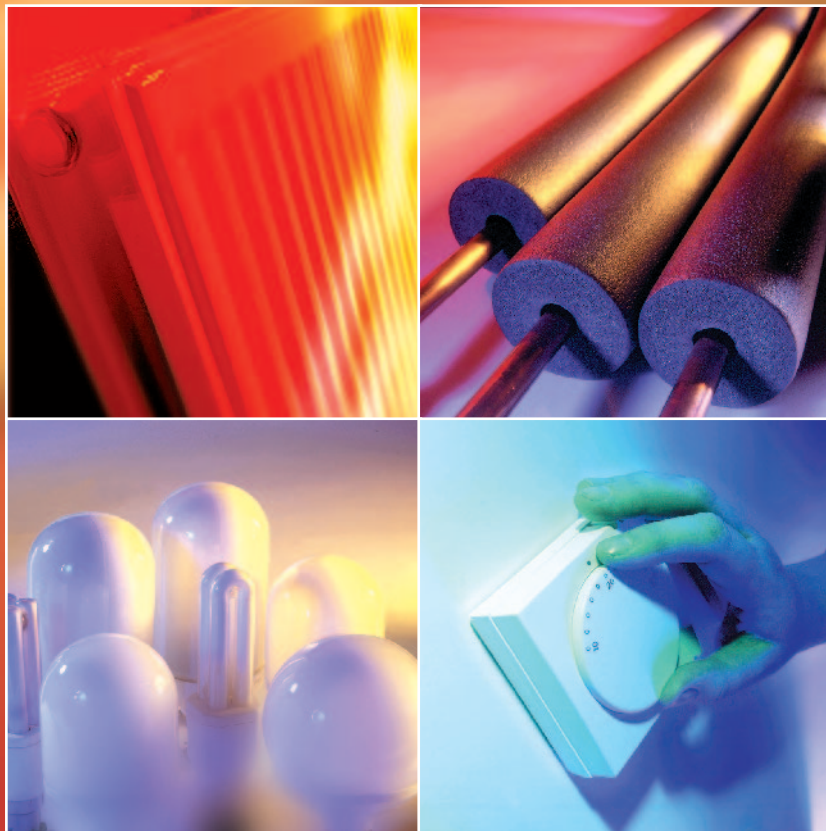




Home Energy Conservation Progress Report



2005-2007

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1. INTRODUCTION

The Home Energy Conservation Act 1995 requires Angus Council to report at regular intervals on improvements made to energy efficiency across all sectors of the Angus housing stock, and to compare actual progress against the targets set out in the original HECA strategy of November 1997.

This is the fifth and final such progress report, and covers the period from 1 April 2005 to 31 March 2007.

2. AIMS AND ORGANISATION

2.1 Energy Efficiency Improvement Targets

Angus Council's original HECA strategy set targets of 31% energy savings, and 28% carbon dioxide reduction by the year 2007. These targets are set out in Figure 2.1 below, along with the figures achieved at the end of the ten year period (calculated using the HECA spreadsheet).

Figure 2.1 - Original HECA Strategy Targets, and Savings Achieved.

Measure	% of potential dwellings with measure at 1997	Proposed % of potential dwellings with measure by 2007	Actual % of dwellings with measure at 2007
Hot water tank insulation	90%	95%	94%
Draught-stripping	53%	95%	79%
Cavity wall insulation	31%	75%	61%
Loft insulation	70%	98%	83%
Double glazing	53%	90%	85%
Improvement of heating systems	0%	50%	42%
Low energy lights and appliances	5%	75%	50%
Improvements in behavioural patterns	0%	30%	N/A

2.2 Local Aims and Achievements

In the original HECA Strategy a number of local targets were set out and these are noted below in figure 2.2 with corresponding notes regarding actual achievement.

