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# ENERGY STRATEGY 2015-2025

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## FOREWORD

**Barnsley, located at the centre of the Yorkshire Coalfield was built on energy. The ascendancy of coal has gone but now there is a real opportunity to once again put energy back at the heart of local economic growth and community wellbeing.**

How we produce and use energy at the local and city region level is of central importance to the delivery of the Council's overarching vision – Working Together for a Brighter Future, A Better Barnsley.

This Energy Strategy is one of 5 strategic documents produced by the Council:

- Energy Strategy
- Housing Strategy
- Jobs & Business Plan
- Public Health Strategy
- Transport Strategy

Taken together (and supported by our Local Planning Framework) the implementation of the strategic priorities set out in these documents will enable us to deliver the values and ambitions for a Better Barnsley

The Energy Strategy sets out the case for greater investment in energy over the next 10-years and speaks directly to the challenges posed by the energy agenda but equally identifies the opportunities to be grasped. Whilst the Strategy sets out the Council's understanding of and response to the energy agenda this document is, essentially, outward-facing and addresses energy matters of common concern to businesses and households alike across the Borough.

Accordingly, the implementation of the strategy is predicated on the development of strong partnerships and seeks to engage with the private and community/voluntary sectors to seize the opportunities for investment in local, low-carbon energy production and greater energy efficiency.

The implementation of the strategy will deliver a number of beneficial economic, social and environmental outcomes, including:

- Saving money and generating income for the Council, households and businesses
- Growing skills, jobs and businesses in the Green economy
- Reducing greenhouse gas emissions
- Reduction in the incidence of fuel poverty

The strategy represents an important statement of intent that can resonate beyond the boundary of the borough. Energy, as essential infrastructure underpinning economic growth, has begun to emerge as an issue of significance at the level of the City Region; it is now becoming an important component of the devolution debate with central government, aimed at delivering lasting, sustainable economic growth across the Leeds and Sheffield City Regions.

Barnsley, located at the very heart of the Yorkshire coalfield, was built on energy. Whilst the ascendancy of coal has long gone, this strategy demonstrates that there is now a real opportunity to once again put energy back at the heart of local economic growth and community wellbeing.



*Stephen Houghton*

Cllr. Sir Stephen Houghton, CBE.  
Leader, Barnsley Met. Bor. Council.



*PR Miller*

Cllr. Roy Miller. Cabinet Spokesperson,  
Place, Barnsley Met. Bor. Council.

## WHY BARNSLEY NEEDS AN ENERGY STRATEGY

**This Strategy sets out the case for greater investment in energy. It speaks directly to challenges that the Council is facing but is also aimed at an external audience in the guise of other public and private sector organisations as well as community and voluntary groups who similarly are confronted by a range of energy-related issues.**

**Energy is a fundamental requirement of any well-functioning society. It is of crucial importance in equal measure to both economic success and domestic wellbeing whilst its use and production can have a profound impact on the natural environment.**

The manner in which we currently produce and consume energy means that many households, communities and businesses across the Borough are not benefitting as they could, whether that be in regard to lower fuel bills from greater energy efficiency, or through the generation of an income and a cleaner environment as a result of local, low carbon energy production.

Barnsley Council, in common with many large organisations, is a major consumer of energy and emitter of greenhouse gases which has a significant impact on expenditure both in terms of energy bills and additional costs incurred in respect of carbon emissions. At a time of severe budgetary constraint it is imperative that these costs be reduced and this will be achieved through the Council's ongoing commitment to its Carbon Management Programme that has been developed with support from the Carbon Trust.

However, the Council's Carbon Management Programme is not simply about saving money; it is also a clear demonstration of the Council's determination to lead by example on the energy agenda, to encourage and support businesses and local communities across the Borough to recognise and grasp the opportunities and benefits of engaging and investing in greater energy efficiency and local, low carbon, energy production.

The economic case for investment in local energy efficiency and energy production is compelling and especially so for local authorities. In essence investment in energy provides excellent 'invest to save' opportunities, typically providing a healthy rate of return on investment over relatively short payback periods. At a time of continuing austerity, investment in energy has to be a key part of a sustainable financial future for local authorities, helping to protect vital services.

The production of low carbon goods and services is also recognised as one of the five primary economic growth sectors for Barnsley<sup>1</sup>. Since 2009 the low-carbon sector in Barnsley has recorded an 11% increase. Such performance is encouraging and clearly demonstrates the potential of this sector to continue growing in Barnsley

Closely linked to the economic wellbeing of the Borough is the skills agenda; Barnsley is well-placed to develop a future workforce with the requisite levels of skills and training and to support businesses to exploit emerging markets in the low carbon sector through the Think Low Carbon Centre at Barnsley College.

<sup>1</sup>Jobs and Business Plan 2014–2017

Taking the domestic, commercial, industrial and transport sectors together, the total energy bill for Barnsley in 2011 was estimated to be some £418m with a forecast for this to increase to £545m by 2022<sup>2</sup>. This will have a detrimental impact on local businesses and household budgets. For example over 9,000 households in Barnsley are living in fuel poverty<sup>3</sup>, often in damp and cold poor quality private sector housing, with damaging effects on health and wellbeing; a variety of programmes are in place to tackle fuel poverty many of which are predicated on improving energy efficiency and reducing the cost of energy.

In regard to annual carbon emissions, in 2012 Barnsley was placed 57th out of 64 UK cities, recording 7.2 tonnes per capita<sup>4</sup>.

This Strategy highlights a range of projects, at varying stages of development, that, when completed, will secure for Barnsley a range of benefits:

- **ECONOMIC** – a reduction in energy costs, the opportunity to generate revenue through local energy production and the growth of jobs and businesses in the low carbon sector.
- **SOCIAL** – a reduction in fuel poverty and consequent improvement in health and wellbeing; a strengthening of local community capacity flowing from the development and implementation of community energy initiatives.
- **ENVIRONMENTAL** – a cleaner and greener environment, including reducing greenhouse gas emissions and thereby helping to improve air quality.

The outcomes of our Energy Strategy are clear:

- To generate income and save money.
- To grow the number of locally based businesses operating in the low-carbon sector.
- To grow jobs, skills and businesses in the Green Economy.
- To increase the proportion of energy consumed from locally produced low carbon sources.
- To reduce CO<sub>2</sub> emissions.
- To reduce fuel poverty.

To achieve these outcomes it is imperative that we engage ever more closely with the private sector and local communities, forming, as circumstances and opportunities dictate, partnerships to ensure delivery on the ground. The implementation of this Strategy is predicated on Barnsley MBC bringing together the combined knowledge, enthusiasm and expertise of a wide range of partners who, working together will deliver the outcome set out above.

<sup>2</sup>A Mini-Stern Review for Barnsley; The Economics of Low-carbon Development

<sup>3</sup>Definition: "a person is to be regarded as living 'in fuel poverty' if he is a member of a household living on a lower income in a home which cannot be kept warm at reasonable cost". Warm Homes and Energy Conservation Act

<sup>4</sup>Cities Outlook 2015; Centre for Cities



## EXECUTIVE SUMMARY

**This strategy and associated action plan has been developed to provide the Council, local businesses and local communities with a firm and clear direction of travel in securing a greener and more sustainable future for the Borough.**

We want Barnsley to build upon its strong track record in regard to energy efficiency and become a leader in the production of low carbon energy. The Council, through the operation of its services, is taking every opportunity to reduce the amount of energy it consumes whilst at the same time increasing the production of renewable energy from its land and property assets. This process is being managed through the Barnsley MBC Carbon Management Programme in partnership with the Carbon Trust.

- The Council has a target of generating 20% of its energy requirements from renewable energy each year, by 2020/21. In 2014/15 almost 15.4% of its energy consumption was being sourced from the Council's own renewable sources.
- During the period 2008 – 2013 the Council reduced its carbon emissions by 24%, with emissions falling from 61,000 tonnes CO<sub>2</sub>e per annum to 46,000 tonnes CO<sub>2</sub>e per annum. The Council is aiming to further reduce its greenhouse gas emissions generated by its operations by 30% by 2020/21 under phase 2 of the Carbon Management Programme.
- The Council aims to be fully carbon neutral in its operations by 2040.

