Chapter 26

Department of Communications, Energy and Natural Resources

Energy Programmes

Energy Programmes

26.1 The Department of Communications, Energy and Natural Resources (DCENR) is responsible for policy related to Ireland's energy management and provision. Its objectives include promoting, through targeted assistance, better energy efficiency and greater use of renewable technologies in both the domestic and non-domestic sectors. It spent €81 million on energy initiatives in 2009 (€68 million in 2008).

Delivery Mechanisms

26.2 DCENR funds Ireland's national energy agency, the Sustainable Energy Authority of Ireland (SEAI) and its functions include the management of schemes aimed at promoting the deployment of energy technologies and raising awareness of energy efficiency by providing information, advice and publicity on best practice in the energy environment.

Chapter Focus

The residential sector accounts for more than 24% of final energy consumption. Three schemes were reviewed in the course of audit – two under the sustainable energy programme and one under the energy research programme. These schemes were

- Warmer Homes
- Greener Homes
- House of Tomorrow.

The three energy schemes were reviewed in order to assess

- whether the financial assistance provided had been properly controlled
- how the schemes were administered including the output and performance under each scheme and the extent to which the schemes had been evaluated.

26.3 These schemes are designed to implement part of Ireland's sustainable energy policy, which is focused on a combination of improved energy efficiency and the wider exploitation of renewable energy. Annex A outlines the schemes that focus on improving energy efficiency.

Financial Control of Schemes

26.4 Since their inception, the three schemes had a cumulative spend of €120 million up to 31 December 2009 as indicated in Figure 131.

Figure 131 Expenditure on Schemes Reviewed

Scheme	Year Established	Cumulative Expenditure to end 2009[a]
		€m
Warmer Homes	**2003**	26.03
Greener Homes	**2006**	66.91
House of Tomorrow	**2001**	27.12
Total Expenditure		**120.06**

Source: SEAI

Note:

a 2009 data is provisional

26.5 As part of this examination a sample of transactions for each of the three schemes was reviewed to ensure that

- the details on application form agree to supporting documentation
- the applicant met all the scheme conditions and had entitlement to the grant
- the approval function for payment was reserved to an appropriate level of management
- payments agreed with the financial records
- payments were recorded and reported under the correct headings
- payments and invoices were recorded in the correct accounting period.

The audit found that the foregoing controls were in place and the payments were duly processed.

Scheme Administration

Warmer Homes Scheme

26.6 It was estimated in 2001 that approximately 62,000 householders in Ireland were living in persistent energy poverty and that a further 165,000 were experiencing intermittent energy poverty[197]. Energy poverty is an inability to heat one's home to an adequate (safe and comfortable) temperature owing to low income and energy inefficient housing [198].

26.7 In an effort to address this, a Low Income Housing Programme had commenced in the 1990s, administered by SEAI using community-based organisations supported by Community Employment, Social Economy and Job Initiative Schemes. In 2003, this programme was

197 The Fitzpatrick Report – A Review of Energy Poverty and Low Income Housing, November 2003 (Fitzpatrick Associates)

198 Clinch and Healy – Alleviating Fuel Poverty in Ireland : A Program for the 21st Century.

incorporated into the Warmer Homes Scheme. The Warmer Homes Scheme was established as a result of the recommendations in the Fitzpatrick Report[199].

Basis and Objectives of the Scheme

26.8 The Warmer Homes Scheme provides funding for the installation of energy efficient measures in households that are unable to afford the associated capital investment. The main objectives of the scheme were to

- improve the energy efficiency and comfort conditions of homes built prior to 2002 in private ownership and experiencing energy poverty
- establish the systems and grow the capacity in Ireland to install such measures.

Implementation Arrangements

26.9 The scheme is primarily administered by SEAI though 22 charitable or non-profit Community Based Organisations.

Community Based Organisations

Community Based Organisations (CBOs) are diverse in terms of method of operation, and funding. Usually, they tend to provide opportunities for long term unemployed, through Community Employment Schemes, to be trained and employed in the installation of energy products. CBO's receive funding from a number of sources including FÁS, local authorities and other Departments.

