# WARM ZONES
# EXTERNAL EVALUATION

## SECOND REPORT

Submitted to Defra and DTI by the Energy Saving Trust
Prepared with the Centre for Sustainable Energy and National Energy Action
August 2004

## CONTENTS

## EXECUTIVE SUMMARY

This report is the second review of the Warm Zone pilot programme - a major Government-sponsored initiative to tackle fuel poverty[1] on a local, area basis in England. Five Zones were established in early 2001 to pilot the approach over a three-year period: Stockton, Newham, Sandwell, Northumberland and Hull. The first review focussed on Zone set-up activities. This review describes Zone progress towards meeting their fuel poverty reduction targets over 2002-3, the second year of the pilot. Fuel poverty means that a household needs to spend more than 10% of income on fuel to meet the standard heating regime. Severe fuel poverty is when that figure is 20% or greater.

The review forms part of the independent external evaluation commissioned by the Department for Environment Food and Rural Affairs (Defra) and the Department of Trade and Industry (DTI). The review is being conducted by the Centre for Sustainable Energy (CSE) and National Energy Action (NEA), under the management of the Energy Saving Trust.

This report is designed to be read as a 'stand alone' document. However, readers may find it useful to refer to the first annual review, published in May 2003 (available at: **http://www.est.org.uk/est/documents/warm_zones_evaluation_1_full report.pdf.)**

### Warm Zone progress against headline targets

Warm Zones have two central targets: to reduce numbers in both fuel poverty and severe fuel poverty by 50% by the end of the 3 year period. After 2 years of activity:

- Zones have removed 5.4% of fuel poor households from fuel poverty (varying from 1.2% in Hull, to 18% in Stockton).
- Zones have removed 11% of severely fuel poor households from severe fuel poverty (varying from 2% in Hull, to 27% in Stockton).

These figures are based on an estimate of the total number of fuel poor households across each Zone and include those that have not yet been assessed.

Progress was much faster in the second year, by a factor of 2.6 (fuel poverty reduction) and 1.6 (severe fuel poverty reduction).

Looking only at those households that have had energy efficiency work undertaken, even in the best funded zone the standard energy efficiency measures package[2] removed only 46% of these *treated fuel poor households* from fuel poverty[3]. 95% of these were in "marginal" fuel poverty.

Warm Zones had the largest impact on the *depth* of fuel poverty, the distance travelled measure, among the severe fuel poor. 43% of severe fuel poor households receiving energy efficiency measures through the Warm Zones were taken out of this category, however only 2% were taken out of fuel poverty altogether. The impact on distance travelled progressively reduced with lower FPI. As such only 6% of *treated* households in moderate fuel poverty were

[1] The Fuel Poverty Index (FPI) refers to the proportion of income households need to spend on fuel to maintain satisfactory heating and meet other energy needs. A household is in fuel poverty if it has an FPI of 10% or more. 'Marginal' fuel poverty refers to households with an FPI of 10-14.9%. 'Moderate' refers to households with an FPI of 15-19.9%. 'Severe' fuel poverty refers to households with an FPI of 20% or more.

[2] The term 'standard energy efficiency package' refers to the suite of measures offered through Warm Front or EEC. This typically includes loft insulation, cavity wall insulation, heating controls and, in certain circumstances, new heating systems. However, in this case, several hundred homes received mains gas for the first time in addition.

[3] This excludes: fuel poor households yet to be assessed by the Warm Zones; those that are assessed as fuel poor but have not had energy efficiency measures installed because they are ineligible under current schemes; those awaiting the installation of measures; and, those that have dropped out of a scheme.

removed from fuel poverty altogether. Initial results show that the standard measures packages typically improve FPI by between 3 to 7 points, enough to move about 60% of fuel poor households down to the next fuel poverty category. However, 36% of the fuel poor stay in the same category and long-distance movement across 2 or more categories (e.g. severe to marginal, or moderate to non FP) is rare, occurring in only 2-3% of cases.

**Warm Zone additionality**

In total, fuel poverty fell by 23% in the 5 Zones over the first 2 years of operation, ranging from a 17% reduction in rural Northumberland to a 36% reduction in Stockton. However 'business as usual' energy efficiency activity and changes in fuel prices and income accounted for three quarters of this change - a fuel poverty reduction of 17.5%. Zone activities accounted for only a quarter of this change – a 5.5% reduction in fuel poverty.

Considering fuel poverty reduction from energy efficiency improvements alone, Zones have made considerably more difference compared to 'business as usual'. Analysis of the second year suggests that fuel poverty reduction resulting from energy efficiency investment in the Warm Zones was over five times the rate that would have occurred were the Zones not present, varying from twice the rate in Hull to 11 times the rate in Stockton.

The analysis also found that the quality of referrals in Zones was higher than that in comparable areas adjacent to the Zones. This is estimated to lead to a notional total saving of £195,000 over the Zones' 3 year period due to the reduction in wasted visits by surveyors.

Zones have secured considerably larger EEC funds for the Zone areas than is likely to have occurred without the Zones' presence. The Warm Zones believe that some Zone local authorities may not have secured any EEC funds at all without Zone support. There are several EEC schemes that are exclusive to Warm Zones, based on household fuel poverty status.

Zones consider their approach leads to more systematic delivery of Warm Front grants and is therefore more likely to reach the target group within a particular area (although this does not necessarily mean Zones are more cost effective). While contact rates could be improved, the proportions of both fuel poor and severe fuel poor households contacted in Warm Zones are in line with their predicted numbers in the Zones' general population, supporting this view.

Zones also provide an important monitoring function. Warm Zones is the only major fuel poverty reduction programme that directly measures its impact on fuel poverty.

**Reasons for limited Zone impact**

The evaluation found that the headline measure used by Zones as an indicator of success understates the full extent of Warm Zones' achievements and the benefits delivered. The 'make or break' measure of bringing households below the 10% FPI threshold is important but does not reflect Zone impact on the depth of fuel poverty and the associated benefits of reducing the severity of fuel poverty. Future Zones should consider setting a target for 'distance travelled', as well as a target based on the number of households removed from fuel poverty.

As in the first report, the limitations of the toolkit available to Zones were found to be a major contributory factor to their ability to meet their fuel poverty targets. Zones have made commendable efforts to secure 'gap funding' for households ineligible for Warm Front. However, these were of insufficient depth and scope to address the problem to any significant extent. Several thousand fuel poor households will still not receive any help at all. Even when gap funding was secured it typically only accessed one standard energy efficiency package or

scheme, rather than assemble a wider range of measures from different sources allowing a greater FPI distance to be travelled.

Zones have not implemented the full possible toolkit. They generally do not offer tariff advice and only started offering welfare rights advice at a fairly late stage in their development. Early analysis suggests that only a small proportion of fuel poor households receiving benefits advice through Warm Zones lead to successful benefit claims – perhaps 3-5% of cases. It is possible that a much larger proportion of Warm Front ineligible fuel poor households are eligible for the new Pension Credit but currently not claiming it.

The impact of a successful benefits claim is dramatic. The average improvement in FPI is about 50% higher than from current energy efficiency packages. Almost two thirds are removed from fuel poverty, even before they are referred back into the Warm Front process for energy efficiency improvements.

An important factor in explaining differential Zone performance is Zone resources, both in terms of Zones' own management costs and funds available for capital measures. The resources allocated to the individual pilots varied considerably with little relationship to need in terms of fuel poverty reduction or energy efficiency improvement. Relative Zone success is highly associated with the level of resources available particularly when the scale of the fuel poverty in different Zones was taken into account.

The information and influence Zones had over fuel poverty reduction resources in their area varied considerably. Some Zones did not know what energy efficiency programmes local authorities or other agencies were running in the Zone areas. This was because they considered there was little value in gathering the information if they did not have any influence over programmes.

The proportion of social and private houses targeted also affected relative Zone success. Fuel poverty reduction appears significantly easier to achieve in social housing. Thus, Hull faced a more difficult task with its decision to focus on the private sector. Zones with a high proportion of households in fuel poverty, more severe levels of fuel poverty and/or living in rural areas also faced a more difficult task.

Some Zones were able to secure regeneration funds to provide a limited amount of gap funding or to improve upon the standard packages on offer. However, Zones experienced difficulties with the process of bidding for funds. Fuel poverty crosses funders' topic boundaries, although creative bids can minimise this problem.

There is room for improvement in Zones' procedures. The evaluation considered an assessment response rate of 80% was required for Zones to hit their fuel poverty reduction targets and is realistically achievable. The overall Zone response rate has not reached this level to date. Zones have made commendable efforts to improve response rates, from desktop assessment procedures to the use of multi-lingual assessors, and innovative marketing strategies, but operating resources have been a limiting factor for some Zones.

**Partnerships**

Several Zones have strengthened partnership arrangements with their local authorities since the first annual review. Zones that had strong relationships at the outset remain at an advantage. There are also encouraging signs of 'buy-in' from the health sector.

Zones still need to build stronger relationships with local community organisations and to support community capacity-building activities, although their limited lifespan works against this.

### Costs and Cost-efficiencies

Zones made considerable improvements in cost efficiency in their second year. Major improvements were made on all measures of productivity. This partly reflects the impact of set-up costs on productivity in the first year.

### Contextual factors

Fuel poverty levels have fallen over the pilot period due to increasing income and falling fuel prices, however energy efficiency remains as a limiting factor that needs to be addressed. Zones demonstrate that local area-based structures can play an important role in realising the Government's Fuel Poverty Strategy objectives. The evaluation suggests that there are considerable benefits to the Warm Zone approach, although a cost effectiveness evaluation is required before a more substantive judgement can be reached. The evaluation contends that the potential impact of the Warm Zones approach could increase within the context of revised energy efficiency and fuel poverty schemes (mainly Warm Front and EEC) and improved funding.

### Succession strategies

As of April 2004, the Zones are nearing the end of the pilot period. Four of the Zones have made arrangements for continued activity at a reduced level, the future for Hull looks less certain. Within the current context of existing energy efficiency and fuel poverty reduction programmes, the Zone approach has continued to be applied within a limited set of circumstances: special funding is available within the Zone area; there is a high level of fuel poverty density; and sufficient resources are assembled for tackling the problem before the Zone starts its work.

### Conclusion and recommendations

The Warm Zone pilots have yielded valuable insights into the problem of tackling fuel poverty at a local level. Local strategies for tackling fuel poverty should form an essential element within the Government's Fuel Poverty Strategy. The pilot Warm Zones represent the most focused and systematic attempt at developing such strategies.

Although major improvements had been made in year 2, the Zones will not reach their ambitious fuel poverty reduction targets. The final report will include a full analysis of the Zones' achievement including the extent to which a realistic target was set for the pilot.

The evaluation concludes that most of the factors that contributed to poor performance were outside of Zone control. Data from Stockton suggest that the standard energy efficiency packages available under the EEC and Warm Front are usually sufficient only to remove the marginally fuel poor from fuel poverty. This will be investigated further in the next stage of evaluation.

There are considerable differences between Zones, with respect to meeting fuel poverty reduction targets. By far the most important reason for this was the level of resources made available to individual Zones, particularly when the scale of the fuel poverty task was taken into account. This could become a major problem in the event of an expanded Warm Zone programme. Central oversight of the allocation of resources to different areas would be essential if allocation is to be related to need.

A number of factors are identified as the responsibility of Zones in terms of not meeting fuel poverty reduction targets. These included: inadequate assessment rates in some Zones;

failure to gather information on all relevant energy efficiency programmes; and, limited integration of programmes in terms of bringing together measures from different funding sources to maximise impact. It is acknowledged that integration is very difficult to achieve with the current programmes, although there are some examples of limited integration involving fuel suppliers and Warm Front managing agents. It is also acknowledged that programme design and the approach of Zone partners are also contributing factors. Reasons include: the length of local authority & social housing planning cycles and alignment of Zone roll-out with these; local priorities and issues of ownership; technical specifications; conflicting organisational goals; contracting; work-allocation; and, other organisational issues with partners.

Zones have also failed to mobilise the full range of potential interventions, such as tariff advice, and only introduced benefits advice at a late stage in the pilot. While the latter may only lead to a positive outcome for a small minority of cases, the impact on these cases is dramatic, typically equivalent to the household receiving a second comprehensive energy efficiency package,

Equally, developing schemes for the "fuel-rich" consistent with Zones' energy-efficiency improvement goals, and securing further cost-efficiencies from clustered work, was very limited. Nevertheless, Zones developed a number of innovative schemes during the second year of operations to extend the coverage of assistance for fuel poor households.

The report concludes with a series of recommendations, based on the evaluation's findings:

1) The Government should make sure that the next round of Warm Front and EEC maximises the opportunities for tackling fuel poverty at a local level. This could be achieved through:
   a) creating mechanisms to facilitate the integration of programmes
   b) widening the measures menu and spending ceilings for harder-to-treat homes
   c) ensuring more complementary and comprehensive coverage of eligibility.

2) Zones should aim to coordinate all relevant energy efficiency programmes as part of a comprehensive local strategy for energy efficiency improvement and fuel poverty eradication.

3) Zones need to improve assessment response rates to help them move nearer to their fuel poverty reduction targets, although actually hitting them now appears very unlikely.

4) Sandwell should prioritise collecting income data for all future assessments. Without this information, fuel poverty estimates are unreliable.

5) Zones should engage communities more extensively to help improve assessment response rates.

6) Zones should attempt to reduce the size of the assessment task through desktop assessment procedures.

7) In the event of any expanded Warm Zone programme, the level of resources allocated to different Zones should reflect the level of fuel poverty need in Zone areas

8) Government guidelines on regeneration should give higher priority to fuel poverty and energy efficiency as a funding priority. The level of fuel poverty need should also be taken into account in the allocation of resources to renewal areas.

9) Local authorities, energy companies and other partner agencies should spend a considerable period on preparation activities before formally launching any future Zones.

10) Any future Zones should provide welfare rights advice, as a minimum, from the outset, ideally, financial, debt and tariff advice should also be offered.

11) Any future Zones should attempt a more ambitious form of scheme integration than has been achieved by the original 5 pilots. Ideally, Zones should aim to integrate funding streams such that the packages of measures can be assembled to meet the need of the individual household.

# 1 INTRODUCTION

This report is the second review of the Warm Zone pilot programme. Warm Zones is a major Government-sponsored initiative designed to systematically address fuel poverty on a local, area basis. In line with the UK Fuel Poverty Strategy, a fuel poor household is one that needs to spend more than 10% of its income on all fuel use and to heat its home to an adequate standard of warmth (defined as 21°C in the living room and 18°C in other occupied rooms, as recommended by the World Health Organisation). Five Zones were established in early 2001 to pilot the approach over a three-year period: Stockton, Newham, Sandwell, Northumberland and Hull[4]. The first annual review described the progress Zones had made towards meeting their objectives and focused on Zone set-up activities. This review describes progress towards objectives over the second year of the pilot.

The review forms part of the independent external evaluation of the Warm Zone pilot programme commissioned by the Department for Environment Food and Rural Affairs (Defra) and the Department of Trade and Industry (DTI). The review is being conducted by the Centre for Sustainable Energy (CSE) and National Energy Action (NEA), under the management of the Energy Saving Trust.

This report makes considerable reference to the first review (published May 2003). While the report is designed to be read as a 'stand alone' document, readers may find it useful to refer to the first review. The full and summary versions are available at: http://www.est.org.uk/est/documents/warm_zones_evaluation_1_full report.pdf.

## 1.1 Warm Zone aims and objectives

The overall aim of the Warm Zone programme is:
"To facilitate the efficient, integrated and appropriate delivery of practical measures to alleviate fuel poverty and improve domestic energy efficiency in defined areas."

Zones have set themselves two key fuel poverty targets for the three-year period:

- to reduce fuel poverty by 50%; and
- to reduce severe fuel poverty[5] by 50%.

Within the overall aim, the specific objectives for the three-year pilot are as follows:

- to determine the extent to which significant marketing and delivery cost-efficiencies can be produced through systematic, intensive area assessments and subsequent area installations using the existing scheme and project management structures available for Warm Front and other programmes;
- to integrate both existing and new fuel poverty measures for the vulnerable with energy saving and reduced $CO_2$ emission programmes for the more affluent, thus reducing any stigma attached to 'fuel poverty';
- to lever-in new private finance, grant support and self-funding thereby optimising direct Government support;
- to create local and national partnerships of all major interested parties and provide a legacy of locally funded, on-going, fuel poverty and energy efficiency teams, new employment and local enterprise; and

[4] More information on the 5 Zones can be obtained from the Warm Zone website on www.warmzones.co.uk.
[5] The degree of fuel is measured by the Fuel Poverty Index (FPI). The FPI refers to the proportion of income households need to spend on fuel to maintain satisfactory heating and meet other energy needs. A household is in fuel poverty if it has an FPI of 10% or more. 'Marginal' fuel poverty refers to households with an FPI of 10-14.9%. 'Moderate' refers to households with an FPI of 15-19.9%. 'Severe' fuel poverty refers to households with an FPI of 20% or more.

- to provide reliable evidence on which the effectiveness of the pilot programme can be assessed, with a view to national extension.

### 1.2 The external evaluation

The four main objectives of the evaluation are as follows:

1. To determine whether Warm Zones are achieving what they set out to do.
2. To provide Government and other stakeholders with sufficient information on which to base decisions on the future of the Warm Zones concept.
3. To inform the design of future zones by examining the experiences, successes and failures of the five pilot zones.
4. To provide information on the effectiveness of existing schemes in addressing fuel poverty and identify how such schemes might be refined.

A wide variety of research tools were employed in the evaluation. These include quantitative assessment of Warm Zones' activities and impacts based on Warm Zones monitoring data, as well as qualitative evaluation of the processes and structures employed in delivery.

The independent evaluation is overseen by a Steering Group consisting of representatives from Defra, DTI, EST and an independent chair, Professor John Chesshire. The results presented here draw on guidance provided by the Steering Group and also the work of Warm Zones' own internal evaluation team. We would like to take this opportunity to thank the Warm Zones and all stakeholders for their cooperation and contribution to this evaluation.

### 1.3 The Warm Zones model

Warm Zones was established to pilot a new approach to addressing fuel poverty in England[6]. The approach has the following elements:

- systematic door-to-door, street-by-street contact with all households in defined area, to carry out energy and fuel poverty assessment over a given timescale (3 years in the pilots)
- integration of funding streams and measures, both hard and soft, to ensure adequate coverage and effectiveness[7]
- offers made to fuel rich as well as fuel poor households
- creating operational economies through clustered working
- partnership approach to the management and development of the Zone

Key to the Warm Zones model is the assessment process in which income and energy efficiency information is collected on a systematic and intensive door-to-door, street-by-street basis to identify fuel poor households. In general, the Zones do not install measures themselves but draw on existing programmes and services. The Zone model also aims to develop key local partnerships and bring together all sources of available funding for fuel poverty reduction, thereby providing a more comprehensive and effective package of energy efficiency measures than is usually provided through schemes operating in isolation. This is important because an increasing body of evidence shows that there are major gaps in coverage and effectiveness in existing programmes[8].

[6] A sixth Zone, Redcar and Cleveland, was established in summer 2002 by Transco in the Teeside area. This evaluation focuses on the original 5 pilot Zones, although it occasionally refers to Redcar and Cleveland experience where this adds to understanding.

[7] coverage: extent to which household(er)s are eligible; effectiveness: ability of measures package to achieve improvement target for each individual case

[8] For example, see NAO (2003), *Warm Front: helping to combat fuel poverty*, National Audit Office

The original Warm Zones model was based on complementing energy efficiency measures with 'soft measures', such as benefits advice to address problems of low income, tariff advice, financial advice and the management of under-occupancy. Cost efficiencies should be achieved through concentrated and co-ordinated management and delivery of measures. Overall, whilst requiring additional investment, this approach is considered more effective and efficient than current practice by achieving greater reductions in fuel poverty in less time and at less cost. The original Zone model proposed that Zones become "Comfort Zones" at the end of the 3 year period, providing a sustainable legacy of structures and systems to deal with fuel poverty.

The three-year operating budget for the programme is £7 million funded from central government, fuel company sponsorship and local authorities. Funding for installed measures is not included in this budget and is negotiated from five major sources: local authorities, central government programmes, energy companies, the voluntary and community sector, and householders themselves. Table 1 below gives details of the main fuel company sponsors for the five pilot Zones.

**Table 1: Fuel company sponsorship of Warm Zones**

| Warm Zone Funders | Fuel company | Local authority |
|---|---|---|
| **Central team** | Powergen | - |
| **Stockton** | Transco | Stockton Borough Council |
| **Newham** | London Electricity | Newham Borough Council |
| **Sandwell** | npower | Sandwell Borough Council |
| **Northumberland** | npower (formerly Northern Electric and Gas) | Northumberland County Council and six 2nd tier Councils |
| **Hull** | npower (formerly Yorkshire Electricity) | Kingston upon Hull City Council |

## 2 PROGRESS AGAINST TARGET

### 2.1 Impact on fuel poverty

The impact of Warm Zones in the second year of their operations has particular significance. It was expected that Warm Zones would be operating at 'full flow' during the second year; having completed 'set up' activities in the first year but in advance of any 'run down' period in the final year. Of course, the picture is more complex than this. Stockton Warm Zone, unlike the other Zones, spent a considerable amount of time on set-up activities before the Zone was formally launched and it is likely that a number of the pilots will continue into a fourth year of operations.

Table 2 below gives the headline figures for Zone success in removing households from fuel poverty as a result of energy efficiency measures delivered through the Warm Zones.

**Table 2: Fuel poor households removed from fuel poverty by Zones over Years 1 & 2**

| Zone | Households removed from fuel poverty | | | | | |
|---|---|---|---|---|---|---|
| | Year 1 | | Year 2 | | Years 1 and 2 | |
| | % | no. | % | no. | % | no. |
| Hull | **0.1%** | 29 | **1.1%** | 289 | **1.2%** | 318 |
| Newham | **0.6%** | 158 | **4.1%** | 1,145 | **4.7%** | 1,303 |
| Northumberland | **0.5%** | 112 | **2.7%** | 570 | **3.2%** | 682 |
| Sandwell | **1.6%** | 445 | **3.9%** | 1,078 | **5.5%** | 1,523 |
| Stockton-on-Tees | **7.0%** | 1,004 | **10.6%** | 1,532 | **17.6%** | 2,536 |
| All | **1.5%** | 1,748 | **3.9%** | 4,614 | **5.4%** | 6,362 |

**Notes:**
% given is the percentage of fuel poor households removed from fuel poverty as a result of energy efficiency measures facilitated through Zone activity alone. It does not include any assessment of changes in fuel poverty due to external factors such as changes in energy prices or energy efficiency work done without the involvement of the Warm Zone.
Table 2 is based on three sources of information:

- data provided by the Zones directly to the evaluation;
- routine bi-monthly Zone reports; and
- results modelled from Stockton Warm Zone (April 2001 to Aug 2003)[9], which has reasonably complete data.

The modelling work was required because the remaining Zones have experienced difficulties in obtaining accurate and timely feedback on energy efficiency investment from managing agents and some EEC contractors to confirm energy efficiency measures actually installed.

More confidence can be placed in the results given in Table 2 than in those given in the first annual evaluation report as they rely to a greater extent on operational data. However, since a certain amount of modelling was employed, and since the operational data itself has not yet been fully validated, they must still be regarded as provisional[10].

Full details of the methodology are given in the Annex to this report.

**Key findings are:**

- Zone impact on fuel poverty during year 2 improved significantly over year 1 (3.9% of fuel poor households were removed from fuel poverty in year 2, compared to 1.5% in year 1).
- Zone impact varied from 1.1% in Hull to 10.6% in Stockton in year 2.
- Zones removed 5.4% of fuel poor households from fuel poverty over the first 2 years.

[9] This data was supplied to CSE and NEA as part of a separate research project, funded by Transco, which is still ongoing.
[10] an update will be given in the final report of the Evaluation.

- This compares to the fuel poverty reduction target of 50% over the 3 year period.
- At the end of the second year, Zones had therefore achieved one tenth of the target in two thirds of the time available. Again, there are variations, from 2% of the target in Hull to 35% of target in Stockton.

It is essential to note that actual fuel poverty levels observed in the Zones will have declined by significantly larger amounts than those quoted above due to the influence of background national trends. These include income rises and reductions in fuel prices over the period of the pilot. Section 3 considers these factors in greater detail.

### 2.2 Impact on differing levels of fuel poverty

Zones set themselves the target of reducing severe fuel poverty by 50%. Neither the data provided by the Zones directly to the evaluation nor the routine Zone bi-monthly reports enable a direct and complete report of progress. However, an estimate is presented below (see Annex for the methodology).

The provisional figures in Table 3 suggest that progress against this target was greater than for the overall fuel poverty reduction target. An estimated 11% of the severe fuel poor were removed from severe fuel poverty by the end of the second year. This varied from 27% in Stockton to 2.5% in Hull. This assessment does not take into account whether or not the household is removed from fuel poverty altogether, but simply assesses whether the household has moved from severe to a lower category of fuel poverty.

**Table 3: Households removed from severe fuel poverty by WZ Intervention**

| Zone | H/hs in severe. FP | Households removed from severe fuel poverty | | | |
|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Years 1 and 2 | |
| | | No. | No. | No. | % |
| Hull | 3,375 | 20 | 63 | 83 | **2.5%** |
| Newham | 3,482 | 16 | 251 | 267 | **7.7%** |
| Northumberland | 2,628 | - | 107 | 107 | **4.1%** |
| Sandwell | 3,466 | 407 | 288 | 695 | **20.1%** |
| Stockton-on-Tees | 1,800 | 194 | 288 | 482 | **26.8%** |
| **All** | **14,727** | **637** | **997** | **1,634** | **11.1%** |

Additional analysis was conducted on Stockton data looking only at those households that have had measures facilitated by Warm Zones and excluding those yet to be assessed, those assessed as ineligible, those awaiting the installation of measures or those that have dropped out of the scheme. While 43% of these *treated* households who were in severe fuel poverty were successfully removed from it, only 2% of them were removed from fuel poverty altogether (see Figure 1). Even among the moderate fuel poor, only 6% escaped fuel poverty altogether.

The evidence is that Stockton's energy efficiency interventions were generally thorough and comprehensive. In addition, several hundred homes in Stockton received mains gas for the first time, and three hundred cases were helped to make successful benefit claims. Not all of these households were in fuel poverty, but this does mean that the Stockton results are better than for Warm Zones as a whole. Many Warm Front Plus packages and regeneration-funded heating schemes, such as those implemented in Sandwell, also have a large impact. Other Zones have also implemented successful welfare rights programmes.

Only a very small proportion of households in moderate and severe fuel poverty are removed from fuel poverty. Moreover, Figures 1 and 2 show that even among the marginally fuel poor, it is still only a minority that are removed from fuel poverty altogether.

**Figure 1 – *Treated* households removed from fuel poverty in Stockton (including zero interventions[11])**

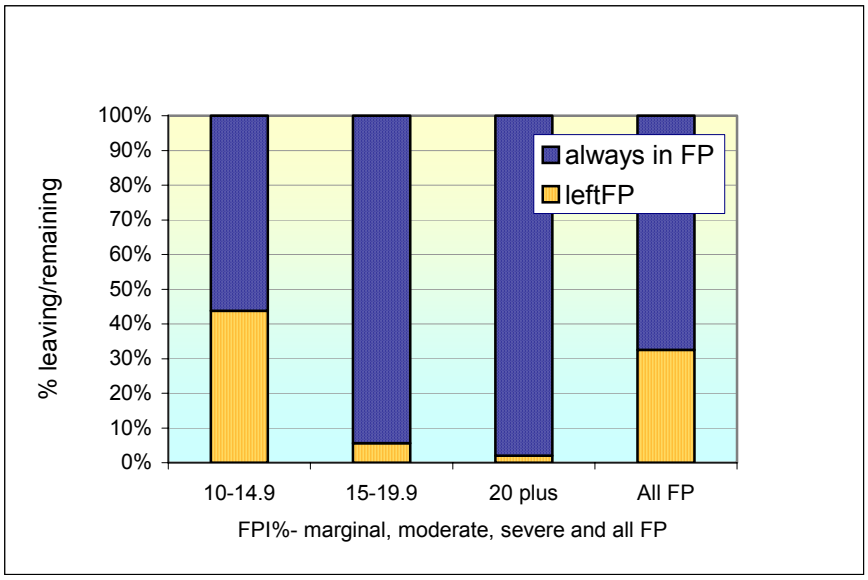
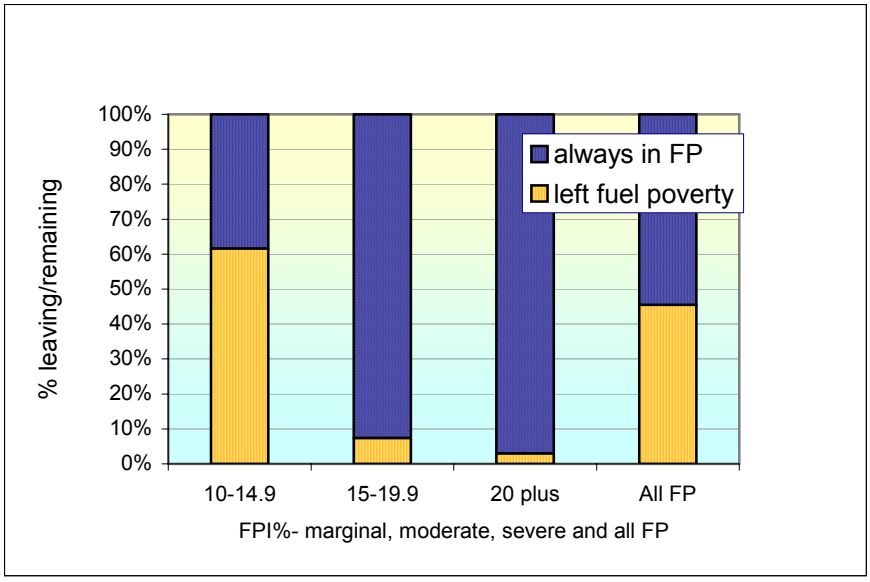



Figure 1 includes "zero improvement cases". Overall, 33% of *treated* households were removed from fuel poverty. While some of these will be cases where records had not been updated or work incomplete at the end of year 2, an unknown proportion are refusals and cases where no feasible work could be done within the packages available and therefore present no further potential improvement. Excluding zero intervention cases gives a more optimistic scenario, with the percentage removed from fuel poverty rising to 45.5%, as shown in Figure 2 below. The true figure will be somewhere between the two.

