objective of the DoELG is to ensure a modern and effective system of building standards harmonised with those of the EU. In this regard the Department introduced the Building Regulations Amendment in January 2003.

The main provisions of the amendment as they relate to energy conservation standards are:

- the typical<sup>20</sup> thickness of attic insulation will be increased from the previous range of 150-200mm to 250-300mm;
- wall insulation was increased from 60-70mm to 100-150mm;
- the level of floor insulation increased from 50mm to 100mm.

The DoELG estimate that the revised building regulations will reduce the energy requirements for space and water heating in new houses by 23% to 33%. The Department also forecasts that the changes will result in a total reduction in CO<sub>2</sub> emissions of more than 300,000 tonnes per annum by 2012.

While the new buildings regulations will greatly improve the thermal efficiency of new houses they may also impact on the insulation standards for the existing housing stock. Community groups currently engaged in delivering thermal efficiency services typically install attic insulation at the thickness specified in the building regulations. It remains to be seen, however, as to whether it would be practical for them to install significantly increased thickness levels. In many older homes, in particular, there may not be sufficient attic space to install substantially thicker depths of insulation.

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<sup>19</sup> Year end figures are not yet available but 2,288 jobs were undertaken in the first 6 months of the year.

<sup>20</sup> Thickness will vary greatly depending on the thermal conductivity of materials used, those shown here are reflective of the materials that are currently most commonly used.

### 4.3.5 National Anti-Poverty Strategy

The National Anti-Poverty Strategy (NAPS), which was launched in 1997, provides a framework for government policy to help eliminate poverty in Ireland. The overall goal of the strategy is reduce the proportion of the population in consistent poverty<sup>21</sup> to below 2% by 2007. The strategy also states that it will be a Government target to increase the lowest rate of social welfare to € 150 per week (in 2002 prices) by 2007. Both these targets will have significant implications for the level of fuel poverty also.

The Report of the National Anti-Poverty Strategy (NAPS) Working Group on Housing and Accommodation contains a number of specific targets relevant to the issue of fuel poverty. In relation to heating in local authority housing it states that :

- “by end 2007 adequate heating systems will be available in all local authority rented dwellings provided for elderly persons;
- by 2010 adequate heating systems will be provided in all local authority rented dwellings”

Research presented both in this report and elsewhere has shown that there is a strong link between fuel poverty and the type of heating system available. A commitment to ensure that all local authority housing will have “adequate heating systems” by 2010 will greatly reduce the level of fuel poverty in that sector.

In relation to housing standards for low income and disadvantaged households the report notes the following objectives:

- “to work towards the elimination of sub standard dwellings in all housing tenures;
- to address the issue of fuel poverty by ensuring that dwellings are adequately insulated and have appropriate and adequate heating systems”

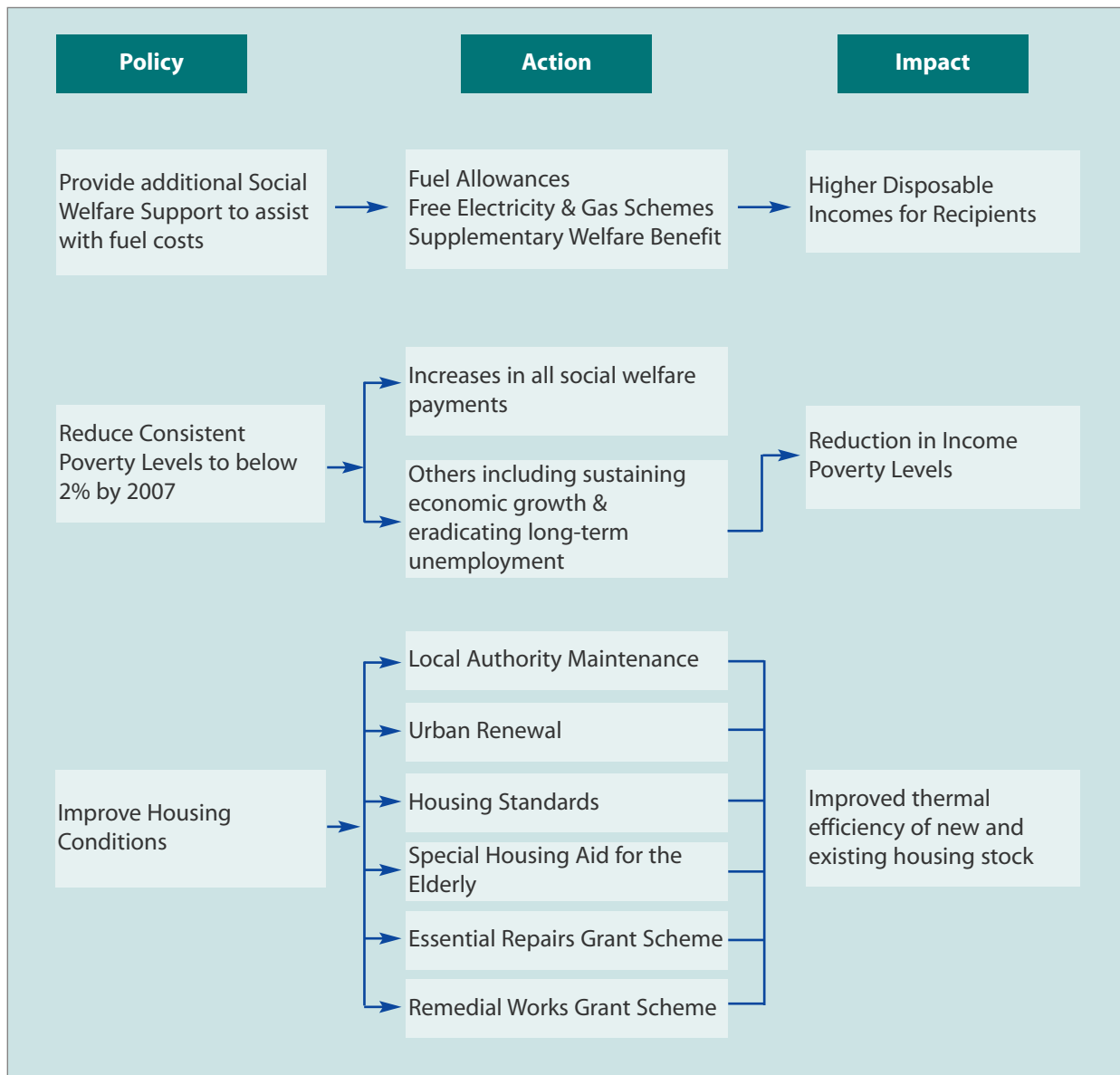
A targeted reduction of 50% has been set for the number of low income and disadvantaged households forced to live in dwellings which are not dry and damp free or which lack adequate heating. A commitment has also been given to introduce revised standards for rented accommodation in 2003.

