

Blaenau Gwent Energy Prospectus

Annual Review 2020 -2021



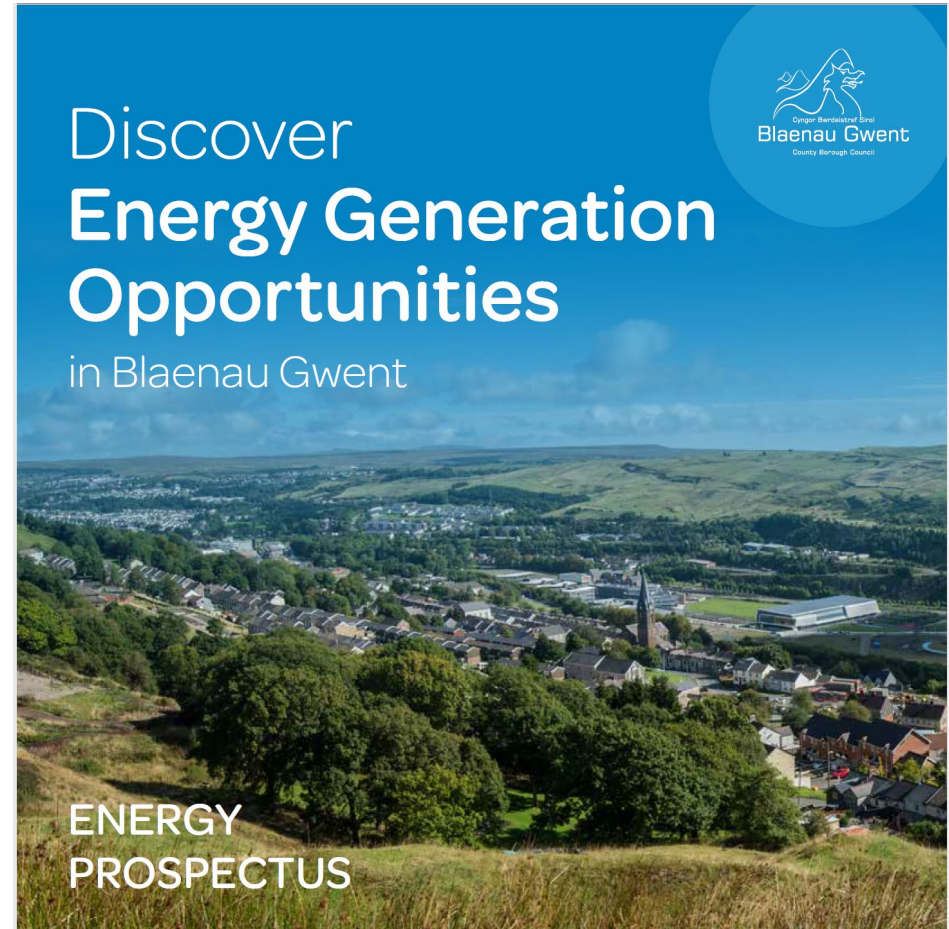
1. Introduction

The Blaenau Gwent Energy Prospectus was approved by Regeneration Scrutiny Committee and Executive Committee in December 2019.

The first Annual Review for 2019/20 was presented to the Regeneration Scrutiny and Executive Committees in December 2020.

This Annual Review seeks to provide a progress update on projects for the last 12 months and emerging opportunities for the future.

The work and projects carried out to develop and deliver upon the Energy Prospectus will support the work needed as a result of the Council's decision to adopt a Decarbonisation Plan and to become net zero by 2030 alongside the declaration of a climate emergency.



1. Introduction

Blaenau Gwent County Borough Council
Decarbonisation Plan



2020 to 2030



Transition Pathway

Challenges in reaching Carbon Neutrality

The Council approved the Decarbonisation Plan in September 2020 and declared a Climate Emergency.

The Decarbonisation Plan looks at our current Carbon Impact as an organization and sets out the key challenge areas that would support us in becoming Carbon Neutral by 2030.

The Projects within the Energy Prospectus will help us on the journey to Carbon Neutrality through identifying opportunities for renewable energy generation and ways that we can use energy more efficiently in the future.

Collaboration across the organization and with stakeholders will be key in delivering upon the work challenges identified within the Decarbonisation Plan and achieving our net zero target.

2. Existing Projects Overview

The table below provides a quick reference to the status of current projects. Further detail for each of the projects is included throughout this document.