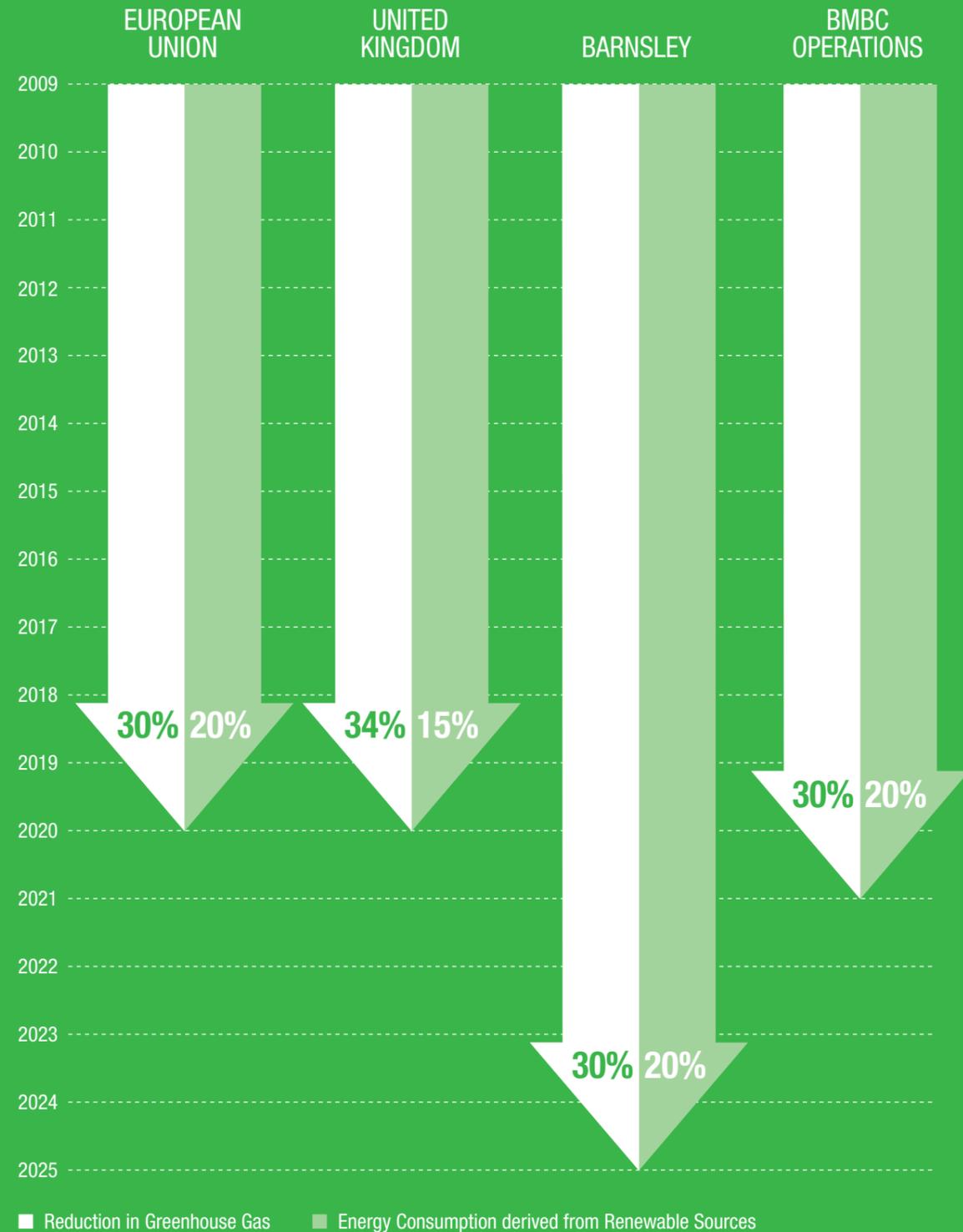
In taking this lead, getting our own house in order, we aim to inspire, encourage and support others, whether they are businesses or local communities to join us in taking action to improve energy efficiency and invest in local energy production.

Delivery of the Barnsley MBC Energy Strategy will help to demonstrate the extent to which Barnsley is contributing to national and city region energy agenda.

At the national level the Climate Change Act 2008 introduced a legally binding target to reduce greenhouse gas emissions by at least 34% by 2020 and at least 80% by 2050 below the 1990 baseline. In addition, under European Union directive requirements, the UK is obliged by 2020 to obtain 15% of energy consumed from renewable sources.

At the city region level energy is fast becoming a key component of the devolution debate, and can play a major role in growing a strong northern economy.

## CLIMATE CHANGE MEASURES AND TARGETS



**At the city region level local enterprise partnerships ('LEPs') are becoming the focus for the devolution of powers and funding (through Growth Deals) from the Government. Energy can be part of this exciting development.**

Devolution will provide the city regions with greater freedoms to determine and deliver against their own priorities, including energy and low carbon matters. The Leeds City Region has a clear ambition to become a global leader in the low carbon energy revolution. Barnsley is already an active participant in variety of energy-related initiatives within the Leeds City Region and this work will continue as a key element within the implementation of this Strategy. At the same time, engagement within the Sheffield City Region will continue to ensure that all opportunities to take forward the energy agenda are seized.

Implementing this strategy will be challenging and particularly so in regard to the ambition for the Borough to become a location renowned for the production of renewable energy. Achieving the ambitions that we have for the scale of local energy production will require the acquisition and development of greater knowledge regarding the various renewable technologies and the creation of delivery vehicles that enable the funding and investment required to turn projects from concept to reality.

To meet these challenges it is essential that we make the most of the existing pool of expertise, via our involvement in the Leeds City Region Energy Accelerator Programme and our membership of the APSE Local Energy Collaboration Group. But we shall also need to forge new delivery partnerships with the private sector and local community energy groups.

To bring shape and rigour to the development and implementation of our Energy Strategy we shall:

- **Continue to work with the Carbon Trust** – in regard to the implementation of the Council's own Carbon Management Programme (to reduce carbon emissions linked to its own operations).
- **Join the Covenant of Mayors** – and develop a Baseline Emissions Inventory and Sustainable Energy Action Plan.
- **Create a Strategic Energy and Low-carbon Board** – comprised of a range of internal and external stakeholders, to help to steer and monitor the implementation of our Sustainable Energy Action Plan.

This Strategy does not mean that the Council is now in a position, beyond its own operations, to control energy production and consumption across the Borough. However, it does enable the Council to lead by example and strengthen its influence through reaching out to other bodies in the public and private sector as well as local communities, encouraging all to act and invest in the brighter and more sustainable future that a move to a low-carbon economy will help to bring about.

#### Targets

- **Reduce CO<sub>2</sub> emissions from Barnsley MBC operations by 30% by 2020/21 from 2012/13 baseline.**
- **Generate 20% of energy used in Barnsley MBC operations from on-site renewable sources by 2020/21.**

## OUR VISION

**Barnsley Council’s overarching vision is ‘working together for a brighter future, a better Barnsley’, with a thriving and vibrant economy, strong, resilient communities, and citizens who achieve their potential.**

In delivering this Energy Strategy Barnsley will become a better, stronger, more sustainable place in which to live, work and do business. Barnsley will become a leader in low carbon and renewable energy production, known for its innovation, and its resilience to rising energy prices. It will be a place that encourages sustainable economic growth that benefits all, producing the majority of its energy from renewable sources while reducing waste and demand through the collective efforts of our communities and businesses.

### Land Use Planning

We shall, through land use planning and the application of local planning policies within the existing Core Strategy and draft Local Plan, encourage the development of low-carbon energy production (including energy infrastructure) and seek to ensure that general development, through the adoption of good design principles, minimises both energy consumption requirements and the emission of greenhouse gases and other air pollutants.

Strategic decisions concerning urban development, such as avoiding urban sprawl, influence the energy use within urban areas and reduce the energy intensity of transport. Compact urban settings may allow more cost-effective and energy efficient public transport. Barnsley’s existing Core Strategy and draft Local Plan set out the challenges of climate change and how as a Council we are addressing these using existing and new planning policies for new developments including sustainable building construction and drainage systems, flood risk alleviation as well as the development of low carbon and renewable energy.

