

BRIDGEND COUNTY BOROUGH COUNCIL

REPORT TO CABINET

22 JUNE 2021

REPORT OF THE CORPORATE DIRECTOR COMMUNITIES

CAERAU HEAT SCHEME

1. Purpose of report

- 1.1. The purpose of this report is update Cabinet on recent activity in relation to the Caerau Heat Scheme, to seek a decision on the way forward and seek authority to submit a re-profiled scheme to the Welsh European Funding Office (WEFO).

2. Connection to corporate well-being objectives / other corporate priorities

- 2.1. This report assists in the achievement of the following corporate well-being objective/objectives under the **Well-being of Future Generations (Wales) Act 2015**:-

1. **Supporting a successful sustainable economy** – taking steps to make the county borough a great place to do business, for people to live, work, study and visit, and to ensure that our schools are focussed on raising the skills, qualifications and ambitions for all people in the county borough.
2. **Smarter use of resources** – ensure that all resources (financial, physical, ecological, human and technological) are used as effectively and efficiently as possible and support the creation of resources throughout the community that can help to deliver the Council's well-being objectives.

3. Background

- 3.1. The Caerau Heat Scheme was established as a highly innovative project that proposed to extract heat from water contained within flooded former coal mine workings, to provide an energy resource for properties within Caerau. The water would be transported via a network of pipes to the properties with the temperature being boosted to the residents' required level by a ground source heat pump.
- 3.2. A report to Cabinet in January 2021 provided an update on the progress made in 2020 and the challenges (particularly financial), faced by the scheme at that time.
- 3.3. It was agreed that an Options Appraisal would be undertaken to determine the viability and suitability of alternative delivery methods for delivering a low

carbon heat scheme in Caerau that meets the requirements of the approved ERDF funding. The recommendations of the Options Appraisal would then be reported back to Cabinet.

- 3.4 The scheme has a series of decision gateways, which form critical points where research undertaken to that point is used to determine whether the proposed method of delivery can, and should, proceed. At each stage the technical feasibility and financial viability are considered.
- 3.5 Table 1 below shows these decision gateways, with their original estimated and revised dates. It also shows scheme outputs and outcomes that will be available in the event of the project being closed down at any one of the decision gates.

Table 1 – Decision Gateways

	Decision Gateway	Original date	Revised dates	Project outputs/outcomes
1	Mine water investigations do not show sufficient mine water available for the scheme to proceed.	Early 2020	Late 2021 Reason - Cost uncertainty and announcement by Coal Authority caused delay.	<ul style="list-style-type: none"> • Developed techno-economic model for a district heating scheme using heat pumps and mine water. • Experience of consumer consultation for a domestic district heating scheme. • Learning about the use of mine water as a heat source.
2	Detailed Project Development and Outline Business Case do not demonstrate that the project is viable.	Early 2020	Mid /late 2021 Reason - Process lengthened due to further techno-economic modelling, scrutiny of the model by a third party and alternative options appraisal.	As above, and: <ul style="list-style-type: none"> • Detailed Project Development for a district heating scheme using heat pumps and mine water.

3	It is not possible to award a contract to a DBOM contractor (e.g. due to the tenders not being credible, or no tenders being received or negotiations with contractors being unsuccessful).	Early 2021	Late 2021 Reason – Sequencing impacted by delays outlined above.	As above, and: <ul style="list-style-type: none"> • Learnings from the tendering process
4	Insufficient households sign up to the scheme despite having previously indicated a willingness to do so.	2022	2022	As above, and: Learnings from the marketing of heat contracts to homes exercise.

4. Current situation/proposal

4.1. An Options Appraisal of the proposed alternative approaches to delivery has been completed based on information available at the time and reported to the BCBC Decarbonisation 2030 Programme Board which oversees the scheme in March 2021.

4.2 The options appraisal reviewed the following options:

- (a) Continue with the original scope of the project, seeking funder agreement to incur higher than anticipated costs relating to borehole investigation work and work to identify further funding to increase the overall budget of the project.
- (b) Continue with investigations into the delivery of a smaller mine water led scheme that would serve only the primary school as a demonstrator and not serve homes
- (c) Seek an alternative source of heat for a scheme to serve homes, ceasing investigations into the use of mine water
- (d) Deliver a blended solution of a demonstrator mine water scheme, serving the school, and a heat network with an alternative heat source serving homes
- (e) Seek to provide home energy improvements on a home by home basis with no on-going supply arrangements
- (f) End the scheme and cease all project development work.

