



Corporate Landlord Energy and Carbon Strategy 2019

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1. Why we need an Energy Strategy?

1.1. Introduction

Bridgend Council's Energy Strategy helps us to ensure value for money in the management of our operations and to fulfil our role as a community leader.

A low carbon and secure supply of energy is essential for our economy. We need energy to heat and light our homes, to power our businesses and to transport people and goods. At the same time, we need to design out energy waste, reduce energy consumption and minimise carbon emissions from the generation and distribution of energy to help combat climate change.

Energy is a significant spend area for Bridgend County Borough Council (BCBC), with annual expenditure exceeding £4m including gas and electricity used in buildings and street lighting.

The use of energy is vital in our operation and the provision of services to our community. It is essential that BCBC effectively manage energy consumption if we are to avoid the impact of price increases on the products and services we provide. In this context the case for investing energy efficiency has never been stronger and of course the cheapest energy is the energy we don't use.

2. Local Drivers

BCBC has setup an ambitious Corporate Plan that clearly sets out a small set of important and long-term priorities so that amongst all the complexity of increased demand and reduced resources BCBC can keep a clear focus on what is really important for our communities.

In relation to energy, The *Corporate Plan 2018-22* suggest the following priorities:

- **Priority One: Supporting a successful economy** - Working towards a Low Carbon economy.
- **Priority Two: Helping People to become more self-reliant** – Support to decrease energy wastage in our community buildings.
- **Priority Three: Smarter use of resources** – Improve control of resources and energy awareness

Additionally the *Asset Management Plan 2021* also supports these principles:

"To have a lean sustainable estate, that supports delivery of the best local services in Wales and enables BCBC to live within its means."

3. Purpose and Vision

BCBC view to improve energy management should be focused on tackling the Energy Trilemma. Due to the increasing energy demand and the investment requirements to meet future energy scenarios, the Energy Trilemma is described by the following 3 variables:

- Energy **Security** – to guarantee a secure and constant energy supply based on growing demand
- Energy **Sustainability** – to maximise proportion of renewable energy sources and decrease carbon emissions
- Energy **Affordability** – to procure best deals on energy supply

Also the council needs to address the following needs:

- Meet its statutory responsibilities with regard to energy management and reporting.
- Respond to overall council budget pressures.
- Manage costs taking into account volatile energy markets and increases in energy prices.
- Demonstrate leadership in reducing carbon emissions.
- Reduce the impact we are having on the rate of global warming through the burning of fossil fuels.
- Reduce energy waste and costs.

As local authority funding changes and demand for services increase, continual improvement in energy and carbon management will contribute towards controlling and reducing energy, fuel and water consumption, and spend, contributing to development of the Council's financial resilience, and protection of front-line services.

4. Policy Aims and Objectives

BCBC should be focused on the following key objective:

- Minimise Co2 Emissions
- Reduce Energy Consumption and costs of our Estate
- Minimise Environmental Impact
- Encourage and promote energy efficiency
- Make use of Renewable/Low Carbon technologies where economically viable to reduce risk of supply, reduce costs and generate income to partially offset remaining costs.

5. Actions and Activities Plan

In order to meet our objectives a series of actions and activities have been identified which will enable the council to deliver the degree of improvement required. It is recognised that this may be achieved in eight key areas:

1. Comply with all relevant **legal and legislative requirements** relating to energy use, consumption and efficiency
2. **Optimise energy performance** of the BCBC Building Portfolio.
3. **Support schools** to reduce energy, costs and emissions
4. Improve engagement, **communications and training** about energy throughout all departments within the Council
5. **Engage with staff** to actively improve Energy and Costs saving
6. **Effective Metering and Monitoring** to effectively reduce avoidable waste
7. **Energy audits** to identify, quantify and prioritise energy saving opportunities
8. Increase participation of **renewable energy technologies** to decrease dependency on fossil fuels.

A co-ordinated and effective strategy and action plan will enable the development and implementation of specific defined activities and projects, delivering set reduction targets and savings.

The following paragraphs give more detail to the key areas listed above:

5.1. Legal and Legislative Requirements

The Energy Contracts Manager will monitor changes in legislation and national policies to ensure compliance with regulatory requirements.