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<sup>21</sup> Consistent poverty is defined as being below 50%-60% of average disposable income and experiencing enforced basic deprivation. Basic deprivation refers to a set of eight indicators one of which is 'having to go without heating in the past year through lack of money'

Figure 4.1 provides an overview of government policies which impact on fuel poverty levels.

**FIGURE 4.1 OVERVIEW OF GOVERNMENT POLICIES IMPACTING ON FUEL POVERTY**



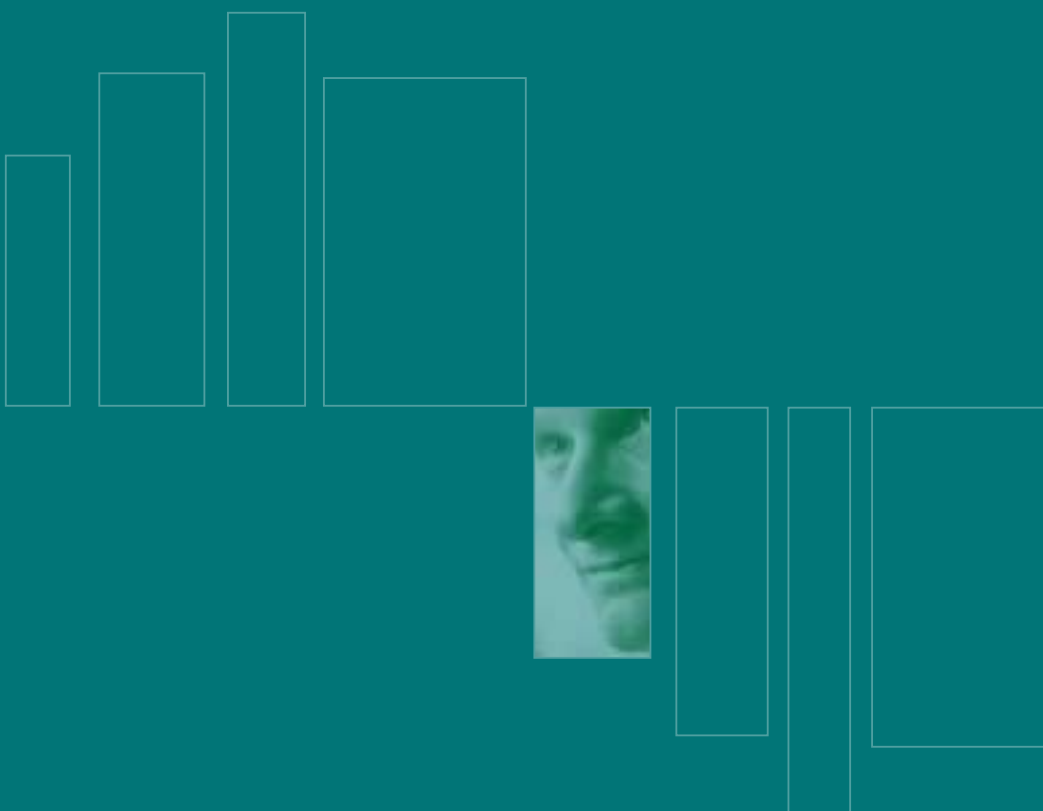
## 4.4 Conclusions

The following are the main Chapter conclusions:

- it was found that there are currently six community groups addressing the issue of fuel poverty;
- community groups have delivered thermal efficiency services to 22,000 homes in the past 15 years – in 2001 almost 3,000 homes received these services;
- the delivery of thermal efficiency services is predominantly focused on Dublin, where 70% of the homes serviced in 2001 were located;
- all of the groups stated that they received funding from a number of sources. FÁS was the most important funding source for all groups while many of the groups also received funding from local authorities;
- a number of community groups have been awarded funding for a three year period under the FÁS Social Economy Programme;
- policies of a number of government departments have a significant impact on fuel poverty. Substantial resources are awarded annually to social welfare recipients through the Fuel Allowances and other related schemes. There are dimensions within the Fuel Allowance scheme which address a number of issues including the alleviation of poverty, compensation for inefficient buildings or compensation for economic instruments. Thermal efficiency upgrades in homes of recipients might allow a re-balancing or adjustment in these allowances, providing that this would be administratively feasible;
- substantial investment in the social housing stock is planned for the next eight years. The refurbishment of local authority housing will greatly reduce fuel poverty levels in that sector. Commitments have been given in NAPS to improve the thermal efficiency and heating standards of all local authority housing by 2010;
- The Building Regulations Amendment was introduced in January 2003. This will have two major impacts on fuel poverty: firstly, all new dwellings will be have significantly higher levels of thermal efficiency and secondly, the standards for the installation of insulation in the existing housing stock may increase;
- it was found that while a number of government departments and agencies are addressing various causes of fuel poverty, no single organisation is responsible for tackling the problem of fuel poverty in a holistic manner.



