

# Energy Efficient Scotland



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# Ministerial Foreword



Over the next period to 2040 we will transform Scotland's buildings to be warmer, greener and more efficient. Doing so will have substantial economic, social and health benefits, and this Route Map sets out how the Energy Efficient Scotland Programme will achieve that ambition.

Households, businesses and public services across Scotland spend around £2.5 billion every year on heating and cooling the buildings we use each day. This represents the largest part of Scotland's energy use (over 50%) and is therefore crucial to our Scottish Energy Strategy<sup>1</sup> and Climate Change Plan<sup>2</sup>.

However, we know that in reality, many of our buildings are inefficient and hard to heat which increases energy bills and wastes money. The result therefore is high energy costs which can be a challenge for many households. This leads to fuel poverty, puts pressure on household finances, and can have adverse effects on people's health.

Similarly, for many of our businesses and public services, energy inefficiency and high energy bills adds unnecessary financial burdens and has the potential to hold back economic growth.

Our latest statistics show that buildings account for 19.7% of total greenhouse gas emissions. To achieve our climate change ambitions, providing a safe clean environment for future generations, by 2050 we must ensure our buildings use as little energy as possible and what energy they do use is from low carbon sources.

That is why energy efficiency has been a consistent priority for the Scottish Government—by the end of 2021 we will have allocated over £1 billion since 2009 to tackle fuel poverty and make our homes more energy efficient. In addition we have invested over £85 million since 2007 in loans supporting Scottish households, businesses and organisations finance the implementation of energy efficiency and renewable measures and the development of district heating schemes, supporting over 5,200 applicants. We have invested to stimulate the market for new technologies and to create the economic and social conditions to support low-carbon heating.

Given the scale of our ambition to eradicate fuel poverty, mitigate climate change, and grow the Scottish economy in an inclusive way, energy efficiency was designated as a national Infrastructure priority by Scottish Ministers. We did this because it has many benefits - benefits for people, businesses and society as a whole. It puts money in people's pockets, delivers savings to the public sector to reinvest in frontline services, and improves the competitiveness of our businesses. Investing in energy efficiency will boost growth, with research showing a 10% improvement in the energy efficiency of all UK households leads to a sustained GDP expansion of around 0.16%.

We are determined to remove poor energy efficiency as driver of fuel poverty and to meet our climate change targets – making homes easier to heat for our most vulnerable

<sup>1</sup> <http://www.gov.scot/Publications/2017/12/5661/0>

<sup>2</sup> <http://www.gov.scot/Publications/2018/02/8867>

households, and transforming our buildings to be warmer, greener and more efficient. This Route Map shows how we will do that.

It proposes clear long term energy efficiency standards that buildings will need to achieve by 2040. It sets out the pathways that different building sectors will take between now and then to achieve or exceed that standard.

Getting there will require a range of measures – some voluntary and some compulsory – including bringing forward legislation in Parliament if required.

This Government will always support our most vulnerable people – that is why we will continue to focus our funding on those experiencing fuel poverty. This is the purpose of our draft Fuel Poverty Strategy and the Fuel Poverty (Scotland) Bill – to set a statutory target to eradicate fuel poverty. And why we will continue to prioritise the improvement of the homes of fuel poor households within the Energy Efficient Scotland programme.

We recognise that we need to make a compelling case for change. We are not advocating that people spend money unwisely – we have already demonstrated the potential economic, social and health benefits of energy efficiency measures. The spend-to-save principle of investing in energy efficiency is well-proven, and that is the approach we will continue to take. We believe that measures installed should be both technically feasible and cost effective, and should more than pay back in terms of energy savings, improved comfort levels, and wider benefits to health and the environment.

We want to support people to take action to meet the long term energy efficiency standards. That is why in this Route Map we are committing to ensuring there is an offer from Government in return for action. We will continue to offer national advice and financial support. In addition we are working closely with our local government partners to develop significantly expanded regional programmes to provide local flexibility and support.

We will ensure that support to help people and businesses meet the long term standards is effective, high quality and good value for money. We want to prevent people from being taken advantage of by cold callers, unscrupulous sham providers or sub-standard workmanship – which we are all too aware, has happened in the past.

We also want to help Scottish businesses grasp the economic opportunity that setting this ambitious goal creates. By setting long-term standards and a clear timetable for achieving them, we can provide a measure of certainty to businesses in Scotland. Certainty that will allow them to invest in the people, skills and equipment necessary to realise our ambition, and to reduce the cost of investment through economies of scale.

Energy Efficient Scotland is a very ambitious programme, with challenging targets. But we know that it can deliver significant economic, social, environmental and health benefits and create a fairer greener Scotland. This Route Map sets out a robust, credible and evidence-based pathway to realising these benefits, and we are proud to be publishing it today.



**KEVIN STEWART MSP**

Minister for Housing and Local Government



**PAUL WHEELHOUSE MSP**

Minister for Business, Innovation and Energy

# EXECUTIVE SUMMARY



# Introduction

## Summary: Vision and overview



Scottish Ministers designated energy efficiency as a national infrastructure priority in 2015, recognising the many benefits delivered by improving the energy performance of our buildings. Energy Efficient Scotland (the Programme) sees us delivering on this priority.

Energy efficiency has been a long term priority for the Scottish Government – by the end of 2021, we will have allocated over £1 billion pounds since 2009 on tackling fuel poverty and improving energy efficiency. Energy Efficient Scotland builds on our existing, well established and successful schemes.

Achieving our vision will take time. That is why Energy Efficient Scotland is a 20 year programme containing a set of actions aimed at making Scotland's existing buildings near zero carbon wherever feasible by 2050, and in a way that is socially and economically sustainable. By the end of the Programme Energy Efficient Scotland will have transformed the energy efficiency and heating of Scotland's buildings, making our

existing homes, shops, offices, schools and hospitals more comfortable and easier to heat.

Energy Efficient Scotland delivers across two key policy areas of Government: fuel poverty and climate change. Because of this it has two main objectives:

- **Removing poor energy efficiency as a driver for fuel poverty.** As set out in our recent consultation on a new fuel poverty strategy for Scotland<sup>3</sup> we are committed to removing poor energy efficiency as a driver of fuel poverty. The Programme will be the primary mechanism by which this is achieved.
- **Reducing greenhouse gas emissions through more energy efficient buildings and decarbonising our heat supply.** The Programme also supports our ambitious targets to reduce greenhouse gases<sup>4</sup>. These targets will see emissions reductions in the residential and services sectors of 23% and

<sup>3</sup> <http://www.gov.scot/Publications/2017/11/6179>

<sup>4</sup> The basket of greenhouse gases comprises carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), for which the baseline is 1990; and hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>), for which the baseline is 1995. Nitrogen trifluoride was added to the greenhouse gas emissions covered by the Act by The Climate Change (Additional Greenhouse Gas) (Scotland) Order 2015

59% respectively by 2032 on 2015 levels. Our Climate Change Plan, published in February 2018<sup>5</sup>, sets out the policies and proposals that will keep Scotland on course to achieve the 2050 target of cutting total greenhouse gas emissions by 80%. To achieve this, emissions from all buildings in Scotland will need to be near zero by 2050. The Plan also sets out that by 2032, improvements to the building fabric of domestic and non-domestic buildings will result in a 15% reduction in domestic heat demand and 20% reduction in non-domestic heat demand respectively.

As a Government our substantial investment in energy efficiency has seen significant improvement in buildings in Scotland. However, we realise that there is much more that needs to be done. To achieve our two key objectives we are proposing to set long term mandatory energy performance standards for all buildings in Scotland to reach by 2040, including more ambitious targets for properties with fuel poor households. We are also proposing that this is achieved in a phased way, recognising different domestic and non-domestic building sectors have different starting points and will be improved at different paces.

Achieving our objectives will create opportunities and realise multiple benefits across Scotland. As well as supporting our ongoing work to eradicate fuel poverty and reduce emissions, it will help to keep bills affordable, make our homes and businesses more comfortable to live and work in, improve health and wellbeing outcomes for our children and more vulnerable Scots, increase the productivity and competitiveness of our businesses and make a positive contribution to the Scottish economy.

This Route Map for the Programme sets out the journey our homes, businesses and public buildings will take to become more energy efficient. It will also guide the decisions that we will be making, with our partners, over the next 20 years. The Route Map has been developed after a series of consultations and stakeholder events that have shaped the decisions we have taken.

To help inform further work on the Programme this Route Map is accompanied by two consultations<sup>6</sup> covering key areas of work that we will take forward in the next two years during the transition phase of the Programme.

The steps we will take on our journey to 2040 are not set in stone. We have set out our long term destination across the sectors and some of the initial steps we will be taking along the way. But we cannot be sure what the future of our energy system will look like, given emerging technologies and increasingly localised energy systems. To take account of the anticipated changes we will review the Programme's progress on a regular basis (expected to be every four years), aligning where appropriate with review processes for key policy areas such as Fuel Poverty, the Energy Strategy, Climate Change Plans and sectoral standards. This will allow us to thoroughly assess the impact of the programme and flex and shape it to meet the challenges and opportunities that will arise.

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<sup>5</sup> <http://www.gov.scot/Publications/2018/02/8867>

<sup>6</sup> <https://beta.gov.scot/ISBN/9781788518185>  
<https://beta.gov.scot/ISBN/9781788518178>

## IMPROVING OUR HOMES

### Summary: Setting the long term domestic standard

#### **By 2040 all Scottish homes achieve an EPC C (where technically feasible and cost effective).**

When we consulted on the Programme in January 2017 there was a clear consensus around setting long term targets, providing certainty and a clear direction of travel. To give that certainty and clarity we are proposing that all domestic properties are required to achieve an Energy Performance Certificate (EPC) energy efficiency rating of at least EPC C by 2040 at the latest. For more information on EPCs see pages 16 and 17.

We have chosen to use EPCs to set the standard as our consultation in 2017 showed that EPCs are widely known and provide a clear way to model and understand the energy performance of a building. The consultation also raised some issues with EPCs. We have listened and already commissioned research to identify how we can improve EPCs. Following this we will be doing more work with partners to make sure EPCs more accurately record the energy efficiency of buildings.

We know that not all buildings will be able to achieve this standard, and that in some cases the cost of the work may outweigh the benefits in terms of energy savings. We will work with partners over the next two years to identify those buildings that may not be able to achieve the standard but will still need to be improved as far as is reasonable.

Reaching the long term standard will require a mixture of encouragement and regulation that will differ between the social rented, the private rented and the owner occupied sectors. We are setting out below the different journeys these sectors will take to 2040. Chapter 3 has more

details on how and when we will improve our homes.

### Summary: Energy efficiency standard in the social rented sector

#### **Maximise the number of social rented homes achieving EPC B by 2032.**

Following the introduction of the Energy Efficiency Standard for Social Housing (EESHS) in 2014, homes in the social rented sector are some of the most energy efficient in Scotland, with over 90% already achieving an EPC D or above<sup>7</sup>. We want to continue the excellent progress that has been made and, following the recent review of EESHS, we are launching a consultation on our proposals for social housing alongside the publication of this Route Map<sup>8</sup>.

The consultation proposes a target to maximise the number of homes in the social rented sector achieving EPC B by 2032 and to include air quality and environmental impact requirements. The consultation also proposes that no social housing should be let if the energy efficiency rating is lower than EPC D, and seeks views on when this minimum standard should come into force.

### Summary: Energy efficiency standard in the private rented sector

#### **Private rented homes to EPC E by 2022, to EPC D by 2025, and to EPC C by 2030 (where technically feasible and cost effective)**

People living in private rented accommodation generally live in homes that have poorer energy efficiency than elsewhere in the domestic sector. We are committed to improving the energy efficiency of homes in the private rented sector, ensuring that tenants are able to enjoy homes that are warmer and more affordable to heat.

<sup>7</sup> SHCS 2016, based on SAP 2012

<sup>8</sup> <https://beta.gov.scot/ISBN/9781788518185>

We are proposing that standards will be gradually increased over the lifetime of the Programme. We will be bringing forward regulations to require that where there is a change in tenancy after 1 April 2020 the property will need to be EPC E, extending to all private rented properties to be EPC E by 31 March 2022; and to require that where there is a change in tenancy after 1 April 2022 the property will need to be EPC D, extending to all privately rented properties to be EPC D by 31 March 2025.

We are consulting on our proposal for these homes to achieve EPC C by 2030, where technically feasible and cost effective. More details on this proposal are set out in the consultation accompanying the Route Map.

### Summary: Energy efficiency standard for owner occupiers

**All owner occupied homes to reach EPC C by 2040 (where technically feasible and cost effective).**

Owner occupied homes account for 61% of domestic housing and around 34% of these are EPC C or above. At this stage, we are not intending to compel home owners to improve the energy efficiency of their homes. Instead we will be working with stakeholders and owner occupiers to encourage the uptake of our offer and supporting local authorities to deliver area based schemes that will see 'end-to-end' support from initial advice through to quality assured installation of measures.

We are proposing that a requirement to reach the long term standard will be considered from 2030 and are seeking your views on this in the accompanying consultation.

### Summary: Energy efficiency target for households in fuel poverty

**All homes with households in fuel poverty to reach EPC C by 2030 and EPC B by 2040 (where technically feasible and cost effective).**

To support our work on eradicating fuel poverty by removing poor energy efficiency as a driver we are consulting on setting a more ambitious target for those households in fuel poverty.

There were around 649,000 households living in fuel poverty in 2016, of which 79% lived in homes rated below an EPC C. These are our most vulnerable households and improving the energy efficiency of their homes will have a significant impact on their heating bills. Our draft Fuel Poverty Strategy and the Fuel Poverty (Scotland) Bill will set statutory targets on fuel poverty. Energy Efficient Scotland lies at the heart of that commitment and we are proposing that the homes of all fuel poor households reach EPC C by 2030 and EPC B by 2040. We already spend significant sums to improve the energy efficiency of the homes of fuel poor households through our energy efficiency programmes and we will continue to target our funding to fuel poor households throughout this programme.

## IMPROVING OUR NON-DOMESTIC BUILDINGS

### Summary: Energy efficiency standard in the non-domestic sector

**Our non-domestic buildings will be assessed and improved to the extent this is technically feasible and cost effective by 2040.**

There are around 200,000 non-domestic premises in Scotland, including around 20,000 public sector buildings. Given the wide variety of building size and use we are proposing to move to a benchmarking system for assessing energy efficiency and we are seeking your views on this in the Energy Efficient Scotland consultation.

We are also proposing to build on the current regulations under the Climate Change (Scotland) Act. These currently only apply to buildings over 1,000m<sup>2</sup>, and buildings can defer improvement by reporting their energy use. We aim by 2040 to have extended the regulations to all non-domestic buildings and for them to be improved to the extent this is technically feasible and cost effective. We will phase the introduction of regulations with the size of the buildings affected decreasing over time. We are seeking views on this phasing in the accompanying consultation.

We will consult further on our plans for the non-domestic sector in 2019 and set out our proposals for this sector by 2020, ahead of new regulations commencing in 2021.

### Alignment with industrial energy

We are also committing to work with industry, aligning our offers of advice and support to consider energy use in its entirety, recognising that reducing the energy used for manufacturing can be as important as ensuring the energy efficiency of the building. More details on our proposals for the non-domestic sector are in Chapter 3.

### Summary: Energy efficiency standard in the public sector

The public sector has a strong track record of delivering energy efficiency and many organisations in the public sector are actively working to improve their buildings.

We are committing to working alongside our public sector partners to establish a baseline of the energy efficiency of public sector buildings. Building on this we will work collaboratively to support a continuing role for the public sector in the vanguard of energy efficiency and to enable all public sector buildings to achieve the relevant benchmark ahead of 2040 (where technically feasible and cost effective).

### Summary: Delivering the Programme

Energy Efficient Scotland builds on existing legislation and programmes that are already supporting the improvement of the energy efficiency of our homes, businesses and public buildings and the work we are doing with local authorities on the development of Local Heat & Energy Efficiency Strategies (LHEES). The launch of the Energy Efficient Scotland Transition Programme with this Route Map sees us continuing to integrate and streamline our existing support over the next two years during the transition phase.

In year 1 of the Transition Programme we will:

- Continue to allocate funding for fuel poverty programmes
- Offer funding to support development of LHEES
- Fund local authorities to offer end-to-end support for energy efficiency in domestic and non-domestic able to pay markets

In year 2 we will build on our work in year 1 and further integrate our funding streams. We expect that this approach, alongside the on-going development of LHEES will see local authorities developing Action Plans that will serve as the evidence for drawing down a range of Scottish Government funding.

