



RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CLIMATE CHANGE CABINET SUB COMMITTEE

28th NOVEMBER 2024

UPDATE REPORT ON KEY ENERGY GENERATION PROJECTS AND RELATED ISSUES

**REPORT OF THE DIRECTOR OF CORPORATE ESTATES IN DISCUSSIONS
WITH THE THE DEPUTY LEADER, CABINET MEMBER FOR COUNCIL
BUSINESS AND CORPORATE ESTATES AND THE CABINET MEMBER FOR
CORPORATE SERVICES, YOUTH PARTICIPATION AND CLIMATE CHANGE**

**Author(s): Anthony Roberts, Head of Energy & Carbon Reduction, and
Jon Arroyo, Energy and Carbon Reduction Manager.**

1. PURPOSE OF THE REPORT

- 1.1 The purpose of the report is to provide an update to Members with regards to the work underway on the development of renewable energy projects and certain other Carbon Reduction related issues.

2. RECOMMENDATIONS

It is recommended that the Members:

- 2.1 Note the contents of this report as part of the ongoing work towards decarbonising the authority's estate and progress towards our carbon reduction targets..
- 2.2 Agree to receiving further reports during 2024 and 2025, providing updates on progress within key areas.

3. REASONS FOR RECOMMENDATIONS

- 3.1 The contents of this report provide background information and key updates on the current situation with regards to the Council's response to Climate Change and in its concerted efforts to decarbonise the Estate and its Assets. It provides an update on the proposals for the Council to build and finance potential renewable energy projects that will make a significant contribution to the Council achieving its Carbon reduction targets, looking towards 2030.

4. BACKGROUND

- 4.1 Officers have previously reported on the ongoing work to investigate the potential of using RCT owned land for the development of major renewable energy projects for both wind, hydroelectric and solar generation, with the assistance of the Welsh Government Energy Service (WGES). These are projects which would be primarily developed by the Council, either exclusively or in partnership with other stakeholders. As such, the projects would both contribute to the increase in the renewable energy provision and carbon reduction in the area, whilst also making a positive economic contribution to the financial situation of the County Borough, which could then be invested in further related improvements or other services for the benefit of citizens.

5. RENEWABLE ENERGY PROJECTS

5.1 Solar Farm Installation

As reported previously, the Council continues to make significant progress in the development of a 6MW Land Based Solar Farm, to be located on Council owned land at Coed Ely. The facility will, when constructed, be an asset owned and operated by Rhondda Cynon Taf County Borough Council. The project has the potential to 'offset' over 1,300 tonnes of carbon per-annum and around 59,000 tonnes CO₂e over the expected 40yr lifecycle of the project. This will take the Council's portfolio of renewable energy potential, from Solar alone, to approaching 9MWp.

A developer has been appointed to construct on behalf of the Council. The construction of the project is now due to start on site during November 2024 with a target completion date in the third quarter of 2025.

5.2 Hydro Electricity

The Council continues to make progress with the development of a 50kW high-head hydroelectric scheme at Dare Valley Country Park, together with a 215kW low-head hydroelectric scheme at Treforest Weir, and both these schemes are the subject of separate reports.

The Team have also now identified and undertaken assessments on a series of potential opportunities for 'high head' Hydro Electric generation across the County Borough. A wider ranking report was completed on over 30 potential sites and further feasibility work was undertaken to assess the potential of a further five of these sites. Some options have more constraints than others, with potential turbine sizes ranging from 30kW up to 250kW. The next step for two of these sites is to look into all land ownership constraints and engage with landowners, if deemed practicable. This will then help determine a ranked viability within the shortlist, and it is hoped that we will have more to report on the potential of these during the first half of 2025.

The Council were also presented with the opportunity to take forward a scheme that had previously been assessed by the Cambrian Village

Trust. This particular high head Hydro scheme is a circa 150kW project, based around the Clydach Vale / Tonypany area. Work is now ongoing to explore the options for private wire connections and how to best use any excess energy, within the local assets and for the benefit of the area. A recent feasibility study shows a favourable project for different abstraction scenarios. Initial ecology works have been completed along with a grid application and a planning pre-application is nearing completion. We have also been awarded £100k in grant funding, from the WGES 'WSRiD Challenge', to help us take the project through to the planning stage.

5.3 **Wind Power Aspirations**

The lack of spare grid capacity at the National Grid (NG) 'Upper Boat' distribution hub continues to prove a barrier to progress, prior to completion of major infrastructure investment works, planned for the grid in the area, over the next 5 to 8yrs.

Notwithstanding the above, the Council was previously successful in obtaining a grid connection from NGED in pursuit of its aspirations to generate renewable energy at the Lewis Merthyr Land Reclamation site, the connection option was for 6MW at 33kV.

