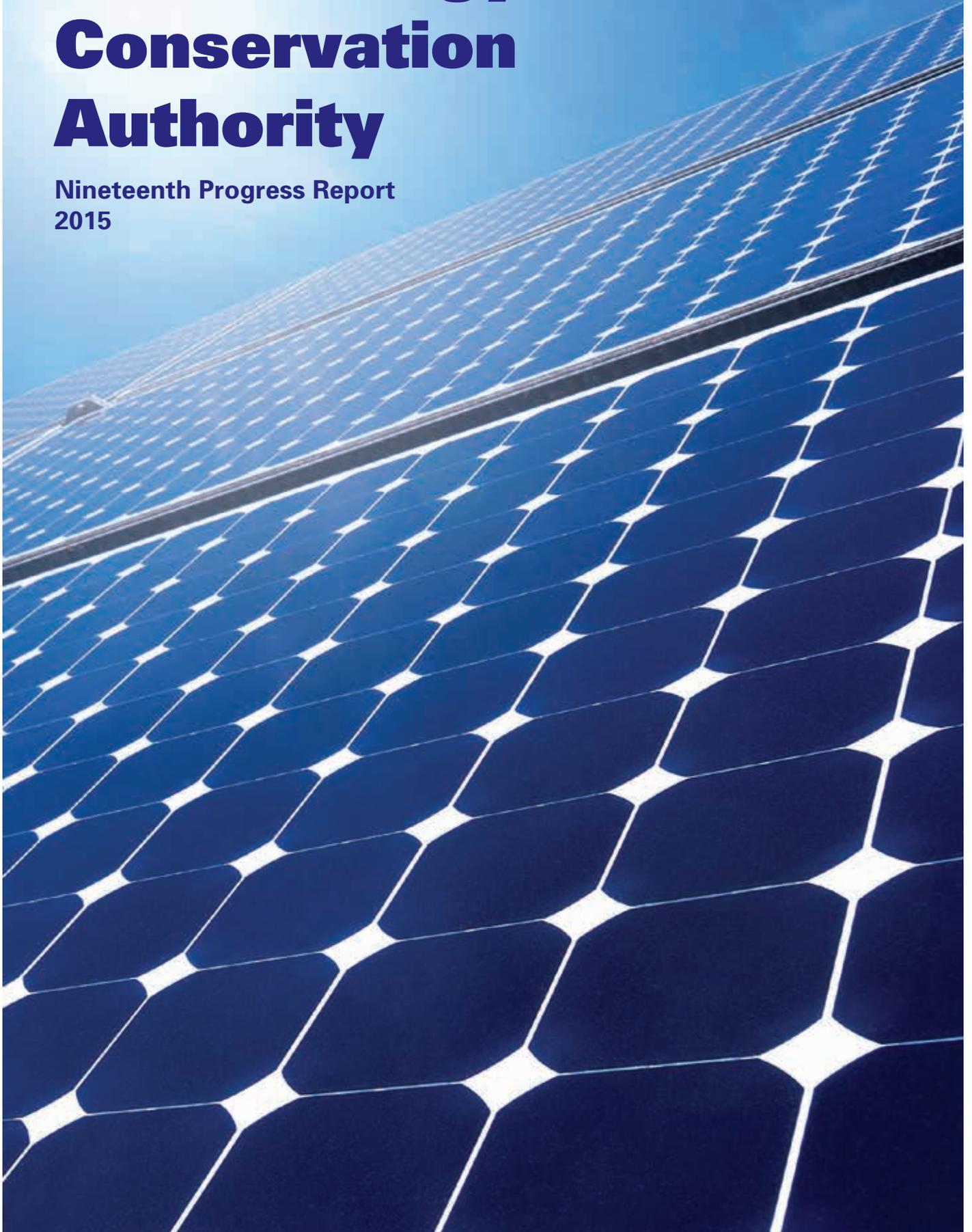


Home Energy Conservation Authority

Nineteenth Progress Report
2015



Foreword

The Housing Executive, as Home Energy Conservation Authority for Northern Ireland is required to submit an annual progress report to DSD on energy efficiency improvements in the residential sector, irrespective of who carries out or funds the work. We can report another very busy year with substantial investment in energy efficiency programmes by a wide range of government departments and agencies, utility organisations and homeowners themselves.