We recently consulted on the introduction of a statutory duty on local authorities to develop LHEES<sup>9</sup>. LHEES would link our long term targets and national policies with delivery of energy efficiency and heat decarbonisation on the ground. They would allow local authorities to prioritise and target work, whether that is supporting owner occupiers and small and medium sized enterprises (SMEs) to install energy efficiency measures or encouraging the development of district heating and other low carbon heat solutions.

<sup>9</sup> <http://www.gov.scot/Publications/2017/01/9139>  
<http://www.gov.scot/Publications/2017/11/6232>

Chapter 4 has more details on how the Programme will be delivered both locally and nationally.

### Summary: Protecting Consumers

Consumer protection and quality assurance must underpin the Programme. Through consultation feedback we have identified a set of key principles that will sit at the heart of our work in this area. These principles will ensure that across the board there is robust consumer protection, focussed on high standards of quality, customer care, competence, skills and training, and health and safety. We have set up a Short Life Working Group that will use these principles to develop a quality assurance framework that will be operational in 2020.

Chapter 5 sets out our key principles and more detail on the work we are doing on quality assurance and consumer protection.

### Summary: Skills and Supply Chain

The rollout of the Programme has the potential to create a substantial Scottish market and supply chain for energy efficiency services and technologies, with every £100 million spent on energy efficiency improvements in 2018 estimated to support approximately 1,200 full-time equivalent jobs across the Scottish economy<sup>10</sup>. As part of our commitment to the Programme we will be working to provide support and actively promote the opportunities of this market for Scottish companies. As well as making sure our companies can benefit from these opportunities we need to make sure that the quality of the work carried out by the supply chain is of a high standard and that installers are suitably qualified.

Because of the close connection between quality assurance, consumer protection and the skills and supply chain, we are considering these issues in the round through the work being undertaken by the Short Life Working Group on Quality Assurance, Consumer Protection, Skills and Supply Chain. More details can be found in Chapter 6.

### Summary: Monitoring the Programme

In order to ensure we are on track to achieve the Programme vision, aims and objectives set out in this Route Map we will be monitoring and evaluating the programme throughout its lifetime. This monitoring and evaluation will allow us to adapt and flex the programme where necessary.

As well as looking at outputs we will be monitoring and measuring outcomes, capturing the impact the programme has on people and communities.

We will be publishing a monitoring and evaluation framework which will be ready for implementation by the end of the transition period. Chapter 7 gives more detail.

### Summary: Legislation

We are introducing the Fuel Poverty (Scotland) Bill later this year that will set a statutory target to eradicate fuel poverty. Our new Fuel Poverty Strategy will set out a framework of sub-targets showing how we will achieve our overall target.

Outwith the Fuel Poverty (Scotland) Bill, we are considering the need for legislation to create a statutory duty for local authorities to develop LHEES and for regulation of district and communal heating<sup>11</sup>. We have previously consulted on these issues. We recognise that other new or revised powers or duties may be

<sup>10</sup> Applying the latest construction sector multiplier (for 2014) from the Scottish Government input-output tables, and deflating 2018 spend to 2014 prices using the GDP deflator.

<sup>11</sup> References to "regulation of district heating" within this document include 'regulation of communal heating' as set out in the Scottish Government's consultation on this issue - <http://www.gov.scot/Publications/2017/11/6232/downloads>

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needed to ensure delivery and funding across all strands of the Programme over its lifetime, and are seeking views within the consultation accompanying this Route Map on what these may be. See Chapter 8 for more details.

### Summary: Conclusion

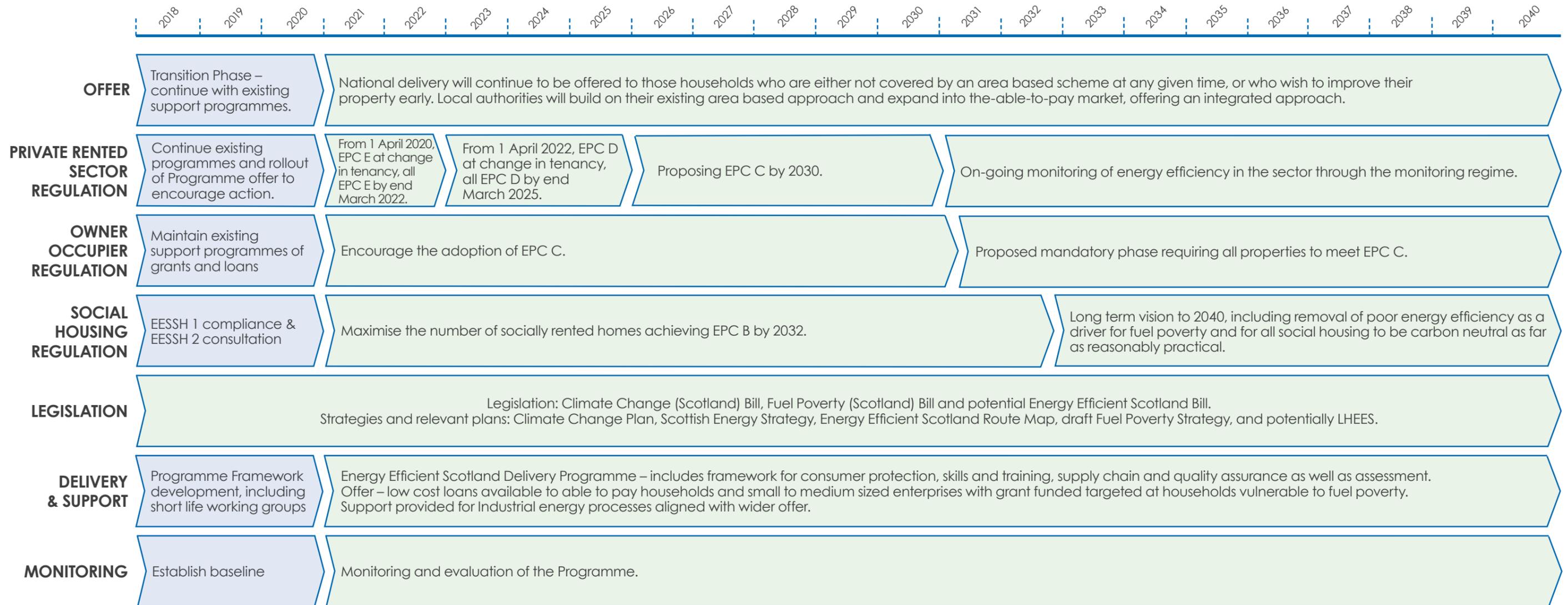
This Route Map is our 20 year plan to improve the energy efficiency of Scotland's buildings and decarbonise their heat supply. We will achieve this by setting energy efficiency standards for our domestic and non-domestic buildings and being clear on how and when these will be achieved. It will help secure an investment in excess of £10 billion over the lifetime of the programme, bringing numerous economic benefits for Scotland. For example, making our homes and buildings more affordable to heat as well as supporting a supply chain that will install the required measures. The Route Map sets out our initial steps on this journey and the Programme and progress we have made will be reviewed on regular basis and adapted to ensure we achieve our objectives.

# SUMMARY

## DOMESTIC

|              | • Transition  | • General  | • Advice  | • Delivery  | • Service  | • Finance  | • Service   |
|--------------|---|--|---|---|--|--|---|
| <b>OFFER</b> | <p>In the Transition Phase we will expand current local delivery programmes into able-to-pay households and businesses, drawing on national advice and financial support.</p> <p>The two year programme will incrementally offer local authorities greater opportunities to plan and deliver integrated energy efficiency projects.</p> | <p>The Programme offer will consist of a universal end-to-end offer made by either a local authority or the Scottish Government.</p> | <p>The foundation of the Programme offer is that all households will be able to access good quality, independent advice and information on improving the energy efficiency of their property and reducing their fuel bills.</p> | <p>Tackling fuel poverty – Area based schemes and Warmer Homes Scotland.</p> <p>National delivery - continue to be offered to provide those households who are either not covered by an area based scheme at any given time, or who wish to improve their property earlier than any proposed backstop date.</p> | <p>Local delivery - Local authorities expand their current approach to delivery by developing a Local Heat and Energy Efficiency Strategy (LHEES) setting out a costed delivery plan for its area.</p> | <p>A mixture of grant and loan funding across different tenure and sectors to tackle fuel poverty and enable achievement of standards.</p> | <p>The Programme customers should be offered a consistent, quality level of service at each stage of the process.</p> <p>Independent advice will be the bedrock, advising property owners on the standards they will be expected to achieve, deadlines, trigger points, programmes and funding.</p> |

## DOMESTIC PROGRAMME SUMMARY

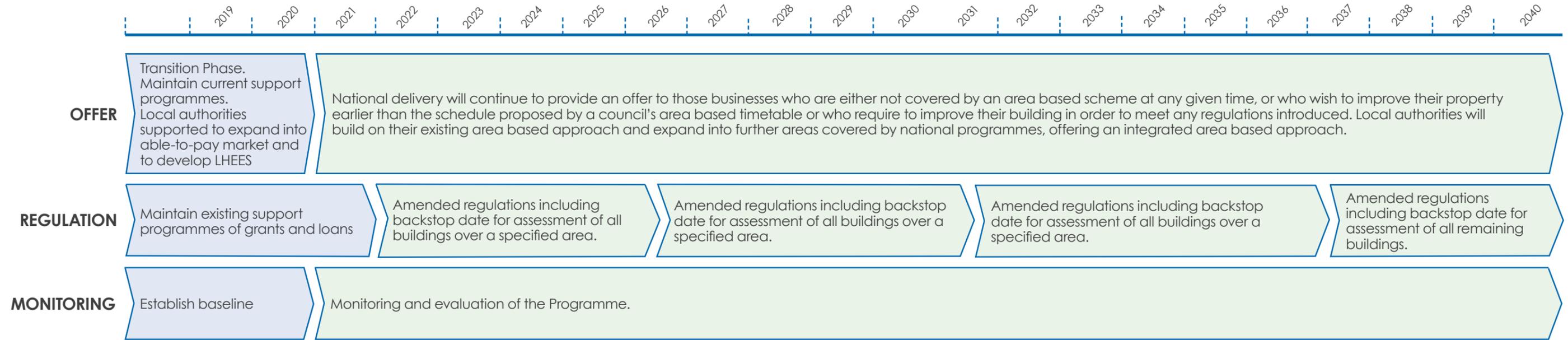


# SUMMARY

## NON-DOMESTIC

|                   | • Transition   | • General   | • Advice  | • Delivery   | • Finance  | • Service   |  |
|-------------------|--|---|---|--|--|---|--|
| <b>OFFER</b>      | In the Transition Phase we will expand current local delivery programmes into able-to-pay households and businesses, drawing on national advice and financial support. |   | The foundation of the Programme offer is that all businesses will be able to access good quality, independent advice and information on improving the energy efficiency of their building(s) and reducing their fuel bills. | National Delivery - continue to be offered to those businesses who are either not covered by an area based scheme at any given time, or who wish to improve their property earlier than backstop date. | Local authorities expand their current approach to delivery by developing a Local Heat and Energy Efficiency Strategy (LHEES) setting out a costed delivery plan for its area. | Subsidise cost of interest free loans for SME sector. As non-domestic baseline developed there is potential to consider a more targeted approach to certain businesses (in terms of size or sector). Large businesses and public sector have ready access to finance resources. |  |
| <b>REGULATION</b> | The scenario proposes the use of building floor area to bring a roughly equal proportion of buildings under regulation within a five yearly review of regulations.     | The Assessment of Energy Performance of Non-domestic Buildings (Scotland) Regulations 2016 introduced a requirement for owners of larger non-domestic buildings (>1,000 m <sup>2</sup> ) to assess and improve the emissions and energy performance of their buildings. The requirement is triggered by sale or rental. | The output of an assessment is an 'Action Plan' that records both the improvement targets and the measures that will be undertaken to meet them, based upon advice from a registered Advisor.                               |  |  | Energy and emissions improvement targets will be set at a level that will pay back investment over an appropriate timescale. This will reinforce the message that 'simple improvements make sound business sense'.  |  |

## NON DOMESTIC PROGRAMME OVERVIEW



### What are Energy Performance Certificates?

Energy Performance Certificates (EPCs) provide information on how energy efficient your building is, and how it could be improved. Buildings are rated on a scale from A-G, with A being the most efficient. Information is also provided on measures which could be made to improve the energy efficiency and an indication of the cost for each improvement. An EPC must be produced when a new building has been constructed; and when a building is to be sold or rented to a new tenant<sup>12</sup>. An EPC must also be obtained and displayed in a building over 250 m<sup>2</sup> in area, which is occupied by a public authority and frequently visited by the public.

EPCs are valid for 10 years.<sup>13</sup> They are based on information such as the size and layout of a building, how it has been constructed and the way it is insulated, heated, ventilated, and lighted. Since people use buildings in different ways, the calculation is based on standardised assumptions of occupancy and use.

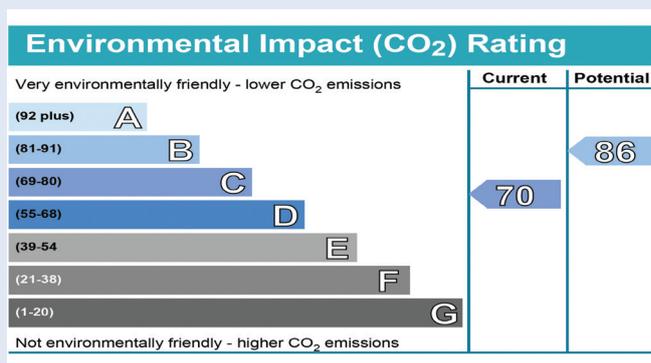
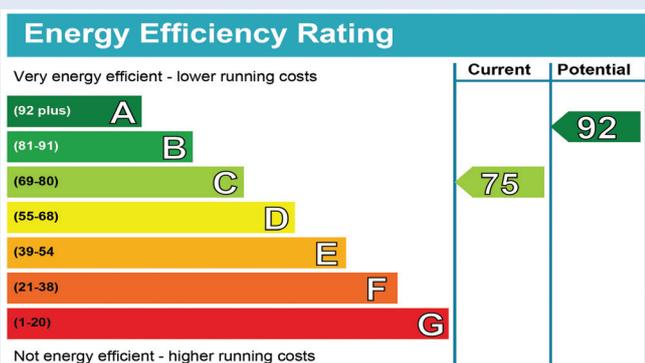
### What do domestic EPCs show?

Domestic EPCs display an Energy Efficiency Rating (EER) and an Environmental Impact Rating (EIR). The EER is rated in terms of energy costs, while the EIR is rated in terms of carbon emissions.

Domestic EPCs also have numerical ratings, with a higher number suggesting greater energy efficiency.

On an EPC the numbered arrows show the current rating based on the existing energy performance of the property and the potential rating if the suggested improvements are implemented.

Responses to the Scotland's Energy Efficiency Programme consultation in 2017 showed that EPCs are well understood and provide a clear way to model and understand the energy efficiency performance of a building. There was a greater awareness of the EER measurement in the EPC compared to the EIR. This, as well as the existing use of the EER in the social housing sector, is why we will use the EER to set the long term standard.



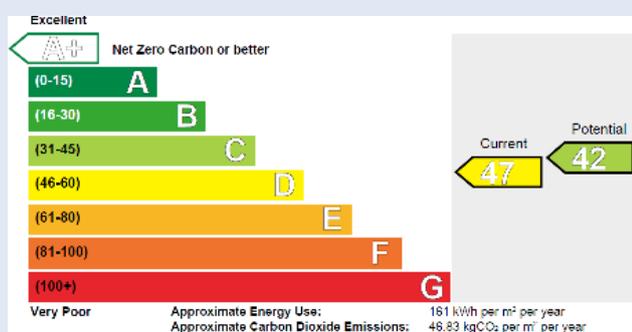
12 Stand-alone non-domestic buildings below 50m<sup>2</sup>, temporary buildings with planned use of no more than two years, non-domestic buildings whose function implies low energy demand and buildings sold for demolition are currently all exempt.

13 <https://beta.gov.scot/policies/building-standards/>

### How are non-domestic EPCs different?

The non-domestic EPC only contains one rating, which is based on projected carbon emissions rather than energy cost considerations. Therefore, in contrast to domestic ratings, a lower numerical rating for a non-domestic building suggests greater energy efficiency.

The approximate energy use for the non-domestic building (used to calculate emissions) is reported on an EPC but not expressed on a rating scale.



# Chapter 1: Programme Vision and Objectives



## VISION



### OUR VISION

BY 2040 OUR HOMES AND BUILDINGS ARE WARMER, GREENER AND MORE EFFICIENT

## INTRODUCTION

Scottish Ministers designated energy efficiency as a national infrastructure priority in 2015, recognising the many benefits delivered by improving our buildings. Energy Efficient Scotland sees us delivering on our commitment.