### Public Procurement

Public procurement and the way procurement processes are shaped and priorities are set in procurement decisions, offer a significant opportunity for Barnsley Council and other public bodies to improve their overall energy consumption performance. The Council’s Procurement Strategy 2013–16 takes into account the three pillars of sustainable development (i.e. environmental, social and economic) in the procurement of goods, services or works.

## STRATEGIC ENERGY OBJECTIVES

CREATE A GREEN ECONOMY  
IMPROVE ENERGY EFFICIENCY  
PRODUCE MORE LOW CARBON ENERGY  
CLEANER, LOWER CARBON ENVIRONMENT  
STRENGTHEN THE RESILIENCE AND SUSTAINABILITY OF COMMUNITIES

## KEY AMBITIONS AND OUTCOMES

GENERATE INCOME AND SAVE MONEY  
GROW JOBS, SKILLS AND LOCALLY BASED BUSINESSES OPERATING IN THE LOW-CARBON SECTOR  
INCREASE THE PROPORTION OF ENERGY CONSUMED FROM LOCALLY PRODUCED LOW CARBON SOURCES  
REDUCE CO<sub>2</sub> EMISSIONS  
REDUCE FUEL POVERTY

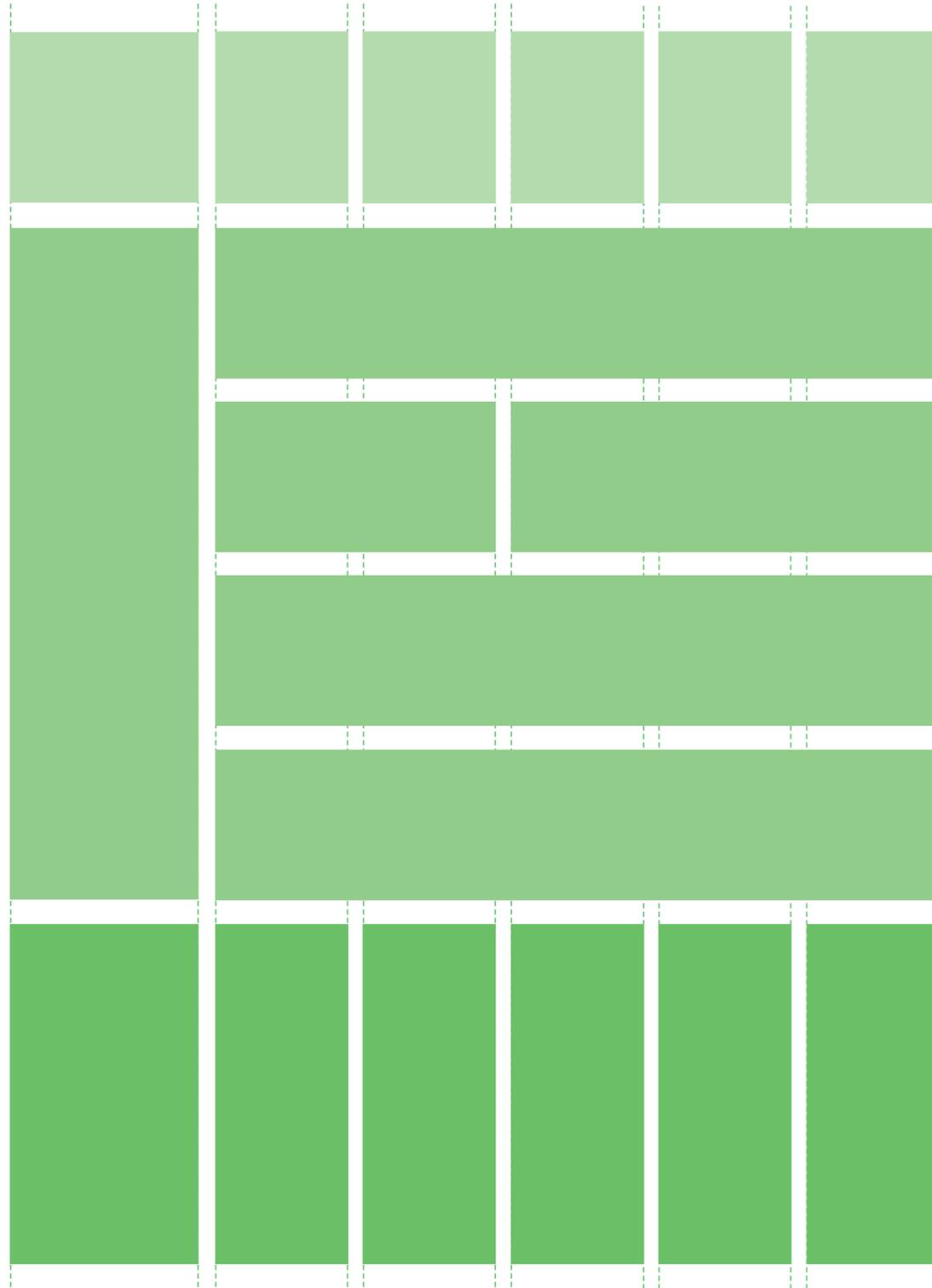
## KEY STEPS TO SUCCESS

DELIVER PHASE 2 OF THE BARNSLEY MBC CARBON MANAGEMENT PROGRAMME 2013/14–2020/21  
DEVELOP A SUSTAINABLE ENERGY ACTION PLAN (SEAP)  
IMPLEMENT THE SUSTAINABLE ENERGY PROJECTS FOR BARNSLEY  
MONITOR AND REPORT PROGRESS

THESE STEPS WILL RUN CONCURRENTLY.

## STRATEGY OVERVIEW

The diagram below provides an overview of the Strategy's objectives, intended outcomes and the key steps that we shall need to take to implement the strategy.



## THE BUSINESS CASE FOR INVESTMENT IN ENERGY

**The growth of the low-carbon sector can play a major role in strengthening Barnsley's economy. Since 2009 the sector has grown by 11% and this expansion can continue with further investment in energy efficiency and local energy production.**

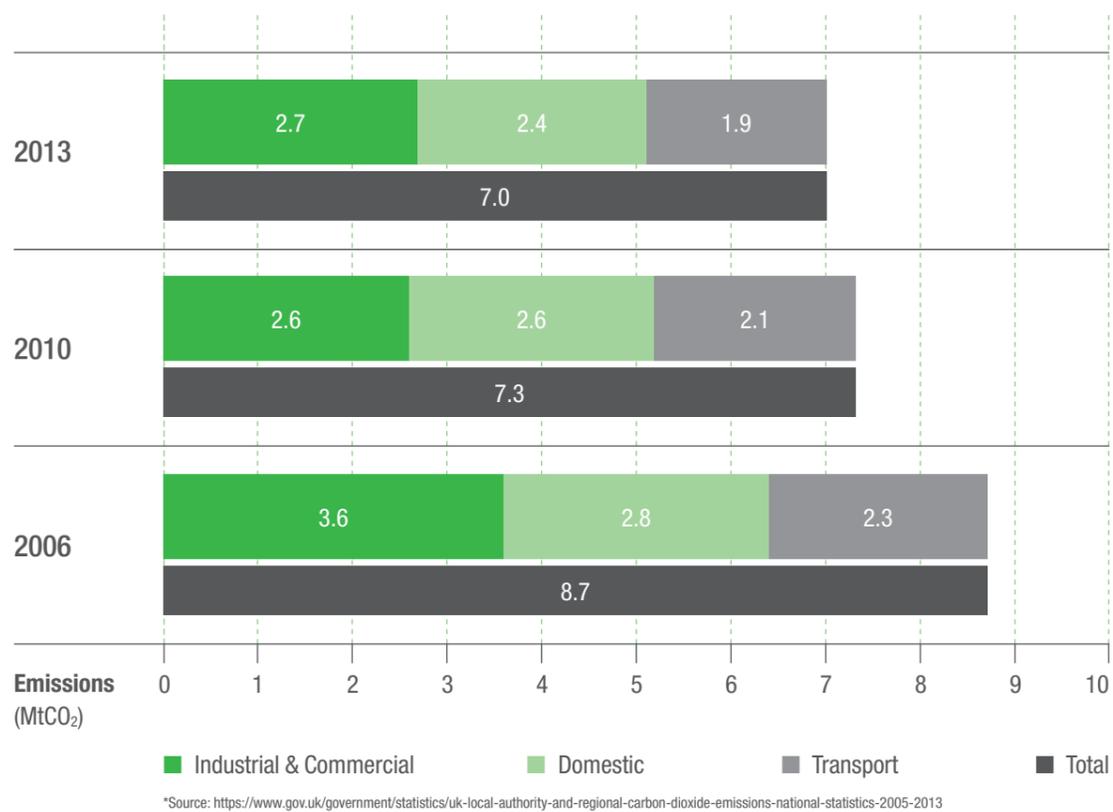
Within Barnsley there exists considerable potential to reduce energy demand and the size of the Borough's carbon footprint whilst at the same time increasing the amount of energy used from local, renewable sources through cost effective and cost neutral investments on commercial terms. This will have wider economic benefits on both employment and economic growth in the Borough. Whilst each energy generation project will be subject to full feasibility assessments it can be stated, in general terms, that investment in energy can provide good 'invest to save' opportunities over relatively short payback periods; such investment opportunities could well be of interest to a range of investment partners.