**Figure 2 – *Treated* households removed from fuel poverty in Stockton (excluding zero interventions)**




[11] Zero-interventions' refer to cases where work was still to be done (perhaps a third of these cases); households had refused work; or no work was feasible within the standard toolkit available.

## 2.3 Initial comments on fuel poverty impact

Stockton data shows that the underlying reason for these results is that the standard measures packages typically improve FPI by between 3 to 7 points [with considerable variation], enough to get about 60% of FP households down to the next fuel poverty category. However, 36% of the fuel poor stay in the same category and long-distance movement across 2 or more categories (e.g. severe to marginal, or moderate to non FP) is rare, just 2-3% of cases.

By definition, an FPI reduction of 10% (i.e. from 19.9 to 9.9) is needed to remove all cases of moderate fuel poverty from fuel poverty altogether. This would entail halving the required fuel costs, which might be achieved by a 50 point SAP improvement, depending on the starting SAP. Alternatively, it could be achieved by doubling income, or by a combination of the two. This would still take not remove any households in severe fuel poverty from fuel poverty altogether.

Table 4 below gives some detail on these improvements for different fuel poverty categories in Stockton. The table shows that intervention led to:

- For the moderate fuel poor, the average SAP improvement was 14.3 and FPI improvement 4 – far less than required in the analysis above.
- An average SAP improvement that ranged from 12 (non fuel poor cases) to16 (severe fuel poor cases)
- An average FPI improvement that ranged from 1 (non fuel poor) to 7 percentage points (severe fuel poor)

**Table 4: Fuel poverty variables by fuel poverty category before intervention (Stockton data)**

| FPI categories, pre-intervention | SAP pre-intervention | SAP post intervention | SAP improvement | FPI pre-intervention | FPI post intervention | FPI improvement (% FPI points) |
|---|---|---|---|---|---|---|
| non fuel poor | 46.5 | 58.9 | 12.4 | 7% | 6% | 1 |
| Marginal FP | 41.2 | 54.5 | 13.3 | 12% | 10% | 2 |
| Moderate FP | 37.5 | 51.8 | 14.3 | 17% | 13% | 4 |
| severe FP | 32.5 | 48.4 | 15.9 | 26% | 19% | 10 |
| Total | 43.9 | 56.8 | 12.9 | 10% | 8% | 2 |

The success rate in removing households from deeper levels of fuel poverty is greater where the reason for the high FPI is particularly low SAP rating, rather than low income. Typically, larger interventions are done when initial SAP rating is lower. Section 4, "Reasons for Limited Impact", discusses a number of the factors that affect success rates. But in this context, it is worth noting that npower EEC funding for basic insulation measures in WF-ineligible severe (and more recently moderate) fuel poor homes (in Sandwell, Hull and Northumberland) is unlikely to remove more than about 35% from that category and probably none from fuel poverty altogether (see Section 4.5 for more details of npower programme). Unlike the Stockton interventions, no heating measures are included. Thus, it will not move beneficiaries a sufficient distance along the FPI.

These considerations should not obscure the fact that the improvements made, while not always removing households from fuel poverty, do represent a significant improvement to household circumstances.

## 2.4 Conclusion

This section has focused on the reduction of fuel poverty in Zones as a result of measures facilitated through Zones alone. The analysis shows that Zones have removed only 5.4% of fuel poor households from fuel poverty over their 2 years of operation (varying from 1.2% in Hull, to 18% in Stockton). This represents one tenth of Zones' fuel poverty reduction target, to reduce numbers in fuel poverty by 50% over the 3 years.

Analysis of Stockton data showed that 95% of households removed from fuel poverty are households in marginal fuel poverty (FPI of 10-14.9%). Typical achievement in other Zones is likely to be less than this, since Stockton receives a higher level of funding, both for operations and measures, than the other Zones.

Zones are estimated to have removed 11% of severe fuel poor from this category. Whilst Stockton is estimated to have performed better, achieving a 27% reduction, even this Zone will clearly not remove 50% of severe fuel poor households from that status over its 3 years of operation (the second Warm Zone target).

Finally, Zone intervention had the largest impact on FPI and SAP among the severe fuel poor. This progressively reduced for the moderate, marginal and non fuel poor. However, while 'distance travelled' was largest for the severe fuel poor, it was nowhere near sufficient to remove these households from fuel poverty.

Section 3 looks at total fuel poverty reduction in the Zones, taking into account 'background' rates of fuel poverty decline indicated by national trends. Section 4 explores the various factors that have limited Zone performance on reaching their fuel poverty reduction targets. Later evaluation reports will comment on the appropriateness of the original targets that the Zones set themselves.

# 3 ADDITIONALITY

This section assesses Zone additionality. It focuses in particular on the *quantity* of fuel poverty reduction that can be ascribed to Zone activity, when compared to the 'business-as-usual' (BAU) level of fuel poverty reduction that might have taken place anyway without the Warm Zones.

The chapter also analyses several possible *qualitative* aspects of 'additionality':

- quality of referrals and installations
- facilitating the delivery of mainstream programmes
- the monitoring function of Warm Zones
- reaching those in need

## 3.1 Comparison to the 'business as usual' rate of fuel poverty reduction

EHCS figures show that fuel poverty fell dramatically over the 1996-2001 period, mainly due to rising incomes and declining fuel prices. Analysis of data collected as part of work on Comparison Zones earlier in the evaluation (see first report) indicates that energy efficiency work could account for between a fifth and a tenth of that change. Incomes are still rising, but fuel prices are now also beginning to rise. The evaluation has attempted to assess how much extra impact the Zones made over and above the 'business as usual' rate of fuel poverty reduction. The estimation method is explained fully in the Annex.

Four scenarios are used in this analysis.

| Scenario | Explanation |
|---|---|
| 1. Business as Usual (BasU) removed from fuel poverty | The estimated number or % of households which would have been removed from fuel poverty in the pilot area in the absence of a Warm Zone [See table A3 in section 3.1 of the annex] |
| 2. Warm Zone (WZ) removed from fuel poverty | The estimated number or % of households removed from fuel poverty through Warm Zone activity alone. |
| 3. Background (BK) removed from fuel poverty | The estimated number or % of households removed from fuel poverty across the pilot areas resulting from rising incomes and falling fuel prices, PLUS BasU energy efficiency work in the areas which WZ have not yet reached ie excluding any energy efficiency work facilitated through the Warm Zone in areas already assessed |
| 4. Total removed from fuel poverty in Zone (Total) | The estimated number or % of households removed from fuel poverty in the pilot area from the combined effect of Background and Warm Zone activity. [scenarios 2 plus 3] |

When Warm Zones were set up, the extent of BasU fuel poverty reduction was not generally appreciated, in particular the income and fuel price components of the background rate. Consequently, they set up no procedures to undertake follow-up monitoring to determine what was actually happening to client households whose income or fuel prices may have been changing quite rapidly, independently of Warm Zone intervention (as shown in the Comparison Zone survey; see 1st Annual Report). This has not been factored into the post intervention assessment of fuel poverty status for households receiving measures assistance through the Warm Zones.

Table 5 below gives estimates on all these scenarios over the first two years of the pilot.

**Table 5: Zone additionality in fuel poverty reduction – numbers removed from fuel poverty**

| Scenario | Year | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|---|
| 1. BAU | Yr 1 | 2,754 | 2,841 | 1,556 | 2,828 | 1,469 | 11,248 |
| | Yr 2 | 2,457 | 2,535 | 1,451 | 2,523 | 1,310 | 10,277 |
| 2. WZ | **Yr1** | 29 | 158 | 112 | 445 | 1,004 | **1,748** |
| | **Yr2** | 289 | 1,145 | 570 | 1,078 | 1,532 | **4,614** |
| 3. BK | Yr1 | 2,748 | 2,795 | 1,543 | 2,744 | 1,408 | 11,032 |
| | Yr2 | 2,356 | 2,291 | 1,378 | 2,270 | 1,184 | 9,508 |
| 4. Total (WZ+BK) | **Yr1** | 2,777 | 2,953 | 1,655 | 3,189 | 2,412 | **12,779** |
| | **Yr2** | 2,644 | 3,436 | 1,948 | 3,348 | 2,716 | **14,122** |

Examining the shaded rows in the final column of Table 5, it is clear that, while Warm Zones removed over 4,500 households from fuel poverty in year 2, the total was considerably greater at 14,000. The comparison is also shown by the % removed from fuel poverty given in Table 6 below.

**Table 6: Zone additionality in fuel poverty reduction - % removed from fuel poverty**

| Scenario | Scenarios 1-4 | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|---|
| 2001 | No. of FP Households | 27,000 | 27,857 | 21,027 | 27,730 | 14,400 | 118,014 |
| Yrs 1+2 | 1. % removed BasU | 19.3% | 19.3% | 14.3% | 19.3% | **19.3%** | 18.2% |
| | 2. % removed WZ | 1.2% | 4.7% | 3.2% | 5.5% | **17.6%** | 5.4% |
| | 3. % removed BK | 18.9% | 18.3% | 13.9% | 18.1% | **18.0%** | 17.4% |
| | 4. % removed Total | 20.1% | 22.9% | 17.1% | 23.6% | **35.6%** | 22.8% |

Warm Zones removed 5.4% of fuel poor households from fuel poverty in years 1and 2, compared to 22.8% for the total change in all fuel poor households in all Zone areas. This impact varies considerably by Zone and by year. Stockton has achieved the largest additionality on this measure. Over years 1 and 2, Stockton facilitated a 17.6% reduction in fuel poverty (WZ), the background rate was 18% (BK), giving a total of 35.6 % of households removed from fuel poverty in years 1 and 2 in the pilot area (Total). Thus, in Stockton, Zone activity has roughly doubled, to 35.6%, the numbers removed from fuel poverty through the background movement of incomes and fuel prices (19.3%) during these 2 years.

In many ways, however, the most meaningful comparison is between Warm Zone fuel poverty removal (which is more than 95% energy efficiency driven) and *the component of BasU that is due to energy efficiency*. The Annex to this report gives full details of the methods developed to measure Zone impact on fuel poverty, and comparing this impact with the BasU scenario. The best comparison would look at Warm Zone fuel poverty reduction compared to the fuel poverty reduction through BasU levels of energy efficiency work across the whole pilot area. However, until the end of the pilot the Warm Zones cannot be expected to have completed work across the whole pilot area and therefore are put at a disadvantage in this comparison. The approach adopted here takes the incompleteness of the pilot into account:

**Additionality 1:** the factor by which fuel poverty reduction facilitated through the Zones has increased total fuel poverty reduction across the whole Zone area, i.e. comparing the WZ scenario with the energy efficiency component of the BasU.

This is given by: **(WZ + BKnz)/BasU**

In this case the background rate (BKnz) is the BasU rate of energy efficiency work applied to the proportion of the pilot area the Warm Zones has not yet assessed. As an indicator, additionality 1 focuses more on coverage[12] - the extent to which a programme reaches its target population. Other things being equal, a Zone that has covered more ground will have a higher score.

**Additionality 2:** the factor by which fuel poverty reduction from Zone activities has increased total fuel poverty reduction *in the area already assessed by the Zone*, compared with the component of the BasU rate in that area which is due to energy efficiency. This is a sampled version of the "ideal comparison" which cannot be calculated until Zone programmes are complete.

This is given by: **WZ /Bkz**

In this case the background rate (BKz) is the BasU rate for *the area already assessed by the Zone* only.

As an indicator, additionality 2 focuses on effectiveness[20] - the extent to which the programme achieves its objective with the clients it does reach. Other things being equal, a Zone with more effective packages will have a higher score, but coverage is not taken into account.

**Composite Additionality**: is the geometric mean of 1 and 2, appropriate when two factors are interdependent - there is a trade-off between coverage and effectiveness in terms of how thinly resources are spread between cases.

This is given by: √(Additionality 1*Additionality 2)

The radar charts below show the results for years 1 and 2 on all three measures of additionality.

**Figure 3 - Energy efficiency fuel poverty reduction Additionality 1 (coverage)**

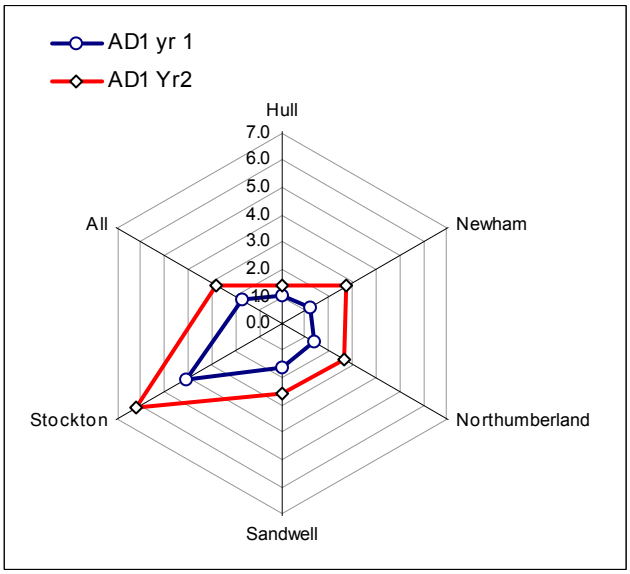
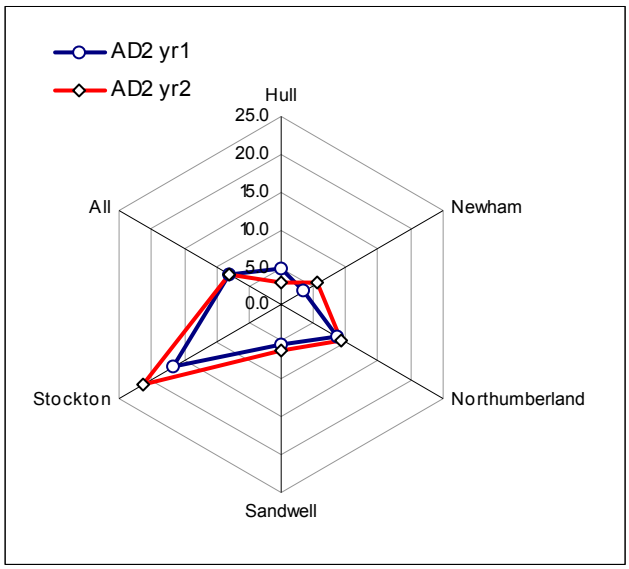
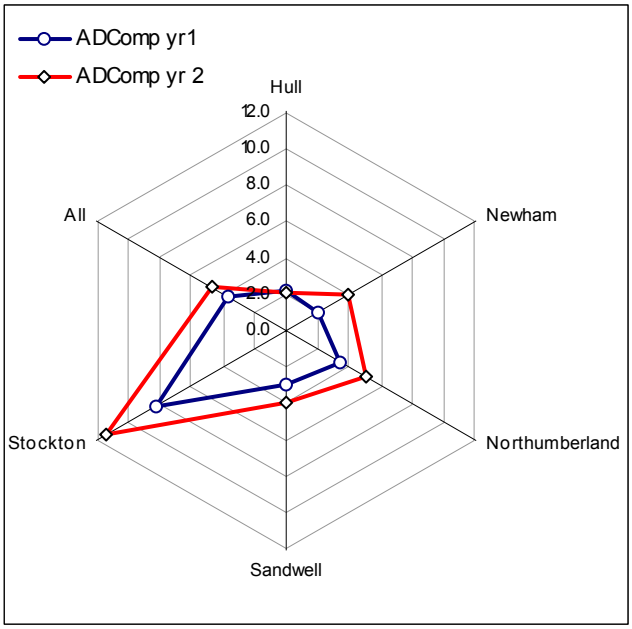



**Figure 4 - Energy efficiency fuel poverty reduction Additionality 2 (effectiveness)**




[12] Terms taken from Sefton, T (2004), *Aiming high – an evaluation of the potential contribution of Warm Front towards meeting the Government's fuel poverty target in England*, Eaga Partnership Charitable Trust.

**Figure 5 - Energy efficiency fuel poverty reduction Additionality composite**




Figures 3-5 tell a similar story in terms of the relative additionality of the pilot zones. *It is important to remember that this illustrates not volumes of energy efficiency work, but households estimated to have been removed from fuel poverty through this work.* Additionality is particularly high in Stockton where the average intervention package was more extensive. It is notable that additionality has generally improved, even though it might have been expected to fall off slightly as Zones moved in year 2 into areas of lower fuel poverty concentration; this confirms the general picture of greater operational efficiency in year 2. Improvement in Additionality 2 is much lower than Additionality 1. This probably reflects the fact that Zones have made only limited headway in terms of producing larger, more effective, intervention packages.

It is clear that the Zones have created a significant acceleration in fuel poverty reduction in the pilot areas. On composite additionality in year 2, the rate of fuel poverty reduction in the Warm Zones is estimated to have been 4.74 times than the case without them. This varied from 2 times in Hull, to 11 times in Stockton. A composite additionality of about 30 would probably be needed to reach target.

## 3.2 Quality of referrals and installation

### 3.2.1 Referrals

It might reasonably be expected that household contact with experienced assessors would enhance the quality of referrals made, compared to referrals made through standard routes. Assessors should be familiar with the eligibility requirements of schemes so that they can discuss options with clients, and should also have a good idea of what energy efficiency measures are feasible from the energy data collected[13]. Thus, experienced assessors should collect good quality data that can be converted to good quality referrals at the data analysis stage.

Table 7 below shows the extent to which Warm Zones improve on the quality of Warm Front referrals when compared with areas adjacent to the Zones - 'comparison zones'. The data

[13] However, this is limited by the lack of loft inspection, as in the case of Warm Front (as opposed to installer) inspections.

provided by EAGA and Powergen to enable this analysis contained certain anomalies (some numbers appeared unfeasibly low and are therefore not included in the table – this applies to Hull and Newham). The results must therefore be treated with caution.

**Table 7: WZ and comparison zone Warm Front referral generation and validity**

| Zone | Ratio of WZ referrals to 'business as usual' rate | % valid WF referrals in WZ | % valid WF referrals in comparison zone |
|---|---|---|---|
| Hull | 1.70 | 71% | - |
| Newham | 1.54 | 76% | - |
| Northumberland | 1.69 | 81% | 67% |
| Sandwell | 1.32 | 57% | 51% |
| Stockton-on-Tees | 2.28 | 80% | 74% |
| **All** | **1.85** | **71%** | **61%** |

Comparison zones are average scores in adjacent comparison areas. BasU rates are used in the comparison (rather than "Background") rates because data is unavailable at sub-district level.

A valid referral is defined as one where the client qualifies for the grant programme, measures can be installed and the client does not withdraw. As argued above, it is reasonable to hypothesise that Warm Zone publicity, personal contact and expert knowledge would minimise the number of incorrect referrals, and also help keep wavering clients on board.

Table 7 confirms the hypothesis. Warm Zones have achieved a mean of 71% valid referrals, compared to 61% in the adjacent comparison zones. All the individual Zones performed better than their respective comparison zones. Sandwell has the lowest WZ WF-referral validity rate at only 57%. However, this is still higher than that of Sandwell's adjacent comparison zone.

This represents a cost saving of £195,000 from a potential total cost of £1,950,000. This is based on saving 10% of the surveys from an expected 39,000 Warm Front referrals over the 3 years, and a survey unit cost of about £50. It is possible that the 71% rate could itself be further improved. But anecdotal evidence suggests a hard core of households that will withdraw from a scheme[14]. There are also technical issues relating to, for example, the requirements of heating systems and cavity wall insulation which assessors or other referral agents are not competent to judge. Redcar and Cleveland appear to have achieved a valid referral rate of 90% recently, and this might be about the limit that could be reasonably expected.

Thus referral quality looks like a tangible additionality from the Zones' approach that delivers a real cost saving. The opposite hypothesis is however also plausible, that the Zone approach is near to cold calling and might result in higher drop-out. Since there are limitations in the data as mentioned, this is an issue that will be revisited in the final report.

### 3.2.2 Installation quality

Most installations facilitated through the Warm Zones conform to the standard specifications of mainstream programmes. For the private sector, this will generally mean the standard Warm Front specification[15]. Specifications in the social housing sector are generally higher, particularly with respect to heating installations. For example, central heating installations typically include a full set of radiators and boxing of pipe-work, neither of which are standard Warm Front practices.

[14] Unfortunately, there is very little hard evidence on this issue.
[15] Warm Front is now only available to private sector properties on passport benefits.

Warm Zones have little involvement in drawing up specifications in the social housing sector. However, in several cases they have negotiated an improved specification for Warm Front installations. Sandwell, for example, was able to upgrade the Warm Front specification in the original pilot Warm Zone area (Greets Green) to the Council's specification (boxed in pipes, full set of radiators etc). The majority of properties in the pilot were social housing, which was still eligible for Warm Front at the time of the pilot. Improved specifications did not continue beyond the pilot.

More recently, Sandwell set up a central heating scheme, funded under the Neighbourhood Renewal Programme, for severe fuel poor households identified through the assessment process. The scheme applies across the borough and both private and social properties are eligible. Measures are installed according to the Council's specification, rather than Warm Front. This means boxed-in pipes, replacement of old and inefficient boilers and typically 8 radiators. £½m funding was allocated to the scheme for 223 systems.

Sandwell Warm Zone has also negotiated smaller scale central heating schemes in some of Sandwell's individual towns, using funds decentralised to the towns. These again use Council central heating specifications.

Newham Warm Zone has similarly improved upon the Warm Front specification with respect to its Warm Zone grant[16]. The grant will pay for extra radiators and for a replacement boiler in the case of boilers in poor condition (Warm Front would typically try to repair such boilers). The grant does not, however, pay for boxing in of pipe-work.

### 3.3 Facilitating the delivery of mainstream programmes

Warm Zones consider they play an important role in facilitating the delivery of mainstream programmes, primarily EEC and Warm Front. This represents another aspect of additionality in that Zones have brought about larger programmes in their areas than might have occurred without their involvement.

All the Warm Zones considered that they helped negotiate larger EEC programmes than might have occurred otherwise due to their capacity to facilitate the delivery of programmes and their access to data which shows programmes are targeted at priority households. Tables 17 and 18 (see section 4.5.1) provide tangible evidence for this. Warm Zones have brought in over £9m worth of EEC funds to the 5 Zones. npower in particular is spending a substantial proportion of its total national EEC budget allocated for social housing projects in the 3 Zones it sponsors.

Sandwell, Hull and Northumberland Zones considered it very unlikely that their respective Councils would have negotiated EEC contracts without the Warm Zones' involvement. Zones argue that there are local authorities that had not got quotes from EEC suppliers and did not know there were EEC schemes on offer. The one exception is Blyth Valley, which negotiated an EEC deal with Scottish Power without Northumberland Warm Zone's involvement. However, the Warm Zone has more recently brokered a separate deal between Blyth Council and npower whereby each party contributes £44k towards an insulation scheme for the fuel poor (see section 4.5.1 on EEC).

However, most Zones have not gained an oversight of all anti-fuel poverty activity in their areas (with the possible exception of Stockton). As a minimum, Zones should have obtained information on the different relevant activities, even if their influence on such activities was likely to be minimal. Given that coordination of different programmes is an important Zone

[16] The Newham Warm Zone grant provides measures to single older fuel poor households not eligible for Warm Front. The Zone has identified this group as the single largest fuel poor group not eligible for Warm Front.

objective and that Zones need to take stock of how different programmes might contribute to fuel poverty reduction targets, this appears a significant failure. For example, some Zones had little knowledge of local authority activity such as private sector housing renewal or even stock heating programmes. The evaluation discusses this issue further in section 4.5.2 (Council resources).

### 3.4 Monitoring

Another aspect of Warm Zone additionality is the monitoring function they carry out. Warm Zones is the only major fuel poverty reduction initiative that actually measures the impact of the interventions facilitated by the Zones in terms of fuel poverty. Neither Warm Front nor EEC measures household fuel poverty status. Thus, while both programmes are essential tools for meeting the Government's Fuel Poverty Strategy targets, there is no routine process for monitoring fuel poverty impact (targets currently relate to 'numbers helped').

The National Audit Office and the Public Accounts Committee support the Warm Zone contention that Warm Front could be re-designed to have greater fuel poverty impact (e.g. by tackling hard to treat properties and switching resources to properties with poor energy efficiency). The Government, in its review of Warm Front, is looking at improved indicators for monitoring impact, although this is likely to involve SAP rather than full assessment of fuel poverty status.

The evaluation found limitations to the monitoring function of Warm Zones:

- The assessment process has still not been validated, as highlighted in the first evaluation annual report. There is little information on the accuracy of assessments or on the likely margins of error[17] but the Zone follow-up study should throw some light on this.
- While Zones have provided some useful feedback, the evaluation team has encountered major limitations to this. These include substantial delays in providing feedback information, poor quality in some cases (e.g. Sandwell does not adequately measure income) and failure to use data for strategic planning.
- Income assessment is very basic in that only a single global income band is asked for. This results in very wide FPI ranges, e.g. from13% to 18.5%.
- Impact on fuel poverty is only assumed on the basis of interventions made, rather than actually measured through a post intervention visit.
- There are severe delays in providing data on fuel poverty impact. In part this is because of delays in getting feedback from Eaga on works completed.

### 3.5 Reaching the fuel poor

The Government's Fuel Poverty Strategy identified a number of programmes as central to its drive to eliminate fuel poverty. These include the priority group component of the EEC, local authority renewal programmes and Warm Front. Warm Zones have argued that their comprehensive sweep is more likely to reach those in need, compared with programmes relying on self-referral following contact with publicity material or referral mechanisms linked to voluntary organisations. These routes are seen as more likely to favour 'less vulnerable' clients, e.g. those with good literacy and 'form-filling' skills.

However, there is very little evidence about the fuel poverty levels of those that have received assistance from Warm Front outside of the Warm Zones. Consequently, it is not possible to say whether Warm Zones are better at reaching the fuel poor, as opposed to reaching the

[17] However, a trial in Newham found that in 50 out of 50 cases, the same in/not in fuel poverty judgement was given by both door to door assessment and desktop assessment methods (where income was known from council tax benefit or housing benefit records).

eligible. However, evidence is presented in section 4.2.6 that the proportions of Warm Zone clients in fuel poverty and severe fuel poverty are in line with predicted numbers in the population and therefore the Warm Zones approach is identifying fuel poor households at a good rate.

### 3.6 Conclusion

The analysis found that overall fuel poverty reduced by 23% in the 5 Zones over the first 2 years of operation, ranging from 17% in Northumberland to 35% in Stockton. However, most of the decline in fuel poverty was due to declining fuel prices and rising incomes, rather than household improvements facilitated by the Warm Zones.

Zones have made a more significant impact when considering energy efficiency improvements alone. Fuel poverty reduction resulting from energy efficiency investment was 3 to 4 times faster with the Warm Zones present than would have been expected due to national trends alone if the Warm Zones were not in place. This represents a significant additional impact.

The analysis also found that the quality of referrals in Zones was higher than in surrounding comparison zones. Zones achieved an overall 71% valid referral success rate, compared to 61% for the comparison zones. This represents a notional saving of £195,000 on avoided wasted surveys compared to a total potential survey cost of £1,195,000 over the Zones' 3 year period. This is a direct result of the Zone approach.

Zones have secured considerably larger EEC funds for the Zone areas than is likely to have occurred without the Zones' presence. Some EEC funds have been used to fund schemes exclusive to Warm Zone areas, such as npower's insulation scheme for the 'ineligible' severe fuel poor or Newham's Warm Zone grant. These schemes require information on household fuel poverty status, which is generally only collected in Warm Zone areas through the assessment process.

Zones consider the assessment approach means that Warm Front grants are systematically delivered to a target fuel poor population. They are therefore more likely to reach a larger proportion of fuel poor households within the Warm Zone area than would have occurred through the 'scattergun' and unfocussed regional marketing of Warm Front outside Zone areas. Cost effectiveness has not been fully assessed as yet.

Zones provide an important monitoring function. They represent the only major fuel poverty reduction initiative that directly measure impact on fuel poverty. However, the evaluation identified several limitations to the monitoring information provided.

