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Consultation Document

Energy Efficiency for Wales

Interested organisations and individuals are invited to contribute to the development of a new Energy Efficiency Strategy for Wales.

Date of issue: **17 June 2015**

Action required: Responses by **9 September 2015**



Overview

The purpose of this consultation is to seek the views of stakeholders on a draft energy efficiency strategy for Wales.

How to respond

You are invited to complete the following questionnaire in order to have your say about the future of energy efficiency in Wales.

You may wish to answer some, or all, of the questions posed.

The questionnaire can be completed by an individual, group or organisation.

Where possible please give reasons for your answers to help us understand your views in full. Additional information, evidence and research can be included with your response. Please submit this along with your completed questionnaire. Please take time to complete the personal details section at the end of the form. This will assist with the analysis of the call for evidence.

The questionnaire can be completed either electronically or as a hard copy.

The consultation document and response forms are available on the Welsh Government's website at: www.wales.gov.uk/consultations

Further information and related documents

Large print, Braille and alternative language versions of this document are available on request.

Contact details

Completed questionnaires should be returned to:

Energy Efficiency
People and Environment Division
Welsh Government
Cathays Park
Cardiff
CF10 3NQ

email: FuelPovertyandEnergyEfficiency@wales.gsi.gov.uk

Data protection

How the views and information you give us will be used

Any response you send us will be seen in full by Welsh Government staff dealing with the issues which this consultation is about. It may also be seen by other Welsh Government staff to help them plan future consultations.

The Welsh Government intends to publish a summary of the responses to this document. We may also publish responses in full.

Normally, the name and address (or part of the address) of the person or organisation who sent the response are published with the response. This helps to show that the consultation was carried out properly. If you do not want your name or address published, please tell us this in writing when you send your response. We will then blank them out.

Names or addresses we blank out might still get published later, though we do not think this would happen very often. The Freedom of Information Act 2000 and the Environmental Information Regulations 2004 allow the public to ask to see information held by many public bodies, including the Welsh Government. This includes information which has not been published. However, the law also allows us to withhold information in some circumstances. If anyone asks to see information we have withheld, we will have to decide whether to release it or not. If someone has asked for their name and address not to be published, that is an important fact we would take into account. However, there might sometimes be important reasons why we would have to reveal someone's name and address, even though they have asked for them not to be published. We would get in touch with the person and ask their views before we finally decided to reveal the information.

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Ministerial Foreword

This Energy Efficiency Strategy has a vital contribution to make to the wellbeing of future generations in Wales. It will drive actions to deliver against the goals set out in our new and historic *Wellbeing of Future Generations (Wales) Act*: tackling poverty and the global threat of climate change, building resilience for our communities, boosting green growth in the economy and addressing the health inequalities caused by poor energy efficiency.

Besides addressing the energy “trilemma” of affordability, security of energy supply and the need for decarbonisation, the strategy is designed to play a major role in driving economic growth – supporting the growth of green jobs and skills throughout Wales and increasing the competitiveness of our businesses.

To protect the long-term well-being of our citizens, we need to take action now to improve the energy efficiency of our homes, our businesses and our public sector. The energy system in Wales is on the threshold of considerable change with new energy, technology and low carbon transition opportunities. Ensuring that our buildings are energy efficient will be the bedrock of this transition.

Wales’ homes and places of work include some of the oldest, traditionally constructed buildings in Europe. We have a high number of solid wall, hard to treat and off-gas properties.

We also have high levels of fuel poverty, and investment in energy efficiency is the most effective way to tackle fuel poverty within the powers that we have. Through the Welsh Government Warm Homes programme, which includes Nest and Arbed, we are providing energy efficiency improvements to thousands of low income households and those living in deprived communities.

As I emphasised in the public sector decarbonisation programme that I recently committed to, bringing our public sector buildings up to the energy efficiency standards of today is a strong priority for the Welsh Government. This is essential not only to meet our climate change targets, but to ensure that our public services can save money and better support essential front line services. It is a significant challenge, but it also offers an opportunity to innovate and to create businesses, jobs and exports, as the world tackles the same problems that we face.

But this activity will not just happen through 'business as usual'; so we are committed to removing the barriers to investment in energy efficiency. This strategy sets out the areas of action needed to ensure continued investment to achieve our vision.

We have been taking action to promote energy efficiency within our buildings and businesses for some decades; so we start from a good base in terms of knowing some of the solutions. We are a good way along the journey of doing some of the more practical things; like filling uninsulated cavity walls, and replacing inefficient boilers with more efficient ones. We must now look to newer technologies and smarter ways of living. We must continue to exploit low carbon renewable heat sources alongside energy efficiency, especially in rural areas.

We must take the opportunity now to deliver, through this strategy, real benefits for our society, our economy and our environment. It is critical for the long-term wellbeing of our citizens, and will confirm Wales as a beacon of best practice in sustainable development.



Carl Sargeant
Minister for Natural Resources

CHAPTER 1 INTRODUCTION



In this chapter we set out the purpose of this document.

Our current energy efficiency support includes the Welsh Government Warm Homes programme, delivering improvements to households across Wales through Nest and Arbed; information, advice and support to all sectors through our Resource Efficient Wales service in collaboration with Business Wales; Rural Development Plan advice and support through Farming Connect and capital funding including public sector loans through Salix and Invest 2 Save. In addition, Wales has access to UK wide initiatives such as the Green Deal and the Energy Company Obligation. So we are building upon considerable measures taken to date.

The encouragement of energy efficiency is devolved to Wales; however, we do not have the powers to regulate on energy efficiency:

We will continue to work with the UK Government in respect of their regulatory measures. We will also pressure the UK Government to frame their energy efficiency measures for the benefit of the people, economy and environment of Wales. Despite our limited powers, we are determined to realise our ambition to maximise the potential impact of energy efficiency actions, by

supporting domestic, business and public sector consumers with a range of measures in order to achieve the highest standards of efficient energy use.

We are developing a new strategy that considers not just the Welsh Government's role in driving this agenda, but also the role of other organisations, of businesses and of householders.

A call for evidence was held between 16 October 2014 and 8 January 2015.

103 responses were received from a wide range of stakeholders. A collation of responses document sharing the results of the call for evidence has been published alongside this draft strategy. All responses have been considered fully in developing the strategy further, and we believe that this draft strategy reflects the current evidence and the views of stakeholders. We would now like to give you the opportunity to shape the final strategy.

CHAPTER 2 THE VISION



The vision is the focal point for the strategy. This provides the direction for building an energy efficient Wales over the next ten years, in line with the Well-being of Future Generations principles.

The proposed vision for Wales by 2025 is:

We want to ensure that Wales is in the best possible position to realise its full energy efficiency potential and become a major exporter of energy efficiency technology and know-how.

This can be achieved by working in five key areas of action:

People, communities businesses and other organisations, recognise the benefits of energy efficiency and take action.

We have the supply chain throughout Wales to deliver energy efficiency improvements: to buildings, products and processes, and those businesses go on to grow and export their expertise and know how.

We have effective education and skills in place to deliver on the energy efficiency challenge, from raising awareness in schools to a qualified and skilled workforce and investment in higher level skills to support R&D and innovation.

We support innovation in new energy efficiency products to deliver solutions in Wales; and our businesses benefit from the opportunities presented by this global challenge.

We have clear funding mechanisms, a sense of direction and a stable framework that is attractive to investors and consumers.

CHAPTER 3 THE NEED



In this chapter we set out the reasons for accelerating the delivery of a more energy efficient Wales.

Box 1: Understanding Energy Efficiency

“Energy Efficiency is a measure of energy used for delivering a given service. Improving energy efficiency means getting more from the energy that we use.”

There are different ways to improve energy efficiency. For example:

- Innovation in new products and technology can lead to the same or greater output with less energy;
- Cutting out wasted energy reduces the energy needed while maintaining output;
- Heating technologies, such as heat pumps, can deliver greater output for less supplier energy;
- There is potential to save energy by changing how we use it, in domestic, business and public sector settings, while maintaining the benefits delivered.

(Energy Efficiency Opportunity in the UK, DECC 2012)

In Wales the drive for energy efficiency will contribute strongly to the well-being of future generations goals by:

- reducing greenhouse gas emissions and helping to deliver on our Climate Change Strategy and achieve our statutory emissions reduction targets;
- reducing fuel poverty and helping to deliver our Fuel Poverty Strategy;
- creating jobs and business opportunities by investing in Green Growth through local energy efficiency supply chains;
- improving the energy performance of buildings in Wales, raising the overall quality of the building stock and reducing energy costs;
- regenerating communities in Wales, both through improvement in the fabric of buildings and through the creation of jobs and business opportunities that will lead to more cohesive, sustainable communities right across Wales;
- delivering our wider Welsh Government energy policy, helping to realise the aspirations of *Energy Wales: A Low Carbon Transition*;
- working towards our resource efficiency agenda and accelerating a circular economy.
- Enabling natural resource management and the implementation of the Environment

3.1 The need

Looking at the future through our Wellbeing of Future Generations Act

The **Wellbeing of Future Generations Act** introduced in March 2015, requires public bodies to think about and plan for the wider and long-term impacts of their actions and investments, and to focus on improving in an integrated way, the economic, social and environmental well-being of people in Wales.

The sustainable development principle that underpins the Act, requires us to ensure that the needs of the present are met without compromising the ability of future generations to meet their own needs.

Our approach to improving energy efficiency in Wales is an early demonstration of our application of the five principles outlined in the Act. An **integrated approach** to energy efficiency means we can deliver multiple benefits for people now and over the **long-term**; helping to **prevent** climate change through the **involvement** of people and **collaboration** with private, public and third sector organisations.

Improving energy efficiency across Wales will improve the well-being of the people of Wales in a whole range of different ways. Figure 1 illustrates that energy efficiency is a very important element in our drive to achieve the well-being of future generations goals.

Our Programme for Government

Delivering against our Programme for Government is our overriding priority. The following commitments are supported by increasing energy efficiency in Wales.

- Growth and sustainable jobs
- Education
- 21st Century Healthcare
- Welsh Homes
- Supporting People
- Safer Communities
- Equality
- Tackling poverty
- Rural Communities
- Environment and Sustainability

Green Growth

In November 2013 Cabinet endorsed the green growth approach and accepted that it was a key part of ensuring economic growth in Wales in the long term.

The drive for Green Growth involves a fundamental change in the way we promote, encourage and support economic growth. It is about taking decisions in the short-term that promote and ensure a different form of growth in the long term.