5.2. Optimise the Asset's Energy performance

To ensure we optimise the energy performance of our building portfolio the Policy will focus on the following key areas:

- **Property Rationalisation** – The tools and processes put in place by the Asset Management Plan (AMP) 2021 facilities a corporate approach for the release of surplus underperforming properties to achieve the aim of fewer but smarter buildings.
- **New build and Refurbishment** - New buildings will aspire to achieve high standards of energy management performance and environmental quality. In particular, new capital builds which lend themselves to innovative forms of sustainable design and demonstrate Best Practice will be actively encouraged. To this end, the Energy Unit will contribute actively to the development and delivery of major construction projects.

We will seek to minimise energy consumption associated with new buildings. This approach will include exceeding latest building regulations, specifying compliance with published good practice energy benchmarks from official sources, such as CLAW, DEFRA, CIBSE, RIBA and OGC and by making best use of low carbon design strategies and Passivehaus design strategies where appropriate.

- **Operations**-Improve energy efficiency of our procedures through efficient building operation.
- **Best Practise**-Identify best practice-operating protocols for energy efficient building use. Energy manager will focus on developing building specific energy plans and/or targets to ensure council owned buildings minimise excess energy use.
- **BEMS**-Effectively Manage BEMS (Building Energy Management Systems) in core buildings to keep running costs relating to Energy as low as possible.
- **Invest to Save**-Invest in energy efficiency/carbon reduction projects on a prioritised basis utilising internal and external financing.

5.3. Support Schools

Schools in BCBC account for 61% (2018) of the councils total energy consumption. Schools are therefore a key contributors to achieving our aims and objectives.

Going forward, our strategy is to help schools manage their energy and reduce the demand for energy, allowing schools more to direct spend (SLA) towards frontline services.

A new Energy Service Level Agreement has been created which aims to:

- Develop, modernise and future-proof our educational assets
- Reduce carbon emissions across the county and Country
- Make our educational assets more comfortable to work and learn in
- Reduce on-going and back-dated maintenance spend
- Reduce energy spend over the estate making significant, long-term savings for school and authority
- Provide on-going training and guidance for schools to determine how to reduce energy usage.

The Energy SLA can be split into the following parts:

- **Capital Investment Plan under SLA**

£1.3 million has been allocated for the Capital Energy Fund which will be used to invest in Energy Saving technologies and Infrastructure in Schools and Corporate Buildings.

Signing into this SLA will allow our energy partner to undertake a survey of targeted schools and identify opportunities to improve energy efficiency.

These opportunities will be prioritised and spend allocated to install energy and cost saving technologies reducing both our energy consumption and CO₂ emissions.

The benefit from the savings for the first five years, will be used by the council to repay the money it has borrowed to fund the scheme. Thereafter the school will receive 100% of the

savings in addition to the “free” mechanical and electrical upgrades the school will receive, such as modern lighting, more efficient boilers and improved insulation.

- **Operational Improvements under SLA**

Part of the service provided by BCBC within the Energy SLA is the analysis of electricity and gas consumption data using specialist Monitoring and Targeting Software Systemslink. This data will be used to:

- Identify the most energy efficient schools and those which need more help and encouragement.
- Investigate Increases in energy costs and data anomalies which can be caused by:
 1. Boiler Plant not programmed correctly or running continuously.
 2. Electric equipment left switched on or during periods of un-occupancy.
 3. Identify Equipment Faults

Other measures to maximise Carbon Cost saving in Schools will include:

- Targeting Schools with dissemination of Energy Wastage data and good housekeeping practises.
- Assisting schools in developing no cost /low cost Action plans by identifying key actions that can be undertaken to reduce Energy Costs.
- Develop a coordinated approach to carbon management within schools.
- Provide ongoing training and guidance for schools on how to reduce energy usage.

There is no investment cost in carrying out these actions other than staff time.

Any savings generated as a direct result of the Energy Unit intervention will be discussed and evidenced with heads, and once agreed the council will receive a one-off payment of 25-50% to cover the cost of implementing the change.

5.4. Communication and Training

The behaviour of all staff and users of council buildings has impact on energy performance and utility costs. Their first main task in improving communication is creating a new communications plan. The plan will focus on utilising In house communication channels focused on the dissemination of energy good housekeeping practices in council buildings, aimed at staff and sub-contractors.

