

Home Energy Conservation Authority

20th Progress Report 2016



Foreword

The Housing Executive, as the **Home Energy Conservation Authority (HECA) for Northern Ireland**, is required to submit an annual progress report to the Department for Communities (DfC) on energy efficiency improvements in the residential sector, irrespective of who carries out or funds the work. 2015/16 has been 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.

The funding situation for energy efficiency programmes remains challenging and 2016 saw the cessation of the domestic Renewable Heat Incentive scheme and further reductions in incentive payments for renewable electricity such as solar PV panels in housing. However, I am confident that the energy efficiency sector will continue to **adapt and improvise** to the policy and financial environment it finds itself in, with some new proposals already at the development stage.

In terms of the Housing Executive's HECA role, considerable progress has been made. Heating and insulation programmes have continued in Housing Executive stock, a new Asset Management Strategy has been initiated and a major **solar photovoltaic (PV)** project has been completed.

For private sector stock, the Housing Executive has implemented DfC's new **Affordable Warmth** programme as a replacement for Warm Homes and continued to manage the **Boiler Replacement Scheme**. In addition, our Research Department is carrying out a cross tenure **House Condition Survey**, which will inform policy on housing generally and energy efficiency specifically over the next few years.

In 2016 I was particularly pleased to see the Housing Executive pick up a Chartered Institute of Housing award for our **oil buying clubs** initiative and an Action Renewables award for our solar PV project.



This annual report also highlights works carried out by a wide range of organisations active in the energy efficiency sector. **Partnership working** remains critical to both the Housing Executive's and DfC's approach to improving energy efficiency and tackling fuel poverty.

Fuel poverty remains a problem for many households due to low household income but this was mitigated somewhat in 2015/16 by reductions in world fuel prices. Another landmark event in 2016 was the beginning of the **Gas to the West** project by Scottish Gas Networks and Mutual Energy which will also help improve energy efficiency and reduce fuel poverty.

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

Donald Hoodless
Chairman

Introduction

- 1.1 This is the 20th annual progress report as required under the Home Energy Conservation Act (1995). The Act designated the Northern Ireland Housing Executive (NIHE) as Northern Ireland's sole Home Energy Conservation Authority (HECA), a role granted to the 408 local authorities in Great Britain (GB). 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 In doing so, the Housing Executive has to identify measures that it considers to be 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 (NI) as 34% improvement in the energy efficiency of residential accommodation (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 date 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 2.5 million tonnes of carbon dioxide per annum over 1996 levels. The fieldwork on a major HCS began during 2016 and will provide an update on the above figures for the 2017 report.
- 1.4 These improvements are removing the contribution of poor energy efficiency as one of the main causes of fuel poverty. Nevertheless, fuel poverty remains a major problem due to low income for many households and, to a lesser extent, fuel prices. A fuel poor household is defined as one which needs to spend more than 10% of its income on all fuel use and to heat its home to an adequate standard of warmth. In 2011, 42% of households were recorded as fuel poor in Northern Ireland (to be updated in 2016 HCS).



Highlights



- The Housing Executive invested **over £21m**, completing 4,645 **heating** conversions in Housing Executive homes in 2015/16.
- The Housing Executive also **invested** £11m in completing **double glazing** installations in 5,611 of its homes.
- The Housing Executive completed a pilot contract in April 2016 for the privately financed installation of solar photovoltaic (PV) panels in 1,000 dwellings.
- The area based **Affordable Warmth** scheme replaced Warm Homes in 2015. Funded by DfC, and managed by the Housing Executive, **approvals to the value of £21.2m** were made in 2015/16 and £11.5m of works completed.
- A 10 year **Asset Management Strategy** has been developed for Housing Executive properties.
- DfC's **Boiler Replacement** scheme, administered by the Housing Executive, funded **4,934 new boiler** installations in 2015/16 at a cost of some £3.5m.
- The Housing Executive distributed an **Energy Efficiency Good Practice Guide** for the

refurbishment of dwellings to stakeholders within the housing sector.