Improving the energy efficiency of our buildings will reduce our energy consumption leading to reduced greenhouse gas emissions

Energy efficiency is at the heart of Scotland's new Energy Strategy and Climate Change Plan – underpinning the Scottish Government's 'whole-system' approach to decarbonisation.

Energy efficiency has been a long term priority for the Scottish Government – by the end of 2021, we will have allocated over £1 billion pounds since 2009 on tackling fuel poverty and improving energy efficiency. Energy Efficient Scotland builds on our existing, well established and successful schemes.

Achieving our vision will take time. That is why Energy Efficient Scotland is a 20 year programme containing a set of actions all aiming to make Scotland's existing buildings near zero carbon wherever feasible by 2050. And to do so in a way

that is socially and economically sustainable, reaping the benefits for all those living and working in Scotland. By 2040, the Programme will have transformed the energy efficiency and heating of Scotland's buildings, making our existing homes, shops, offices, schools and hospitals more comfortable and easier to heat.

### What the Programme will do

Until the mid-2020s, the Programme will focus on improving the energy efficiency of Scotland's existing buildings, as well as continuing to support the deployment of low regrets, low carbon heat options (such as individual renewable heat technologies for those buildings not connected to the gas grid or heat networks where they make sense).

The future shape of the gas and electricity networks will impact on Energy Efficient Scotland and our approach to decarbonising heat. It is important the Programme can adapt to any changes, including network changes. In the mid-2020s, there will be the first of a series of Programme reviews. This review will take into account the developing local energy systems in Scotland, as set out in Scotland's Energy Strategy<sup>14</sup> as well as the decisions made by the UK Government on areas where it has legal

<sup>14</sup> <http://www.gov.scot/Publications/2017/12/5661>

competence, particularly the mains gas network and the electricity network. The Programme will then be able to take into account the implications of the UK decisions in determining its approach to rolling out low carbon heat beyond the mid-2020s.

The Programme's focus is on improving the energy efficiency of existing buildings, it will not extend to new buildings.

Whilst Energy Efficient Scotland is focussed on the energy efficiency of buildings we know that in the non-domestic sector the energy used in manufacturing is just as important. That is why we are aligning our activity in the industrial sector with wider advice and support on how to reduce energy consumed on sites for productive processes.

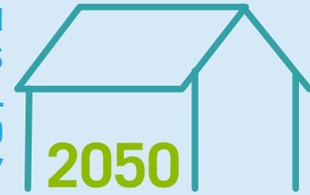
### The Programme and Behaviour Change

As well as improving the energy efficiency of Scotland's buildings it is equally important the Programme supports the occupiers of the improved buildings to run the buildings as effectively and efficiently as possible, getting the most out of the improvements.

Behaviour change is already part of our energy efficiency programmes and it will continue to be as the Programme is rolled out. The Scottish Government currently funds Home Energy Scotland and Resource Efficient Scotland who provide free, impartial advice to property owners including on energy saving behaviours such as heating system management. Behaviour change advice is also embedded into our domestic area based schemes to help households maximise the benefits of energy efficiency improvements. During the Transition Programme we will continue to develop and trial new innovative approaches.

## PROMOTING DECARBONISATION OF HEAT

EMISSIONS FROM ALL BUILDINGS IN SCOTLAND WILL NEED TO NEAR ZERO BY



OUR CLIMATE CHANGE PLAN SETS OUT A TRAJECTORY TO 2032 WHICH REQUIRES:

**35%** OF DOMESTIC AND  
**70%** OF NON-DOMESTIC BUILDINGS



HEAT TO BE SUPPLIED BY LOW CARBON TECHNOLOGIES



REDUCTION IN DOMESTIC BUILDINGS' HEAT DEMAND BY

**15%**

THROUGH IMPROVEMENTS TO THE BUILDING FABRIC BY 2032



REDUCTION IN NON-DOMESTIC BUILDINGS' HEAT DEMAND BY

**20%**

THROUGH IMPROVEMENTS TO THE BUILDING FABRIC BY 2032

**THIS IS SUPPORTED BY OUR LONG STANDING TARGET THAT WILL SEE 11% OF NON-ELECTRICAL HEAT DEMAND TO BE FROM RENEWABLE SOURCES BY 2020.**

To support our ambitions we have a range of support measure in place

- **Low Carbon Infrastructure Transition Programme (LCITP)** - financial support for low carbon projects covering a wide range of technologies, including of low carbon and renewable heat.  
Since March 2015, LCITP has already offered over £40 million of funding to 16 low carbon demonstrator projects supporting low carbon energy generation and supported the co-development of over 30 proof of concept and development proposals.
- The **District Heating Loan Fund** helps address the financial and technical barriers to district heating projects.  
– Since 2011 just under £13 million offered to 45 projects across Scotland.
- The Scottish Government actively promotes the GB-wide **Renewable Heat Incentive (RHI)** scheme - uptake in Scotland is much higher pro-rata at 20% of the total accreditations for Great Britain.
- **SME Loan Scheme** low or no cost loans to business up to £100,000 for the installation of efficiency measures and renewable technologies via Resource Efficient Scotland (RES). Since 2008, the SME Loan Scheme has financed over 800 projects resulting in estimated heat and electricity energy savings of 339 GWh, carbon savings of over 130 ktCO<sub>2</sub> and financial savings of over £36 million.
- The **Home Energy Scotland Loan Scheme** provides interest-free loans up to the value of £35,000 for both energy efficiency measures and renewable technologies via the Energy Saving Trust (EST). There have been 1,325 loans offered from the Scottish Government under the HES Loan scheme since it was launched in May 2017 and the value paid out from the Scottish Government through the HES Loan Scheme to date totals £3.4 million.

## CASE STUDY - Wick

In June 2012, Ignis Wick Ltd (the operating subsidiary of Ignis Biomass Ltd) purchased the assets of the Wick District Heating scheme, and took over its operation from Highland Council. Ignis Wick invested £2.5 million in a new biomass steam boiler and associated modifications, to replace the existing oil fuelled boiler. This investment in wood fuel supply reduced fuel costs and secured the heat supply to 165 homes and the adjacent Old Pulteney whisky distillery. The wood fuel is supplied from local woodlands, creating significant investment in the economy of Caithness. Skilled jobs will be secured in forestry and in support services as a result.

Ignis continued to invest in the network, with assistance from the Scottish Government's District Heating Loan Fund. The heat network now supplies over 200 domestic customers (of which over 90% are social housing) with low cost heat, as well as a care home, the Highland Council's Assembly Room and the distillery. It was recently announced that Caithness General Hospital will join the network, adding further security and cost benefits.

In March 2016, the Green Investment Bank and Equifax announced their acquisition of Ignis Biomass Ltd. Plans are in place to upgrade existing infrastructure as well as commission a number of smaller-scale stand-alone CHP systems for major users in and around Wick.

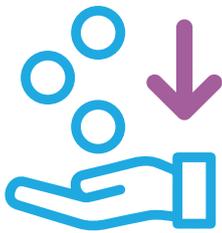
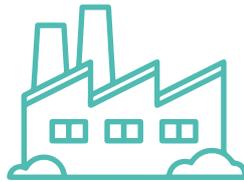
## The Programme Objectives

### Why we need the Programme

**23%**  
EMISSION REDUCTIONS IN  
THE DOMESTIC SECTOR BY  
2032 ON 2015 LEVELS



**59%**  
EMISSIONS REDUCTION IN  
THE NON-DOMESTIC SECTOR  
BY 2032 ON 2015 LEVELS



REMOVING POOR ENERGY  
EFFICIENCY AS A DRIVER  
OF FUEL POVERTY

The Programme delivers across two key policy areas of Government: fuel poverty and climate change. Because of this it has two main objectives:

- supporting the eradication of fuel poverty, by removing poor energy efficiency as a driver of fuel poverty
- reducing greenhouse gas emissions through more energy efficient buildings and by decarbonising our heat supply.

As set out in our recent consultation on a new fuel poverty strategy for Scotland we are committed to removing poor energy efficiency as a driver of fuel poverty.

As well as being one of the six strategic priorities in our Energy Strategy Energy Efficient Scotland also supports our ambitious targets to reduce greenhouse gases<sup>15</sup>. These ambitious targets will see emissions reductions in the residential and services sectors of 23% and 59% respectively by 2032 on 2015 levels. Our Climate Change Plan, published in February 2018<sup>16</sup>, sets out the policies and proposals that will keep Scotland on course to achieve the 2050 target of cutting total greenhouse gas emissions by 80%. To achieve this, emissions from all buildings in Scotland will need to be near zero where feasible by 2050. The Plan also sets out that by 2032, improvements to the building fabric of domestic and non-domestic buildings will result in a 15% reduction in domestic heat demand and 20% reduction in non-domestic heat demand respectively.

Later in 2018, the Scottish Government will introduce a new Climate Change Bill with even more ambitious targets than those set in the Climate Change (Scotland) Act 2009. This will see Scotland becoming one of the first countries in the world to legislate to support the aims of the Paris Agreement.

## The benefits of the Programme

In achieving our objectives, we will be delivering multiple benefits. Investment in improving the energy efficiency and decarbonising the heat of Scotland's buildings will:

- put more money in people's pockets by helping to keep bills affordable – supporting our ambitions to eradicate fuel poverty.
- improve business competitiveness by making sure every pound spent on energy is maximised in productivity.
- substantially reduce greenhouse gas emissions contributing to meeting our ambitious climate change targets.

<sup>15</sup> The basket of greenhouse gases comprises carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O), for which the baseline is 1990; and hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF<sub>6</sub>), and nitrogen trifluoride (NF<sub>3</sub>), for which the baseline is 1995. Nitrogen trifluoride was added to the greenhouse gas emissions covered by the Act by The Climate Change (Additional Greenhouse Gas) (Scotland) Order 2015

<sup>16</sup> <http://www.gov.scot/Publications/2017/11/6179>

- boost GDP, with research showing a 10% improvement in the energy efficiency of all UK households leads to a sustained GDP expansion of around 0.16%.<sup>17</sup>
- help create a substantial Scottish market and supply chain for energy efficiency services and technologies. Every £100 million spent on energy efficiency improvements in 2018 is estimated to support approximately 1,200 full-time equivalent jobs across the Scottish economy.<sup>18</sup>
- deliver health, wellbeing and early years improvements through warmer homes.
- help regenerate our communities through upgrading building stock.



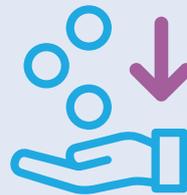
**EVERY £100 MILLION SPENT ON ENERGY EFFICIENCY IMPROVEMENTS IN 2018 IS ESTIMATED TO SUPPORT APPROXIMATELY 1,200 FULL TIME EQUIVALENT JOBS ACROSS THE SCOTTISH ECONOMY**



**BOOST GDP, WITH RESEARCH SHOWING A 10% IMPROVEMENT IN THE ENERGY EFFICIENCY OF ALL UK HOUSEHOLDS WILL SUSTAIN GDP EXPANSION OF AROUND 0.16%**



**£10-12 BILLION TO BE INVESTED IN ENERGY EFFICIENCY MEASURES**



**INVESTMENT IN ENERGY EFFICIENCY TO SUPPORT OUR AMBITIONS TO ERADICATE FUEL POVERTY AND INCREASE WELLBEING**

<sup>17</sup> Figus, G., Turner, K., McGregor, P. & Katris, A. (2017). Making the case for supporting broad energy efficiency programmes: Impacts on household incomes and other economic benefits. *Energy Policy*, 111(September), 157–165. <https://doi.org/10.1016/j.enpol.2017.09.028>

<sup>18</sup> Applying the latest construction sector multiplier (for 2014) from the Scottish Government input-output tables, and deflating 2018 spend to 2014 prices using the GDP deflator.

## How we will achieve our objectives

We have made significant progress in improving the energy efficiency of our buildings but more needs to be done if we are to achieve our vision and maximise the benefits. To achieve our two key objectives we are proposing setting long term mandatory energy efficiency standards for all buildings in Scotland to reach by 2040.

We are proposing that this is achieved in a phased way, recognising different domestic and non-domestic building sectors have different starting points and will be improved at different paces. For example, homes within the social rented sector already have to meet an energy efficiency standard which means in general their performance is the best in the domestic sector.

These standards will be reached through a mix of encouragement and regulation that will vary across sectors, as well as encouraging and supporting low carbon heating, including district heating. We will also provide advice and support to help achieve the standards.

In improving the energy efficiency of buildings through the Programme we know that building condition is important. Energy efficiency measures can be ineffective because of building disrepair and we know that it will sometimes be necessary to improve the condition of the building in advance of or alongside energy efficiency improvements.

As we further develop the Programme we will be considering disrepair as part of our planned work on assessment and quality assurance.

We also recognise that traditionally constructed buildings account for a significant percentage of our building stock and they are an important part of Scotland's historic environment and cultural heritage. It is important that the Programme takes account of the specific characteristics of these buildings and helps to maintain and enhance these buildings.

As we develop and deliver the Programme we will continue to work with our partners, including Historic Environment Scotland and local authorities, to ensure that it helps to maintain and improve the energy efficiency of our traditional buildings without diminishing their contribution to our sense of place and cultural identity.

## Energy Efficiency Scotland Consultations

We have been working closely with partners during the development of this Route Map, through a number of forums. It has also been informed by the following consultations:

- Scotland's Energy Efficiency Programme<sup>19</sup>
- Scottish Energy Strategy: The Future of Energy in Scotland<sup>20</sup>
- Consultation On Heat & Energy Efficiency Strategies, and Regulation of District Heating<sup>21</sup>
- Energy efficiency and condition standards in private rented housing<sup>22</sup>
- Fuel Poverty Strategy Consultation<sup>23</sup>
- Second Consultation on Local Heat & Energy Efficiency Strategies, and Regulation of District and Communal Heating<sup>24</sup>

To help inform the on-going development of the Programme this Route Map is accompanied by two consultations on further key areas of work that we will take forward with our partners over the next two years, ahead of the Programme being fully in place from 2020.

<sup>19</sup> <https://consult.gov.scot/energy-and-climate-change-directorate/scotlands-energy-efficiency-programme/>

<sup>20</sup> <http://www.gov.scot/Publications/2017/12/5661/downloads>

<sup>21</sup> <http://www.gov.scot/Publications/2017/01/9139>

<sup>22</sup> <http://www.gov.scot/Publications/2017/04/2510>

<sup>23</sup> <http://www.gov.scot/Publications/2017/11/6179>

<sup>24</sup> <http://www.gov.scot/Publications/2017/11/6232>

## Principles

In developing the Programme we are embedding the following seven principles that will guide our decisions on policy and delivery.

Provide long term stability and certainty

Be transformational, removing poor energy efficiency as a driver of fuel poverty and decarbonising our heat supply

Be well known and trusted, maintaining quality and high standard installations

Operate throughout Scotland and be delivered to meet local needs

Ensure that heated buildings are comfortable to use, live and work in

Support jobs across Scotland

Attract investment in energy efficiency and low carbon heat

## Summary

This Route Map accelerates our work on energy efficiency as committed to in the Programme for Government 2017 and sees us:

- Putting in place a national infrastructure programme to deliver energy efficiency and heat decarbonisation, continuing to meet our commitment to invest at least £0.5 billion over the four years to 2021.
- Launching the Energy Efficient Scotland Transition Programme, where we are continuing to work with local authorities on the development of LHEES that we hope will shape future local delivery programmes on energy efficiency and heat decarbonisation.
- Launching our consultation on setting a long term energy efficiency standard for all domestic properties, with higher non-mandatory targets for households in fuel poverty.
- Launching our consultation on proposed new standards for social housing.
- Confirming the introduction of new energy efficiency standards in the private rented sector, ensuring that tenants are living in homes that are warmer and more affordable to heat.
- Setting out our proposed approach to improving our non-domestic buildings.

## Navigating the Route Map

In the following chapters, this Route Map sets out the actions we will take to improve the energy efficiency of Scotland's buildings (Chapter 3); how we will support delivery on the ground (Chapter 4); the steps we will take to protect consumers (Chapter 5); our actions to develop and support the supply chain (Chapter 6); and how we will monitor and evaluate the programme (Chapter 7). The final chapter outlines the potential legislative provisions that we are considering to support the programme, including the potential for an Energy Efficient Scotland Bill if needed.