Project Name	Total Cost / Capex	Funding Source	BRAG Status	Comments
Re:FIT	£4.1 million	Salix Loan		Works completed. Work is ongoing around monitoring and evaluation.
The Works District Heating Expansion	£1.2 million	Private & Public Sector		Lime Avenue Business Park units have been connected to the District Heating Network. Further expansion is possible within the site.
District Energy Network Development	£9 million	Private & Public Sector		Opportunities identified but dependent upon future development across the sites.
Wind Generation	£4.6 million	Private & Public Sector		Progress has been made with one site to reach full business case development stage.
Hydro Generation	£500k	Private & Public Sector		Funding secured for feasibility studies. Phase 1 of a 2 Phase process completed.
EV Charging Infrastructure	£465k	OLEV & Public Sector		Gwent Regional Project. Installations completed. Final draw down of OLEV money to be undertaken.

3. New and Emerging Projects

The table below provides a quick reference to new and emerging projects

Project Name	Total Cost / Capex	Funding Source	BRAG Status	Comments
CCRCD Taxi ULEV Infrastructure	£1.82m (for the region)	Cardiff Capital Region City Deal		Rapid Charge points for taxi drivers in four BG Town Centres
CCRCD Public Charge Points Fund	£2.87m (for the region)	Cardiff Capital Region City Deal		Fast charge points in 12 locations with further sites to follow
EV Infrastructure Fund	£300k	WLGA		Fast Charge points for BG Schools, Social Services Buildings and Anvil Court.
Low Emission Fleet		Welsh Government		Fleet review completed. Procurement of first ULEV fleet completed.
Whole Systems Business Research Innovation for Decarbonisation Challenge (WBRID)	Ph1 £100k Ph2 £500k	Welsh Government		Phase 1 completed. Phase 2 started July 2021 and covers deployment of R&D innovative solutions from phase 1.
Community Municipal Investment Bonds	£400k	Community / Private Investment		Launch of BGCBC Green Bonds to raise public finance for investment into green projects and raise awareness of climate change.

3. New and Emerging Projects

Project Name	Total Cost / Capex	Funding Source	BRAG Status	Comments
LoRAWAN Digital Technology for Energy Consumption Monitoring	£30K	Welsh Government		Digital infrastructure monitoring of solar pv with a view to reducing energy consumption. This relates to solar installations via the RE:FIT programme.
Tech Valleys Business Improvement Grant	£500k	Tech Valleys		Application for funding to decarbonise Crown Industrial Estate as deployment of Smart Living Programme R&D.
HyBRID Hydrogen Feasibility Studies.	Tbc	Welsh Government	n/a	Exploring partner opportunities to act as a test site for hydrogen feasibility and deployment under the Welsh Government HyBRID SBRI Fund 2021.
Horizon Europe	Tbc	European Union	n/a	Monitoring forthcoming funding calls with a view to entering R&D partner trials.

4. RE:FIT – Energy Efficiency

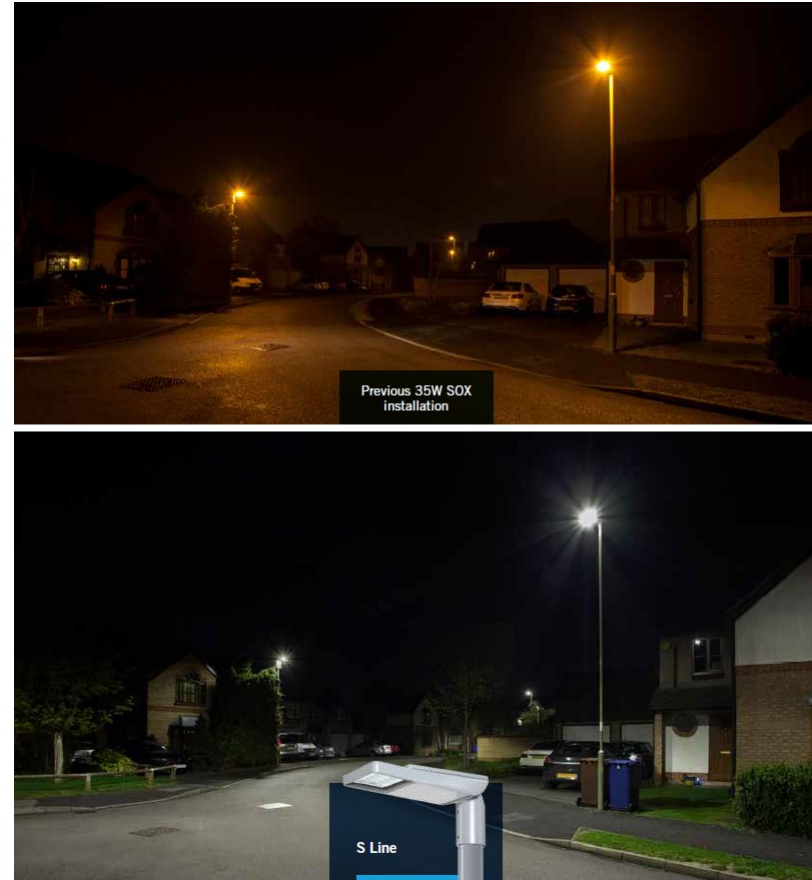
Street Lighting

Around 6,000 of the Council's street lighting stock was non-LED and therefore not the most energy efficient. The Council also operated multiple management systems some of which were obsolete and no longer supported.