# Chapter 05: Impact of Economy-wide Instruments on Fuel Poverty



## 5.1 Introduction

In this Chapter we outline the possible impact of energy and climate change-related economy-wide instruments on fuel poverty. Section 5.2 summarises the National Climate Change Strategy. Section 5.3 considers economy-wide instruments, ie instruments with broad sectoral and/or cross-sectoral application, in particular carbon taxes and emissions trading. In Section 5.4 we examine the impact of economy-wide instruments on fuel poverty and look at ways to cushion the impact.

## 5.2 National Climate Change Strategy

Ireland's National Climate Change Strategy was published in October 2000 in response to the United Nations Framework Convention on Climate Change which required developed nations to put in place policies and measures to return the emissions of greenhouse gases to 1990 levels by 2010. It was later agreed, in Kyoto in 1997, to reduce global emissions of greenhouse gases by 5.2% over the period 1990-2012. The EU will reduce emissions by 8% overall.

Ireland, as part of the EU target, has agreed to limit the growth in greenhouse gas emissions to 13% above 1990 levels. The 'do nothing' scenario would have resulted in CO<sub>2</sub> emissions rising by 37%. To meet the national target an emissions reduction of 13.1m tonnes carbon dioxide (CO<sub>2</sub>) equivalent is required.

CO<sub>2</sub> is the main greenhouse gas and is produced naturally and through the burning of fossil fuels in transport, heating and electricity generation. Emissions of methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O) are relatively higher than in other countries. In 1990 agriculture accounted for 35% of all greenhouse gas emission, more than any other sector. However, emissions from the transport sector are expected to grow faster (180%) than any other sector by 2010.

The guiding principles behind the strategy recognise that the burden of emissions reduction must be borne equitably within the economy. These are:

- the requirement to promote sustainable development;
- maximisation of economic efficiency;
- achievement of sectoral equality;
- protection of economic development and competitiveness;
- generating an impetus for early action.

A range of policy tools and options will be used to meet the targets, these include:

- the use of economy-wide instruments;
- a range of policies and measures tailored specifically to relevant sectors;
- a vigorous and appropriate pursuit of common and coordinated policies and measures implemented at EU and wider international levels;
- participation in international emissions trading.

## 5.3 Economy-Wide Instruments

### 5.3.1 Why Economy-Wide Instruments?

Given that the emissions targets cannot be met by actions in any one sector, action must be taken across all sectors. The best way to bring this about is through the use of economy-wide instruments. Economy-wide instruments consist of a variety of measures which use market processes to meet their objectives, ie change the relative price of goods and develop a market where none currently exists or change prices to discourage consumption. Of interest here are carbon taxes and emissions trading.

In the context of emissions reductions, economy-wide instruments have a number of attractive characteristics:

- they rely on market forces and reduce the need for government intervention;
- they factor greenhouse gas emissions into the final price of a given commodity (and thereby comply with the polluter pays principle);
- they create an incentive for economic agents (organisations or individuals operating in the market) to reduce emissions in the most efficient and cost-effective way;
- they force economic agents to choose between the cost of emissions reduction or the cost of doing nothing;
- they provide ongoing incentives to reduce emissions and maximise the competitive advantage of achieving low cost emissions reduction;
- they promote continuous, rather than once-off, improvements in greenhouse gas efficiency.

### 5.3.2 Carbon Taxes

A carbon tax would serve to reduce energy-related CO<sub>2</sub> emissions by placing a financial cost on them, thus creating an economic incentive to reduce carbon intensity in production processes and shift production to less carbon-intense sectors. An effective carbon tax must be designed in a way that ensures economic agents are encouraged to reduce emissions rather than absorb the increased costs. Carbon taxes can take the place of compulsion and regulation in identifying changes that are cost-beneficial.

The National Climate Change Strategy notes that the “Government will put in place an appropriate framework for greenhouse gas taxation, prioritising CO<sub>2</sub> emissions, from 2002 on a phased, incremental basis and in a manner that takes account of national economic, social and environmental objectives”<sup>22</sup>.

A range of factors must be taken into account in the design of a carbon tax:

- revenue recycling: the measure is to be broadly fiscally neutral, provide new incentives towards energy efficiency and disincentives on energy inefficiency, ease the impact on the firms most adversely affected and on society. Potential ways to do this include corresponding reductions in direct taxation, incentives for spending on energy efficiency, etc. It must be noted that revenue recycling does not imply that certain sector or firms will be insulated from the need to cut greenhouse gas emissions;

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<sup>22</sup> National Climate Change Strategy: Ireland, page 27.

- alternatives for firms: economic agents should be guided towards lower emission rather than opting for higher costs, ie tax changes promote the shift towards the most environmentally beneficial behaviour;
- prevent market failure: in line with the above support programmes must be implemented to ensure the development and implementation of reduction programmes at the level of the firm;
- level of tax: the carbon tax must be implemented at a level which maximises the emissions reduction response in a cost effective manner;
- structure of the carbon tax: the tax must be structured to maximise the benefits for low levels of emissions. Given that fossil fuels are imported the balance of payments will also benefit;
- point of taxation: it is proposed to apply an upstream (point of production) tax based on the carbon equivalent content of fuel inputs in the case of energy production, greenhouse gases from emissions from processes and the use of industrial gases in the case of industry. Downstream (point of consumption) could also be applied but is considered difficult;
- a review of rates and structures of tax may be required to ensure effectiveness and efficiency;
- all related instruments should be mutually reinforcing and not in conflict with the ultimate goal of emissions reductions;
- relationship with emissions trading: this should be reviewed in the context of finalising trading regimes.