Improving the energy efficiency of local business operations will reduce overheads, thereby helping to increase profitability and/or enable greater investment in enterprises.

Taking the domestic, commercial, industrial and transport sectors together, the total energy bill for Barnsley in 2011 was estimated to be some £418 million with a forecast to grow to £545 million by 2022<sup>5</sup>, an increase of some 30%. Clearly there is significant potential to reduce expenditure on fuel with the resultant savings being available for investment in the local economy.

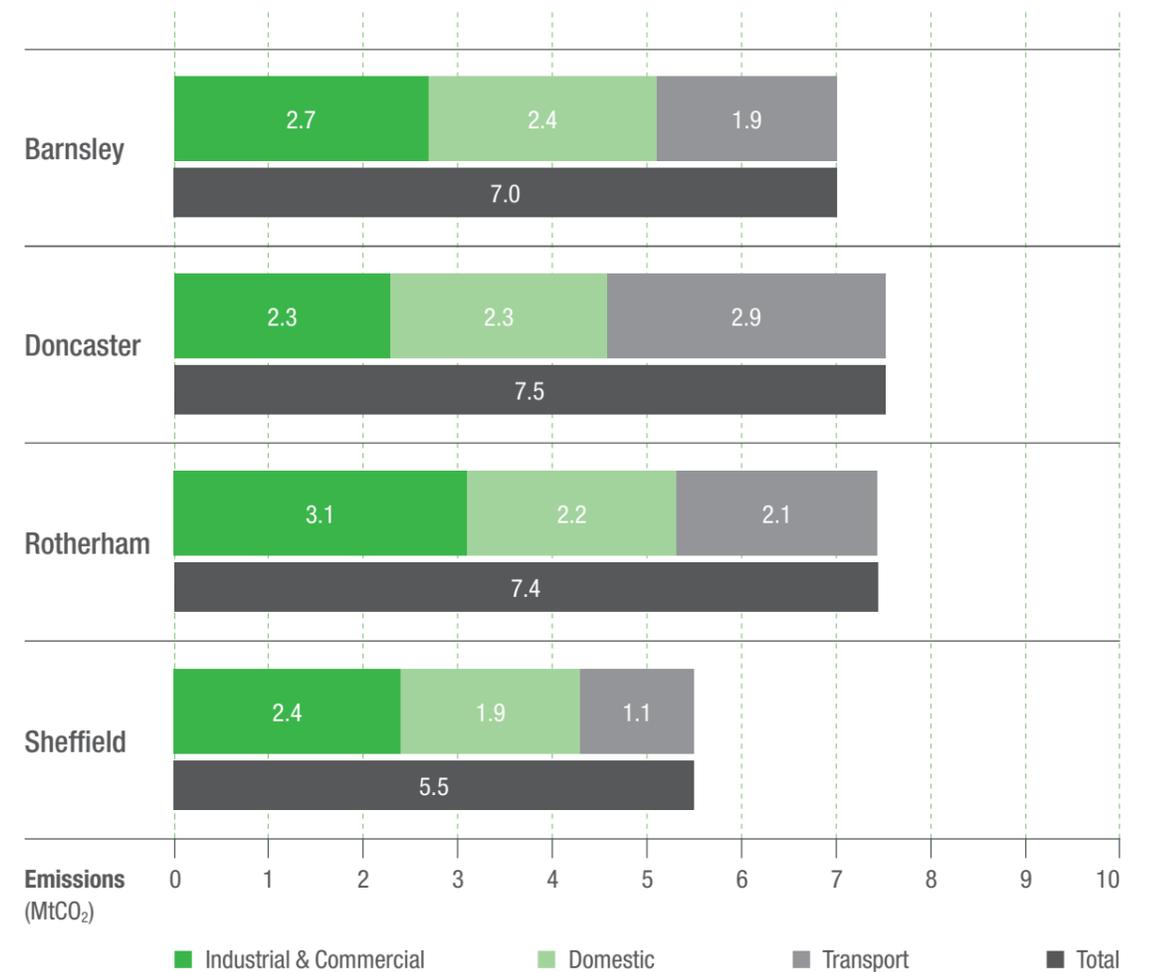
Investing in local energy production and energy efficiency also makes sense in regard to Barnsley MBC's operations. In 2012/13 some £5.2 million was spent by the Council on procuring energy whilst, under the Department of Environment & Climate Change Carbon Reduction Commitment (CRC) Scheme the Council incurred charges of £300,000 in 2012/13.

### BARNSELEY – PER CAPITA CO<sub>2</sub> EMISSION ESTIMATES BY SECTOR



<sup>5</sup>A 2010 Mini-Stern Review for Barnsley; The Economics of Low-carbon Development

### SOUTH YORKSHIRE – PER CAPITA CO<sub>2</sub> EMISSION ESTIMATES 2013 BY SECTOR



A number of projects will take place under Phase 2 of the Council's Carbon Management Programme to ensure that the Council continues to reduce its consumption of energy, grasps opportunities for investment in low carbon energy production and reduces its emissions of greenhouse gases. If no action were taken to reduce emissions it is estimated that the cost of CRC scheme by 2020/21 would be approximately £400,000, whereas, under Phase 2 of the Carbon Management Programme it is estimated that resultant reductions in the emissions of greenhouse gases will reduce the CRC charge to some £280,000.

On the domestic front over 9% of households in Barnsley live in fuel poverty. However, the incidence of fuel poverty is greater in some areas of the Borough than others with approximately 25% of the Borough

recording more than 13% of households as being fuel poor. Money saved on domestic fuel bills is money that will then be spent in the local economy, supporting local businesses and jobs.

### INCIDENCE OF FUEL POVERTY

|                  | NUMBER OF FUEL-POOR HOUSEHOLDS | PROPORTION OF FUEL-POOR HOUSEHOLDS |
|------------------|--------------------------------|------------------------------------|
| <b>BARNSLEY</b>  | 9,421                          | 9.2%                               |
| <b>DONCASTER</b> | 12,676                         | 9.8%                               |
| <b>ROTHERHAM</b> | 9,984                          | 9.0%                               |
| <b>SHEFFIELD</b> | 25,509                         | 10.9%                              |

Source: DECC – Sub-regional Fuel Poverty, England 2013, (Low Income High Costs (LIHC) Definition)

A significant proportion of the older (i.e. pre-1919) housing stock in the Borough has low levels of energy efficiency. Poorly insulated homes leak heat, increasing the risk of households living in cold and damp housing conditions; this, in turn can lead to poor health outcomes caused by respiratory and cardio-vascular conditions commonly associated with excess winter deaths.

A health impact assessment of private sector housing conditions in Barnsley<sup>6</sup> has set out how a range of preventative measures to tackle cold and damp housing conditions would save the National Health Service significant expenditure, (through interventions to improve thermal efficiency), by not having to treat those who fall ill as a result of occupying sub-standard housing.