We looked at the Council's street lighting inventory and identified that there were 6,099 lights suitable for replacement with LED.

An initial phase of the programme to replace the lanterns started in 2020 and this together with an additional phase was completed in April 2021.

To ensure that the expected savings achieved are in line with those guaranteed through the Contract, Measurement and Verification will be put in place and reviewed for up to 8 years after the installation.



Street Lighting Installation Before and After

5. Renewable Energy Generation – Wind Power

Within the Energy Prospectus approved in 2019 we identified two opportunities for Wind Generation within Blaenau Gwent.

Within Future Wales 2040 the National Development Framework for Wales published by Welsh Government includes a number of pre-assessed areas for wind turbine development.

Discussions are ongoing with Western Power to understand import/export capacity within the current network to accommodate proposed projects.

Local generation that is used locally onsite would reduce energy being directly exported to the grid. This may have financial benefits and play a key role in our ongoing journey to carbon neutrality.

One of the proposed sites shall be developed to business case stage and seek Council approval in 2022. The second site has identified grid export capacity constraints. Options to mitigate this and maintain financial viability will be investigated.



6. Renewable Energy Generation – Hydro power

In 2020, the Council was awarded £20,000 from the Rural Development Fund LEADER programme to support the Council in appointing consultants to assist with exploring the potential for hydro power generation across Blaenau Gwent.

After completing a tender process to find technical consultants to help us explore potential hydro power opportunities, Dulas Ltd were commissioned to undertake a technical modelling and feasibility of sites across Blaenau Gwent for hydro power

Using the LEADER funding, consultants Dulas identified two sites in the Cwm and Llanhilleth Wards alongside the river Ebbw with potential to carry out feasibility studies.

The findings of the feasibility study suggested that whilst the development of hydro generation would support local energy demand, the level of generation is extremely low when compared to the level of investment required. For this reason we have determined it is not financially viable to take either of the two schemes forward at the current time.

Dulas are currently working on feasibility of further sites across the rest of Blaenau Gwent which will be reported on in due course.



7. Collaborative Project – EV Charging Infrastructure

The Gwent Regional Local Authorities EV project was a collaboration between:

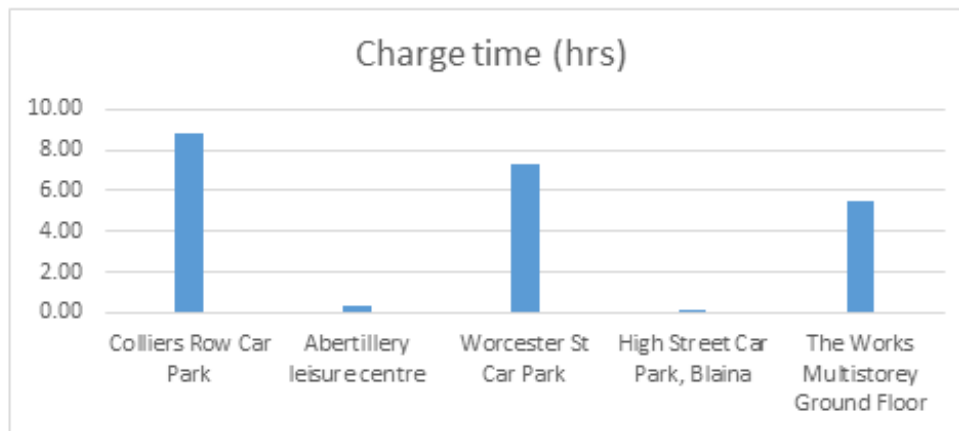
- Blaenau Gwent County Borough Council
- Caerphilly County Borough Council
- Monmouthshire County Council
- Newport City Council
- Torfaen County Borough Council

Under this project we have installed 63 charge points across 34 sites. Blaenau Gwent took the role as the Lead Partner for the Procurement and Project Management of the charge point Installation.

All charge points across Gwent are now operational. Since being launched all charge points have seen usage (see graph for September 2021 below). In some cases this has been regular usage and less frequent for others. Whilst usage at some sites is lower than others having the infrastructure in place enables residents and visitors to Blaenau Gwent to charge their vehicles.