The communication plan will be achieved through a variety of activities and media, delivered through external, top-down and peer-to-peer communication. The key aims are as follows:

- Inform external stakeholders of the council’s activity in relation to carbon management
- Keep staff informed of carbon reduction aims, projects and progress
- Promote the changes staff can make to cut energy consumption via Intranet and emails
- Develop an intranet page focused on the dissemination of energy good housekeeping practises in council buildings aimed at schools
- Sharing good practise and success stories with staff
- Utilisation of energy reporting software to provide energy reports to key individuals in order to engage and drive down energy costs
- Electronic Suggestion Box where staff can:
 1. Report Signs of significant energy loss

- 2. To bring forward ideas regarding alterations to working practise, buildings, use of equipment that might further promote the Energy and Cost Saving
- Integrating energy efficiency into Council training and Staff induction programmes.
- Ensure building managers are trained to minimise their building's running costs and environmental impact

5.5. Engage with Staff

Energy Management is not the sole responsibility of the Energy Contracts Manager. **Energy Management is everyone's responsibility.**

The Energy Unit will aim to promote energy efficiency awareness and responsibilities to all staff as building users:

Each of the council services employees and contractors has a responsibility to:

- Where appropriate, consider the energy impact of their current projects/activities
- Consider how their behaviour impacts on the council's carbon footprint
- Act responsibly and use energy efficiently
- Electrical equipment – **Switch off** when not in use.
- Lighting – **Switch off** when not required.
- Heating - **Check** the room temperature first and then adjust controls, to the appropriate setting not to max. **Do not overheat rooms!**
- Cooling - **Check** is the heating on? Can you adjust controls before opening a window or switching on air conditioning?
- Communication – **Inform** facility management when you see a waste of energy or when you have an idea to reduce wasted energy. If you do not inform facility management, the issue may not be resolved.

5.6. Effective Metering and Monitoring

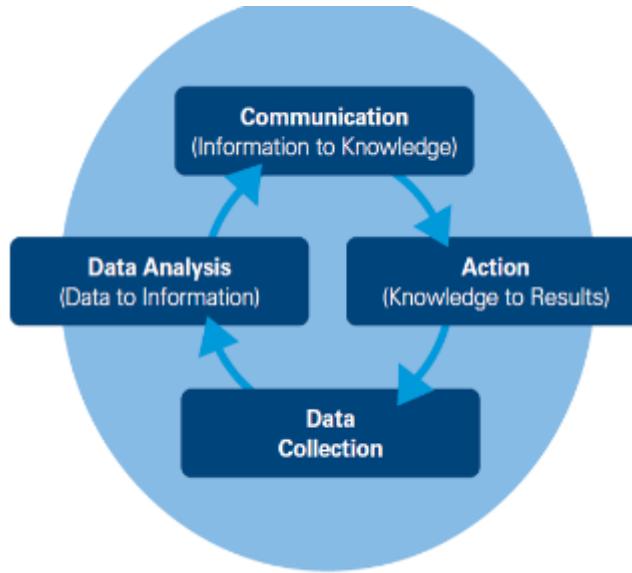
Energy metering and monitoring gives us a better understanding of the council's energy consumption and provides the opportunity to identify and tackle energy waste.

The primary function of any energy management system is to ensure that it is founded upon accurate energy consumption data. The Council has invested in Automatic Meter Reading Technology (AMR) on many of its larger energy meters. AMR allows for the consumption to be measured by the Energy Suppliers on a half hourly basis. The Council can access this data 24 hours later.

It is hoped that by monitoring and analysing this data we will be in a better position to:

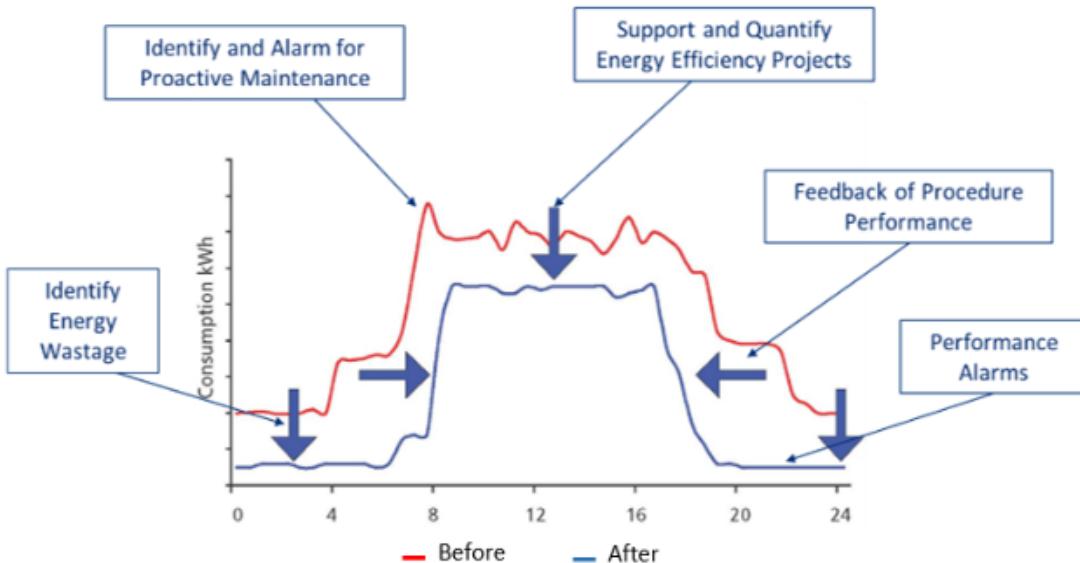
- Control energy usage and costs
- Identifying anomalies in consumption to allow any problems in a building to be corrected as soon as possible.

- Maintain occupant comfort resulting in additional benefits such as increased productivity in the workplace.



The following procedure will be implemented to reduce Avoidable Waste within BCBC:

1. **Data collection:** Collation of all metering data in Systemslink Software and Systemslink Web Portal.
2. **Data Analysis:**
 - Verify Accuracy
 - Convert raw data into usable forms (Filter/Organise)
 - Compare data with previous weeks/years
 - Identify areas of interest or concern



You can achieve significant energy savings just by understanding your data. The red line on the graph shows the energy use over a typical day before any energy monitoring. The blue arrows highlight areas where energy savings may be achieved. The blue line demonstrates improved performance to be monitored and reported.

3. Reporting:

- What are the results/key findings of the analysis?
- Summary of key findings to management with more detailed reports to key end users and responsible persons.
- Production of reports when excessive energy use is identified.

4. Action:

- Data reports are acted upon.
- Energy Audits carried out at problem sites.
- Energy cost saving action plan created and implemented.

5. Review and improve:

- Obtain feedback and Monitor Impact of energy action plan.
- Frequently refresh analysis and use the greater understanding that the data gives to support wider energy management initiatives.

The implementation of this procedure will result in identifying poorly performing buildings and energy waste, enabling resources to be targeted effectively and facilitate the development of an energy efficiency investment programme.

5.7. Energy Audits

The Energy Unit will aim to carry out periodic energy audits based upon energy monitoring data and poorly performing buildings.

These audits will aim to identify, quantify and prioritize tangible opportunities to reduce energy use, costs and carbon emissions in a building or on a site. The full co-operation of designated building managers and users will be required during these audits.

5.8. Renewable Energy Technologies

Promote the installation of renewable energy technologies across all existing buildings within BCBC portfolio to decrease dependency on fossil fuels and electricity from the grid.

BCBC should also aim to near zero emission buildings to all new buildings and therefore renewable technologies should be promoted. Most common renewable energy technologies are: solar thermal, solar photovoltaic panels, heat pumps (GSHP and ASHP) and, less likely, hydro and wind.

Also, ensure that when opportunities for the installation of renewable energy technologies are identified, business cases should reflect not only cost savings and payback periods but also lifetime saving carbon emissions and estimated annual increase on energy tariff in order to see the great potential of renewable energy technologies against the traditional fossil fuel alternative.

6. Conclusion

Achieving an affordable, low carbon and secure energy supply is vital for the future of the authority. As fuel costs continue to raise year on year, the importance of controlling our energy consumption and associated carbon dioxide emissions has never been so high.

The council needs to take action, to ensure we drive down our energy consumption, and look to provide local, low carbon energy sources. This strategy sets out the Corporate Landlord approach towards energy and carbon management and identifies key actions for the Council to take to deliver reductions in carbon emissions and energy costs of operating BCBC buildings.

It is hoped through this strategy Bridgend Council will see many benefits including improvements in energy efficiency, minimisation of avoidable wastage, recognition of the energy efficiency projects undertaken in different areas, and a greater understanding of how we can contribute to climate change mitigation.

This policy and strategy will be reviewed annually by the Energy Contracts Manager and revisions reported to the Corporate Landlord Project Board for approval.