- In 2015/16 there were 1,568 new build starts and 1,209 completed homes by housing associations.
- 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 continued to make progress on developing the **gas network into counties Tyrone and Fermanagh** with work on the Strabane to Maydown stretch beginning in 2016.
- **Oil, gas and electricity prices** continued to reduce in 2016 with oil prices reaching a 12 year low in February 2016.
- Six companies - Power NI, Airtricity, Budget Energy, Click Energy, Open Electric and Electric Ireland - now **compete for domestic** consumers.
- The Housing Executive and Bryson Energy set up a network of **27 Oil Buying Clubs** in 2015 and are set to meet targets for increased membership in 2016.
- Bryson Energy delivered the Housing Executive funded **energy efficiency programme** to P6 classes in 160 primary schools.
- The Housing Executive funded Bryson Energy to provide **energy advice to 7,178 households** throughout Northern Ireland in 2015/16.
- 6,300 Housing Executive tenants received advice through the **Heatsmart** programme.
- The Housing Executive began the fieldwork on the 2016 **House Condition Survey**.
- An **investment of some £8m** on innovative schemes took place in 2015/16 under the NI Sustainable Energy Programme (NISEP).
- The Department for the Economy's (DfE) **Renewable Heat Incentive**, promoting renewable heating in buildings including housing, closed to new applicants in March 2016.
- DfE reduced financial incentives (Renewable Obligation Certificates) for small scale solar PV in October 2016 - they end in March 2017.

Fuel Poverty

2.1 The definition of fuel poverty is ‘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; and
- Cost of fuel.

2.2 Housing policy and programmes can only tackle one of the three causes of fuel poverty, namely, the poor thermal efficiency of homes. Housing bodies have no control over household income or the cost of fuel. The Housing Executive is playing its

part in alleviating fuel poverty but has always maintained that if it 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 has consistently been higher than other parts of the UK mainly due to lower household incomes and higher fuel prices. The situation eased somewhat during 2015 and early 2016 with much lower oil prices leading to lower gas and electricity prices. In January 2016, the price of oil reached a 12 year low at around \$25 per barrel but by early summer 2016 this had risen to \$47 a barrel. This is still much lower than oil prices over the previous few years.



Energy Efficiency

House Condition Survey

- 3.1 The last House Condition Survey (HCS) in Northern Ireland was in 2011. It recorded that the energy efficiency of the local housing stock across all tenures had increased (on the SAP Scale of 1 to 100) from 35 in 1996 to 60 by 2011. This was mainly due to large scale fuel switching from inefficient coal fired heating to more efficient fuels like natural gas and oil and to improved levels of insulation and glazing.

The key findings of the 2011 HCS were:

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

However, 11% of homes failed the Decent Homes Standard and of these, 62% failed on the thermal comfort element. In addition:

- Over half of homes need loft insulation topped up to 270mm; and
- The quality of cavity wall insulation may have degraded in some homes.

During the summer, fieldwork began on the 2016 House Condition Survey which will provide an update on the above figures. In parallel with this, a survey is also underway on the quality of existing cavity wall insulation in a sample of private sector dwellings drawn from the main HCS sample.

Good Practice Guide

In 2015, the Housing Executive produced a Good Practice Guide for the refurbishment of housing from an energy efficiency perspective. The guide was produced by the Housing Executive in its regional strategic role as HECA Authority to inform and influence key decision makers within both the public and private sector housing providers. The Guide has been distributed to a wide range of stakeholders across the housing sector in Northern Ireland.



The Guide recommends an 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 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.

Performance 2015/16

Energy Efficiency and Fuel Poverty in homes

- 4.1 The Housing Executive invested over **£21m in energy efficiency improvements**, which funded central heating conversions in 4,645 dwellings in 2015/16. 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. In addition some £11m was spent on installing double glazing in 5,611 Housing Executive homes.
- 4.2 In 2015/16, housing associations availed of NISEP Cosy Home funding for **1,068 energy efficiency measures**. Of these, 485 were heating installations and 583 were insulation measures, including 152 partial fills of cavities that already had insulation board.
- 4.3 In 2015/16, housing associations started construction on **1,568 new homes** and **completed 1,209 homes**. These homes were built to either Code for Sustainable Homes Level 3 or, the revised building regulations delivering an average SAP (09) of 82, well above the NI average of 57 across all tenures.

Housing Executive Asset Management Strategy

- 4.4 Following completion of a major **stock condition survey** by Savills on some 22,000 Housing Executive dwellings, the Housing Executive developed a 10 year Asset Management Strategy. The Strategy was approved by the Housing Executive's Board in September 2015 and by the Minister for Social Development (now DfC) in February 2016.