Figure 2.2 - Local targets set for December 2006

Objective	Planned Method of Achievement	Achieved	Notes
Property database expanded as technology advances	Housing Department to liaise with IT department	Yes	Database on council properties fully populated and updated continuously.
Active targeting of individual low efficiency dwellings and developments	Use of database to highlight badly insulated properties	Yes	Database used to identify Specific properties for insulation and heating improvements
Schools expanding energy issues throughout environmental science syllabus	Recognition throughout education establishment of the importance of energy issues	Yes	Energy efficiency and climate change now core issues within curriculum
All Housing Association staff trained	Training provided by local energy advice centres (EEAC's)	Yes	Energy efficiency training sessions provided by Angus Council and EEAC's
Interactive web site updated in line with technology	Advances in the internet system allowing faster and more diverse applications of information	Yes	Energy efficiency information available on Council website
Eco building operating and running demonstrations	Council and private sector partnerships funding building costs and liaison with education for training	Yes	Eco buildings in Tayside available for educational visits and new eco visitor centre on site at Glen Doll.
Innovatory technology research schemes operating	Council and University research partnership	Yes	Council piloting renewable technology in partnership with utilities and Scottish Government
Private and Public Sector networks inter-linked	Energy issues high on the agenda at all relevant meetings and working to common goal	Yes	Energy and climate change a high priority consideration in all strategies
Private finance funding major works	Liaison with Government and private sector	Yes	Developers now moving towards using the code for sustainable homes
Private sector sponsoring individual measures	Liaison with network contacts	Yes	EEC scheme has funded many energy efficiency measures
All house sales incorporating energy ratings in marketing	National acceptance of domestic energy rating by public	Yes	Energy Performance Certificates being introduced for house sales
Average NHER up to 6.0	Insulation targets reached	Partly	Results of Scottish House Condition Survey awaited
30% reduction in energy use	Energy saving targets reached and education of the public ongoing	Partly	20% saving achieved
Average Carbon Dioxide emissions reduced to 9.5 tonnes per year per dwelling	Higher efficiency, less fuel burned	No	Approximate average carbon emissions of 10 tonnes per dwelling achieved

2.3 Organisation

HECA activities in Angus are co-ordinated by the Technical Officer in the Technical Section of Housing within Neighbourhood Services (the lead department). The Technical Officer is assisted by a full time Home Energy Management Officer, who advises householders across Angus on energy efficiency and fuel poverty issues, irrespective of tenure.

Responsibility for overseeing the work currently lies with the Neighbourhood Services Committee, but many projects have been particularly effective because of the successful

working relationship that Housing have with colleagues in Building Control, Community Services, Education, Environmental & Consumer Protection, Planning, Property Services and Social Work and Health.

Energy efficiency is a core part of Angus Council's environment strategy and is also integral to the strategy for ensuring that the Council's own housing stock meets the Scottish Housing Quality Standard (SHQS) by 2015. Other crucial mechanisms for delivering savings have been the Local Housing Strategy, the Community Plan, and the Angus Joint Health Improvement Plan. Activities under the HECA strategy are also being taken forward in tandem with the Fuel Poverty Strategy.

2.4 Partnerships

Angus Council has continued to deliver energy efficiency improvements in partnership with a number of organisations. Figure 2.4 below provides a summary:

Figure 2.4: summary of partnerships

Project	Partner	Summary	Number of Households
Energy Efficiency Commitment (EEC)	British Gas	Provision of low energy light bulbs (CFL's)	1000
EEC	E-ON	Provision of CFL's & power down units	2000
RSPA	Scottish Government SCARF	Grant for services in rural areas. Woodfuel heating systems for private rented families in fuel poverty	4
Community energy days	SCARF, EAGA, Energy Watch	Promotion & energy advice for householders	200
Health Improvement Learning Zone	SCARF. NHS Scotland COSLA	Awareness training for health professionals within Angus Hospitals and health centres	150

2.5 Monitoring

Angus Council's own housing stock is monitored through its stock improvement programmes and this process has been enhanced by making maximum use of the full stock database, which holds comprehensive information on all of the council's 8100 houses. This enables the Housing Division to identify council properties that are in need of upgrade of any particular element, such

as loft insulation, heating and so on. This means that all relevant properties are included in improvement work, and that it is possible to analyse the data on any specific property based item, to ensure that investment is targeted at the highest priority need.

Monitoring of the non council stock is less easy: information is available from Housing Associations on their stock through their delivery plans for meeting the Scottish Housing Quality Standard. However, figures for the owner-occupier and private rented sectors are scant. Information can be sourced from local Warm Deal installers, Planning and Building Control, and Angus Care and Repair; but the major problem is how to collate the information, and then how to keep it up to date. The registration of private landlords has provided a vehicle for encouraging and monitoring energy efficiency improvements in the private rented sector. Angus Council has used this mechanism to find out more about the standard of properties, and to direct grant money at private rented tenants in fuel poverty in the rural area.