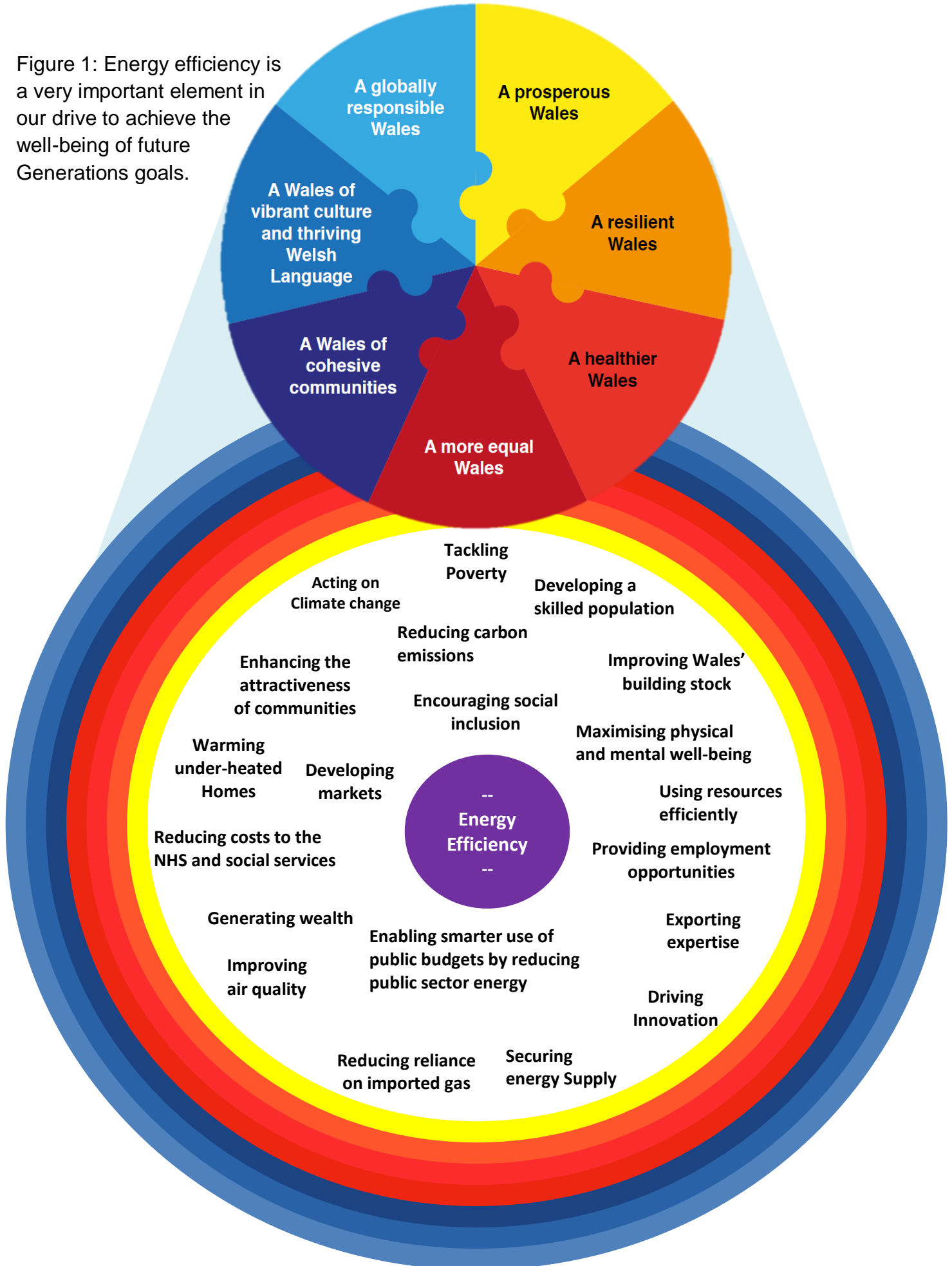
The prospectus sets out how the sustainable use of our natural resources can create a new economic model that will deliver wealth creation and economic growth both today and into the future.¹

Investing in energy efficiency is integral to our green growth ambitions. It addresses environmental sustainability by reducing carbon emissions, it is socially inclusive through tackling poverty and it helps support economic growth by delivering on sustainable employment.

1

<http://gov.wales/topics/environmentcountryside/consmanagement/green-growth-wales/?lang=en>

Figure 1: Energy efficiency is a very important element in our drive to achieve the well-being of future Generations goals.



3.1.1 An effective energy market

Energy efficiency can support households, businesses and other organisations in Wales, by saving money, by reducing energy security risks and by supporting more sustainable lifestyles. At scale, it is the most cost-effective intervention to support the move to a low carbon energy system.

Energy Hierarchy

The Welsh Government has an ambition to make the long-term transition to a low carbon energy system. It recognises three major challenges that make this transition urgent: the need to mitigate climate change, the impact of rising energy costs, and the future risks to energy security. Tackling these problems requires co-ordinated action at all levels in Wales, with the Welsh Government playing our part. It also requires a more interconnected UK and European energy system. We must maximise the benefits from public money spent on energy.

The energy hierarchy, shown in figure 2, shows that reducing energy demand and increasing energy efficiency are the best starting points. Energy efficiency actions reduce energy demand and enable us to use energy wisely. Maximising energy savings and energy efficiency will be essential to the feasibility of increasing reliance on low carbon sources of energy.

That is because reducing our demand for energy and increasing energy efficiency at the point of use means that less energy needs to be generated; it is therefore easier to meet demand using low carbon sources of energy. This in turn lowers the need to generate energy (both electricity and heat) from fossil fuels, thereby lowering our carbon emissions.

Energy Security

Energy efficiency reduces the absolute amount of energy that needs to be generated, which, combined with low carbon energy from the sustainable use of Wales' natural resources, improves energy security. This is of importance to people and businesses, who are less likely to face energy supply cuts, and it has wider strategic importance for the ability of the UK as a whole to reduce the amount of energy that it has to import from outside its borders.

Energy costs

The price of energy impacts on the ability of people to heat their homes affordably, and it reduces the competitiveness of Welsh businesses in global markets. Inefficient buildings use more energy than they need to, which leads to householders and businesses paying for this waste.

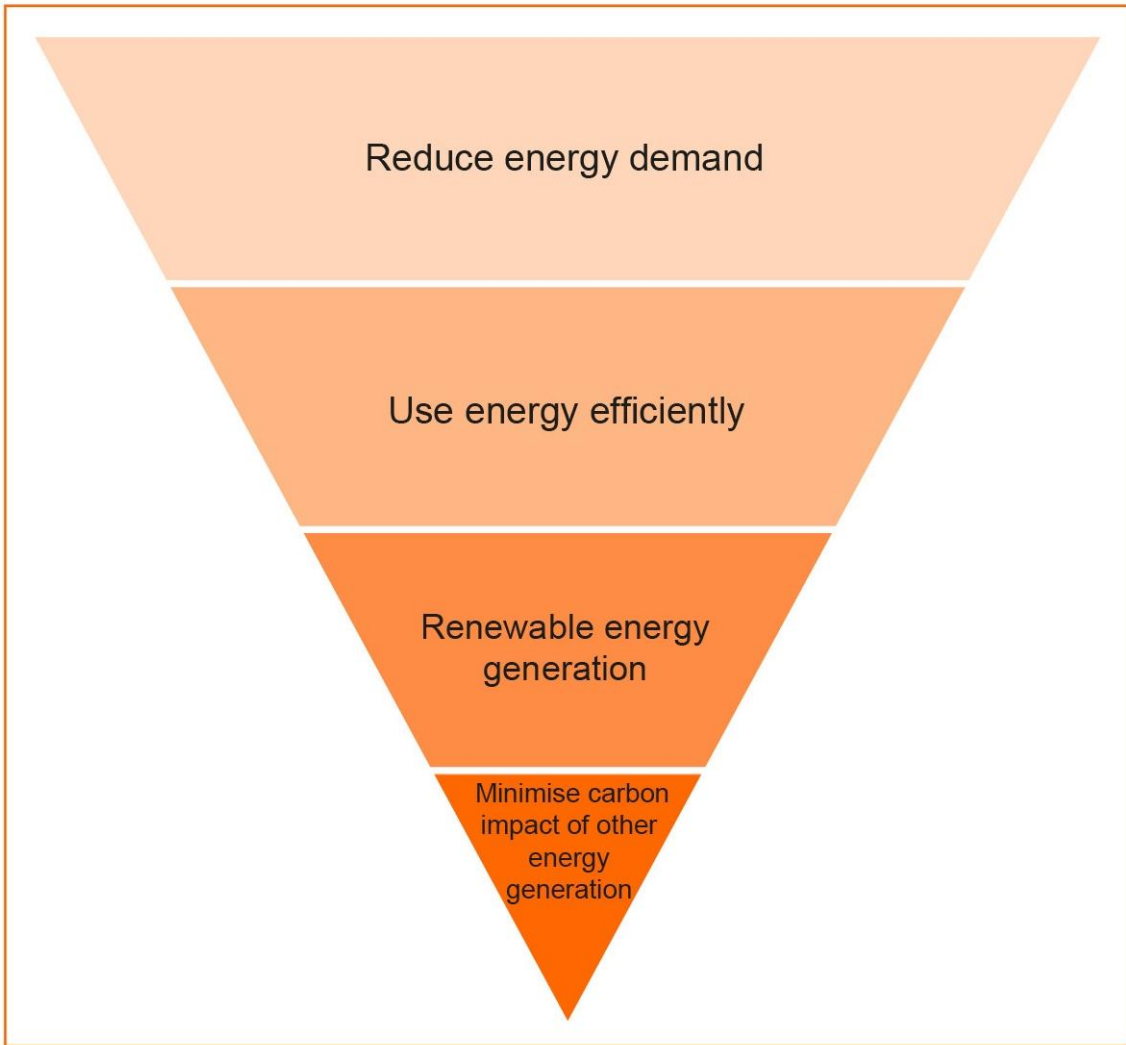


Figure 2: The Energy Hierarchy

3.1.2 Economic Benefits

Saving energy saves money

When energy is saved that leads to lower energy bills, which can benefit the economy. The level of benefits from the drive for energy efficiency depends on the extent to which savings are circulated back into the economy, and the extent to which investments in energy efficient technologies give impulse to local economies. Determining the impacts on the economy is a rather complex issue. To our knowledge, there is no European-wide study available investigating the macro-economic benefits of European-wide energy efficiency measures in detail. Neither is there a Wales-wide study.

Saving energy creates jobs

Due to the labour-intensive and localised nature of most energy efficiency work, it is possible to create jobs locally. Jobs will be created in local installation and in manufacturing, and will also benefit the transport, energy, and service sectors. Direct employment will be created in the manufacturing of equipment and materials including insulation and heating systems, as well as in installation and project management. Auditing, monitoring of energy use, efficiency rating, marketing and consultancy also all offer employment opportunities.

Some of the jobs that are created to enable energy efficiency improvement and energy savings will inevitably displace existing jobs in other sectors. Determining the exact level of displacement in sectors where product and service demand is reduced, or in other words, the net jobs that are gained in an emerging sector, is again a complex issue.

Saving energy ensures Wales' long term competitiveness

The successful growth of the energy efficiency sector in Wales will lead to a skilled and highly specialised workforce in several sectors of our economy. This could have a positive, more indirect effect on our competitiveness in the manufacturing and services sectors as well as in research and development.

Reducing energy use in any industry cuts operational expenses, therefore it becomes increasingly important when competing in a global market against countries whose energy (and labour) costs are relatively low compared to those in Wales.

Additionally, consumers are increasingly aware of the environmental impact of their behaviours. Companies that, as part of their business strategy, can deliver low-carbon and low-energy intensive products build competitive advantage and create added value.

3.1.3 Climate Change

Our work on energy efficiency has demonstrated that action on climate change can drive economic growth and tackle vulnerability and inequality – wins that are at the heart of our Government priorities.