However, there have also been a number of policy changes that may impact on future programmes. The Government has announced its intention to scrap the requirement for future newbuild to meet zero carbon targets. Financial incentives for solar photovoltaic (PV) panels in housing were reduced in September 2015, and will reduce further in October 2016 and disappear altogether in April 2017. This will undoubtedly have an impact on the volume of future PV installations. However, DETI also introduced the Renewable Heat Incentive for renewable based heating systems and DSD introduced the Affordable Warmth programme as a replacement for Warm Homes.

Our annual report highlights many of the works carried out by a wide range of organisations active in the energy efficiency sector. Partnership working is a key part of the Housing Executive's approach to delivering energy efficiency and is a critical part of DSD's strategy for tackling fuel poverty. Despite the progress being made in energy efficiency, fuel poverty remains a problem for many households due to low household income. However, it would be much worse if progress was not being made on energy efficiency programmes. Reductions in fuel prices in the past year for oil, gas and electricity have also helped mitigate the impact of fuel poverty.

In addition to Housing Executive investment in heating replacement, double glazing and insulation programmes, DSD continued to fund Warm Homes and the Boiler Replacement grant for private homes. The Housing Executive is also managing the DSD's Affordable Warmth scheme, introduced in the past year to replace Warm Homes. Scottish Gas Networks and Mutual Energy have been granted licences to bring gas



to a number of towns in Tyrone and Fermanagh and this will also help improve energy efficiency and reduce fuel poverty.

The introduction of Oil Buying Clubs by the Housing Executive has also been a key milestone in the past year with 27 clubs established through Bryson Energy, our managing agent. Another key achievement is the letting of a contract for the provision of solar photovoltaic (PV) panels in 1,000 Housing Executive homes through a privately financed scheme. The Housing Executive is currently exploring other opportunities for innovation in delivering energy efficiency in the residential sector and we anticipate further progress towards this in 2016.

A handwritten signature in black ink that reads "Donald Hoodless". The signature is written in a cursive, flowing style.

Donald Hoodless
Chairman
Northern Ireland Housing Executive

Introduction

- 1.1 This is the 19th annual progress report as required under the Home Energy Conservation Act (1995). The Act designated the Housing Executive as Northern Ireland's sole Home Energy Conservation Authority, a role granted to the 408 local authorities in Great Britain. It required the Housing Executive to develop a strategy to significantly improve the energy efficiency of the entire housing stock and to submit annual progress reports thereafter.
- 1.2 The Housing Executive had to identify measures that it considered practicable, cost-effective and likely to result in a significant improvement in the energy efficiency of the residential accommodation. "Significant improvement" is defined in Northern Ireland as 34% (30% in GB) as there was greater scope for fuel switching here. Although the measures identified did not necessarily have to be implemented or funded by the Housing Executive, we are required to report annually on progress, irrespective of who carries out the work. No deadline was set for the achievement of the target which is measured as a reduction in fuel consumption within the housing stock.
- 1.3 Progress on the energy efficiency target is measured through the House Condition Survey (HCS). The last major HCS was carried out in 2011 and recorded a 22.5% improvement in the energy efficiency of the occupied housing stock between 1996 and 2011. The Standard Assessment Procedure (SAP 09) measures the energy efficiency of individual dwellings on a scale of 1 to 100 (1 being very poor and 100 being excellent). The average SAP (09) for Northern Ireland's housing had risen from 35 in 1996 to 60 by 2011 (the average SAP score for England in 2010 was 55). This represents recurrent savings of 2.5m million tonnes of carbon dioxide per annum over 1996 levels.
- 1.4 These improvements are undoubtedly removing poor energy efficiency as one of the main causes of fuel poverty. Nevertheless, fuel poverty continues to be a major problem due to fuel prices and low income for many households. In 2011, 42% of households were recorded as fuel poor in Northern Ireland. The key highlights and events of the past year relating to energy efficiency and fuel poverty have included;