Otherwise, monitoring of the national situation is achieved by utilising the results of the Scottish House Condition Survey, by playing an active role in the Scottish HECA officers network (SHON), and by consulting with established partners across Scotland.

3. PROGRESS TO DATE

3.1 Energy Efficiency Improvement Results

Figure 3.1 below shows the calculated improvement in domestic energy efficiency in Angus for the period 1 April 1997 to 31 March 2007, calculated by using the Communities Scotland HECA 2007 spreadsheet.

Figure 3.1 - Results - HECA Progress Spreadsheet - Comparison: April 1997 to March 2007

	April 1997 Base Data		31 March 2005 Results		31 March 2007 Results	
Total number of dwellings	48254		48254		48254	
Summary of Current State	Potential	% of potential to which measure applied	Potential	% of potential to which measure applied	Potential	% of potential to which measure applied
Hot water tank insulation	45310	90%	43724	94%	43322	94%
Draught stripping (>39%)	48254	53%	48254	77%	48254	79%
Cavity wall insulation	32403	31%	32403	56%	32403	61%
Loft insulation (100mm or more)	35251	70%	35251	81%	35251	83%
Double glazing	48254		48254		48254	
Full House		43%		69%		73%
Half House		10%		15%		15%
Heating Systems	48254		48254		48254	
Condensing Boilers		0%		7%		30%
Central heating (< = 12 years old)		51%		84%		63%
Central heating (> 12 years old)		29%		5%		5%
Room Heaters		20%		4%		2%
Improvement Summary: Tenure	Nominal energy use (GJ)	Nominal CO² emissions (tonnes)	Nominal energy use (GJ)	Nominal CO² emissions (tonnes)	Nominal energy use (GJ)	Nominal CO² emissions (tonnes)
Owner-Occupied	3,786,355	264,288	3,307,998	227,153	3107018	216115
Local Authority	900,739	70,521	680,390	50,732	638249	45576
Private Rented	478,273	39,220	434,130	35,116	428187	34986
Other (inc. Housing Associations)	195,820	14,209	152,366	10,887	143158	9585
Aggregate Total	5,361,187	388,238	4,574,884	323,888	4,316,612	306,262
				-Additional measures	-31402	-7.7
				Total	4,285,210	306,262
					Change in Nominal energy use (GJ)	Change in Nominal CO² emissions (tonnes)
Total Change (1997 - 2007)					-1,075,977	-81,984
Percentage Change (1997 - 2007)					-20.07%	-21.12%
Incremental change (2005-2007)					-289,674	-17,634
Incremental percentage change (2005-2007)					-6.33%	-5.44%

3.2 Measures – Works/Grants/Information and Publicity

Angus Council obviously has specific information on works completed in its own properties. There is however, insufficient information on energy efficiency improvements in the private sector and in the private rented sector, so these are not included in this section. Information is available on the number of Angus householders benefiting from insulation measures and heating through the Scottish Executive's Warm Deal and Central Heating Grant, and for the purposes of the HECA spreadsheet these figures are already built in to the spreadsheet formula. The information has therefore not been specifically included in the report, but it is assumed that the figures are accurately represented in the results derived from the spreadsheet.

Energy efficiency measures on the Council-owned stock form part of ongoing major improvement programmes designed to ensure that all properties comply with the Scottish Housing Quality Standard (SHQS) by 2015. The main areas of work concerning energy saving in the two year period have been installation of whole house heating systems and upgrade of existing central heating with condensing boilers; external insulation; internal insulation (as part of kitchen replacements) and external door replacements. Where complete modernisations take place, all appropriate measures are included in the operation but in general, measures are installed in specific contracts. Figure 3.2 shows the number of properties receiving these measures between April 2005 to March 2007 and the corresponding costs.

Many improvements have also been made by the Housing Associations to their properties and like the Council, energy efficiency measures form part of a package of upgrades designed to meet the SHQS.

Figure 3.2- Measures installed in Local Authority stock 2005 - 2007

Measure	Number completed April 2005 to March 2007	Cost £
Double glazing	4	20,000
Whole house heating replacement	400	2,000,000
Heating upgrade with condensing boiler	1000	2,000,000
External insulation	20	150,000
Internal insulation (part)	500	50,000
Loft insulation top-ups	50	2,000
Cavity insulation	20	10,000
New Tanks with high insulation	1400	700,000
External door replacement	1000	1,000,000
	Total Cost	£5,932,000

During this period, Angus Council worked with several partners to aid funding of measures and awareness raising (see also figure 2.4).