Delivery organisations are chosen by SEAI following assessment under criteria such as

- whether they have a successful track record in delivering energy or similar measures
- whether they have the technical knowledge and would be able to commit to the standards and training requirement of SEAI
- whether they can obtain funding from other sources to cover labour and overhead costs
- whether they reside in an area, that requires the service.

In practice, insulation, draft proofing and lagging of hot water cylinders are the usual type of work. Funding is drawn down in instalments based on actual activity.

26.10 The CBO assesses the householder taking into consideration factors such as income, circumstances and age of the members of the household. The primary eligibility criterion is that the household is in receipt of a fuel allowance from the Department of Social Protection (DSP), combined with owing a property built prior to 2002. When a householder is deemed eligible for a grant and the dwelling is suitable for measures required, the work is carried out by the CBO. Prior to 2010, the householder made a small monetary contribution to the CBO in certain cases.

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199 The Fitzpatrick Report – A Review of Energy Poverty and Low Income Housing, November 2003 (Fitzpatrick Associates)

Outturn and Cost

26.11 Between 2003 and December 2009, 32,591 households had benefited under this scheme. SEAI has stated that the pace of expansion of the scheme in programme delivery and impact has been determined by annual budget allocations.

26.12 The total planned investment for this scheme from 2003 to the end of 2009 was €27.5 million. This compares to expenditure of €26 million in the same period. Planned costs, outturn and household numbers for the scheme is set out in Figure 132.

Figure 132 Planned Costs, Outturn and Household Numbers for the Scheme 2003-2009

	2003	2004	2005	2006	2007	2008	2009[a]	Total to end 2009
Planned Costs (€m)	0.90	0.85	1.55	1.70	2.50	5.00	15.00	**27.50**
Outturn (€m)	0.79	0.95	1.42	2.00	2.40	5.69	12.78	**26.03**
Households Assisted	**1,768**	**1,947**	**1,813**	**2,102**	**3,378**	**5,343**	**16,240**	**32,591**

Source: SEAI

Note:

a 2009 data is provisional

Administration of the Scheme

26.13 Each CBO submits payment documentation to SEAI and is paid in due course. All CBO's are audited by SEAI to ensure that documentation submitted is accurate and correct. The audits also check that the CBO is complying with SEAI terms such as insurance and data administration. The CBO's update a national database held by SEAI over the internet giving details of the number of households that have been assisted, measures installed, costs, the source of the original application, geographical location and the installers name. This database is owned by SEAI and validated by an independent agency (the energy grants agency)[200].

26.14 The energy grants agency carries out inspections on behalf of SEAI after grant-aided installation work has been done. The energy grants agency has set a target inspection rate of between 10% to 15% of sites. In 2009, this inspection process and related services (including call centre maintenance and administrative support) cost SEAI €553,000. As part of its contract with SEAI, the energy grants agency also carries out customer satisfaction surveys. Feedback from the inspection process and the customer satisfaction surveys are used to gauge customer satisfaction. SEAI has reported that satisfaction levels are high with the scheme.

[200] Following a tendering competition, SEAI contracted out the quality aspects of the work to an agency. This agency was established in 1990 in the UK as a privately owned company to lead UK Government funding efforts to improve the living conditions of vulnerable people living in cold, damp and energy inefficient homes. In 2007, this agency became the principal contractor, or managing agent, for energy efficiency schemes such as Warm Homes (in Northern Ireland), Warm Front (in England) and HEES (in Wales).

26.15 The energy grants agency reports monthly in relation to

- the number of houses where work has been completed in the month and cumulatively
- the type of activity carried out
- the spend by each CBO
- the number of quality control inspections and their outcomes.

Warmer Homes Scheme Plus

In 2009, as a result of additional funding provided by the DCENR, the Warmer Homes Scheme was expanded. This expansion of the scheme provides for wider geographical coverage as some areas were outside the existing CBO network and increases the number of measures available to include interventions such as central heating and dry lining. This expansion in scheme delivery was achieved by appointing a panel of private contractors through public procurement.

Of the 16,240 homes completed under the Warmer Homes Scheme in 2009, 12,669 homes were delivered by CBO's and 3,571 were delivered through private contractors. 219 of these availed of measures only available as a result of the expansion of the scheme.