The European and statutory UK 2050 target set the wider context for the decarbonisation of our economy – with both committing to a reduction in overall greenhouse gas emissions by at least 80% by 2050. This means that there is now a clear roadmap in place for decarbonisation, with energy efficiency being a key driver for this, and with European interim targets for 2020 and 2030 to guide planning towards the aim of decreasing emissions by at least 80% by 2050 (below 1990 levels).

At the Wales level the goals and principles set by our ground breaking Well-being of Future Generations Act encompass the need to act on the causes and adapt to the consequences of climate change, as well as ensuring that Wales is globally responsible in its actions.

Wales has had a long term commitment to taking action on climate change, which is outlined in our existing Climate Change Strategy.

This is being strengthened by the Environment (Wales) Bill, which focuses on the sustainable management of Wales' resources and includes a statutory commitment to carbon budgeting to set a clear pathway for decarbonisation. Our aim for at least an 80% target reduction by 2050 is in line with wider UK and EU

obligations. Wales, along with the UK is part of a leading group of countries taking legislative action to tackle climate change.

Greenhouse gas emissions from existing housing and businesses in Wales account for approximately half of the emissions included in the Welsh Government's target to reduce greenhouse gas emissions by three per cent per year in areas of devolved competence. Promoting energy efficiency is a critical component of achieving this target and generally encompasses many of the most cost-effective greenhouse gas reduction measures.

Our latest Annual Report (2014) shows that the Residential sector is responsible for 24% of emissions covered by the 3% target and has reduced by 7.6% compared to the baseline, whilst the business sector accounts for 31% of emissions covered by the 3% emissions reduction target², and has reduced by 16.7%.

Energy efficiency provides a key opportunity for reducing emissions across different sectors and will deliver significant savings, whilst providing green growth opportunities and reducing the inequalities that underpin poverty.

² This excludes direct emissions from heavy industry and energy generation.

3.1.4 Fuel poverty

The Welsh Government regards a household as being in fuel poverty if, in order to maintain a satisfactory heating regime, it would be required to spend more than 10 per cent of its income (including Housing Benefit, Income Support for Mortgage Interest or council tax benefits) on all household fuel use.

There are three main factors that influence whether a household will be in fuel poverty: household income, energy prices and the energy efficiency of the home.

The Welsh Government has a statutory obligation to eradicate fuel poverty³, as far as is reasonably practicable, in all households in Wales by 2018. We have limited powers to tackle low income and energy prices, making the eradication of fuel poverty a real challenge, but we can make a significant difference by improving the energy efficiency of homes in Wales, and we are doing this through our energy efficiency programme.

Improving the energy efficiency of the homes of low income households is important, not just because we want to reduce household energy use and energy bills, but because living in a cold home has a detrimental impact on people's health and well being. There is evidence that cold homes can lead to increases in respiratory illnesses and the risk of heart attack and stroke, as well as contributing to excess winter deaths⁴. In addition, worrying about

paying energy bills can increase levels of stress and mental illness. We also know that some people will cut back on food or other essentials in order to pay their energy bills. This all leads to poorer health outcomes for low income households and increases pressure on health and social care resources.

The negative impacts of fuel poverty and living in a cold home are wider than health and well being: they can also impact on educational attainment when children lack a quiet, warm place at home to study, or have higher levels of absence due to illness. They can increase social exclusion when people are reluctant to invite friends to their home because it's cold or damp, and there are wider impacts on the economy through increased days lost to sickness and reduced disposable household income that might otherwise be spent in the local economy.

³ Statutory targets for eradicating fuel poverty in Wales were published in 2003, in the Welsh Government's **A Fuel Poverty Commitment for Wales**, as required by the Warm Homes and Energy Conservation Act 2000.

⁴ **The Health Impacts of Cold Homes**. Friends of the Earth and the Marmot Review Team (2011)

3.1.5 Obligations

There are a number of statutory obligations relating to energy efficiency, which the Welsh Government is committed to. These are shown below in box 2.

Box 2: Energy efficiency obligations

2020 and 2030 Energy Efficiency Target

In 2007 the European Union set an ambitious primary energy saving target of 20% by 2020, against a 2007 business-as-usual projection. This forms part of a wider package of targets – known as the “20-20-20 targets” – which make up the EU’s 2020 climate and energy package, and which include binding greenhouse gas emissions and renewable energy targets. This framework has been strengthened by the EU 2030 framework, which now sets in place further targets for delivery by 2030, and encompasses an energy efficiency target for at least 27% reduction.

The UK’s Target

The UK notified the European Commission on 30 April 2013 of its target under Article 3 of the Directive. The UK’s target was set at the level of 129.2 million tonnes of oil equivalent (mtoe) for final energy consumption on a net calorific value basis. This represents an 18% reduction in final energy consumption,² relative to the 2007 business-as-usual projection, and reflects the UK’s ambitious energy efficiency policy package.³ Estimates of energy consumption in 2020 can be broken down by sector based on the 2013 Energy and Emissions Projections.⁴

The EU Energy Efficiency Directive¹

This Directive (2012/27/EU) represents a major step forward for energy efficiency in the EU, establishing a common framework of measures to promote energy efficiency across different sectors of the economy throughout the EU. The Directive will play a key role in driving progress towards the EU’s 2020 energy efficiency target. Central to achieving this goal is the requirement in Article 3 for Member States to set national non-binding energy saving targets.

Welsh Government Targets

The Welsh Government currently has a commitment to reduce greenhouse gas emissions by three per cent per year in areas of devolved competence. This has been strengthened by the Environment Bill, which will put in place statutory climate change targets and carbon budgeting to help drive further action on climate change. Our aim is for at least an 80% target reduction by 2050.

The Welsh Government has a statutory obligation to eradicate fuel poverty,⁵ as far as is reasonably practicable, in all households in Wales by 2018. The most effective way that we can do this is through energy efficiency.

¹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2012:315:0001:0056:EN:PDF>

² Equivalent to a 20% reduction in primary energy consumption.

³ The UK’s target was taken from the UK Department of Energy and Climate Change’s Updated Energy and Emissions Projections (published in October 2012).

⁴ <https://www.gov.uk/government/publications/updated-energy-and-emissions-projections-2013>

⁵ Statutory targets for eradicating fuel poverty in Wales were published in 2003, in the Welsh Government’s A Fuel Poverty Commitment for Wales, as required by the Warm Homes and Energy Conservation Act 2000.

CHAPTER 4 THE OPPORTUNITY



In this chapter we outline the opportunities and challenges presented by accelerating energy efficiency in Wales.

The opportunities presented by an energy efficient Wales are manifold, not least in terms of cost savings for businesses, households and the public sector, increased resilience to economic shocks, the stimulation of innovation and the potential for job creation.

In our call for evidence, we asked our stakeholders about the potential impact in Wales of energy efficiency in terms of saving money and creating jobs and green growth. We had 74 responses to this question providing some useful and interesting information. Responses show that there is a great opportunity to be realised. There is a good deal of information to show the importance of energy efficiency and its positive impact on society. We don't have material that fully quantifies the opportunity specifically for Wales; however, we will continue to develop our knowledge in this area, as our data about the building stock in Wales improves.

Building stock and energy use

Wales has 1.4 million homes⁵ across a wide range of housing types, including a significant proportion of older buildings. New construction offers opportunities to incorporate new energy systems; and to implement much higher standards of energy efficiency. But 65-70 per cent of the dwelling stock in existence in the 2050s is likely to have been built before 2000⁶. Therefore, despite national Building Regulations being introduced in 1965, with local standards in existence since the 1930s, we have some of the oldest and least thermally-efficient

building stock in Europe. The prevalence of older buildings in Wales' stock leaves a considerable legacy of non-energy efficient features.

By far the largest use of energy in buildings is in the generation of heat and hot water. Since 1970, central heating systems have become the predominant means of heating UK homes. The fuel type used in homes is dependent on location. The households in Wales that are not connected to the gas grid use other fuels that can vary depending on whether the household is in a rural or urban setting. Off-gas rural homes will typically be in areas not reached by the gas network, while off-gas urban homes will be in buildings that have, for a variety of reasons, not been connected to the available gas network. In dense urban environments, the predominant fuel for heating non-gas fuelled homes is electricity, particularly in housing blocks where there may be limitations on the use of gas for safety reasons. In rural settings, the fuels used for heating are mainly electricity and heating oil, with solid fuels and liquefied petroleum gas (LPG) being used also, but to a lesser extent.

Outside of its use for heating, and hot water, the demand for electricity in domestic properties is spread across its use for cooking, lighting and appliances. The provision of lighting has seen a number of technological developments in the last decades, with standard incandescent light bulbs being phased out across the European Union and being replaced with more efficient Light Emitting Diode lamps (LEDs).

Non domestic buildings vary widely in their form, age and use, from small shops, to high rise commercial office buildings, hospitals and airports. As with the domestic sector,

⁵ <https://stats.wales.gov.uk/Catalogue/Housing/Dwelling-Stock-Estimates/DwellingStockEstimates-By-LocalAuthority-Tenure>
⁶ Foresight (2008) Powering our Lives: Sustainable Energy Management and the Built Environment. Government Office for Science, London.

much of the 2050 environment will not have been designed or constructed with energy efficiency and decarbonisation standards in mind.

Relatively little data exists to enable analysis on energy performance but what has been done⁷ suggests that, while this enormous diversity exists, there is some correlation between activity and built form. Energy performance varies widely even for very similar buildings, which means that there is huge potential for a wide range of energy efficiency measures.

Energy use in non domestic buildings is as much to do with their occupation, equipment, use and management; as with the buildings themselves. The diversity of building use in non-domestic has a profound effect on the levels of energy used for heating and cooling across the various sectors. Non-domestic buildings may have to deal with high levels of internal heat gains from lighting and other electrical processes such as IT, particularly in office buildings, as well as the conditioning of deep plan spaces, where natural ventilation may be difficult to achieve. In addition to high cost alterations to fabric and services, non-domestic buildings offer many opportunities for making major savings cost-effectively by avoiding waste and from minor improvements. However, with so many players involved, (including owners, agents, managers, occupiers and a range of service providers), principal/agent problems can make it difficult to retrofit energy efficiency measures.

We are looking at ways to improve and update the data on the building stock in Wales so that we can assess the full opportunity in these premises and for Wales as a whole.

In 2014, there were around 230,000⁸ businesses operating in Wales and most of these were micro businesses (less than 10 employees). At present many SMEs do not take action on energy efficiency and there is a need to stimulate and support demand in this group. Smaller SMEs can benefit from similar energy efficiency improvements to domestic households but like households they may not recognise the benefits of doing so. In addition, whilst larger SMEs have taken action, there is more that can be done working through the Welsh Government's sector teams to support action on energy efficiency.

There is a significant opportunity to invest more in public sector energy efficiency through loans and attracting private sector investment. Whilst many public sector organisations have already taken action and made use of external investment options, more can be done to scale up in this area. Funding on the scale needed across all sectors cannot be provided by the public sector alone, therefore the success of making Wales energy efficient depends on significant mobilisation and engagement of the private sector.

Tackling Poverty

As explained above, Wales has some of the most inefficient housing stock in Europe. Therefore, it simply takes more energy to

⁷ Non-Domestic Energy Factfile, BRE, 1998

⁸ <http://gov.wales/statistics-and-research/size-analysis-welsh-business/?lang=en>

keep our homes warm than elsewhere in Europe, and this drives up energy bills.