Training and advice sessions were held with various organisations such as the Child and Family centre, church groups, pensioner groups, and criminal justice groups. The Council also carried out a project in partnership with NHS Scotland and COSLA which provided training for health professionals in all Angus hospitals. The training was delivered within the hospital working environment to minimise the time staff were away from their core duties.

Angus Council worked with registered private landlords by directing funds from the Rural Services Priority Grant to provide efficient woodfuel central heating systems for 4 families in fuel poverty. The project was designed to encourage registered private landlords to improve the standard of their rented accommodation, and to help kick-start a sustainable woodfuel industry in Angus.

Energy efficiency publicity events were held in local communities and promoted through various articles in local press, and tenant newsletters. Some 12000 compact fluorescent lights (CFL's), supplied by British Gas and E-ON, were distributed to approximately 3000 houses in the two-year period as follows:

- Energy efficiency Community events in Forfar and Montrose
- Work with Eco Schools and other school advice events
- Distributed with the Community meals service
- Fuel Poverty Training – distributed at training events and supply given to various health and social work professionals to distribute as necessary
- Supplies to Angus Care and Repair as required
- Supplies to Housing Associations across Angus
- Change of Tenancy – new Council tenants receive 4 CFL's when signing for a property
- Council Heating and rewiring contracts – 4 CFL's provided to each tenant
- Referral Network – distributed to all Angus residents who have been visited by the Home Energy Management Officer

These were in addition to increased sales of the light bulbs at local retailers, and also to the light bulbs supplied direct to customers by the power companies.

A core element of the promotional work has been the co-ordinated approach that Angus has taken with its neighbouring authorities (Moray Council, Aberdeenshire Council, Aberdeen City Council, Dundee City Council, Perth & Kinross Council), and with the local energy efficiency advice centre, SCARF.

3.3 Outputs from the Measures

Cost

As can be seen from figure 3.2 the total cost of energy efficiency measures in local authority stock was some £5.9 million for the two years in question. The level of spending across other tenures is unknown.

Fuel and CO²

Using the HECA 2007 spreadsheet calculation, a 6.3% reduction in domestic energy use has been calculated for the two-year period, with a reduction in carbon dioxide emissions of 5.4%. For the total ten-year period since the original HECA report in 1997 there has been a 20.1% reduction in domestic energy use, and a 21.1% reduction in carbon dioxide emissions. The incremental reduction in this period has been slightly higher than in the previous period.

Because the HECA results are calculated from base data in 1997, the scope for improvement over the ten years since, is very much dependant on the quality of the Housing stock at the beginning of the exercise (ie: how efficient the houses were already in 1997). As the Housing stock in Angus was already of a relatively high quality, there has only been limited room for improvement. This is especially the case with public sector Housing where both the Council's own stock, and that of the Housing Associations, already had high levels of cavity wall insulation, and reasonable levels of loft, tank and pipe insulation. Double glazing was already widespread and new central Heating was also common.

This meant that many of the simple energy efficiency improvements that could feasibly be carried out to the public sector stock had already been done before the HECA exercise began, and most, if not all of them, have now been completed. Indeed, over 85% of the Council stock now has a National Home Energy Rating (NHER) score of over 5 (on a scale of 1-10). This only leaves narrow scope for future improvement, such as the completion of the change to using condensing boilers, some more internal and external insulation as funds allow (this is a very expensive measure), and the increased use of renewable energy technology where appropriate.

The spreadsheet does not allow for changes in housing numbers, either for demolition of old inefficient stock, or for the high numbers of more efficient new build. Nor does it cater for the increase in sales of computer and audio visual equipment, and domestic appliances.

This means that although the spreadsheet calculation shows that there has only been an overall 20.1% reduction in energy use in Angus, this does not mean that any other region is better or worse in terms of either the amount of domestic energy being used, or the savings obtained. It merely calls into question the validity of the exercise. It is hoped that a more appropriate way of assessing the energy efficiency of the Housing stock (such as using the NHER or total domestic fuel use statistics from the utility companies) will be one of the objectives of a national energy efficiency strategy for Scotland.

Employment

The investment by Angus Council has obviously had a positive impact on employment. One person per year of work is generally created or sustained by £40,000 stock investment. £5.9 million has therefore enabled approximately 148 units of one-year employment. It is unlikely, however, that these have been 'created'; but rather, the investment has helped to sustain existing employment in the construction industry.