### 5.3.3 Emissions Trading

Emissions trading or tradable permits (the right to emit greenhouse gases) are market-based instruments for cost-effective pollution control. They are environmentally effective as they are based on the setting of specific emission limits. A quota is set for emissions and this is translated into a number of permits. Each permit specifies exactly how much the firm is allowed to emit and is transferable. Emissions trading systems can also be economically efficient, in that they minimise the overall cost of compliance by encouraging the agents that can abate pollution more cheaply to do so first, while allowing those with higher costs to opt for buying additional permits in excess of their emissions quota. They also provide flexibility for regulated agents in their choice of means for achieving the environmental objectives. Additionally, depending on how the emissions trading scheme is designed, they can ensure better control over the distributive effects of policies, achieving desired income distribution or transfers among different groups through several methods of initial permit allocation. Permits may be auctioned, allocated for free ('grandfathering') or a combination. A key difference between an emissions trading scheme with free allocation and an environmental tax regime or auctioned permit is that the latter two are revenue raising. Such revenues can be used to for poverty-proofing measures or diverted to the general exchequer or a combination of the two.

The EU Commission's recent draft directive regarding emissions trading<sup>23</sup> envisages a regime whereby Member States will grant tradable greenhouse gas permits that set an obligation to hold emission allowances equal to the actual emissions as well as requiring adequate monitoring and reporting of emissions. In addition to permits Member States will also allocate allowances. Each year emitters will be obliged to submit for cancellation a number of allowances that correspond to their actual emissions. If they wish to exceed their permitted allowance firms can buy permits/allocations from firms with unused allowances.

<sup>23</sup> Commission of the European Communities (2001), "Proposal for a directive of the European Parliament and of the Council establishing a Framework for Greenhouse Gas Emissions Trading within the European Community and amending Council Directive 96/61/EC".

## 5.4 Impact of Economy-wide instruments on Fuel Poverty

### 5.4.1 Carbon Taxes

The introduction of carbon taxes will have a more significant impact on some fuel prices than on others. The dirtier fuels such as peat and coal emit much higher levels of CO<sub>2</sub> than either oil or gas. Table 5.1 outlines the level of CO<sub>2</sub> emissions from various fuels and how different levels of carbon taxes would impact on them.

**TABLE 5.1 CO<sub>2</sub> EMISSIONS BY FUEL TYPE AND PRICE IMPACT OF CARBON TAXES**

	CO <sub>2</sub> Emissions Per TOE*	% Impact on Fuel Prices	
		Impact of € 5 carbon tax**	Impact of € 10 carbon tax**
Sod Peat	4.34	21.7	43.4
Coal	3.7	18.5	37
Oil	3.05	15.3	30.5
Natural Gas	2.3	11.5	23

\* Tonne of oil equivalent \*\* Impact on price per tonne of oil equivalent

SOURCE: ESRI.

The price impact of carbon taxes on peat would be almost double that on natural gas. Similarly the price increase in coal would be 1.6 times greater than that for natural gas. Previous research has shown that those who experience fuel poverty tend to use the dirtier fuels of coal and peat (in rural areas).

The introduction of carbon taxes would therefore have a higher proportionate impact on those experiencing fuel poverty than on other sectors of society. In addition to the fuel type factor, and as with any form of economic instrument, the poorest households will suffer disproportionately more from the introduction of carbon taxes as they spend a greater proportion of their income on energy. The introduction of carbon taxes would, however, generate a substantial revenue source which could be used to alleviate the impact on those who have suffered the greatest.

### 5.4.2 Emissions Trading

The impact of an emissions trading regime depends on how the permits are allocated. As stated earlier, one option is to allocate the permits to existing polluters based on their current levels of emissions, frequently called "grandfathering". Under this scenario polluters have to purchase additional permits if they want to exceed their quota. The alternative is to auction the permits to the highest bidders (and recycle the revenue). Choosing the grandfathering route has an opportunity cost in that no revenue is raised for alternative purposes. This would be the least desirable scenario from a fuel poverty perspective as the

revenues raised could be used for 'fuel-poverty proofing' the National Climate Change Strategy. The introduction of an emissions trading regime implies that producers of emissions will have to acquire a permit for every tonne of carbon equivalent fuel used. Those with permits are free to emit (consume the permit) or sell the permit on to other emitters. If a permit holder chooses to consume the permit the cost of the permit will be passed on to consumers in the form of higher prices plus the open market price of the permit. If the permit is grandfathered the receiver will get a windfall gain paid for by the final consumers via higher prices. However, if they have to buy the permit they do not receive a windfall gain. In this case the Exchequer as the seller of the permit has benefited and can recycle the benefit. It can therefore choose to alleviate the impact of those who suffered most severely from the price increases.

#### **5.4.3 Alleviating The Regressive Effects of Economy-wide instruments**

There are a number of methods with which to recycle the revenue raised through the introduction of economic instruments:

- green fiscal reforms have usually been introduced in a revenue neutral way. In practice reforms have been implemented in a manner that reduces the tax wedge on labour in order to reduce unemployment. This has the advantage of achieving environmental objectives without resulting in reduced levels of economic activity;
- those in fuel poverty will require special attention through the social welfare payments system and targeted incentives (e.g. support for insulation improvements). Both will be required to tackle the two categories of fuel poverty: those with insufficient basic income to pay for increased energy costs (lowest income households will require full compensation for increased costs), and those with high energy needs requiring capital investment to reduce excessive costs. The main method of providing support for poor households is through primary weekly social welfare payments, and the standing policy on necessary increases in overall social welfare payments would suggest that compensation would be through these primary payments. An increase in the Fuel Allowance Scheme payment would provide an alternative or supplemental mechanism for support, but only for the winter heating season;
- subsidies to improve the thermal efficiency performance of homes of the less well-off would also be appropriate;
- the option of recycling to firms and society in general, through reduced employer labour taxes and costs may be explored. In this context, it may not be appropriate to reduce PRSI, as the Social Insurance Fund is projected to be in deficit by the time of the Kyoto commitment period, and targeted adjustment of income tax and allowances could address specific problem categories (e.g. low income households in the tax net with children).