September 2021 usage data



9. CCRC D Taxi Charging Infrastructure

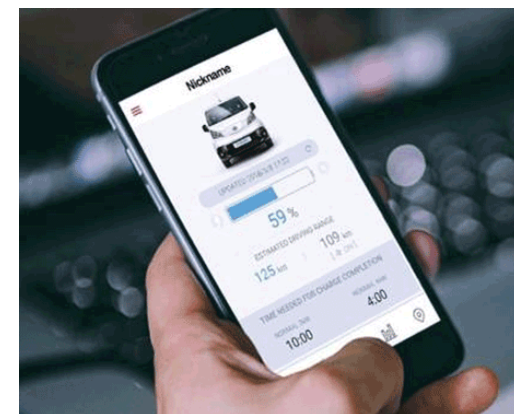
Cardiff Capital Region City Deal (CCRC D) has secured funding from Welsh Government to install rapid charge points for taxi ranks across the region and purchase electric taxis for deployment across the City Region and offered under a 30-day 'try before you buy' free trial for taxi drivers.

CCRC D has purchased 44 wheelchair accessible electric taxis that will be available for trial across the region. The trial is expected to operate for two years and Blaenau Gwent has taken delivery of two of the electric taxis which will be available for trial by Taxi Drivers.

Day to day management of the taxi trials will be undertaken by a management company that will be appointed by CCRC D. A tender process has been undertaken to appoint a management company and it is hoped this will be in place by the end of 2021.

Commissioning of the rapid charge points throughout the City Region area is underway.

Once the charge points are operational we will work with CCRC D to develop communications that will raise awareness and promotion of the scheme.



10. CCRC – Public Use Charging Infrastructure

Within the Region 159 public use charging sites have been identified for on street, car parks and transport hubs.

The Council has put forward 12 sites to be included as part of this contract. The contract has just been awarded with an expected completion date of March 2022. This may be subject to change as a result of current global supply chain issues which are affecting the market.

The contract for the region will be awarded under a concession arrangement identical to that of the taxi infrastructure and will include a share in profit.

An All Wales Framework has been included within the tender to enable other public bodies (other regions within Wales, TFW and WG) to deliver future EV infrastructure under this framework.



11. EV Infrastructure Fund

Within Prosperity for All: A Low Carbon Wales, Welsh Government has set ambitious targets for the decarbonisation of the public fleet. One of the key targets and ambitions is that all new cars and light goods vehicles in the Public Sector fleet are ultra-low emission by 2025 and where practicably possible, all heavy goods vehicles are ultra-low emission by 2030.

Welsh Government has awarded a £300k EV Charging Infrastructure grant to each Local Authority to provide infrastructure for Council fleet and staff. Local Authorities have been encouraged to develop a ULEV (Ultra-Low Emission Vehicles) Transition Plan to detail the plan to transition Council fleet to a ULEV fleet and also provide infrastructure across the borough for employees, residents and businesses.

Officers have been working alongside the Community Services, Education and Social Services Departments to identify suitable sites and have determined charging infrastructure can be provided at:

- 9 schools
- Community Meals Service, Pond Road
- Anvil Court
- Bert Denning Centre
- Augusta House

The next step will be to agree the location of the charge points with our EV Contractor and it is the intention that the sites will be added into the Concession Agreement already in place.



Community Meals Service, Pond Road



Bert Denning Centre, Brynmawr



Augusta House, Ebbw Vale

8. Low Emission Fleet

The Council is currently preparing a 10 - 15 year Ultra Low Emission Vehicle (ULEV) Transition Plan. In November 2020 the Council completed a Low Emission Vehicle Fleet Review with Consultants Cenex. The fleet review has considered our current fleet, low emission vehicle technology options, performance reviews and infrastructure review.

Within the Fleet Review Cenex have identified vehicles that could be replaced by low emission technologies with minimal change to operating patterns and ownership periods. It also presents a set of recommended next steps to implement replacement vehicles.

At the time of the review our fleet consisted of 97 vehicles and included passenger cars, light commercial vehicles, large minibuses and a range of trucks. Our fleet contributes 800 tonnes of CO2 annually and 63% of these emissions come from rigid trucks (12-18t).

The review found that battery electric vehicles within the light commercial segment represent the best opportunity for Blaenau Gwent CBC to introduce low emission vehicles into the fleet in the short term.

A order has been placed for the first of these vehicles and they are expected to arrive in November/December 2021.



