



Energy Strategy

2016-2020

FOREWORD

The way the UK generates and uses energy is entering a critical period at both the national and local level. At a time when the trend is for energy consumption to increase rather than fall, it is acknowledged by the Government that we require a sustained commitment and investment in a new range of skills and technologies.

It is not, however, enough to address only these risks. There are significant benefits to be gained from improving energy efficiency of both domestic and commercial premises and increasing local generation where communities are the primary beneficiaries. Delivering these benefits is central to our Energy Strategy.

Changing the way energy is generated and used in West Sussex is a big challenge and requires a long-term commitment if it is to be achieved. This County Council strategy sets out an ambitious journey and framework for action. Adopting the strategy is a means for the Council to become resilient to the fluctuations in global energy prices and volatile supply chains; to support and grow efficient and low-carbon businesses and to enable communities to reduce their energy use and generate their own energy supplies.

Achieving the vision will not be easy. I hope that this strategy will both lead and catalyse action to ensure that the communities and businesses of West Sussex benefit from their energy resources.

Louise Goldsmith, Leader, West Sussex County Council

1. INTRODUCTION

- 1.1 The energy landscape is changing rapidly. At a national level, the Government has implemented a number of policies designed to transition to a low-carbon economy against the backdrop of fossil fuels declining, energy costs increasing, energy supply becoming more vulnerable and growing concern about environmental sustainability. As a result, the UK is increasingly looking to renewable and low-carbon sources to meet the demand for energy and heat.
- 1.2 In 2015 West Sussex County Council spent in the region of £11.5 million on energy in its buildings. This includes schools, offices, care homes and libraries. The likely future increase in these costs represents a real threat to the ability of West Sussex County Council to continue delivering high quality services.
- 1.3 In addition, our communities face major challenges and risks relating to both supply and demand for energy. The County Council has a duty under the Localism Act and a unique opportunity to work with communities to prepare for these challenges now.

2. PURPOSE OF THE STRATEGY

- 2.1 The strategy establishes how West Sussex County Council can build upon the work completed to date and address the key issues facing the authority, whilst looking for ways to support its residents. The strategy also:
 - Provides a framework to co-ordinate effort in delivering common aims;
 - Encourages buy-in and ownership for joint working with partners;
 - Ensures co-ordination and focus on priority areas where efforts can deliver the greatest benefits for the County.
- 2.2 The strategy aligns to specific priorities in the corporate plan, 'Future West Sussex':
 - Giving children the best start in life – by supporting families to reduce their energy bills
 - Championing the West Sussex economy – by working with the local supply chain
 - Promoting independence in later life – by supporting the elderly and vulnerable in their homes and helping them to reduce energy bills
- 2.3 The strategy does not address energy issues such as the development of onshore hydrocarbons or transport energy demand.
- 2.4 An accompanying action plan identifies key activities for delivering the strategy.

3. WORK TO DATE

- 3.1 Significant work has been undertaken by the County Council on its own estate following the introduction of a comprehensive corporate Energy and Water Management Plan. A number of control mechanisms, smart metering programmes and solar Photovoltaic (PV) installations were installed several years ago, leading to a growing awareness of and commitment to energy efficiency and renewable energy generation within the authority. This gave rise to a much broader work programme involving other Sussex authorities.

- 3.2 An agreed business plan, successful funding bid and procurement exercise led to the creation of 'Your Energy Sussex' – a West Sussex County Council-led council partnership with ambitious plans to support householders, communities and businesses to reduce energy consumption and bills, and generate more renewable energy. With Carillion, Your Energy Sussex partner authorities have a shared ambition to support low income residents at risk of fuel poverty and generate economic growth among local SMEs.
- 3.3 The Your Energy Sussex work programme is gathering pace and a number of projects are complete and delivering the projected environmental, social and financial benefits. The 5MW solar farm at Tangmere is operational and generating enough low-carbon electricity to power 1,500 households. Over 25 years it will also generate £13.8 million in income for the County Council. Low-carbon energy from Tangmere is also used to power WSCC buildings.
- 3.4 The partnership has also delivered successful solar PV projects for schools, social housing and commercial partners. An ongoing Affordable Warmth programme is also providing replacement, energy efficient boilers for low income and vulnerable residents in fuel poverty.
- 3.5 The Energy Strategy and Action Plan build on this growing momentum and track record for delivering successful low-carbon projects. Its ambitious and long-term targets will help to establish West Sussex as the key location for investment in the low-carbon and renewable energy sector.