Modelled fuel poverty estimates for 2012 indicate that 386,000 (30 per cent) of all households in Wales were fuel poor. This is an increase of 54,000 households since 2008, when it was estimated that 332,000 (26 per cent) of all households in Wales were fuel poor.⁹ The increase in the number of fuel poor households since 2008 has resulted from significant increases in energy prices during the period, along with falling or flat lining incomes.

While the overall number of households in fuel poverty has increased, the modelling identifies that a further 36,000 households would have been in fuel poverty without the impact of energy efficiency improvements.

We want to build a stronger evidence base on the health impacts of our home energy efficiency improvements and are investing jointly with the Economic and Social Research Council (ESRC) in a project to link data on energy efficiency improvements with health outcome data. The project will run for three years and aims to provide conclusive evidence of health impacts to inform future policies and programmes.

We want to understand more about which low income individuals or households are most at risk from the effects of living in a cold home, and therefore most in need of the support provided through home energy efficiency improvements. To help inform future policies and programmes, we are commissioning research on the characteristics of individuals and households who are most in need. The research will be completed at the end of 2015.

Economic opportunity

In 2011/2012, the UK's energy efficiency market accounted for around 136,000 jobs and sales of over £18 billion.¹⁰ However there is more potential in the market. With the right market in Wales we could unlock more potential for energy efficiency investment, helping to generate green growth and jobs.

Given the significant employment multipliers associated with energy efficiency measures (HMT estimate that 32.6 jobs are supported/created for every £1 million capital spent on domestic energy efficiency retrofit versus 15 for major infrastructure projects) and the significant housing and fuel poverty issues that Wales faces, there are significant economic, social and environmental benefits associated with the delivery of domestic and commercial energy efficiency measures. There are few better capital investments for Wales in terms of the multiple benefits delivered.

⁹ **Fuel Poverty Projection Tool**,. Welsh Government Social Research (2013)

¹⁰https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/307993/uk_national_energy_efficiency_action_plan.pdf

The HMT coefficients allow us to estimate the number of gross direct jobs sustained (FTE) for every £1,000,000 invested. Improving homes from energy efficiency ratings E, F and G to energy efficiency rating D can reduce the average annual fuel bill by £600 (as estimated in a WWF Cymru and Energy Saving Trust Report on “Cutting Carbon Emissions in Welsh Homes”). Using the figures in this report it can be estimated that improving the energy efficiency of 1,000 homes from ratings E, F and G to a D rating could lead to total annual bill savings of around £571, 000. This is an underestimation of the benefits that could be generated, because this is simply an estimate for one year.

Whilst some businesses have undertaken significant investment in energy efficiency there is a need to do more across business to maintain competitiveness, counteract the impact of price rises, and reduce sector emissions. There are nearly 90,000 SMEs in Wales and a significant number of public sector organisations. On the whole this business energy efficiency is an untapped opportunity. The findings of the Parliamentary inquiry by Carbon Connect ‘Energy Efficiency The untapped business opportunity’ established that poor energy efficiency, currently costing UK business more than £6billion a year, needs to be tackled immediately. Despite the huge cash and carbon savings available, the private sector has yet to realise the benefits of adopting energy efficient measures.

As we currently experience significant pressure on public sector budgets, increasing the energy efficiency of the public sector would release resources that could be re-directed into front line services.

The green economy is an important element of economic growth and describes a major subset of the Welsh economy.

It is an established and growing sector, with UK sales in the green economy increasing by 4.8% to £128.1 billion in 2011/12, in a global market of £3.4 trillion, placing the UK sixth in that global market.

Sales in the green economy in Wales contributed £5.5 billion to the Welsh economy in 2011/12, supporting over 41,000 jobs. During the recession between 2009/10 and 2011/12, jobs grew by around 2.4% and sales by around 9.3%.

In both employment and sales terms, the largest sub-sector in the green economy in Wales is in building technologies, which account for 15.1% of green economy employment in Wales and 15.4% of sales.

It is clear from these figures that Wales is developing a strong market in building technologies, which cover activities associated with energy efficiency. Building technologies includes main stream building materials and systems that contribute to reduced energy use and to lowering the carbon footprint of buildings. Hence this market incorporates much of the energy efficiency sector.

Decarbonisation opportunities

Residential:

The residential sector accounted for 22% of our 3% (devolved) target emissions in 2011. 61% of emissions are from direct fuel consumption in the sector (dominated by heating and cooking) and 39% are from end-use consumption of electricity (for heating, lighting and cooking).

The Residential Sector 3% target emissions are largely due to electricity consumption reflecting the high electricity use for heating, lighting and cooking in the sector. Furthermore, total (all fuel) end-user consumption estimates for the residential sector in 2011 are 174% higher compared to the by-source emission estimate for Wales; due to the additional emissions allocated from the upstream energy process sectors to deliver the refined fuels and electricity that are consumed in the sector. Therefore, the residential sector has an important influence on demand driven emissions across the energy sector in Wales. This highlights the importance of energy efficiency policy implementation in the residential sector, if we are to achieve emission reductions and deliver on the 3% target.

The energy consumption mix in Wales' residential sector (2011) appeared to be moving towards more carbon intense fuels such as coal (13% increase 2005-2011) whilst gas (-25% decrease 2005-2011) and electricity (-25% decrease 2005-2011) consumption looked to be falling. This may reverse the improving emission reduction trend and counter the benefits delivered by increasing energy efficiency within the residential sector, if the shift to more carbon intense fuels is maintained. Furthermore, to achieve overall emission reductions the residential consumption decline needs to continue to outpace any increase in housing growth to achieve net emissions reductions.

There are a number of routes to delivering emissions reduction for the residential sector with actions that could be undertaken both within and external to the sector itself. These include improving energy efficiency and the consequent reduction in total energy consumption, reducing the carbon intensity

of the fuel mix consumed by householders and reducing the carbon intensity of electricity produced in the energy sector, which is subsequently consumed in the residential sector.

At the UK level (in 2013) 66 per cent of total domestic consumption was for space heating¹¹. Water heating (17%), lighting and appliances (15%) and cooking (3%) make-up the remainder of energy consumption in the domestic sector. Heating energy is the dominant component of Britain's household energy use and therefore the greatest gains in the residential sector are likely to be achieved from emission reduction policies that tackle domestic heating energy demand.

Business:

The business sector accounted for 32% of our 3% (devolved) target emissions in 2011. 47% of emissions were from direct fuel consumption in the sector (largely dominated by production emissions) and 53% are from end-use consumption of electricity (for heating, lighting and operating machinery).

This evidence demonstrates that electricity consumption for heating and lighting in the business sector was a significant part of our total 3% target emissions and that targeting energy efficiency measures here, alongside the residential sector, would contribute strongly to overall emissions reduction goals in Wales.

Due to the high end-use electricity consumption within the sector for heating, temperature has a considerable influence on

2012 data has been used where available, however some 2011 data has been used where further breakdown is available.

¹¹ Energy Consumption in the UK (2013) Chapter 3. Available at: <https://www.gov.uk/government/statistics/energy-consumption-in-the-uk>

the sector emissions, with increases in emissions associated with increased heating demands during colder years.

End-user electricity consumption is the single largest component of the 3% target emissions in the Business Sector. This component reflects the CO₂ emissions associated with the production of electricity that is consumed by the sector. The Business Sector is a large consumer of electricity (61% of electricity consumption in Wales) which is used for heating, lighting and operating equipment.

Those businesses in Wales not covered by the EU-ETS¹² were dominated in 2011 by smaller scale industrial fuel combustion (27%), including through small-scale on-site electricity generation (autogenerators), industrial machinery, and the combustion associated largely with the production of glass, bricks and ceramics. Other dominant sources of emissions include coke ovens associated with iron and steel combustion (16%), F-gas emissions from refrigeration and air conditioning (11%) and sinter production for the iron and steel industry (11%).

The Business Sector will need to reduce both by-source and end-use emissions, as these components make almost equal contributions to overall emissions. To reduce end-use emissions, policies need to focus on reduction of consumption (increasing efficiency) in areas such as heating, lighting and operating machinery. End-use electricity consumption emissions can also be addressed by reducing the carbon intensity of electricity production at the UK level.

The by-source emissions of these business will require policies that increase efficiencies in production, to reduce the overall sector energy demand. The greatest gains may be achieved by policies that target the following activities: (i) autogenerators, industrial machinery, other industrial combustion including production of glass, bricks, ceramics, (ii) F-gas emissions from refrigeration and air conditioning equipment, (iii) Iron and Steel combustion: coke ovens and (iv) Iron and Steel sinter production.

Appropriate actions will need to be taken in a period of increased production as Wales moves out of recession, making the achievement of emissions reduction action in this area still more challenging.

Alongside the carbon reductions delivered by energy efficiency, improvements in our energy security through reduction in demand for imported energy, warmer homes and lower resulting energy bills mean that action on energy efficiency is win-win-win. Greater energy efficiency may also support improvements in wider resource efficiency. We must, and will, make it happen in Wales.

This strategy sets out action by the Welsh Government and others, over a ten year period, to address the barriers we have identified, and to deliver against the opportunities.

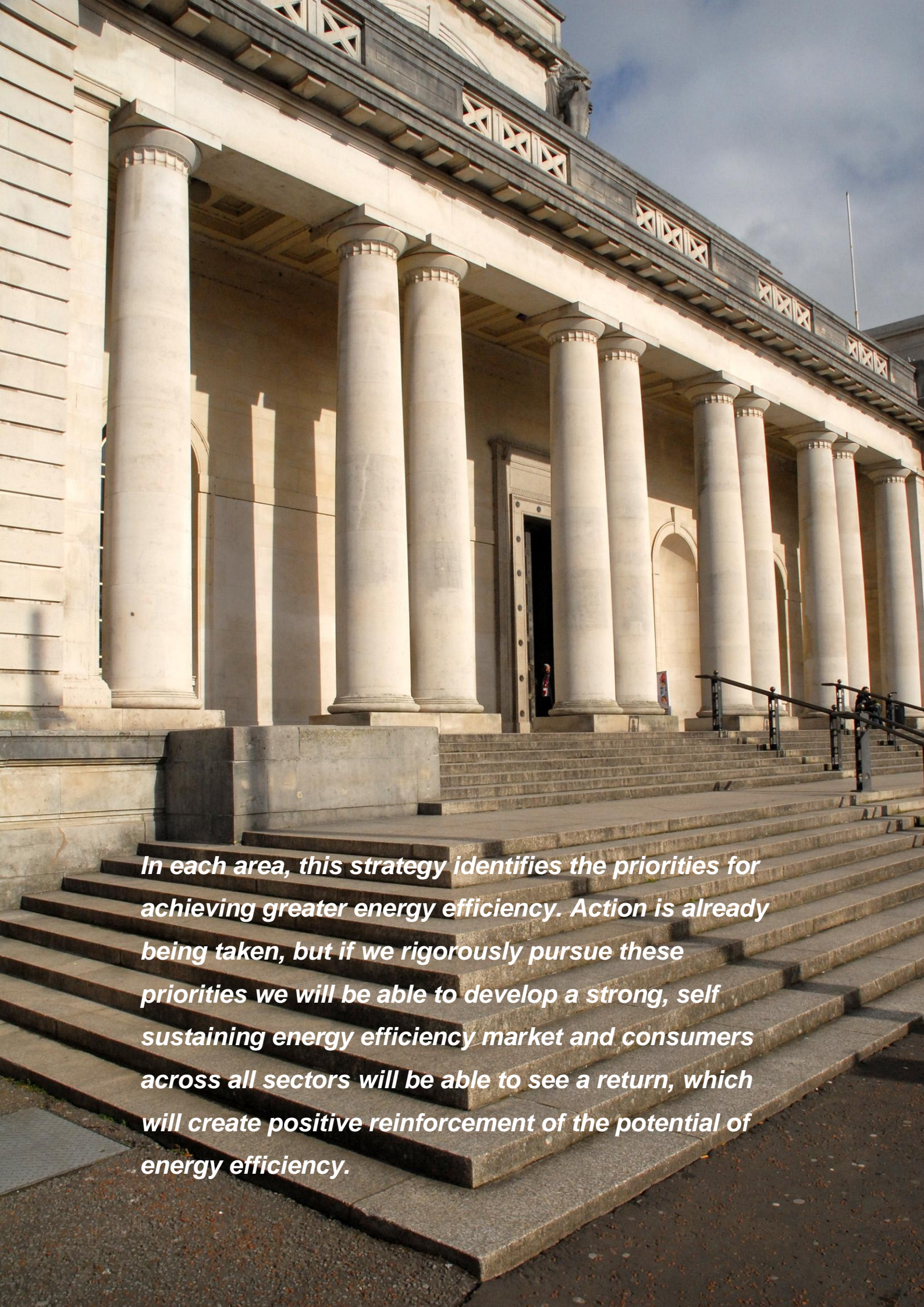
Whilst it is therefore not possible to quantify the precise impact of this strategy on carbon emissions, the Welsh Government is committed to undertaking a full assessment of the carbon reduction impact of any action that we take forward to deliver on the strategy.