City of London 26t electric RCV supplied by NRG Fleet Services



12. Research and Innovation – Smart Living

The Welsh Government Smart Living Initiative has been supporting the Council on its ambition to catalyse local energy through the building of separate but then integrated energy platforms across commercial/business-public-social/domestic assets.

In 2020, Welsh Government invited the Council to apply for funding to run a Small Business Research Initiative type project. This type of project enables public sector bodies to connect with innovative ideas and technology businesses to provide innovative solutions to specific Public Sector challenges and needs. The Whole System Business Research Innovation for Decarbonisation (WBRID) challenge is a two phase pilot to evaluate and demonstrate solutions for Decarbonisation.

BGCBC are looking for innovative solutions which will support energy generation, supply, demand and storage for commercial end users (and in the future domestic end users) across Blaenau Gwent and to work towards creating zero energy parks as a USP for Blaenau Gwent.

The challenge will be split into two phases:

- Phase 1 Initial concept design and feasibility
- Phase 2 Detailed design and demonstration



Industrial Estates Across BG

The Challenge

Developing Smart Industrial and Commercial Energy Platform Solutions to Achieve Net-Zero Outcomes



12. Research and Innovation - WBRID

Phase 1 – Four Suppliers developed feasibility studies to meet the challenge of zero energy business parks:

In Phase One, we wanted explore how we create a local energy system that would meet industrial and commercial energy requirements and work alongside domestic energy requirements to help alleviate fuel poverty.

Our contract notice was issued on 23rd December 2020. To brief potential suppliers we held a Virtual Briefing Event on 19th January 2021. The deadline for submission of applications was Wednesday 27th January 2021.

A total of 11 submissions were received – mixture of single suppliers and consortia. Of these four Companies were selected to go forward into Phase One. The four suppliers undertook initial research and desktop analysis to prepare feasibility studies for their concepts.

Concepts considered included renewable generation, energy storage, energy trading and demand-side management.

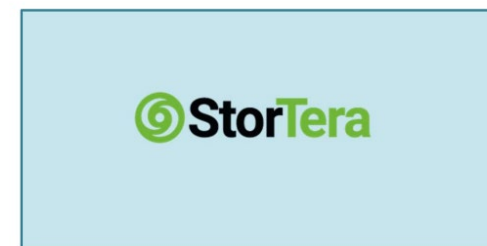
A panel of experts including representatives from Welsh Government and Blaenau Gwent Council assessed the outcomes of the four project studies in Phase 1 of the competition and two companies were invited to participate in Phase 2 to run a demonstration across Blaenau Gwent Business Parks.



Supplier One - Aquatera



Supplier Two - IBECCS



Supplier Three - Stortera



Supplier Four – Urban Chain

12. Research and Innovation - WBRID

Phase 2 – Live demonstration of solutions.

Phase 2 will be a demonstration phase with two shortlisted suppliers. Stortera and BankEnergi have each been given a share of the funding to carry out demonstration of their solutions over the next year.

StorTera are an Edinburgh based energy storage solution provider working to revolutionise the energy storage industry. BankEnergi is a consortium consisting of Consortio, Carbon Track, Wales and West Utilities and BankEnergi. The consortium has worked together on a number of previous projects from whole systems thinking to Prospering From the Energy Revolution (PFER) projects related to energy and flexibility trading.

The companies will be demonstrating their solutions which includes creating an energy trading platform utilising existing renewable energy generation and installing new equipment including battery storage, solar PV, heat pump and Artificial Intelligence (AI) controls. This will optimise performance and energy utilisation with a view to decarbonising business parks.



13. Community Municipal Investments



We pledge to:

1. Explore the launch of a Local Climate Bond within 18 months of COP26, aiming to raise funding for a specific local net zero project(s)
2. Set and share publicly the target dates for completion of the project(s)
3. Provide public updates on the measurable positive impacts – eg. environmental, financial, economic and social – of our funded project(s), including any learnings for the future.

Blaenau Gwent Community Municipal Investment with Abundance Investment and the Green Finance Institute

Blaenau Gwent Council are exploring opportunities to launch Community Energy Bonds as a way for the local community to play a part in raising the funds to support the development of low carbon energy generation infrastructure and technology.

As one of a number of UK pilot areas, the Council has the opportunity to use Community Municipal Investment (CMI) to fund low carbon infrastructure for the Council.

In September 2021, the Council's Executive Committee agreed to move forward with due diligence to consider the risks / issues associated with this route of investment.

As a result this approval, the Council have signed the Local Climate Bond pledge with the UK Government Green Finance Institute. The Blaenau Gwent Climate Bond will support us in raising the funds to make investment in low carbon infrastructure and help us on our journey to become net zero by 2030.