#### **5.4.4 Conclusions and Recommendations**

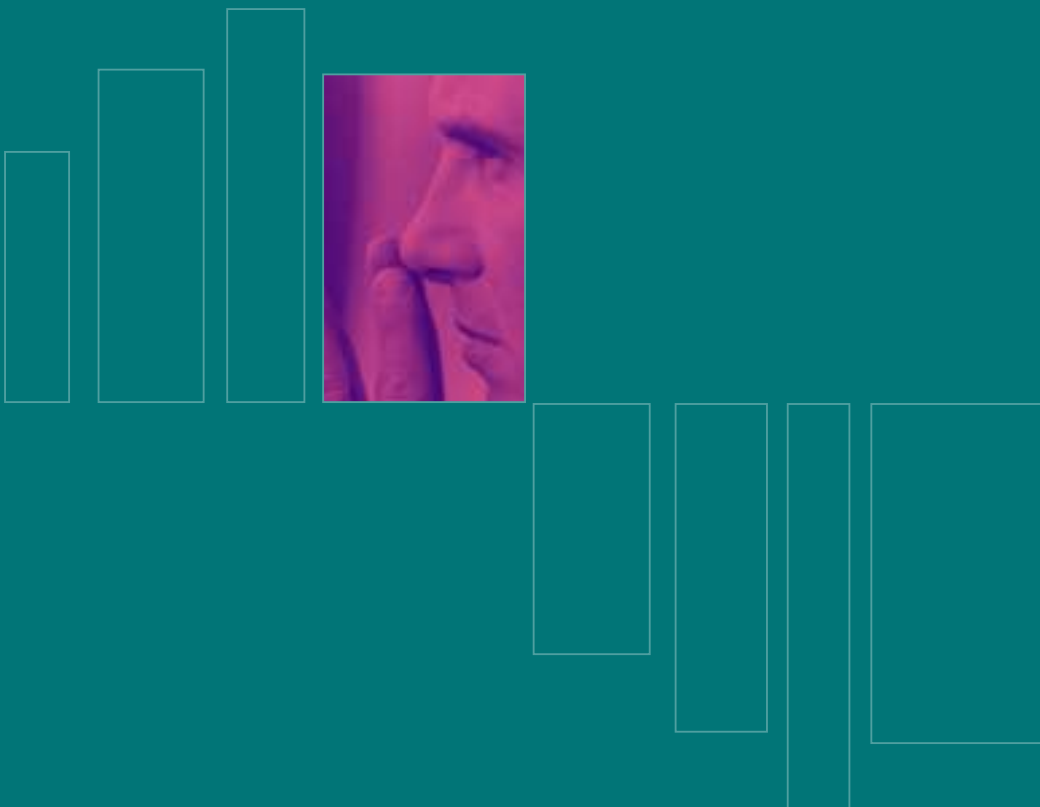
In relation to the type of economic instrument to be introduced, either carbon taxes or the auctioning of permits would offer the potential for revenue recycling. From a fuel poverty perspective these would be the most desirable form of instruments to be used. In order to cushion the impact of higher fuel prices on those experiencing fuel poverty the following options are recommended:

- upon the introduction of economic instruments, both the fuel allowances and all other social welfare payments should be addressed. The increase in fuel allowances should be greater than that for other social welfare payments. It is recommended that any real increases in social welfare payments should be on a short-term basis only in order to offer those on low incomes the opportunity to adjust to increased fuel prices;

- for local authority housing a portion of the available revenue should be allocated to local authorities in order to fast-track the improvement of the thermal efficiency of housing in that sector;
- financial assistance, close to the full cost of improving the thermal efficiency of dwellings, should be made available to all those receiving social welfare payments. This should apply to both local authority tenants and owner occupiers;
- conversion grants to enable those currently using coal and peat to switch to gas or oil should be made available to all social welfare recipients.;
- tax credits, equivalent to the cost of thermal efficiency improvement works or heating conversion, should be made available to landlords of rented property and to all owner occupiers;
- special consideration should also be given to those on low incomes but not in receipt of social welfare payments. One option would be to provide grants to those under a certain household income threshold to finance the improvement of the thermal efficiency of dwellings. It can be seen from Chapter 3 (Figure 3.13) that the number of households experiencing fuel poverty falls substantially once household incomes increase to over  $\approx 30,000$ . Depending on the level of revenue available, a household income threshold of circa  $\approx 30,000$  could be set. Households with incomes below this threshold should be awarded upgrade grants which would cover a large proportion of the costs of thermal efficiency improvement works;
- a set of detailed selection criteria and operating procedures should be established for all grants. The overall purpose of the grants should be to improve the thermal efficiency or reduce energy wastage in dwellings. The criteria and procedures for each grant category should set out the type of works to be funded, the maximum grant level to be awarded and the manner in which applications will be assessed. All grants should be funded solely from the revenue generated from carbon taxes or emissions trading.



# Chapter 06: Sustainable Energy Ireland's National Programme



## 6.1 Introduction

SEI has a budget of €7.62m over the period 2000-06 in order to address the issue of low income housing and fuel poverty. It has set a target of assisting 18,000 households experiencing fuel poverty in this period. This Chapter sets out guidelines as to how SEI can make the optimum use of its resources in this regard.