The aim of the Strategy is to establish a portfolio of assets that:

- matches social housing needs;
- provides a type and quality of housing that meets residents' requirements;
- supports sustainable neighbourhoods; and
- both supports and is supported by a robust business plan.



In summary, it will give new direction to how the Housing Executive plans the improvement and maintenance of its housing stock.

- 4.5 The Strategy will have an **initial timeframe of five years** to 2020/21 at which time it will be subject to a formal review. It is firmly based on the findings of Savills' Stock Condition Survey in 2014/15 and an Asset Performance Evaluation Model that assesses how well the stock - across a range of characteristics - performs in meeting Housing Executive's business requirements.

The major elements in the Strategy are:

- the adoption of a new investment standard - the Commonly Adopted Standard - that in addition to reflecting the need to provide modern facilities in our homes also aspires to improving their thermal efficiency;
- the delivery of a new 10 year Investment Plan for the stock (currently being prepared);
- a programme of option appraisals for stock that performs poorly in meeting our needs and supporting our business plan;
- a commitment to engage with partners working on area-based regeneration initiatives through effective 'place shaping'.

Pilot schemes and research projects

- 4.6 The Housing Executive has sponsored or participated as partners in a number of pilot and research projects. These included:



S-IMPLER Solid Wall Insulation

- 4.7 In Northern Ireland there are about 120,000 homes across all tenures that have solid wall construction. The Housing Executive owns around 9,000. Working in collaboration with the BRE (Building Research Establishment), Carillion Energy Services and other key partners, the Housing Executive has started work on a new research and demonstration S-IMPLER project in Antrim designed to help the refurbishment sector achieve effective and economical retrofit of insulation in solid wall homes.

Five of these 'No Fines' properties have now been externally insulated and some embedded sensors have been installed for further data collection that will be analysed before project completion next year. In-use data collection post-occupancy will be completed on some of the properties and run over the coming heating season, with reporting in spring 2017.

External Wall Insulation

- 4.8 In 2015, Cuchulain House, one of the seven Housing Executive high rise blocks in the New Lodge area of Belfast, had its complete external envelope thermally improved. This involved external wall insulation, new windows and a new roof. A second scheme is now underway at Eithne House, also in the New Lodge area, and the Housing Executive also has schemes at tender stage for two other high rise blocks elsewhere in Belfast. The Housing Executive has already completed external wall installation on three rural cottages outside Belfast installed in 2013/14. All of these schemes will help inform policy for insulating solid wall properties throughout Northern Ireland.

Cavity Wall Insulation

- 4.9 The Housing Executive commissioned research into the effectiveness of cavity wall insulation within its stock in 2014. 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 findings of the South Eastern

Regional College report which examined 206 properties were published in September 2014. The Housing Executive accepts that there are issues with the quality of existing cavity wall insulation in some of its dwellings. In some cases, the problems were due to poor installation practices and the post-inspection methods that are used today were not available in the 1980s. However, it is also apparent some dwellings were also insulated where it was inappropriate to do so, due to geographic location, construction type or dwelling condition.

- 4.10 Going forward, the Housing Executive will carry out sample surveys in a number of dwellings in estates undergoing outside maintenance work to determine the quality of cavity wall insulation. In parallel with the 2016 HCS, the Housing Executive has commissioned a further survey into the quality of existing cavity wall insulation in a sample of private sector dwellings taken from the main House Condition Survey. However, dealing with defective cavity wall insulation will require substantial financial resources and any proposed remedial action will have to be taken in consultation with the relevant bodies. There are two schemes currently underway in Belfast involving the extraction of depleted insulation and refilling, where this is deemed appropriate.



Oil Buying Clubs

- 4.11 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.
- 4.12 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.

- 4.13. Oil buying clubs aim to help consumers 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. In Year 2 of the project, Bryson is focussing on increasing the membership of each club. In March 2016, the Housing Executive won a Chartered Institute of Housing Award for this initiative in the category 'More than Bricks and Mortar'.

Solar Photovoltaic Project

- 4.14 Solar photovoltaic (PV) panels generate electricity from daylight. In July 2015, the Housing Executive appointed Saliis Ltd to privately finance the installation of solar 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. 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.
- 4.15 This scheme for 1,000 homes completed in April 2016 and was the first large scale solar PV project for residential properties in Northern Ireland. Assuming tenants use 50% of the electricity produced by the panels they will save about £200 on their annual bills. Fold Housing has also



gone out to tender for a 'rent a roof' scheme for their housing stock based on the Housing Executive's template. In March 2016, the Housing Executive's pilot project for 1,000 units won the Action Renewables Award in the category "Most Successful Renewable Electricity Installation".