We know that publishing this Route Map is just the beginning. We know that things will change and to reflect these changes the Route Map will be a 'living' document. We will be regularly evaluating the impact of the Programme and will take into account changes in policy and technology and adapt our plans. We will be issuing updates of the Route Map in 2019 and 2020 and then at regular intervals following reviews of the Programme progress.

# Chapter 2: Scotland's Improving Building Stock



There are around 2.7 million properties in Scotland. They vary widely in terms of building type, use, size, age, construction and energy efficiency, and are situated across all corners of Scotland. Improving the energy efficiency of these buildings to support our work on eradicating fuel poverty and reducing greenhouse gas emissions brings challenges.

## DOMESTIC BUILDINGS

In 2016 there were around 2.5 million domestic properties<sup>25</sup> in Scotland and it is likely that over 80% of them will still be in use in 2050. These homes are inter-generational resources and improving these properties today provides better homes for our children and grandchildren. Three quarters of our homes were built before 1982. A fifth were built before 1919 using traditional methods of construction. The research and development of new approaches for the energy efficiency of these pre 1919 buildings is overseen by Historic Environment Scotland.

Approximately 61% of homes are owner occupied, 15% are privately rented, and 23% are socially rented<sup>26</sup>.

The energy efficiency of Scotland's homes has been improving in recent years. In 2016, 39% of homes achieved an Energy Performance Certificate (EPC) rating of C or above. Social housing is generally more energy efficient with 53% rated EPC C or better<sup>27</sup>. This compares to the private sector where 35% achieve a similar rating.

Heating our homes and the water we use accounts for over three-quarters of the energy we use in our homes<sup>28</sup>. The majority of households use mains gas for their heating, with smaller proportions using electricity and oil as their main fuel source<sup>29</sup>.

≈ 2.5 million

dwellings in Scotland (2016)



Source: National Records of Scotland

The majority of Scottish dwellings are **owner occupied (61%)**



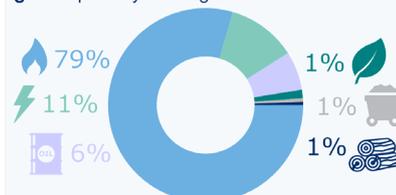
Source: Scottish Government Housing Statistics for Scotland

39% of Scottish homes were rated as EPC band C or better (SAP 2012)



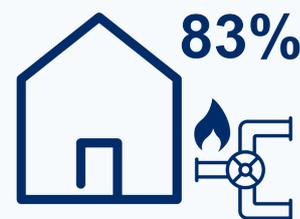
Source: Scottish House Condition Survey 2016

**Around 8 out of ten** Scottish dwellings use **gas** as primary heating fuel



Source: SHCS 2016

Dwellings within max distance from the **gas grid** for a standard domestic connection ('on the grid')



Source: SHCS 2016

<sup>25</sup> NRS Estimates of Households and Dwellings, 2016, estimates that there are 2.45m households or 2.58m dwellings. Domestic energy efficiency data presented in later sections of this routemap is based on Scottish House Condition Survey (SHCS) 2016 data which focuses on household estimates.

<sup>26</sup> Housing Statistics for Scotland, 2016

<sup>27</sup> Scottish House Condition Survey (SHCS) 2016 <http://www.gov.scot/Resource/0052/00528448.pdf>

<sup>28</sup> SHCS 2016. On average, around 74% of modelled household energy demand was from space heating and 13% from water heating.

<sup>29</sup> And very small proportions use communal heating, biomass and solid mineral fuels (SHCS)

## NON-DOMESTIC BUILDINGS

There are approximately 200,000 non-domestic buildings in Scotland, including around 20,000 buildings in public ownership. Our non-domestic buildings are hugely diverse in terms of construction, size and in particular their use, ranging from shops and offices to factories, warehouses and hotels.

We know less about the energy performance of the non-domestic sector compared to the domestic sector. This is largely due to the diverse nature of non-domestic buildings. In addition, far more homes have registered their EPC and we also undertake a large scale annual survey on housing that includes energy efficiency<sup>30</sup>.

As of July 2017, there were around 30,000 non-domestic buildings that have an EPC assessment.<sup>31</sup> Of these 30,000 non-domestic buildings, just five per cent have a rating of EPC B or better; with 22 per cent being rated C or D, and the remaining 73 per cent rated E or worse.

We are currently developing our understanding of the energy efficiency performance of Scotland's non-domestic building stock, which will be used to inform the development of Energy Efficient Scotland.

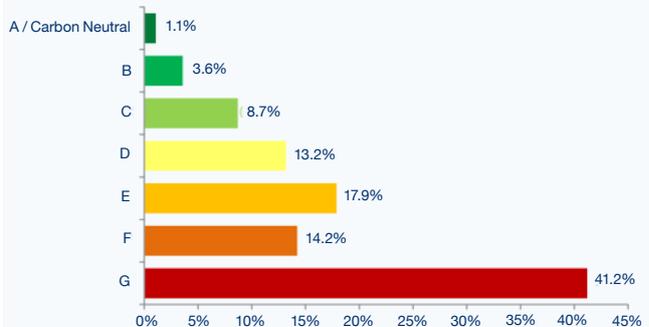
EPCs in the non-domestic sector are partly determined by how buildings are used, i.e. type of business, and as a result don't always directly reflect the actual energy efficiency of buildings. We will be considering this issue as part of our planned work on the Programme.

As of 31 July 2017, there were **200,000** non-domestic buildings in Scotland, with **10%** of these being **public sector** buildings



Source preliminary SG analysis

As of 31 July 2017, 5% of assessed non-domestic buildings were in EPC band **B or better**



Source: EPC Register (based on EPCs lodged 29 Jan 2013 to 31 July 2017)

<sup>30</sup> SHCS annually surveys a nationally representative sample of around 3,000 homes

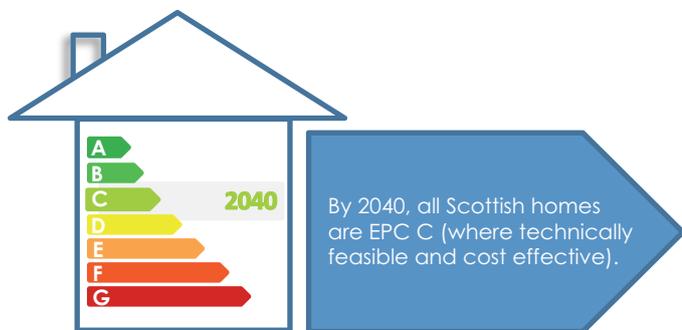
<sup>31</sup> Scottish EPC Register (based on EPCs lodged 29 January 2013 to 31 July 2017)



# Chapter 3: Improving our Buildings



## LONG TERM STANDARD FOR THE DOMESTIC SECTOR



When we consulted on the Programme in January 2017, there was a clear consensus around setting long term targets, providing certainty and a clear direction of travel. To give that certainty and clarity we are consulting on requiring homes to meet a long term standard based on the Energy Efficiency Rating of the Energy Performance Certificate (EPC) for domestic properties. This will see all domestic properties achieve EPC C by 2040 at the latest.

Achieving EPC C for the majority of our homes is a challenging but achievable target that will deliver the emissions reductions required by our Climate Change Plan. However, to remove poor energy efficiency as a driver of fuel poverty we need to go further for fuel poor households.

### Meeting the long term standard

We know that there are different starting points for energy efficiency across the social rented, private rented and owner occupied sectors, so this Route Map proposes different journeys to bring these properties up to the long term standard.

In the social rented sector landlords have already been working towards ensuring that the majority of their properties are the equivalent of EPC C or D (depending on dwelling and fuel type) by 2020, to meet the Energy Efficiency Standard for

Social Housing (ESSH). We want to ensure that social housing continues to lead the way on providing energy efficient properties for its tenants. Therefore, following the recent review of ESSH, we are launching a consultation alongside the publication of this Route Map which proposes a target to maximise the number of homes in the social rented sector achieving EPC B by 2032 and that no social rented homes should be let if their energy efficiency is lower than EPC D.

We consulted last year on introducing minimum standards in the private rented sector, and this Route Map confirms that private rented properties will be required to meet EPC E by 2022, and EPC D by 2025. To maintain momentum in the sector, and to allow private sector landlords to plan improvements to their properties, we are consulting now on our ambition that the private rented sector meets EPC C by 2030. We want to ensure that tenants in the private rented sector are able to live in properties which are warmer and more affordable to heat.

The largest sector, owner occupiers, will take the longest time to bring all properties up to standard – so we think this should be achieved by 2040. We want to continue to encourage and enable owners to take action, but that alone may not be enough. This is why we are consulting now on our intention to consider the role for requiring action to improve owner occupied properties in the later stages of the programme.

We know that not all buildings will be able to achieve this standard, nor do we expect people to make improvements that provide little return in energy savings. That is why we are clear that all buildings should achieve the long term standard where it is technically feasible and cost effective.

The consultation accompanying this Route Map seeks your views on a number of areas and its findings will inform our work over the next two years. By 2020 we will look to confirm:

- The long term standard and how it will be phased in each sector
- Higher targets for fuel poor households
- Instances where buildings are not required to reach the long term standard
- Definition of technically feasible and cost effective

### NEXT STEPS – LONG TERM STANDARD

Energy Efficient Scotland consultation on long term standard – May to July 2018

Scottish Government response and confirmation of long term domestic standard – 2019

Across the different housing tenures we know that reaching the long term standard will require a mixture of encouragement and regulation that will differ between the sectors. We are setting out

below the different pathways these sectors will take to achieve the long term standard and the support that will be offered.

## OUR OFFER – DOMESTIC

The Scottish Government has been providing an offer of advice and support to households for a number of years - supporting those living in fuel poverty and encouraging others to make energy efficiency improvements to their properties to reduce their greenhouse gas emissions and save money on their fuel bills.

At the core of our offer to owners and occupiers is Home Energy Scotland (HES) which provides free and impartial advice on energy efficiency and energy saving measures to all households in Scotland. Home Energy Scotland provides advice to households on funding and support available, including advice on income maximisation schemes, and makes onward referrals to Scottish Government programmes, Local Authority Area Based Schemes and to CITRUS Energy for advice on switching tariffs. Community liaison officers visit the most vulnerable people in the community in their own homes to ensure they get the support they need.

As well as providing free, impartial advice the Scottish Government provides grant funding to cover the cost of installing energy efficiency measures in fuel poor households through its Home Energy Efficiency Programmes (HEEPS). For owners that are able to pay and for private sector landlords the Scottish Government provides interest free or low cost loans helping to spread the cost of making energy efficiency improvements and installing home renewables. These are also available to registered social landlords helping them spread the cost of investing in energy efficiency.

The HEEPS programme has helped make a significant contribution to the Scottish Government's commitment to tackling fuel poverty since its launch in 2013. Our investment of almost £300 million between 2013 and 2016 has leveraged investment from UK Government schemes, social landlords and home owners to produce a total investment of over £600 million. As a result almost 100,000 households now live in homes which are warmer and cheaper to heat due to the measures installed between 2013 and 2016. The effects of these changes will benefit households for many years to come. HEEPS is continuing to deliver and our 2016/17 and 2017/18 programmes should help almost another 50,000 households improve their homes.

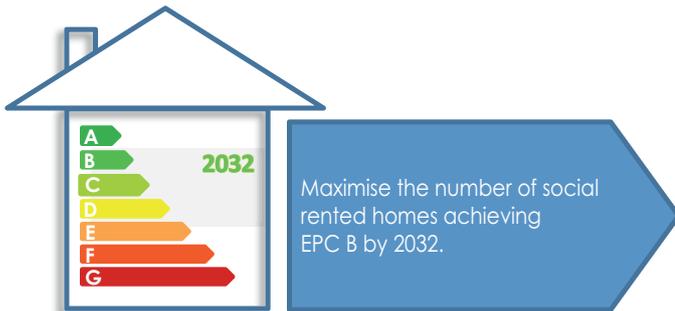
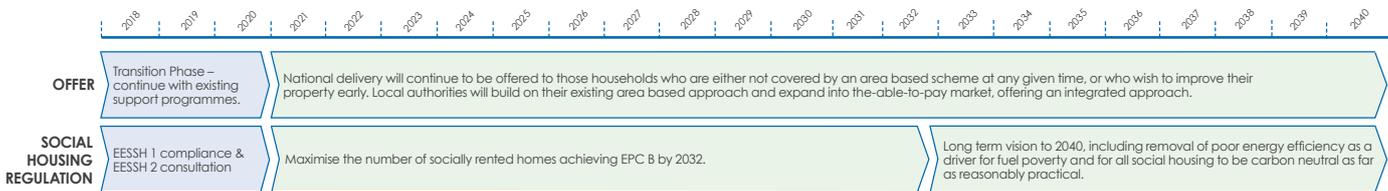
The programme also helps towards the Scottish Government meeting its climate change targets by reducing CO<sub>2</sub> emissions and we know that our advice and support service helps households save on their fuel bills. Households with health problems are increasingly being referred to our schemes through new partnership arrangements meaning that HEEPS will continue to have a genuinely cross-cutting impact on areas such as fuel poverty, health and climate change.

This support will continue to be made available during the transition phase of the Programme, and we will continue to leverage funding from the energy supplier obligation, including ECO. The Scotland Act 2016 provides Scottish Ministers with very limited powers over only some elements of ECO, and the UK Government has failed to provide any degree of certainty about the long-term future of this scheme beyond the early 2020s. This lack of control and continued uncertainty about the future of ECO means it is difficult at this time to justify the use of these powers as they currently stand. However, we are committed to working with the UK Government to seek clarity about the long-term future of ECO and a dialogue with the Secretary of State on the expansion of powers being devolved so that ECO can be delivered in a more meaningful way that will truly align with our efforts to tackle fuel poverty in Scotland.

Details on future programme delivery will be set out in 2020.

## SOCIAL HOUSING

### Target: Maximise the number of social rented homes achieving EPC B by 2032.



### PERFORMANCE

The social rented sector has some of the most energy efficient homes in Scotland, with over 90% already achieving an EPC D or above<sup>32</sup>. EESHS was introduced in 2014 to encourage social landlords to improve the energy efficiency of their stock. It sets a minimum energy efficiency rating of SAP 2009 60-69 (this equates to EPC D or C) for landlords to achieve by 2020, depending on fuel and dwelling type<sup>33</sup>.

We have carried out a review of EESHS which considered progress against the 2020 target and the setting of future milestones.<sup>34</sup>

### PHASING

Following agreement through the EESHS Review Group, we are proposing new EESHS milestones and targets. These new milestones support our wider ambitions for fuel poverty, Energy Efficient Scotland, emissions reductions and domestic heat. We are proposing a new target that will see social housing maximise the number of homes meeting EPC B by 2032. We are also proposing that no social housing should be let if the energy efficiency rating is lower than EPC D, and seeking views on when this should come into force.

This ambition will look to realise the removal of poor energy efficiency as a driver of fuel poverty in social housing, and for all social housing to be carbon neutral as far as reasonably practical.

We are consulting on our proposals for social housing and EESHS after 2020 (EESHS2) as part of our wider consultative work on the development of the Programme<sup>35</sup>.

### NEXT STEPS – SOCIAL HOUSING

EESHS Consultation – May-July 2018

Analysis of consultation responses – Autumn 2018

Scottish Government response and confirmation of post-2020 activity – Winter 2018/19

<sup>32</sup> SHCS 2016, based on SAP 2012.

<sup>33</sup> EESHS compliance is part of the Scottish Social Housing Charter, with the Scottish Housing Regulator (SHR) responsible for monitoring performance. The SHR's Technical Guidance on EESHS is available at: <https://www.scottishhousingregulator.gov.uk/publications/technical-guidance-eessh-december-2017>

<sup>34</sup> Further information on the EESHS Review is available at: <https://beta.gov.scot/policies/home-energy-and-fuel-poverty/energy-efficiency-in-social-housing/>

<sup>35</sup> The EESHS consultation is available at: <https://consult.gov.scot/better-homes-division/energy-efficient-scotland>

## CASE STUDY

**Cairn Housing Association**

Cairn's Albert Street estate has 25 units, with a mixture of houses, four-in-a-blocks and tenement style flats. The properties were built in 1988 with electric storage heating and hot water cylinders.



The existing energy performance of the stock varied between band D and E. Some tenants had taken to supplementing the heating with their own panel heaters. As the storage heating was nearing 20 years of age, another solution was being sought that would provide better performance and meet the EESSH rating.

Cairn used their asset management software to model different solutions, ensuring they surpassed the EESSH energy ratings but at the lowest cost. This resulted in the selection of high heat retention storage heaters, new highly insulated hot water cylinders and the top up of loft insulation to 300mm.