¹² http://ec.europa.eu/clima/policies/ets/index_en.htm

CHAPTER 5 PRIORITISING ACTION



In this chapter we set out the five key areas of action to deliver the vision: overcoming barriers; developing the supply chain; skills and education; innovation; and finance.



In each area, this strategy identifies the priorities for achieving greater energy efficiency. Action is already being taken, but if we rigorously pursue these priorities we will be able to develop a strong, self-sustaining energy efficiency market and consumers across all sectors will be able to see a return, which will create positive reinforcement of the potential of energy efficiency.

5.1 Overcoming barriers

“People, communities businesses and other organisations, recognise the benefits of energy efficiency and take action.”

We have set out the need for increased investment in energy efficiency and further information is given in later sections on the considerable opportunities and benefits.

However, we are only going to realise the potential for Wales if all sectors seize this opportunity. This is not a new challenge, and the evidence that we have received indicates that there are many inter-related barriers preventing the level of investment that we need to achieve. It is also a complex challenge and we have to recognise that if achieving action at scale was easy, it would already be happening, at pace, across all sectors.

There is no one single barrier that once addressed will accelerate progress the needs of different sectors and the different customers within those sectors are wide and varied.

Each building is different and every person behaves differently within their home or workplace. The diversity of building stock in terms of age, use, materials, build type and quality, thermal mass, location, orientation and occupancy means that solutions need to be specifically tailored to the building or group of buildings in question.

There is also the added complication that even if appropriate interventions can be

identified, it is a mistake to assume that measures will perform according to expectations. Their performance may be affected by issues intrinsic to the measures themselves or by issues relating to installation and process. Performance predictions in general tend to be based upon an assumption of ideal behaviour of materials and products under standard conditions, combined with perfect installation and proper use. In reality performance may not match expectations.

At a basic level there is a need to raise awareness of the value of energy efficiency compared with other investment to improve the quality of information provision and to build trust in it. It is also important to ensure that financial incentives exist where appropriate and that bad practice and the lack of trust that it cause, are robustly tackled.

We cannot tackle the barriers on our own; we will need to make better use of our wider network of partners and influencers across all sectors. Often, the Welsh Government is identified as being the prime mover, but in many cases we do not carry the influence that others do, particularly when it comes to unlocking the demand from higher income households and businesses.

The Welsh Government can and will provide leadership. We are in the best position to take

an all Wales, all sector view. We are convinced of the tremendous potential this area has and a key part of our role is to convince others.

Resources are a major issue both for ourselves and our partners. That makes it even more important that the resources there are, are utilised in areas such as this that can so clearly demonstrate significant economic, social and environmental returns.

We will need to consider how we can take a more targeted approach with our own limited resources in order to deliver effective change.

We will also consider wider action to drive energy efficiency. For example we will examine how energy efficiency might be driven through processes such as applications for council tax benefits and Welsh Government grants.

Keeping our approach under review will be essential, and we must be able to adapt more quickly to changes in the market to tackle any new barriers and use our resource wisely to achieve maximum effect. We should learn more from successful approaches in other regions, but our approach will need to reflect the particular challenges that we face in Wales.

Overcoming barriers for householders and communities

Achieving energy efficiency refurbishments at scale will be impossible without buy-in from all households. Whether they are fuel poor, have low incomes or are relatively well-off, people need to understand, in clear and simple terms, the benefits to them of taking action. The evidence that we received showed that there remains a lack of knowledge and

understanding about the benefits of energy efficiency. Respondents to the call for evidence also identified complexity, lack of trust and insufficient financial incentives as key barriers.

For householders, the whole house approach, covering energy efficiency and new technologies around storage and smart control, could be an effective way forward.

From the evidence we have identified nine priority areas in addition to those highlighted in other sections of the strategy:

Area of action 1.1 - Improved information on the value of energy efficiency, the relative benefits of different measures and the support available.

The Welsh Government, working closely with local authorities, has a key role to provide trusted and impartial advice. Improved information on the latest support available will help to overcome the confusion and complexity that exists for householders and will showcase the support available. It will also address the lack of confidence and trust generated by cold callers and rogue installers.

Area of action 1.2 - Working through others with influence to encourage action on energy efficiency.

We will work with partners to develop targeted campaigns to raise awareness of the value of energy efficiency, for example, the link between the energy efficiency rating of a property and its value.¹³

Area of action 1.3 - Building on the work being done by Smart Energy GB.

¹³<http://www.google.co.uk/url?url=http://www.cewales.org.uk/cew/wp-content/uploads/EPCs-Mortgages1.pdf&rct=j&frm=1&q=&esrc=s&sa=U&ei=RmpDVeP0MY3haJvggagB&ved=0CCMQFjAA&usg=AFQjCNHyOtrilOrednBHx7jbYSYeanObEg>

Smart meters offer the potential, particularly for higher energy users, to better monitor and manage their consumption. However, the introduction of smart meters is unlikely to provide the same level of benefit for fuel poor households, many of whom are under heating their homes. In addition, as more households take up the smart technologies that are introduced alongside the smart meter roll out, there is a danger that levels of switching, which are already low in Wales, will reduce. Households will become familiar with, and attached to, a particular product aligned to an individual energy company. We will work with Smart Energy GB and Ofgem to ensure that the needs of Welsh consumers are considered in the roll out of smart meters.

Area of action 1.4 - Providing free energy efficiency assessments and guidance for low income households.

We are piloting a project to look at whether low income households, not eligible for grant funded support, can be encouraged and supported to take action through the provision of a free energy efficiency assessment. We will review this pilot and lessons learnt.

Area of action 1.5 - Continuing to provide advice and support for those households on the lowest incomes and living in the most energy inefficient properties.

The Welsh Government has recently published a revised **Child Poverty Strategy for Wales**¹⁴. This includes a new objective on supporting families living in poverty to increase household income through debt and financial advice, action to address the “poverty premium” (where households pay disproportionately more for goods and services) and action to mitigate the impacts of welfare reform. Work being taken forward to provide

¹⁴ <http://gov.wales/topics/people-and-communities/people/children-and-young-people/child-poverty/?lang=en>

advice and support for those households on the lowest income and living in the most energy inefficient properties, through **Welsh Government Warm Homes – Nest**, will make an important contribution to delivering this key objective.

Area of action 1.6 - Making energy efficiency easy for those households who are able to pay but who are put off by the complexity and lack of trust in the sector.

Working with our Construction Sector Panel we will undertake research into the feasibility and potential impact of establishing a paid for service that facilitates the assessment and installation of energy efficiency improvements for middle and higher income households.

Area of action 1.7 - Ensuring that the private rented sector take action to meet the obligations placed on them by the UK Energy Act (2011).

Early compliance by landlords will drive improvement in the energy efficiency of privately rented properties. The Act has the following requirements:

- From April 2016, residential private landlords will not be able to unreasonably refuse consent to a tenant’s request for energy efficiency improvements where Green Deal finance or subsidies are available to pay for them.
- From April 2018, private domestic and non-domestic landlords will need to ensure that their properties reach at least an E EPC rating, or have installed those improvements that could be funded using available Green Deal finance or subsidies available to pay for them, before granting a tenancy to new or existing tenants.

- These requirements will apply to all private rented properties – including occupied properties – from April 2020 in the domestic sector (and from April 2023 in the non-domestic sector).

Investing in their properties will benefit landlords as they will own more energy efficient properties, be warmer and more attractive to tenants

Area of action 1.8 - Review of Part L of the Building Regulations in 2016.

Although Wales does not have powers to regulate on energy efficiency we will look at the potential to encourage action through the powers that we do have and any future powers that are devolved to Wales. One important upcoming opportunity is the review of Part L of the Building Regulations in 2016. Building regulations run from A to P, building regulations part L refer to the requirements with regards to conservation of fuel and power. We will look for opportunities to build on the improvements made in the 2014 changes in relation to existing buildings and extensions.

Area of action 1.9 – Drive achievement of the Welsh Housing Quality Standard.

All 220,000 social homes have to achieve the Welsh Housing Quality Standard by 2020 and we are investing £108million every year to support this. This will ensure that these homes are properly insulated e.g. achieving at least SAP 65 (EPC rating D on a scale of A-G).

WHQS achievement is monitored through published annual statistical returns, visits, and annual submission of 30 year business plans. There are measures in the Housing (Wales) Act 2014 to take action against landlords who choose not to meet the standard.

Area of action 1.10 - Aligning community based activity to our wider community based action.

Communities, be they geographical or communities of interest, provide a route for raising awareness of energy efficiency and for delivering bespoke support. We will ensure that Welsh Government energy efficiency action targeting communities is well integrated in wider programmes of activity such as Communities First and Flying Start, and in actions under the Rural Development Plan, in order to achieve maximum reach and impact.

Overcoming barriers for businesses

The key barriers for business are lack of time, limited access to finance and a lack of awareness around energy efficiency actions. We have provided support over many years to businesses and there is an opportunity to build on this support and expand the take up of help with energy efficiency across a wider range of businesses.

For some businesses, holistic solutions encompassing energy efficiency and new storage and smart control technologies will be the most effective way forward.

There remains a significant ongoing opportunity to support all sizes of businesses. Although smaller SMEs do not individually account for high emissions, in aggregate they represent an untapped market and could benefit from similar energy efficiency measures to those used in households. We should ensure that they receive information regarding the value and benefits of energy efficiency.