## 6.2 Factors to be Considered In Relation to Disbursement of Funds

The key findings, as they relate to the fund disbursement plan, arising from the review of the nature and scale of fuel poverty in Chapter 3 are as follows:

- 62,000 people in Ireland experience persistent fuel poverty while an additional 165,000 people suffer from experience intermittent fuel poverty. The total number of households found to be experiencing fuel poverty in 2001 was therefore 227,000;
- 28% of those experiencing fuel poverty live in Dublin while 38% live in rural areas. Just over 12% were found to reside in other cities and a further 12% in small towns. In excess of 10% of those experiencing fuel poverty live in large towns. The regional dispersion of fuel poverty indicates that about one third of the available funding should be allocated to the Dublin area and at least a further third to groups servicing rural areas. It is important that a substantial portion of the available funding should continue to be spent in Dublin as it currently has an extensive delivery network. This will enable considerable progress to be achieved during the initial programme period. It was also noted in Chapter 3 that the incidence of fuel poverty is higher in the BMW Region than in the S&E Region;
- while a high proportion of those experiencing fuel poverty live in local authority housing, in absolute terms a much greater number of fuel poor own their own homes than rent from local authorities. Almost 63% of those experiencing fuel poverty own<sup>24</sup> their own homes while 27% rent their homes from local authorities. A further 10% of those experiencing fuel poverty rent accommodation in the private sector. It was shown in Chapter 4 that of these three groups, those renting from local authorities are likely to receive a greater level of government assistance in addressing fuel poverty than the other groups. NAPS has set out the commitment to ensure that all local authority houses will have adequate heating systems by 2010. While it may be more difficult to identify fuel poverty among non local authority owned homes, it is clear that it is this group that will require the greater level of assistance over the period 2002-2006.

## 6.3 Guidelines for Fund Disbursement

The following sections set out are a list of recommendations in relation to the disbursement of funds through the Low Income Housing Programme.

### 6.3.1 To Whom and Where

- It is recommended that all of the direct funding should be allocated to community groups wishing to address the issue of fuel poverty at a local level. Through using community groups to deliver the programme, the funding will complement that of other government programmes and promote social inclusion in disadvantaged areas. Other important factors in delivering the programme through community groups are:

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<sup>24</sup> Includes those where home is mortgaged.

- the cost per house would be lower than if private installers were used;
  - a number of community groups have considerable expertise in the area and this should be availed of;
  - local community groups have a detailed understanding of the social dynamics of their own areas and are best placed to make decisions on household selection. Many of the groups have also undertaken their own programme of research and have a detailed understanding of the nature and scale of fuel poverty in their own area;
  - community groups have an ethos of working with other agencies for the purpose of improving the overall quality of life of the disadvantaged and marginalised sections of society;
  - community groups deliver thermal efficiency services in conjunction with other measures such as home security;
  - groups in receipt of FÁS funding have already gone through a 'vetting system' and are subject to a programme of audits;
  - community groups currently involved in addressing the issue of fuel poverty have displayed a spirit of professionalism and commitment that suggests that they would have an integral role to play in the delivery of a national programme.
- It is recommended, however, that if a community group is not available to service a large rural area or city, private installers should be commissioned, subject to quality and value-for-money considerations. Other types of delivery involving co-operation between community, public and private sectors could also be investigated;
  - at least 65% of the available funding should be allocated to groups operating outside of Dublin. Particular emphasis should also be given to groups operating in rural areas. Groups currently operating in cities and large towns should be encouraged to extend their coverage to their rural hinterland;
  - the most recent Census shows that 64% of the State's population live in the S&E Region and 36% in the BMW Region. It was shown in Chapter 4 that the incidence of fuel poverty in the BMW Region was 19% while that in the S&E Region was 16.9%. This higher incidence of fuel poverty in the BMW Region should be reflected in the funding allocation. It is recommended that at least 40% of the available funding should be allocated to the BMW Region;
  - it is recommended that a threshold should be set for the proportion of funding to be allocated to local authority housing. The threshold would be different for groups operating in cities from those operating in more rural areas. Data on the tenure of households addressed should be collected by all groups and the thresholds should be reviewed periodically. While it is recommended that the thresholds should be agreed in consultation with individual groups, the national target for the number of local authority houses to be addressed should not exceed 50% of the total. While it is recognised that a lower number of fuel poor live in local authority housing than in other housing types, the majority of thermal efficiency services currently delivered by community groups are to local authority householders. This is partly due to the fact that it is more difficult to effectively target the private housing sector. It is therefore recommended that a shift in the focus of attention from local authority housing to owner-occupied dwellings should occur over time. Greater focus should also be paid to the private rented sector.

### 6.3.2 Funding Levels

The following are recommendations in relation to the level of funding to be allocated:

- funding should be allocated to all groups on a multi-annual basis over the time frame of the programme. This would enable groups to plan their activities over longer periods and would also assist them in leveraging funding from other sources;
- the number of houses for which groups should receive funding would be based on an assessment by SEI of business plans submitted by community groups. A mechanism should also be put in place whereby unused allocated funding could be transferred to groups that have sufficient capacity to service a greater number of houses;
- allocations to groups should be made to cover the total cost of materials only;
- equal allocations per house should be awarded to all groups irrespective of their track record or experience. In exceptional cases, however, where groups operate in very rural or remote areas, additional funding should be allocated to cover higher than normal travel costs;
- while it is envisaged that in subsequent programme periods the level of thermal efficiency services will be broader and will involve the 'the whole house' approach to energy conservation, it is recognised that in order to address a substantial number of homes within the constraints of available resources a restricted level of measures will have to be delivered to the majority of houses under the current programme. It is recommended that the allocation per house, for the installation of the 'basic package', should be  $\approx 250$  in the first year and should increase by 4% per annum<sup>25</sup> over the remaining years of the programme. The cost per house estimate used here assumes that existing standards (insulation thickness requirements etc) will continue to operate over the time frame of the programme. It is envisaged that 17,600 houses will receive the 'basic package' of thermal efficiency measures. Table 6.1 below outlines the cost per house and the annual number of houses to be addressed over the period 2002-2006;
- it is recommended that a further 400 homes should receive a higher standard of measures or the 'whole house' approach to energy conservation. In addition to the 'basic package' of services, the 'whole house' approach would include cavity wall insulation, central heating, installation of energy efficient appliances and other energy conservation measures. Funding under this scheme should be made available to all groups subject to their ability to deliver the measures. It is envisaged that the average cost per house would be  $\approx 4,500$  in the first year rising to  $\approx 500$  by 2006 (see Table 6.1). The experience gained by groups in delivering this broader range of measures would be instrumental in increasing the level of awareness of a more extensive approach to energy conservation. This would be of great benefit to subsequent fuel poverty programmes;
- it is recommended that about 20 groups nationally should be allocated funding under the programme. It is believed that at least this number would be required in order to achieve a reasonable level of geographical coverage. Given that only six groups are currently delivering thermal efficiency services, about a further 14 groups will be required in order to deliver the programme. These groups will require additional assistance, both financial and otherwise, in order to establish their services. It is recommended that each start-up group should be allocated a once-off grant of up to  $\approx 20,000$  for the purpose of capacity building and to assist them in leveraging funding from other sources. It is believed that it would be necessary to allocate this funding to groups on start-up in order to enable them to purchase equipment, vehicles or premises and to facilitate staff training. Groups should also be encouraged to avail of other sources of capital funding such as that available through the Social Economy Programme.