4. KEY ISSUES

- 4.1 This Energy Strategy has been developed in response to three key issues: security; affordability; and environmental sustainability. Across the industry these issues are known collectively as the 'Energy Trilemma'. The strategy aims to address these issues, mitigate and limit future risks, and maximise potential opportunities.

4.2 Key Issue 1: Security

- 4.2.1 Being energy secure relies on having a consistent, reliable and affordable energy supply. The increasing threat to the security of the UK energy supply is caused by a number of factors¹:
- About a fifth of UK power stations will close within this decade as they come to the end of their working life or are deemed too polluting;
 - Declining reserves of fossil fuels will make the UK more dependent on imports at a time of rising global demand;
 - Our energy infrastructure is old and inadequate.
- 4.2.2 It is estimated that £126 billion of new investment is needed in UK energy infrastructure, primarily power stations and the electricity grid, before 2020 if security of supply is to be guaranteed².

1. Energy Security Strategy, DECC, Nov 2012

2. ONS Energy Stats, 2011

- 4.2.3 A modernised electricity grid is needed to support the transition to a low-carbon future – which will bring with it an increase in distributed and intermittent generation, principally from renewables – a modernised electricity grid is needed with greater capacity and the ability to manage greater fluctuations in supply and demand, whilst guaranteeing supply to the consumer. Investment in grid infrastructure and new technologies that can effectively store electrical energy will also be needed.

4.3 Implications

- 4.3.1 Local authorities are responsible for providing vital public services as their primary duty. To deliver these duties effectively, facilities such as schools, care homes, street lighting and housing require a reliable source of power.
- 4.3.2 With 21% of existing generating capacity due to close in the next decade, significant investment is needed at both national and local level to safeguard our service users against possible power cuts and disruptions in power supply.
- 4.3.3 National investment in energy infrastructure does not take into account local energy requirements and does little to create local resilience to the increasing threat to energy security. The South Coast in particular is connected to the rest of the UK grid system by only one set of high voltage circuits³. If there is a fault at one end of this route, power will be forced to flow a very long distance to reach the connectors on the South Coast. Without an upgrade, this could lead to voltage depression along the route and outages will need to be managed.
- 4.3.4 Rural communities in West Sussex are particularly vulnerable to supply disruptions. This is because rural properties tend to be 'off gas' and reliant on primary fuels, such as LPG and oil. In addition, localised fuel delivery networks are particularly vulnerable to extreme weather events such as heavy snow.

4.4 Key Issue 2: Affordability

- 4.4.1 Energy affordability is a key component of wellbeing and economic growth. The three aspects to this are a) access to energy, b) the price of energy and c) managing energy demand. Over the next decade, energy prices are likely to rise or become increasingly volatile due to:
- Increases in wholesale electricity and gas costs as a result of increasing fossil fuel prices;
 - The required investment in energy infrastructure;
 - Declining indigenous energy production in the UK;
 - An increased reliance on global markets;
 - Increased global demand.
- 4.4.2 Domestic energy bills tend to reflect global commodity prices. For energy consumers in the UK this tends to mean that, when wholesale gas and electricity prices rise, so does the cost of living. Ofgem has estimated that if the market was left as it is today, annual average household energy bills could more than double by 2030⁴.

3. Electricity 10 year statement, 2015

4. Ofgem Project Discovery, 2010

4.5 Implications

- 4.5.1 The increased cost and volatility of energy prices will impact on the cost of delivering council services and the proportion of the budget allocated to energy by local authorities will increase.
- 4.5.2 Carbon taxes also have an impact on the cost of energy. As energy policy leads to high-carbon energy becoming more expensive, all energy purchasers will need to undertake long-term financial projections and develop strategies to generate and procure low-carbon energy, and reduce energy consumption, to help reduce the impact of future price rises. This will particularly affect large energy users in the county, both in the public and private sectors, and impact on the viability of many SMEs.
- 4.5.3 Household energy prices have also increased in recent years, tracking sharp increases in energy tariffs. Fuel poverty is increasing in West Sussex and is particularly prevalent in urban areas of the coastal strip and in rural areas in the north of the County where properties are not connected to the gas network and rely on more expensive fuels such as heating oils⁵.
- 4.5.4 In addition Excess Winter Deaths (EWD) are above the national average in Adur, Horsham and West Sussex generally, with a direct correlation between cold homes and number of deaths.