4.3 Each of these options was then considered against the following criteria:

- Project cost - The degree to which options are considered affordable within the overall budget currently remaining available for the project.
- Financial viability - The degree to which options deliver revenue sufficient enough to cover operating and replacement costs in the long-term

- Timescale - The degree to which options are considered to be deliverable within the current agreed end date of the ERDF funded project, June 2023.
 - Compliance - The degree to which options are considered to comply with all current relevant regulations, policies and procedures
 - Funder requirements - The degree to which options are considered to be within the scope of 'community energy' as required by WEFO and state aid compliance.
- 4.4 A high level review was undertaken based on the information available as the basis for consideration by the Decarbonisation 2030 Programme Board. Based on the options appraisal, it is recommended to Cabinet that option (d) under section 4.2 above should be pursued and presented via a re-profile to WEFO. Option (d) is a 'blended option', comprising a set of small-scale low-carbon heat demonstrator projects, each developed to suit a different setting based on variables such as type of customer, housing density and proximity to resources. The package is proposed to be made up of the following elements:
- Caerau Primary School - delivering a small mine water led scheme serving Caerau Primary School as a demonstrator and not including connections to homes.
 - Tudor Estate - connecting homes at the Tudor Estate to a small-scale heat pump based District Heat Network (DHN).
 - A private wire power supply (electricity) from Llynfi Afan Renewable Energy Park - providing low-cost, low-carbon power.
- 4.5 This approach has been discussed with WEFO and it was well received with the view that this way forward remains within the spirit of community energy, as originally approved and would be considered as a suitable basis for a re-profile proposal from BCBC for WEFO consideration.
- 4.6 A summary of the headline financial information for the re-profile project delivery budget exercise is outlined below in section 8 of this report.
- 4.7 Subject to Cabinet's approval, the essential next steps in relation to the delivery of the small-scale mine water heat demonstrator are to secure the necessary agreements from the Coal Authority to progress with mine water exploration at the demonstrator site and to put in place all necessary licenses, permissions and consents to do so within the target timeframe of Autumn 2021. The scheme will also be subject to a 'design freeze' in June 2021, in order to deliver the scheme by the ERDF deadline of June 2023. Therefore, any future changes in relation to the delivery model of the scheme will be restricted due to time and certain options may not be deliverable if insufficient time remains.
- 4.8 Should the proposed way forward in section 4.4 be approved by Cabinet and then agreed by WEFO, it will enable further, more detailed information to determine any further changes that may be required to the delivery model, the delivery budget, the future financial model and the overall risk profile of the scheme. If significant future changes are required then as considered appropriate further reports will be presented to Cabinet.

5. Effect upon policy framework and procedure rules

- 5.1. There is no direct impact on the Council's policy framework and procedure rules.

6. Equality Act 2010 implications

- 6.1. An initial EIA screening has identified that there would be no negative impact on those with one or more of the protected characteristics, on socio-economic disadvantage or the use of the Welsh language. It is therefore not necessary to carry out a full EIA on this policy or proposal.

7. Well-being of Future Generations (Wales) Act 2015 implications

- 7.1. The Well-being of Future Generations (Wales) Act 2015 Assessment Template has been completed and a summary of the implications from the assessment relating to the five ways of working is below:

Long Term: The project will provide a key opportunity to deliver decarbonised heat system that support efforts through an innovation project to meet the UK decarbonisation targets.

Prevention: The project will provide an opportunity for those impacted in the community of Caerau to benefit from the decarbonisation transition and ensure that solutions are designed and available for everyone and not just the ability to pay market.

Integration: The project will offer carbon reductions, reduced fuel bills and create economic opportunities through a clearly identified value chain.

Collaboration: BCBC is working with both UK Government and Welsh Government as well as private sector partners to deliver the decarbonisation agenda.

Involvement: The project involves working with a variety of stakeholders to deliver sustainable solutions around the delivery of decarbonised heat for residents.

8. Financial Implications

- 8.1. The development of the Caerau Mine Water Heat Scheme is currently a fully funded innovation and demonstrator scheme up to the point of commencement of heat and power delivery. The total scheme cost, as approved by the Welsh European Funding Office (WEFO), is currently £9,732,922, split between capital and revenue as set out in the table below. This also shows the funding sources for the scheme.

