



## **RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL**

### **CLIMATE CHANGE CABINET SUB COMMITTEE**

**28<sup>th</sup> NOVEMBER 2024**

### **PROPOSED HYDROELECTRIC SCHEME AT DARE VALLEY COUNTRY PARK**

**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**

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Katie Trembath, Carbon Reduction Officer.**

#### **1. PURPOSE OF THE REPORT**

- 1.1. The purpose of the report is to provide an overview of the work completed for the development of a high-head hydroelectric scheme at Dare Valley Country Park.

#### **2. RECOMMENDATIONS**

It is recommended that 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 continue with the development of these proposals, as detailed within section 5, to submit a planning application and, if approved, progress to appointing an appropriate contractor to build the scheme.
- 2.3. Receive further progress reports, at appropriate intervals, in the development of these proposals.

### **3. REASONS FOR RECOMMENDATIONS**

- 3.1. Agreeing to take this project forward to the next stage has the potential to make a positive contribution towards the Council's efforts to increase its renewable energy generation and contributing towards achieving our ambitious carbon reduction targets.

### **4. BACKGROUND**

- 4.1. The content of this report provides supporting information for the development of a hydroelectric scheme at Dare Valley Country Park, an outline of which was first presented to the Climate Change Cabinet Sub-Committee (CCCSC) in December 2022 and subject of an update report in March 2024.
- 4.2. In RCT's Corporate Plan 2024-2030 "Working With Our Communities", the Council acknowledged that delivering on our Climate Change commitment is our greatest challenge. In our plan we committed to delivering priorities, all of which will contribute to and benefit from tackling climate change.
- 4.3. To achieve our carbon reduction targets, the Council must invest in the development of clean energy generation projects that enable the Council to decarbonise assets across its estate. With National mains electricity grid constraints becoming an issue for RCT and for Wales, the generation of renewable energy utilising hydro power 'on site', behind the meter, will assist with introducing potential innovative opportunities across the County Borough.
- 4.4. Dare Valley Country Park is a public park, comprising of 200 acres of woodlands, pasture, and moorland mountainside. The landholding consists of two large ponds to the northwest of the visitor's centre. The project proposal is to install an intake on the existing weir at the upper pond (see Appendices). The powerhouse would be situated on the northwest corner of the lower pond and house the turbine, generator, and control system. Water would be returned to the lower pond from the powerhouse.
- 4.5. The project has historically been taken to tender stage in 2014, however the proposal did not meet the criteria for further advancement at that time. Given the urgency of the current Climate Change agenda and increasing cost of energy, there is now a greater need to implement renewable energy projects.

### **5. PROPOSED HYDROELECTRIC SCHEME**

- 5.1. The proposed development is for a 50kW micro hydro-electric scheme along the Dare River at Dare Valley Country Park. The proposal would consist of the following works:
  - Intake modification of the existing weir at the upper lake.
  - Penstock chamber at the upper lake, with a pipe and control cable running from upper to lower lake which will abstract the portion of waterflow from the existing stream between the higher and lower lake.

- Powerhouse being constructed at the lower lake which would contain the hydro turbine unit.
  - The installation of underground power cables from the powerhouse to LV switch room, meter and transformer located close to the Hotel.
- 5.2. The scheme would generate approximately 193MWh of electricity per year where it is estimated 80% will be used directly by the Dare Valley Park Hotel and Visitor Centre on site, via a private wire connection. The remaining 20% surplus will be exported to grid. However, when the system is operating at peak generation it is expected to meet 100% of the Hotel's electricity demand.
  - 5.3. The proposal will result in some localised woodland management to install the pipe and also abstraction of part of the water flow from the stream. A full site ecological and arboricultural assessment has been undertaken by external consultants under the guidance of RCTCBC's internal ecologist, who are confident this can be positive for the biodiversity through careful mitigation and biodiversity net gain measures across the remainder of the site. A tree protection plan has been prepared and if any tree removal is required, it will be subject to a tree planting programme in accordance with Planning Policy Wales compensation planting ratio set at 3 for 1.
  - 5.4. To date, a preliminary design for the scheme has been completed along with the relevant site surveys. Officers have engaged with various teams across the Council to ensure the design does not interfere with current use of the site, or any future plans. This includes colleagues within the Flood Risk Management Team, and we are exploring ways of improving the capacity of the lake to assist with future flood mitigation downstream.
  - 5.5. A technical advisor has been appointed to support the scheme and to submit a planning application in due course. As well as the planning application an application will need to be submitted to Natural Resources Wales for the abstraction and impoundment licences required for the hydroelectric scheme.
  - 5.6. Should the planning application be approved, the technical advisor will continue to support the scheme through to contractor appointment. It is anticipated the scheme could begin construction in the second half of 2025.
  - 5.7. At this stage, this report including proposed finances and timeline are based on the current design and market estimates. This will be refined as the project progresses through each stage and will be subject to change.