We need to make it easy for SMEs, who are focused on the day to day challenges of running a business, to access information and

support that enables them to invest well in energy efficiency. Consumer Focus' Under the Microscope (2012) report found that a majority of SMEs do not have a gas supply. Solutions will therefore also need to maximise the use of micro generation.

From the evidence we have identified six priority areas for business in addition to those outlined in other sections.

Area of action 1.11 - Access to information, advice and support on energy efficiency.

Through Resource Efficient Wales, Business Wales and Farming Connect, we will provide information, advice and support to businesses, promoting the value of energy efficiency through support available to business of all sizes.

We need to more actively showcase case studies of businesses who have successfully benefited from energy efficiency. This should include those where businesses have secured the buy in of employees in reducing their energy use. We will also actively engage with The Federation of Small Businesses, the Confederation of British Industry and Wales TUC.

Area of action 1.12 - Integrate energy efficiency support within wider business support.

Businesses in Wales benefit from a broad, established business support service. Energy efficiency should be driven through all existing programmes.

Area of action 1.13 – Work with large businesses to use energy more efficiently.

As highlighted in Chapter 4 on the opportunity, the greatest carbon reduction gains may be achieved by targeting certain industrial

activities. We will continue to work with large businesses in Wales, particularly the Welsh anchor companies, to optimise the efficiency of their energy use. We acknowledge that appropriate actions will need to operate in a period of increased production as Wales moves out of recession, making the achievement of emissions reduction action in this area more challenging.

The Energy Savings Opportunity Scheme (ESOS) for larger businesses will provide cost effective recommendations for energy efficiency improvements every four years. Energy suppliers already offer major business users an energy audit service.

Area of action 1.14 - Building on the work being done by Smart Energy GB.

Smart meters provide an opportunity for businesses to monitor and manage their energy use, however, there is an issue as to whether smaller companies will use this information and act upon it. To ensure smaller companies see real benefits, there will be a need to raise awareness on how smart meter data can be used to understand and drive down costs.

Area of action 1.15 - Increased investment and support through Green Growth Wales.

In addition to access to finance, Green Growth Wales will also provide practical support alongside Resource Efficient Wales and Business Wales for larger businesses to access skills and advice to bring projects to a stage where they are investment ready.

Overcoming barriers for the Public Sector

Barriers for the public sector are mostly connected with a lack of understanding of energy efficiency technologies and a lack of the capacity and skills needed to develop and manage large scale retrofit projects on public sector buildings. Innovation in energy

efficiency and the move to smarter and more local energy production are increasing the need for bespoke advice and support.

Respondents to the call for evidence also identified a lack of clear ownership of energy efficiency within public sector organisations and, with pressure on resources, insufficient incentives to prioritise energy efficiency over competing demands.

However, action in the public sector will now be more strongly incentivised through the requirements of the Wellbeing of Future Generations Act, the Carbon Reduction Commitment Energy Efficiency Scheme and an increased focus within the Welsh Government on carbon budgeting.

With high up-front investment costs public sector organisations need to understand the benefit of a clear commitment to energy efficiency and the need to access advice on the financial options to secure finance that will deliver the maximum sustainable benefits for the organisation. Further detail on the financial support for the public sector is provided in the finance section of this strategy.

Given the lack of capacity within many public sector organisations and the complexity involved in larger scale projects, access to support and the showcasing of successes to learn from will be essential. The Welsh Government has made a commitment for **Natural Resources Wales** to become carbon neutral, providing a great public sector example.

From the evidence we have identified the following priorities for action in the public sector, in addition to those in other sections:

Area of action 1.16 - Access to advice and support.

We will continue to provide advice and support to public sector organisations to enable them to undertake energy efficiency activity.

Resource Efficient Wales along with Green Growth Wales will support public sector organisations to develop activity and a pipeline of projects able to attract investment

Area of action 1.17 - Showcasing successful projects.

We will showcase those projects that have been successful including those that we have supported through our Invest to Save fund and the support we have provided in the past through Salix.

Area of action 1.18 – Drive efficient use of public expenditure on resource efficiency through the use of the National Procurement Service and Resource Efficient Wales procurement service.

The National Procurement Service (NPS) was launched in 2013 to help the Welsh public sector save £25m per year and create new opportunities for Welsh businesses to win public sector contracts. It will reduce expenditure; eliminate duplication, develop a sustainable procurement model and increase efficiency. It will also develop local supply chains to make sure Welsh businesses benefit from the £4billion that the Welsh public sector spends each year on goods and services, including energy efficiency goods and services. The NPS will ensure taxpayers receive maximum value for this money.

Q1) Do you agree with the areas of action set out in chapter 5.1: Overcoming Barriers?

5.2 Supply chain development

“We have the supply chain throughout Wales to deliver energy efficiency improvements: to buildings, products and processes, and those businesses go on to grow and export their expertise and know how.”

Increasing the demand for energy efficiency measures is essential to meet our climate change targets, decrease household costs, and to reduce operating costs for our businesses and the public sector in Wales. That demand must be driven by more than Welsh Government funding. The call for evidence responses identified concern from the supply chain regarding continuity of funding and demand for energy efficiency. With the exception of fuel poor households, we need to encourage more market-driven demand; that will be a sustainable solution, which will give the energy efficiency supply chain the confidence to invest in and develop their businesses.

Within Wales we are only going to reap the full rewards of an energised energy efficiency market if we have a supply chain that is qualified and flexible, and which operates effectively throughout the whole of Wales and beyond.

Wales is rare in having an energy efficiency supply chain covering all aspects from manufacturing through to installation, within its boundaries. Insulation and micro-generation technologies are made in Wales. We have a strong installer base in many parts of Wales,

which we have helped to grow through the innovative delivery of our own energy efficiency programmes and through targeted energy efficiency supply chain support. However, there are weaknesses that we need to tackle.

Our area based energy efficiency programme has been particularly innovative and effective in supporting smaller companies to collaborate and compete with larger companies, and in sourcing materials from within Wales. Our fuel poverty scheme has also supported small businesses by ensuring that energy efficiency measures are installed by Wales-based SMEs.

Unlike many other sectors, energy efficiency has the potential to boost employment and economic growth throughout Wales (see section 4). It often requires local labour and the growth of this sector provides the opportunity for existing construction companies to upskill and diversify relatively easily. The energy solutions for customers are likely to involve not just insulation or heating measures but also micro generation technologies such as solar photovoltaics, heat pumps and biomass. We have provided support to installers to become accredited and

provide a wider range of technologies to customers; but there is more that needs to be done, particularly in rural and off-gas areas.

The move to integrated smart energy solutions that join together all aspects of the energy system and connect assets to a smarter grid for; households, communities, businesses and the public sector, will provide new opportunities for businesses in Wales.

Innovation Wales, the Welsh Government's innovation strategy¹⁵ identifies Smart Energy as an area where Wales can take a lead.

From the evidence we have identified five priority areas for action in relation to supply chain development:

Area of action 2.1 - Continued support for installers to diversify, achieve the necessary accreditation and identify opportunities for collaboration.

Future support needs to focus on supporting installers throughout Wales in order to overcome the limited availability of qualified installers in rural Wales, particularly given the potential for micro generation technologies to support off-gas households and businesses.

Area of action 2.2 – Strengthened support for supply chain development.

Support for the energy efficiency and renewables supply chain is provided through **Resource Efficient Wales**, **Construction Futures Wales** and a number of other Welsh Government programmes including **Welsh Government Warm Homes – Arbed and Nest**. This support is vital to help strengthen and grow Welsh businesses and to ensure that we have the capacity to deliver on the energy efficiency challenge. We will do more

to strengthen this support and ensure that it keeps pace with developments in the market.

Area of action 2.3 – Supporting supply chain development through delivery of our programmes.

Where the Welsh Government is directly funding and supporting energy efficiency activity, we will continue to provide support to businesses in the supply chain as an integral part of delivery.

Our **area based and demand-led energy efficiency programmes** have been effective in many parts of Wales in developing the installer base through well designed procurement and have help smaller companies to upskill and collaborate to compete with larger contractors. We will do more to support this, particularly in rural parts of Wales.

Green Growth Wales will develop a pipeline of projects, initially in the public sector, that will increase renewable energy capacity and deliver energy efficiency savings. It will raise significant levels of private finance to support those projects and we will ensure that those projects provide new opportunities for businesses in Wales and create new jobs.

Similarly **Smart Living** is developing innovative and novel demonstrators with the aim of achieving multiple benefits that will include supply chain development.

Energy efficiency projects funded through the Welsh Government's **Invest to Save** fund will also look to provide opportunities for business in Wales.

¹⁵ <http://gov.wales/topics/businessandconomy/innovation/innovation-strategy-wales/?lang=en>

Area of action 2.4 – Action to ensure quality of delivery.

The supply chain itself also has a role to play in stimulating demand and ensuring an effective energy efficiency market, particularly for householders. Many responses in the call for evidence identified inappropriate cold calling and bad practice by some unscrupulous businesses as a real barrier to the take up of energy efficiency, undermining the market as a whole. The supply chain needs to recognise this and work to counteract this bad practice.

We will work with the UK Government to encourage more effective consumer protection and good practice under UK led schemes such as ECO and Green Deal as well as through schemes in Wales.

However, the supply chain can go further than this to build confidence and promote business amongst its customers. Many householders have trusted builders and heating engineers whom they listen to and who can encourage greater use of energy efficiency measures. As identified earlier, evidence¹⁶ shows that energy efficiency measures are often best implemented when householders are already carrying out major house improvement projects, such as installing new kitchens. Local, trusted tradesmen have a real role to play in helping energy efficiency to be seen as an important home improvement rather than as a discrete activity to support climate change action.

A priority for the **Resource Efficient Wales** service will be to consider how, working with builders and installers, it can stimulate demand and encourage householders to see energy efficiency as home improvement. The

service will also help the public in terms of cold calling, helping them to understand any offers that may be made, and clarifying if offers are genuinely back by Government funding.

Area of action 2.5 – Entrepreneurship.

We will offer the energy efficiency sector in Wales, particularly the construction industry, the support that it needs to grow.

We will continue to help businesses to evaluate and benchmark current performance and will provide expert support, to help them grow, increase productivity and competitiveness and achieve future business success.

Q2) Do you agree with the areas of action set out in chapter 5.2: Developing the supply chain?

¹⁶ <http://www.ukerc.ac.uk/publications/understanding-homeowners-renovation-decisions-findings-of-the-verd-project.html>

5.3 Skills and education

“We have effective education and skills in place to deliver on the energy efficiency challenge, from raising awareness in schools to a qualified and skilled workforce and investment in higher level skills to support R&D and innovation.”

The Policy Statement on Skills¹⁷, published in January 2014, sets out future policy actions, which will enable Wales to evolve into a highly skilled nation. Our ambition remains to develop a skills system in Wales that supports our future competitiveness and helps us evolve into a highly skilled society, as well as tackling poverty.

Our primary focus will continue to be on raising productivity, reducing barriers into work and supporting people into sustainable employment.

Our long-term outlook for the skills system in Wales focuses on:

- skills for jobs and growth
- skills that respond to local needs
- skills that employers value
- skills for employment

A **Skills Implementation Plan** for Wales¹⁸ was published in July 2014. This has been developed to inform future action in relation to post-19 skills and employment policy. It aims to provide details of the actions to be undertaken by the Welsh Government working with

employers, individuals, trade unions and delivery partners.