Cairn successfully applied for funding from the HEEPS ABS Loan scheme, with Albert Street being one of the projects included. The project was procured through a framework and the successful main contractor was Keepmoat. As well as the heating and hot water, they had to renew isolators and upgrade the consumer units.

On average per unit, works took one and a half days to complete, at a cost of £4,380. Cairn had customer satisfaction rates of over 85% on the works and positive comments on the effectiveness and look of the new heating. Upon completion the energy performance increased to a minimum of band C for all the units in the estate, ensuring full EESSH compliance.

## CASE STUDY

**Stirling Council – Solar Photovoltaics / Battery Storage**

In 2011, Stirling Council commenced the roll out of solar photovoltaic installations to its social housing stock. The strategic objectives were to reduce fuel poverty, reduce carbon emissions and improve the energy efficiency performance of the housing stock to meet Scottish Housing Quality Standard and the expectation of new challenging targets coming forward from the Scottish Government (EESSH was introduced in 2014).

By 31 March 2018, 2,400 installations were completed (42% of the Stirling Council housing stock) with a further 1,300 installations planned for 2018/19.

The average size of system installed is 3.0kWp at an average cost of £4,200 (ex VAT) generating on average 2,330kWh per annum per property.

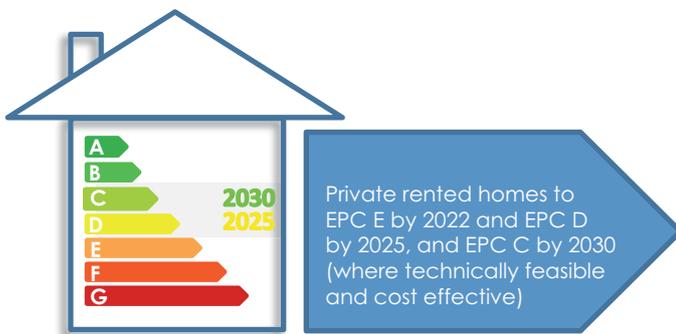
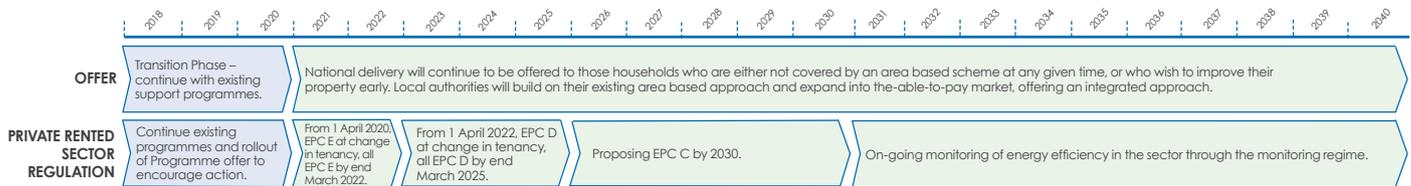
In order to maximise the “self-consumption” benefit to tenants, the solar PV installations are being complimented with solar diverters in the “off-gas” stock and piloting battery storage across the solar PV portfolio. Depending on the size of system installed and the orientation, solar PV increases the energy efficiency rating by between 10 to 20 RdSAP (2012) points.

Battery storage has been installed in over 100 properties to date and a further 200 installations planned for 2018/19. Systems range from an internally mounted system providing 2kWh storage to an externally mounted system that can provide 13.5kWh of storage. Data is showing that battery storage can provide the householder with a “self-consumption” rate of 25% during winter months to over 90% during summer months. The cost of a 13.5kWh battery storage system is currently around £5,600 (ex VAT) but costs are starting to fall as the technology starts to mature in the UK. Battery storage is starting to open up other opportunities including sharing microgeneration power over connected homes and the ability to import Economy 7 power in to the battery to time shift consumption out with Economy 7 time bands.

Feedback from tenants has been very positive. They have cited the reduction in their electricity bills and that they are secure in the knowledge that Stirling Council's Housing Service remotely monitors the performance and maintenance across the entire portfolio of both PV systems and battery storage units.

## PRIVATE RENTED SECTOR

**Target: Private rented homes to EPC E by 2022, EPC D by 2025, and EPC C by 2030 (where technically feasible and cost effective)**



### PERFORMANCE

Overall, more people in privately rented accommodation are living in homes that have poorer energy efficiency than elsewhere in the domestic sector<sup>36</sup>.

We believe that people living in the private rented sector should live in homes that are warm and affordable to heat. Our offer of support has not delivered sufficient improvement in the building stock in this sector and we consulted on the introduction of minimum energy efficiency standards in 2017<sup>37</sup>.

### PHASING

Following the previous consultation this Route Map confirms that we will be bringing forward regulations to require that where there is a change in tenancy after 1 April 2020 the property will need to be EPC E, extending to all private rented properties to be EPC E by 31 March 2022; and to require that where there is a change in tenancy after 1 April 2022 the property will need to be EPC D, extending to all privately rented properties to be EPC D by 31 March 2025.

To maintain momentum in the sector, and to allow private sector landlords to plan improvements to their properties, we think that we should set out now when privately rented properties would be expected to meet the long term standard. Therefore we are consulting now on our ambition that private rented sector properties are EPC C by 2030 (where technically feasible and cost effective). We are seeking views on this in the consultation accompanying this Route Map.

### NEXT STEPS – PRIVATE RENTED SECTOR

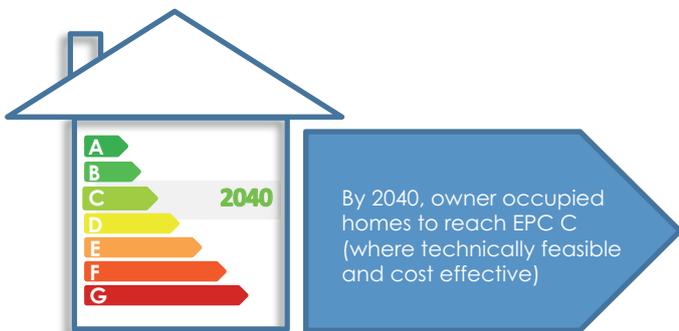
- The Programme consultation on requiring PRS to meet EPC C by 2030 – May-July 2018
- Ministers confirm timescales for long term standard in PRS – Route Map 2019
- Consultation on draft regulations to implement minimum EPC E standard – 2019
- Introduce Regulations – 2019
- Regulations come into force 2020

36 <http://www.gov.scot/Topics/Statistics/SHCS>

37 <http://www.gov.scot/Publications/2017/04/2510>

## OWNER OCCUPIED

### Target: Owner occupied homes to reach EPC C by 2040 (where technically feasible and cost effective)



### PERFORMANCE

Private homes occupied by their owners account for 61% of domestic housing. Improving the energy efficiency of these homes will be critical in achieving the overall aims of Energy Efficient Scotland.

The Scottish Government provides support to improve the energy efficiency of private homes through schemes such as the Home Energy Efficiency Programmes for Scotland (HEEPS). This has seen a steady improvement in the number of homes achieving EPC C, and there are now around 34% of homes at this standard or higher. However, this still leaves a significant number of properties that would need to be improved to meet the long term standard, a large increase on current levels. Clearly more needs to be done to encourage owners to improve the energy efficiency of their homes, particularly in those 'able-to-pay' households that are not eligible for support through our fuel poverty schemes.

That is why we are consulting on proposals to set a long term standard requiring owner occupiers to improve their homes to EPC C by 2040 (where technically feasible and cost effective).

## PHASING

We are proposing that we initially continue to focus on supporting home owners to make improvements to the energy efficiency of their homes, making the offer through our national advice services, providing access to low or no interest loans and working with local authorities to encourage them to deliver an end-to-end energy efficiency service for able-to-pay home owners.

We know that it will be challenging to increase the level of activity that will be needed to achieve EPC C in all owner occupied properties, where this is technically feasible and cost effective. Setting out our ambitions now across all domestic properties will give the market a clear signal, and focusing action to support owners who want to improve their properties over the first 10 years of the programme will help drive improvements. But waiting until 2040 to require improvements will not be practical or meet our ambitions. That is why the Programme consultation seeks views on requiring action to meet EPC C from 2030 onwards.

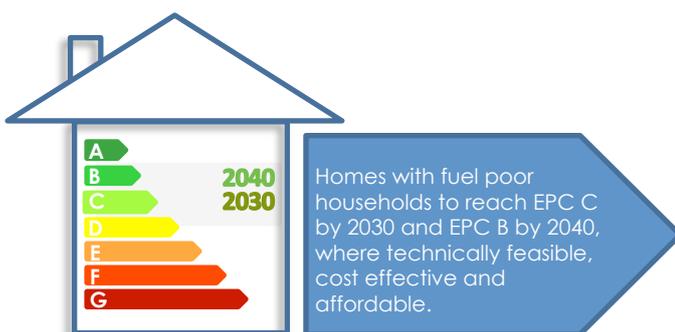
### NEXT STEPS – OWNER OCCUPIERS

Energy Efficient Scotland consultation on domestic long term standard – May-July 2018

Stakeholder engagement to identify proposals for supporting and requiring action phases – 2018

## HIGHER TARGETS FOR FUEL POOR HOUSEHOLDS

**Target: All homes with fuel poor households to reach EPC C by 2030 and EPC B by 2040, where technically feasible, cost effective and affordable.**



Households that are living in or vulnerable to fuel poverty spend a larger proportion of their income on fuel bills. We know that improving the energy efficiency of their homes is one of the most sustainable ways to lift households out of fuel poverty. It saves them money on their fuel bills year-after-year as well as helping to protect

them against future changes in fuel prices. That is why by the end of 2021 we will have allocated over £1 billion since 2009 on tackling fuel poverty and improving energy efficiency. This funding builds on the over 1 million measures delivered through a range of (UK and Scottish) programmes to over 1 million households since 2008.

We recently consulted on establishing a non-statutory sub-target and interim milestone in our draft Fuel Poverty Strategy to remove poor energy efficiency as a driver for fuel poverty by ensuring all homes reach a minimum energy efficiency rating by 2040.

As set out earlier in this Route Map, we are proposing setting a minimum energy efficiency

standard of EPC C to be met by all domestic properties, where technically feasible and cost effective by 2040. This will ensure that all homes have achieved a good level of energy efficiency, helping to remove it as a driver of fuel poverty as well as supporting the installation of low carbon and renewable heating systems in the future.

However, due to the depth of fuel poverty experienced by some households we know that reaching EPC C will not be enough to lift all households out of fuel poverty. That is why we are proposing a new milestone requiring social housing to maximise the number of homes achieving EPC B by 2032. And whilst some of our most vulnerable citizens live in social housing we also want to ensure that other fuel poor households are protected. That is why we are proposing adopting a higher ambition for fuel poor households, regardless of tenure, that would see them improved so that they reach EPC C by 2030 and EPC B by 2040.

We know that in many cases homes would need significant interventions to achieve EPC B, for example the installation of solar panels and heat pumps in addition to significantly improving the building fabric, requiring significant investment. That is why at this stage we do not believe it is appropriate to make these ambitious targets mandatory across the entire domestic building stock. However, we are proposing that these ambitious targets act as a guide for our national and area-based fuel poverty programmes which will operate throughout the lifetime of the Programme, building on the existing schemes in operation. In practice this will mean maximising the level of improvement possible within limits affordable to the public purse. We are seeking views on the practicalities and operation of setting higher targets for fuel poor households in the Energy Efficient Scotland consultation published alongside this Route Map.

#### NEXT STEPS – FUEL POVERTY

Publication of draft Fuel Poverty Strategy and bill – by summer 2018

Fuel Poverty (Scotland) Bill introduced in Scottish Parliament – summer 2018

Delivery of Fuel poverty Programmes - On-going

## CASE STUDY

**Miss R from Ballater, Aberdeenshire**

Miss R, a householder from Ballater lives alone and was worried about how she was going to make it through the winter living in a cold home with ill health and the cost of her energy bills. After doing some research Miss R got in touch with Home Energy Scotland to see if she might be eligible for some help.

Once it was established that she was eligible for the Warmer Homes Scotland scheme, she was referred to Warmworks to begin her customer journey. A surveyor then went to the property to assess what measures would be most appropriate; it was here that Miss R was told she could get secondary glazing installed under the scheme at no cost to her.

*'Very nice chap, he told me what was going to happen next and explained that it may take 6 weeks to get the windows. He was very good, very efficient – I couldn't fault anyone.'*

Warmworks appointed a registered sub-contractor to carry out the works and a technical survey was completed. At this point, the technical surveyor explained where everything would be situated and advised Miss R on the preparations needed before the work was carried out. A few days later the installation began. The team arrived on time and worked swiftly to ensure that everything was installed within one day to minimise disruption to Miss R.

*'I was dreading the install a little bit as I didn't want any upheaval, but it was absolutely fine! They arrived about 8 o'clock in the morning and didn't stop for coffee or tea or anything, they worked so hard. They showed me how to open and close the windows, they also explained it all to my friend as well just in case I can't get them open or need help.'*

When the work was finished a Warmworks inspector came out a few days later and explained to Miss R that everything was installed correctly and in line with the right specifications. Miss R's home is now more energy efficient and she has noticed a difference in the warmth of her home.

*'My kitchen is too warm now! It's going to make an enormous difference in the winter – I have an old Rayburn in my kitchen, I also have two big windows in the kitchen here facing north east, which is where the worst of the winter weather comes from. Before this it would get really quite cold, you wouldn't believe the amount of clothes that I had to put on to keep warm!'*

Miss R had this to say about her experience with Warmer Homes Scotland:

*I have got quite a lot wrong with me; I have five different lung conditions, arthritis, and I've been in hospital quite a bit. I thought I wasn't going to make it through the winter.*

*I was really very impressed. It's a wonderful thing that you're doing – it's like a fairy tale to me!'*

## ASSESSING THE PERFORMANCE OF OUR HOMES

The current Energy Performance Certificate (EPC) system for assessing the energy performance of domestic properties<sup>38</sup> is well understood and well embedded - for more information on EPCs see pages 16 and 17.

Feedback on the previous consultation highlighted a number of concerns around the underlying EPC methodology and we have already commissioned some initial research to explore these issues and identify how EPCs can be improved to support the Programme. This will be taken forward as part of our further work on Energy Efficient Scotland.

In setting a long term standard using the Energy Efficiency Rating of EPCs we are committing to using and building on the current EPC assessment process. With the setting of the standard we will need an appropriate and proportionate assessment process. Owners need to know how energy efficient their buildings are (which is based on the EPC), what they have to do to meet the standard, the best way to do that and once the work is done, to be able to demonstrate that the standard has been reached.

For some home owners (and some landlords) the process from assessment through improvement to meeting the long term standard will be straightforward and the current EPC assessment should be able to be used. We want these home owners to be able to use the existing assessment process if this suits their circumstances, but we know that this will not suit all home owners. There will be situations where the home owner may be unsure of what measures to install, or want to know what to do to achieve a higher standard. There may also be technical issues around buildings that could mean that some additional assessment will be needed.

Building owners also need confidence that once they have met the Programme standard they will not be required to do further work because the assessment and the methodology supporting the EPC assessment has changed. We know this is an issue. For example EESSH addresses the issue using a conversion table. But this may not be appropriate in other sectors. We are seeking views on how to address the issue through the Programme consultation accompanying this Route Map.

We believe that by refining the way that the current EPCs are calculated will help in some assessment situations. But this will not be the case for all instances and some additional advice or assessment may also be needed. This additional assessment should be appropriate and proportionate and build on the existing EPC assessment process. By using and developing the existing EPC assessment we will maintain and grow the existing capacity, experience and skills we have within the Scottish supply chain.

To agree the additional assessment that will be needed we are planning to work with partners through a Short Life Working Group. The remit of this group will include

- Considering what other assessment measures are needed to support the Programme;
- Considering the skills set an Energy Efficient Scotland Assessor should have to deliver any additional processes or services;
- Considering how the agreed principles of technically feasible and cost effectiveness are delivered in the real world;
- Considering a proportionate and streamlined way to ascertain and improve energy performance, building on EPC processes;
- Scoping out costs for the assessment and infrastructure to support this; and

<sup>38</sup> Social housing that is required to meet the EESSH standard has a separate assessment and compliance system

- Consideration of consultation responses to non-domestic assessment proposals.

Membership of this group will be drawn from EPC assessor bodies, construction professionals and traditional buildings interests and other interested parties including consumer specialists.