4.6 Key Issue 3: Environmental Sustainability

- 4.6.1 There is a widespread global commitment to reducing carbon emissions. Successive UK governments have introduced legislation, including the Energy Act 2013 and the Climate Change Act 2008, to drive the transition from a carbon-intensive energy regime towards a low-carbon economy. In parallel, policies have been introduced to incentivise low-carbon energy generation and reduce energy consumption, including the Carbon Reduction Commitment (CRC) and Climate Change Levy (CCL).
- 4.6.2 Electricity Market Reform is also intended to put in place the institutional and market arrangements to deliver security of supply at least cost to the consumer, but local action is also needed to meet the UK's carbon and renewable energy targets.

4.7 Implications

- 4.7.1 Through its Sustainability Strategy, the County Council is committed to meeting a challenging carbon reduction target of 50% by 2025. This will be delivered in a number of ways, including through the Your Energy Sussex work programme, waste reduction initiatives and improvements in sustainable transport. In addition, the County Council purchased £616,064 of Carbon Reduction Commitment (CRC) allowances in 15/16. If the County Council does not implement energy saving measures, this cost will exceed £900,000 in 2018.

4.7.2 As the national drive to de-carbonise energy gathers pace, all large scale energy purchasers will need to take account the additional cost of carbon taxes alongside energy prices when budgeting for future energy consumption.

5. FUTURE ENERGY SCENARIOS

5.1 The National Grid is responsible for maintaining a secure, balanced energy system in the UK and has responded to the Energy Trilemma by setting out how long-term security of supply can be secured in four different scenarios.

5.1.1 In these four Future Energy Scenarios there are high or low levels of equity (as measured through Prosperity) and high or low levels of environmental sustainability (as measured through Green Ambition). See table 1 below.

Table 1: Future Energy Scenarios as described by National Grid

	Low Green Ambition	High Green Ambition
High Prosperity	Consumer Power	Gone Green
Low Prosperity	No Progression	Slow Progression

5.1.2 The energy infrastructure required to achieve each different scenario varies widely, as does the likely level and type of investment required to achieve them and the future fuel mix underpinning them. In order to meet UK carbon budget targets and to support national efforts to limit global temperature increases to 2 degrees above pre-industrial measures, only a Gone Green scenario is likely to achieve this ambition.

5.1.3 A Gone Green scenario (as described by National Grid) is one of moderate economic growth and a high level of green ambition, which combine to create a County where the ambitions of communities and businesses are not constrained by their current financial limitations. Key attributes of this scenario also include:

- an increase in future power demand (owing to electricity becoming more commonly used to heat buildings and fuel transport)
- a decrease in future gas demand for heat (owing to rollout of heat pumps)
- an increase in the proportion of the national fuel mix provided by renewable energy
- a prompt and widespread rollout of smart meters to buildings
- a new set of electricity interconnections with a European 'supergrid' which will lower the cost of power in participating countries; reduce power station unreliability and allow for greater use of renewable resources
- rapid development and deployment of carbon capture & storage and electricity storage technologies

5.2 The West Sussex Picture

- 5.2.1 The prevailing Future Energy Scenario for different communities in West Sussex can be assessed through the use of specialist customer segmentation databases that quantify the level of prosperity and green ambition in the County. Early analysis of this database by the County Council indicates that communities in West Sussex are twice as likely to maintain a high green ambition – indicating a Gone Green scenario – particularly in the rural areas.
- 5.2.2 Adopting this scenario for West Sussex is more likely to align with national priorities and to attract inward investment. It is aligned with the National Infrastructure Delivery Plan⁶ as informed by the recommendations in Smart Power; A National Infrastructure Commission Report⁷.

6. PRIORITIES AND OBJECTIVES

- 6.1 The strategy has four priorities and each priority is supported by a number of objectives. The priorities and objectives demonstrate how West Sussex County Council is responding to the challenges of a volatile energy market and the challenges presented by the Energy Trilemma. It also supports both residents and businesses in a Gone Green scenario as well as steering energy investment to the County.

Priority 1: To reduce energy consumption and increase energy efficiency across the West Sussex County Council estate

Objectives

- To deliver energy efficiency and energy reduction programmes for the County Council's corporate estate (including schools) to reduce running costs and achieve carbon reduction targets.