<sup>6</sup>Health Impact Assessment of Private Sector Housing in Barnsley; BRE 2013



# RENEWABLE ENERGY TECHNOLOGIES

Local, low carbon energy production in Barnsley can be achieved through a number of technologies:

- **ONSHORE WIND** – to produce electricity.
- **BIOMASS** – to generate heat, electricity or both, with the potential to power local heat networks.
- **ANAEROBIC DIGESTION** – to produce biogas to generate heat, electricity and provide fuel for vehicles, with the potential to power local heat networks.
- **SOLAR THERMAL** – to provide heat and hot water.
- **SOLAR PHOTOVOLTAIC** – to generate electricity.
- **GROUND SOURCE HEAT PUMPS** – to provide space heating.
- **AIR SOURCE HEAT PUMPS** – to provide space heating.
- **WATER SOURCE HEAT PUMPS** – to provide space heating.
- **GEO-THERMAL** – to provide heat and/or generation of electricity.
- **HYDROELECTRICITY** – to generate electricity.

## BARNSLEY HAS MADE A GOOD START IN THE USE OF RENEWABLE ENERGY TECHNOLOGIES:

### RENEWABLE ENERGY INSTALLATIONS FOR PRODUCTION OF ELECTRICITY AS AT SEPTEMBER 2015

| Local Authority                     | Barnsley | Doncaster | Rotherham | Sheffield |
|-------------------------------------|----------|-----------|-----------|-----------|
| Solar PV                            | 4,232    | 5,564     | 4,582     | 4,445     |
| Wind                                | 21       | 4         | 3         | 8         |
| Hydro                               | 2        |           |           |           |
| Installations per 10,000 households | 407      | 428       | 414       | 187       |

Source: <https://www.gov.uk/government/statistical-data-sets/sub-regional-feed-in-tariffs-confirmed-on-the-cfr-statistics>

## RENEWABLE ENERGY INSTALLATIONS FOR PRODUCTION OF HEAT

| Local Authority         | Barnsley | Doncaster | Rotherham | Sheffield |
|-------------------------|----------|-----------|-----------|-----------|
| Non-domestic            | 22       | 22        | 10        | 14        |
| Installed Capacity (MW) | 6.4      | 5.0       | 2.2       | 1.3       |
| Domestic                | 28       | 54        | 21        | 92        |

Source: <https://www.gov.uk/government/statistics/rhi-deployment-data-february-2015>

## ...BUT WE CAN ACHIEVE FAR MORE

Electricity produced via renewable energy can be used in situ and/or exported to the grid for use elsewhere. The capacity of the electricity grid to accommodate significant increases in the amount of renewable energy is a challenge which has been recognised at the national level.

At the local level the Council will work closely with Northern Powergrid to ensure that proposals for local energy production take into account grid connection and capacity issues.

In the west of the Borough, in areas close to the Peak District National Park, historic development of turbines has left little scope for further wind energy development.

However, in the eastern half of the Borough there may be locations where new wind energy schemes could be accommodated<sup>7</sup>.

The selection of which technologies to use in Barnsley will be determined by local geography, commercial and planning considerations and will be established on a project by project basis.

Consideration will also be given to the opportunities to the extraction of all forms of lower carbon fuel sources to help in the transition to a zero carbon economy.

Within Barnsley there exists considerable potential to reduce energy demand and the size of the Borough's carbon footprint whilst at the same time increasing the amount of energy used from local, renewable sources through cost effective and cost neutral investments on commercial terms. This will have wider economic benefits on both employment and economic growth in the Borough. In addition, increasing the amount of energy produced locally would increase the security of the energy supply.

Recent advances in battery technology will shortly mean that every last drop of low-carbon energy can be used to greatest effect, whether that be to reduce energy costs or generate income.

### The generation of electricity of through wind power is already established in Barnsley:

| No. of Wind Turbines: | Output Capacity (MW): |
|-----------------------|-----------------------|
| Operational: 51       | 27.3                  |
| Pipeline: 7           | 6.8                   |

Source: BMBC Planning Database

<sup>7</sup>South Pennines Wind Energy Landscape Study; Julie Martin Associates; July 2014

## WHAT MUST WE FOCUS ON?

All energy projects will support and encourage:

**Greater energy efficiency and corresponding reductions in carbon emissions and demand for energy**

**An increased use of renewable energy and/or reduction in energy demand**

**An increase in the local production of low-carbon energy.**

### Sectoral Focus

Using the framework provided by the Covenant of Mayors, we will focus on the buildings and equipment/facilities in the domestic, commercial and industrial sectors and the transport sector in the delivery of our Sustainable Energy Action Plan; these sectors account for the majority of energy consumption and greenhouse gas emissions.



# 1 BUILDINGS AND EQUIPMENT/FACILITIES (DOMESTIC, COMMERCIAL, INDUSTRIAL)

## Housing

Housing activity accounts for around 27% of UK carbon emissions. Successive improvements in Building Regulations have ensured that more recently built homes are reasonably energy efficient and consequently it is within the older housing stock that the highest incidence of poor thermal performance occurs.

There are currently some 108,000 homes within the Borough. The Council has ambitions to facilitate the building of some 20,000 homes by 2033. The Council will work with housing developers to encourage compliance with the Code for Sustainable Homes, the Code to be replaced by the next revision of the Building Regulations (part L) in Autumn 2016.



**BUILDINGS ARE RESPONSIBLE FOR 40% OF THE TOTAL ENERGY CONSUMPTION IN THE EUROPEAN UNION AND ARE OFTEN THE LARGEST ENERGY CONSUMER AND CO<sub>2</sub> EMITTER IN URBAN AREAS.**

### Council Housing

Consistent investment in stock maintenance and improvement means that the vast majority of the Council's 18,500 properties are energy efficient. In 2014 the average SAP rating for Council housing had risen to 83, well above the threshold score of 65 which is often used as a proxy measure for the absence of fuel poverty in the home, whilst the average Energy Performance Certificate (EPC) rating is C.

Berneslai Homes with the Council's full support is taking a comprehensive approach to improving further the energy performance of Council housing; their ongoing capital programme encompasses energy efficiency measures and the application of renewable technologies and to date has included:

**INSTALLATION OF HIGH EFFICIENCY CONDENSING GAS BOILERS;**

**REMOVAL OF ALL COAL-BURNING APPLIANCES FROM THE HOUSING STOCK;**

**REDUCING RELIANCE ON FOSSIL FUEL FOR DOMESTIC HEATING**

- e.g. over 200 air-sourced heat pumps have been installed, making use of the Renewal Heat Incentive (RHI) scheme;

**USE OF BIOMASS BOILERS (WITH GAS BACK-UP) FOR HEAT NETWORK SCHEMES**

**SOLAR PHOTOVOLTAIC**

Over 300 properties fitted to date with the following outcomes:

- 1.4 GWh of electricity generated.
- 758 tonnes CO<sub>2</sub> saved.
- Energy bill savings for tenants.

The Council has recently entered into a partnership with Gen Community to install solar PV panels on council houses across the Borough under the Energise Barnsley programme.

### Private Sector Housing

The real challenge lies in the stock of older private sector housing – some 22,500 homes in this sector were built pre-1919 and were constructed in such a manner as to render them “hard to treat”. The average SAP rating for private sector housing is 57. But more tellingly some 7,000 of the oldest properties have an average SAP rating of less than 35. Homes that leak heat also end up leaking money (through higher energy bills) from household budgets and by extension from the local economy.