Caerau Heat Scheme	Total cost	ERDF grant approved	Other grants & service charges	BCBC contribution
	£	£	£	£
Capital	7,827,791	6,293,463	366,218	1,168,110
Revenue	1,905,131	1,002,782	529,308	373,041
Total	9,732,922	7,296,245	895,526	1,541,151

8.2 The current proposed revised scheme costs for the 2021 re-profile are outlined below:

Caerau Heat Scheme	Total cost	ERDF grant approved	Other grants & service charges	BCBC contribution
	£	£	£	£
Capital	7,660,179	6,125,850	366,219	1,168,110
Revenue	2,064,074	1,118,813	576,652	368,609
Total	9,724,253	7,244,663	942,871	1,536,719

8.3 Other external funding to the scheme includes Welsh Government (WG) grant of £301,265 and DECC/Scottish Power grants of £141,605. The approved scheme also included anticipated charges for the supply of heat of £452,656. It is proposed that this be replaced with £500,000 revenue funding from Welsh Government under the Small Business Research Initiative (SBRI). Despite receiving informal email communication from WG indicating that the SBRI funding might be used for the Caerau Heat Scheme, the Council still awaits final formal written approval from WG along with advice from Pinsent Masons that we can accept and use this funding for the Careau Heat Scheme. This will need to be sought before the proposed re-profile is submitted to WEFO and the final decision about its eligibility will be made by WEFO. If WEFO do not consider it acceptable then there will be a shortfall in match funding which will reduce the grant available and thereby the overall project budget. If this situation arises then a further review of delivery options would be required and a further report to Cabinet should an alternative way forward be required.

8.4 The £1,168,110 BCBC capital contribution relates to expenditure already incurred and funded and retrospectively agreed by WEFO as part of the scheme. WEFO reimbursed these costs and, as a result, the Council was able to put aside this funding to contribute towards the future capital costs of the scheme. The £368,609 BCBC revenue contribution relates to existing budgets already secured and allocated towards the support of the scheme.

8.5 In addition to the costs incurred to date, the project currently has a number of live contracts, with remaining costs outstanding of £569,542. These are:

- Detailed Project Design (Nordic Heat) £211,109
- Legal Advisor (Pinsent Mason) £21,274

- Private Wire Study (Challoch Energy) £7,596
 - Strategic Advisor (Adwill Assoc.) £29,720
 - Comfort as a Service (Energy Systems Catapult) £299,843
- 8.6 If Cabinet approves pursuing option (d) and WEFO accept the re-profile proposal as outlined in section 4.4, this will require a review of the contracts outlined in section 8.5 to determine whether any variation may be required, which may change the contract values. This will not be known until such time as the outcome of the reprofile to WEFO is completed.
- 8.7 Acceptance of the re-profile by WEFO will provide BCBC with confirmation that costs to develop the scheme further are considered as eligible, such as the specific mine water investigations linked to the demonstrator. As the proposal in section 4.4 is recommending a blended approach, this additional work needs to take place before the revenue implications of the scheme on an ongoing basis are finalised and available for consideration. The results of these investigations and detailed financial modelling that will result will provide greater certainty in relation to capital costs, deliverability by June 2023 and on-going revenue implications post-completion.
- 8.8 Whilst certainty as regards on-going revenue implications post-completion requires further analysis, the current models are suggesting that the schemes will run at a shortfall. Careful consideration of the ongoing revenue implications will need to be undertaken to identify whether the operational aspect of the scheme can at least deliver at a breakeven position. The delivery model and in particular the financial implications of this will be subject of a further report to Cabinet.

9. Recommendations

- 9.1 It is recommended that Cabinet:
- Approves pursuing the recommended way forward for the Caerau Heat Scheme as outlined in section 4.4 of this Report, being the delivery of a blended solution of a demonstrator mine water scheme, serving Caerau Primary school, a district heat network with an alternative heat source serving homes on the Tudor Estate and a private wire power supply from Llynfi Afan Renewable Energy Park;
 - Delegates authority to the Corporate Director Communities, in consultation with the Chief Officer - Legal, HR & Regulatory Services and the Interim Chief Officer, Finance, Performance and Change, to submit the 2021 Scheme re-profile to WEFO based on the recommended way forward outlined in section 4.4 and the financial information in section 8.2; and,
 - If the 2021 Scheme re-profile is accepted by WEFO, delegates authority to the Interim Chief Officer, Finance, Performance and Change to sign and accept the revised ERDF grant offer and funding letter from WEFO in consultation with the Corporate Director Communities and the Chief Officer - Legal, HR & Regulatory Services .

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Background documents:

None