- The Housing Executive invested over £31m, completing 6,910 heating conversions in Housing Executive stock in 2014/15.
- The Housing Executive let a contract in July 2015 for the privately financed installation of solar photovoltaic (PV) panels in 1000 dwellings.
- DSD's Warm Homes scheme, administered by the Housing Executive, formally closed in March 2015. In 2014/15 there were 6,626 insulation measures and 746 heating replacements in private homes at a costs of around £10.5m.
- The area based Affordable Warmth scheme replaced Warm Homes in April 2015. Funded by DSD, it is administered by the Housing Executive.
- A condition survey of some 22,000 Housing Executive dwellings was completed by Savills to help develop a 5 year investment strategy.
- DSD's Boiler Replacement scheme, administered by the Housing Executive, funded 8,399 installations in 2014/15 at a cost of over £5.5m.
- The Housing Executive published an Energy Good Practice Guide for refurbishment of the residential sector.
- Housing Associations started construction on 2,013 new energy efficient dwellings with 1,658 homes completed in 2014/15.
- Firmus Energy continued to develop the gas network in its licence areas and are competing with Phoenix Natural Gas in Greater Belfast.
- Scottish Gas Networks and Mutual Energy were granted licences to develop the gas network into counties Tyrone and Fermanagh.
- Oil, gas and electricity prices reduced in 2015. Power NI, Airtricity, Budget Energy and Electric

Ireland are competing for domestic consumers. Funded by the Housing Executive, Bryson Energy met its target of setting up 27 Oil Buying Clubs during 2015.

- Bryson Energy delivered the Housing Executive funded energy efficiency programme to P6 classes in 260 primary schools.
- The Housing Executive funded Bryson Energy to provide energy advice to 12,837 households throughout Northern Ireland in 2014/15.
- The Housing Executive undertook an energy efficiency marketing campaign, which included DETI's Energywise brand.
- An investment of some £8m on innovative schemes took place in 2014/15 under the NI Sustainable Energy Programme (NISEP) and the Utility Regulator extended NISEP for another year.
- DETI's Renewable Heat Premium Payment continues to part fund renewable heat systems and the annual Renewable Heat Incentive payment scheme was initiated in 2015.
- DETI announced a reduction in financial incentives for small scale solar PV from October 2015 with a further reduction in October 2016.
- The UK Government announced that they are scrapping the requirement for newbuild to meet zero carbon targets by 2016.



Fuel Poverty

A woman with long brown hair and glasses is shown in profile, looking out of a window. The window shows a view of solar panels against a blue sky. The woman is wearing a blue jacket. The overall scene is bright and clear.

2.1 Fuel poverty is defined as 'a household is in fuel poverty if, in order to maintain an acceptable level of temperature throughout the home, it would have to spend more than 10% of its income on all household fuel'.

This includes all fuel of any type, used for space heating and electricity used for all purposes, eg, water heating, cooking, lighting and appliances.

Fuel poverty has three main causes:

- Poor thermal efficiency of homes
- Low household income
- Cost of fuel

2.2 Housing policy and programmes can help tackle fuel poverty caused by poor thermal efficiency of dwellings. However, housing bodies have no control over household income or the cost of fuel. If fuel poverty is to be tackled successfully, it will require concerted action by a range of Government bodies and agencies to deal with all three primary causes.

2.3 Fuel poverty in Northern Ireland remains the highest in the UK and whilst there are a range of policies and programmes to deliver more energy efficient homes, fuel costs and low income still mean householders struggle to heat these homes. During 2015, the situation was eased somewhat with lower oil prices leading to lower gas and electricity prices. The main domestic electricity suppliers introduced price reductions in April 2015 and the two main gas suppliers announced price reductions taking effect from October 2015.

Energy Efficiency

Energy Efficiency of existing Northern Ireland home across all tenures

- 3.1 The 2011 House Condition Survey recorded that;
- 99% of homes had full central heating, 17% with natural gas and 68% oil
 - 71% have full wall insulation, 6% partial - 23% have none
 - 96% have some loft insulation
 - 80% have double glazing, 12% partial - 7% have none.

However;

- 11% of homes fail the Decent Homes Standard and of these, 62% fail on thermal comfort of Decent Homes Standard
- Over half of homes need loft insulation topped up to 270mm
- Quality of cavity wall insulation may have degraded in some homes.
- Preparations are now underway to undertake a major House Condition Survey in 2016 which will provide an update on the above figures.

Energy Efficiency Good Practice Guide for Refurbishments

The Housing Executive, in its role as HECA Authority, produced a Good Practice Guide for the refurbishment of housing from an energy efficiency perspective. Its purpose is to inform and influence key decision makers within both the public and private sector housing providers. A fresh approach is required in order to reduce fuel poverty, CO2 emissions while enhancing health and well-being.