Finally, Zones do appear to be reaching the fuel poor population through the assessment process. While their contact rates could be improved, the numbers of both fuel poor and severe fuel poor households contacted are in line with their predicted proportions in the general population.

# 4 REASONS FOR LIMITED FUEL POVERTY IMPACT

Section 2 demonstrated that Zones are failing to meet their fuel poverty reduction targets. In particular, Zones were not achieving a sufficient reduction in household FPI - the 'distance travelled measure'. The evaluation developed seven hypotheses for explaining Zone under-performance and differential performance and improvement rates between Zones, outlined below.

i. The measure of success, 'households removed from fuel poverty', understates the full extent of Zones' achievements and benefits delivered, since only households actually brought below the 10% threshold count as a success. While Zones themselves selected this performance indicator, a 'distance travelled' measure might have given a more comprehensive reflection of accomplishment.

ii. Overall, Zones have not reached the assessment rates required, upon which referral and intervention depend. Lack of finance may have been a limiting factor in some Zones.

iii. The nature of the task facing each of the Zones varied considerably. For example, Hull concentrated on private housing sector work where matched funding for EEC is generally more difficult to arrange than in the social housing sector.

iv. A significant proportion of fuel poor households (over 50% in some Zones) have not been referred for measures, owing in particular to the lack of funding for fuel poor households assessed as ineligible for Warm Front.

v. Zones have not secured sufficient resources to meet their challenging targets, both for financing Zones' own operations and for funding energy efficiency measures and other forms of intervention.

vi. The full Warm Zones toolkit has not been implemented e.g. general failure to offer tariff advice and late implementation of benefits advice.

vii. Even where a household is referred for assistance, the available measures are only sufficient to take households out of fuel poverty in a minority of cases.

## 4.1 Measures of success

The primary aim of Warm Zones is to reduce fuel poverty. As objectives to meet this aim, Warm Zones set themselves the task of removing fuel poor/severe fuel poor households from fuel poverty. Thus, the key performance indicators are 'removal of households from fuel poverty' and 'removal of severe households from fuel poverty'. However, these particular measures of success tend to understate the full extent of WZ achievement and the benefits delivered. For example, reducing a household's FPI from 35% to 10% would not count as a success, while reducing another household's FPI from 11% to 9% would. Yet, the former represents a much larger impact than the latter.

While 'removal from fuel poverty' is obviously an important indicator for a fuel poverty reduction programme, a 'distance travelled indicator' is also important. A good case could be made, too, for a SAP improvement target, since this gives a good indication of energy efficiency impact. Future Zones and other fuel poverty reduction programmes should consider using all 3 indicators at the target setting stage.

Tom Sefton of LSE refers to the "fuel poverty gap", as a means of representing distance travelled:

$$\textit{Fuel poverty gap} = \Sigma_{1 \text{ to } n}(\textit{current FPI} - 9.99\%)$$

Where n=the number of households in fuel poverty; the total is thus number of FPI percentage points required to remove all households from fuel poverty.

Some work inevitably gets carried out in non-fuel poor homes, whether under Warm Front or social housing renewal etc. From the point of view of immediate fuel poverty reduction alone, this is referred to as "mis-targeting". In theory, such work could be re-directed in the short run to prioritise the homes of those in fuel poverty although this is not being recommended here.

Some work carried out in fuel poor homes may take FPI well below 10%. The gap between 9.99% and final FPI is referred to as "overshoot". It is neither practicable nor desirable to avoid 'overshoot'. This is because work should always aim to maximise efficiency objectives and 'fuel poverty proof' properties to minimise the risk of households falling into fuel poverty in the future due to 'churn' e.g. through a subsequent reduction in household income.

Table 8 below was produced from Stockton WZ data. "Simple" distance travelled (row B) means all FPI reduction, whether in fuel poor homes or not. "Valid" distance travelled (row F) means all FPI reduction in fuel poor homes down to an FPI of 9.99%, beyond which the reduction is overshoot.

Note: the data excludes cases of zero-intervention, as in other analyses. This will tend to overstate achievement since not all the additional gap will be filled to the same extent shown below. However, the relativities should not be appreciably distorted.

**Table 8: Closing the fuel poverty gap in Stockton**

| **Measures** | | **FPI % Points** | **notes** |
|---|---|---|---|
| A | Total fuel poverty gap | 25,332 | sum of (FPI% pre minus10%) all FP cases |
| B | Simple distance travelled | 19,075 | sum of (FPI% pre minus FPI% post) all cases |
| C | Non-Fuel Poor distance travelled | 6,706 | As B - non FP cases only |
| D | Hence Fuel poor distance travelled | 12,369 | As B - in FP cases only (B-C) |
| E1 | Fuel poor overshoot (<FPI 10%) | 2,707 | sum of (10% minus FPI% post) FP cases |
| E2 | Fuel poverty undershoot | 15,670 | Total gap less "valid" distance travelled |
| F | "Valid" distance travelled (>FPI 9.99) | 9,662 | sum of (FPI% post minus 10%) FP cases |
| **Results** | | **%** | |
| G | % Simple Gap closed (B/A) | 75% | total FPI reduction/Gap - all cases |
| H | % Overshoot (E1/B) | 14% | overshot FPI reduction as % all activity |
| I | % "Mis-targeted" (C/B) | 35% | mis-targeted FPI reduction as % all activity |
| J | % "Valid" distance travelled (F/B) | 51% | valid FPI reduction as % all activity |
| K | total activity (H+I+J) | 100% | hence total activity |
| L | Valid distance travelled as % gap (F/A) | 38% | valid FPI reduction as % FP Gap |

*Computed from Stockton Warm Zones operational data*

It was previously shown (Figures 1 and 2) that between 33 and 46% (mean 39%) of fuel poor households assessed were removed from fuel poverty following Warm Zone intervention in Stockton[18].

However, Stockton has achieved greater success on the simple distance travelled measures at 75%. This is about twice the percentage achievement against the headline measure (% households removed from fuel poverty) i.e. 75%/39%. While 'removal from fuel poverty' should remain a primary objective, the adoption of a 'distance travelled' measure would also give a good indication of total fuel poverty reduction activity contributing to closing the fuel poverty gap.

[18] Actual target attainment was lower than this because this requires a reduction of 50% across all households, not just those assessed. At this time, 20% of households assessed were not signing up for assistance, and the assessment programme was incomplete.

This finding provides an interesting counterweight to the rather disappointing headline results. It is important to stress that Zones have little control over mis-targeting, since these are the result of such factors as Warm Front rules and social landlords' priorities. However, the Zone assessment process does provide useful information on the extent of mis-targeting. Again, it is emphasised that the use of the term "mis-targeting" does not imply any recommendation to target energy efficiency interventions very precisely to households who happen to be within a given range on the FPI at a particular moment.

Government or social landlords may wish to consider this information when formulating future targeting policies. The separate CSE/NEA research for Transco referred to earlier, for example, will give some indication of the precise benefit and housing circumstances of both fuel poor and non-fuel poor households. Similarly, in trying to make sure additional resources are effectively targeted at fuel poverty, Newham Warm Zone has identified single older households as the key group for its Warm Zone grant.

Finally, note that fuel poverty undershoot (the total amount by which interventions failed to bring households below an FPI of 10%) was 15,670. This is more than the valid distance travelled (9,662). This is highly relevant to the issue of the adequacy of current measures packages and their ability to deliver sufficient 'distance travelled' (see section 4.7).

## 4.2 Reaching the Fuel Poor

### 4.2.1 Assessment activity

The impact of Warm Zones upon fuel poverty is dependent upon their assessment activity. It is therefore important to establish how far any shortfall in target attainment is due to failure to make progress on the assessment task.

Table 9 below identifies the scale of the assessment[19] and fuel poverty reduction tasks that faced the Zones at start up. Fuel poverty estimates are derived from the simple NEA model in which regression modelling of empirical ward fuel poverty proportions was carried out against Index of Multiple Deprivation scores[20]. This gives an estimate of 19.2% in fuel poverty for Stockton. The comparable figure obtained from Warm Zone assessments is 19%. A baseline survey carried out pre-launch suggested a figure of 21%. This is therefore comparable, given that fuel poverty levels were marginally higher at the time.

**Table 9: Assessment and fuel poverty reduction task facing Warm Zones**

| Zone | Estimated % in FP | Total no. households | % total WZ h/hs | % total WZ FP h/hs |
|---|---|---|---|---|
| Hull | 25% | 108,000 | 21% | 23% |
| Newham | 31% | 89,000 | 17% | 24% |
| Northumberland | 16% | 129,000 | 25% | 18% |
| Sandwell | 23% | 118,000 | 23% | 23% |
| Stockton | 19% | 75,000 | 14% | 12% |
| **All** | **23%** | **519,000** | **100%** | **100%** |

1. Household numbers are from Social Trends 2001. This does not necessarily correspond to the number of dwellings (occupied or not) in the local authority area concerned.
2. Figures based on full income definition of fuel poverty
3. While estimated % (col 2) seems high, the Stockton figure is confirmed both by their assessments and by their baseline survey.

Table 10 below defines annual assessment targets for the 3 years of the pilot. It draws on the experience of Warm Zones and other integrated schemes in assuming that a maximum of 80%

[19] The table assumes all households within the Zone should be assessed.
[20] The methodology used for this is given in the first annual evaluation report.

assessment success rate is achievable (outside a 'bottom up' community development approach[21]). It also assumes that Years 1 and 3 will have a lower output, because of start-up and run-down, and that 40% of the task needs to be achieved in year 2.

**Table 10: Adjusted assessment targets (80% of households)**

| Zone | Total | yr1 | yr2 | yr3 | Yr1 + yr2 |
|---|---|---|---|---|---|
| Hull | 64,800 | 19,440 | 25,920 | 19,440 | 45,360 |
| Newham | 46,200 | 13,860 | 18,480 | 13,860 | 32,340 |
| Northumberland | 103,200 | 30,960 | 41,280 | 30,960 | 72,240 |
| Sandwell | 94,400 | 28,320 | 37,760 | 28,320 | 66,080 |
| Stockton | 60,000 | 18,000 | 24,000 | 18,000 | 42,000 |
| **All** | **368,600** | **110,580** | **147,440** | **110,580** | **258,020** |

Notes:
1. 30% assumed in years 1&3 (start-up; mopping-up), 40% in year 2 (mid).
2. Hull was not targeting the social sector particularly in year 1, although that sector remained within the business plan.
3. 25,000 of the 71,200 properties in Newham are eliminated through desk-top assessment.
4. Northumberland believes that 80% is not realistically achievable, given the rural nature of much of the Zone area.

Table 11 shows actual assessment activity as a percentage of the WZ assessment target from table 10, both for each year individually ("annual") and for the period between start-up and the end of the 2 year period ("cumulative"). An assessment is counted as such, whether or not income data was collected.

**Table 11: % WZ adjusted assessment task achieved years 1 & 2**

| Task basis | Annual | Annual | Annual | Cumulative | Cumulative | Cumulative |
|---|---|---|---|---|---|---|
| **Period** | **1** | **2** | **1 & 2** | **1** | **2** | **1 & 2** |
| Hull | 4% | 58% | 35% | 1% | 23% | 25% |
| Newham | 32% | 119% | 82% | 10% | 48% | 57% |
| Northumberland | 17% | 62% | 43% | 5% | 25% | 30% |
| Sandwell | 59% | 105% | 85% | 18% | 42% | 60% |
| Stockton-on-Tees | 82% | 82% | 82% | 25% | 33% | 58% |
| **All** | **38%** | **83%** | **64%** | **11%** | **33%** | **45%** |

Notes:
1. Both Hull and Northumberland have made considerable use of postal self-completion assessment, which tends to have a much smaller "hit rate" (15-20%).
2. Hull started assessments almost a year later than the other Zones, due to late start-up. This limited activity in year 1.

### 4.2.2 Assessment results - all Zones

1. In Year 1, underperformance on assessment was considerable even allowing for the lower targets set (which assumed a lower rate due to start up activities and a maximum rate of 80%).
2. However, the 38% success rate in Year 1 increased to 83% in Year 2. This represents a major improvement.
3. The cumulative (weighted) percentage of total task showed substantial acceleration (from 11% to 45% between years 1 and 2. This suggests a final achievement of about 70% of the adjusted target (80% of all households) by March 2003, allowing for run-down.

This underperformance may reflect factors relating to both Zone organisation, such as personnel issues, and the quality and yield of different approaches to assessment. Despite

[21] See 4.2.6, particularly reference to the Armagh-Dungannon project

these problems, Zones have generally increased response rates over the second year. They have achieved this through:

- Providing high quality training for assessors, plus repeat visits to maximise the probability of households being at home.
- Using assessors with language skills in areas with large minority ethnic populations whose first language is not English.
- Maintaining a high public profile through publicity and media events.
- Working in areas with high concentrations of Warm Front and priority EEC eligible households (not necessarily the same as fuel poor households)[22].
- Community outreach activities such as presentations to local community groups, setting up stalls at local events, informing local councillors and other community representatives.

Response rates could be improved further through greater community engagement, as recommended in the first annual evaluation review. This includes giving communities more input to Warm Zone processes and priorities, for example by allocating a certain amount of Warm Zone resources that are spent on community priorities. However, it is also likely to increase Warm Zone costs and require longer time frames to allow community capacity-building.

### 4.2.3 Assessment results – individual Zones

The response rate to assessment in **Stockton** was very consistent from start-up onwards and seems likely to reach 80% by the end of the pilot period. **Sandwell's** record is even more impressive, in terms of numbers at least. This in part was achieved through carrying out a 'mopping up' exercise in which 'non-contacts' were re-visited. **Newham** also made enormous strides in year 2 and is likely to reach 80% by the pilot end. The Zone reports that response rates increased significantly when it started using multi-lingual assessors. The Zone also received funding from the Council in April 2003 to re-visit wards assessed in the earlier stages of the Zone, for which response rates were low.

**Hull's** performance looks slow at 35% of total, even taking into account the late start-up. However, the low figure might partly be explained by the fact that Hull is only assessing private sector properties. All Zones report that this sector is more difficult to assess (although Zones do not report the private/public sector response rate split). If the Zone is successful in its desktop assessment of Council properties (see below), this will increase the overall success rate substantially (since the exercise should obtain an estimated 90% response rate for the Council sector). **Northumberland** appears unlikely to achieve a success rate above 50%. This partly reflects the logistical difficulties of working in rural areas on a limited budget (see later section on 'impact of rurality on assessment').

Zone marketing activity and outreach work has played an important role in improving response rates. Much of this activity is highly innovative and provides valuable experience for other agencies engaged in fuel poverty reduction work.

**Newham** has run competitions and articles in the local press, the Council's magazine and London Energy's magazine. **Sandwell** regularly participates in community events to help raise its profile. Indeed, the Zone believes that its participation helped increase attendance at such events due to the offer of free light bulbs. The Partnership Manager also attends many community and local 'town' meetings. **Hull** has participated in the Lord Mayor's Gala,

[22] Some Zones rolled out their programmes according to wards' positions on the Index of Multiple Deprivation. A key component of the Index is 'households claiming means tested benefits'. This corresponds closely to Warm Front and priority EEC eligibility. Other Zones rolled out their programmes according to local marketing opportunities or to follow Council-defined area programmes

distributed self-assessment packs in GP surgeries and run competitions. The Zone has also created a self-assessment form accessible through the Council's website.

### 4.2.4 Importance of Assessment Rates

The evaluation suggests that an assessment target[23] of 80% of all households is achievable. For the Warm Zones as a whole, on current trends only 70% (i.e. 56% of all households) of this target will be achieved by 31 March 04.

Assuming the same fuel poverty density in both assessed and non-assessed populations, this means that 89% of fuel poor households assessed would need to be taken out of fuel poverty in order to achieve the target of reducing fuel poverty by 50%. Given the evidence of section 2, such an achievement looks difficult.

If postal assessment is used for remote areas, or those thought likely to contain a low concentration of fuel poverty, that target should be scaled down in proportion. Even under the best circumstances, it is rare to achieve a response rate much above 30% by such methods. This has consequences for setting a realistic fuel poverty reduction target.

When assessment achievement falls below 62.5% of the adjusted target (80% of all households), it is impossible to meet the fuel poverty reduction target on any scenario. Hull and Northumberland look certain to be in this situation. However, Northumberland has received funding to continue its work for another 3 years (see succession strategies). This will allow it to increase the level of assessment activity across the county.

### 4.2.5 Assessment Quality

The first annual report made a number of comments about Zone assessment procedures. Zones have responded to some of these but not all. In particular, Zones have not engaged communities to the extent, for example, that the Armagh-Dungannon Health Action Zone project achieved (where a participation rate of 93% was reached)[24].

Table 12 below shows the "hit rates" of assessment in different Zones. This gives the total number of attempts to make contact, the numbers of non-contacts, refusals, and the proportion who answered the income question. The latter is essential for determining fuel poverty level, Zone progress against target and for assessing possible eligibility for funds that use fuel poverty as the criterion for access, rather than benefit status (e.g. Newham's Warm Zone grant).

'Hit rate 1' is the percentage of those attempted for whom an assessment is successfully completed, whether it includes the income answer or not. 'Hit rate 2' is the percentage of those attempted where the completed assessment includes income.

[23] A successful assessment is one where information is obtained on a household's property and ideally income circumstances.

[24] Zones had a much larger task than the Armagh-Dungannon project (which targeted 469 properties). Nevertheless, the initiative provides a benchmark which demonstrates the maximum likely achievable response rate, given sufficient time and resources and commitment to community engagement.

**Table 12: Year 2 assessments attempted and achieved**

| District | Assessments attempted | No. resulting in non contact | No. refused | No. fully completed assessments achieved | Hit rate 1 (all assmts) | % giving income details | Hit rate 2 ( incl. income details) |
|---|---|---|---|---|---|---|---|
| Hull | 29,359 | 12,331 | 1,967 | 15,061 | **51%** | 70% | **36%** |
| Newham | 30,000 | 4,809 | 1,872 | 22,000 | **78%** | 89% | **69%** |
| N'land | 46,500 | 21,100 | 3,200 | 25,573 | **48%** | 84% | **40%** |
| Sandwell | 46,996 | 3,599 | 3,793 | 39,604 | **84%** | 21% | **18%** |
| Stockton | 25,576 | 4,741 | 1,129 | 19,706 | **77%** | 90% | **69%** |
| All | **178,431** | **46,580** | **11,961** | **121,944** | **67%** | **64%** | **43%** |

Hull and Northumberland use a proportion of postal self assessments.
Newham figures do not include desk top assessment.

### 4.2.6 Refusals and non-contacts

The overall 'hit rate 1' of 67% suggests that there is scope to improve assessment rates. Most Zones have reported substantial improvements through training, removing less successful or conscientious assessors, and procedural changes such as more flexible working hours. However, 80% appears to represent the ceiling for full assessments (i.e. where income data is also collected)[25].

Newham has successfully used local authority data on building characteristics and Council tax to eliminate 25,000 households from the assessment task[26]. Households identified as 'highly unlikely to live in fuel poverty' do not receive an assessment visit. In a rural Zone, such economical procedures could be used to finance the greater expense of door to door assessment. However, the 'desktop assessment' procedure requires good quality data on all housing sectors, which only a limited number of local authorities possess.

Hull Warm Zone is attempting to use a desktop approach to assess the fuel poverty status of Council tenants. The Zone is using the Council's Housing Benefit and Council Tax benefit records to identify tenants' income. It then intends to marry this with SAP data on housing stock. The Zone overcame data protection issues by writing to every Council tenant to seek their permission to access benefits records for this purpose. Less than 1% of tenants denied access to their records.

However, this approach only works for the 60% of Hull Council tenants that claim Council Tax and/or Housing Benefit. The Warm Zone is intending to mail shot the remaining 40% of tenants to collect the necessary data. It is likely that the exercise will help improve Hull's overall assessment rate considerably.

Note that even for Newham, Sandwell and Stockton, non-contact is a much more important factor in assessment failure at 13%, than refusal at 6.7%. Some voids are bound to be encountered, especially in areas of low demand, and some householders are away from home for lengthy periods. These factors might account for 3 or 4% of failure. However, improvement may be possible through making additional contact attempts over a longer time period.

As already noted, the Armagh-Dungannon HAZ project has achieved participation rates of 93%. This is the obverse of the WZ refusal rate, and suggests that there may be a core of householders impervious to the energy-efficiency message (and/or perhaps permitting strangers to enter their homes) amounting to about 7%. The conclusion is that, with a big

[25] Northumberland argues that 80% is not achievable in 3 years in large rural areas.
[26] The procedure is likely to result in a failure to identify households who are not claiming their benefit entitlements.

enough assessment budget, 90% sign-up is just about attainable. It may be significant that Hull, with the smallest budget per household, has the lowest hit-rate of the urban zones.

### 4.2.7 Assessing income

Zones varied considerably on hit rate 2, i.e. assessments including income details, from 21% in Sandwell to 90% in Stockton. Although there is a general view that "people are reluctant to discuss money matters", district-wide surveys such as Omnibus surveys typically achieve a response rate of at least 70% on household income. Furthermore, given that Warm Zones offer the possibility of home improvement grants, it would seem reasonable to assume response rates should be even higher.

In this context, Sandwell's 18% performance on hit rate 2 (with just 21% answering the income question) appears very poor. The Zone has suggested that its high level of deprivation and large minority ethnic population are linked to suspicion and reserve towards official agencies; hence poor response to questions on income. However, these factors also apply in several of the other Zones. Further, general survey experience suggests that people on low incomes are more willing to answer income questions than people on higher incomes. This is thought to be linked to the fact that many people on low incomes are required to provide income details when claiming benefits.

Access to Warm Front and EEC measures is determined by benefit status and household type, rather than income. It would therefore appear that Sandwell has largely run the Zone as an operational unit for delivering volume energy efficiency improvements, rather than for providing detailed feedback information in keeping with its pilot status. Thus, the Zone assessors typically carry out the assessment on households' doorsteps (rather than enter the home, as with the other Zones), allow minimal time for obtaining information and make little effort to obtain income information. Sandwell's reliance on insulation contractors to carry out the bulk of assessments may also be a contributory factor. The Warm Zone Board has not challenged the Zone to correct the lack of income data.

### 4.2.8 Assessment 'reach'

The 122,000 assessments undertaken in Year 2 have encountered 29,000 households in fuel poverty[27]. This represents 24% of all Warm Zone households. Table 13 below compares the observed and expected proportions of fuel poverty. Overall, the expected figure is a comparable 22.7%, although observed and expected figures do differ in individual Zones. This probably reflects the different stages and ordering of roll-out in the Zones.

**Table 13: Expected and observed levels of fuel poverty in the Zones**

| District | % FP (observed) | % FP (expected) |
|---|---|---|
| Hull | 14% | 25% |
| Newham | 24% | 31% |
| Northumberland | 22% | 16% |
| Sandwell# | 33% | 24% |
| Stockton-on-Tees | 19% | 19% |
| **All** | **24%** | **23%** |

**Notes**
1. Hull's figure is probably low due to the Zone's focus on the private sector and the fact that it intends to assess the most deprived wards at the end of the Zone period.
2. # limited sample with income data.
3. Expected figures are taken from Table A in the Annex.

[27] Assuming that the 36% with no income data are comparable to the other cases

This suggests that Warm Zones are successfully reaching households in fuel poverty through the assessment process.

### 4.2.9 The impact of rurality on assessment

Northumberland believes that the rural nature of much of the Zone area contributed to its poor response rate (see Table 10). Factors might include:

- The dispersed distribution of the rural fuel poor means that they are more difficult to assess and thus identify.
- Rural households are less likely to claim Warm Front passport benefits.
- Warm Front and priority EEC measures may be of limited value due to the large number of rural households off the gas network and (possibly) living in properties built with solid walls. Therefore, households see little value in providing information if they do not expect to benefit from the programmes on offer.
- The large geographical area covered by the Zone means that 'word of mouth' publicity has less effect than in the 'urban' Zones
- The higher average incomes associated with many of the wards the Zone is working in (Northumberland has lower average levels of deprivation than other Zones). All Zones report lower response rates among higher income households.
- Poor weather conditions exacerbate problems relating to long travelling times and dispersed clients.

However, the Zone did suffer in the initial period from poor organisation of the assessment process in the initial period, which it subsequently was able to address.

The evaluation compared response rates between 'urban' and 'rural' wards in Northumberland. The Countryside Agency's standard classification of 'urban' and 'rural' wards was used for the analysis.[28] Table 14 below shows that there is a significant difference between response rates in urban and rural wards[29]. However, it is not possible to comment on which single factor might have contributed to this difference. There are two potentially confounding issues:

1. Income levels are generally higher in Northumberland's rural wards, compared to urban (although it could be argued this is related to rurality, since rural deprivation is more dispersed than urban).
2. The Warm Zone has relied more extensively on completion of self assessment forms in rural areas, rather than door to door assessment. Again it could be argued that operational factors relating to rurality (i.e. the cost of door to door assessment in remote, dispersed areas) contributed to the difference.

**Table 14: Response rates in Northumberland's urban & rural wards**

| Type of ward | Mean response % | No. wards |
|---|---|---|
| Rural | 31.2% | 57 |
| Urban | 51.4% | 37 |
| Total | 39.2% | 94 |

[28] This tends not to recognise significant 'built up' areas, such as market towns and coastal resorts, in its definition of 'rurality', and as such is problematic. Both the Office of National Statistics and the Office of the Deputy Prime Minister are carrying out research into the re-definition of urban and rural areas. This will lead to greater differentiation of 'urban' and 'rural'.

[29] The difference was found to be statistically significant, using the 'analysis of variance' test.

Northumberland has adopted similar approaches to other Zones to improve response rates, for example running publicity campaigns, competitions etc. It has also pioneered self assessment and health worker involvement as means for increasing response rates.

The Warm Zone has also helped coordinate some small scale initiatives to offer measures designed to tackle lack of access to gas – a major problem in rural areas. This in turn might lead to better response rates if householders consider the Warm Zone has more to offer. The Zone also offers bespoke energy efficiency advice to all participants. This has addressed a gap in service from the local EEAC due to lack of capacity.

### 4.3 Tenures targeted by Zones

It is possible that the tenure mix in Zones and the relative priority given to targeting of the different tenures may influence the difficulty of the task faced by the different Zones.

Data from Stockton shows a higher mean FPI in the private sector (14.9%) for fuel poor households than in the local authority sector (13.3%). This might seem a small difference but, as shown in Section 2.2, this can make a considerable difference to the proportion removed from fuel poverty. Moreover, social sector fuel costs are less (£775 compared with £825). This may reflect dwelling size and the lower incidence of under-occupancy in the social sector (15% less). In addition, all the Zones report that social sector tenants have better access to welfare rights support and are therefore less likely to under-claim benefits[30].

Thus, the task of fuel poverty alleviation appears easier in the social sector. This is confirmed by Stockton's results, where, with similar distance travelled on FPI improvement, 43% were removed from fuel poverty in the social sector but only 27% among owner occupiers.

By the end of year 2, both Stockton and Northumberland had targeted considerably (36-7%) more local authority/ALMO[31] properties than its proportion in the population. By contrast, Hull and Newham had both carried out more energy efficiency work (57% and 50% respectively) in the private sector than its proportion of the housing stock. This makes Hull's task particularly demanding, as the private sector is almost twice as large as that in Newham. Until very recently, Hull had not worked with the Council sector at all.

Concentrating on the private sector presents a number of difficulties:

i. Less than half of fuel poor households in the private sector are eligible for Warm Front – the only major fuel poverty programme for private sector households. However, the programme is targeted at the vulnerable fuel poor, as identified by passport benefits.
ii. Social landlord energy efficiency schemes generally aim to bring all housing stock up to certain standards and will therefore eventually reach all fuel poor households.
iii. It is much harder to organise matched funding for EEC schemes in the private sector. Landlord finance from capital schemes is usually available to provide match funding in the social sector[32].
iv. Social sector households in fuel poverty tend to be less deeply in fuel poverty, as shown above.

[30] It is local authorities' interest to maximise benefit take-up for social housing tenants since this helps reduce rent arrears.
[31] Arms length management organisation
[32] Although, note that Newham and Sandwell have used regeneration programmes as a source of match funding for private sector properties (see section 4.5.3). Also, Blyth Valley has provided match funding for npower's insulation scheme for the moderate and marginal fuel poor in the private sector. npower provides 100% funding for the severe fuel poor (see 4.5.1).

Hull has faced a considerable disadvantage in the tenure mix targeted so far, with Newham also facing a more difficult task. This makes Newham's year 2 performance the more creditable, especially given their slow start during year 1. However, Northumberland's rather slow performance looks less easy to understand, since there is less social housing in the remote rural areas of Northumberland, compared with the urban centres of Ashington, Berwick etc.

### 4.4 Referral and non-referral

#### 4.4.1 Referral numbers

Fuel poverty reduction critically depends on referral of an assessed household to a fuel poverty scheme for measures, and the successful conversion of referrals into the installation of measures.

To meet year 2 fuel poverty reduction targets, 23,600 households needed to be removed from fuel poverty. Assuming a rate of fuel poverty removal of 30%[33], this target would require 78,500 referrals. Assuming a conversion rate (from referral to installation) of 0.85 (perhaps a little optimistic), the total number of referrals required would be 92,500.
However, it is estimated (Table 15) that only 27,800 referrals for energy efficiency work in Warm Front-eligible households and households in fuel poverty were made in the year[34]. This represents only 30% of the referral rate required to meet the fuel poverty reduction target.