Similar support for local employment will have been provided by the Housing Associations through their investment in improvement projects, but these figures have not been quantified.

Average Cost Savings

The modest reduction in energy use in the two-year period means that the stock is continuing to become more efficient, and the average cost saving per household is in the order of £48. As stated in previous reports however, investment in energy efficiency does not necessarily equate to corresponding energy savings - householders often choose a greater level of comfort instead. There has also been an increase in the use of electrical appliances whilst any previous cost savings derived as a result of competition in the de-regulated energy market have been more than offset by large increases in fuel prices. Paradoxically, this may encourage householders to become more prudent with their use of energy, whilst at the same time causing an increase in fuel poverty.

4. PERSONAL CIRCUMSTANCES

Angus Council has a Fuel Poverty Strategy, which seeks to identify fuel poor households, address the causes, and monitor progress.

4.1 Fuel Poverty Strategy Objectives

The objective is to eradicate fuel poverty in Angus, as far as is reasonably practical, by 2016. To achieve this, the Council has the following aims:

- Aim 1:** To identify and target vulnerable households most in need of help

- Aim 2:** To maximise physical measures, allowing Angus householders the opportunity to live in warm and healthy homes, which are energy efficient, and free from condensation and damp

- Aim 3:** To raise awareness of fuel poverty and energy efficiency issues

- Aim 4:** To provide access to quality energy advice

- Aim 5:** To maximise income in Angus through advice, education and economic development

- Aim 6:** To provide access to advice on fuel supply, tariffs and payment methods

Extensive time and resources have been invested in establishing an on-going training programme for front line health, housing and social work professionals, as well as those from the voluntary sector. This has helped to create a successful Fuel Poverty referral network within Angus. For further information on both the training and the referral network please refer to the Fuel Poverty Strategy.

5. LOOKING FORWARD

Angus Council's original HECA report suggested that a target of 30% energy savings by 2007 was achievable. The HECA 2007 spreadsheet shows us that a total reduction of 20.1% has been achieved.

Angus Council's method for achieving efficiency savings in future years will be to concentrate on promotion and awareness raising activities in the private sector and private rented sector. In collaboration with its partners, Angus Council will work closely with private sector landlords to encourage them to carry out energy efficiency improvements to their properties, and the council is investigating new ways of funding work in this sector, as well as with owner-occupiers. In particular the Council is working more closely with the health sector to ensure that health problems associated with poor housing can be identified at an early stage so that preventative measures can be facilitated, in the form of insulation and improvements to heating systems. This not only improves energy efficiency, but also reduces costs to the health service if intervention is made early enough.

At the same time the Council will ensure that its own stock is continually improved through central heating upgrade programmes etc, so that not only will the stock meet the Scottish Housing Quality Standard, but it will go further, and meet the higher Angus Council Standard. This has been developed in partnership with the Council's tenants as a direct response to their preferences and requirements.

The intention is to reduce inequalities and social exclusion by facilitating the opportunity for all householders to enjoy the same standards of accommodation, as set out in the Scottish Housing Quality Standard.

6. SUMMARY

Reductions of 5.4% in carbon dioxide emissions and 6.3% in domestic fuel use in Angus for the fifth two-year period are once again modest achievements. Although this means that the 30% savings target for the full ten year period of the strategy has not been met, the 20% reduction achieved for the ten years is reasonable, given that Angus has a large number of rural properties which present unique challenges in terms of energy efficiency improvements. Although the ten year period of the HECA strategy has run its full term, Angus Council will ensure that progress steadily continues. Work will be focused on the private sector, as most cost effective energy efficiency improvements to the social housing stock have now been completed. A full summary of outputs for the two-year period 1st April 2005 – 31st March 2007 is shown in figure 6.1 below.

Figure 6.1: Summary of outputs 1st April 2005 – 31st March 2007

Energy efficiency improvement	6.3%
Reduction in CO2 emissions	5.4%
Reduction in CO2 emissions	17.6 kilotonnes
Cost of works (local authority only)	£5.9 million
Number of dwellings benefiting (local authority only)	4000
Number of 1 year units of employment created (local authority works only)	148
Average savings in kilowatt hours	1669 kWh
Average savings in fuel bills	£48

7. CONTACTS

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