- 3.3 The Housing Executive, as the HECA Authority, firmly believes the correct approach is an improvement to the thermal performance of the external envelope as a single entity (Envelope First Approach) and an upgrade to the heating system. An objective of energy efficiency is to get the most out of the fuel used within the dwelling and to keep that heat where it is needed for as long as possible. This requires a whole upgrade of the thermal envelope of the dwelling rather than the piecemeal approaches of the past which looked separately, at different stages, at wall insulation, loft insulation, windows, external doors and heating. The Guide is available on the Housing Executive's website.



Performance 2014/15

Energy Efficiency and Fuel Poverty in Social Housing Sector

- 4.1 The Housing Executive invested over £31m in energy efficiency improvements, which funded central heating conversions in 6,910 dwellings in 2014/15. Our policy is to install gas heating where gas is available and oil or wood pellet boilers elsewhere. Replacement heating now includes zoning, if practical, delivering a more efficient system, and an upgrade of loft insulation to 270mm.
- 4.2 In 2014/15, housing associations availed of NISEP Cosy Home funding for 982 energy efficiency improvements. 255 of these improvements were heating installations and 727 were insulation measures.
- 4.3 In 2014/15, Housing Associations started construction on 2,013 new homes and completed 1,658 homes. These homes were built to either Code for Sustainable Homes Level 3 or 4 or, the revised building regulations delivering an average SAP (09) of 82 well above the NI average of 57 across all tenures.

Over the years, the Housing Executive has secured funding from both the EU and local NI partners to deliver renewable projects. The Housing Executive has been successfully obtained funding to install;

- solar water heating panels in 2,032 homes.
- solar photovoltaic (PV) panels in 32 homes.
- solar air heating and ventilation systems in 55 homes.
- biomass wood pellet boilers in 53 homes.
- ground source heat pump in 1 home.
- micro wind turbine in 1 home.
- a field trial of micro-CHP systems in 10 homes.
- a field trial using bio-fuel which is a mix of kerosene oil and vegetable oil but produces 21% less carbon emissions than kerosene.

Housing Executive pilot schemes and research projects

- 4.4 The Housing Executive has sponsored or participated as partners in a number of pilot and research projects.





SIMPLER Solid Wall Insulation - Antrim

- 4.5 Northern Ireland has up to 120,000 homes in all tenures of solid wall construction which are quite expensive to insulate. A partnership project with the Technology Strategy Board (TSB) and Building Research Establishment (BRE) has investigated innovative solutions to seven “no fines” dwellings in Antrim to deliver increased thermal performance. The outcome of this UK wide research project is currently being evaluated by TSB and BRE.

External Wall Insulation

- 4.6 Three rural cottages in the Coleraine had external wall installation installed in 2013/14. The works improved the external envelope as a single component with replacement loft insulation, external wall insulation, A rated windows, frames and doors resulting in 40% reduction in actual heating costs in 2014/15. In 2015 a number of other schemes have been brought forward to test different types of insulation in aluminium bungalows. In addition Cuchulain House, one of the seven high rise blocks in the New Lodge area of Belfast had its complete external envelope thermally improved involving external wall insulation, new windows and a new roof. All of these schemes will help inform policy for insulating solid wall properties across all tenures.

Cavity Wall Insulation Research

- 4.6 In 2014, the Housing Executive published a research report into the effectiveness of cavity wall insulation within its stock. This followed suggestions by the local industry that insulation installed in homes in the 1980s and early 90s may no longer be fit for purpose. The Housing Executive commissioned the South Eastern Regional College to examine 206 properties to assess the performance and effectiveness of existing cavity wall insulation. The Housing Executive is assessing the findings of this survey, in the context of the recently commissioned stock condition survey, to determine spending priorities over the next 5 years.

Oil Buying Clubs

- 4.8 In November 2014, the Housing Executive awarded a contract to Bryson Energy to set up a network of oil buying clubs across Northern Ireland. Whilst there were a number of clubs already in existence, these were mainly located in County Antrim and were funded by the Public Health Agency and local Councils. Bryson Energy's remit was to establish a network of clubs in other parts of Northern Ireland.
- 4.9 The majority of households in Northern Ireland (68%) depend on home heating oil. Over 40% of



Housing Executive householders use oil and there are particular issues with some families struggling to pay for it or rationing heat to avoid debt. The most competitive way to currently buy oil is to get a full tank of fuel at delivery stage. This requires an upfront payment of several hundred pounds which many householders struggle to find.