#### **NEXT STEPS – ENERGY EFFICIENT SCOTLAND ASSESSMENT**

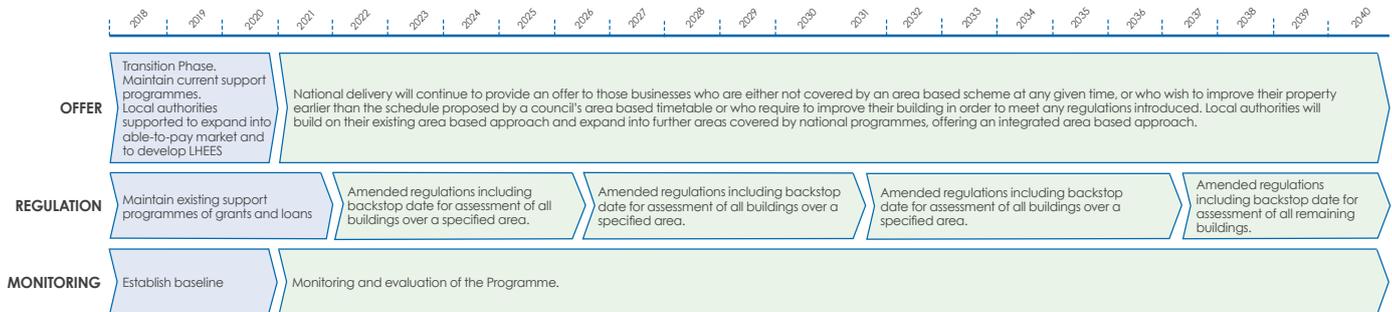
Set up the Energy Efficient Scotland Assessment Short Life Working Group – August 2018

Consult on principles underpinning the Programme Assessment – 2019

Energy Efficient Scotland assessment and guidance available – 2020

## NON-DOMESTIC BUILDINGS

**Target – Our non-domestic buildings will be assessed and improved to the extent this is technically feasible and cost effective by 2040.**



We are not setting the long term standard for our non-domestic buildings just now - this will be done following further work and public consultation after which we will set out any proposed changes to the regulations made under section 63 of the Climate Change (Scotland) Act 2009.

### PERFORMANCE

Requirements to assess the energy performance of non-domestic buildings in Scotland using EPCs were first introduced a decade ago. They began in May 2007 with new buildings, followed by buildings on sale or rental in January 2009 and a requirement to display an EPC in larger public buildings<sup>39</sup>. Currently small non-domestic buildings (under 50 m<sup>2</sup> in area) do not require assessment. There are other limited exemptions<sup>40</sup>.

In 2009, section 63 of the Climate Change (Scotland) Act<sup>41</sup> introduced a requirement for Ministers to make regulations for the assessment and improvement of the emissions and energy performance of non-domestic buildings. Following consultations in 2011 and 2013, The Assessment of Energy Performance of Non-domestic Buildings (Scotland) Regulations 2016<sup>42</sup> were introduced on 1 September 2016. These Regulations are triggered by sale or by rental of a building and apply only to larger buildings (those over 1,000 m<sup>2</sup>).

This established the systems needed for further assessment of non-domestic buildings where following the issue of an EPC improvement targets are identified. Owners are advised and a record is made of what owners need to do to meet the targets.

39 Beginning at 1,000 m<sup>2</sup>, the trigger size for EPC assessment reducing to 250 m<sup>2</sup> in July 2015

40 Information on application of EPBD in Scotland is published at [www.gov.scot/epc](http://www.gov.scot/epc)

41 See <http://www.legislation.gov.uk/asp/2009/12/section/63>

42 See <http://www.legislation.gov.uk/ssi/2016/146/contents/made>

## CASE STUDY

## Houston Bottling & Co-pack makes savings of £16k with Scottish Government SME Loan



Scottish bottling company Houston Bottling & Co-pack used the zero interest small business loan from the Scottish Government to upgrade the lighting in its warehouses to high efficiency LEDs - cutting more than £16,000 a year from its energy bill.

Houston Bottling & Co-pack, established in 1988, is an independent company which provides bottling and co-packing services to the Scotch Whisky industry. From its bonded warehouses in Renfrew and Dumbarton, approximately one million cases of whisky are packed and exported worldwide each year. Customers include; William Grant & Sons Ltd, MacDuff International, Chivas Bros, Tomatin Distillers and a significant range of craft distillers.

The company previously used a mixture of high energy halogen and halide lamps to provide lighting for its warehouses. These lamps were electrically inefficient, had a poor lighting level and frequently wore out. This required warehouse staff to rig up a hoist and move stock to replace the bulbs, increasing downtime and reducing productivity. The company identified that upgrading to LEDs would significantly reduce energy costs, with a short payback period on investment. LEDs have a number of advantages over incandescent light sources including lower energy consumption, longer lifetime, smaller size and greater robustness.

Resource Efficient Scotland supported Houston Bottling & Co-pack to implement this money saving project by providing access to the Scottish Government's SME loan scheme, which offers businesses unsecured interest free loans of up to £100,000 to make savings to their energy, waste and water equipment systems. Resource Efficient Scotland's advisors also provided free technical support and guidance throughout the project planning and implementation stages. This included testing and measuring lighting options within the warehouse to make sure that the lights being trialled would be bright enough.

"We are committed to implementing the most efficient processes possible in our bottling and packing services, so it makes sense to apply this ethos in all of our business activities. Resource Efficient Scotland supported us at every step of the way in upgrading our lighting system, from planning and funding the project through to installation. With this help, a relatively small change to our building is translating to a big saving in our energy usage." Duncan Elder, Houston Bottling & Co-pack.

Satisfied with the results of the project, Houston Bottling & Co-pack worked with Resource Efficient Scotland again to implement energy efficiency lighting solutions in their Dumbarton site.

## OUR OFFER – NON-DOMESTIC

The Scottish Government currently provides a variety of support to owners and occupiers of non-domestic buildings in the public, private and community sectors to encourage them to make energy efficiency improvements to reduce their greenhouse gas emissions and reduce their fuel bills.

At the core of our offer are our advice and support services, Resource Efficient Scotland (RES), Local Energy Scotland and the public sector Non-Domestic Energy Efficiency (NDEE) Project Support Unit, who together provide advice and project support to SMEs, communities and public sector organisations.

The Scottish Government continues to provide loans ranging from commercial to no or low interest to cover the cost of installing renewable energy technologies or energy efficiency measures to SMEs, public sector and communities. We are currently piloting a cashback offer with the existing SME interest-free loan scheme, which we will evaluate, considering whether it can be offered more widely.

Since 2008 we have invested over £38 million in loan funding for public sector energy efficiency projects through Salix Finance and £24 million through the RES SME Loan Scheme. Since 2013 £44 million has been made available through CARES (Community and Renewable Energy Scheme) to support community and local energy.

Through our Low Carbon Infrastructure Transition Programme (LCITP), co-funded by the European Regional Development Fund, we support the acceleration of low carbon infrastructure projects across the public, private and community sectors aiming to stimulate commercial interest and investment in our low carbon sector.

The Scottish Government has also established a NDEE Procurement Framework to support delivery of energy efficiency retrofit works and services for the public sector. This framework offers better solutions and value for money than single project procurement exercises run by individual public sector bodies. To date around £15 million of capital investment has been supported by this framework.

This support will continue to be made available up until 2020, during the transition phase of the programme, with further details on the future offer through Energy Efficient Scotland to be set out in 2020.

### PHASING

The Climate Change Plan shows that there has been a 6% reduction in emissions in the service sector since 2009. If we are to achieve our ambition of a 59% reduction of emissions from this sector by 2032 on 2015 levels then clearly more progress needs to be made.

In our Climate Change Plan, through Energy Efficient Scotland we proposed a review and expansion of current regulations for 2020. This Route Map sets out our proposals to extend the regulations to all buildings requiring them to achieve a specified standard, phasing the application of the regulations over the lifetime of the Programme.

We are proposing to gradually broaden the application of regulations, leading to full coverage across all non-domestic buildings from 2035 at the latest. To do this, each phase would have a backstop date by which all qualifying buildings must have had an assessment identifying improvement targets for the building and showing how the building owner will meet those targets through improvement work. Building owners would then have a set period of time to carry out the work.

The phasing of the regulations will be based on the floor size of buildings, which is easily defined and measured, continuing the approach in the current regulations.

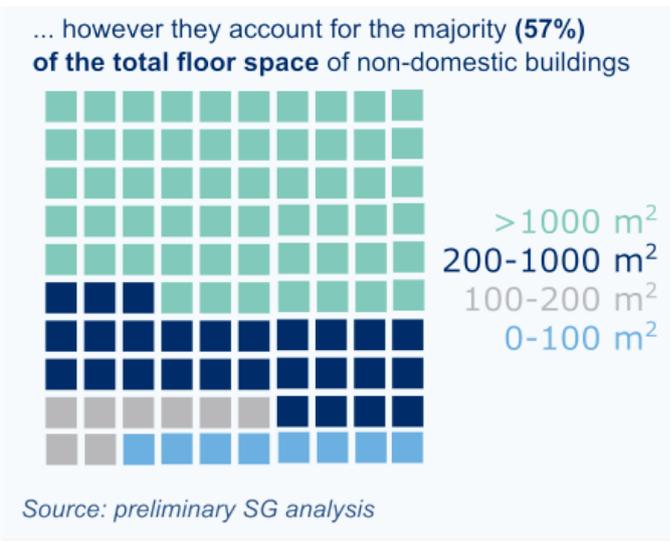
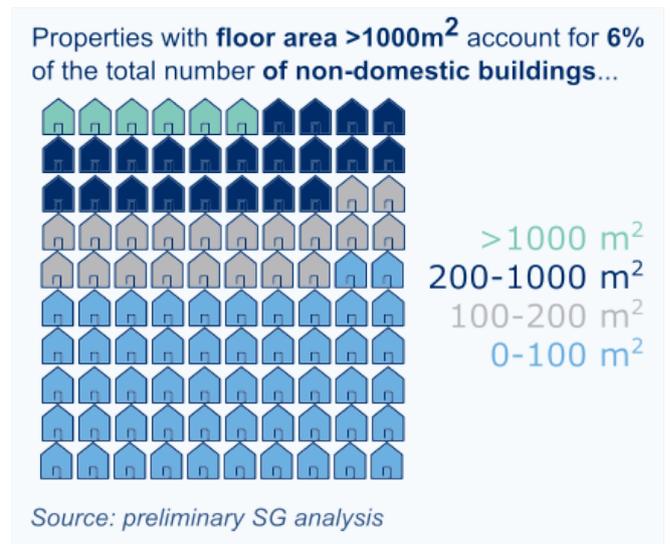
The table below is one example of how the regulations might apply. Actual criteria (e.g. building floor area) will be determined as part of the review process.

| Regulations apply from | Building area trigger for assessment |
|------------------------|--------------------------------------|
| 2021 – 2026            | >1000 m <sup>2</sup>                 |
| 2026 – 2031            | 200 – 1000 m <sup>2</sup>            |
| 2031 – 2036            | 100 – 200 m <sup>2</sup>             |
| 2036 – 2041            | 0 – 100 m <sup>2</sup>               |

The phasing will need to ensure a steady and consistent rate of work that is within the capacity of the supply chain to deliver and which spreads the work and investment over the lifetime of the programme.

As part of our work on phasing we will also be considering whether elements in the current regulations such as the exclusion of buildings smaller than 50m<sup>2</sup> or the option to defer improvement by the reporting of annual energy use should be continued.

We are proposing moving towards a benchmarking system where the performance of a building is assessed using a 'notional specification' to an existing building. This specification would illustrate 'what good looks like' for that particular type of building, based on



typical and achievable levels of improvement. Our accompanying consultation seeks your views on the move towards a benchmarking system for non-domestic buildings and sets out in more detail some of the areas we will be considering.

We will be undertaking research on benchmarking and as part of this we will also be exploring whether it is practical, in 2020, to set out the long term standard for performance of non-domestic buildings. This would give building owners long-term certainty over what future investment may be needed from the start of the Programme.

The development of benchmarks and setting of the long term standard will consider the cost of improvement to building owners. We recognise that improvement must be cost effective and the measures proposed technically feasible. We are committed to working with our businesses to improve their energy efficiency and energy productivity.

Once our research is complete we will convene a Working Group with relevant partners to review the findings and support the development of detailed proposals for new regulations.

A public consultation on the detailed proposals will take place in 2019. Subject to consultation, we intend to publish the new benchmark standards, regulations and assessment tools for non-domestic buildings in 2020, with regulations coming into force the following year.

### Public Sector Non-Domestic Buildings

Of the 200,000 non-domestic buildings, around 20,000 are owned by the public sector. Regulations requiring improved energy efficiency of non-domestic buildings would, of course, apply to those owned by the public sector. We believe that the public sector could build on the work it has already done on energy efficiency and potentially achieve the Energy Efficient Scotland standard ahead of 2040.

The public sector has a legal duty under the Climate Change (Scotland) Act 2009 to contribute towards meeting Scotland's climate change targets when carrying out its functions. It has a strong track record delivering energy efficiency and many organisations are actively working to improve their buildings. There will be an expectation that it will continue to lead by example, championing the Programme. To date, the public sector has invested significant sums in energy efficiency, including £38 million of loan support for 685 energy efficiency projects through SALIX finance.

In 2016 we also launched the NDEE Framework. This framework has been designed to support Public and Third Sector organisations procure energy efficiency retrofit work. To date, 12 projects have procured through the Framework, with capital investment of around £15 million.

Throughout 2018 and 2019, we will be working with the public sector, via their duty to report under the Climate Change Act and the development of Local Heat & Energy Efficiency Strategies, to develop an accurate baseline of public sector buildings, identify how much improvement is needed to achieve the long term standard, the timescales involved and what support would be needed.

### NEXT STEPS – NON-DOMESTIC

The Programme consultation seeking views on proposals to move to a 'benchmarking; approach – May - July 2018

Commission research to determine appropriate benchmarks for initial and further regulations – 2018

Convene an industry working group to review research and proposals for amended regulations – late 2018

Consultation on amended non-domestic regulations – 2019

Publish amended regulations and assessment tools for non-domestic buildings including new benchmarks – 2020

New regulations come into force – 2021

## CASE STUDY

## PUBLIC SECTOR ENERGY EFFICIENCY – CASE STUDY

**Opportunity**

Working with the Scottish Funding Council (SFC), Edinburgh College, Borders College, Newbattle Abbey College, and West Lothian College were successful in attaining Scottish Government 2017 Capital Stimulus Programme funding to support a large-scale Colleges Energy Efficiency Pathfinder (CEEP) project. The aim of the project was to provide significant energy and carbon emissions savings across the suite of Colleges, with the challenge of a relatively short project programme.

**Solution**

To support, develop and deliver the CEEP project, SFC and the Colleges identified Scottish Government's Non-Domestic Energy Efficiency Framework as the ideal procurement route; delivering Energy Performance Contracts which are underpinned by Measurement and Verification (M&V) principles to guarantee savings.

**Outcome**

Using the Framework, and in collaboration with NDEEF Project Support Unit run by Mott MacDonald, the Colleges were able to:

- Develop project requirements in to appropriate tender documentation;
- Run a mini-competition to select a preferred Contractor;
- Review and agree the Contractor's detailed design solutions; and
- Ultimately, implement a range of energy savings measures throughout their estates within an 11-month period following Outline Business Case approval, at a total project cost of £3.7m.

The energy saving measures in the project include LED lighting, Combined Heat and Power plant, high efficiency heating system replacements, building fabric upgrades, building management system and controls upgrades and variable speed drive installation.

Guaranteed annual energy cost savings exceed £0.3m and annual carbon savings of around 1.5 ktCO<sub>2</sub>e are anticipated.

Initial assessments show significant reductions in energy bills across each of the Colleges. Wider project benefits have also been realised including significantly improved teaching and working environments, as well as learning opportunities for students around energy efficiency technologies and general construction related activities.

**Energy Efficient Scotland non-domestic assessment**

Current regulations introduced a requirement for owners to assess and improve buildings that the regulations applied to. The regulations also established a section 63 Assessment, as well as the new roles and tools needed to help building owners to assess and improve their buildings.

The new role of 'Section 63 Advisor' was created. The Advisor, who is also a non-domestic EPC Assessor, uses approved software to calculate the improvement targets for a building. Then, in discussion with the building owner, they agree a package of improvement measures to meet the targets. This is recorded on an 'Action Plan' which is lodged to the Scottish Energy Performance

Certificate Register (SEPCR)<sup>43</sup>. Under the current regulations, the building owner may choose either to improve their building or to defer improvement by the reporting of annual energy use through a 'Display Energy Certificate (DEC)' lodged to the SEPCR<sup>44</sup>. A separate DEC Assessor role, already established elsewhere in the UK, was introduced in Scotland.