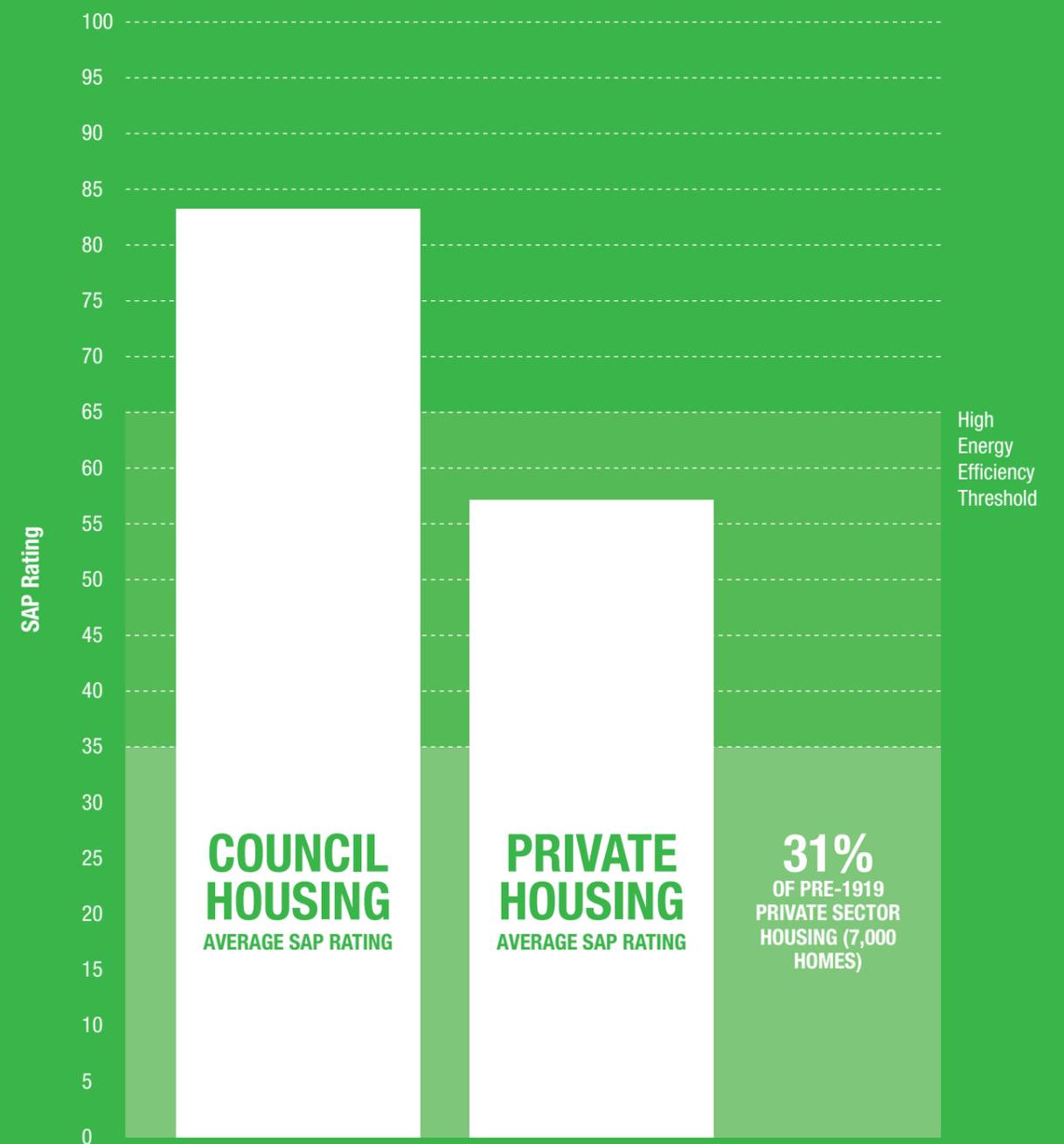
Over the last decade the Council has supported a variety of projects that have seen over 2,300 private sector homes, (in the main occupied by vulnerable, low-income households) benefit from the installation of measures to improve energy efficiency. Over the last three years funding restrictions have severely curtailed the scale of activity in regard to private sector housing. The council is supporting the Better Homes Barnsley Home Energy Efficiency Scheme to encourage and assist households and property owners to improve the energy efficiency of their homes. During the first three years of the scheme the target is for over 1,100 households across the Borough to benefit from the scheme, with a particular emphasis on low income, vulnerable households.

## Improving the energy efficiency of older, private sector housing is a significant challenge

### HOUSING SAP RATINGS – 2014

SAP ratings can be used as a proxy for fuel poverty in households occupied by people claiming income based benefits, given the link between income poverty and fuel poverty.

A SAP rating of 65 and above denotes high energy efficiency and a reduced likelihood that households living in such properties will be in fuel poverty.



## 2 NON-DOMESTIC BUILDINGS

Whilst activity in regard to domestic energy efficiency is progressing reasonably well, there remains, in contrast a significant amount to do in the commercial and industrial sectors. Commentators estimate that the potential for savings in this sector from energy efficiency measures is as much as four times greater than the remaining opportunity in the domestic sector.

There are also significant potential gains to be made in regard to local energy production and particularly so when aligned to the demands for heat and power from industrial users and the opportunity for the installation of local energy production technologies as part of or adjacent to new and existing employment and business parks across the Borough. It is arguably in this area that some of the greatest rewards can be obtained with significant cost savings to industry going hand-in-hand with real opportunities for long-term income generation.

Barnsley Council, in common with all public sector bodies has a significant carbon footprint. Under its ongoing Carbon Management Programme the Council has already made substantive progress in reducing carbon emissions from its own operations and is finalising the content of Phase 2 of the programme.

More information is provided on the Carbon Management Programme below, under the “*How will we Put our Strategy into Action*” section.

The Energise Barnsley programme (referred to on pages 30, 42–45) also extends to the installation of solar PV panels on non-domestic buildings owned by the Council.



**THE POTENTIAL FOR SAVINGS IN THIS SECTOR FROM ENERGY EFFICIENCY MEASURES IS AS MUCH AS FOUR TIMES GREATER THAN THE REMAINING OPPORTUNITY IN THE DOMESTIC SECTOR**

# 3 TRANSPORT

The transport sector represents approximately 30% of the final energy consumption in the UK. Cars, trucks and light vehicles are responsible for 80% of the energy consumed in the transport sector. Emissions from transport are a major cause of poor air quality in the Borough and in consequence the Council's 7 Air Quality Management Areas (AQMAs) are located adjacent to busy roads.

There remains a lot to do before we can say with confidence that we are fully embarked on a journey to a low carbon transport network in Barnsley but a good start has been made by the Council. For example, the piloting of the use of electric vehicles, the use of bio-fuels in the Council and Berneslai Homes' fleet of vehicles, coordinating the national ECO Stars (Fleet Recognition Scheme) and the installation of low energy LED street lighting.

Within the context of the South Yorkshire sub-region Barnsley is involved in the EVInmotion scheme, through which businesses are supported to expand their use of electric vehicles.



## HOW WILL WE PUT OUR STRATEGY INTO ACTION?

Our Sustainable Energy Action Plan will set out the projects and actions that we need to carry out to realise our energy ambitions. The four key steps for achieving our strategic aims and ambitions are:

# Deliver Phase 2 of the Barnsley MBC Carbon Management Programme

# Develop a Sustainable Energy Action Plan (SEAP)

# Implement the Sustainable Energy Projects for Barnsley

# Monitor and Report Progress

These steps will run concurrently.

## 1. Barnsley MBC Carbon Management Programme – Phase 2

Barnsley Council, in common with all public sector bodies has a significant carbon footprint. In 2008 the Council, through Phase 1 of its Carbon Management Programme, set out to reduce its operational carbon emissions from usage of gas, electricity, coal and other fuels over a five year period. These emissions are associated with the operation of buildings, street lighting, fleet and business travel.

Phase 1 of the Carbon Management Plan ended in 2013 by which time the Council had reduced its carbon emissions by 24% from 61,000 to 46,000 tonnes CO<sub>2</sub>e per annum, securing annual energy cost savings of £338,000. The Council is currently working with the Carbon Trust to finalise the content of its Phase 2 Carbon Management Programme, (with the Council's leisure centres likely to form the core of the Programme). Under the Programme the following targets are proposed:

- Reduction of 30% in carbon emissions by 2020/21 from a 2012/13 baseline.
- Generating 20% of energy used from renewable sources by 2020/21.

Whilst it is important in its own right that the Council does all it can to be ever more energy efficient in its operations the bigger prize lies in the opportunity for us to use the Carbon Management Programme as a platform, to demonstrate that we have “got our own house in order” and to inspire others to join us in a greater awareness of and investment in the energy agenda so as to make Barnsley a better place in which to live and do business. In summary we shall:

- Continue to work with partners to develop and deliver the Phase 2 Carbon Management Programme to achieve the stated ambitions of significantly reducing the Council's carbon emissions, providing more on-site renewable energy, reducing energy consumption and lowering energy bills.
- Set a benchmark and demonstrate to local businesses how they can improve and grow through implementing low carbon programmes.

## 2. Develop a Sustainable Energy Action Plan (SEAP)

Although the strategy will be delivered over 10 years, the SEAP will set out a real-time [four] year plan for what needs to be delivered now in order to start on the path to creating a greener and more sustainable future for the Borough.

The SEAP will also reflect the current state of Barnsley's energy and low carbon achievements and comparable position in terms of energy usage, carbon emissions and fuel poverty, whilst not forgetting the long-term ambitions to improve performance by being more energy efficient, reducing carbon emissions and by producing more low carbon energy within Barnsley.