- 4.9 Oil buying clubs are designed to help consumers to reduce their costs by purchasing their oil orders in bulk as part of a group. By combining orders, club members can negotiate a lower price per litre than by ordering alone. It makes budgeting easier for households as these clubs can organise monthly deliveries facilitating smaller volumes per house. By August 2015, Bryson Energy had met its target of establishing 27 Clubs during the first year of its contract. Year 2 will focus on maximising membership. One of the most successful clubs placed an order at the beginning of October 2015 for 42,000 litres of oil which included many pensioners ordering 200 litres for that month.

Newry Retrofit Project

- 4.10 A project is at tender stage to retrofit a terrace of 5 dwellings in Newry. Each will be refurbished to a different standard of energy efficiency and their energy consumption monitored to determine which is the most cost-effective solution.



Solar Photovoltaic Project

- 4.10 In July 2015, the Housing Executive appointed Saliis Ltd to privately finance the installation of solar photovoltaic (PV) panels in 1,000 of its homes based on the “rent a roof” model. ‘Rent a roof’ schemes involve the private company paying an annual rental to the landlord in exchange for being permitted to install PV panels on the roof of Housing Executive dwellings.
- 4.11 Tenants can freely use any electricity generated during daylight hours. The private company recoups its investment and makes a profit over 20 years from the sale of Renewable Obligation Certificates (ROCs) and the sale of any electricity, which tenants do not use, into the grid.
- 4.12 This is the first large scale solar PV project for residential properties in Northern Ireland. PV panels generate electricity from daylight and assuming tenants use 50% of what is available they will save about £200 on their annual bills. The outcome of this first phase and of DETI’s reduction of ROCs will determine if the Housing Executive rolls the project out to other suitable houses.
- 4.13 Housing Associations have continued to install a variety of renewable technologies in newbuild schemes. These have included solar PV, solar water heating, heat pumps and biomass boilers. However, as achieving the Code for Sustainable Homes is no



longer mandatory, it remains to be seen if this will continue. DETI's policy decisions on both future incentive payments for PV and Renewable Heat Incentives will also be key factors.

Heat from Anaerobic Digester Plants

4.14 The Housing Executive is currently exploring the feasibility of taking surplus heat, from an existing anaerobic digester plant outside Cookstown, to heat 40 nearby homes. The existing plant, operated by local farmers, has been generating electricity since January 2015. They currently have no market for the heat, produced as a by-product, and approached the Housing Executive about piping this heat to our nearby dwellings. Another group in Fermanagh are also exploring a similar project in Irvinestown but this proposal is at a much earlier stage.

Success in the Private Sector

4.15 In 2014/15, further progress was made in improving energy efficiency in private homes. The key achievements were;

- Under DSD's Warm Homes scheme, administered by the Housing Executive, 6,626 insulation measures and 746 heating replacements in private homes at a cost of almost £10.5m.

- DSD's Boiler Replacement scheme, administered by the Housing Executive, funded 8,399 installations in 2014/15 at a cost of some £5.5m.
- Affordable Warmth, an area based approach developed by the Housing Executive, replaced Warm Homes as the main fuel poverty programme for private homes in April 2015. Funded by DSD, it is administered by the Housing Executive.
- Investment of over £7m in energy efficiency works funded by NISEP. Some examples include Power NI projects involving heating in 230 homes, cavity wall insulation in 1,011 and loft insulation to 1,537.
- The Housing Executive funded Replacement Grants for 17 new homes to modern energy efficiency standards and, under various other grants, loft insulation in 40 homes, cavity wall insulation in 29 and new heating systems in 15.
- DETI's Renewable Heat Premium Payment from inception has funded 1,479 renewable heating installations up to mid August 2015. This comprises 195 air source heat pumps, 188 ground source heat pumps, 6668 biomass boilers and 428 solar water heating panels.
- Further works funded by homeowners themselves but it will not be possible to measure this until the next House Condition Survey.

Marketing the Energy Efficiency Message



5.1 In the past year, as Home Energy Conservation Authority for Northern Ireland, the Housing Executive has promoted energy efficiency through various media. Housing Executive staff have taken part in a number of TV and radio promotions, and advertised energy efficiency in a range of newspapers and trade journals. Our staff have also promoted the energy conservation message to the public through presentations at seminars and conferences and by taking our stand out to major exhibitions (eg Self-Build Show) and community events.