Following a feasibility study, and following discussions with both the adjacent developer and the Council's Tips Management Team, it became evident that options for development at the site would be limited to a one turbine scheme only. This limitation combined with a significant increase in the grid development costs, applied by NGED in their periodic cost review of the estimate, meant that the viability of the project was severely damaged.

Discussions had been underway, for some time, with an adjacent 'local' developer who have plans to create a far larger windfarm on an immediately adjacent site. The dialogue sought to explore our options for collaborative working and how it could benefit both parties. In view of the above restrictions, an agreement has now been reached to novate over the grid connection for it to be used to extend the larger adjacent wind farm (*for which planning permission has now been granted*). This action will allow the Council to recover its previous outlay to NGED, and also will also present an opportunity for the developer to combine the grid connection with its own offer, and the build out the turbine on Council owned land. The Council will then enter into a land agreement with the developer, to promote associated mutual benefits, and will also retain options for the Council to invest further, at a later date.

5.4 **Other Solar Aspirations**

Feasibility studies are being undertaken at some of our brown field sites, to determine their suitability for use as future land based Solar Farms. These initiatives are on a smaller scale than the project at Coed-Ely and, given the limitation of grid connection opportunities, the purpose of these potential projects would be to help decarbonise adjacent Council assets,

using the energy 'behind the meter' as a first option, wherever practicable.

A report has been commissioned for the feasibility of constructing a ground mounted solar PV farm/facility at Maerdy/Ferndale utilising unused land neighbouring the secondary school and swimming pool. The site has potential for approx' 300kW installed capacity on the ground and also room for additional rooftop solar PV. Next steps are to complete more detailed assessment of the pool plant for the potential to upgrade using low carbon heat grant funding (see 5.5) and to also look at associated grid connection options, where viable. This is currently looking like a strong project to take forward.

Officers are currently also looking at three other sites around the County Borough, ranging from targets of 1.5MW, to 300kW and then one at 105kW. Two of these feasibility studies are at/on former land reclamation sites and one is within the grounds of a school. It is hoped that we will have more to report on the potential of one or more of these sites at a future meeting.

5.5 **Low Carbon Heat Targets**

Officers are currently assessing opportunities to participate in the WGES Low Carbon Heat (LCH) Projects challenge, and the intention is to submit a bid (*or bids*) in the near future.

Three sites currently being assessed for Air Source Heat Pump technology (*including the National Lido of Wales - as referred to in the report for Treforest Weir*) and the potential to include further solar PV at some of the sites is also being considered, in parallel with the LCH works.

6. **UPDATE ON OTHER RELATED AREAS OF WORK**

6.1 **Carbon Reduction Programme (CRP)**

The CRP works include a wide range of proposals including such schemes as Solar PV, LED Lighting, BMS Controls and Boiler Upgrades, etc. The consolidated programme for 2024/25 is valued at around £1.55M and will result in carbon savings approaching 130 tonnes (CO_{2e}). The 2024/25 programme is now in the third quarter of delivery with around with over £670k in orders (*circa 44%*) committed to date.

Our progressive, year on year commitment to this programme, has ensured that cumulative savings resulting from this programme (*dating back to fy'2009/10*) are now in the region of 6,572 tonnes CO_{2e}.

6.2 **Geo-Thermal Technology**

Following the success of the Taffs Well Thermal Spring (TWTS) heat network project, Officers have been looking towards other ground water opportunities. The lessons learned during the TWTS project will potentially help develop other future heat recovery networks, involving ground water, at targeted locations within the County Borough, or in potential partnerships with adjacent authorities.

Discussions with 'The Coal Authority' (TCA) have assessed a potential 'pilot' project within RCT. A TCA feasibility study/report has now been received for an ambitious initiative at the Rhondda Heritage Park site and the Welsh Government have approved grant funding for a stage 2 assessment, awarded direct to TCA. This initiative will facilitate further research into the outline proposals, and if deemed viable, the project may also have the potential to help heat and decarbonise a nearby school.

6.3 Amgen Developments

The 1.5MW wind turbine project at Nant-y-Gwyddon was installed during 2023 and has now completed its first yearly cycle of generation, having been fully operational since September of that year. This project has a community fund that has now started receiving applications, which are currently being scrutinised and evaluated by the Council.

The 300kW land based solar PV development, proposed at the Bryn Pica site, has overcome some issues with grid export constraints, is undergoing a tender process to appoint a contractor for the scheme. If realised the project will be used to help decarbonise waste and recycling operations at the site.

6.4 Local Area Energy Plan (or LAEP)

In early 2023, the Cardiff Capital Region (CCR), funded by WGES, commissioned a team of specialists to prepare a LAEP for each Local Authority in the region. The ambition of the LAEP is to establish a comprehensive framework that enables the Council, in collaboration with partners and stakeholders, to achieve a zero-carbon local energy system by 2050 for the County Borough.