Table 15 presents the results from an analysis based on conversion rates and fuel poverty removal rates derived from the fairly limited samples of operational data available.

**Table 15: Referrals and expected fuel poverty reduction 2002/03**

| District | WF referrals | FP non WF jobs | estimated % of FP removed from FP |
|---|---|---|---|
| Hull | 2,203 | 1,508 | 2.0% |
| Newham | 3,533 | 1,756 | 2.9% |
| Northumberland | 3,147 | 1,480 | 2.8% |
| Sandwell | 2,923 | 3,674 | 4.1% |
| Stockton-on-Tees | 4,144 | 3,500 | 10.9% |
| All | **15,950** | **11,918** | **4.0%** |

The 4% reduction from fuel poverty figure is comparable with the observed figure of **5.4%** in the Zones presented in section 2.1, given the sensitivity of the headline number to small changes in FPI outcomes. This reinforces the conclusion that Zones are generating a insufficient number of referrals, given the inability of existing packages to travel sufficient FPI distance.

If the effectiveness rates of the referrals increased to about 90%, the fuel poverty reduction in year 2 would look more like 16%. This would then require only a relatively small expansion of the assessment programme to reach the fuel poverty reduction target. This supports the Zones' contention that failure to meet the target has more to do with the inadequacy of the toolkit than a lack of activity on their part.

[33] This is based on the fact that Stockton achieved a fuel poverty reduction rate of 35-45% (see Tables 3 & 4) and the fact that mean SAP improvement across all Zones is significantly lower than in Stockton
[34] The uncertainty arises because of the large numbers of cases where income was unknown. Moreover, Zones did not provide a FP/non-FP breakdown of referrals.

This might be achieved if packages were made more effective through multi-streaming different funding regimes into an integrated package and/or providing additional measures, such as solid wall insulation, gas network extension, renewable technologies as well as a package of soft measures. Zones argue that they were keen to develop initiatives of this nature but were prevented from doing so due to lack of funding and organisational barriers to scheme integration. The main barriers were identified as insufficient volume to warrant the effort and the lack of mainstream grant funding.

### 4.4.2 Non referrals

Non-referral of fuel poor households for measures remains a serious problem in most Zones. Zone operational reports show that there are a *minimum* number of 1,500 un-referred fuel poverty cases.

Zones reported non-referrals totalling no less than 5,990 households in fuel poverty in year 2, about 20% of the total. However, it is understood that some of these were carried forward from year 1, and that at least several hundred were subsequently referred for measures under new initiatives in year 2. The exact figure is unknown, but seems likely to be between 1,500 and 4,000 cases across the Zones, about 10% of the fuel poor.

These fuel poor non-referrals relate primarily to the difficulties Northumberland and Hull have had in securing gap funding. Newham had a similar problem at first, but has more recently secured gap funding. Newham's current returns show zero non-referrals for fuel poor households. The situation in Sandwell is not clear, due to the lack of accurate data on fuel poverty (resulting from lack of income data).

This remains a serious matter, not only for the local credibility of the Zone, but also for the attainment of Zone targets.

### 4.4.3 Soft measures referral

Table 16 shows the number of referrals for soft measures, such as benefits or tariff advice. Feedback from Zones (and in some cases from agencies to Zones) has been sketchy.

**Table 16: Soft measures referrals in Years 1 & 2**

| District | tariff | tariff outcomes | benefits advice | benefits outcomes | benefit notes |
|---|---|---|---|---|---|
| Hull | 4,044 | - | 2,079 | - | 2,079 requests |
| Newham | 0 | - | 500 | 500 | 14% higher income |
| Northumberland | - | - | 882 | 739 | 1.2% higher income |
| Sandwell | - | - | 10,009 | Not known | |
| Stockton-on-Tees | - | - | 3,000 | 277 | 9% higher income |

Most benefits advice sessions reported by Zones actually indicate requests or agreement that they might be interested. Only the 1,600 cases reported by Newham, Northumberland and Stockton resulted in a known number of outcomes from individualised case-work. Local capacity for dealing with referrals and cost remain issues in this area (see first annual report for further discussion of these issues).

Only Hull reported making any tariff advice referrals, but no outcomes are known. No Zone made any referrals in relation to under-occupancy advice. Some Zones, e.g. Northumberland and Sandwell, refer people for help with debt and other financial issues but neither the number of referrals nor actual outcomes are known.

Thus it is extremely rare for clients to benefit from more than two types of possible Zone intervention (energy efficiency measures; financial, benefits, and tariff advice; occupancy). Energy efficiency measures represent overwhelmingly the main thrust.

The figures suggest, in conjunction with the preliminary analysis of benefits advice impact (see section 4.6), that there is scope for expansion of referrals. However, "referral" can mean anything from a formal request to instigate a procedure to giving a client a telephone number. As always, referral quality is key.

From Newham and Stockton's experience, it appears that about 30% of fuel poor (plus some non fuel poor) households might be interested in a benefit check. Of these actually referred, there was a positive outcome in a little over 10% of cases. These figures should be treated with caution because it is not clear whether 'like is being compared with like' in terms of what Zones count as a 'benefit check' or 'benefit outcome'. Early results from the CSE/NEA research for Transco estimate that potential eligibility for Pension Credit may be much higher than these figures suggest, i.e. a significant number of the 'currently ineligible fuel poor' may be eligible for Pension Credit. The next report will give further details on this.

These are very tentative findings, but would suggest that Zones are now making up to 10,000 quality referrals for welfare rights each year. Section 4.6.1 – 4.6.3 gives further details of benefits advice provided by Zones.

### 4.5 Funding for measures

Drawing down resources for fuel poverty alleviation is a key Warm Zone objective. This section focuses on Warm Zone success in attracting additional resources beyond Warm Front. The following sources were identified:

- Energy Efficiency Commitment
- Mainstream Council funds
- Regeneration programmes and other external sources

These sources are often inter-related. For example, Warm Zones have often negotiated matched funding between EEC and mainstream Council or regeneration programmes. The following section, however, assesses Warm Zone success in drawing down funds from each source separately.

#### 4.5.1 EEC

Zones have played a major role in negotiating EEC deals between the sponsoring energy company and local Councils and other agencies. Section 3.3 commented that Zones considered that the size of the EEC programmes is much bigger than Councils would have negotiated without Zone involvement. In some cases, Zones doubted whether Councils would have negotiated any EEC schemes at all.

Table 17 below details the amount of EEC funding negotiated by Zones for spending on measures within Zones. This does not reflect expenditure in the pilot area unrelated to Warm Zone activity such as:

- the Scottish Power EEC deal with Blyth Valley;
- schemes marketed independently (to the Warm Zone) by energy companies or agents or contractors to the 'fuel rich', e.g. discount schemes;
- pre-existing EESOP/EEC schemes negotiated before the Zones started; and
- CFL schemes.

**Table 17: EEC spend in Warm Zone pilots**

| Zone | Amount | Programme | Comments |
|---|---|---|---|
| Stockton (British Gas) | £3.4m | 100% funding for insulation in social housing<br>50% funding for private housing insulation | <br>Stockton Council provides remaining 50% |
| Sandwell (npower) | £1.00m<br>£0.42m<br><br>£0.042m | 45% funding for insulation in social housing<br>100% funding for non WF eligible severe FP owner occupiers (insulation)<br>FridgeSavers for FP and people on qualifying benefits | Sandwell Council funds remaining 55%<br><br><br>Client contribution of £60 for fridge freezers or £35 for fridges |
| Northumberland (npower) | £1.076m<br><br><br><br>£0.25m<br><br>£0.044m<br><br>£0.025m | 50% funding for insulation in social housing (not Blyth)<br><br><br><br>100% funding for non WF eligible severe FP owner occupiers (insulation)<br>50% funding for non WF moderate & marginal FP owner occupiers in Blyth (insulation)<br>FridgeSavers for FP and people on qualifying benefits | Councils fund remaining 50% in social housing. Includes £15k for Guinness Trust scheme. Blyth negotiated EEC scheme with Scottish Power (separate to WZ)<br><br><br>Blyth Valley Council funds remaining 50%<br><br>Client contribution of £60 for fridge freezers or £35 for fridges |
| Hull (npower) | £0.8m<br><br><br><br>£0.33m<br><br>£0.033m | 50% funding for insulation in social housing<br><br><br><br>100% funding for non WF eligible severe FP owner occupiers (insulation)<br>FridgeSavers for FP and people on qualifying benefits | Hull CC funds remaining 50% in social housing. Programme will continue after pilot period<br><br><br><br>Client contribution of £60 for fridge freezers or £35 for fridges |
| Newham (EDF) | £0.9m<br>£0.1m | 42% funding for insulation in social housing.<br>33% funding for WZ grant for severe FP. | Part of £0.9m will provide match funding for £100k allocated to Canning Town SRB |
| **Total** | **£9.22m** | | |

**Notes**

1. npower spend on severe fuel poor scheme and FridgeSavers is notional for each Zone, since figures were only given for the 3 Zones as a whole.
2. Does not include spend on standard fuel company EEC offerings, e.g. insulation discounts, since these are not administered through the Zones. These tend to be taken up by fuel rich. However, Newham is considering running a scheme for the fuel rich through use of assessment data. Hull also developed an offer in which insulation of any type was offered for £99 (for households not eligible for grants). This was originally intended for the fuel poor but later re-targeted at the non-fuel poor, due to low take-up by the fuel poor.
3. Does not include CFL schemes

Table 17 illustrates the scale of British Gas funding in Stockton. npower's EEC spend is of a similar order to British Gas's across the 3 Zones. However, the latter's spend is spread across a much larger population base.

Table 18 below estimates the EEC spend per household and fuel poor household in the Warm Zones (priority EEC is targeted at households on benefits, not fuel poor households). Both figures are given to illustrate relative differences between the Zones, i.e. they do not reflect the actual expenditure on every household (since many will not get anything) or every fuel poor household (since only a relatively small amount is specifically targeted at the fuel poor, e.g. npower's insulation grant).

**Table 18: Proportion of EEC budget spent in Warm Zones**

| Zone | Total EEC spend in WZ | EEC spend/ hh (WZ) | EEC spend/ FP hh (WZ) |
|---|---|---|---|
| Stockton | £3,400,000 | £44.74 | £241 |
| Sandwell | £1,458,000 | £12.40 | £56 |
| Northumberland | £1,395,000 | £10.70 | £68 |
| Hull | £1,167,000 | £10.80 | £46 |
| *All npower WZs* | *£4,020,000* | *£9.80* | *£49* |
| Newham | £1,000,000 | £11.00 | £38 |

Table 18 again illustrates the scale of British Gas expenditure in Stockton Warm Zone and of energy company EEC expenditure in the Warm Zones in general. This is likely to represent a substantial proportion of company's total EEC budget (data on total EEC budgets are not available for reasons of commercial confidentiality).

On top of this EEC commitment, companies have provided substantial sponsorship and 'in-kind' contributions to Zones (e.g. secondment of staff). Given that the figures do not include standard EEC offerings to the non fuel poor (e.g. discount schemes) and CFL expenditure, it can be seen that the scale of company investment in the Zones is considerable.

Such commitment may be difficult to sustain in the event of an expanded Warm Zone initiative. The final report will comment on 'resource displacement' issues, including those that might relate to EEC. The final report will also discuss the 'spatial equity' implications of an expanded Zone programme.

### 4.5.2 Mainstream Council funds

Table 19 below summarises local authority contributions towards energy efficiency measures in Warm Zones. The information is not complete because not all Zones supplied the details requested. The table also only relates to programmes in which Zones had some involvement. It therefore does not include, for example, Blyth Valley's match funding for Scottish Power's EEC investment. Similarly, only Stockton Warm Zone has drawn upon private sector renewal funds. It is quite possible that these funds are used by other local authorities for energy efficiency but are not under the control of Zones.

**Table 19: Council spend in Warm Zones (Y1 & Y2)**

| Zone | Programme | Amount ('000) £ | Notes |
|---|---|---|---|
| Stockton | Capital programme | 310 | Matched against EEC for non WF eligible FP |
| | Private sector renewal grants | 17 | |
| | Emergency fund | 10 | |
| | Heating spend | 5,000 | |
| | 'Housing department' | 10 | not specified |
| | Total SBC | **5,347** | |
| Sandwell | Capital programme (insulation) | **1,200** | matched against EEC (social housing) |
| Newham | Capital programme (insulation) | 1,230 | matched against EEC (social housing) |
| | General Fund | 150 | Contribution to WZ grant |
| | Total NBC | **1,380** | |
| Hull | Capital programme (social) | 800 | matched against EEC (social housing) |
| | Capital programme (private) | 55 | £99 fixed price LI/CWI offer |
| | Total HCC | **855** | |
| Northumberland | Blyth Valley Capital programme | **44** | LI/CWI offer to marginal and moderate fuel poor (FPI 10-19%) |

**Notes**

1. Some of Stockton Council's funding derives from SRB and a Public Service Agreement it reached with the Government for energy efficiency investment.
2. No information provided on other Northumberland local authority programmes.

Table 19 again illustrates the scale of resources available in Stockton, particularly with respect to the Council's heating programme. Sandwell has secured around £½m for central heating through a Neighbourhood Renewal Fund bid (see next section for more details). However, this is considerably smaller than that available in Stockton. Of course, some Zone local authorities were already carrying out central heating improvements on their stock before the Warm Zone pilots started, e.g. Hull CC had agreed a £7.8m central heating programme (33,594 systems) just before the Zone was established (2002).

The evaluation will attempt to establish further details of the local authority heating and other energy efficiency programmes at a later stage in the evaluation.

### 4.5.3 Regeneration programmes

The evaluation paid particular attention to Warm Zones' ability to attract funding from regeneration programmes, since these are the most likely major sources of external funding for measures (i.e. additional to EEC and mainstream Council programmes). However, Zones have obtained resources from other sources. For example, Stockton secured £250k from Tristar Homes as part of the 'Arms Length Management' deal for former Council stock. Similarly, Northumberland received part funding from Northern Rock Building Society for a welfare rights worker and Newham part funds a welfare rights worker through the interest it receives from Council payments to run the Council's capital programmes.

The following summarises Warm Zone success in accessing regeneration and other external funds.

It is important to note that Zones' ability to access regeneration funds is in part determined by the type and size of regeneration programmes available in the different Warm Zone areas. The evaluation will conduct a review of regeneration programmes in Warm Zones by way of providing context to the achievements set out below. The evaluation will also assess the extent to which Zones themselves meet the Government's 'sustainable regeneration' criteria (to the extent that Zones can be considered 'regeneration initiatives'.)

**Stockton, Hull and Northumberland Warm Zones** are not accessing regeneration funds to provide extra measures, although all had tried to access this source.

**Stockton** made an unsuccessful application to the Neighbourhood Renewal Fund (NRF). It has not made any subsequent bids. Of course, the Zone is under less pressure than the other Zones to secure additional funding, due to the scale of measures funding it receives from the Council and British Gas.

Notably Redcar & Cleveland Zone supported a successful Council and Government Office bid for ERDF/ESF funds. £800,000 will be spent on training (e.g. in heating and insulation installation skills) and provision of heating measures.

**Northumberland** made an unsuccessful bid to the Local Strategic Partnership (LSP) for funding for a mobile display/assessment team. The Zone was informed that the bid did not fit in with the LSP's priorities. Wansbeck is the only district that has access to NRF funding. The Council contributes to Zone costs from this fund but has not used it to fund measures or as a matching source for EEC measures. The Zone believes that fuel poverty crosses too many agendas – funders assume everybody else is funding fuel poverty reduction measures.

**Hull** has not had any success in accessing regeneration funds. It attributes this to the issue of fuel poverty crossing funding topic boundaries. Some NRF/Single Regeneration Budget (SRB) money is spent on social housing but this is not channelled through the Warm Zone (the money is allocated to mainstream housing improvement). The Zone made an unsuccessful bid for joint welfare rights/financial exclusion provision. It was particularly disappointed with this decision because the Zone had been encouraged throughout the application process by fund-holders.

Both Hull and Northumberland reported that a lot of time is spent on fund-raising, often with little result. Their experience of bidding for regeneration funds was that there did not appear to be any rational explanation for why some bids were accepted and others were not. Further,

much regeneration money appeared to be already allocated. Fuel poverty was not a high priority for funders.

Finally, Hull and Northumberland Zones commented that Government guidelines for individual regeneration programmes currently do not refer to fuel poverty reduction goals. They argued that such guidelines should make this objective explicit in future, if the Government considers regeneration programmes should play a role in combating fuel poverty.

**Sandwell** has had much more success in attracting regeneration funds since the first evaluation report. The Zone considers that this is because it has built up a track record for reliability and getting the money spent and it has built relationships with the 'gatekeepers' of regeneration funds. While the Zone believes it has submitted high quality bids in which it has used assessment data to demonstrate its case, it also believes that informal contacts with programme managers were essential. It would not submit bids if had not already been given an informal indication that bids were likely to be successful.

Sandwell's largest bid was £560,000 to the Neighbourhood Renewal Fund (NRF) for a central heating programme for severe fuel poor households. The Zone was subsequently able to boost this by attracting additional funds from Sandwell's individual town teams (e.g. £55,000 from Tipton). The funding has enabled the installation of 223 central heating systems, 70 in the public sector and 153 for owner occupiers. NRF central heating is installed according to Council specifications, i.e. 8 radiators, boxed-in pipes (average expenditure is £2,500).

The Zone still felt there were considerable problems in seeking funds from regeneration and other sources. On several occasions, the Zone had to submit bids late in the day with very tight delivery deadlines[35] or when alerted of 'under-spend'. The Zone felt that 'gatekeepers' should give better guidance and provide more notice of under spends.

The Zone suggested that it would be more appropriate for local authorities to identify the possible use of regeneration funds for Warm Zone work at the outset. This should form part of an overall commitment to ensure that there are sufficient funds to tackle the scale of the problem.

**Newham** has had some success in attracting regeneration funds for measures and matched this with London Energy EEC funds. The Zone has used this source to provide measures for the non-eligible severe fuel poor through its Warm Zone grant.

The Zone has successfully negotiated £100k for heating and insulation measures in the Canning Town area of Newham. The Zone is also awaiting decisions on a £320k New Deal for Communities (NDC) bid in Plaistow and a £125k NRF borough-wide bid. Both bids are for heating and insulation measures. The NDC bid includes £20k to train local people as assessors. The NRF bid includes a health theme in which households diagnosed as suffering ill health due to fuel poverty are given measures. Both bids were part of wider social inclusion proposals. The Warm Zone showed how the proposal contributed to wider objectives.

Newham has also found that energy efficiency is low on the list of funders' priorities, although 'fuel poverty' is sometimes given greater recognition. The Zone is now finding that funders are approaching the Zone because of the Zone's ability to deliver programmes, provide evidence on the extent of need and to refer to past experience, e.g. from delivering the Warm Zone grant.

[35] For example, the Zone had 4 months to introduce the NRF scheme (a totally new scheme) and spend the money. This represented a major logistical exercise.

The Zone stressed the importance of creatively demonstrating how Warm Zones can meet wider health and social inclusion themes, when preparing bids. The Zone also stressed the importance of gaining political support and cultivating good contacts with regeneration 'gatekeepers' and project officers.

The Zone considered SRB problematic as a tool for fuel poverty alleviation. SRB is focussed on one specific geographic area, while fuel poverty is extensive throughout Newham. Even accepting there may be some geographic differentiation, SRB areas do not necessarily correspond with the worst areas for fuel poverty[36]. The Zone favoured an approach based on tackling the 'worst' areas first, particularly if conducted on a regional basis. However, it recognised the problem of tackling fuel poverty in areas outside the priority regeneration areas.

### 4.5.4 Variations in difficulty of the task in relation to resources secured

This analysis must be regarded as tentative at this point since it is based on only a few cases and there are difficulties with some of the data.

Rurality has already been discussed as a factor affecting the difficulty of the Warm Zone task, in terms of the headline indicator of % households removed from fuel poverty.

There are other factors which should be considered including:

- the number of households in fuel poverty, *particularly in relation to….*
- the Zone resources available for assessment and management *and*….
- the depth of fuel poverty indicated (because the marginal fuel poor are far easier to remove from fuel poverty than the moderate and severe fuel poor, as shown previously)
- tenure mix of targeted households (see section 4.3 above).

**Overall Task Size**

Mean FPI for all (FP and nonFP) households assessed is not available for all Zones. The evaluation therefore constructed a proxy for 'depth of fuel poverty' from the percentages assessed by Zones to fall in each category (marginal, moderate, severe)[37]. A difficulty weighting was assigned to each Zone in relation to the probability (in Stockton) of removing households from fuel poverty with the current energy efficiency packages under programmes including Warm Front and EEC. Weightings of '1' for marginal fuel poverty, '3' for moderate and '5' for severe were applied to reflect the relative probability of removing households from fuel poverty, as shown in Table 4.

The Zone average fuel poverty severity was then calculated by applying these weightings to the proportion of households in each fuel poverty category within the 5 Zones. Table 20 below shows the results of these calculations.

[36] SRB areas are typically selected with reference to their score on the Index of Multiple Deprivation. 'Receipt of means tested Benefits' is a key indicator within the Index. The mismatch between fuel poverty status and benefits receipt therefore reduces the accuracy of the Index in identifying areas with high levels of fuel poverty.

[37] As noted elsewhere, Sandwell's fuel poverty data is scanty, and, implausibly, suggests that over 50% of households are in fuel poverty. However, the *relative proportions* in each category reported appear credible.

**Table 20: Fuel poverty task difficulty in Zones**

| Zone | Proportion of FP in category | | | Mean case task size | hhs in FP | All cases task size | Relative Zone task size (Ratio Zone: SWZ) |
|---|---|---|---|---|---|---|---|
| | Marginal | Moderate | Severe | | | | |
| Hull | 0.64 | 0.20 | 0.16 | **2.04** | 27,000 | 55,080 | 2.15 |
| Newham | 0.61 | 0.23 | 0.16 | **2.10** | 27,857 | 58,500 | 2.28 |
| Northumberland | 0.72 | 0.16 | 0.12 | **1.80** | 21,027 | 37,849 | 1.48 |
| Sandwell | 0.61 | 0.23 | 0.16 | **2.10** | 27,730 | 58,233 | 2.27 |
| Stockton | 0.71 | 0.19 | 0.10 | **1.78** | 14,400 | 25,632 | 1.00 |

*Mean case task size = (1xmarginal)+(3xmoderate)+(5xsevere)*
*All cases task size = Mean case task size x No. of households in fuel poverty*

The final column shows the overall difficulty of fuel poverty reduction for each zone, using Stockton as a baseline (assigned a score of 1) since it has the smallest task.

On this measure, Stockton is followed by Northumberland (1.48 times the task), Hull (2.15) and Sandwell and Newham each with approximately 2.25 Stockton's task.

Table 20 above puts into perspective the relative success of the different Zones at removing households from fuel poverty (see table 2). Table 2 suggested that Stockton removed the largest proportion from fuel poverty, Sandwell second, Newham and Northumberland third equal, and Hull last. Table 20 therefore shows that Hull and Northumberland have done worse than expected, but Sandwell and Newham better.

It seems likely that Hull's position is at least partly explained by late start-up since another 10 months activity pro-rata would close the gap considerably. Northumberland's largely rural nature may also be a factor as previously discussed.

**Relationship between available resources and 'task difficulty'**

One would expect Zone resources for administration and operation to be in rough proportion to the task size. As both the previous evaluation report and the above analysis showed, this is far from the case. How far do these variations explain differences in performance? The same question can be asked for funds secured for additional capital measures, soft measures work etc.

Table 21 below summarises funds secured by the Zones. It was not possible to break these down by year of usage[38]. Task size is as defined above in table 20. The remaining rows compare achievement in terms of fuel poverty reduction, operational funding and capital funding as a proportion of that achieved by Stockton (set at 100% to represent the baseline). Capital funds do not include Warm Front spend, since the data is unavailable and the effect should be proportional. In any case, there is no reason why all the valid referrals made should not result in intervention. It should not be a limiting factor in itself.

[38] In particular, Stockton secured £5m for its central heating programme (see section 4.5.2), not all of which has yet been used. Further, a large proportion will not be spent on the fuel poor. This is true, of course, for some of the funding secured in other Zones. For example, the impact of £855,000 secured during year 2 for social housing in Hull does not show up in year 1 and 2 results and will presumably be used whatever the future of the Zone

**Table 21: Funding and task achievement**

| Item / Zone | Hull | Newham | N'land | Sandwell | Stockton |
|---|---|---|---|---|---|
| operating funds (yr 2) | £117,751 | £299,311 | £240,505 | £737,556 | £463,539 |
| capital funds (all non-WF) | £1,163,000 | £2,480,000 | £1,440,000 | £3,314,000 | £8,997,000 |
| Relative Zone task size | 2.15 | 2.28 | 1.48 | 2.27 | 1.00 |
| % task achieved | 1.2% | 4.7% | 3.2% | 5.5% | 17.6% |
| operational funds/task size | £54,768 | £131,277 | £162,503 | £324,915 | £463,539 |
| capital funds/task size | £540,930 | £1,087,719 | £972,973 | £1,459,912 | £8,997,000 |
| **achievement as % Stockton** | **6.8%** | **26.7%** | **18.2%** | **31.3%** | **100.0%** |
| operational fund/task size as % Stockton | 11.8% | 28.3% | 35.1% | 70.1% | 100.0% |
| **capital fund/task size as % Stockton** | **6.0%** | **12.1%** | **10.8%** | **16.2%** | **100.0%** |

**Notes**
1. Operating funds refer to Zone admin and management costs.
2. Capital funds refer to EEC, Council and regeneration funds, but exclude WF.

It could be argued that operational funding should be related more to the assessment task than to fuel poverty reduction. Areas like Northumberland and Stockton need to carry out more assessments to find the fuel poor, because of their lower fuel poverty density, and Northumberland's task is logistically more difficult. Even so, there is a strong statistically significant correlation between proportion of achievement in Zones and operational resource ($R=0.9$; significance level $<p=.033$). The correlation is even stronger in the case of capital funding ($R=0.95$, significant at $p<.001$), explaining over 90% of the between-zone variation. The Transco sponsored Zones have emphasised right from the outset the need to secure the necessary resources for the envisaged task before starting work

There is also a strong relationship between the two types of funding ($R=0.85$[39]). This might be expected if the funding comes from the same sources. Otherwise, it might reflect the considerable operational resources (particularly staff time) needed to secure further capital funding.

Finally, Stockton was the only Zone able to secure the estimated capital funds (Warm Front, Stockton BC capital funds, BGT EEC funds etc) required to meet its fuel poverty reduction targets. In spite of this, the Zone is still not reaching these targets (see Table 2). There are four main reasons for this:

i. much of the resource is spent on non-fuel poor homes, for example approximately 70-75% of Warm Front recipients and 65-75% of non Warm Front social sector insulation and heating programmes recipients are not fuel poor
ii. many of the fuel poor, while now more marginally fuel poor, are still technically in fuel poverty (as discussed in section 4.1). They have travelled some, but insufficient, distance on the FPI
iii. there was a degree of overshoot, with many households receiving more than they needed to leave fuel poverty (14% of total spend).
iv. limitations to standard energy efficiency packages, as discussed in section 2.

A degree of "mis-targeting" and "overshoot" is inevitable, particularly in the case of large scale social programmes designed to provide affordable warmth for any future tenant. Those in fuel poverty now are not the only relevant objective – energy efficiency and prevention of future fuel poverty are also highly valid concerns. Moreover, a "metered" intervention calculation to reach an FPI between, say 9 and 9.99 is not always feasible, even if it were thought desirable.

[39] This relationship falls just outside statistical significance, $p=.067$

### 4.6 Implementing soft measures provision

The analyses presented above are hardly affected by welfare rights work, since Zones have placed much more emphasis on implementing hard measures programmes in the initial period of operations[40]. More recently Zones have put more efforts into developing benefits advice services and this is starting to have a significant impact on fuel poverty reduction.

This section describes the arrangements Zones have made for providing advice. The evaluation will undertake a more detailed analysis of the impact of advice on Warm Zone clients, including analysis of the benefit characteristics of fuel poor households, since certain specific benefits are considered to correlate more closely with fuel poverty status than others.

The evaluation has focussed on the impact of benefits advice (rather than the other 'soft measures' of debt, energy or financial advice) on fuel poverty reduction for a number of reasons:

- Benefits advice may provide a major solution to the problem of fuel poor households' lack of eligibility for Warm Front[41].
- Benefits advice has a direct impact on Warm Zone clients' income and therefore on their fuel poverty status.
- There are standard procedures for monitoring the impact of benefits advice on clients' income and therefore fuel poverty status (unlike energy or financial advice, for example).