According to SEAI, in 2010 full national coverage for the scheme is now available.

Under the inspection process for the Warmer Homes Scheme, it was noted that inspection results were very poor for the private contractors at the start of the rollout of the expanded scheme. According to SEAI, this was not unexpected, as contractors were adjusting to SEAI's technical specifications and workshops were only done after the panel of contractors was established for a while. According to SEAI, by July 2010, inspection pass rates have reached on average 92%.

Outcomes and Evaluation

26.16 To date no external evaluation of this project has been carried out. The scheme would benefit from evaluation at this stage of its development, including an examination of the extent to which it has achieved its stated objectives of

- improving the energy efficiency and comfort conditions of targeted households in energy poverty
- establishing the systems and grow the capacity in Ireland to install energy efficiency measures.

26.17 It was not clear whether the scheme removed households assisted under the scheme from energy poverty as SEAI does not measure the impact of the scheme on the energy efficiency of grant aided households. In November 2008, the Economic and Social Research Institute (ESRI) estimated that between 68,000 and 301,000 households are in some form of energy poverty. However, a methodology to define and identify these households has not yet been established. While household's entitlement to fuel allowance is a key criterion for eligibility to a Warmer Homes grant, to achieve maximum impact the scheme needs to actively target persons in receipt of fuel allowance. A mail shot to 20,000 homes during 2009 for the purpose of making fuel allowance recipients aware of the Warmer Homes Scheme is an encouraging initiative in this regard.

26.18 A new Energy Affordability Strategy is being drawn up by the DCENR, DSP and SEAI. It is understood that a first draft of the Strategy will be ready in Autumn 2010.

Greener Homes

26.19 The Greener Homes Scheme provides grants for the installation of certain renewable energy technologies. It commenced in 2006 with a planned duration of five years.

Basis and Objectives of the Scheme

26.20 Installations in this category can include solar heating panels, heat pumps, wood chip\pellet stoves\boilers and wood gasification boilers.

26.21 The level of grant support varies from €800 to €3,500 per installation. An installer registered with SEAI must carry out installations. These installers have received qualifications under training schemes approved by FETAC[201].

26.22 The objectives of this scheme are to

- increase the number of households in Ireland that use renewable energy heating
- guide consumers and enhance awareness of renewable energy heating choices
- ensure that the market for the products,[202] services[203] and fuel[204] continues to develop in a robust manner
- decrease Ireland's reliance on imports of fossil fuels
- benefit the environment by reducing emissions of carbon dioxide.

Implementation Arrangements

26.23 Applicants apply directly to SEAI for a grant. When they receive SEAI approval they may then proceed with the installation. The applicant hires an installer. The installer carries out the work and certifies that work performed meets the required standards. Payments are made directly to the applicants on foot of documented claims and installer's certification.

Outturn and Costs

26.24 The budget for the Greener Homes Scheme for the period 2006-2010 was set at €27 million. The budget allocation was increased to €57 million in 2007 to take account of higher than anticipated demand levels. In 2009, the budget allocation for the scheme is €68 million. As at the end of 2009 a total of €67 million had been spent. Planned costs, outturn and number of installations for the scheme for 2006-2009 are set out in Figure 133.

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201 Further Education Training and Awards Council (FETAC) is the national awarding body for further education and training in Ireland.

202 Products that are deemed eligible under the scheme are renewable energy based heating systems under the following categories – solar heating, heat pumps, wood chip or pellet stoves or wood chip and pellet boilers and wood gasification boilers.

203 Services, in this case relates to installers and supplier of products.

204 For this scheme, the fuels are wood pellets and wood chips.

Figure 133 Planned Costs, Outturn and Number of Installations for the Scheme 2006-2009

	2006	2007	2008	2009[a]	Total to end 2009
	€m	€m	€m	€m	€m
Planned Costs	4.90	28.20	22.50	12.35	**67.95**
Outturn	5.04	27.67	22.55	11.65	**66.91**
Number of Installations	**1,338**	**8,387**	**9,643**	**7,311**	**26,679**

Source: SEAI

Note:

a 2009 data is provisional

Administration of the Scheme

26.25 Following installation, SEAI inspects the appliances and systems installed. In 2006, it was planned that 10% of installations were to be inspected each year by SEAI inspectors. Currently, the inspections are picked randomly or as a result of complaints or if the installer is new. At December 2009, 2,255 inspections had been completed which represents 8.5% of all installations. Inspections found that 1,477 installations or 65% of all work inspected required a revisit and resolution by the installer. The result of these inspections is outlined in Figure 134.