The LAEP was methodically developed through a series of strategic workshops, facilitated by our Officers. These workshops were instrumental in identifying and prioritizing six critical intervention areas: Retrofit Whole Buildings, Decarbonise Transport, Deploy Onshore Renewables, Foster Innovation, Reinforce Electricity Distribution Network, and Transition of the Gas Network.

The development of the LAEP was the subject of a separate report that was taken to Cabinet in September 2024. The LAEP represents a comprehensive and forward-looking approach to energy planning in the wider County Borough of Rhondda Cynon Taf, and the intention is that it will be underpinned by community engagement, evidence-based decision-making, and a commitment to sustainable development.

Officers are currently involved in setting up a new sub-group, reporting to the Climate Change Working group (CCWG), to begin the implementation phase of the LAEP. It is intended that this working group will be made up of Officers from across the Council, to ensure that all aspects of the LAEP are given due consideration. The first meeting of the group is due to take place on 20th November, and it is expected that the group will, in due course, make recommendations on the future

governance of the LAEP, which will then become the subject of a further report.

7. EQUALITY / DIVERSITY IMPLICATIONS & SOCIO-ECONOMIC DUTY

7.1 This supporting report is for the purpose of update and consequently an Equality Impact Assessment is not required with regard to this report.

8. WELSH LANGUAGE IMPLICATIONS

8.1 This supporting report is for the purpose of update and consequently Welsh Language Impact Assessment is not required with regard to this report, however a copy can be made available in Welsh if requested.

9. CONSULTATION / INVOLVEMENT

9.1 There are no consultation requirements at present with regards to this supporting report.

10. FINANCIAL IMPLICATION(S)

10.1 All existing 'live' projects are currently funded through approved, relevant cost centres and/or an existing enabling budget. Therefore, there are no further financial implications aligned to this interim report.

10.2 It should be noted that the cost of borrowing has now risen above the level used in all previous financial models used in various project assessments. Also, the recent wholesale market rises in energy costs, together with the future unpredictability of the market, mean that constant review and reassessment of the viability of all these projects is now necessary, and on a more frequent basis.

11. LEGAL IMPLICATIONS OR LEGISLATION CONSIDERED

11.1 There are no legal implications aligned to this update report.

12. LINKS TO THE CORPORATE PLAN / OTHER CORPORATE PRIORITIES.

12.1 Leading by example, the Council is committed to taking action to become a Carbon Neutral organisation by 2030, working with residents and businesses to promote similar aspirations for the whole County Borough. These actions support the priorities of the Council's Corporate Plan "Working With Our Communities" (2024-2030) and support the priorities aimed at enhancing the social, economic, environmental, and cultural well-being of Rhondda Cynon Taf, namely:

- Protecting, supporting, and working with nature to tackle both the climate and nature emergencies.
- Managing public sector land to support sustainable projects including producing 'green energy'.
- Continuing to invest in solar energy across our schools and Council buildings and also developing energy generation through solar, wind hydro-electric and geothermal/mine water, to heat and cool homes and businesses.

The Council aims to create a resilient and sustainable community and the objective of such energy projects is to not only reduce carbon

emissions, but to also empower local communities, support economic growth and protect our natural resources. The ambition of the Council is to provide cleaner, more sustainable energy solutions, whilst fostering local job opportunities and reinforcing the environmental management within the boundaries of Rhondda Cynon Taf.

12.2 The Well-being of Future Generations Act asks public bodies to work better with people, communities, and each other, to meet the Sustainable Development principle. The Council's approach to the implementation of the Act agreed by Cabinet is to make sure that its requirements are embedded into the everyday business.

- A Healthier Wales
- A More Equal Wales
- A Resilient Wales
- A Cohesive Wales
- A Vibrant Wales
- A Prosperous Wales
- A Globally Responsible Wales

The purpose of the report is to provide an interim update and highlight any future actions that may arise as a result of the recommendations of the Climate Change Cabinet Sub Committee, and any actions resulting from the report will pay full regard to the seven national wellbeing goals.

13. CLIMATE CHANGE IMPLICATIONS

13.1 The intent of this report is in furthering the ambitions for the Council's Climate Change Agenda.

13.2 This report is for the purpose of update only, however if the potential as described herein is realised, the outcomes will make a positive contribution towards tackling climate change and help decarbonise the Council's Estate and/or Activities.

14. CONCLUSION

14.1 This report provides background information and an update on the current situation with regards to issues covered by the Climate Change Cabinet Sub Committee. It provides updates on the proposals for the Council to build and finance potential projects that will make a significant contribution to the Council achieving its Carbon targets. It also provides key updates on other keynote associated workstreams and related plans to reduce the Council's Carbon impact.

Contact Officers: Anthony Roberts 01443 281 146

Jon Arroyo 01443 424 144