#### 4.6.1 Organisational arrangements for providing benefits advice

Zones have made varying arrangements for providing benefits advice. **Sandwell** has set up arrangements with local Citizens Advice Bureau (CAB), Age Concern and the Council's welfare rights service, although provision is patchy across the borough. **Newham** employs 1.5 (full time equivalent) welfare rights officers (paid for from interest on funding it receives from the Council to manage its capital programme), seconded to the main local voluntary sector welfare rights provider. **Northumberland** employs 2 welfare rights officers, paid for by Northern Rock and the County, seconded to the County Council's welfare rights unit. **Stockton** employs 1 welfare rights worker, seconded to the Council's Social Services Department. **Hull** runs ward by ward surgeries (marketed as the 'Heat is on' events) but does not consider this sufficient for meeting demand. The Zone lost a bid for Legal Service Commission funding for a 'bank on it' programme that was designed to address both benefits advice and financial exclusion.

Benefits checks are now a mainstream service within the Warm Front programme. Warm Zones may need to review their arrangements for providing advice in the light of this. However, it should be noted that mainstream provision is confined to a basic benefits check and is confined to people not already claiming a Warm Front passport benefit. Existing eligible claimants are not offered a check to establish whether they may be entitled to extra benefits. Clients are expected to continue the process of making a claim themselves.

Zones are generally offering (or have made arrangements with an advice agency) to provide a full welfare rights advice service. This involves advice workers 'hand-holding' potential

[40] This is not the case in Redcar and Cleveland Warm Zone, where benefits advice was built into the programme from the very outset. Following analysis of assessment data, the Zone proactively contacts all fuel poor households to encourage them to use the Zone's benefits advice service (as well as households that request advice at the assessment stage).

[41] The key question relating to this problem is: is ineligibility for Warm Front among fuel poor households due to ineligibility for passport benefits or is it due to failure to claim the passport benefits to which fuel poor households are eligible?

claimants through the whole process, including help with filling in forms, home visits and, if necessary, representation at benefit tribunals. The evaluation intends to gather further details of the quality of advice offered.

Northumberland Warm Zone has not taken any specific initiative to increase benefit take-up in rural areas[42], although low take-up is widely regarded as a major problem[43]. Such initiatives might include running welfare rights surgeries in health practices (e.g. CAB have linked up with many GP practices in rural Wales) or developing provision in conjunction with community development awareness raising activities. The latter is important because seeking advice and making claims is more stigmatised in rural areas due to the dispersed nature of rural poverty. Households are reluctant to seek advice because of concerns over visibility to neighbours (hence the expression 'claiming in a goldfish bowl')[44].

### 4.6.2 Zone procedures for measuring impact of benefits advice

Zone procedures for getting feedback on the advice provided vary, mainly because of the differences in the organisational arrangements made. **Newham** and **Northumberland** have closer control over soft measures provision and are more able to make sure successful claims are referred back into the Warm Front programme. This only applies, of course, to cases where the household was previously ineligible, rather than existing Warm Front eligible households who were found to be eligible for additional benefits.

**Stockton** originally experienced difficulties in getting feedback on benefit claims, due to confidentiality issues. The Zone has overcome these and is now able to monitor impact on clients' income. **Sandwell** reported that feedback on Warm Zone clients varied according to the different benefits providers. The Zone did not report on progress on soft measures provision to the evaluation. **Hull** faced difficulties organising the provision of benefits advice and is not able to monitor progress on individual claims (although it does get feedback on the total value of claims).

For most Zones, successful outcomes are only just starting to come through. Zones with close control over the process can then refer these cases back into the Warm Front process (if in the private sector). Even where Zones do not have close control, other agencies may refer successful claims onto Warm Front, although they do not inform the Warm Zone of individual cases (e.g. Age Concern in Sandwell). In Stockton's case, this is not particularly relevant because the Zone had already identified 'gap funding' for the ineligible fuel poor. The Zone has also relied extensively on EEC funds for much of its work for the last year, even where households might have been eligible for Warm Front.

Several Zones felt that they faced a dilemma between providing measures for the 'ineligible fuel poor' immediately through other funding sources or waiting for a claim to be processed and then refer to Warm Front at a later date (if the claim is successful). If the latter course was adopted, measures installation would be delayed considerably. They suggested systems should be amended such that Warm Front was able to retrospectively fund households who had measures installed under a non Warm Front programme but were subsequently found to be Warm Front eligible. Alternatively, they suggested EEC trading rules should cover this scenario.

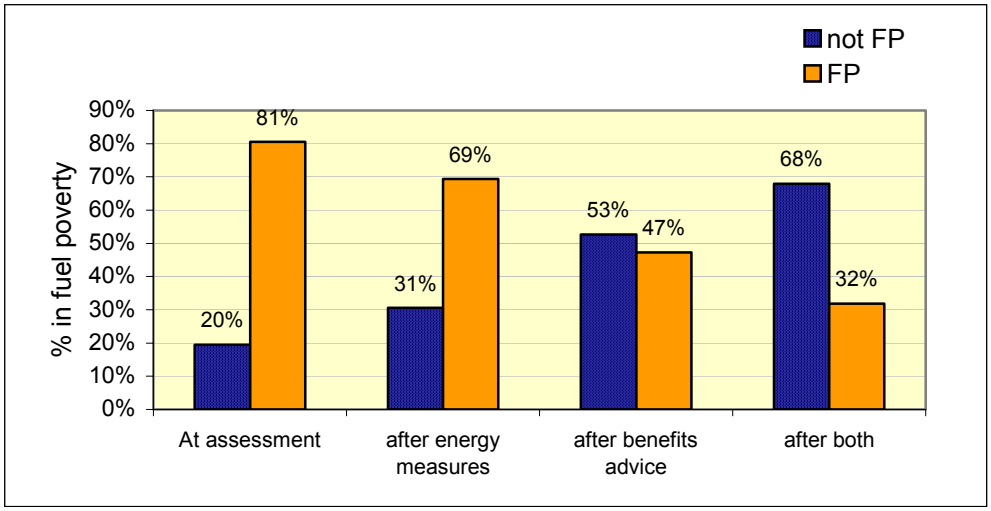
[42] However, Northumberland has been more successful than Hull and Sandwell in providing a benefits advice services to Zone clients. The comment refers to the value of wider outreach activities and publicity campaigns to promote benefit awareness among rural residents.
[43] See, for example, Bramley et al (2000), 'Benefit take-up and the geography of poverty in Scotland', *Regional Studies,* Vol 34.6, pp507-519.
[44] See Baker, W (2002), *Rural fuel poverty: defining a research agenda*, Eaga Charitable Trust.

### 4.6.3 Impact of benefits advice

Where Zones have achieved successful claims for previously ineligible households, the increased income will often have a bigger impact on FPI than the installation of hard measures. Advice takes a long time to translate into a positive outcome (the average successful claim takes at least 3 months to process). Coupled with the delay in getting provision established, Zones are only just starting to get feedback on the impact of the benefits advice they have facilitated. About 2,700 assessed households in Stockton requested benefits advice (roughly 10% of all assessed households). Of these, 277 clients have made successful claims[45]. A large proportion of the remainder were considered to be ineligible for help. Other Zones may find the proportions vary substantially. It is likely that a much higher proportion of households will achieve successful claims in Redcar and Cleveland, where welfare rights advice was integrated into the measures package from the outset.

The next report will give detailed information on the impact of benefits advice on clients' fuel poverty status. Newham and Stockton report that the average increase in income resulting from a successful new benefit claim is between £1300 and £2250 per year per client. Figure 6 presents the results of a limited analysis of the impact of combined impact of welfare rights and energy advice in Stockton.

**Figure 6 - Impact of benefits advice and energy work in Stockton**




*Stockton cases only: n=277cases which had a positive welfare rights outcome.*

Incomes were, unsurprisingly, very low in this group, and it is important that the results are not generalised to all fuel poor households. Given these low incomes, it is unsurprising that the benefits work proves the more powerful measure. 61% of the fuel poor were removed from fuel poverty after both energy efficiency measures and successful benefits advice - more than the sum of each intervention individually. Furthermore, this is an understatement since upwards of 15 cases out of the 277 would be expected to be waiting for energy work at the time the database was interrogated.

This suggests that benefits advice has an important part to play in the toolkit, although its application is clearly limited. (The very low figure for cases where income has improved in the

[45] However, early results from the CSE/NEA analysis of Stockton assessment data suggest that there is considerable under-claiming of Pension Credit. If all eligible households were to claim it, the problem of Warm Front ineligible fuel poor households would be reduced considerably.

Northumberland returns suggests that great care is needed in helping clients to decide whether or not to pursue a claim).

### 4.7 Energy efficiency package adequacy

#### 4.7.1 Initial analysis

Section 2 concluded that the current standard energy efficiency packages did not achieve sufficient impact on the degree of fuel poverty experienced by most households to take them out of fuel poverty, and this was confirmed in the referrals analysis. Unravelling the reasons for this is a complex task.

In sections 2.2 and 2.3, it was shown that the majority of fuel poor cases still remained in the same fuel poverty category (marginal, moderate, severe) after intervention. Why was it not possible to move these cases of households remaining in fuel poverty any further?

One further finding reported here is that, in the case of the Stockton data, the greater the severity of fuel poverty, the greater the distance travelled (but not necessarily sufficient to remove from fuel poverty). But the cause of fuel poverty is important. In general, the difference in incomes between the 3 fuel poverty categories is proportionately larger than for SAP rating. This indicates that energy efficiency measures in the homes of the severe fuel poor have to do proportionately more work in order to remove them from fuel poverty as the impact of improved energy efficiency is 'masked' by the influence of their income. However, when energy efficiency is a more dominant factor in household fuel poverty, the fuel poverty impact of intervention naturally tends to be larger.

The Stockton data shows that those who moved to the next lower fuel poverty category were on average in homes that had a pre-intervention SAP 4.9 points lower and pre-intervention fuel costs £71 higher than those staying in the same band. It also confirms that they were in higher income homes. This suggests that more is achieved in those homes with more energy efficiency improvement potential, although this may partly reflect the limited range of measures available in packages rather than a technical limit.

#### 4.7.2 Further investigations planned

The evaluation will undertake the following analysis in the future:

i. How often a ceiling of feasibility is reached in terms of FPI distance that can be travelled by conventional energy intervention measures. This involves analysis of which homes are *hard to treat* (no gas, or solid walls) or *very hard to treat* (both).
ii. How often a ceiling of eligibility for available funding is reached, involving analysis of the characteristics of households in terms of *benefits status, household type and tenure.*
iii. How often a ceiling of acceptability is reached, beyond which some households have *refused measures*.
iv. How often a grant ceiling prevents feasible work from being done.
v. The extent to which these factors interact to yield particularly intractable cases.
vi. The extent to which other factors, such as *low income* (more strongly related to fuel poverty than energy efficiency) and *under-occupancy,* are compounding factors.

#### 4.7.3 Scheme integration

Scheme integration can potentially bring about a greater impact on households' fuel poverty levels than single schemes alone, particularly within the existing framework of provision. Integration of schemes is one of the Warm Zone objectives. Most integration in the Zones so

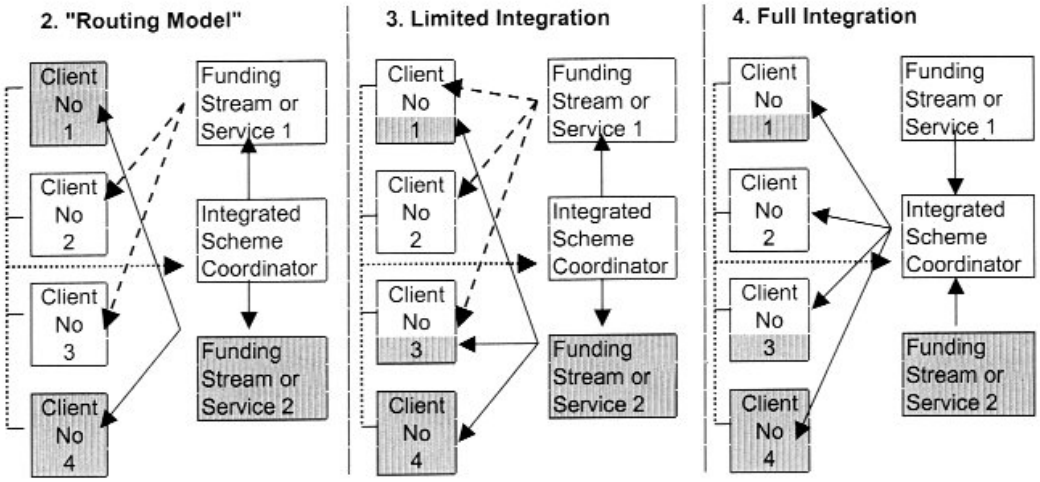
far has been of the 'signposting' type, in which an agency refers household A to scheme X, household B to scheme Y etc. Zones argue that scheme rules prevent them from carrying out extensive integration.

But 'signposting-type' integration does not affect the impact of the individual schemes on households' FPI, over and above that which would have occurred through standard routes of accessing schemes. To realise the potential additional impact of scheme integration, services and funding need to be 'multi-streamed' from different schemes into the same household. At the extreme, the total package might include:

- Insulation measures provided, e.g. under an EEC programme
- Heating measures, e.g. under a LA Private Sector Renewal Strategy
- Welfare Rights work to ensure maximisation of income benefits
- Tariff advice
- Special funds or top-up for solid wall insulation or oil central heating etc for hard to treat homes
- General energy efficiency advice to bring about behavioural changes

NEA has developed a 'typology' of integration, illustrated below, as part of its research for the Local Authority Operational Group (LAOG) of the Energy Efficiency Partnership for Homes.

**Three Models of Energy or Fuel Poverty Scheme Integration**




The research found that multi-streamed full integration is not easy, although there are many small local schemes that have moved towards this approach. Energy efficiency scheme rules do not make integration work easy and in some cases actually prevent it. The intrinsic difficulties to 'multi-stream' integration probably explain why Warm Zones have made little attempt to develop such approaches. The biggest example has been the use of EEC insulation, social landlord capital funding and the Transco Affordable Warmth Heating scheme for several thousand social sector homes in Stockton, some of which have also received welfare rights support. But this is exceptional. Instead, Zones have focused on using existing single schemes to meet the level of need identified through the assessment process.

Future Zones should be able to learn from the pilots' experiences and speed up this aspect considerably, thus allowing them to focus on integration activities. However, Zones believe that they will only be able to fully integrate schemes if existing scheme rules are changed.

Without multi-streaming (or reforms to major schemes making it unnecessary), fuel poverty and low energy efficiency will remain even after three years of Warm Zone activity. On the plus side, Redcar and Cleveland Warm Zone and Warmer Newcastle are making considerable efforts to adopt 'multi-streaming'. The evaluation will further analyse issues of integration in later reports.

### 4.8 Conclusion – why are Zones not meeting their targets?

***Measure of success***
The Zone 'make or break' measure of bringing households below the 10% income threshold does not fully capture Zone achievement. Zones have made considerably more progress on 'distance travelled', a measure of the extent of fuel poverty reduction rather than actual removal from fuel poverty. Future Zones and other fuel poverty reduction programmes should consider using a performance indicator relating to 'distance travelled', as well as 'removal from fuel poverty'.

***Reaching the fuel poor – assessment***
Overall, Zones have not reached the required assessment rates. Resources may have been a limiting factor in some Zones. However, Zones have made commendable and innovative efforts to improve response rates, with some now reaching rates of around 75 to 80%. This probably represents the upper limit of feasible response rates unless a deep rooted community development approach is adopted. Warm Zones will not therefore be able to make up the shortfall in the remaining pilot period.

Door-to-door assessment is expensive. Warm Zones should seek methods to reduce these costs. This might be achieved through one of the following routes:

- Identify households very likely to be 'fuel rich' and eliminate these from the assessment task (Newham's approach). This requires good data on housing conditions in all sectors[46].
- Identify the fuel poverty status of all social housing tenants through benefit and housing data (Hull's approach). All local authorities should have this data, although data protection clearance will be needed and separate data collection is required for tenants not claiming benefits.
- Adopt a policy of bringing all social housing properties up to a sufficiently high standard to ensure affordable warmth for both current and future tenants. There would be no need to assess properties.

Rurality causes particular problems in achieving successful responses to assessment. Community engagement is even more important in rural areas[47], if fuel poverty reduction projects are to have any success. Armagh-Dungannon provides a good example in this respect (see 4.2.5).

Warm Zones working in rural areas need to be able to offer hard to treat housing measure packages beyond those within the current Warm Front and EEC programmes, e.g. oil central heating boilers, solid wall insulation, renewables, and gas extension where feasible. All these examples are, of course, expensive.

Door-to-door assessment must obtain household income data since this is essential for the accurate assessment of fuel poverty status. The only exception is where a level of

[46] The approach also means that the under-claiming of benefits will not be identified. However, identifying such a problem among the 'non fuel poor' is not a primary Warm Zone objective.
[47] See, for example, Baker, W (2002), op. cit.

intervention[48] is offered sufficient to make properties 'fuel poverty proofed'. No Zone is currently offering this level of intervention. Sandwell's failure to collect accurate income data is disappointing, as is the failure of the Warm Zone Board to impress upon Sandwell the need for this data.

***'Terrain of operation'***

Local contextual factors, such as amount and depth of fuel poverty, and tenures targeted contributed to differential Zone success rates. Stockton and Northumberland targeted a higher proportion of social properties than were present in the overall housing mix, whereas Hull and Newham targeted a higher proportion of private sector properties. The latter is a much more difficult sector, given the difficulty of using EEC resources and the fact that Warm Front is not targeted at all the fuel poor. Newham's achievements are therefore particularly noteworthy.

***Adequacy of 'toolkit'***

As in the first report, the limitations of the energy efficiency toolkit are a major factor influencing Zones' ability to meet their fuel poverty targets. Zones have made commendable efforts to secure 'gap funding' for Warm Front ineligible households; however, these are of insufficient depth and scope to address the problem. Too many fuel poor households will still not receive any help at all.

Zones have also not implemented the full toolkit that was originally identified at the outset of the Warm Zone process. They have generally failed to offer tariff advice and only started implementing benefits advice at a late stage in the process. In some cases this was because of lack of resources and/or lack of local capacity.

Early results from a separate analysis of Stockton's operational data suggest that benefits advice only has an impact in a small proportion of cases. However, where households *are* found to be eligible for benefits, the impact is dramatic. Successful new benefits claims will typically have a far greater impact on beneficiaries' FPI than energy efficiency measures. And that is before households are referred back into the Warm Front process.

***Resources***

There is considerable variation in resources available to the Zones, both for management costs and for installation of capital measures. Some of this variation might be explained by the degree of Zone influence on fuel poverty alleviation programmes within their respective areas. Nevertheless, the evaluation found that the strongest predictor of Zone success is the amount of operational and capital funding secured, particularly when overall task difficulty is taken into account.

Energy companies have allocated considerable EEC resources to the Zones, some specifically for the 'non-eligible' fuel poor. Despite these resources, Zones are still not hitting their fuel poverty elimination targets. Further, the scale of EEC input has implications for 'resource displacement' from other non Warm Zone areas, particularly if the programme is expanded. The proposed doubling of EEC2 in April 2005 may help offset this.

Some Zones have successfully secured regeneration funds, although this is fairly ad hoc. Other Zones have experienced considerable difficulties. The limited Zone experience of accessing regeneration funds suggests the following lessons:

[48] This might include offering solid wall insulation, heating systems with similar efficiency to gas condensing boilers for non-gas properties etc, as well as installing every possible measure within standard measures packages. One approach might involve setting SAP targets that relate to the size of the property, c.f. the Welsh Housing Quality Standard.

- Establishing relationships with ‘gatekeepers’ of regeneration funds and key politicians is critical to making a successful bid.
- Fuel poverty appears to cross funders’ topic boundaries, although creative bids can minimise this problem, e.g. by showing how fuel poverty alleviation can help meet other pre-determined priorities such as social exclusion and health gains.
- The development of a track record for competent implementation of programmes can help.
- Government guidelines on regeneration programmes should include more explicit fuel poverty alleviation objectives.
- Local authorities wanting to follow the Warm Zone model should identify the use of regeneration funds at the outset, given that they are typically the fund ‘gatekeepers’.
- If regeneration programmes are going to play more of a role in future Zone activity, Zones must support community capacity building activities.

The following implications flow from the analysis of resource availability:

- There was little relationship between the resources available for fuel poverty alleviation and actual fuel poverty need.
- An expanded Warm Zone programme would need to address inter-area differences in resource adequacy. This suggests an important role for central management to allocate the distribution of resources according to the level of need.
- The allocation of fuel poverty reduction resources to areas according to the level of need will require baseline information on the level of fuel poverty within individual areas. Such information should be comparable across the country.
- Some Zones are failing to meet the ‘coordination’ objective and lack knowledge of fuel poverty reduction and energy efficiency resources in their area. It is difficult to see how these Zones can develop effective strategies without this information.

# 5 PARTNERSHIPS

## 5.1 Local authorities

The first annual report of the Warm Zone evaluation stressed the central importance of the partnership arrangements between Warm Zones and their local authorities. All the pilots believed that in ideally considerable time should be spent on building this partnership in the pre-launch period.

**Stockton** is the only Warm Zone that benefited from a pre-existing relationship between Warm Zone staff and the Council. This is considered to have contributed to the Warm Zone's success. The Council has made a significant contribution to measures funding, due in part to it successfully negotiating a Public Service Agreement with the Government which it uses to fund energy efficiency measures.

The Council contributes 50% funding towards measures for non WF eligible households in the private sector (British Gas contributes the remainder from its EEC programme). It also has put in place a major heating programme for social housing tenants.

**Sandwell** now considers it has good relations with key Council staff but reports that it took 2 years to reach this position. The Zone has benefited from having a member of the Council's staff seconded onto the Zone team who was able to provide insights into bidding for funds controlled by the Council. Sandwell match funds npower's EEC contribution for insulation measures (see 4.5.2).

Newham Council played a central role in the establishment of **Newham** Warm Zone and provided its original Director. However, the Zone had considerable difficulties in its early days and subsequently recruited an independent Director (also independent of the sponsoring energy company). The Zone still has members of staff seconded from the local authority. This has proved beneficial for accessing external funds, Council databases for. 'desktop assessment', and use of common systems for HECA reporting and property registers. The Council has contributed major resources (around £200k) from its capital programme towards energy efficiency improvements in social housing.

**Hull** has faced considerable problems due to major structural crises within Hull Council. These include poor Audit Commission reviews, central government intervention, major overspending and suspension of the Council's Chief Executive. Despite these problems, the Zone has benefited from Council support, including:

- provision of a contact centre service for the Zone via 'Hull Connect',
- provision of funds for a '£99 insulation offer' for fuel poor households not eligible for Warm Front, as identified by the Zone, although take-up is low.
- match funding for npower's £800k EEC contribution for insulation measures in the Council housing sector.

The Zone believes that the Council could make more of a contribution to fuel poverty by identifying a 'fuel poverty champion' at senior officer level who would coordinate key Departments within the Council. The current situation means that fuel poverty work is fragmented and given low priority since no single individual has overall responsibility.

**Northumberland** has experienced considerable difficulties in having to work with 7 local authorities (6 housing authorities). While there is some coordination between authorities, this has not been at the extent of agreeing a common strategy and action plan (along the lines of the Gloucestershire and Wiltshire Affordable Warmth Strategies, for example). The Warm Zone receives a modest financial contribution from each authority but had to spend

considerable time in the first couple of years chasing this up. The Zone reports improvements more recently, with greater 'buy in' from senior managers in all authorities concerned (see succession strategies).

Blyth Valley has shown the greatest level of commitment to the Northumberland Warm Zone, not surprising given its fuel poverty Beacon Council status. The Council has match funded £44k from npower for insulation measures for the fuel poor[49]. The Council also negotiated a large EEC deal with Scottish Power, although the Warm Zone was not involved in this process.

### 5.2 Energy companies and Zone Directors

Energy companies remain the most important players in Warm Zones. They have seconded staff to all Zones, including at Director level in 4 of the Zones, and 2 senior managers serve on the Warm Zone Board. They have contributed considerable EEC resources to Zones. Zones have also negotiated innovative programmes with energy companies, which are not available outside the Zones. These include npower's 100% funding for insulation measures for the severe fuel poor, EDF's contribution towards Newham's Warm Zone grant and British Gas's funding for WF ineligible private sector households in Stockton.

The Director's role is critical to Warm Zones' success, as commented in the first annual report. However, there is a trend of making one Director responsible for several Zones at the strategic level. Thus, one Director now runs all of the npower Zones. Similarly, one Director is responsible for both the Transco Zones (Stockton and Redcar & Cleveland), as well as carrying out development work on a third Zone in Newcastle.

The Newham Director, while not a fuel supplier employee, is now responsible for developing the Zone concept in other London boroughs. He will also be responsible for running the successor body in Newham after March 2004. Development work is likely to focus on identifying opportunities for matching EDF EEC funds with public monies. Transco, npower and EDF are clearly committed to a continuing involvement in Warm Zones beyond the pilot phase (see succession strategies).

It is not clear whether other energy companies are likely to 'buy in' to the Warm Zone concept, although this might change should EEC rules be revised. Scottish Power has indicated reservations about the Warm Zone approach and is very active in marketing EEC measures to social landlords through its own programmes (*personal communication)*. However, the company recently won a bidding competition run by the embryonic Newcastle Zone to be the main EEC provider (launch date April 2004).

Powergen provided initial support for the Central Team's costs but this is not likely to continue. The company is currently putting considerable efforts into its 'Heat Streets' initiative, which encompasses many elements of the Warm Zone model. British Gas provided considerable EEC resources to Stockton and Redcar and Cleveland. There are also similarities between the company's 'here to HELP' programme and the Warm Zone approach. The evaluation does not have any information on Scottish and Southern or United Utilities' perspective on Warm Zones.

Overall, energy companies continue to play an important role in the current and potential future Zones. This includes secondment of skilled staff, but experience shows that energy company experience is not essential for this role. The Director's role requires a fairly unique combination of skills. This would be difficult to sustain in an expanded programme under the current approach since it would require energy companies to second a larger number of senior

[49] The Blyth Council element funds measures for the marginal and moderate fuel poor, while the npower element funds measures for the severe fuel poor

staff. The experience in the pilot suggests that future Directors will play a catalytic and strategic development role, possibly overseeing a number of individual Zones. Day-to-day Zone management then becomes more a responsibility for 'Operational Managers'.

The pilots have benefited from considerable energy company sponsorship, as well as Government support. This is not likely to continue beyond the pilot period (see 'succession strategies'). The key issue for energy companies is the value of Warm Zones for facilitating the implementation of their EEC programmes. However, as noted in the first annual evaluation report, sponsorship of the pilot Zones by companies with EEC responsibilities can undermine the ability of Zones to broker EEC deals with different EEC providers. The new Newcastle Zone has played exactly this role, whilst still benefiting from Transco sponsorship.

### 5.3 Health

Several Warm Zones are now starting to secure 'buy in' from the health sector, including commitment of resources, after little signs of interest in the earlier stages. **Northumberland** involved frontline health workers in 2 rural pilots to support the assessment process (see first annual report). More recently, the Northumberland Care Trust has agreed to provide funding for the Zone's core costs for a 3 year period after the pilot finishes (alongside the local authorities). **Stockton Primary Care Trust (PCT)** has agreed to provide funding for the Comfort Zone that will take over when the pilot finishes (see succession strategies).

**Newham** reported difficulties in engaging the NHS health sector in generating referrals for its Warm Zone grant. However, it has had more success in engaging environmental health workers as referral agents. **Hull** and **Sandwell** report minimal involvement from the health sector, despite attempts by the Warm Zones to achieve this.

The health sector has been notoriously difficult to engage in fuel poverty reduction work outside Warm Zones, despite considerable encouragement from Government, senior health professionals and good practice demonstration projects. However, the recent engagement of the health trusts in Northumberland and Stockton is encouraging. There is value in monitoring and evaluating this experience and disseminating the results to PCTs.

### 5.4 Conclusion

All of the Zones have continued to strengthen partnership arrangements with local key agencies, particularly their local authorities. It is clear that Zones with strong ties with their local authorities from the outset are at an advantage. A pre-condition for future Zones should be local authority commitment at the outset, including of resources for both Zone operations and capital measures.

Several Zones have started to make breakthroughs in gaining support from the health sector. In both Stockton and Northumberland's case, this includes the commitment of financial resources.

Energy companies remain the most important partners in the Zone initiative. They have seconded skilled staff, providing sponsorship funds and committed considerable EEC resources. Transco, npower and EDF are clearly committed to Zones after the pilot period has finished. There is little indication that other energy companies intend to support the Warm Zone approach at this stage. It is possible that this will change if scheme rules for the next round of EEC are amended.

There is little indication of Zones securing substantial 'buy-in' from the community sector, as recommended in the first evaluation report. Several commented that this was difficult within the context of the limited pilot period. Nevertheless, future Zones should make this a priority.

Zones should support community capacity building activities, particularly if they intend to mobilise regeneration funds, and give a degree of community control to Warm Zone procedures.

# 6 WARM ZONE COSTS AND COST EFFICIENCIES

This section provides initial analysis on costs against outputs in the Zones in year 2. It goes on to compare performance on key performance ratios in year 1 and year 2 of Zone operation.

Whilst the analysis seeks to provide as much transparency as possible it is important to remember that there are many factors affecting these ratios. Therefore, the evaluation seeks to investigate the circumstances under which efficiency can be increased, but recognises the importance of understanding the complexity of the comparisons. .