Figure 134 Inspections and Severity Levels of Issues

	2006	2007	2008	2009	Total to end 2009
Level 1[a]	21	81	105	36	**243**
Level 2[b]	124	419	399	292	**1,234**
Level 3[c]	31	125	126	131	**413**
No Issues	-	116	134	115	**365**
	176	**741**	**764**	**574**	**2,255**

Source: SEAI

Notes:

a Potential Health and Safety Risk and require a return visit.

b Matters that have the capacity to impact the performance of the system and require a return visit.

c Issues that are identified to the installer for future reference but do not require a return visit.

26.26 Since this level of revisits suggest that there is a need to address the quality of installation, I sought the views of SEAI. SEAI stated that it considered that the level of rework required was not unexpected given the approach taken to inspection generally under SEAI programmes and the known risks in the national policy drive to introduce innovative or unfamiliar systems into a traditionally unregulated domestic market. It said that, in the first instance, inspections were against very high standards set by SEAI. For this reason, a requirement for rework did not necessarily represent a poor or bad installation. Also secondly, the approach taken to inspection was a risk-focussed approach. The criteria/information that inform the selection of sites or installers for inspection included complaints, installers that are newly registered as well as a random selection. This regime would automatically mean that results would be biased toward lower performance.

26.27 SEAI stated that the results of inspections since the launch of the programme had fed into training programmes, continuous development workshops for installers, newsletters for installers identifying common reasons for rework and identifying remedies. Combined with the introduction of mandatory training in 2008, this had led to a reduction in the level of rework following inspections in later years of the scheme.

26.28 One of the key purposes of the robust inspection regime operated by SEAI was to ensure that the domestic renewable market develops with the correct standards and quality. The common reasons for reworks were collated and used to assist installers to achieve best practice in their installation works. The results of the collation are posted on the SEAI website. Repeated errors or failure to complete reworks could lead to sanction up to and including deregistration from the Greener Homes Scheme list of registered installers.

26.29 The Accounting Officer for DCENR stated that lowering revisit rates and improving installation quality would be a continuing objective of the Greener Homes Scheme. In this regard he noted that there had been a continual feedback of findings of inspections into installation training since the Greener Homes Scheme was introduced. He said that the high rate of revisits was the logical result of a deliberately chosen risk oriented inspection system that was specifically designed to focus on likely problems. It did not represent evidence of a wider quality problem. He said that the risk-based approach to sample selection meant that new installers, or installers with a record of issues, were prioritised. This both skewed the results and ensured that customers benefited from increased oversight of those most likely to be unfamiliar with these technologies. The Accounting Officer stated that the positive impact of this approach was actually seen in the high revisit rates, as the inspection mechanism focused on quality improvement and development of overall standards. The result had been a reduction in both the number and severity levels of issues arising from inspections.

Outcome and Evaluation

26.30 The number of households that use renewable energy heating systems has increased in the last four years with the actual number of installations at 26,679 under this scheme.

26.31 DCENR, under the 2009 to 2011 round of the Value for Money and Policy Review Initiative, is conducting a report on the Greener Homes Scheme. This report is expected to be finalised shortly.

26.32 One of the objectives of the scheme is to ensure that the market for the products, services and fuel continued to be developed in a robust manner. No targets were set in this area. It has been reported by SEAI that the number of products in the market that are registered with SEAI has increased significantly from 241 in April 2006 to 968 in December 2008. The number of installers has also increased with 1,625 registered with SEAI in December 2009. It is reported by SEAI that the number of suppliers of wood pellets and wood chips has increased from a very low base in April 2006 to 92 in December 2008.

26.33 It has been estimated by SEAI that the scheme to date has saved 64 kilotonnes of CO_2 emissions per annum. Since it is estimated that the residential sector accounted for 25% (11,896 kilotonnes CO_2) of energy related CO_2 emissions in 2006. This would imply that the scheme has contributed to a saving of 0.5% of the total 2006 level of CO_2 emissions in the residential sector.