- 4.16 Achieving the Code for Sustainable Homes is no longer mandatory however, housing associations continue to install a variety of renewable technologies in newbuild schemes. These have included solar PV, solar water heating, heat pumps and biomass boilers. DETI's decision to stop future incentive payments for both PV and Renewable Heat Incentives will also be key factors.

Heat from Anaerobic Digester Plants

- 4.17 The Housing Executive is currently exploring the possibility of taking surplus heat, from anaerobic digester plants, to heat nearby homes at two sites in Cookstown and Irvinestown. Both projects have had feasibility studies funded by Invest NI. However, the developers of both projects are currently trying to secure funding for the schemes and decisions on Housing Executive participation cannot be made until potential finance is sorted out.

Success in the Private Sector

- 4.18 In 2015/16, further progress was made in improving energy efficiency in private homes.

Key achievements included:

- Under DfC's Affordable Warmth scheme, administered by the Housing Executive, 5074 measures were installed in 3,057 homes at a cost of around £11.5m.
- DfC's Boiler Replacement scheme, administered by the Housing Executive, funded 4,934 boiler installations in 2015/16 at a cost of some £3.5m.
- Investment of over £7m in energy efficiency works funded by NISEP.
- 896 energy efficiency measures were funded via grant schemes.
- The Housing Executive funded Replacement Grants for five new homes to modern energy efficiency standards and, under various other grants, loft insulation in 35 homes, cavity wall insulation in 27 and new heating systems in four.
- DETI's Renewable Heat Premium Payment from inception to closure in February 2016 funded 2,637 renewable heating installations. This comprised 411 air source heat pumps, 343 ground source heat pumps, 1,179 biomass boilers and 704 solar water heating panels.
- Further works funded by homeowners themselves but we cannot report on this until the 2016 House Condition Survey analysis is complete.

Marketing the Energy Efficiency Message

- 5.1 In the past year, as Home Energy Conservation Authority for Northern Ireland, the Housing Executive has promoted the energy efficiency message through various media. Housing Executive staff have taken part in a number of TV and radio interviews, and advertised energy efficiency in various newspapers and trade journals. Staff have also promoted the energy conservation message to the public through presentations at seminars and conferences and at 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.
- 5.3 The Housing Executive's service provider, Bryson Energy, delivered energy advice to 7,178 households throughout Northern Ireland in 2015/16. Bryson Energy also delivered the Housing Executive's schools energy efficiency programme to P6 classes in 160 primary schools. A further 6,300 Housing Executive tenants also received energy advice through the Heatsmart programme. The Housing Executive also funds National Energy Action, the fuel poverty charity, in its work to alleviate fuel poverty.



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

The Housing Executive in partnership with Bryson Energy



12,837
households across NI given
energy advice

7,500+
Heatsmart visits
to Housing Executive tenants



160
primary schools

participated in our **energy efficiency programme**



7,400+
children at P6

27 Oil Buying Clubs established



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 first stretch of pipeline from Maydown to Strabane began in early 2016 with natural gas expected to be available in Strabane by late 2016. In 2017 and 2018 gas should be available in other towns, 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 (now DfC) 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 and were instrumental in the development of "rent a roof" type schemes, described earlier in this report, which brought private funding into the free installation of PV panels in the private and social housing sectors.

- 6.4 DETI confirmed that solar PV up to 50kW, which includes small scale domestic installations, would continue to receive four ROCs until October 2015 when it will reduce to 3 ROCs. A further reduction from three to two ROCs will commence in October 2016 and ROCs will disappear completely for small scale PV at the end of March 2017. Solar PV above 50kW will continue to receive two ROCs. These changes will not 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

- 6.5 In August 2014, DETI announced its proposals for the Renewable Heat Incentive (RHI). RHI was a payment, guaranteed for seven years, for householders that install renewable heating systems such as biomass boilers, air or ground source heat pumps or solar water heating panels. It was designed to 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 to closure in February 2016 funded 2,637 renewable heating installations. This comprised 411 air source heat pumps, 343 ground source heat pumps, 1,179 biomass boilers and 704 solar water heating panels. However, due to unprecedented demand, DETI announced earlier this year that the scheme would close to new applicants from 29th February 2016.





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