We will be reviewing the current assessment process to identify where change is needed to support further regulation. This will include:

- how to report on building energy performance clearly and easily
- the option of a new rating system
- how we can better use the information we have on energy performance to support building owners.

In doing this work we want to ensure that the assessment allows building owners to better understand the energy performance of their building, how it can be improved and how the building compares to a typical or very efficient example of the same type.

We will start with the review of responses to the consultation issued alongside this Routemap, as part of the Energy Efficient Scotland Assessment Short Life Working Group set out on pages 41 and 42.

### Energy Efficient Scotland for industrial users of energy

The Programme is focused on the energy efficiency of buildings, on energy used for heating, cooling and lighting. However, many

industrial businesses use significant amounts of energy for productive processes. We believe that our initiatives should be streamlined and are committing to aligning, where possible, advice and support to invest in energy efficiency with wider advice and support to reduce energy used for productive processes.

Our Climate Change Plan commits us to improve the evidence base of the industrial sector to allow more effective monitoring. Following our work to improve baseline data on non-domestic buildings, we will do further work to identify the amounts of energy consumed and carbon emitted by industrial processes. This information will support industry to be more productive and decarbonise, and should also be of use to benchmark the performance of industrial operations.

We have committed to work in collaboration with representatives of energy intensive industries, in line with our Energy Strategy, to increase the focus on providing incentives for industrial operations to become more energy efficient or to decarbonise, and to align support with the Programme, taking account of the more bespoke needs of industry.

A discussion paper will be produced during 2018 setting out what financial or other support is needed for industry to invest in decarbonisation measures, identifying gaps, examining opportunities for investment through mechanisms such as competitive calls, loan guarantees or other financial instruments and building on existing activity such as that within our Manufacturing Action Plan for Scotland (MAP)<sup>45</sup>.

#### NEXT STEPS

Aim to gain more clarity on the amounts of energy consumed, and carbon emitted, by industrial processes as compared to industrial premises

Produce a discussion paper during 2018 that will set out what financial or other support is needed for industry to invest in decarbonisation measures

<sup>43</sup> Scottish Energy Performance Certificate Register: <https://www.scottishepcregister.org.uk>

<sup>44</sup> Further detail on the regulations and their application are published at [www.gov.scot/section63](http://www.gov.scot/section63).

<sup>45</sup> <https://beta.gov.scot/policies/manufacturing/>

# Chapter 4: Delivering on the Ground



## DELIVERY PROGRAMME AND DELIVERY MECHANISM

### Overview

The Scottish Government has a long track record of supporting improvements to domestic and non-domestic properties.

#### DOMESTIC ENERGY EFFICIENCY 2013-2016

Total HEEPS  
Investment of  
£248m

Overall investment  
in domestic energy  
efficiency in  
Scotland  
£618m

96,000 households  
assisted by HEEPS  
since 2013

2.42m tonnes of  
CO<sub>2</sub> saved by our  
HEEPS programmes

£542m savings in  
household fuel bills  
by HEEPS

#### SME LOAN SCHEME HAS PAID OUT OVER

**£24 million**

IN LOANS SINCE LAUNCHING IN 2006,  
FUNDING OVER 900 PROJECTS WITH  
ESTIMATED SAVINGS OF:

 **355 GWh**

OVER  
 **£38 million**  
IN FINANCIAL SAVINGS

 **136,122 tCO<sub>2</sub>**  
CARBON SAVINGS (OVER  
LIFETIME OF THE MEASURE)

#### SINCE 2008, SCOTTISH GOVERNMENT HAS INVESTED OVER

**£38 million**

IN LOAN FUNDING FOR 685 PUBLIC SECTOR  
ENERGY EFFICIENCY PROJECTS THROUGH  
SALIX FINANCE. THESE PROJECTS HAVE  
PRODUCED:

**>£100 million**  
OF SAVINGS SINCE 2008

**480,000 tCO<sub>2</sub>**

SAVINGS SINCE 2008. 28 OF SCOTLAND'S 32  
LOCAL AUTHORITIES HAVE USED SALIX LOAN  
FUNDING FOR ENERGY EFFICIENCY PROJECTS.



### Transition Phase

We have outlined the offer of support currently in place and the next steps we will be taking in each sector earlier in the Route Map. Our energy efficiency programmes have developed over time to deliver different objectives across domestic and non-domestic properties. Through Energy Efficient Scotland we have begun a process of moving to a more integrated approach so that households, public bodies and businesses can more easily plan and deliver energy efficiency improvements. We are now launching a Transition Programme that will take us through to full rollout.

### Transition Programme

The Transition Programme is in addition to the national framework of advice, support and regulation that we are proposing in this Route Map. It builds on our existing programmes, earlier pilots, and supports the continuing development of LHEES. The two year Transition Programme, beginning in May 2018, will gradually give local authorities the opportunity to plan and deliver integrated energy efficiency projects. This will be based on their current activity on domestic Area Based Schemes to tackle fuel poverty but expanded to cover able-to-pay households, retail, commercial and industrial properties and joining up with their current projects on the public sector estate.

Alongside the Transition Programme and the support delivered by local authorities, we will be maintaining our national provision, with our existing national fuel poverty programmes and existing loan programmes continuing to be

available to support households or businesses that are based outside designated area based schemes, and to bodies in the public or private sector which are developing heat networks.

| Year 1  | Year 2   |
|---|--|
| <ul style="list-style-type: none"> <li>• continued funding for domestic fuel poverty programmes (currently HEEPS: ABS)</li> <li>• funding support to allow local authorities to move into domestic and non-domestic able-to-pay market</li> <li>• continued funding to support LHEES development</li> <li>• continued funding to provide national advice, support and information via HES and RES</li> <li>• continued funding to provide loans to individuals, SMEs and public sector for energy efficiency improvements</li> <li>• continued funding and support for public sector projects through SALIX loan funding, the Non-Domestic Energy Efficiency Framework and Project Development Unit.</li> </ul> | <ul style="list-style-type: none"> <li>• continued funding for domestic fuel poverty programmes (currently HEEPS: ABS)</li> <li>• funding support to allow local authorities to move into domestic and non-domestic able-to-pay market</li> <li>• continued funding to support LHEES development</li> <li>• continued funding to provide national advice, support and information via HES and RES</li> <li>• continued funding to provide loans to individuals, SMEs and public sector for energy efficiency improvements</li> <li>• further supporting energy efficiency in the public sector by incentivising integration of domestic, non-domestic and public sector projects through SALIX loans and continuation of the Non-Domestic Energy Efficiency Framework and Project Development Unit.</li> </ul> |

### Delivering in partnership with local government

Energy Efficient Scotland will be a strategic partnership with local government. Throughout its development, we have consulted and discussed the design with our partners in COSLA, so that we can jointly build upon the successful components of existing programmes. From the start, in our initial pre-consultation discussions with stakeholders, they identified the importance of strategic planning for Energy Efficient Scotland at local and national levels across the 20 years of the programme.

Given the need for this strategic planning to take place from the outset of the programme, we have already consulted in detail on proposals for LHEES. LHEES would be the foundation on which the Programme is delivered at a local level over the lifetime of the Programme. Its purpose is to:

- Provide the evidence base to guide the Programme, locally and nationally over its 20 years. Each local authority would assess its building stock, identifying the potential for improvement in energy performance and heat supply in order to meet long term the Programme standards. The LHEES would support setting objectives to deliver this improvement, and the scale of the investment needed to meet it. Looking at all of the LHEES together across Scotland would give a comprehensive picture of the building stock and levels of improvement needed for the whole of the Programme.
- Act as the guiding framework for developing and funding future investment strategies. The analysis that each local authority undertakes in preparing its LHEES would help it to prioritise and cost local delivery programmes. These would be submitted to the Scottish Government for approval and funding. The LHEES analysis would also help the Scottish Government to design and support national investment programmes (where needed) that could complement local authority activities.
- Provide an investment prospectus for developers and the supply chain in the energy efficiency and heat sectors. The data underpinning each LHEES, and the objectives that it sets, would provide valuable market information for investors (from both the private and public sectors) on potential new investment opportunities. The prioritisation and costing of local Energy Efficient Scotland delivery programmes and national investment programmes would help to give investors and the supply chain certainty to help them plan for long term delivery across the 20 years of the programme.

Given that LHEES would be central to informing and shaping the overall delivery of the Programme, we are proposing that there should be a statutory duty on local authorities to prepare and deliver them. We recognise that there are resource implications for this and that additional support may be required.

We have therefore consulted twice during 2017 and 2018 on the purpose, scope, and content of LHEES, and on the powers and resources needed to deliver them. In parallel, we have been working with COSLA and 12 local authorities to pilot the preparation of LHEES. This is allowing us to understand the processes of data gathering, objective setting, and design and prioritisation of local delivery programmes. The pilots are testing different methodologies and providing evidence on the resources needed to prepare LHEES.

As noted above, we are now committing in this Energy Efficient Scotland Route Map to providing support to all remaining local authorities in Scotland over the next two years to pilot development of LHEES in their areas as part of the Energy Efficient Scotland Transition Programme. During 2018, we will also establish a working group with COSLA and representative local authorities to develop and agree guidance and supporting materials for LHEES, in preparation for the rollout of the Programme from 2020, and in advance of any statutory duty.

We are considering the evidence from our 2017 and 2018 LHEES consultations alongside the ongoing findings from the pilots. We will set out our final proposals on LHEES as part of our response to the further consultation accompanying this Route Map.

### District Heating

As well as consulting on LHEES, we have also consulted twice during 2017 and 2018 on the potential for regulation of district heating. We consulted on establishing a regulatory framework that would provide confidence for investors and would ensure protection for district heating consumers. We also proposed that the public sector could take a leading role in the development of district heating where an LHEES identified it was appropriate to do so. Further development of district heating could play an important role in helping local authorities meet their objectives set out in their LHEES for the Programme.

We will set out our final proposals on regulation of district heating as part of our response to the consultation accompanying this Route Map.

### The Programme Offer

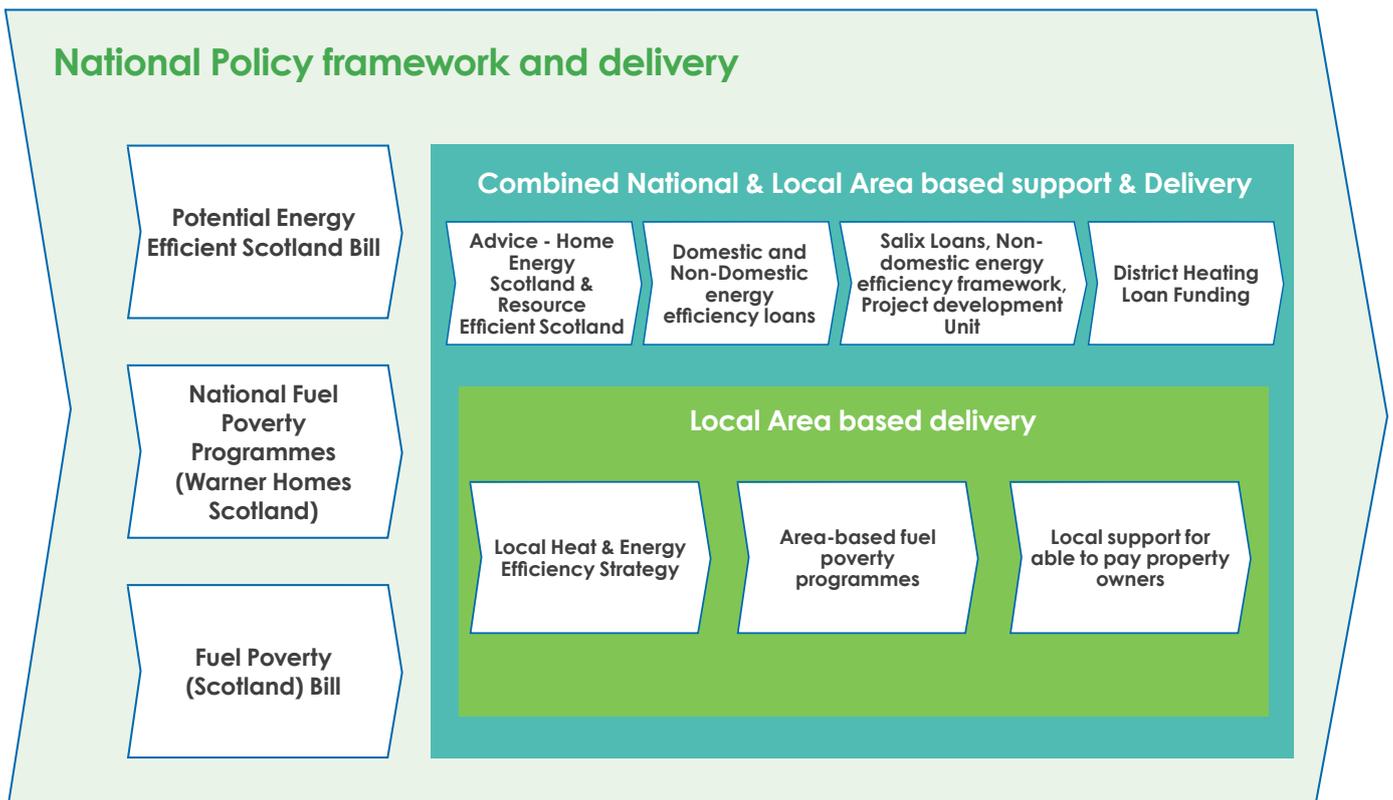
The Programme offer ('the offer') for the domestic and non-domestic sectors will support bringing domestic and non-domestic properties to the Energy Efficient Scotland long term standard by 2040.

### Advice

The foundation of our offer will be that all households and businesses in Scotland will continue to have access to good quality, independent advice and information on improving the energy efficiency and decarbonising the heat supply (where applicable) of their property and reducing their fuel bills. The advice provided will continue to be accessed in a variety of ways, including online, via telephone and, if needed, face-to-face. Advice will be offered at both national and area based levels across both the domestic and non-domestic sectors.

### Delivering the offer

Delivery of the offer will be organised both nationally and locally (through area based delivery led by local authorities).



### Nationally Delivered Support

Nationally delivered support will continue to provide an offer to those households and businesses which are not covered by an area based scheme at any given time, who wish to improve their property earlier than any scheduled area based scheme proposed or need to improve their property in order to meet any regulations introduced. We are proposing that existing nationally delivered support continues to be offered under the Programme, including:

- national advice services (currently HES and RES)
- domestic fuel poverty programme (currently Warmer Homes Scotland)
- domestic energy efficiency loan programme (currently HES Loans)
- non-domestic loan programme (currently SME Loans)
- district heating loan funding (currently District Heating Loan Fund)
- public sector energy efficiency programmes (currently NDEE Procurement Framework and the Project Development Unit)<sup>46</sup>

For both domestic and non-domestic loans we will be engaging with stakeholders to explore what is required to incentivise uptake and adapting our schemes to reflect our findings.

### Local delivery

At the local level, delivery will continue to be organised through local authorities. Scotland's local authorities have been successfully delivering area based fuel poverty programmes for a number of years and are well placed to continue this approach and expand into the able-to-pay areas necessary for the Energy Efficient Scotland long term standard to be achieved. LHEES Strategies would set out a costed delivery plan for a local authority area, showing how the local authority intends to provide a service to households and businesses

to assist them in improving the energy efficiency of their properties to meet the Programme Long Term Standards.

We are proposing that local authorities build on their existing area based approach and expand into sectors currently covered by national programmes, offering a facilitated, integrated, area based approach which covers:

- advice, support and assessment for domestic and non-domestic buildings
- tackling fuel poverty
- domestic and non-domestic able-to-pay energy efficiency (with loan funding provided by the national loan scheme)
- public sector energy efficiency
- low regrets heat decarbonisation approaches where relevant, e.g. renewable heat in off-gas areas and district heating where appropriate

We recognise that our proposal will require local authorities to expand current approaches and, in some cases, develop new ways of working. The Programme will need to see an expansion in current:

- promotion activity
- household and business engagement and sign-up
- provision of advice and guidance
- management of customer installations

We also recognise that there will be a cost associated with expanding local authority activity. That is why we are testing and trialling this approach as part of the Transition Programme, and will be working closely with local authorities and other delivery bodies to better understand the costs. Over time we anticipate that much of this activity could become self-financing.