26.34 The scheme does not provide for feedback on whether installations have improved energy efficiency. SEAI has stated that measures under the Greener Homes Scheme will not have any impact on energy efficiency. It stated that the Greener Homes Scheme is designed to increase penetration of renewable energy systems. However, the products that can be installed are required to be registered with SEAI, which ensures that they meet a minimum efficiency standard.

House of Tomorrow

26.35 House of Tomorrow is a scheme that was established in September 2001 by SEAI on behalf of DCENR as an element of the National Development Plan 2000-2006.

Basis and Objectives of the Scheme

26.36 The scheme was targeted at accelerating improvements in energy performance in Irish housing. This had its origins in the Green Paper on Sustainable Energy in 1999[205], which highlighted deficiencies in this regard.

26.37 The fundamental objective of the scheme was to demonstrate the feasibility of achieving a 40% improvement on existing building regulations by providing funding for developments which achieved this through best and innovative energy efficient design, practice and technologies.

26.38 There was a focus on stimulating widespread uptake of superior sustainable energy design, specification and construction practices in both the new home building and home improvement markets.

Implementation Arrangements

26.39 This scheme was aimed at housing developers who were building at least ten dwellings. The range of developments includes large-scale public regeneration housing schemes and sheltered accommodation – both substantially provided from public monies.

26.40 The target for the scheme in 2001 was 135 projects or 3,000 houses. This was to include a geographical as well as a technical mix.[206] An annual target was not set for this scheme. The initial response from the potential market was very weak in 2001 to 2003 and by early 2004 there were only 15 projects approved, with most of these applicants coming from the social housing market.

26.41 Interest increased over the period 2004-2007 as a result of promotion by SEAI when it targeted the building industry though the Construction Industry Federation and the Irish House Builders Association. Ultimately, in 2007, the scheme was closed off to new applicants as the targets had been reached in terms of number of houses and geographical spread.

Outturn and Costs

26.42 The financial support offered to builders was 50% of the additional costs up to a maximum of €8,000 per dwelling, for new housing projects. Non-capital related expenses were limited to no more than 30% of the entire grant. Figure 135 sets out the planned costs, outturn and number of projects completed over the nine years of the scheme.

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205 Green Paper on Sustainable Energy, Department of Public Entreprise, 1999.

206 The geographical mix relates to having a spread of developments throughout the country. The technical mix relates to having a portfolio of innovation features that could demonstrate new technologies and their effectiveness.

Figure 135 Planned Costs, Outturn and Number of Projects Completed for the Scheme 2001-2009

	2001-2004	2005	2006	2007	2008	2009[a]	Total to date
	€m	€m	€m	€m	€m	€m	€m
Planned Costs	2.32	2.60	3.52	8.00	9.00	2.00	**27.44**
Outturn	2.06	2.94	3.87	7.91	8.78	1.56	**27.12**
Total Projects Completed [b]	**10**	**11**	**18**	**33**	**60**	**9**	**141**

Source: SEAI

Notes:

a 2009 data is provisional.

b Includes 13 research and development and feasibility study projects.

26.43 The elements installed in a total of 5,292 houses were

- 3,086 condensing boilers
- 1,411 solar hot water heaters
- 2,380 mechanical ventilation water/heat recovery systems
- 718 heat pumps
- 1,266 wood biomass boilers.

Administration of the Scheme

26.44 The administration of the scheme involved

- review of the application and sign off by the SEAI's technical manager to ensure that the proposed energy efficiency features were in line with the technical requirements of the scheme
- confirmation by the quantity surveyor, or the engineer on site, that technical features funded by SEAI were installed
- at least one site visit was also made to all sites by SEAI's technical manager to ensure that features outlined in the application were present and installed.

Outcomes and Evaluation

26.45 To date no external evaluation of this scheme has been carried out. However, SEAI has drawn up tender documentation for such an evaluation. It is SEAI's intention to get the evaluation carried out in the near future.

26.46 SEAI sees the core success of the House of Tomorrow programme in terms of its contribution to the revision of the Building Regulations in 2008 to reflect House of Tomorrow standards.