Barnsley's SEAP will focus on those areas where the Council has a role to play as a planner, motivator, consumer, producer and investment partner.

All energy actions will support and encourage reduction in carbon emissions, and an increased use of sustainable energy and/or reduction in energy demand, and will be targeted at key sectors e.g. commercial buildings, transport, domestic properties.

In order to measure the success of the SEAP, a Baseline Emissions Inventory (“BEI”) for the Borough will be created based on current emissions and energy consumption levels. This will enable us to gauge the impact of projects contained in the SEAP in regard to reducing energy consumption and emissions of greenhouse gases.

The key metrics that the Baseline Emissions Inventory will enable us to monitor and report against are:

**BASELINE GREENHOUSE GAS EMISSIONS (TONNES CO<sub>2</sub>E)**

**REDUCTION IN GREENHOUSE GAS EMISSIONS (TONNES CO<sub>2</sub>E)**

**REDUCTION IN GREENHOUSE GAS EMISSIONS (%)**

**BASELINE ENERGY CONSUMPTION (MWH)**

**REDUCTION IN ENERGY CONSUMPTION (MWH)**

**REDUCTION IN ENERGY CONSUMPTION (%)**

**INSTALLED RENEWABLE ENERGY CAPACITY (MW)**

A number of sustainable energy projects are already underway, some are at early feasibility stage with others aspirational in nature at this point. These projects are

set out in the following section, Achieving our Strategic Energy Objectives.

The SEAP is a living document that will be updated at regular intervals. It will enable the ongoing monitoring of progress made in the implementation of the Strategy. Additional actions will be required to meet the ambitious targets set in the SEAP. These will be informed by ongoing monitoring and stakeholder engagement which will help identify the areas needing focus.

#### Our priorities:

- Establish a Baseline Emissions Inventory for the Borough in order to measure success of the SEAP. This will show us where we are currently in terms of greenhouse gases (GHG) and emissions CO<sub>2</sub>e.
- Council to become a signatory to the Covenant of Mayors.
- Agree and approve measurable energy actions to achieve targets as part of the SEAP with stakeholders.
- Submit SEAP to Covenant of Mayors within one year of official signature.

### 3. Implement the Sustainable Energy Projects for Barnsley

Effective project management and partnership working is absolutely central to the successful implementation of this strategy. A number of projects are highlighted in the following pages; these are at various stages of delivery, ranging from initial concept through to delivery in progress.

The larger projects, especially those concerning the development of larger scale renewable energy facilities will be characterised by 4 keys stages:

- **PROJECT DEVELOPMENT** – site selection, site acquisition, grid requirements, feasibility studies, planning permissions / permit requirements.
- **PROJECT STRUCTURING** – procurement, financing.
- **CONSTRUCTION** – building / plant construction, grid connection, commissioning.
- **MANAGEMENT** – operations & maintenance.

The Strategy's successful implementation requires sufficient financial resources. The potential to attract substantial levels of private sector investment in energy and low carbon management in Barnsley will be vigorously pursued. This will include exploring innovative financing mechanisms, based on new forms of cost recovery and benefit sharing and new ways of managing risk.

We will consider a wide range of financing and funding options, with both short and longer term repayment periods. Financing mechanisms used for renewable energy schemes and energy efficiency measures are widespread. Potential sources of finance include:

- Public Loans Works Board – direct investment by the Council.
- Salix funding – via DECC<sup>8</sup>.
- Green Investment Bank.
- City Region Local Growth Deal Funding.
- European Structural and Investment Funds (ESIF).
- Crowd Funding.
- Community Share Offers.
- Urban & Rural Community Energy Funds (DECC).
- Energy Company Obligation (ECO).
- Energy Producer Incentives – Renewable Heat Incentive, Feed in Tariff, Contracts for Difference.
- Periodic funding opportunities through DECC.

The formation of partnership arrangements to develop, finance and deliver projects will be essential. Potential delivery vehicles include:

- Joint Ventures.
- Community Benefit Societies.
- Cooperatives.
- Energy Service Companies ('ESCOs').

Barnsley's existing Core Strategy and draft Local Plan are supportive of development opportunities to produce locally sourced, low carbon energy. Both documents include planning policies on climate change, sustainable construction, low carbon and renewable energy production aimed at facilitating the growth of locally produced energy across the Borough.

<sup>8</sup>DECC = Department of Energy and Climate Change.



#### 4. Monitor and Report Progress

To gauge the impact that projects will have on reducing the baseline carbon emissions, it is important they are measured consistently. All projects will be subject to ongoing monitoring and reviews and the SEAP will be revised and updated as part of an iterative process.

Achievement towards SEAP targets will be monitored on an annual basis. All identified, measurable activities will be required to report progress towards individual targets on a frequency appropriate to the activity. This will enable appropriate action to be identified and implemented where measures are falling short of expected outcomes.

##### How will progress be scrutinised?

A Strategic Energy and Low-carbon Board comprised of a range of public and private sector experts from the low-carbon energy field will be established. The role of this board shall be to monitor and provide a steer to the implementation of the Energy Strategy. The Council membership of this board will be drawn from the membership of the BMBC Carbon Management Board (which oversees the implementation of the Council's Carbon Management Programme).

A dedicated energy team led by the Council, supported by advisors, will support the Strategic Energy and Low-carbon Board to provide specialist input into each project.

##### Key actions

The following regular reports will be submitted to the Strategic Energy and Low-carbon Board and Covenant of Mayors:

##### MONITORING EMISSIONS INVENTORY

- CO<sub>2</sub> emissions report, on similar lines to the original baseline submission.

##### IMPLEMENTATION REPORT

- Quantitative information on measures implemented, their impacts on energy consumption and CO<sub>2</sub> emissions

##### ACTION REPORT

- Qualitative information about the implementation of the SEAP.

##### Communicating the Strategy and Raising Awareness

The communication associated with the Strategy is of paramount importance. There are several strands to the communication, including:

- **Council** – this includes intranet, email, green energy champions, workshops and management reports.
- **Community** – community groups, area councils, ward alliances, parish councils, local media, social media, email and website.
- **Economy** – local enterprise partnerships (LEPs), Barnsley Economic Partnership (BEP), Barnsley Chamber of Commerce, Barnsley Development Agency.



# ACHIEVING OUR STRATEGIC ENERGY OBJECTIVES

## 1. Create a Green Economy

The production of low carbon goods and services is recognised as one of the five primary economic growth sectors for Barnsley<sup>9</sup>. Since 2009 the low-carbon sector in Barnsley has recorded an 11% increase. Such performance is encouraging and clearly demonstrates the potential of this sector to continue growing in Barnsley.

Working with the LEPs, local businesses and service providers we will enable the infrastructure, investment and requisite skills to create the conditions for a measurable transformation towards a green economy.

We want to become a market leader in innovative businesses and low carbon technologies, a destination where businesses want to come and invest. We will enhance and build a robust network of small and medium sized businesses in the low carbon sector to help secure Barnsley's economic future.

We will take advantage of our unique geography and mining heritage, utilising our natural resources to build a sustainable Borough and create economic gain.

### Key Projects

- Use of low-carbon building materials in construction of new-build affordable housing development, in conjunction with manufacturer of low-carbon building components, basing operations in Barnsley.
- Installation of solar PV arrays on under-used BMBC land / industrial unit roofs to provide energy infrastructure required to service business parks – potential scheme at Rockingham Business Park, Dearne Valley Parkway.

### Key Measures

- Increase in no. of local businesses operating in the low-carbon sector.
- Increase in no. of jobs in the low-carbon sector.
- Increase in GVA attributed to the low-carbon sector.

## 2. Improve Energy Efficiency

We will aim to reduce energy demand so that we do not need to consume as much energy from conventional (dirty) high-carbon sources.

Energy reduction and efficiency measures are often 'quick wins' and inexpensive to implement, and can improve the health and wellbeing of those in fuel poverty.

Barnsley will aim to insulate itself against projected energy price increases through investments in energy efficiency and low carbon technologies.

The merits of using energy more efficiently will be promoted through engaging with young people in the school setting (for example as part of proposals to install solar PV at school sites) and with households and businesses, with a particular focus on small and medium sized enterprises (SMEs).