## **6. EQUALITY AND DIVERSITY IMPLICATIONS / SOCIO-ECONOMIC DUTY**

- 6.1 This report is for the purpose of providing an update and consequently an Equality Impact Assessment is not required.

## **7. WELSH LANGUAGE IMPLICATIONS**

- 7.1 This report is for the purpose of providing an update and consequently a

Welsh Language Impact Assessment is not required, however a copy can be made available in Welsh if requested.

## **8. CLIMATE CHANGE IMPLICATIONS**

- 8.1 The intent of this report is in furthering the ambitions for the Council's Climate Change Agenda.
- 8.2 The project, if delivered, has the potential to save 43 tonnes CO<sub>2</sub>e per annum and over 2,150 tonnes CO<sub>2</sub>e over the 50-year lifecycle. The generator will however require replacement after 25 years to achieve the full lifecycle potential of the plant.

## **9. CONSULTATION**

- 9.1 There are no consultation requirements at present with regards to this supporting report. However, if given the approval to proceed, appropriate consultations will take place as part of the necessary consenting phases of the project.
- 9.2 Officers have prepared visual displays to inform the public of the scheme proposals, which are to be displayed at the Hotel complex and Aberdare Library should the project receive permission to proceed. This creates an educational resource for local schools to visit and learn how the technology works. These visual displays are drafted and copies can be produced upon request.

## **10. FINANCIAL IMPLICATION(S)**

- 10.1. The initial budget estimate for the full development and construction costs for the entire project have been reassessed, in light of all the additional information we now have available. Considering current market conditions, the estimated budget now stands in the in the region of £828k and the project will be funded from existing budgets up until tender stage. Following this the scheme will be considered as part of the Capital Programme in March 2025.
- 10.2. All costs will be subject to periodic review and then reported on at each notable stage of development. It is hoped that the direct connection to the hotel facility, together with the increased wholesale market prices in energy costs, will mean that the project model can show an increasingly favourable payback period. However, this situation will be fully advised when the final budget/income review is assessed.

## **11. LEGAL IMPLICATIONS**

- 11.1. Natural Resources Wales regulates many aspects of environmental protection and is particularly involved in the protection of inland waters. The scheme will require abstraction and impoundment licences from NRW. These have previously been granted in 2014 and since expired, so new applications will be required in line with the planning application.
- 11.2. Full planning permission is required for the hydropower development and

an Environmental Impact Assessment (EIA) screening request has been submitted to the Local Planning Authority. This determined that the proposals are unlikely to have significant effects on the environment and therefore not considered to constitute an EIA development within the meaning of the 2017 regulations. The response has suggested several supporting documents for the application which has informed the survey work undertaken and will be submitted as part of the planning application should this project receive the approval to proceed with the submission.

## **12. LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL-BEING OF FUTURE GENERATIONS ACT**

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 the hydroelectric scheme 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. CONCLUSION**

- 13.1 This report provides a key update on the proposed hydroelectric scheme at Dare Valley Country Park. Recommendations are to agree to further expenditure in the development of these proposals, as detailed within section 10, to submit a planning application and, if approved, progress to appointing an appropriate contractor to build the scheme.
- 13.2 The delivery of the hydroelectric scheme at Dare Valley Country Park will support the Council in its ambition to become a carbon neutral organisation and make a positive contribution to the wider Climate Change agenda.

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