The plan sets out the policy actions required in order to develop a sustainable skills system for the future. It has the aim of supporting Wales to evolve into a highly skilled nation and to create the conditions that will allow businesses in Wales to grow and flourish.

This will guide our action in ensuring that we have the necessary education and skills in place to deliver on the energy efficiency challenge.

Employment projections clearly show the potential for people in Wales to gain employment in the growing energy and environment sector.

¹⁷ <http://wales.gov.uk/topics/educationandskills/skillsandtraining/policy-statement-on-skills/skills-implementation-plan/?lang=en>

¹⁸ <http://gov.wales/topics/educationandskills/skillsandtraining/policy-statement-on-skills/?lang=en>
<http://wales.gov.uk/topics/educationandskills/skillsandtraining/policy-statement-on-skills/skills-implementation-plan/?lang=en>

From the evidence we have identified six priority areas for action on skills and education to support energy efficiency.

Area of action 3.1 – Delivering skills that respond to local need.

The Policy Statement on Skills outlined a new direction to strengthen the regionalised approach to skills delivery. The challenge was outlined under the title “Skills that respond to local need” and activity began during the summer of 2014 to identify suitable regional skills partnerships. Three regional skills partnerships (RSPs) were formally announced by the Deputy Minister for Skills and Technology in October 2014, to drive investment in skills by developing responses based upon local and regional need.

Each Regional Skills Partnership (RSP) was asked to identify key priorities for their region through an annual Regional Employment and Skills Plan. The aim of the Plan is to offer a strategic and collaborative response from stakeholders that prioritises investment in order to maximise the potential of available employment and skills support, including EU and other funding, to deliver economic benefits in the region.

Regional Employment and Skills Plans will be refreshed on an annual basis.

The Plans will align Welsh Government employment and skills policy, Labour Market Intelligence and how regional employer skills needs are articulated, thus providing the foundation for setting out regional employer skills needs linked to key investment priorities/transformational projects.

Area of action 3.2 - Mainstream provision of skills.

The Welsh Government must facilitate the development of the skills required to support climate change action, this includes energy efficiency. There is a requirement to forge strong links with the pre-19 education system, to ensure that the future workforce is highly skilled and supported by a solid foundation of literacy and numeracy skills. To ensure a sustainable skills system, we also need to ensure that education and skills provision is closely aligned with the skills employers need, and that current and future employees have the skills they need to join, and prosper in the labour market.

Concepts such as energy use and climate change are taught as part of the curriculum, through **Education for Sustainable Development and Global Citizenship (ESDGC)** within the **Personal and Social Education Framework**. Under the Science Programme of Study, learners are given the opportunity to consider how humans affect the local environment at all key stages.

An independent and wide ranging review of the national curriculum and assessment arrangements in Wales from Foundation Phase to Key Stage 4 was recently conducted by Professor Graham Donaldson. The recommendations set out a compelling, exciting and ambitious vision for a new curriculum in Wales.

His report champions six “areas of learning and experience” as the basis for Wales’ new curriculum, which would transcend all learning from the age of three through to 16. He recommended that the introduction of “progression steps” would provide a more coherent basis for learning, teaching and assessment.

Allied to that, Professor Donaldson supports the introduction of three “cross-curriculum responsibilities” – literacy, numeracy and digital competence – that all teachers would be expected to deliver.

This gives us a real opportunity to do something unique in Wales - to develop a curriculum for Wales and, in so doing, give every child the best possible chance to succeed as citizens of the world.

Area of action 3.3 - Post 16 education and training.

Delivery of skills for Green Growth is captured as part of our broad approach to delivering post 16 training through a network of work based learning providers.

The Welsh Government delivers a range of apprenticeship frameworks to equip the supply chain with the skills related to improving energy efficiency.

Relevant frameworks include: Building Energy Management Systems, Smart Meter Installations, Energy Assessment and Advice, Sustainable Resource Management, Engineering Environmental Technologies, Engineering Manufacture, Advanced Manufacturing Engineering, Maritime Operations and the Power Sector.

The Welsh Government also promotes environmental awareness as an integrated element of the learning process, including induction and qualification delivery. We ensure that learning providers make employers aware of their environmental sustainability obligations in relation to reduction, re-use and recycling, transport, purchasing, water, energy, biodiversity and raising awareness.

The Welsh Government will encourage Regional Skills Partnerships to promote **‘energy related’ apprenticeship frameworks via their networks** to encourage take up and meet regional demand for energy sector apprentices.

The Welsh Government will also promote **Higher Level Apprenticeships**, to ensure that young people, between the ages of 16-24, continue to receive the skills they need to progress in their chosen career and into further learning at a higher level.

We will use the labour market intelligence emanating from regional employment and skills plans to ensure that the relevant vocational qualifications that are valued by employers are delivered to post 16 learners. We will also ensure that these vocational qualifications are portable and flexible enough to allow learners to transfer their skills to meet the future changing needs of the sector.

Area of Action 3.4 - Enhanced employer engagement.

We will work with regional skills partnerships to encourage stronger relationships between schools and employers in regions.

Employers are noting that young people aren’t always well prepared for the world of work, or consistently provided with the information they need to make an informed decision about their future. We want to develop a more strategic, coherent and sustainable approach to education-employer links to prepare young people more effectively for transition in to the world of work.

The **Youth engagement and progression framework implementation plan**¹⁹ sets out our approach to increasing engagement and progression of young people in (and into) education, employment or training. The implementation plan contains commitment to strengthen engagement between learning providers and employers. **Qualified for Life**²⁰, our education improvement plan for 3-19 year olds in Wales includes a commitment to initiate an enhanced employer engagement project to promote stronger employer-school links.

The Welsh Government will procure a provider to develop a school- employer engagement model to build sustainable relationships between secondary schools and local employers.

There is also significant opportunity for the supply chain to link more strongly with the academic network in Wales, which is providing innovative products and approaches to energy efficiency.

Area of action 3.5 - Business capability.

Though Welsh businesses are increasingly integrating energy efficiency into their operating models, a skills gap has, in some cases, prevented businesses from making energy efficiency improvements. The Welsh Government has taken action in a number of areas to close this gap by supporting the delivery of training and new qualification development. If Wales is to enjoy the benefits of greater energy efficiency, we need to make sure that individuals responsible for the delivery of our energy efficiency policies have the appropriate qualifications.

The Energy Savings Trust, on behalf of the Welsh Government, will work with employers to ensure that they have access to appropriate training and development; to identify gaps in skills provision and influence regional delivery of skills that meet employer need through interface with Regional Skills Partnerships.

Area of action 3.6 - Capital Investment in 21st Century Schools.

We will work with local authorities to ensure that sustainable development is occurring when capital investment in education is supported by the Welsh Government. Our Grant Offer letters specify that all new schools and those requiring significant re-modelling meet appropriate standards for their build, including the Building Research Establishment Environmental Assessment Method (BREEAM) 'excellent' and an Energy Performance Certificate (EPC) rating of 'A'.

We are committed to the construction of buildings that meet specific environmental requirements.

Through the school standard we will make schools more environmentally sustainable, by reducing energy use and carbon dioxide emissions, and improving the school environment.

Q3) Do you agree with the areas of action set out in chapter 5.3: Skills and Education?

¹⁹<http://gov.wales/topics/educationandskills/skillsandtraining/youthengagement/?lang=en>

²⁰ <http://gov.wales/topics/educationandskills/allsectorpolicies/qualified-for-life-an-educational-improvement-plan/?lang=en>

Box 3: Key energy efficiency accreditations

Energy Service Providers

There is a suite of National Occupational Standards (NOS) for Green Deal Advisors against which competency must be demonstrated. These build on the existing suite of Energy Assessor vocational qualifications based on NOS.

Energy Auditors

The UK Government has commissioned the UK's national standards body (BSI) to develop PAS 51215, working with industry. PAS 51215 will provide a benchmark setting the level of competence for lead energy efficiency auditors who will be deemed qualified to conduct energy efficiency audits in compliance with the UK's implementation of Article 8(4) of the Energy Efficiency Directive. We expect a range of professional bodies in the UK that currently issue qualifications for professional auditors to have their existing qualifications assessed against this standard.

Energy Managers

The UK has a well-established framework for energy managers with a variety of training schemes and education packages offered by the Energy Institute and the Institute of Environmental Management Assessment (IEMA). IEMA members are also required to sign a professional code of conduct.

Installers of energy-related building elements

The installation of new building elements (such as windows, a new roof, boiler or lighting system) must meet the standards in the Building Regulations. This means the work is either checked by Local Authority Building Control or a private Approved Inspector, or carried out by a 'Competent Person'.

Green Deal installers

Green Deal installers are certified through authorised Certification Bodies for the different Green Deal measures that they wish to install. The certification body will register the installer with the Oversight and Registration Body⁴⁰ and license them to use the Green Deal Quality Mark. Green Deal Installers must:

- be certified by a Green Deal accredited Certification Body as meeting the standard (PAS 2030) for the measures they wish to install;
- comply with the conditions in the Green Deal Code of Practice;
- keep clear records of work done and allow monitoring of installation work when requested.

5.4 Innovation

“We support innovation in new energy efficiency products to deliver solutions in Wales; and our businesses benefit from the opportunities presented by this global challenge.”

The recently published **Innovation Wales Strategy** identifies low carbon energy and environment as one of the four grand challenge areas where the greatest investment in innovation will occur. Specifically there are many opportunities for Wales in the field of energy, where priorities in smart living, energy resource efficiency and large scale energy generation have been identified.

The energy market is undergoing major transformation both within Wales and further afield, with a move to smarter more connected energy systems often created at a local level. We need to encourage and support all households, businesses, communities and public sector organisations to make use of new technologies and services that have the potential to transform the way that they use as well as generate energy.

The smart meter roll out can pave the way for greater use of demand management as a means of smarter control of energy use. In addition, development in technology for goods production will support energy demand reduction.

Whilst the focus is often on innovation in supply side measures, measures that reduce demand can be more cost effective in meeting our climate change and tackling poverty targets.

Many of the drivers for innovation will be market-led from across all sectors. However, there is a role for Government to support the demonstration of new local Smart Living integrated approaches and technologies. This must be a collaborative approach across the public and private sectors, and we will need to share good practice and encourage wider roll out when pilots prove successful.

Government also has an important role in ensuring that smaller businesses and low income households are not left behind in the move to smarter energy use. This is especially the case in Wales with our high levels of fuel poverty and high percentage of micro businesses.

Through the approach set out in **Innovation Wales** we will work with our universities and businesses to help them to develop and commercialise new products that contribute to greater energy efficiency.

We will encourage Welsh organisations to work closely with Innovate UK and the research councils to make better use of the funding support that they can provide to develop new energy efficiency solutions, for example, Retrofit for the Future by Innovate UK.

We need to learn from others and exploit the successes of other regions, whether these be

innovative delivery approaches of existing technologies or new smarter energy systems.

From the evidence we have identified six priority areas of action to support innovation.

Area of action 4.1 – Support to develop new products and services.

Through the approach set out in Innovation Wales, Welsh Government, working with partners, will provide support for businesses to develop and commercialise new energy efficiency products and services and benefit from the opportunities that the global energy efficiency challenge offers.

Area of action 4.2 – Smart meters.