The analysis only gives the overall costs of Warm Zones, Warm Front and EEC. The next report will develop a more detailed analysis of component costs for these schemes and the cost efficiencies secured by Zones.

## 6.1 Zone characteristics and outputs

Outputs need to be judged against both the size and difficulty of the task, and the resources available to carry it out. Table 22 and 23 below summarises the relevant information.

"Zone task difficulty", draws on the analysis described fully in section 4.5.4, which examines the extent to which variation in Zone performance can be explained in terms of fuel poverty density and of depth of fuel poverty.

The operational budget for Zones refers to the 'on costs' for their day to day activities such as management and administration, overheads and assessment. It excludes any capital spend on measures.

Note that not the capital funds are for all fuel poverty work. For example, Stockton appears to have secured about half of the all-Zone total, enough to eliminate fuel poverty. But a large unknown proportion of this is for renewal and heating work in social housing, and a large proportion of the recipients were not in fuel poverty. As noted previously, these exclude Warm Front spend for which data is not available but is not a limiting factor (see 4.5.4).

**Table 22: Size of fuel poverty task in relation to costs**

| A. Zone Characteristics | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|
| Households | 108,000 | 89,000 | 129,000 | 118,000 | 75,000 | **519,000** |
| Fuel poor households | 27,000 | 27,857 | 21,027 | 27,730 | 14,400 | 117,813 |
| % fuel poor households in Zone | 25.0% | 31.3% | 16.3% | 23.5% | 19.2% | 22.7% |
| % of fuel poor across all WZs | 22.9% | 23.6% | 17.8% | 23.5% | 12.2% | 100.0% |
| Warm Zone operational costs yr2 – on costs | £376,890 | £523,684 | £425,354 | £821,040 | £471,450 | £2,094,734 |
| % of total operational costs over all WZs | 18.0% | 25.0% | 20.3% | 39.2% | 22.5% | 100.0% |
| Capital funds (all non WF) | £1,163,000 | £2,480,000 | £1,440,000 | £3,314,000 | £8,997,000 | £17,394,000 |
| % of total capital funds across all WZs | 7% | 14% | 8% | 19% | 52% | 100% |
| Zone task difficulty (total)* | 2.15 | 2.28 | 1.48 | 2.27 | 1 | |

* see table 20

**Table 23: Warm Zone outputs**

| B. Zone Activity | Hull | Newham* | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|
| Assessments completed | 15,061 | 23,219 | 25,573 | 39,604 | 19,706 | 123,163 |
| Total jobs | 2,816 | 8,040 | 8,388 | 5,543 | 7,986 | 32,773 |
| No of FP jobs | 767 | 3,218 | 1,992 | 2,781 | 3,168 | 11,927 |
| removed from FP | **289** | **1,145** | **570** | **1,078** | **1,532** | **4,614** |
| % removed from FP | **1.1%** | **4.1%** | **2.7%** | **3.9%** | **10.6%** | **3.9%** |
| removed from sevFP | **63** | **251** | **107** | **288** | **288** | **997** |
| % removed from sevFP | **1.9%** | **7.2%** | **4.1%** | **8.3%** | **16.0%** | **6.8%** |

Tables 22 and 23 are extracted from the Zone Results worksheet given in full in the annex.

## 6.2 Performance ratios

Table 24 draws upon sections 6.1 and analyses the relationships between task, performance and resources, using standard management ratios.

**Table 24: Management ratios**

| D. Management Ratios | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|
| WZ resources (on cost) per h/h in Zone | £3.49 | £5.88 | £3.30 | £6.96 | £6.29 | £4.04 |
| WZ resources (on cost) per FP h/h in Zone | £13.96 | £18.80 | £20.23 | £29.61 | £32.74 | £17.75 |
| WZ on-cost per assessment | £25.02 | £22.55 | £16.63 | £20.73 | £23.92 | £17.01 |
| WZ on-cost per job | £133.84 | £65.13 | £50.71 | £148.13 | £59.04 | £63.92 |
| WZ on-cost per FP job | £491.23 | £162.71 | £213.48 | £295.22 | £148.81 | £175.62 |
| WZ on-cost per h/h taken out of FP | £1,304.97 | £457.19 | £746.74 | £761.78 | £307.67 | £716 |
| WZ on-cost per SAP point improvement | £12.88 | £6.62 | £6.12 | £13.33 | £4.29 | £6.01 |
| WZ on-cost per £1 req fuel saved p.a. | £1.29 | £0.65 | £0.58 | £1.36 | £0.46 | £0.60 |
| WZ on-cost per valid WF referral | £240.96 | £195.03 | £166.87 | £367.17 | £172.31 | £228 |
| WZ resources/task difficulty | £175,298 | £229,686 | £287,401 | £361,692 | £471,450 | £305,105 |

The “WZ resources per FP household in Zone” row shows that there is wide variation in the operational resources available (for assessment, management etc) for the number of fuel poor households present. The final row (“WZ resources/task difficulty) also shows that there is a wide variation in the level of resources available to meet the size and extent of the fuel poverty reduction task. Both rows show that Stockton has around two and a half times Hull’s resources in relation to task.

The better resourced Zones are neither less effective nor less efficient than the others. Stockton achieves the highest percentage of its task (see section 2.1), but it does so with economy. All Stockton’s costs on the outputs (assessments, interventions, Warm Front referrals) are significantly less than average. This suggests that there may be a minimum level of resource (in relation to task) needed to operate both in an effective and efficient way.

The discussion in section 4.5 confirms that better-resourced Zones secure more additional capital funds. The low on-cost per unit of output in Stockton reflects the greater capital funding secured there.

Sandwell looks very expensive in terms of fuel poverty reduction. This may reflect the problems of travelling sufficient distance on the FPI with existing packages, particularly when the mean depth (as well as extent) of fuel poverty is much greater than average, as Sandwell claim.

### 6.3 Package analysis

Table 25 below shows the outputs - the 'package' - that could be expected in each Zone for each £1000 invested in its operation. These are calculated by dividing the total Zone output by the proportion of the operational budget that£1000 represents, to give a common unit for comparison.

**Table 25: Warm Zone outputs per £1,000 invested**

| E. Package Analysis | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|
| Zone delivered package for: | £1,000 | £1,000 | £1,000 | £1,000 | £1,000 | £1,000 |
| £1,000 as proportion of operational budget | 0.0027 | 0.0019 | 0.0024 | 0.0012 | 0.0021 | |
| generated capital funds of | £3,086 | £4,736 | £3,385 | £4,036 | £19,084 | £6,865 |
| generated Assessments= | 40 | 44 | 60 | 48 | 42 | 46.9 |
| giving Warm Front Interventions= | 4.2 | 5.1 | 6.0 | 2.7 | 5.8 | 4.8 |
| with other EE Interventions= | 3.3 | 10.2 | 13.7 | 4.0 | 11.1 | 8.5 |
| h/hs removed from FP= | 0.8 | 2.2 | 1.3 | 1.3 | 3.3 | 1.8 |
| h/hs removed from severe FP= | 0.2 | 0.5 | 0.3 | 0.4 | 0.6 | 0.4 |
| increasing EE by SAP pts: | 77.6 | 151.0 | 163.3 | 75.0 | 233.1 | 140 |
| saving tonnes carbon | 9.7 | 19.2 | 21.9 | 9.2 | 27.2 | 17 |
| saving GJ energy | 170.6 | 339.4 | 395.8 | 160.5 | 461.5 | 306 |
| giving notional fuel cost savings p.a. of: | £774 | £1,528 | £1,730 | £737 | £2,187 | £1,391 |

Some of the results presented in Table 25 look impressive, particularly the SAP indicator. These ratios should be understood in the context of comparison with other schemes (where obtaining data is difficult) and with previous performance in Zones, described in section 6.5.

### 6.4 Changes in Zone performance ratios

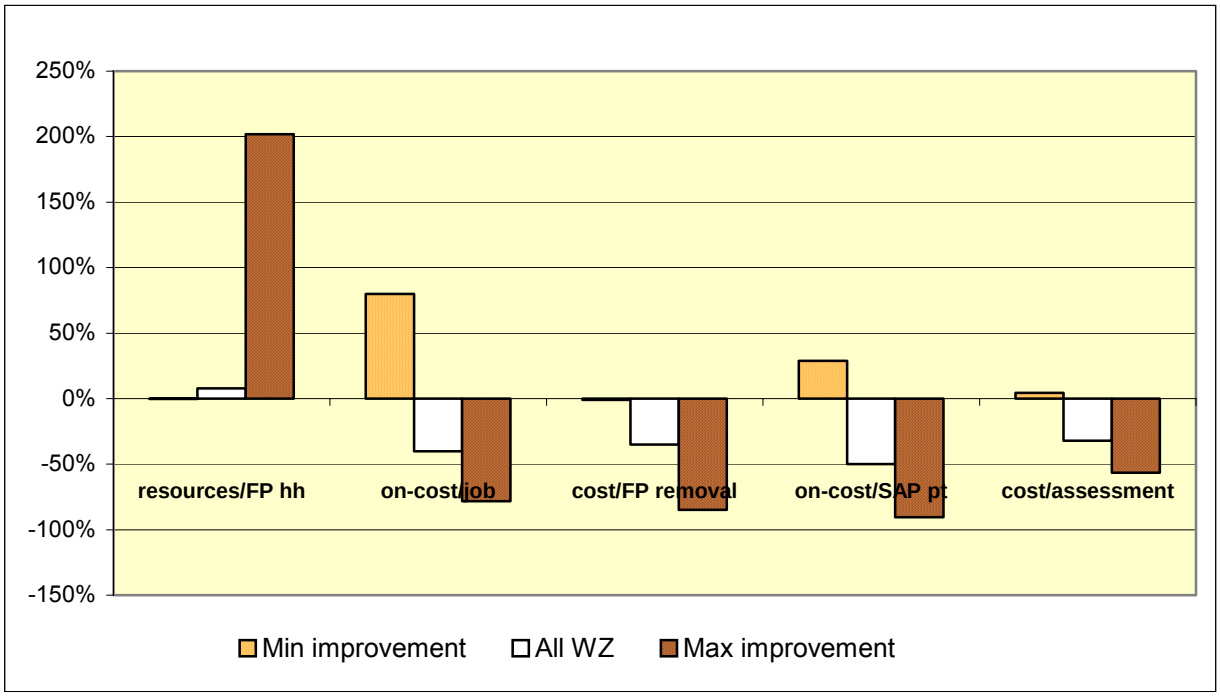
This section assesses changes in Zone performance on those key ratios for which data is comparable between years 1 and 2..

Improvement is to be expected, given that most Zones had to go through a considerable learning process in the first set-up year of operations. Zone on-cost per intervention, per household taken out of fuel poverty and per SAP point of improvement all show positive change. Newham's improvements are quite spectacular, with 4-5 times the output per unit of resource in year 2 when compared to year 1. Some of Hull's improvement is attributable to its late start up in year 1.

Conversely, Stockton's show least improvement. This is because Stockton began at a high level of activity, with everything in place. Even so, considerable improvements were still registered. The data suggests that Sandwell's performance deteriorated in some respects. However, considerable inference was required for both years 1 & 2 to determine impact in Sandwell, due to the limitations of Sandwell's assessment data (see 4.2.6).

These qualifications do not substantially alter the overall picture, shown in Figure 7.

**Figure 7 - % change in key Warm Zone cost ratios yr 1 to y2**




Taking the Zones as a whole (unshaded bars), more resources have been secured, and major improvements have been secured in the 4 key indicators shown here.

In the final report, it should be possible to say to what extent this is a continuous improvement, or whether the second year has been the year of maximum output for a relatively constant resource, between the less efficient start-up and run-down periods.

Finally, it is not surprising that the 'package' analysis shows similar improvement. The **bold** percentages in the right hand column give the all-Zone picture.

**Table 26: Changes in WZ package delivered per £1000 between Year 2 and Year 1**

| G. Comparison Packages Yr 1 and 2 | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|
| generated Assessments yr1 | 38 | 19 | 33 | 50 | 41 | 40 |
| generated Assessments yr2 | 40 | 44 | 60 | 48 | 42 | 47 |
| % change | 5% | 130% | 80% | -4% | 3% | **17%** |
| h/hs removed from FP yr1 | 0.52 | 0.33 | 0.48 | 1.21 | 3.22 | 1.43 |
| h/hs removed from FP yr2 | 0.77 | 2.19 | 1.34 | 1.31 | 3.25 | 1.77 |
| % change | 49% | 566% | 177% | 9% | 1% | **24%** |
| h/hs removed from severe FP yr1 | 0.17 | 0.05 | 0.00 | 0.55 | 0.42 | 0.32 |
| h/h's removed from severe FP yr2 | 0.17 | 0.48 | 0.25 | 0.35 | 0.61 | 0.37 |
| % change | 0% | 825% | 15445% | -36% | 46% | **18%** |
| increasing EE by SAP pts yr1 | 39 | 14 | 27 | 97 | 147 | 83 |
| increasing EE by SAP pts yr2 | 77.6 | 151.0 | 163.3 | 75.0 | 233.1 | 140.0 |
| % change | 97% | 961% | 515% | -22% | 59% | **68%** |
| giving fuel savings pa of yr1 | £414 | £154 | £288 | £1,003 | £1,411 | £838 |
| giving fuel savings pa of yr2 | £774 | £1,528 | £1,730 | £737 | £2,187 | £1,391 |
| % change | 87% | 893% | 500% | -27% | 55% | **66%** |

Overall, the picture is one of output rising per unit cost by between 17% and 68%, depending on the measure.

### 6.5 Conclusion

The Zones have made major improvements in both operational effectiveness and in cost-effectiveness, albeit from a very low base in year 1.

It is clear that Zone activities per unit of output do represent a significant on-cost. The next report will explore the extent to which these on-costs are offset by operational economies achieved through Zones' facilitation of the delivery of existing fuel poverty schemes.

# 7 WARM ZONES CONTEXT

The first annual review discussed the main factors that have facilitated and hindered the Warm Zone task. Many of these continue to be important themes, for example:

i. the intrinsic difficulty, under current arrangements, of multi-streaming services and funding streams to provide a more effective measures package (see 4.7.3)
ii. the difficulty of securing matched funding for EEC in the private sector, coupled with limited Warm Front eligibility, leading to a particularly demanding task for private sector fuel poverty reduction (see 4.5.4).
iii. the lack of funding for solid wall insulation

In this report we confine the contextual analysis to a brief resumé of changes in the Warm Zone environment, where they are relevant to 2 key themes:

a) helping to explain performance of the Warm Zones in terms of fuel poverty reduction
b) examining the prospects for potential roll-out of further Warm Zones.

## 7.1 Income changes

Mean household income has continued to rise, at the rate of about 3% p.a. This has made a very substantial contribution to 'background trends' in fuel poverty reduction. The Government has continued to concentrate resources on increasing the incomes of "vulnerable groups". This leaves private sector non-vulnerable fuel poor households in a less advantageous position, compounded by their non-eligibility for Warm Front. This remains a major eligibility gap, which has caused problems for the Zones[50].

Income improvements have quite a powerful effect on the headline numbers in fuel poverty. However, it has a much smaller impact on the total reduction in FPI required - the 'fuel poverty gap' (see section 4.1 for explanation of this term). Thus, a simulation on the Stockton data and comparison zone data (see first report) shows that while a 3.3% income increase reduces numbers in fuel poverty by about 11%, it reduces the fuel poverty gap by only 0.4%. This is because only the most marginally fuel poor (FPI 10-10.33) are removed from fuel poverty. It also explains the steady lowering of the mean SAP of those remaining in fuel poverty.

The headline indicator thus gives a misleading impression that fuel poverty is disappearing all by itself and that the role of Warm Zones and other initiatives could be less significant. In reality, the need for focused, in-depth work is even greater. Households remaining in fuel poverty are more likely to be in moderate and severe fuel poverty. Hard-to-treat homes requiring expensive solutions outside the realm of current standard measures packages may be another factor.

## 7.2 Fuel price changes

The previous point is underlined by movements in fuel prices. According to the DTI, in Warm Zones' second year, electricity prices fell by 2% and gas prices remained steady. This means that fuel costs overall fell by about 1%, further reducing the numbers in fuel poverty. However, prices are now rising, although the total effect of recent changes has not yet been quantified. Although incomes may be rising by 3% p.a. (probably less for the poorest groups) the effect

[50] The Government's Fuel Poverty Strategy does not give any specific details of how fuel poverty will be eliminated among this group. It intends to tackle the problem after 2010, the target date for eliminating fuel poverty among the 'vulnerable' and social housing sector fuel poor. It should be noted that there is a high level of 'churn' among the private sector 'healthy adult fuel poor' group.

would be outweighed by a 5% in fuel costs over the year, bring a number of "marginally non-fuel poor" households back into fuel poverty.

This reversal of the post-liberalisation trend highlights the importance of Zones offering tariff and financial advice. It also raises the possibility of Warm Zones brokering affinity deals with energy companies, in which favourable tariffs are negotiated for Zones' client bases[51]. However, the pilot model of reliance on energy company sponsorship might make this hard to engineer, since Zones are unlikely to negotiate deals with a different company to the sponsor (this conflict of interest does not arise in cases of Transco sponsorship).

### 7.3 Warm Front and EEC reviews and other provision

The evaluation argued in the first annual review for Zone-based experiments to overcome the coverage and effectiveness gaps in Warm Front and EEC and to facilitate the joining-up of programmes to 'multi-stream' measures and services into the same household. Zones similarly pressed for a variation in scheme rules to improve targeting towards fuel poor households. These were not taken forward. Evidence of these problems has strongly featured in the ongoing re-appraisal of Warm Front and the EEC from the point of view of fuel poverty strategy.

Since the Regulatory Reform Order, many local authorities have developed private sector renewal strategies under which private-sector EEC priority schemes are match-funded. Some local strategies also carry out non- priority low-income energy efficiency work. At the moment, these developments are patchy and there appears to be a wide disparity between districts on the extent of available funding. However, this development is potentially helpful to solving one of the Zones' most intractable problems.

### 7.4 Emerging integrated schemes

In the last two years, other local integrated energy efficiency and fuel poverty schemes have emerged in many parts of the UK. Although often small-scale, it does look as though learning from the Warm Zones and other experience is taking root. For example, the embryonic Newcastle Warm Zone has been able to:

- Spend a long time in preparation, building partnerships and local capacity
- Take a genuinely strategic approach, linking resource acquisition to an appraisal of need
- Link environmental, social and economic objectives in a wider sustainable development agenda in which energy work is seen to meet energy-saving and health improvement objectives, as well as those of social exclusion, and in which offers are available to the "fuel-rich"
- Take advantage of sophisticated information systems, providing process management as well as recording and monitoring functions.

Smaller scale initiatives in other parts of the country (e.g. Cumbria) are adopting at least some of the above approaches.

### 7.5 Transparency on cost issues

It has been argued that Warm Zones are simply "expensive mechanisms to generate Warm Front referrals". There is scope to reduce these costs through streamlined assessments (the

[51] It should be noted that individual local authorities or consortia of authorities have had limited success in negotiating such deals to date. Authorities have tended to focus on Council-owned 'void' properties and there are no examples of initiatives negotiating better deals for prepayment meter consumers (see, for example, Peacock, C (1999) in *Competition Monitor,* **4, Nov 99**, CSE)

Powergen ‘affordable warmth survey system’ may offer one possibility), use of desktop assessment methods and setting affordable warmth standards in social housing to ‘fuel poverty proof’ properties for both current and future tenants. Warm Zones, acting upon assessment information, have also systematically delivered measures in local areas on a ‘street by street’ basis. Again, this may appear expensive but it is difficult to envisage how other approaches can be sure of hitting most properties within a given area. There is

More information, while still limited, on the real costs of finding clients and administering schemes is becoming available through research into local schemes, the NAO report into Warm Front, and from the Warm Zone evaluation. It now looks as if the relative cost of Warm Zones is nearer the theoretical "ideal world" 5% on-cost than was previously thought (see first annual review). However, some of the current contractual arrangements for Warm Front and other schemes may limit the attainment of such cost-efficiencies. For example, where local referrals go to more than one scheme, lack of shared approved/preferred contractors clearly reduces the possibility of economies arising from clustered working. The next report will analyse this issue in more detail.

### 7.6 Currency of the Warm Zones concept

It might be argued that, with falling headline levels of fuel poverty[52], the Warm Zones concept is becoming outdated. In particular, leFebre's paper on fuel poverty concentration argued that lower concentrations of fuel poverty rendered the house-by-house, street-by-street approach uneconomic[53].

However, this line of argument ignores a number of factors:

i. Evidence about churn implies that, in the long-run, all properties in which lower-income households are likely to live should be capable of delivering affordable warmth. Of course, the vulnerable and those in fuel poverty represent the most immediate priority.
ii. It is perfectly possible (see 7.4) to signpost provision for the non-fuel poor within the Zoned approach, although the pilots have been slow to develop this.
iii. The elevation of energy efficiency on the national political agenda requires a more systematic and strategic approach, which a local co-ordinating agency can provide.

Many districts are articulating a demand for the multi-stranded zoned way of working, ranging from urban Wolverhampton to rural North Cumbria. But some, while favouring the approach, are working piecemeal on an area-by-area basis, without having an overall whole-district plan over a defined timescale.

Limiting factors for many authorities in adopting a Warm Zone type approach are:

- The lack of reliable baseline information about the level and nature of the fuel poverty problem authorities face.
- Limitations with existing provision and lack of additional funding opportunities to overcome such limitations.
- A perception that other social problems (to fuel poverty) require more urgent attention, e.g. lack of demand for housing in certain areas within cities, economic decline.
- Difficulty in identifying an appropriate section within a local authority that can take the lead on a focused and coordinated approach that is integral to the Zone method.

It may be significant that "Warmer Newcastle" is being set up in an area with an abundance of funding opportunities, including SRB, ERDF, NDC. Further, the large potential client base and

[52] But see 7.1 above
[53] LeFebre (2002), *Fuel poverty integration schemes project,* report to Fuel Poverty Advisory Group, 26/9/02

substantial social housing providers offer attractive opportunities to EEC providers. Thus, the generalisability of the Warm Zone concept may be limited more by the availability of relevant funding than by a lack of desire for the benefits.

If Warm Front and EEC are improved, this raises the question of whether Warm Zones are necessary at all. The evaluation suggests that there is value in having a clear local focal point for fuel poverty reduction activity, such as Warm Zones although the cost effectiveness is still yet to be fully assessed. Zones can facilitate the delivery of mainstream programmes or even, potentially, act as managing agents for such programmes. There is value in having a structure capable of coordinating all energy efficiency programmes according to a strategic assessment of need (although only Stockton is close to having this level of control). Local authorities themselves are capable of providing such an approach. However, they always face a range of competing priorities and may not regard fuel poverty reduction as important. There is also wide variation in authorities' performance on taking corporate and strategic perspectives on cross boundary issues in general (of which fuel poverty is a prime example).

### 7.7 Conclusion

This section presents a mixed picture on the potential for Zone roll-out.

Fuel poverty levels have fallen over the pilot period due to increasing income and falling fuel prices, however energy efficiency remains as a limiting factor that needs to be addressed.

Zones demonstrate that local area-based structures can play an important role in realising the Government's Fuel Poverty Strategy objectives. It is hoped this report and future evaluation reports will help inform such decision-making on the required balance between national and local mechanisms for delivering fuel poverty reduction programmes.

The Warm Zone approach (both within and out with Warm Zone's Ltd ambit) has taken hold and is expanding. The evaluation suggests that there are considerable benefits to the Warm Zone approach, although a cost effectiveness evaluation is required before a more substantive judgement can be reached.

The evaluation contends that the potential impact of the Warm Zones approach could increase within the context of revised energy efficiency and fuel poverty schemes (mainly Warm Front and EEC) and improved funding. Improved national programmes will not in themselves undermine the need for Zones; since local structures still add considerable value in terms of making sure fuel poverty is eliminated 'on the ground'.

The evaluation intends to reach a more definitive judgement on whether or not to recommend roll-out of Warm Zones once it has completed a cost effectiveness evaluation.

# 8 SUCCESSION STRATEGIES

## 8.1 Zone Succession Plans

The original Zone model included the notion that 'comfort zones' would be established after the pilot period finishes. These would be tasked with continuing the Zone approach, albeit on a more modest scale. Table 27 summarises the current arrangements for continuing Zone activities after the pilot period finishes in March 2004.

**Table 27: Zone succession plans**

| ZONE | PROGRAMME PLAN AND COMMITMENTS SECURED | COMMENTS |
|---|---|---|
| Hull | 16 options under review.<br>Request to Hull City Council for £100k min / £250k requirement for operational costs.<br>Activity beyond April 2004 included in Hull City Council (HCC) Housing Strategy etc<br>Proposals due to go to HCC Cabinet in Dec 03/Jan 04. | If Council funding not obtained, Zone will cease activities by end of March 2004 |
| Newham | London Borough of Newham has agreed £55k cash and £30k in-kind support for 2004/05 to continue existing WZ.<br>EDF agreed £40k cash and secondee for 2004/05. | Existing central resources will be released (£15k) to enable development of further Zones in other London boroughs |
| Northumb erland | Borough Councils, County Council and Health Trust agreed £220k of support for WZ operational costs for each of next three years to March 2007.<br>Npower will continue to second the Operations Manager | |
| Sandwell | Sandwell Council agreed £100k (operational costs) to continue reduced Zone programme (mainly coordinating implementation of surveys and measures).<br>Npower will continue to second the Partnership Manager. | Existing Zone will continue on reduced scale within Council |
| Stockton | Programme to be completed. Stockton Council and PCT will provide funding for a 'Comfort Zone'. | Comfort Zone will become a 'mainstream' activity within Council. |

NEA has taken over Warm Zones Ltd as a wholly owned subsidiary body. The company will focus on expanding the Warm Zone concept to other areas in the country and supporting operational activities within the existing pilots. The existing pilots will become self-financing, a decision that is most likely to affect Hull, where about 30% of homes have yet to be assessed and continuation funding has not been secured.

Transco is developing plans for fully funded Zones in Newcastle and other areas. Newcastle was formally launched on 1st April 2004. It will continue to support Redcar & Cleveland, aided considerably by the successful European (ERDF and ESF) funding bid.

The continuing support of the sponsoring energy companies beyond the pilot period may in part reflect companies' commitment to projects in which they have been closely involved and may in part reflect a belief that Warm Zones provide a useful mechanism for meeting EEC commitments. In the latter respect, the current succession bodies and future Zones will need to rely much less on company sponsorship and much more on being viewed as viable EEC delivery structures.

The next evaluation report will give further details of the succession strategies for both the existing pilots and the holding Warm Zone company.

## 8.2 Conclusion

The Zone experiment has generated a lot of enthusiasm and support. Within the current context of existing energy efficiency and fuel poverty reduction programmes, the Zone approach has continued to be applied within a limited set of circumstances: special funding is available within the Zone area; there is a high level of fuel poverty density; and sufficient resources are assembled for tackling the problem before the Zone starts its work.

# 9 CONCLUSION AND RECOMMENDATIONS

## 9.1 Conclusions

The second annual review of the external evaluation of the Warm Zone pilots has yielded further valuable insights into the problem of tackling fuel poverty at a local level. Local strategies for tackling fuel poverty can form an important element within the Government's Fuel Poverty Strategy. The pilot Warm Zones represent the most focused and systematic attempt at developing such strategies.

This report has presented the evaluation findings on Zones' success at meeting their objectives. At first sight, Zone performance looks poor. Zones will not meet their fuel poverty reduction targets (50% reduction in fuel poverty and 50% reduction in severe fuel poverty), including Stockton, the most generously funded Zone. After two years, Zones have reduced fuel poverty by 5.4% (18% in Stockton's case). Thus, two-thirds into the pilot 3-year period, Zones are well short of their fuel poverty reduction targets.

Zones have made better progress on the 'distance travelled' measure (the amount by which fuel poverty is reduced, rather than the number actually removed).

Overall, the change in fuel poverty levels across the whole pilot area in year 2 is almost 5 (4.7) times more than would be expected if the Zones were not present, a significant additionality.

Zones have removed only 11% of households in severe fuel poverty from that category, far less than the 50% target, and most have remained in fuel poverty.

The evaluation explored the factors that contributed to Zones' poor performance. In most cases, Zones had little control over these factors. It is clear that current standard energy efficiency packages alone are just not adequate for tackling most cases of even moderate let alone severe fuel poverty. 95% of households removed from fuel poverty by Zones were in marginal fuel poverty (FPI of 10-14.9%). Of course, Zones might have made more effort to improve upon these packages, such as offering benefits advice from the outset. But it is suspected that the scope for such improvement is limited, given current scheme rules and resource constraints.

By far the strongest predictor of a Zones performance is the amount of resources available to the Zones, particularly when the scale of the fuel poverty task facing the different Zones is taken into account. The evaluation found that the level of resources available to the individual Zones, both for internal management and for capital spend, bore no relationship to level of need. Some Zones appear to be significantly under-funded. This could become a critical issue in the event of an expanded programme. The cost ratio analysis suggests that better resourced Zones (both in terms of operational and, especially, capital resources) perform better. There would obviously come a point when further resources led to a reduction in performance on these ratios but that point seems to be a long way off.