5.2 The Housing Executive provides advice and information on our website where we also publish the latest available electricity tariffs. This is also provided to new tenants when signing for a

dwelling as many may not know that they now have a choice of six electricity suppliers.

5.2 The Housing Executive's service provider, Bryson Energy, delivered energy advice to 12,837 households throughout Northern Ireland in 2014/15. Bryson Energy also delivered the Housing Executive's schools energy efficiency programme to P6 classes in 260 primary schools. The Housing Executive also funds National Energy Action, the fuel poverty charity, in its work to alleviate fuel poverty.

5.3 Our Private Grants Department has also been active in promoting energy efficiency in its role as administrator of DSD's Affordable Warmth Programme and Boiler Replacement scheme.

Recent Developments

Gas to the West

- 6.1 In February 2015, the Utility Regulator awarded licences to Scottish Gas Networks (SGN) and Mutual Energy to bring gas to the West of NI. Mutual Energy will build the main high pressure pipeline heading west from Portadown through County Tyrone and into Fermanagh. SGN will develop the lower pressure pipelines which will develop the network into and around specific towns. DETI has pledged £32m to the project with these two companies funding the rest.
- 6.2 Construction of the main pipelines will begin in 2015 with natural gas available initially in Strabane by late 2016. In 2017 and 2018 gas should be available in other towns, namely Dungannon, Coalisland, Cookstown, Magherafelt, Omagh, Enniskillen and Derrylin. It will also be available in any villages that the pipeline passes through en route to these towns. The Housing Executive's heating policy of installing gas, where available would then apply in these locations.

Renewable Obligation Certificates

- 6.3 In December 2014, following a consultation exercise, DETI announced changes in relation to Renewable Obligation Certificates (ROCs). ROCs have a tradable value and currently are one of the main incentives for encouraging the development of renewable electricity technologies such as wind turbines, solar PV panels and hydro systems. The ROC payments are guaranteed for 20 years.
- 6.4 DETI confirmed that solar PV up to 50kW, which includes small scale domestic installations, would continue to receive 4 ROCs until October 2015 when it will reduce to 3. There will be a further reduction from 3 to 2 ROCs in October 2016. Solar PV above 50kW will continue to receive 2 ROCs. These changes won't affect existing installations completed prior to these dates. However, the reductions from October 2016 could deter further investment in "rent a roof" schemes by private companies. This will impact more on low income households who cannot afford to install their own systems.



Renewable Heat Incentive

In August 2014, DETI announced its proposals for the Renewable Heat Incentive (RHI). RHI is a payment, guaranteed for 7 years, for householders that install renewable heating systems such as biomass boilers, air or ground source heat pumps or solar water heating panels. This will help DETI to meet its target that by 2020, at least 10% of NI heat demand should be met from renewable sources. DETI's Renewable Heat Premium Payment from inception in 2012 has funded 1,479 renewable heating installations up to mid August 2015. This comprises 195 air source heat pumps, 188 ground source heat pumps, 668 biomass boilers and 428 solar water heating panels.

Stock Condition Survey

- 6.5 The DSD and Housing Executive commissioned Savills to undertake a major survey of the condition of Housing Executive stock in 2014/15. The results of this will help inform future investment strategies for Housing Executive stock, including the extent of energy efficiency works required. From an energy efficiency perspective the main conclusion was that the average SAP rating of Housing Executive stock was 57 which was relatively low in comparison with benchmarks elsewhere. However, the report added that "this is partly due to the fact that a large proportion of the stock is not serviced by the gas network" with gas being "the most efficient form of heating and certainly produces higher SAP ratings".
- 6.6 It recognised that many of the obvious opportunities of work to improve the SAP ratings have been undertaken by the Housing Executive. SAP ratings will improve as the gas network develops in the Firmus licence areas outside Belfast and expands into the west in 2016/17. For other tenure groups the next major House Condition Survey is planned for 2016.



Conclusion



It has been another very busy year in the sector with a wide range of organisations active in delivering energy efficiency across all tenures.

It has also been a challenging year with a number of announcements regarding changes to financial incentives.

Despite this, the wide range of organisations involved in energy efficiency will continue to come up with new approaches and ideas whatever the policy context or finance available.

We look forward to working towards further improvements in 2016 and to progressing some of the schemes outlined in this report.



Housing Executive

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is available in
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