For households and businesses, the roll out of smart meters across the UK is already seeing the development of new technologies that are changing how we interact with energy in our homes and workplaces. Calculations from the British Gas Hive Active Heating case study suggest that on average, people waste £150 a year in heating their home when they are asleep or away.

The development of new technologies will be market led and we will support Welsh businesses to benefit from the opportunity offered by the roll out.

The Welsh Government will also work closely with Smart Energy GB, who are leading on the consumer engagement aspects of the roll out of Smart meters, as well as with energy companies, Ofgem and Citizens Advice to look at how all households, including those on low incomes, and businesses, can benefit from this roll out.

Area of action 4.3 – Energy efficiency innovation in the public sector.

We will step up our action to maximise the considerable opportunities for greater innovation in energy efficiency within the public sector. This is essential to reduce carbon emissions, and to reduce costs, and maximise savings for investment in front line services.

Through **Green Growth Wales**, the Welsh Government will enable a stream of energy efficiency projects in the public sector to get off the ground. A package of project development support, including access to specialist advice through the **Resource Efficient Wales** public procurement framework will ensure that public sector organisations make use of the latest technologies and approaches to deliver the best energy solutions for them and to maximise the opportunities for Welsh businesses.

We will also encourage the use of SBRI (Small Business Research Initiative) to help public sector organisations identify and implement solutions to energy use issues.

Area of action 4.4 – Smart Living demonstrations.

Local authorities in partnership with the Welsh Government have a key role in working with a range of stakeholders including the private sector, universities and network operators to lead the development of local and community based **Smart Living** energy demonstrator projects.

These will take an integrated approach, with energy efficiency and demand reduction at their core. There is no single “right” technology that we know, today, will dominate the future energy market. Demonstrators will test a range of new technologies and

approaches that together will reduce demand, generate and store energy.

The move to smarter energy provides the opportunity to support the resilience and wellbeing of our communities for the long term. The Welsh Government will ensure that the needs of low income households and the opportunities for Welsh businesses are an integral consideration in the development of demonstration projects.

Area of action 4.5 – Shared learning.

In collaboration with others we will actively encourage the exchange of best practice, and will provide opportunities for organisations to learn from each other, from other regions, from Innovate UK and from academia. The public sector, in particular, has a vital role in showcasing new technologies and the benefits of energy efficiency.

Area of action 4.6 – Innovation in Welsh Government Programmes.

We will continue to innovate in the delivery of our own energy efficiency programmes.

Respondents to the call for evidence said that we should continue to use existing basic measures through our fuel poverty energy efficiency programmes. We know that improving the energy efficiency of households is the most effective way to tackle fuel poverty.

We have been successful through **Welsh Government Warm Homes - Arbed** in taking an innovative approach to procurement and scheme management, and this has delivered significant multiple benefits not realised in other area based energy efficiency schemes. We will continue to develop and innovate in the delivery of our programmes. We will carry out research and pilot new technologies where appropriate and roll out if effective and offering value for money.

Q4) Do you agree with the areas of action set out in chapter 5.4: Innovation?

5.5 Finance

“We have clear funding mechanisms, a sense of direction and a stable framework that is attractive to investors and consumers.”

Energy efficiency in Wales is currently supported by initiatives targeted at domestic customers, businesses and public sector organisations. Some of this support is funded by the Welsh Government, such as our **Welsh Government Warm Homes** programme, information, advice and support through **Resource Efficient Wales**, support to businesses through **Business Wales**, the development of **Green Growth Wales** and public sector loans through **Salix** and **Invest 2 Save**. In addition, Wales has access to UK wide action through initiatives such as the Green Deal and the Energy Company Obligation.

The Welsh Government has shown our commitment to tackling fuel poverty by increasing funding to our **Welsh Government Warm Homes** programme at a time of budget cuts.

In addition, the Welsh Government has a role to increase the level of knowledge about financing mechanisms for energy efficiency beyond pure grant funding. There is a need for smarter use of public funds accompanied by a long-term, transparent and stable framework. We should look to expand funding through access to European and local authority co-funding, by attracting private capital, and by stimulating investment by householders. It is essential that a vigorous market for energy

efficiency improvements emerges and that public funds act to lever private capital.

However, there are significant challenges around funding to support the take-up of energy efficiency, given the level of ambition in this area and the constraints of public resources. We recognise that grant funded support for those households living in the most energy inefficient properties and on the lowest incomes needs to continue, and ensuring that our own funding is effectively targeted is critically important.

Our approach to increasing financial investment in energy efficiency starts with the people and organisations involved rather than with the financial product. From our experience, we know that different approaches are appropriate for different groups. We should ensure that a range of financial support mechanisms is available to provide resilience in a changing landscape.

Householders

Area of action 5.1 – Information on financial support for householders.

Householders need to have access to consistent and impartial information about financial support available to them. The **Resource Efficient Wales** service will have a key role to play in helping to increase the level of knowledge amongst householders.

Area of action 5.2 – Welsh Government investment.

In line with the **Wales Infrastructure Investment Plan**, we will continue to provide grant funding for those households living in deprived communities, and those in the most energy inefficient homes and on the lowest incomes. We will seek to maximise investment from the EU and from other sources, such as a future energy company obligation, alongside our own grant funding. We will continue to maximise links with other programmes, for example Vibrant and Viable Places where appropriate.

To ensure best value for public money, we will limit the capital investment per household to an appropriate maximum reflecting the needs of the Welsh housing stock.

We will only invest in energy efficiency measures that are appropriate and cost effective and that provide value for money.

Area of action 5.3 – Loan funding.

The call for evidence identified the need for low interest finance to ensure that lack of finance is not a barrier to energy efficiency. The Welsh Government's **Home Improvement Loans** fund enables householders to take out finance to improve their homes. This scheme, delivered by local

authorities in Wales, aims to ensure that people have a high quality, warm, secure and energy efficient home. It enables short to medium term loans to be provided to owners of substandard properties providing they pass affordability criteria and who restricted in their access to other sources of finance. Recycling of the loan repayments by the local authority will allow the fund to operate for the next 15 years.

An evaluation of the scheme will be undertaken to look at the benefits of improving properties. This includes the boost to the local construction industry, prevention of accidents caused by hazards in the home and tackling social issues.

The Welsh Government wants empty property to come back into use and its **Houses into Homes fund** is designed to help achieve that aim. In helping to meet housing demand in Wales, the fund also tackles social issues. .

Latest figures suggest there are around 23,000 empty properties in Wales. Some of these properties could provide homes to people who need them.

Loans are available to bring empty houses or commercial buildings back into use as homes - including splitting them into flats - for sale or rent. The improvements made using these loans will include energy efficiency improvements.

Area of action 5.4 – Leverage of other funds into Wales.

We should continue to maximise the leverage of funds into Wales and will work with the UK Government on energy efficiency initiatives that cover England and Wales. We aim to maximise the take up of such funding by householders in Wales.

Area of action 5.5 – Financial benefits of switching.

Consumers can save money on their energy bill by switching energy supplier to get the best deal. Levels of switching are low in Wales. Collectively we should work together to raise awareness and encourage consumers to regularly check the market and switch where this will provide a better deal.

Finance for businesses

One of the key barriers cited by businesses to investing in energy efficiency is their lack of access to finance. We will continue to provide access to repayable forms of finance for businesses to invest in energy efficiency.

Area of action 5.6 – Awareness of financing mechanisms.

We will increase the level of knowledge about financing mechanisms for energy efficiency in businesses beyond pure grant funding through our **Resource Efficient Wales** service, **Business Wales** and **Farming Connect**.

Area of action 5.7 – Green Growth Wales.

Through the establishment of the **Green Growth Wales** investment fund we will lever private investment for energy efficiency and renewable energy projects for businesses in Wales.

Area of action 5.8 – Support for businesses.

We will continue to support businesses to grow and improve their ability to compete in their markets.

Public Sector Finance

Public sector organisations across the board, from health bodies to schools, need to increase their energy efficiency significantly if we are to meet our climate change targets and focus funding on front line services. The benefits of energy efficiency are undisputed by the facilities industry. However, capital funding in the public sector tends to be limited and organisations prioritise critical projects, often linked to addressing safety issues rather than energy efficiency. Alternative sources of funding and enabling mechanisms for infrastructure improvements are necessary to stimulate the increased investment that we need to achieve.

Area of action 5.9 – Public sector loans.

Zero interest finance is currently available to the public sector in Wales through our **Invest 2 Save** fund and the **Salix fund**. Loan repayments are recycled into further public sector energy efficiency loans. We will expand the financial offering to the public sector for energy efficiency projects through **Green Growth Wales**.

Area of action 5.10 – Energy Performance Contracts.

We will support organisations who want to use Energy Performance Contracts (EPCs) as a way of financing their energy efficiency improvements. Working with the UK Government, we have made available a model contract and accompanying guidance notes²¹ to reduce the amount of time involved in setting up each contract. We are also exploring options to offer further support. EPCs have been delivered across a wide range of building types and different sectors

²¹ <https://www.gov.uk/government/publications/energy-performance-contract-epc>

including local authorities, the NHS, schools, further education, and universities. EPCs can potentially provide a strong business case and offer organisations a range of benefits including: guaranteed energy, attractive savings, reduction in backlog maintenance levels, maintenance costs and other running costs. Wider benefits include delivering CO₂ reductions, improving the building environment and comfort for occupants through upgraded and more efficient heating and cooling systems, and investment in buildings and green technologies to help generate local jobs and improve local skills.

Area of action 5.11 – Pipeline of capital projects.

We will optimise our support for delivery of energy efficiency projects by co-ordinating a pipeline of capital projects right across the public sector. In an increasingly dynamic landscape of capital development and delivery, we will maximise the potential for these projects to come to fruition. By identifying the projects, understanding their barriers and seeking solutions to those barriers, we will ultimately make them more investable. This will provide us with a complete picture of potential projects with a funding strategy for the whole sector.

Q5) Do you agree with the areas of action set out in chapter 5.5: Finance?

CHAPTER 6 NEXT STEPS



In this chapter we explain what action we would like you to take as part of this consultation.

We would be grateful for your general comments as well as responses to specific consultation questions. These will help to inform our final strategy, which we intend to publish late 2015.

Consultation Questions

Please respond to all those questions that relate to your areas of interest. Any supporting evidence will assist in the analysis of responses.

Q1) Do you agree with the areas of action set out in chapter 5.1: Overcoming Barriers?

Q2) Do you agree with the areas of action set out in chapter 5.2: Developing the supply chain?

Q3) Do you agree with the areas of action set out in chapter 5.3: Education and Skills?

Q4) Do you agree with the areas of action set out in chapter 5.4: Innovation?

Q5) Do you agree with the areas of action set out in chapter 5.5: Finance?

Q6) Do you agree with the impact assessments associated with this draft strategy?

Q7) We have asked a number of specific questions. If you have any related issues that we have not specifically addressed, please use this space to report them:

Credit section.

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Personal details

To help our analysis please let us know who completed this response form.

Contact details (Optional):

Please only supply if you are over the age of 18

This response is from (name)

Please place a tick in the box next to the answer you wish to select ✓

Are these views of:

- An individual**
- A public organisation**
- A Group Discussion**
- SME**
- Industry**
- Community**
- Large Business**
- Other**

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Please state the titles of any additional information, evidence and research that you are submitting with your response.