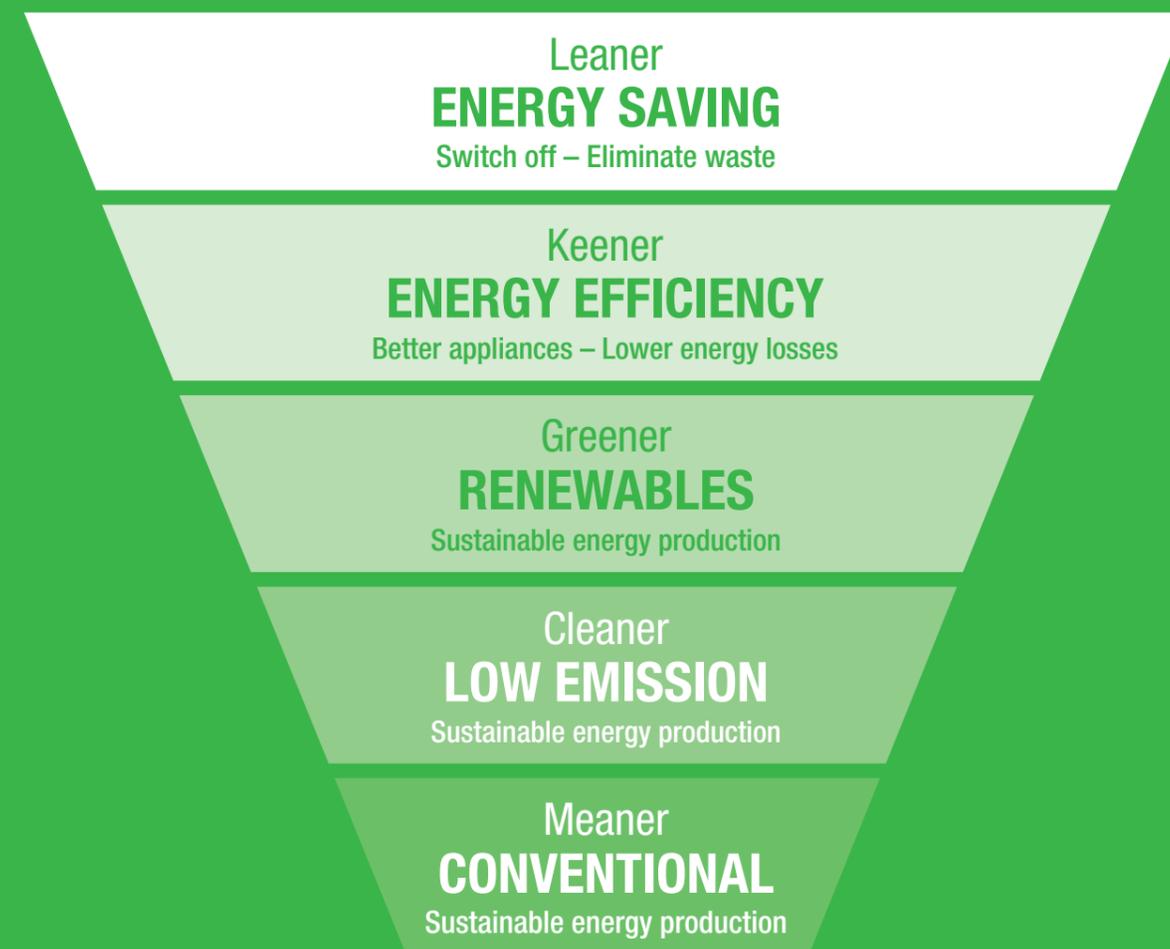
### Key Projects

- Better Homes Barnsley (Green Deal/ECO): a private sector home energy efficiency scheme – ongoing.
- Barnsley Homes Standard capital investment programme (and other schemes) for 18,500 Council owned homes – ongoing.
- Promotion of Carbon Trust's SME Carbon Network – planned.
- Development of energy advice service for SMEs – aspirational.
- Green Doctor Service (to provide energy advice to vulnerable households and carry out installations of low-level efficiency measures) – ongoing.
- Energise Barnsley in partnership with Gen Community and British Gas – implementation ongoing.

### Key Measures

- Number of properties that have received measures under Better Homes Barnsley home energy efficiency scheme.
- Number of council homes that have received energy efficiency measures under the Barnsley Homes Standard programme (and other schemes).

The guiding principle of the energy hierarchy is to reduce energy use before meeting the remaining energy demand by the cleanest means possible.



<sup>9</sup>Jobs and Business Plan 2014–2017

### 3. More Low-carbon Energy

Acting as an investor and enabler the Council along with other public, private and community organisations will actively promote and increase the production and use of more low carbon/renewable energy in Barnsley. This will help to increase the security of the local energy supply, ensuring that the lights remain on in Barnsley.

The Council will support the increase in the generation of renewable energy production to meet and exceed the European Union target of 20% by 2020.

#### Key Projects

- Hydro-power scheme at Worsbrough Reservoir – initial feasibility study undertaken.
- Energise Barnsley – in partnership Gen Community and British Gas – implementation ongoing.
- Solar PV farms on under-used BMBC land to provide power to meet local demand for power from commercial and residential customers – audit of BMBC land assets completed.
- Wind turbines to provide power to meet local demand for power from commercial and residential customers – landscape capacity study completed.
- Installation of solar PV canopies to BMBC car parks – audit of BMBC carparks underway.
- Creation of a partnership with private sector delivery partner to boost no. of solar PV roof installations in private sector housing – aspirational.
- Combined heat and power district heating network for Barnsley Town centre – master planning ongoing.
- Bio-fuel production from crops/anaerobic digestion – aspirational.
- Installation of gas CHP boilers at Metrodome Leisure Centre – final business case in preparation.

#### Key Measures

- Wind turbine power generation in Borough (MW).
- Solar power generation in Borough (MW).
- Other renewable energy power generation in Borough (MW).

### 4. Reduce Carbon Emissions

The Council has committed to reducing its own carbon emissions by 30% by 2021 and its ambition is to exceed this figure. The implementation of this Strategy will also encompass Phase 2 of the Council's Carbon Management Programme through which the Council will continue to reduce its carbon emissions and reduce its financial liability under the Carbon Reduction Commitment Scheme.

#### Key Projects

- Carbon Management Programme (Phase 2) – final planning.
- Street lighting – ongoing.
- Continuation of Eco Stars Recognition Scheme – ongoing.
- Expansion in use of electric vehicles by Barnsley MBC and Berneslai Homes – aspirational.
- Increase the number of electric vehicle charging points – aspirational.
- Promote electric bike leasing scheme within BMBC and encourage widespread adoption by local businesses – aspirational.
- Increase use of biofuel in Barnsley MBC/ Berneslai Homes vehicle fleet – planned.
- Energise Barnsley in partnership with Gen Community and British Gas – implementation ongoing.

### 5. Resilient and Sustainable Communities

The Council recognises the importance of community engagement and will support community groups and voluntary groups in their efforts to establish smaller scale local energy projects. In particular we shall work with local communities to help them to identify projects and to apply for funding. The Dearne Valley Eco-vision will continue to help local communities to maximise the benefits of local energy initiatives and projects.

Our aim will be to promote and facilitate the formation of groups of like-minded, driven and innovative individuals focussed on leading community action on sustainable energy and climate change issues. Community groups, in an attempt to alleviate these difficulties, are looking at energy efficiency measures, awareness raising and greater use of renewable energy. They play an important role in engaging more people on the ground and in achieving national targets for energy and carbon reduction.

In addition, engaging local communities with the energy agenda is central to reducing the cost of energy and winning support for renewable energy development proposals – the greater the amount of community buy-in the less chance of fundamental objections being raised and sustained.

#### Key Projects

- Creation of Dearne Valley Community Energy Company (an Industrial & Provident Society) under the auspices of the Dearne Eco-vision – completed.
- Hydro-power at Worsbrough Reservoir – initial feasibility study completed summer 2013.
- Creation of Barnsley Energy Tariff – initial planning.
- Community energy scheme as part of programme of ground-mounted solar PV – feasibility study ongoing.
- Energise Barnsley in partnership with Gen Community and British Gas – implementation ongoing.

# CONTACT US

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