<sup>25</sup> Allowing for inflation.

**TABLE 6.1 COST ESTIMATES (α )**

	2003	2004	2005	2006	TOTAL
Basic Package					
Cost Per House	260	270	281	292	
No. of houses	3,000	3,500	4,000	4,000	17,600*
Total Cost	780,000	945,000	1,124,000	1,168,000	4,017,000
'Whole House' Package					
Cost Per House	4,500	4,650	4,800	5,000	
No. of houses	75	100	100	125	400
Total Cost	337,500	465,000	480,000	625,000	1,907,500
Start-up Grants					
No. of groups	13				
Grant per group	20,000				
Total Cost	260,000				260,000
Programme Management	111,000	150,500	170,400	176,800	714,450
Miscellaneous Items and Previous Years' Expenditure					721,050*
<b>TOTAL Budget</b>					<b>7,620,000</b>
* Services have already been delivered in 2000 and 2001.					

It is envisaged that programme management costs in the first year would be circa 15% of total expenditure and while actual costs will increase over the duration of the programme, the percentage of total annual expenditure allocated to programme management should not exceed 10%. It is envisaged that management expenses as a percentage of programme expenditure in the first year will be higher due to the cost of establishing standards, monitoring procedures and other programme management systems.

### 6.3.3 Group Selection Criteria and Funding Allocations

When selecting the groups for programme delivery it is recommended that the factors in relation to geographical coverage set out in Section 6.2 should be taken into account. The following factors should also be considered:

- Track record: priority should be given to groups that have a successful track record in delivering thermal efficiency services. This would be of particular importance in the case of geographical overlap;
- Other funding sources: the level of funding that groups can obtain from other sources should be a criterion for selection. Groups should not receive funding under this programme unless they can provide clear evidence that they will be able to obtain funding for labour and overhead costs;

- Technical knowledge: groups should be able to demonstrate both a technical understanding of the issues at hand and a firm commitment to adhere to the standards and training requirements laid down by SEI;
- Funding requested and capacity: some groups will have the capacity (resources and staff) to address a greater number of homes than others. A minimum requirement per group of 100<sup>26</sup> homes per annum should be established in order to achieve economies of scale. If certain groups express a wish to service a greater number of homes, however, additional funding should be allocated to them subject to the constraint of geographical targets;
- Geographical coverage: it was shown in Chapter 4 (Map 1) that there is currently a large proportion of the country where no community groups are delivering thermal efficiency services. Groups requesting funding to operate in these areas should be given priority.

If the number of applicants greatly exceeds the number of groups required for programme delivery a scoring, weighting, ranking system could be used. This would involve scoring the various groups based on the criteria set out above, weighting the scores based on the importance of the individual criteria and ranking all groups in order of the aggregate score achieved.

#### **6.3.4 Programme Management and Other Issues**

A number of programme management issues will need to be addressed prior to allocating funding for a national programme. A key issue is the establishment of standards and monitoring and evaluation procedures. It is recommended that SEI establishes the precise standards to which all work must be carried out, a listing of approved materials and products and the training requirements of staff. An important issue for consideration in relation to the standards required will be the changes required to current practice as a result of amendments to the building regulations.

Irrespective of the mechanism (either in-house or outsourcing) used to carry out quality control, it is recommended that programme management costs should not exceed 15% in the first year and 10% thereafter.

Further research should be carried out in relation to the targeting of fuel poor households. This work should include analysis of micro-level assessment criteria that would assist delivery groups in identifying households experiencing fuel poverty.

### **6.4 Government and Community Response to Fuel Poverty**

It is recommended that SEI, in co-operation with the community groups, should continue to increase the level of awareness of fuel poverty at government level. Current government policies do not address the issue in a co-ordinated manner. While a number of commitments provided under NAPS will have a significant impact on fuel poverty, the exact mechanisms for achieving the stated objectives remain unclear. The establishment of an Inter-departmental Working Group with the responsibility of co-ordination of a government response to fuel poverty would be a welcome development. SEI should propose the establishment of this working group. The group could be chaired by the Department of Communications, Marine and Natural Resources and should comprise of representatives from the Departments of; An Taoiseach; Environment and Local Government; Health and Children; Finance; and Social, Community and Family Affairs; and Community, Rural and Gaeltacht Affairs.