26.47 The impact of the programme was seen through accelerated regulatory change, initially at local level and subsequently at national level

- From 2005 onwards, individual local authorities began to adopt House of Tomorrow or similar standards, representing future coverage of over 10,000 new housing units. It is estimated that these standards would improve energy efficiency by 40%.
- Revision of the Building Regulations by the Department of Environment, Heritage and Local Government in 2008 made these energy and carbon performance standards a requirement for all new housing units.

26.48 SEAI stated that mainstreaming the standards had the effect of making what were originally innovative 'House of Tomorrow standards' the new regulatory norm.

26.49 SEAI estimates that, with the implementation of the revised Building Regulations as a result of the scheme, that there is a potential to reduce CO_2 emissions by 615 kilotonnes by 2020.

Conclusion

While under the Warmer Homes Scheme, investment has occurred in a range of energy saving initiatives, no work has been done to establish the extent to which they have been successful in removing the assisted households from energy poverty. It is also unclear whether the scheme penetrates through to the households in greatest need but a recent mailshot to 20,000 homes during 2009 for the purpose of making fuel allowance recipients aware of the scheme is an encouraging initiative in this regard. These issues should be examined in the course of a comprehensive evaluation.

Over 26,000 installations under the Greener Homes Scheme were in place at December 2009. It was noted that as part of its assurance process, 65% of all inspections required a revisit and resolution by the installer. Action is required to lower revisit rates and improve installation quality.

The slowdown in the building industry has had an effect on building completion rates and has made it difficult to gauge the impact of the House of Tomorrow scheme. This scheme influenced revisions in the Irish 2008 Building Regulations, but the full impact of these will only be seen when the construction sector returns to sustainable output levels.

The volume of properties impacted by the revised regulations to date is likely to be in the range of 20,000 to 30,000 with the key improvements including

- mandatory high efficiency (condensing) oil or gas boilers, first introduced as a standard innovation condition within the House of Tomorrow programme from 31 March 2008
- targeted energy and carbon performance improvements of 40% (i.e. effectively the House of Tomorrow standard), nominally from 1 July 2008. However, a transitional exemption provision which is common with the Building Regulations meant that in practice this provision only took effect from 1 July 2009.

Audit work carried out on the schemes showed the control system governing payments to be satisfactory and all cases reviewed were found to have entitlement for payment. Overall, the financial administration of the schemes was operated in accordance with preset procedures.

Evaluation to date of the three energy schemes examined has been limited and is internal in character. At this point, it would be useful to independently review their effectiveness and, in particular, the extent to which they have achieved their stated objectives. Internal evaluations, have reported the following impacts

- The Warmer Homes Scheme which targets households most at risk of energy poverty, will see 60,000 homes upgraded by end 2010.

- The Greener Homes Scheme has achieved its key objective of encouraging the development of certain sustainable energy technologies.
- The House of Tomorrow Scheme has influenced improved energy performance standards as required under the revised Buildings Regulations.

Annex A Sustainable Energy Schemes

Six schemes or initiatives are focused on improving energy efficiency in the residential sector. These are summarised below.

Schemes	Description	Output
Warmer Homes Scheme	Support energy efficiency improvements in low income households	Over 32,000 homes improved 2003-2009
House of Tomorrow	Supports to construction sector towards superior energy performance in new buildings	Over 5,000 exemplar homes. Proof of viability of increased standards – led to the 2008 Building Regulations revision
Home Energy Saving Scheme	Support homeowners investing in energy efficiency improvements	18,800 homes improved in 2009, 2,500 contractors registered
Building Energy Rating	Compliance with EPBD[a] while providing information on energy performance of homes prior to purchase or rental – shaping consumer choice and behaviour	118,000 homes rated and 2,200 registered assessors
Greener Homes Scheme	Support to homeowners to invest in new renewable heat technologies	26,600 systems installed, robust market of 1,500 qualified installers and 1,100 eligible products established
Power of One Campaign	Consumer awareness programme influencing consumer choice and behaviour on energy using products in the home	Engagement of general public on a wide range of energy behaviour messages

Note:

a EPBD - Energy Performance of Buildings Directive