There are some elements of Zone under-performance that do result from Zones' own procedures. Assessment rates are poor in some of the Zones. The difficulty of carrying out assessments in rural areas is an explanatory factor for Northumberland's poor performance. Poor performance in Hull is partly due to a lack of resources and partly due to Hull's targeting of the private sector - all Zones find this sector more difficult to assess.

Nevertheless, Zones continue to innovate and improve assessment performance. Desktop assessment (Newham and Hull) can help reduce the size of the assessment task and use of multi-lingual assessors and health workers can help improve response rates. Further

improvement may be possible by engaging communities more extensively within the overall Warm Zone process.

Sandwell Zone, while achieving high volumes of assessments, has failed to collect income information in most cases. This has prevented the Zone from accurately assessing levels of fuel poverty. The Zone appears to have focussed on operational matters, rather than the intelligence-gathering work essential to a pilot programme adopting a genuinely strategic approach.
`

The evaluation is concerned that some Zones do not have information about all the relevant energy efficiency programmes in their area, partly because they do not regard this as necessary if they have little influence over such programmes. These Zones have not carried out the coordinating role that was originally regarded as central to the Zone concept. It is also difficult to see how Zones can truly assess progress towards fuel poverty reduction targets if they do not have, at the very least, information on relevant activities.

Zones have also not implemented the full possible toolkit. They generally do not offer tariff advice and have only started to offer welfare rights advice at a fairly late stage in their operations. The next report will look at the potential impact of benefits advice in more depth. Early analysis suggests that only a small proportion of households – 2-3% of cases – will benefit from advice (perhaps with the exception of Pension Credit, where potential impact may be much greater).

For households receiving benefits advice, impact is dramatic. Such advice has a much greater impact on fuel poverty status than the current energy efficiency packages. In many cases it will remove them from fuel poverty (including moderate and severe cases), even before they are referred back into the Warm Front process.

Zones have also only adopted a limited form of programme integration. To the extent that integration has taken place, it is mainly of the 'signposting' variety. Essentially this means households will just receive the standard energy efficiency packages from whichever source they happen to be eligible for. There is little evidence of the more extensive 'multi-streaming' type of integration, in which different funding packages are assembled for intervention proportionate to their need. However, Zones argue that scheme rules prevented them from carrying out more extensive integration.

The Stockton social housing heating and insulation programme perhaps represents the nearest attempt at full integration. However, there are promising signs in the Redcar and Cleveland Warm Zone and the developing 'Warmer Newcastle' initiative, which will be launched in April 2004. Private sector renewal funding, in conjunction with EEC, would represent a major contribution towards full integration.

### 9.2 Recommendations

1) The Zone-type approach, if not the exact organisational arrangements developed for the pilots, represents an important local fuel poverty reduction initiative. This form of local intervention is important for meeting the Government's Fuel Poverty Strategy objectives. The Government should therefore make sure that the next round of Warm Front and EEC maximise the opportunities for tackling fuel poverty at a local level. This could be achieved through:
   a) creating mechanisms to facilitate the integration of programmes
   b) widening the measures menu and spending ceilings for harder-to-treat homes
   c) ensuring more complementary and comprehensive coverage of eligibility.

2) Zones should aim to coordinate all relevant energy efficiency programmes as part of a comprehensive local strategy for energy efficiency improvement and fuel poverty eradication. Such a strategy should attempt to take account of national factors, such as trends in fuel prices and benefit levels. At the very least, Zones should gather information on all relevant local programmes, such that they have some sense of the task they face and the resources to hand. Alternatively, Zones could develop a relationship with either local authorities or Local Strategic Partnerships, such that Zones become the executive arm for delivering local affordable warmth strategies.

3) Zones need to improve assessment response rates to help them move nearer to their fuel poverty reduction targets, although actually hitting them now appears very unlikely.

4) Sandwell should prioritise collecting income data for all future assessments. Without this information, fuel poverty estimates are unreliable.

5) Zones should engage communities more extensively to help improve assessment response rates. This may entail giving community and voluntary organisations more control over Zone processes, such as Partnership Committees and potentially budgets for community-based fuel poverty reduction activities.

6) Zones should attempt to reduce the size of the assessment task through desktop assessment procedures. This may require prior clearing of data protection procedures, e.g. obtaining social tenants' approval.

7) In the event of any expanded Warm Zone programme, the level of resources allocated to different Zones should reflect the level of fuel poverty need in Zone areas. A central mechanism will be required to ensure area-based resource allocation. This is particularly pertinent in the case of WF/EEC resources, local authority programmes and regeneration funds.

8) Government guidelines on regeneration should give higher priority to fuel poverty and energy efficiency as a funding priority. The level of fuel poverty need should also be taken into account in the allocation of resources to renewal areas. This may require establishing an explicit fuel poverty criterion.

9) Local authorities, energy companies and other partner agencies should spend a considerable period on preparation activities before formally launching any future Zones. This should include demonstration of the level of need, assembling resources to meet that need, building partnerships and local capacity, putting programme delivery mechanisms in place and instituting information systems to manage and monitor the whole process.

10) Any future Zones should provide welfare rights advice, as a minimum, from the outset, ideally, financial, debt and tariff advice should also be offered. This requires the identification of funding and making sure that there is sufficient capacity to meet demand. Provision should include support throughout the benefit claiming process, from help with form-filling to representation at benefit tribunals.

11) Any future Zones should attempt a more ambitious form of scheme integration than has been achieved by the original 5 pilots. Ideally, Zones should aim to integrate funding streams such that the packages of measures can be assembled to meet the need of the individual household. Changes to scheme rules will help this process. Future Zones should also aim to meet wider energy saving, health improvement and social exclusion objectives, requiring integration with wider initiatives. They should also develop programmes aimed at the 'non-fuel poor'.

## ANNEX: ASSESSMENT OF ZONE IMPACT AND ESTIMATION OF ZONE ADDITIONALITY

### 1. Zone impact and additionality

Two of the most central questions for the evaluation are:

- What has been the impact of Warm Zones on fuel poverty?
- How much difference have they made compared to the situation without Warm Zones in place?

This appendix explains how the answers to these questions have been derived.

### 1.1. Zone impact on Fuel Poverty

Even after two years of operation, most Zones were still unable to present impact data based on more than a few hundred cases[54]. In some instances this was partly due to limited income data. But there still appear to be problems in getting returns from scheme managing agents, in updating operational records, or producing basic monitoring reports from these databases.

However, Zones *were* able to supply data on:

- Numbers of assessments completed and referrals made, broken down by FP/nonFP
- Baseline mean SAP and FPI scores for fuel poor/non fuel poor households as determined at assessment
- mean SAP improvement from the limited number of documented cases so far.

In addition, the evaluation had access to the complete Stockton WZ database.

A definitive picture of fuel poverty impact could be obtained only from a comprehensive follow-up survey, or from a set of *complete* operational records for each Zone, showing baseline and improvement. Given the availability of the data above, a *reasonably robust estimate* of Zone impact on headline fuel poverty reduction targets is feasible[55]. Section 2 describes the full version of the methodology for assessing Zone fuel poverty impact.

### 1.2. Additionality

It is essential to get a picture of how much faster the Zones have been able to reduce fuel poverty compared with "Business as Usual", the change which would have been the case had there been no Warm Zones. This requires both reliable estimates of Zone Impact as above, and further work on the Business as Usual (BasU) scenario. This work is described in section 3.

### 2. Calculating Zone impact on fuel poverty

Although we have only a small amount of hard impact data from most of the individual Zones, we do have access to the complete baseline and live data sets extracted from Stockton WZs (SWZ) MVM Starpoint system. Stockton has had much fewer reporting problems as their energy efficiency work is under their own control. The data set contains several hundred variables giving full household and property details before and after intervention (where intervention has actually been done) for the 40,000 or so properties assessed so far. The data are of reasonable quality, with few anomalies, and are updated post-survey. However,

[54] However, overall there is more hard data than for the first annual review
[55] The estimated impact data given in the first annual review was, of necessity, quite tentative.

Stockton, like other Zones, uses imputed data for floor area and fuel tariff (as well as other less critical factors) so fuel poverty estimates near to FPI=10% at individual household level are subject to inaccuracy.

We also have the Comparison Zone data from a survey carried out for the evaluation in 2002, giving a comprehensive picture of energy and household circumstances in a random sample of lower income households in Carlisle District (urban and rural mixed) and Nottingham (highly urbanised). This work also recorded changes in incomes, fuel costs and home energy factors over 2001-2. This file is important for testing how far findings or models developed on the SWZ set generalise to other comparable situations.

The following procedure was used:

A. From the SWZ dataset, a non-linear regression[56] model was developed predicting the effect on fuel cost of different sizes of improvements to SAP rating (SAPdiff). [These varied from zero to over 50 SAP points of improvement]. The model included a term for initial SAP rating, because the impact of a given improvement has less impact on fuel cost when baseline SAP is higher, since the scale is logarithmic. Floor area has a big impact on fuel costs, since it determines the amount of space to be heated. However, since data on floor area was not available, fuel cost *percentage difference* (RFC%diff) was used in later versions of the model instead of simple fuel cost difference, and this corresponded to the Starpoint-predicted[57] post-intervention fuel costs very closely. All fuel poor households that had received improvements were included in the data set used for constructing the model.

The final model is: $RFC\%diff = .04237 \times SAP^{-.0698} \times sapdiff^{.6944}$

This gave an $R^2$ of better than 0.96, showing that almost all the variation in RFC%diff is accounted for by the model. Standard errors for the parameter estimates were very narrow (plus or minus <1%). Sample predicted reductions in fuel costs given by the model are shown in the table below for a range of starting SAP values and sapdiff (size of intervention) scores.

Table A1: Fuel Cost Reduction by initial SAP and improvement size

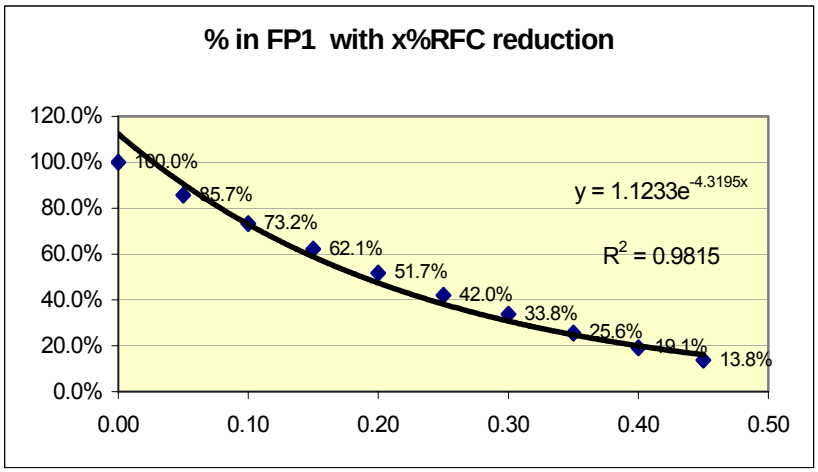
| | sapdiff (i.e. final SAP less initial SAP) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Starting SAP | 2 | 4 | 6 | 8 | 10 | 12 | 13.5 | 14 | 16 | 18 | 20 |
| 5 | 0.061 | 0.099 | 0.131 | 0.160 | 0.187 | 0.213 | 0.231 | 0.237 | 0.260 | 0.282 | 0.303 |
| 15 | 0.057 | 0.092 | 0.122 | 0.149 | 0.174 | 0.197 | 0.214 | 0.219 | 0.240 | 0.261 | 0.281 |
| 25 | 0.055 | 0.089 | 0.117 | 0.143 | 0.167 | 0.190 | 0.206 | 0.212 | 0.232 | 0.252 | 0.271 |
| 35 | 0.053 | 0.087 | 0.115 | 0.140 | 0.164 | 0.186 | 0.201 | 0.207 | 0.227 | 0.246 | 0.265 |
| 45 | 0.053 | 0.085 | 0.113 | 0.138 | 0.161 | 0.182 | 0.198 | 0.203 | 0.223 | 0.242 | 0.260 |

For example, taking the highlighted cell, with a starting SAP of 45 and an improvement of 10 SAP points, the model predicts a 16.1% reduction in fuel costs in this sample.

B. Results from this model were then used to observe the blanket effect on the incidence of fuel poverty and severe fuel poverty in the SWZ fuel poverty sub-sample, of mean fuel cost reductions across a range from 5 - 50%. For the SWZ mean (19% reduction) this produced very similar results (about 53% still in fuel poverty) to the 55%[58] actually observed, suggesting the procedure, although an approximation is reasonably accurate. The graph below shows the effect on the percentage remaining in fuel poverty in the sample, when different average fuel cost reductions are applied. A negative exponential curve has been fitted (model B1).

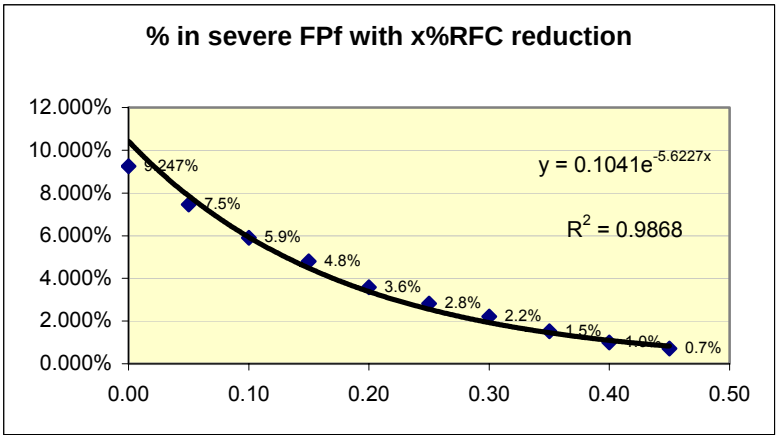
[56] NLR model as featured within the SPSS Regression module. This has significant advantages over earlier procedures such as Powell's LSQ algorithm but, like all such iterative numerical estimation methods, does not guarantee an optimum solution.
[57] Starpoint incorporates the standard BREDEM-12 energy efficiency calculation engine
[58] this is with zero interventions excluded.

Figure A1: % Remaining in fuel poverty with varying blanket Fuel Cost reductions




There is some ambiguity in the Stockton data set around zero-interventions. Some cases are clearly waiting for work, but in other cases it is not completely clear whether no work could be done, clients were waiting or records awaiting update at the time the database was "frozen". The same inaccuracy around zero% fuel cost reduction is seen with the severe fuel poverty cases (model B2 fitted) where the baseline percentage was 9.6% in severe fuel poverty before intervention took place:

Figure A2: % Remaining in severe fuel poverty with varying blanket Fuel Cost reductions




Otherwise, the simple negative exponential[59] curves model the situation well, as can be observed.

C: Model testing. When models B1 and B2 were applied to the fuel poor sub-sample of the Comparison Zone dataset, very similar proportionate reductions were observed, which is encouraging. Of course, the CZ areas were specifically chosen to be comparable with Warm Zones as a whole, and the model parameters might well be different in an area with very different property characteristics, such as one of the new towns.

While property characteristics associated with fuel poverty clearly vary somewhat by area, this is probably less true of the distribution of basic income. This is because 70% plus of those in fuel poverty live partially or wholly on income from state benefits whose rates are nationally set. On the other hand, there is a little more uncertainty in using full income (including housing

[59] this type of function is often used to model situations involving decay, as here with the progressive but diminishing reduction in the incidence of fuel poverty when larger doses of treatment are applied.

benefit), which is used in the evaluation, since it is the Government's preferred definition. Since the "allowable amount" used in awarding housing benefit is set with reference to local rent levels, the general relationship between income and fuel poverty would be affected by the general level of local rents. Thus high rents increase income on this definition, reducing the apparent amount of fuel poverty. This affects Newham in particular; however, no reason is apparent why this should affect estimates of percentage change in the numbers in fuel poverty following intervention, or that other Warm Zones would be affected in this way.

To summarise:

1. Expected %reduction in fuel costs can be estimated with some accuracy if starting SAP at assessment and the typical size of SAP improvements are known. This information is available from all Warm Zones.

2. Unless the population is unusual in terms of the distribution of energy efficiency or low incomes, the proportions of the fuel poor population removed from fuel poverty (and from severe fuel poverty) by a given mean reduction in fuel cost can also be estimated with reasonable confidence.

These results were applied to the Zone Results worksheet, which links a substantial array of Zone variables, indicators and other comparators, to provide an overall summary of performance and circumstances. The worksheet uses the models described to generate estimates of Zone outputs from the known parameters where only limited operational data is available.

A section of this is shown below as table A2.

The logic of the analysis is shown in the descriptions (column 2) of each row, reading from top to bottom. The key steps are:

a) The numbers of different types of referrals are known for each Zone, also the yield of energy efficiency jobs per referral.

b) the average intervention sizes (SAP differences) and starting SAP ratings for different types of referrals are known for a limited sample of cases, and are assumed to be typical of the whole Zone caseload

c) the baseline numbers in fuel poverty are known

d) a comprehensive picture of observed fuel poverty impact is available for Stockton Warm Zone, and estimated for the other Zones using the procedure described above linking impact to a,b,c above.

*NB: Sources are given in the left hand column:*

*C: results calculated from data in part A of the sheet that gives Zone characteristics such as numbers and proportions in fuel poverty. [a print of the complete Zone Results worksheet is given at the end of this appendix]*
*A,B: the models described earlier in this section (unless hard data available as in SWZ)*
*Z: data from Zones  WF: data from Warm Front managing agents*
*calc: row calculated from combination of previous rows]*

**Table A2: Extract from Zone Results Worksheet: section B - Zone Activity Year 2**

| source | B. Zone Activity Year 2 | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|---|
| Z | Assessments completed | 15,061 | 23,219 | 25,573 | 39,604 | 19,706 | 123,163 |
| Z | mean SAPpre (FP only) | 47 | 44 | 54 | 40 | 41 | |
| C | proportion fuel poor | 0.143 | 0.241 | 0.221 | 0.326 | 0.239 | 0.234 |
| Z | ppn severe FP | 0.024 | 0.040 | 0.030 | 0.067 | 0.036 | |
| calc | severe as ppn of FP | 0.168 | 0.166 | 0.136 | 0.206 | 0.151 | |
| calc | hence fuel poor numbers | 2,154 | 5,596 | 5,652 | 12,911 | 4,710 | 31,022 |
| calc | including severe FP numbers | 361 | 929 | 767 | 2,653 | 709 | 5,420 |
| Z/WF | WF (or equiv) referrals | 2,203 | 3,533 | 3,147 | 3,923 | 2,880 | 15,686 |
| Wfcalc * | WF yield (ppn of valid referrals) | 0.71 | 0.76 | 0.81 | 0.57 | 0.95 | |
| Z | Warm Front jobs (or equiv) | 1,564 | 2,685 | 2,549 | 2,236 | 2,736 | 11,770 |
| calc | WF ppn in fuel poverty | 0.28 | 0.33 | 0.32 | 0.38 | 0.33 | |
| A,B1 | WF FP ppn remaining | 0.532 | 0.531 | 0.631 | 0.526 | 0.514 | |
| A,B2 | WF (severe) remaining | 0.413 | 0.411 | 0.514 | 0.407 | 0.394 | |
| calc | WF FP numbers removed | **208** | **420** | **304** | **399** | **442** | **1,773** |
| calc | WF severe removed | **44** | **88** | **54** | **103** | **83** | **371** |
| Z est | est mean EEC sapdiff | 6.5 | 8.0 | 6.0 | 9.5 | 13.9 | |
| Z | EEC/Regen/PRS etc referrals | 1,391 | 5,950 | 6,488 | 3,674 | 5,833 | |
| est | EEC/Regen/PRS yield | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | |
| calc | EEC/Regen/PRS etc jobs | 1,252 | 5,355 | 5,839 | 3,307 | 5,250 | 21,002 |
| Calc# | EEC ppn in fuel poverty | 0.26 | 0.43 | 0.20 | 0.59 | 0.43 | |
| A,B1 | EECetc FP ppn remaining | 0.75 | 0.69 | 0.77 | 0.65 | 0.52 | |
| A,B2 | EECetc (severe) remaining | 0.64 | 0.58 | 0.67 | 0.53 | 0.40 | |
| Calc | EECetc FP numbers removed | **81** | **726** | **265** | **679** | **1,091** | **2,841** |
| calc | EECetc severe removed | **19** | **164** | **52** | **185** | **205** | **626** |
| All | total jobs | 2,816 | 8,040 | 8,388 | 5,543 | 7,986 | 32,773 |
| calc | ppn. this Zone of all WZobs | 0.09 | 0.25 | 0.26 | 0.17 | 0.24 | 1.00 |
| calc | no of FP jobs | 767 | 3,218 | 1,992 | 2,781 | 3,168 | 11,927 |
| calc | removed from FP **ALL** | **289** | **1,145** | **570** | **1,078** | **1,532** | **4,614** |
| calc | removed from sevFP **ALL** | **63** | **251** | **107** | **288** | **288** | **997** |
| 40%** | % of years 50% target FP | ***5.3%*** | ***20.6%*** | ***13.5%*** | ***19.4%*** | ***53.2%*** | ***19.5%*** |
| 40%** | % of years 50% target sev FP | ***7.0%*** | ***27.2%*** | ***18.7%*** | ***25.3%*** | ***66.4%*** | ***25.1%*** |

* see section 3.2.1. in main report
**The 2nd year target is set at 40% of the total rather than 33% to make some allowance for Zone start-up and run-down in years 1 and 3. Thus, if a Zone contained 1000 fuel poor households, the 2nd year target would be to remove not (50%/3)=167 households but (50%/2.5) i.e. 200.  This is consistent with the approach set out in the main body of the report for calculating progress on assessment targets.
# calculated from Zone returns

This table is the source of many of the results and further analyses throughout the report, including the section on additionality below.

Finally, the results are shown in the bottom two rows**. Overall, Zones are found to be achieving about a fifth of the fuel poverty reduction target, and a quarter of the severe fuel poverty reduction target**. Performance against target varies from 5% to 66% in individual Zones.

Thus Section 2 shows major underperformance against targets. But this may still represent a substantial improvement over the "Business as Usual" (BasU) scenario. This is the subject of Section 3.

### 3. Estimating Additionality - the approach

This section explains the methods used to calculate the difference between the impact of Warm Zones on fuel poverty just discussed, and what would have happened had there been no Warm Zones. The method has four stages, introduced briefly below and then explained in more detail under the same numbered headings:

**Section 3.1.** Applying national fuel poverty reduction trends to the Zones to estimate "Business as Usual" (BasU) rates. These are what we would expect to have occurred in the absence of a Warm Zone or other major fuel poverty reduction programmes. These trends are extrapolated from statistical models[60] models fitted to EHCS fuel poverty data (and some intermediate Defra/DTI figures 1999,2000) 1991-2001. The table below shows the progressive reductions predicted from a baseline set at 2001. Figures are given for full (f) and basic (b) income definitions, and for urban and rural rates of reduction; the later are used for Northumberland.

| | urban | urban | rural | rural |
|---|---|---|---|---|
| | FP1(f) | FP2(b) | FP1(f) | FP2(b) |
| **2001** | 0.0% | 0.0% | 0.0% | 0.0% |
| 2002 | 10.2% | 9.2% | 7.4% | 5.9% |
| 2003 | 19.3% | 17.6% | 14.3% | 11.4% |
| 2004 | 27.5% | 25.2% | 20.6% | 16.6% |

Thus, in the highlighted cell, a 10.2% reduction in numbers in fuel poverty in urban areas is predicted on the full-income definition between 2001-2.

Extrapolation has its dangers, but there is no reason to suspect major changes in trends between 2001 and 2003, the key period in question here. [However, energy prices began to rise again in late 2003, following a period of substantial decline following liberalisation of the gas and electricity markets].

There are problems with this approach when applied to specific geographical areas. Because EEC, regeneration and social housing refurbishment (and even Warm Front) are not evenly distributed, and the distribution is unknown, the approach gives an England average that may apply only loosely to an individual Zone. Within Northumberland, the northern districts are not well known for their prioritisation of energy efficiency, whereas Blyth has done a great deal and is in fact a Beacon Council. HECA returns (though not strictly comparable) confirm this picture. It is tempting to say on this basis that the variations across Zones similarly iron out but there is no way of telling, without a major investigation.

**Section 3.2**. working out how much of the BasU reduction is due to energy efficiency improvements (which have been the overwhelming focus of Warm Zone intervention), as opposed to changes in household incomes or fuel prices. What is left when the energy efficiency component is removed, is the fuel poverty reduction which is taking place anyway through income and fuel price changes, and which is thus not attributable[61] to Zone activity.

[60] On this data, negative exponential and linear models gave practically identical results in the short term.

[61] In year 2, the development of welfare rights work on income in the Zones was still very limited; moreover, feedback on results was almost non-existent. However, it seems clear from the Stockton data (where this work was probably the most advanced) that less than 5% of those removed from fuel poverty are accounted for by welfare rights work. On this basis, it seems safe to ignore this component of impact for the year 2 additionality analysis.

**Section 3.3**. Working out background levels of fuel poverty reduction. This involves applying the income improvement and fuel price reduction components of BasU to the Zone as a whole, but the energy efficiency component only to those parts of the Zone which roll out has not yet reached. This clearly depends upon the extent of progress Zones had made in rolling out their assessment programmes by the end of years 1 and 2. The logic is that at any stage in the assessment roll-out:

- The area assessed has been thoroughly harvested, and will generate negligible new referrals in the immediate future[62].
- The *remaining area* still to be assessed will still be generating referrals for energy efficiency work in much the usual way (e.g. via social landlord programmes, voluntary association referrals, responses to conventional marketing)

The amount of the BasU energy work attributable to the *remaining area* is then added to the BasU fuel poverty reduction attributable to fuel price and income change (3.2. above) for the period in question. This gives the Background level of fuel poverty reduction in the Zone for the period. The Background level is simply an estimate of that part of the total fuel poverty reduction in the total Zone pilot area which is not due to Warm Zone activity. This procedure assumes an average level of fuel poverty for this mid programme year, which does not seem unreasonable.

There are a number of complications.

i) In one Zone at least, Warm Front continued to be marketed out with the Warm Zone framework in those areas in advance of the Zone roll-out, taking advantage of the additional background publicity generated by the Warm Zone. This effect has been ignored for the analysis, since such work can be regarded neither as Zone activity nor as part of the normal background (or Business as Usual).

ii) Similar effects *may* have arisen in relation to council housing stock where the energy efficiency work is not managed through the Zone. This has also been ignored for the same reasons. In any case, many social housing organisations do not know the energy efficiency of the impact of their refurbishment work.

Both these points raise other issues not to do with additionality per se and these will be examined in the next report.

**Section 3.4.** Making comparisons. There are several different measures here that can be usefully compared for example:

- amount of energy efficiency work being done under the Warm Zone compared with BasU to assesses how much acceleration is being given by Warm Zones to energy efficiency work.
- total amount of fuel poverty reduction under WZ (i.e.WZ-attributable work plus the background rate explained above) and under BasU to give the overall actual picture under the two scenarios
- proportion of actual Fuel Poverty reduction *attributable to the Zone* compared with BasU. Once the Zones' programmes are completed, this will be the most meaningful indicator of additionality as such.

[62] apart from the fairly immediate and well-known "second wave" effect where those who had refused earlier now self refer on seeing their neighbours getting improvement work done. [In the longer term, areas will generate new fuel poverty as a result of churn, through movement, retirement, other changes to household circumstances and degradation of equipment]

### 3.1. Calculation of Business as Usual

Table A3 below gives the predicted 'business as usual' fuel poverty reduction rates for the Warm Zones (the rural ratios are applied in Northumberland's case) to calculate the FP reduction that could be expected in the Warm Zones districts if no Warm Zones were actually in place.

**Table A3: Business as Usual FP reduction**

| District | FP 2001 | FP2002 | reduction 01-02 | FP2003 | reduction 02-03 |
|---|---|---|---|---|---|
| Hull | 27,000 | 24,246 | 2,754 | 21,789 | 2,457 |
| Newham | 27,857 | 25,016 | 2,841 | 22,481 | 2,535 |
| Northumberland | 21,027 | 19,471 | 1,556 | 18,020 | 1,451 |
| Sandwell | 27,730 | 24,902 | 2,828 | 22,378 | 2,523 |
| Stockton-on-Tees | 14,400 | 12,931 | 1,469 | 11,621 | 1,310 |
| All | 117,813 | 106,565 | 11,248 | 96,289 | 10,277 |

The reduction columns are given by applying the full-income ratios given above to the estimates of the numbers in fuel poverty estimated from the NEA fuel poverty prediction model[63]. In general, operational data was not used since assessment in most Zones was far from complete, had usually prioritised more deprived Zones and in Sandwell's case, was seriously deficient in income data.

### 3.2. Calculation of Energy Efficiency Component of BasU

While most Warm Zone activity is directed towards energy efficiency measures, it is generally acknowledged that the greater part of the 1996-2001 fuel poverty reduction was due to fuel price and income changes, whose effects, while changing, still continue throughout the pilot period.