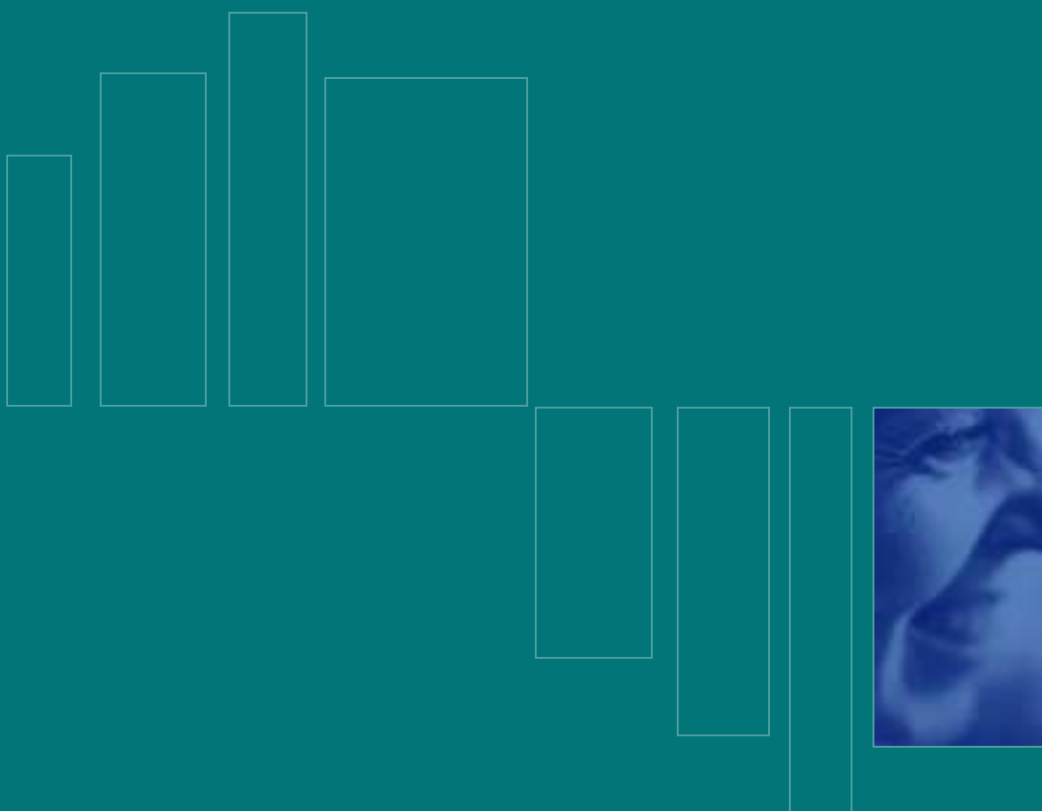
The issues which the group should address would include:

- mechanisms to alleviate negative impacts of economy wide instruments on those experiencing fuel poverty;
- the introduction of tax credits for all households and grants for fuel poor households in order to encourage the improvement of the thermal efficiency of the existing housing stock;
- the use of social welfare payments in addressing the problem of fuel poverty;
- an information campaign in order to increase the level of awareness across government departments and agencies and the general public on the benefits of eliminating fuel poverty;
- co-ordination of departmental activities in order to achieve synergistic benefits in addressing the problem of fuel poverty.

In addition to the co-ordination of central government activities in relation to fuel poverty it is also important that co-ordination mechanisms are established at local level. The County Development Boards (CDBs) could provide such a role as their members represent the four sectors of local government, statutory agencies, local development and social partners.



# Annex 01: Composite Measurement of Fuel Poverty



A variety of aggregate measurements of fuel poverty have been derived. These results are weighted (composite) estimates of fuel poverty. Each indicator is assigned a weight, and each weight varies in the sensitivity analysis in accordance with their relevance to the qualitative definition of fuel poverty. Thus, 'Inability to Afford Adequate Home Heating', as the key indicator of fuel poverty, may be given a higher weighting than the other indicators, and so forth. A variety of sensitivity analyses are conducted to test the sensitivity of the results to various assignments of weights. For economies of space and ease of reading, the indicators are denoted in the weighting equations as follows:

$\alpha$  = Unable to afford to heat home adequately  
 $\beta$  = Unable to pay utility bills on time  
 $\pi$  = Lack of adequate heating facilities

$\delta$  = Damp walls and/or floors  
 $\lambda$  = Rotten window frames  
 $\mu$  = Lacking central heating

### Scenario 1: Key Indicator Given Strong Preference

Here, the key indicator of fuel poverty, 'Households unable to afford to heat home adequately' ( $\alpha$ ), is given a weight of 0.5; each of the five subsequent indicators is assigned a weight of 0.1 respectively, i.e.

$$0.5 \alpha + 0.1 \beta + 0.1 \pi + 0.1 \delta + 0.1 \lambda + 0.1 \mu$$

The results of the various scenarios are outlined in Table 1 below.

### Scenario 2: Equal Weights

If it is thought that all indicators are of equal importance, then equal weights can be assigned to each of the six indicators. Under this scenario, all indicators are given a weighting of 0.17 respectively, i.e.

$$0.17 \alpha + 0.17 \beta + 0.17 \pi + 0.17 \delta + 0.17 \lambda + 0.17 \mu$$

### Scenario 3: Subjective Indicators Only

It may be useful to consider the subjective and objective indicators separately. Disaggregating in this manner, so that only subjective social indicators of fuel poverty are considered, implies giving a weighting of 0.33 to each of the three subjective indicators, i.e.

$$0.33 \alpha + 0.33 \beta + 0.33 \pi$$

#### Scenario 4: Key Indicator and Objective Indicators Given Preference

If it is felt that the key indicator and the objective indicators are more reliable than the subjective indicators, then weights may be distributed as follows:

$$0.5 \alpha + 0.17 \delta + 0.17 \lambda + 0.17 \mu$$

#### Scenario 5: Key Indicator Given Moderate Preference

While it seems wise to weight the key indicator of fuel poverty higher than other indicators, a weight of 0.5 may seem too generous. Hence, in this case, the first scenario is altered so that a weight of one-third is given to the key indicator and all other five indicators are assigned equal weights of 0.134, i.e.

$$0.33 \alpha + 0.134 \beta + 0.134 \pi + 0.134 \delta + 0.134 \lambda + 0.134 \mu$$

**Table 1 SENSITIVITY ANALYSIS OF FUEL POVERTY IN IRELAND (MEAN % OF HOUSEHOLDS, 1994-97)**

Scenario	1	2	3	4	5
% of households	8.3	9.6	6.9	9.5	9.0
SOURCE: HEALY AND CLINCH (2002)					



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