<sup>46</sup> <http://www.gov.scot/Topics/Business-Industry/Energy/Action/lowcarbon/NDEE>

## COMMUNICATION AND KNOWLEDGE SHARING

To deliver our targets and ensure owners and occupiers take action at the appropriate time, we recognise the need for communications that motivate owners and occupiers to access the advice and support on offer. To support this, we will develop a strong brand for the Programme that inspires trust and raises awareness. We will develop targeted messages for each sector that make the case for improving energy efficiency and switching to low carbon heat. We will learn lessons from and build upon successful marketing campaigns such as Greener Scotland and existing programmes such as Home Energy Scotland and Resource Efficient Scotland, and look for opportunities to promote the Programme and raise awareness of energy efficiency.

Sharing information between those involved in delivery will also be important. We will put in place suitable forums for communication between delivery partners to provide opportunities for sharing best practice, coordinating delivery and gathering feedback on programme performance.

### Offer to meet the Energy Efficient Scotland Standard

Our offer of advice and support will be geared towards helping building owners get their premises to the Energy Efficient Scotland long term standard. This Route Map restates our commitment to continuing to target funding to low income households to improve their homes and offering loans to those businesses and households who are able to pay.

In our on-going work to develop the Programme offer we are not proposing wholesale change or the introduction of a raft of new programmes, rather we are looking at integrating and streamlining existing programmes. We will streamline our processes, making it easier for local authorities to access funding and reduce administration costs. We will provide multi-year funding, enabling local authorities to better plan and deliver complex projects which may take significant time and we will ensure that households and businesses are covered by strong consumer protection frameworks in order that they have confidence in the work being carried out on their properties.

We are retaining the flexibility to provide short-term funding boosts for specific sectors or purposes and to alter the focus of our programmes as priorities change.

### Delivery Mechanism

We asked about how best to deliver the Programme in our consultation in January 2017 and one of the messages we received was the potential need for a national mechanism to oversee the delivery of Energy Efficient Scotland.

The Programme will be running for 20 years and will involve activities as varied as improving the energy efficiency of the majority of buildings, decarbonising the heat supply to off-gas grid properties and supporting the development of district heating networks. The programme will also involve significant investment. We are investing over £0.5 billion in the Programme in the four years from 2016–17 and we know that significant additional private investment will be needed to achieve our long term vision.

Due to the duration and significant investment involved, it will be important to establish appropriate governance and coordination for the Programme to ensure that it delivers successfully, particularly as it will run over a number of Parliamentary cycles.

The Programme will also be complex to deliver and so it could benefit from a national delivery mechanism that would develop and provide national capacity and expertise to deliver the programme across Scotland.

We are considering the consultation responses and wider stakeholder views to decide on the best options for a national delivery mechanism for the Programme.

# Chapter 5: Protecting Customers



## ASSURING QUALITY AND PROTECTING CUSTOMERS

Establishing trust in Energy Efficiency Scotland will be key to its success and it is therefore important that products and services provided by the Programme are of the highest quality. We intend to achieve this by putting in place robust quality assurance requirements at every stage of the delivery process from the marketing and communications to the assessment and installation. This will ensure that consumers are protected, confidence in the programme is boosted and investment is attracted. This Route Map sets out our commitment to developing a robust quality assurance framework covering all aspects of the Programme.

In recent years, shortcomings in consumer protection and in the expected quality standards of installations in the renewable energy, energy efficiency and district heating sectors have emerged. Citizens Advice Scotland and other organisations with consumers' interests at heart have highlighted this as an area of growing concern. Specific concerns have been raised about cold calling and mis-selling in the energy efficiency sector.

In October 2015 the UK Government commissioned Dr Peter Bonfield to chair an Independent Review of Consumer Advice, Protection, Standards and Enforcement for UK home energy efficiency and renewable energy measures. The Each Home Counts<sup>47</sup> review identified many examples of exemplary performance of installing energy efficiency measures. However, it also found that too often interventions were not appropriately targeted and, in a minority of cases, there is poor practice and substandard work being carried out<sup>48</sup>.

Responsibility for consumer protection in energy efficiency, renewable energy and district heating is provided by a number of bodies - Trading Standards Scotland, Ofgem, ombudsman organisations and independent guarantee schemes. Quality standards, inspection, and levels of redress vary significantly between different organisations and compliance schemes. Redress processes, where they exist, can be unclear, slow and difficult for consumers to navigate. Ultimately, they may not satisfactorily resolve the consumer's complaint. It is also important to note that consumer protection enforcement powers are reserved to the UK Government, although the Scottish Government has new powers to provide consumer advocacy and advice and is able to set quality requirements for installers on work carried out through the Programme incentives and other Scottish Government schemes.

The wide-ranging and still evolving nature of the Programme, which includes a number of installation scenarios from individual properties to district heating networks covering householders, non-domestic premises and businesses, creates new challenges in developing protections that will be applicable in all circumstances. However, the Programme also provides an opportunity to build on existing provisions and create an integrated, accessible and effective quality assurance framework.

The 2016 SNP manifesto committed to creating a consumer body to protect consumers. This represents another opportunity to ensure consumers are able to engage confidently with providers and suppliers and to make energy efficiency choices that suit their particular circumstances.

<sup>47</sup> <http://www.eachhomecounts.com/about/>

<sup>48</sup> A Technical Monitoring Report carried out by Ofgem on the UK Government's Energy Companies Obligation (ECO) showed that 6.9% of the almost 1.5 million measures installed during the first ECO period between January 2013 and March 2015 were inspected. Of these, 9.9% did not meet the necessary installation standards in the first instance and required additional work to be undertaken. The majority of these failures are not thought to be due to intentional poor performance, but the result of gaps in standards or training provided.

In developing the framework we will be embedding the set of principles set out below.

### The Energy Efficient Scotland Quality Assurance (QA) Principles

- Across the board there will be robust consumer protection that focuses on high standards of quality, customer care, competence, skills, training and health and safety.
- Individuals and businesses carrying out work under the the Programme umbrella should be competent, appropriately trained and should agree to adhere to the the Programme Code of Conduct.
- Individuals or businesses who fail to adhere to the standards or Code of Conduct will be removed from the scheme.
- There will be sufficient capacity in the supply chain to meet the demand for the Programme and be able to deliver the Programme offer.
- The Programme finance will only be made available where the Programme approved individuals or businesses are used.
- The Programme consumer protection should build on existing standards and frameworks and should represent good value for money.
- The Programme standards will be robustly enforced.
- Consumers will have access to simple and effective redress if things go wrong.

The development and implementation of the Programme quality assurance framework has already begun and will be continuing throughout the transition phase to ensure it is operational by 2020. During this period, customers will benefit from the legal protections that are already in place. As the quality of installation work is integral to the overall delivery of the Programme, the framework will also encompass the skills and competence requirements of the Programme operatives as

well as the capacity of the supply chain in Scotland.

We are developing the quality assurance framework with partners and we have established a Short Life Working Group on Quality Assurance, Consumer Protection, Skills and Supply Chain.

### NEXT STEPS

The development of the Programme Quality Assurance framework began in early 2018 and will continue throughout the transition phase in order to be operational in 2020.

SLWG will meet during 2018.

A set of actions will be taken forward that will ensure the framework meets the principles set out.

# Chapter 6: Skills and Supply Chain



The rollout of Energy Efficient Scotland has the potential to create a substantial Scottish market and supply chain for energy efficiency services and technologies, with every £100 million spent on energy efficiency improvements in 2018 estimated to support approximately 1,200 full-time equivalent jobs across the Scottish economy<sup>49</sup>. As part of our overall commitment to the Programme we will be working to provide support and actively promote the opportunities of this market.

As well as making sure Scottish companies can benefit from the opportunities, we need to ensure that the quality of the work carried out by the supply chain is of a high standard and that installers are suitably qualified.

We know that activity in the skills and supply chain needs to be increased in the transition phase and beyond. We already have an existing energy efficiency skills base and people and businesses in place to perform energy efficiency work. However, we want to ensure that as the Programme expands they are able to capture the new opportunities and that these opportunities are available to our SMEs as well as our larger businesses.

Because of the close connection between quality assurance, consumer protection and the skills and supply chain, we are considering these issues in the round through the work being undertaken by the Short Life Working Group on Quality Assurance, Consumer Protection, Skills and Supply Chain.

The Group has representatives from across industry, consumer organisations, and enterprise and skills agencies, and is considering:

- The current capacity and capability within the supply chain and whether or not it is likely to meet the demand for the Programme.
- How best to keep the supply chain informed of the work and training opportunities available

through the Programme during and after the transition period.

- How best to provide clarity on the quality assurance and consumer standards expected from supply chain participants as part of the the Programme delivery framework.
- How to assess and address the barriers that industries, both small and large scale, face in successfully participating in the Programme.
- How best to promote skills and training opportunities for the supply chain.
- How we can best help the energy efficiency industry overcome inefficiencies and keep their costs low, making participation in the Programme financially viable.
- How we can best promote the opportunities available to small and medium enterprises (SMEs) throughout Scotland and help ensure that participating in the Programme is financially viable for them.
- How best to include industry and support them through the Programme transition period and beyond.

As a first stage to inform the Short Life Working Group, we are looking at our existing supply chain to determine the current capacity and capability. We have undertaken the following research:

- A Home Energy Efficiency Programme – Area Based Scheme (HEEPS: ABS) – Lessons Learned report for the Development of the Programme. This will help us ascertain areas for improvement in procurement that would help SMEs to compete and participate in the Programme.

<sup>49</sup> Applying the latest construction sector multiplier (for 2014) from the Scottish Government input-output tables, and deflating 2018 spend to 2014 prices using the GDP deflator.

- An Energy Efficiency and Low Carbon Market Research report was produced in October 2017<sup>50</sup>, identifying:
  - What the likely future demand is from key buyers in Scotland.
  - What the current supply chain characteristics are in Scotland.
  - Insights to assess the supply chain's ability to respond to the tenders to be issued as part of the Programme.
  - Barriers and gaps in the supply chain's ability to meet the needs of buyers.
  - Recommendations and feedback for the Scottish Government and partners.

We have also commissioned work specifically relating to the supply chain and its requirements under the Programme, including:

- looking at raising industry awareness of the Programme
- obtaining details of current market knowledge of the scheme
- providing customer service training and behavioural advice to the supply chain
- collating a bespoke communications plan specifically relating to the supply chain industry.

This work is on-going and we intend to publish further details of how we will assist and support the supply chain by the end of 2018.

Scottish Enterprise has recently commissioned fore sighting work to identify Scottish capability and capacity, prior to developing a Scottish supply chain programme to support Energy Efficient Scotland and to help develop a strategic approach to maximising the associated economic benefits for industry.

The actions and recommendations from our research and the findings from the Working Group will be used to develop the specific skills, quality assurance and consumer protection outcomes that are required to be incorporated into the Programme.

## PROGRESS AND NEXT STEPS

The development of the Programme Quality Assurance framework began in early 2018 and will continue throughout the transition phase in order to be operational in 2020.

SLWG will meet during 2018.

A set of actions will be taken forward that will ensure the framework meets the principles set out.

50 <http://www.energysavingtrust.org.uk/scotland/businesses-organisations/supply-chain/research>

# Chapter 7: Monitoring and Evaluation



In order to ensure we are on track to achieve the the Programme vision, aims and objectives set out in this Route Map, we will be monitoring and evaluating the programme throughout its lifetime. This monitoring and evaluation will allow us to adapt and flex the programme where necessary.

As well as looking at outputs we will be monitoring and measuring outcomes, capturing the impact the programme has on people and communities.

We will be publishing a monitoring and evaluation framework which is ready for implementation by the end of the transition period, setting out:

- A comprehensive framework covering both the domestic and non-domestic sectors;
- A range of output and outcome indicators to inform an annual statement of progress, taking account of the Climate Change Plan monitoring framework, monitoring and evaluation requirements for Fuel Poverty as set out in the Fuel Poverty (Scotland) Bill and other appropriate policies; and
- A commitment to regular, multi-year review (anticipated to be every 4 years) and evaluation of the programme, aligned where appropriate with reporting processes for key policy areas such as Fuel Poverty and the Climate Change Plan. This will include the commissioning of external evaluation of key elements of the Programme at key points across the 20 year period.

As part of this work we will be reviewing the available data, identifying where any gaps exist and where we can draw on existing evidence, ensuring we have the most accurate possible baseline for our domestic and non-domestic building stock. We are committed to working with relevant bodies to collect good quality data to support the monitoring of the programme. We will also be engaging with stakeholders on the development of our monitoring and evaluation framework to ensure that it meets a range of needs.

To underpin the monitoring and evaluation cycle, in 2020 we will be publishing a baseline setting out the state of Scotland's building stock against which we will track improvements over the duration of the Programme.

Our monitoring and evaluation approach will ensure there is clarity from the outset on the information which will determine whether the Programme aims and objectives have been achieved.

# Chapter 8: Potential legislative provisions



## POTENTIAL LEGISLATIVE PROVISION TO SUPPORT the Programme

With a programme as ambitious as Energy Efficient Scotland we need to review our existing legislation and consider what new or amended powers or duties may be needed to support the programme. As a minimum we are considering the need for legislation to create a statutory duty for local authorities to develop LHEES and for regulation of district heating. We have previously consulted on these issues. We recognise that other new or revised powers or duties may be needed to ensure delivery and funding across all strands of the Programme over its 20 year lifetime, and are seeking views through the consultation accompanying this Route Map on what these may be.

Our fuel poverty target of removing poor energy efficiency as a driver for fuel poverty will be achieved via Energy Efficient Scotland.

The Fuel Poverty (Scotland) Bill due to be introduced to Parliament in June 2018 will set out the new statutory target - to eradicate fuel poverty by 2040. This Bill will also require that we report to Parliament every four years reviewing progress to date and setting out delivery plans for the next four years (as previously committed to under the Housing (Scotland) Act 2001).

The draft Fuel Poverty Strategy will set three indicators to measure progress against this target:

- the removal of poor energy efficiency as a driver for fuel poverty;
- the reduction of the overall fuel poverty rate to less than 10% by 2040; and
- ensuring that the median household fuel poverty gap is no more than £250.

Our proposal to see fuel poor households living in homes that are EPC C by 2030 and EPC B by 2040 as set out in Chapter 3 supports these aims.

The focus of the Fuel Poverty (Scotland) Bill will be on fuel poverty provisions only. However, stakeholders told us in our previous consultation in 2017 that there could also be a role for regulation and quality assurance standards supported by legislation. We have committed to develop, if appropriate, a wider Energy Efficient Scotland Bill for later in this Parliament, and this would be the vehicle for any further legislative changes needed to support the Programme, beyond the fuel poverty provisions contained in the Warm Homes Bill. We are now asking stakeholders, through the accompanying consultation, what legislation might be needed, that could be included within a the Programme Bill.

### Existing Legislation

There is already a wide range of legislation giving powers and duties to the Scottish Government, local authorities and energy suppliers to improve the energy efficiency of buildings, and reduce emissions associated with their energy and heat supply.

To ensure that the Programme is underpinned by appropriate legislation in future, we would like stakeholders to comment on whether any changes are needed to existing legislation relating to energy efficiency and heating of buildings in Scotland to support the Programme moving forward. We are inviting stakeholders to do this by responding to the consultation accompanying this Route Map.

### Further Legislative provision

In this Route Map, we have set out the various elements of the programme. These include issues such as:

- setting a long term vision for the programme;
- setting a long term standard for improvement of energy performance of domestic and non-domestic buildings;
- requiring improvement in the energy efficiency of buildings to meet required standards;
- amendments to an assessment process, including showing what is technically feasible and cost effective;
- making an offer of support to building owners and tenants to meet these standards;
- requiring local authorities to develop LHEES to determine objectives and design delivery programmes for the improvement of energy efficiency and decarbonisation of heat supply in buildings to help building owners meet these standards;
- giving local authorities powers to regulate the development of district heating in their areas, including powers to consent development, and powers to require public bodies to provide information regarding their heat supply with a view to connecting to district heating networks;
- ensuring that consumers are protected in the installation of energy efficiency measures to meet the Programme standards, or when connecting to district heating<sup>51</sup> ;
- actions to develop and support the supply chain;
- monitoring and evaluation of the programme;

In order to support all of these elements of the programme, we are currently considering whether legal provision would be needed for:

- New or amended powers enabling Ministers to set long term standards for improved energy efficiency and heat decarbonisation of all types of buildings, including the potential to review this standard, and associated powers for assessment, monitoring and review of the programme, and enforcement of standards, if and when needed;
- New duties on local authorities to prepare LHEES, setting out how they will deliver the Programme over its 20 year period;
- New powers and duties to regulate district heating (including requirements for licensing of district heating operators, and consenting of district heating projects).

We have published a consultation to accompany this Route Map where we are seeking views on:

- whether any changes are needed to existing legislation, or;
- if any further legislation is required.

51 Bearing in mind that consumer protection is a reserved matter (UK Government responsibility)



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