Priority 2: To integrate low-carbon energy generation and infrastructure into the development of West Sussex County Council assets

Objectives

- To include local low-carbon energy generation in future decisions around waste;
- To identify the role of West Sussex County Council land in low-carbon energy generation.

6. National Infrastructure Plan 2016-2021. Cabinet Office and HM Treasury

7. Smart Power: A National Infrastructure Commission Report, March 2016

Priority 3: To work in partnership with our communities and stakeholders to tackle fuel poverty and identify affordable energy efficiency and low-carbon energy opportunities

Objectives

- To develop and support new projects that reduce the cost of energy to domestic and non-domestic customers.
- To increase the number of available low-carbon energy options available to urban and rural communities, particularly those that are dependent on high-cost, high-carbon fuels;
- Work with partners across the public sector to identify opportunities to improve energy efficiency on their estate and investigate the suitability of low-carbon energy schemes;
- Work with businesses and business parks to support a programme to reduce energy consumption;
- Work with the Fuel Poverty Coordinator for West Sussex to develop joint approaches and initiatives to tackle fuel poverty and support residents on low incomes.

Priority 4: To develop the commercial provision of low-carbon energy and energy-related services in West Sussex and ensure the creation and retention of jobs in this area

Objectives

- To develop key, strategic relationships with the District Network Operators (DNOs) to ensure the energy infrastructure needs of West Sussex are being met;
- To develop new finance models such as social bonds or Energy Service Companies to increase investment in the West Sussex low carbon economy;
- To apply the CITB Construction Skills Framework which requires 1 FTE (or equivalent) to be created or maintained for every £1 million of spend. The County Council is a signatory to this framework.

6.3 Further information on the delivery of these objectives is contained in the Energy Action Plan.

7. CORE PRINCIPLES

7.1 The Strategy is underpinned by six key principles. All energy-related projects and initiatives will need to demonstrate that they can be delivered in accordance with the relevant principles. Compliance will be monitored through the action plan reporting which can be found in section 8 of the strategy.

7.1.1 **Wellbeing:** Projects in the community must help to improve wellbeing and reduce fuel poverty. All projects must deliver clear benefits to the people of West Sussex.

7.1.2 **Maximising business opportunities:** Projects must generate enough income to pay back the initial investment and help to create new sources of income in the longer term. Internal rates of return (IRR) will be examined on a project-by-project basis; however, a starting point IRR of 6% is envisaged.

- 7.1.3 **Sustainable economic development:** Targeted recruitment and training opportunities will be identified alongside any projects to ensure we get maximum economic benefit from any initiatives.
- 7.1.4 **Increasing energy security:** Projects must support increased energy security and protect communities from price volatility.
- 7.1.5 **Reducing consumption and increasing energy efficiency:** Projects must reduce energy consumption, leading to lower costs for all.
- 7.1.6 **Reducing carbon liabilities:** By reducing the amount of energy West Sussex County Council consume from fossil fuels, this will reduce carbon emissions and, as a result, carbon tax bills will be lower. All projects must demonstrate how carbon will be reduced and by what level.

8. IMPLEMENTATION

- 8.1 The Energy Action Plan sets out the first programme of actions for delivering the West Sussex Energy Strategy over a four-year period starting in 2016. The actions and initiatives are grouped under the relevant priority and objective.
- 8.2 The action plan contains:
- A phased programme of actions which identifies how and when the priorities will be achieved;
 - Qualitative and quantitative targets to measure the effectiveness of actions.

9. MONITORING AND REVIEW

- 9.1 The Action Plan will be monitored and reported on a regular basis to take account of progress. Reviews will include:
- Quarterly monitoring against the action plan and reporting to members and partners;
 - Annual progress reporting to internal and external audiences;
 - Annual monitoring of energy generation and installed capacity;
 - Annual monitoring of economic benefit by measuring investment in energy projects, income retained in local economy through renewable energy supply and cumulative job creation.
- 9.2 The corporate priorities will be reviewed every year taking into account progress made against each objective and other factors, e.g. political and policy changes.
- 9.3 It is intended that the current action plan will be followed by subsequent four yearly action plans. The content of future plans will be informed by the implementation of the current plan and the issues that emerge during the plan period, including research into suitable and relevant areas of demand, technologies available and cost implications and the contribution to carbon targets as outlined in the Sustainability Strategy.