In an early stage of the analysis, examination of the CZ data showed that the relationship between change in FPI 2001-2 was about ten times stronger for income change than for SAP change, thirty times stronger than for fuel prices. On this basis, 10% of the reduction in numbers in fuel poverty was attributed to energy efficiency improvement across the housing stock. However, it was recognised that interaction effects can occur whereby many households might be brought almost out of fuel poverty by one of the changes, but would be actually removed only in conjunction with one or more of the others. This interaction has now been examined in both the CZ and for the SWZ data sets, observing the combined and independent impact of SAP improvement, fuel price change and income change. The results are summarised below:

**Table A4: Sources of FP reduction**

| 1. As observed in CZ data (01-02) | |
|---|---|
| 100.0% | all cases of leaving fuel poverty |
| 78.7% | when SAP changes excluded** |

[63] This model gives slightly more accurate results when tested against the Stockton baseline survey than the more sophisticated CSE/University of Bristol model (Pearson correlation 0.9 as against 0.89). The updated version of the latter should be more accurate still, but is not yet available.

| | |
|---|---|
| **21.3%** | >>attributable to SAP change alone |
| 2. As observed/modelled in SWZ data | |
| 100.0% | all cases of leaving fuel poverty |
| 53.0% | when SAP changes excluded** |
| **47.0%** | >>attributable to SAP change alone |

*** I.e. cases of income and fuel price change only*

*NB: A blanket 3% income increase is applied to SWZ data, comparable to the mean income change 2001-2 in the CZ data. It is important to remember this represents an estimate of change given changes in **all** factors, energy efficiency, fuel price and income. Zones do not revisit households to test for income and fuel price changes, and their estimates of those taken out of fuel poverty reflect only changes in energy efficiency (plus a small welfare rights impact in some cases).*

The greater proportion attributable to SAP alone in the SWZ data is of course to be expected given the energy efficiency improvement programme. However, in this case, the problem of double-counting becomes very serious. For since over 15% of cases of FP have a FPI of between 10 and 11% a significant improvement in ANY of the 3 main factors (SAP, fuel price, income) can take the household out of fuel poverty leaving a tricky problem for attribution.

To deal with this, another approach to the problem is to examine the proportion of total FPI distance travelled in the CZ data from the three main sources, income change (divided by 10), fuel price change and energy efficiency change. This avoids the problems both of interaction and potential double-counting.
Results are shown below (for fuel poor households only), the numbers giving the mean income or fuel cost change across the sample on a notional 12-month period. Again, the CZ income change factor (mean 3% increase) has been applied to the SWZ sample as well.

**Tables A5a and A5b**

| CZ - £/household | |
|---|---|
| income/10 | +16.22 |
| Fuel price | -12.05 |
| Energy efficiency | -12.93 |
| Total** | 41.20 |
| EE% | **31%** |

| SWZ - £/household | |
|---|---|
| income/10 | +16.22 |
| Fuel price | -11.25 |
| Energy efficiency | -121.00 |
| Total** | 148.47 |
| EE% | **81%** |

Nb **totals are the sums of the *absolute* item values, since income is the denominator of the fuel poverty equation FPI=Fuel Costs/Income, and the other items affect the numerator.

[When the impact of welfare rights work is included, the % of FP distance travelled *attributable to the Zone* increases only by 1 percentage point and is ignored for these purposes.]

Results of the two approaches are summarised below in Table A6:

**Table A6 % Fuel Poverty change due to Energy Efficiency**

| CZ | SWZ | Change estimated by: |
|---|---|---|
| | **81%** | Distance Travelled version |
| **21%** | | % h/h's in FP version |

The results are that we can expect 21% of the change in the numbers in fuel poverty in the non-WZ scenario (i.e. as in the CZ data) to be due to background rates of energy efficiency improvement[64] hence 79% due to income and fuel price change[65]. By contrast, in SWZ, where a particularly thorough programme of energy efficiency intervention has been done, the

[64] nationally, the EHCS data shows that mean SAP rating has been improving by about 1 point a year between 1996 and 2001

[65] Recent estimates for Scotland suggest 15% of recent fuel poverty reduction there has been due to energy efficiency.

estimate is 81% - this latter proportion will of course be different for each Warm Zone because of the different levels of energy efficiency work, and is calculated with reference to Stockton as a baseline.

### 3.3. Calculating Background levels of Fuel Poverty reduction

We now apply these results to the estimation of fuel poverty reduction not resulting from Warm Zone activity. In what follows, it is helpful to bear in mind the definitions of the following terms:

| Scenario | Explanation |
|---|---|
| Business as Usual (BasU) removed from FP | The estimated number or % of households removed from fuel poverty in the pilot area in the absence of a Warm Zone [See table A3 in section 3.1 of this annex] |
| Warm Zone (WZ) removed from FP | The estimated number or % of households removed from fuel poverty through Warm Zone activity |
| Background (BK) removed from FP | The estimated number or % of households removed from fuel poverty across the pilot area rising incomes and falling fuel prices, PLUS BAU energy efficiency work in the areas which WZ roll-out has not yet reached ie excluding any energy efficiency work facilitated through Warm Zones in areas already assessed |
| Total removed from FP in Zone (WZ+BK = Total) | The estimated number or % of households removed from fuel poverty in the pilot area from the combined effect of Background and Warm Zone activity. |

Table A7 shows the relative extent of programme roll-out for both year1 and year2 in each Zone.

**Table A7: WZ Assessments Achieved**

| | | | | | % rollout achieved by: | |
|---|---|---|---|---|---|---|
| **Zone** | **no of h/hs** | **assessed yr1** | **assessed yr2** | **yrs 1 and 2** | **%total end yr1** | **%total by end yr2** |
| Hull## | 81,000 | 866 | 15,061 | 15,927 | 1% | 20% |
| Newham** | 57,750 | 4,500 | 22,000 | 26,500 | 8% | 46% |
| Northumberland | 129,000 | 5,181 | 25,573 | 30,754 | 4% | 24% |
| Sandwell | 118,000 | 16,758 | 39,604 | 56,362 | 14% | 48% |
| Stockton | 75,000 | 14,811 | 19,706 | 34,517 | 20% | 46% |
| All | 460,750 | **42,116** | **121,944** | **164,060** | **9%** | **36%** |

## Hull started 6 months later than the others

In table A8, this is used, along with the energy efficiency disaggregation explained in section 3.2., to calculate the Background rate of fuel poverty reduction as defined above.

**Table A8: Background rates of Fuel Poverty reduction**

| | **X**. Removed from FP under Business-as-Usual (table A3) | **Y**. Energy Efficiency Component of BasU @ 21% (see 3.2) | **Z**. EE Component Modified for Zone roll-out (table A7 cols 6,7) | Hence Background Fuel Poverty Reduction Rate (X-Y+Z) |
|---|---|---|---|---|

| Zone | BasU reduction 01-02 | BasU FP reduction 02-03 | BasU reduction 01-02 EE | BasU FP reduction 02-03 EE | non WZ EE reduction 01-02 | non WZ EE reduction 02-03 | Back-ground FP reduction 01-02 | Back-ground FP reduction 02-03 |
|---|---|---|---|---|---|---|---|---|
| Hull | 2,754 | 2,457 | 578 | 516 | 572 | 415 | **2,748** | **2,356** |
| Newham | 2,841 | 2,535 | 597 | 532 | 550 | 288 | **2,795** | **2,291** |
| Northumberland | 1,556 | 1,451 | 327 | 305 | 314 | 232 | **1,543** | **1,378** |
| Sandwell | 2,828 | 2,523 | 594 | 530 | 510 | 277 | **2,744** | **2,270** |
| Stockton-on-Tees | 1,469 | 1,310 | 308 | 275 | 248 | 149 | **1,408** | **1,184** |
| All | 11,248 | 10,277 | 2,362 | 2,158 | 2,146 | 1,390 | **11,032** | **9,508** |

These results can now be compared with those from Zone Activity (section 2) to give a picture of additionality.

### 3.4. Comparing Removal from Fuel Poverty under BasU, Background, WZ and Total

The tables summarise the results on additionality.

- BasU is as calculated in section 3.1
- WZ FP removal is derived from operational data or estimated as in section 2
- Background FP removal is as described in section 3.3, and Zone total is WZ+BK

**Table A9a: Zone Additionality in Fuel Poverty Reduction - numbers**

| scenario | Removed from FP | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|---|
| BasU | removed BasU yr 1 | 2,754 | 2,841 | 1,556 | 2,828 | 1,469 | 11,248 |
| BasU | removed BasU Yr 2 | 2,457 | 2,535 | 1,451 | 2,523 | 1,310 | 10,277 |
| WZ | WZ removed from FP yr1 | 29 | 158 | 112 | 445 | 1,004 | 1,748 |
| WZ | WZ removed from FP yr2 | 289 | 1,145 | 570 | 1,078 | 1,532 | 4,614 |
| BK | Background removed FP yr1 | 2,748 | 2,795 | 1,543 | 2,744 | 1,408 | 11,032 |
| BK | Background removed yr2 | 2,356 | 2,291 | 1,378 | 2,270 | 1,184 | 9,508 |
| WZ+BK | Zone total removed yr1 | 2,777 | 2,953 | 1,655 | 3,189 | 2,412 | 12,779 |
| WZ+BK | Zone total removed yr2 | 2,644 | 3,436 | 1,948 | 3,348 | 2,716 | 14,122 |

**Table A9b: Zone Additionality in Fuel Poverty Reduction - percentages**

| scenario | Removed from FP | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|---|
| 2001 | No. of FP Households | 27,000 | 27,857 | 21,027 | 27,730 | 14,400 | 118,014 |
| Yr 1 | *% removed BasU* | *10.2%* | *10.2%* | *7.4%* | *10.2%* | *10.2%* | *9.5%* |
| | % removed WZ | 0.1% | 0.6% | 0.5% | 1.6% | 7.0% | 1.5% |
| | % removed Background | 10.2% | 10.0% | 7.3% | 9.9% | 9.8% | 9.3% |
| | % total removed in Zone | 10.3% | 10.6% | 7.9% | 11.5% | 16.7% | 10.8% |
| Yr 2 | *% removed BasU* | *9.1%* | *9.1%* | *6.9%* | *9.1%* | *9.1%* | *8.7%* |
| | % removed WZ | 1.1% | 4.1% | 2.7% | 3.9% | 10.6% | 3.9% |
| | % removed Background | 8.7% | 8.2% | 6.6% | 8.2% | 8.2% | 8.1% |
| | % total removed in Zone | 9.8% | 12.3% | 9.3% | 12.1% | 18.9% | 12.0% |

The ideal comparison would be to look at Warm Zones fuel poverty reduction compared o the fuel poverty reduction through business as usual (BasU) energy efficiency work across the whole pilot area, particularly when Zone programmes have finally been completed. However, this is not a fair comparison until Zone tasks have been complete, which was not the case at the end of March 03.

The approach adopted here takes the incompleteness of programmes into account:

**Additionality 1:** the factor by which fuel poverty reduction facilitated through the Zones has increased total fuel poverty reduction across the whole Zone area, i.e. comparing the WZ scenario with the energy efficiency component of BasU.

This is given by: **(WZ +** BKnz**)/BasU**

In this case, the background rate (BKnZ) is the BasU rate of energy efficiency work applied to the proportion of the pilot area the Warm Zones have not yet reached. As an indicator, additionality 1 focuses on coverage[66] - the extent to which a programme reaches it target population. Other things being equal, a Zone that has covered more ground will have a higher score.

**Additionality 2:** the factor by which fuel poverty reduction from Zone activities has increased total fuel poverty reduction *in the area already assessed by the Zone*, compared with the component of the BasU rate in that area which is due to energy efficiency. This is a sampled version of the "ideal comparison", which cannot be calculated until Zone programmes are complete.

This is given by: **WZ /Bkz**

In this case the background rate (*BKz*) is the BasU rate for the area already assessed by the Zone only.

As an indicator, additionality 2 focuses on effectiveness[32] – the extent to which the programme achieves its objective with the clients it does reach. Other things being equal, a Zone with more effective packages will have a higher score, but coverage is not taken into account.

**Composite Additionality**: is the geometric mean of 1 and 2, appropriate when two factors are interdependent - there is a trade-off between coverage and effectiveness in terms of how thinly resources are spread between cases.

This is given by: √(Additionality 1*Additionality 2)

This procedure assumes that the average fuel poverty reduction under BasU is applicable to the second year. This seems reasonable, since most Zones focussed in year 1 on those areas thought to have the highest concentrations of fuel poverty, and year 2 would therefore be more representative of the mid-range.

Table 10 below gives calculations and results for the second year:

**Table A10: Energy Efficiency FPR additionalities Year 2**

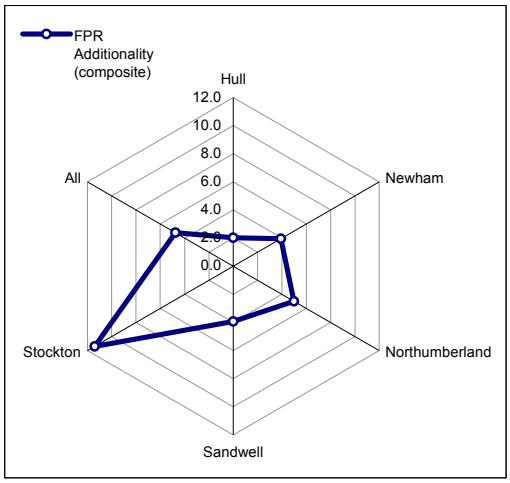
| | | | | | | Additionality 1 | Additionality 2 | Geo.Mean 1&2 |
|---|---|---|---|---|---|---|---|---|
| *Calcs:* | a | b | c | d=a-c | e=b+c | f=e/a | g=b/d | h=√(f*g) |
| **District** | **BasU** | **WZ EE** | **BKnz*** | **BKz*** | **WZ+BKnz** | **(WZ** | **WZ/BKz** | **Geo. Mean** |

[66] Terms taken from the work of Tom Sefton:

| | | | | | | +BKnz)/BasU | | |
|---|---|---|---|---|---|---|---|---|
| Hull | 516 | 289 | 415 | 96 | 703 | **1.36** | **3.01** | **2.03** |
| Newham | 532 | 1,145 | 288 | 203 | 1,434 | **2.69** | **5.65** | **3.90** |
| Northumberland | 305 | 570 | 232 | 60 | 802 | **2.63** | **9.43** | **4.98** |
| Sandwell | 530 | 1,078 | 277 | 178 | 1,355 | **2.56** | **6.06** | **3.94** |
| Stockton | 275 | 1,532 | 149 | 72 | 1,681 | **6.11** | **21.19** | **11.38** |
| All | 2,158 | 4,614 | 1,390 | 571 | 6,004 | **2.78** | **8.08** | **4.74** |
| *focuses on:* | | | | | | *coverage* | *effectiveness* | *composite* |

***BKnz** is the BasU rate of energy efficiency work applied to the proportion of the pilot area the Zone has not yet reached
**BKz** is the BasU rate for the area already assessed by the Zone in the year of analysis.

The **bold** figures show the additionality scores, the number of times by which the Zone is estimated to have increased the rate of fuel poverty reduction. For example, 4.74 (bottom right in table 10) means that, on the composite score in year 2, the rate of fuel poverty reduction in the Warm Zones is estimated to have been 4.74 greater than would have been the case without them without them. This varied from 2 times in Hull, to 11 times in Stockton.




The results are given graphically in the radar chart above. Charts for additionality 1 and 2 are also given in the main text. Table A11 below summarises the results for years 1 and 2 for all measures of additionality.

**Table A11: Fuel Poverty reduction Zone Additionality - summary table**

| | Additionality 1 (coverage) | | Additionality 2 (effectiveness) | | Composite Additionality | |
|---|---|---|---|---|---|---|
| **District** | year 1 | year 2 | year 1 | year 2 | year 1 | year 2 |
| Hull | 1.0 | 1.4 | 4.7 | 3.0 | 2.2 | 2.0 |
| Newham | 1.2 | 2.7 | 3.4 | 5.6 | 2.0 | 3.9 |
| Northumberland | 1.3 | 2.6 | 8.5 | 9.4 | 3.3 | 5.0 |
| Sandwell | 1.6 | 2.6 | 5.3 | 6.1 | 2.9 | 3.9 |
| Stockton | 4.1 | 6.1 | 16.5 | 21.2 | 8.2 | 11.4 |
| All | 1.6 | 2.8 | 8.1 | 8.1 | 3.7 | 4.7 |

## 4. Reference Material: Zone Results Worksheet

| A. Zone Characteristics | Hull | Newham | N'land | Sandwell | Stockton | All WZ |
|---|---|---|---|---|---|---|
| Households | 108,000 | 89,000 | 129,000 | 118,000 | 75,000 | **519,000** |
| Fuel Poor Households | 27,000 | 27,857 | 21,027 | 27,730 | 14,400 | 118,014 |
| inc. SevFP households | 4,531 | 4,624 | 2,854 | 5,699 | 2,169 | 19,878 |
| % Fuel Poor Households in Zone | 25.0% | 31.3% | 16.3% | 23.5% | 19.2% | 22.7% |
| % in severe fuel poverty | 4.2% | 5.2% | 2.2% | 4.8% | 2.9% | |
| % of WZ's Fuel Poverty | 22.9% | 23.6% | 17.8% | 23.5% | 12.2% | 100.0% |
| Warm Zone Costs over second year | £376,890 | £523,684 | £425,354 | £821,040 | £471,450 | £2,094,734 |
| % of total WZ budget | 18.0% | 25.0% | 20.3% | 39.2% | 22.5% | 100.0% |
| Zone additional measures funds | £1,163,000 | £2,480,000 | £1,440,000 | £3,314,000 | £8,997,000 | £17,394,000 |
| % of total additional Zone funds | 7% | 14% | 8% | 19% | 52% | 100% |
| Zone task size | 2.15 | 2.28 | 1.48 | 2.27 | 1 | see sec 4 |
| | | | | | | |
| **B. Zone Activity** | **Hull** | **Newham** | **N'land** | **Sandwell** | **Stockton** | **All WZ** |
| Assessments completed | 15,061 | 23,219 | 25,573 | 39,604 | 19,706 | 123,163 |
| mean SAPpre (FP only) | 47 | 44 | 54 | 40 | 41 | |
| proportion fuel poor | 0.143 | 0.241 | 0.221 | 0.326 | 0.239 | **0.234** |
| ppn severe FP | 0.024 | 0.040 | 0.030 | 0.067 | 0.036 | |
| severe as ppn of FP | 0.168 | 0.166 | 0.136 | 0.206 | 0.151 | |
| hence fuel poor numbers | 2,154 | 5,596 | 5,652 | 12,911 | 4,710 | 31,022 |
| including severe FP numbers | 361 | 929 | 767 | 2,653 | 709 | 5,420 |
| WF (or equiv) referrals | 2,203 | 3,533 | 3,147 | 3,923 | 2,880 | 15,686 |
| WF yield | 0.71 | 0.76 | 0.81 | 0.57 | 0.95 | |
| Warm Front jobs (or equiv) | 1,564 | 2,685 | 2,549 | 2,236 | 2,736 | 11,770 |
| WF ppn in fuel poverty | 0.28 | 0.33 | 0.32 | 0.38 | 0.33 | |
| WF FP ppn remaining | 0.532 | 0.531 | 0.631 | 0.526 | 0.514 | |
| WF (severe) remaining | 0.413 | 0.411 | 0.514 | 0.407 | 0.394 | |
| WF FP numbers removed | **208** | **420** | **304** | **399** | **442** | **1,773** |
| WF severe removed | **44** | **88** | **54** | **103** | **83** | **371** |
| est mean EEC sapdiff | 6.5 | 8.0 | 6.0 | 9.5 | 13.9 | |
| EEC/Regen/PRS etc referrals | 1,391 | 5,950 | 6,488 | 3,674 | 5,833 | |
| EEC/Regen/PRS yield | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | |
| EEC/Regen/PRS etc jobs | 1,252 | 5,355 | 5,839 | 3,307 | 5,250 | 21,002 |
| EEC ppn in fuel poverty | 0.26 | 0.43 | 0.20 | 0.59 | 0.43 | |
| EECetc FP ppn remaining | 0.75 | 0.69 | 0.77 | 0.65 | 0.52 | |
| EECetc (severe) remaining | 0.64 | 0.58 | 0.67 | 0.53 | 0.40 | |
| EECetc FP numbers removed | **81** | **726** | **265** | **679** | **1,091** | **2,841** |
| EECetc severe removed | **19** | **164** | **52** | **185** | **205** | **626** |
| **total jobs** | 2,816 | 8,040 | 8,388 | 5,543 | 7,986 | 32,773 |
| **prop. all Zone jobs** | 0.09 | 0.25 | 0.26 | 0.17 | 0.24 | 1.00 |
| no of FP jobs | 767 | 3,218 | 1,992 | 2,781 | 3,168 | 11,927 |
| removed from FP | **289** | **1,145** | **570** | **1,078** | **1,532** | **4,614** |
| removed from sevFP | **63** | **251** | **107** | **288** | **288** | **997** |
| % of years 50% target FP | ***5.3%*** | ***20.6%*** | ***13.5%*** | ***19.4%*** | ***53.2%*** | ***19.5%*** |

| % of years 50% target sev FP | ***7.0%*** | ***27.2%*** | ***18.7%*** | ***25.3%*** | ***66.4%*** | ***25.1%*** |
|---|---|---|---|---|---|---|
| | | | | | | |
| **C. Aggregate Savings** | **Hull** | **Newham** | **N'land** | **Sandwell** | **Stockton** | **All WZ** |
| weighted mean SAP | 10.4 | 9.8 | 8.3 | 11.1 | 13.8 | 10.6 |
| >C02 CARBON model tonnes pa | 1.3 | 1.2 | 1.1 | 1.4 | 1.6 | |
| >GJ ENERGY model | 22.8 | 22.1 | 20.1 | 23.8 | 27.2 | |
| >RFC FCOST model | 103.7 | 99.5 | 87.7 | 109.1 | 129.1 | |
| tot CO2 tonnes/yr | 3,658 | 10,044 | 9,295 | 7,565 | 12,816 | **43,379** |
| tot Gjyr energy | 64,285 | 177,740 | 168,338 | 131,794 | 217,569 | **759,725** |
| tot fuel costs | 291,895 | 799,930 | 735,930 | 604,894 | 1,031,224 | **3,463,872** |
| | | | | | | |
| **D. Management Ratios** | **Hull** | **Newham** | **N'land** | **Sandwell** | **Stockton** | **All WZ** |
| WZ resources per h/h in Zone | £3.49 | £5.88 | £3.30 | £6.96 | £6.29 | £4.04 |
| WZ resources per FP h/h in Zone | £13.96 | £18.80 | £20.23 | £29.61 | £32.74 | £17.75 |
| WZ cost per assessment | £25.02 | £22.55 | £16.63 | £20.73 | £23.92 | £17.01 |
| WZ on-cost per job | £133.84 | £65.13 | £50.71 | £148.13 | £59.04 | £63.92 |
| WZ on-cost per FP job | £491.23 | £162.71 | £213.48 | £295.22 | £148.81 | £175.62 |
| WZ on-cost per h/h taken out of FP | £1,304.97 | £457.19 | £746.74 | £761.78 | £307.67 | £716 |
| WZ on-cost per SAP point improvement | £12.88 | £6.62 | £6.12 | £13.33 | £4.29 | £6.01 |
| WZ on-cost per £1 req fuel saved p.a. | £1.29 | £0.65 | £0.58 | £1.36 | £0.46 | £0.60 |
| WZ cost per valid WF referral | £240.96 | £195.03 | £166.87 | £367.17 | £172.31 | £228 |
| WZ resources/task difficulty | £175,298 | £229,686 | £287,401 | £361,692 | £471,450 | £305,105 |
| | | | | | | |
| **E. Package Analysis** | **Hull** | **Newham** | **N'land** | **Sandwell** | **Stockton** | **All WZ** |
| Zone delivered package for: | £1,000 | £1,000 | £1,000 | £1,000 | £1,000 | £1,000 |
| package as pptn budget | 0.0027 | 0.0019 | 0.0024 | 0.0012 | 0.0021 | |
| generated additional funds of | £3,086 | £4,736 | £3,385 | £4,036 | £19,084 | £6,865 |
| generated Assessments= | 40 | 44 | 60 | 48 | 42 | 46.9 |
| giving Warm Front* Interventions= | 4.2 | 5.1 | 6.0 | 2.7 | 5.8 | 4.8 |
| with other EE Interventions= | 3.3 | 10.2 | 13.7 | 4.0 | 11.1 | 8.5 |
| h/hs removed from FP= | 0.8 | 2.2 | 1.3 | 1.3 | 3.3 | 1.8 |
| h/h's removed from severe FP= | 0.2 | 0.5 | 0.3 | 0.4 | 0.6 | 0.4 |
| increasing EE by SAP pts: | 77.6 | 151.0 | 163.3 | 75.0 | 233.1 | 140 |
| saving tonnes carbon | 9.7 | 19.2 | 21.9 | 9.2 | 27.2 | 17 |
| saving GJ energy | 170.6 | 339.4 | 395.8 | 160.5 | 461.5 | 306 |
| giving notional fuel cost savings pa of= | £774 | £1,528 | £1,730 | £737 | £2,187 | 1,391 |
| | | | | | | |
| **F. Comparison Ratios Yr 1 and 2** | **Hull** | **Newham** | **N'land** | **Sandwell** | **Stockton** | **All WZ** |
| Cost per assessment Yr 1 | £26.23 | £51.87 | £30.01 | £19.88 | £24.58 | £25.04 |
| Cost per assessment Yr 2 | £25.02 | £22.55 | £16.63 | £20.73 | £23.92 | £21.77 |
| Yr 2 costs as % Yr 1 - assessments | 95% | 43% | 55% | 104% | 97% | 0.8 |
| Cost per intervention Yr 1 | £182.25 | £300.06 | £166.87 | £82.32 | £87.05 | £107.00 |
| Cost per intervention Yr 2 | £133.84 | £65.13 | £50.71 | £148.13 | £59.04 | £91.37 |
| Yr 2 costs as % Yr 1 - interventions | 73% | 22% | 30% | 180% | 68% | 75% |
| Cost per SAP point Yr 1 | £25.32 | £70.27 | £37.67 | £10.35 | £6.81 | £12.02 |
| Cost per SAP point Yr 2 | £12.88 | £6.62 | £6.12 | £13.33 | £4.29 | £6.01 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Yr 2 costs as % Yr 1 - SAP points | 51% | 9% | 16% | 129% | 63% | 54% |
| Cost per WF referral Yr1 | £127.57 | £898.83 | £116.81 | £63.58 | £131.02 | £100.73 |
| Cost per WF referral Yr2 | £240.96 | £195.03 | £166.87 | £367.17 | £172.31 | £228.47 |
| Yr 2 costs as % Yr 1 - WF refs | 189% | 22% | 143% | 577% | 132% | 212% |
| Cost per h/h out of FP Yr 1 | £1,940.59 | £3,045.73 | £2,065.97 | £828.12 | £310.76 | £699.37 |
| Cost per h/h out of FP Yr 2 | £1,304.97 | £457.19 | £746.74 | £761.78 | £307.67 | £715.67 |
| Yr 2 costs as % Yr 1 - h/hs out of FP | 67% | 15% | 36% | 92% | 99% | 62% |
| | | | | | | |
| **G. Comparison Packages Yr 1 and 2** | **Hull** | **Newham** | **N'land** | **Sandwell** | **Stockton** | **All WZ** |
| generated Assessments yr1 | 38 | 19 | 33 | 50 | 41 | 40 |
| generated Assessments yr2 | 40 | 44 | 60 | 48 | 42 | 47 |
| Yr 2 as % Yr 1: | 105% | 230% | 180% | 96% | 103% | 117% |
| giving Warm Front* Interventions yr1= | 8 | 1 | 9 | 16 | 8 | 10 |
| giving Warm Front* Interventions yr2 | 4.2 | 5.1 | 6.0 | 2.7 | 5.8 | 4.8 |
| Yr 2 as % Yr 1: | 53% | 461% | 70% | 17% | 76% | 48% |
| h/hs removed from FP yr1 | 0.52 | 0.33 | 0.48 | 1.21 | 3.22 | 1.43 |
| h/hs removed from FP yr2 | 0.77 | 2.19 | 1.34 | 1.31 | 3.25 | 1.77 |
| Yr 2 as % Yr 1: | 149% | 666% | 277% | 109% | 101% | 124% |
| h/h's removed from severe FP yr1 | 0.17 | 0.05 | 0.00 | 0.55 | 0.42 | 0.32 |
| h/h's removed from severe FP yr2 | 0.17 | 0.48 | 0.25 | 0.35 | 0.61 | 0.37 |
| Yr 2 as % Yr 1: | 100% | 925% | 15545% | 64% | 146% | 118% |
| increasing EE by SAP pts yr1 | 39 | 14 | 27 | 97 | 147 | 83 |
| increasing EE by SAP pts yr2 | 77.6 | 151.0 | 163.3 | 75.0 | 233.1 | 140.0 |
| Yr 2 as % Yr 1: | 197% | 1061% | 615% | 78% | 159% | 168% |
| giving fuel savings pa of yr1 | £414 | £154 | £288 | £1,003 | £1,411 | £838 |
| giving fuel savings pa of yr2 | £774 | £1,528 | £1,730 | £737 | £2,187 | £1,391 |
| Yr 2 as % Yr 1: | 187% | 993% | 600% | 73% | 155% | 166% |

: