CAPITAL INVESTMENT BUSINESS CASE

Chelson Meadow Community Solar - Virtual Power Purchase Agreement

EXECUTIVE SUMMARY

The Executive Summary is a short summary of the Business Case and should be the last section you complete, this will enable you to extract or only the key facts from relevant sections i.e. 'project on a page'. The summary is a 'snapshot' of the business case which will need to tell the story and sell the proposal.

The Council and Plymouth Energy Community have an approved planning application to build a 13MW solar farm on the ex-landfill site at Chelson Meadow.

The solar farm creates the following opportunities for the council:

- To reduce the Council's current carbon emissions by approximately 60%, with 75% of the current electricity need being met by renewable energy.
- To protect the Council against energy price increases and volatility over a 20 year period through a Virtual Power Purchase Agreement with the solar farm.
- To future proof the Council against potential policy and legislative change relating to carbon emissions.
- To create a 50/50 joint venture with Plymouth Energy Community to build, own, and manage the solar farm. This will result in 50% of any surplus income returning to the Council.
- To generate an income over just under £1million over the life of the solar farm through a lease on the land which will be paid annually.
- To generate an income by offering construction finance and long-term debt to the project. By borrowing at PWLB rates and loaning onwards to the joint venture on commercial terms, the Council's debt margin would be up to c£1.3million over the life of the project.

This business case picks up on the second point above and seeks to secure a commitment to sign a virtual power purchase agreement with Chelson Community Solar.

SECTION 1: PROJECT DETAIL

Project Value Revenue	Forecast to be £480,000 of income over the 30 year lifetime of the project	**Contingency (show as £ and % of project value)**	**n/a**
Programme	Low Carbon	**Directorate**	Place
Portfolio Holder	James Stoneman	**Strategic Director**	Anthony Payne
Senior Responsible Officer (client)	Kat Deeney	**Project Manager**	Paul Elliott
Address and Post Code	Ballard House	**Ward**	Plymstock Radford

Current Situation: *(Provide a brief, concise paragraph outlining the current situation and explain the current business need, problem, opportunity or change of circumstances that needs to be resolved)*

The in-principle business case for the construction of the solar farm at Chelson Meadow was approved in October 2022. This set out the 3 key elements in which the Council needs to be involved to make the project viable. These are:

1. Provide a long-term loan to the joint venture to enable construction and subsequent operation of the solar farm.
    - *This enables the Council to make a finance margin – by capturing the value between the rate the Council borrow at, and the increased rate the Council lend to the joint venture at on commercial terms*. At current rates t*he value of this is estimated to be £1.3m over 20 years.*

2. Create a joint venture with Plymouth Energy Community (PEC) to run and manage the solar farm.
    - *This enables the Council to benefit from a share of the surplus generated by the joint venture..*

3. Enter into a Virtual Power Purchase Agreement with Chelson Community Solar.
    - *The solar farm can provide locally generated green power equivalent to 75% of the council's electricity needs. By signing a long-term Virtual Power Purchase Agreement (VPPA) with the joint venture the Council will gain long-term security on energy prices as well as provide security of income for the project - giving additional confidence on the projects ability to repay finance loaned to the project. This provides the Council significant opportunity to hedge against long-term energy price increases as well as reduce its carbon emissions. This could be realised from Q2. 24/5 if construction commences in 2023.*

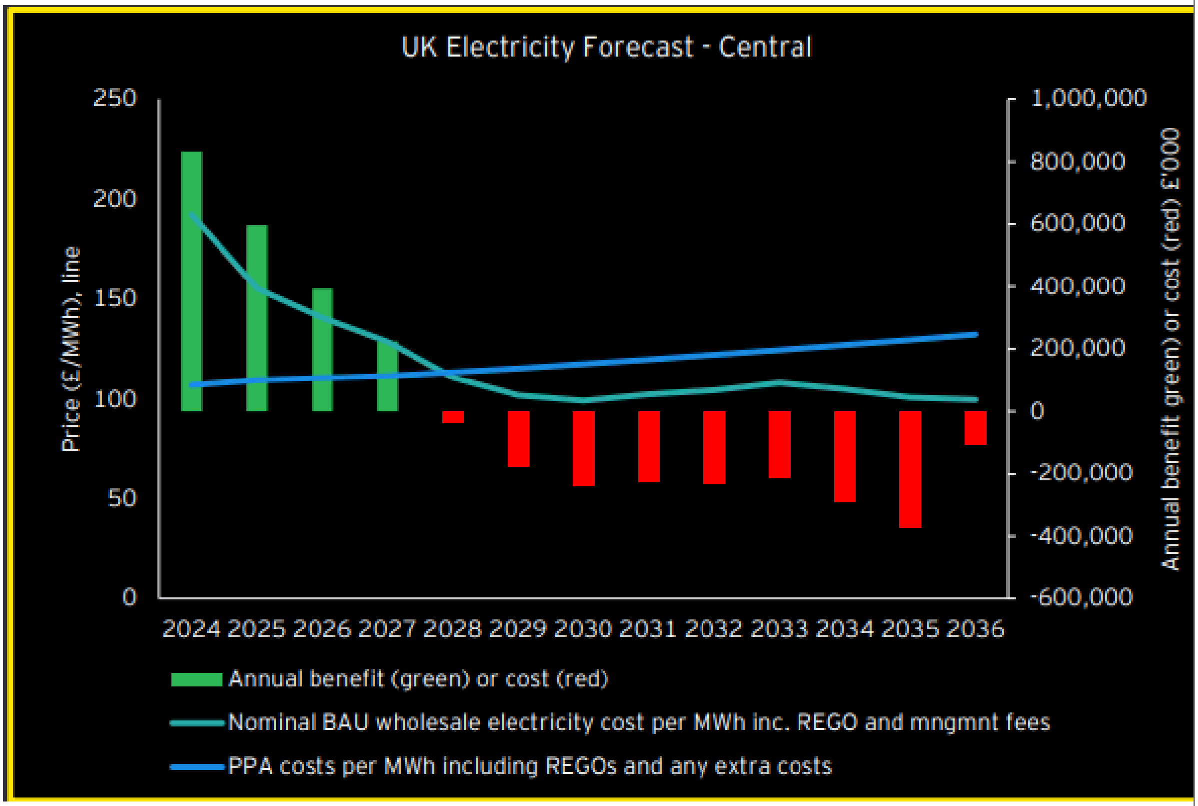
This business case considers the final point regarding signing up to a VPPA.

Proposal: *(Provide a brief, concise paragraph outlining your scheme and explain how the business proposal will address the current situation above or take advantage of the business opportunity)* **and** *(What would happen if we didn't proceed with this scheme?)*

There is an opportunity for the Council to benefit from a VPPA with Chelson Community Solar (CCS). A VPPA is purely a financial mechanism and agreement, that would allow the Council to hedge against energy prices. It is not the purchasing of actual power, and therefore will not affect the Council's current arrangements with it's energy procurement.

The agreement is based on a 'contracts for difference' approach - this sees both parties agree a 'strike price', if Chelson Community Solar is able to sell power to the grid above the strike price then PCC will receive an income for the value of the difference between the two. If the energy prices drop below the strike price then the Council would pay Chelson Community Solar the difference between the two values.

We have commissioned Ernst and Young to provide advice and guidance to forecast future energy costs and ultimately what an appropriate strike price would be. Ernst are Young are the leading global consultancy firm on energy costs and forecasting. This work is ongoing and will be used to negotiate a strike price should the Council choose to enter into a VPPA. The graph below provides a visual explanation of how the payments would play out if a strike price of £100 / MWh was agreed to 2036. Forecasting energy costs beyond this time period becomes subject to a greater degree of variables. The VPPA required on this project needs to be 20 years.



The light blue line represents wholesale costs – and forecasts that energy prices are set to reduce and stabilise from around 2030. The green bars represent the years that the joint venture can sell power for more than the strike price – and therefore a payment to the Council would be due. The red bars illustrate the reverse of this, where power is sold for less than the strike price and a payment from the Council to the joint venture would be due. The above model represents cost neutrality by 2036, i.e. it has not cost the Council anything over that time period.

Although the actual strike price is still to be determined the above diagram illustrates the concept of how a VPPA would work regardless of strike price. Ongoing work with Ernst and Young will enable the Council to negotiate the final strike price with the joint venture – with any agreement being subject to S151 and monitoring officer review prior to signing.

In order to mitigate against energy prices falling, and therefore de-risk the potential for the Council to be paying more to the joint venture than it receives, 3 key mechanisms will be introduced. The first is the ability to re-negotiate the strike price with the joint venture if energy prices change significantly. This gives the Council and the joint venture the ability to adapt to market conditions and ensures the VPPA is delivering good value. The second is quarterly monitoring and a robust annual review process. This will enable the Council to consider any surplus income generated that year, alongside revised energy cost forecasts, and make a decision on how it should be best utilised. Thirdly if energy prices drop and interest rates drop, refinancing and renegotiation of the VPPA strike price will be triggered.

Apart from the financial modelling above, the key element of the VPPA is that it provides the joint venture with certainty of income over the loan term. This is crucial for the joint venture, without this certainty they are unlikely to take the loan from the Council, and the solar farm will not get built. Conversely, by entering into the VPPA the Council mitigates the risk of the joint venture defaulting on it's loan re-payments.

In essence the commitment to signing a VPPA with the joint venture is an essential element in constructing and benefitting from the solar farm. Chelson Meadow Solar Farm represents a huge step forward in meeting our own internal and citywide carbon reduction targets, the VPPA also provides long term financial security against unforeseen energy cost rises again.

This business case seeks a commitment from the Council to agree a virtual power purchase agreement with Chelson Community Solar. The decision to sign the agreement will be delegated to the S151 officer and only occur on completion of the following:

- the submission of a detailed final report which includes the forecast net present value of each year in regards to VPPA.
- A risk workshop with Ernst and Young to ensure the Council is fully sighted on the potential risks and mitigation surrounding the agreement before signing.

Both the above points will demonstrate the Council has undertaken significant due diligence on its decision regarding the virtual power purchase agreement.

Milestones and Date:		
Contract Award Date	Start On Site Date	Completion Date
March 2023	April 2023	July 2024

SECTION 2: PROJECT RISK, OUTCOMES AND BENEFITS				
Risk Register: *The Risk Register/Risk Log is a master document created during the early stages of a project. It includes information about each identified risk, level of risk, who owns it and what measures are in place to mitigate the risks (cut and paste more boxes if required).*				
Potential Risks Identified		*Likelihood*	*Impact*	*Overall Rating*
Risk	Energy Prices fall below forecast amounts, resulting in increased payments to Chelson Meadow Community Solar based on required strike price	Medium	High	Medium
Mitigation	• Using Ernst&Young to provide their wholesale market forecasts with low, central and high scenarios. These are just predictions, but give us the most informed predictions available • Regular monitoring of the VPPA to understand performance. Periodic requests for market predictions from E&Y or similar to understand changes to predicted market trends. • Giving provision for the loan to be refinanced should interest rates drop which would in turn allow for a potential drop in the strike price	Medium	Medium	Medium

Calculated risk value in £ (Extent of financial risk)	Annual review will provide basis for this. Currently the project is expected to make a surplus of £480,000			
Risk	Timely construction of the solar farm. The forecast figures rely on the solar farm being commissioned in July 2024.	Medium	Medium	Medium
Mitigation	• Initial review carried out of construction partner programme for viability. • Programme workshop with expert consultant partners to refine programme for deliverability early in construction partner appointment process • Split construction period increases ability to absorb any slippage in construction works and allows for parts ordering delays • Beginning parts ordering early in spring 2023 • Using established project team including owners engineer and contract PM support to manage efficient schedule	Low	Medium	Low
Calculated risk value in £ (Extent of financial risk)	£350k (loss of summer income)			
Risk	The council is exposed to purchasing energy in a riskier way.	Low	Medium	Medium
Mitigation	• Ensure reconciliation mechanism design allows council to manage risks of power purchase in an acceptable way. • Using a VPPA rather than a sleeved PPA that doesn't leave council exposed to risk for purchase of consumption requirements beyond solar farm generation.	Low	Low	Low
Calculated risk value in £ (Extent of financial risk)	0			
Risk	The strike price is set higher than the joint ventures requirements.	Medium	High	Medium
Mitigation	• Strike price requirement has been modelled on an open book process by expert consultant working on behalf of the council and the future joint venture • The Council have a 50% ownership in CCS, 50% of any additional payments to CCS would flow back to PCC. The rest would go to PECR and by default local net zero and fuel poverty support	Low	Low	Low

Calculated risk value in £ (Extent of financial risk)	£0			
Risk	The open book costing process results in the project requiring an unachievable strike price	Medium	High	Medium
Mitigation	• Use of QS to develop upper cost estimate for construction allowing the creation of an upper cost estimate for the required strike price. • Shared open book workstream to establish required strike price • Consider other income streams in assessment of VPPA cost viability i.e. land rent, debt margin • Consider other benefits in assessment of viability of VPPA e.g. social value, biodiversity improvements, community benefit, additionality of carbon savings for the council	Low	Low	Low
Calculated risk value in £ (Extent of financial risk)	0			
Risk	Grid connection is not possible by July 2024	Medium	Medium	Medium
Mitigation	• Early and active engagement with National Grid • Appoint construction partner on design stage contract to allow for early design discussions with National Grid • Order key equipment for connection in early spring 2023	Low	Medium	Low
Calculated risk value in £ (Extent of financial risk)	£0			
Risk	CLP Envirogas do not sign tripartite agreement stopping project progression	Medium	High	Medium
Mitigation	• Extensive process of establishing agreement starting with HoT based understood CLP requirements • Taking liability from CLP from impact of installing solar farm on land where they already hold a business tenancy (i.e. any harm CLP cause the solar farm will be recovered from the councils share of the profit share agreement with CLP) • Proactive partnership working with CLP during project design stage	Low	High	Medium
Calculated risk value in £ (Extent of financial risk)	Not modelled			

Outcomes and Benefits	
List the outcomes and benefits expected from this project. *(An **outcome** is the result of the change derived from using the project's deliverables. This section should describe the anticipated outcome)* *(A **benefit** is the measurable improvement resulting from an outcome that is perceived as an advantage. Benefits are the expected value to be delivered by the project, measurable whenever possible)*	
Financial outcomes and benefits:	**Non-financial outcomes and benefits:**
• Protects the Council against energy cost increases over the long term. • Commitment to signing VPPA give the joint ventureCCS enough confidence to construct. This then realises £33K of land rent per annum, and £68K of debt margin on the loan.	• 3,300 t/CO2 saved per year of operation • Potential to reduce the Council's carbon emissions by 60%. • Provides long term security of energy costs

Low Carbon		
What is the anticipated impact of the proposal on carbon emissions	Saving of 3,300 t/CO2 per year	
How does it contribute to the Council becoming Carbon neutral by 2030	If the Council choose to utilise a virtual purchase power agreement with the joint venture, this is equivalent to 75% of the council's current electricity demand. Overall this will reduce the Council's CO2 emissions by up to 60%.	
Have you engaged with Procurement Service?		Yes
Procurement route options considered for goods, services or works	Procurement relating to VPPA is not required as it is a financial mechanism.	
Procurements Recommended route.	n/a	
Who is your Procurement Lead?	n/a	
Is this business case a purchase of a commercial property		No
If yes then provide evidence to show that it is not 'primarily for yield'	N/A	
Which Members have you engaged with and how have they been consulted *(including the Leader, Portfolio Holders and Ward Members)*	• Growth and Scrutiny Committee, and Audit and Governance committee briefings arranged for 23rd Feb 2023. • Project is on Leaders forward plan. • Planning committee briefed and consulted. • Site visit and briefings for Environment portfolio holder.	

SECTION 4: FINANCIAL ASSESSMENT

FINANCIAL ASSESSMENT: *In this section the robustness of the proposals should be set out in financial terms. The Project Manager will need to work closely with the capital and revenue finance teams to ensure that these sections demonstrate the affordability of the proposals to the Council as a whole. Exact amounts only throughout the paper - not to be rounded.*

CAPITAL COSTS AND FINANCING

Breakdown of project costs including fees surveys and contingency	Prev. Yr. £	22/23 £	23/24 £	24/25 £	25/26 £	26/27 £	Future Yrs. £	Total £
	0	0	0	0	0	0	0	0
Total capital spend	0	0	0	0	0	0	0	0

Provide details of proposed funding: ***Funding to match with Project Value***

Breakdown of proposed funding	Prev. Yr. £	22/23 £	23/24 £	24/25 £	25/26 £	26/27 £	Future Yrs. £	Total £
As above								
Total funding								

Which external funding sources been explored	n/a
Are there any bidding constraints and/or any restrictions or conditions attached to your funding	No
Tax and VAT implications	None expected but to be confirmed with finance colleagues
Tax and VAT reviewed by	

REVENUE COSTS AND IMPLICATIONS

Cost of Developing the Capital Project *(To be incurred at risk to Service area)*

Total Cost of developing the project (solar farm as a whole)	£640,000
Revenue cost code for the development costs	

Revenue costs incurred for developing the project are to be included in the capital total, some of the expenditure could be capitalised if it meets the criteria	Y
Budget Managers Name	Paul Elliott

Ongoing Revenue Implications for Service Area							
	Prev. Yr. £	**22/23 £**	**23/24 £**	**24/25 £**	**25/26 £**	**26/27 £**	**Future Yrs. £**
Service area revenue cost							
Other (cost neutral over lifetime)							
Loan repayment *(terms agreed with Treasury Management)*		0	0	0	0	0	0
Total Revenue Cost (A)		0	0	0	0	0	0
Service area revenue benefits/savings							
Annual revenue income *Averaged mid point figure*		0	0	395,000	395,000	395,000	tbc
Total Revenue Income (B) (debt margin and land rent)		0	0	395,000	395,000	395,000	tbc
Service area net (benefit) cost (B-A)			0	395,000	395,000	395,000	tbc
Has the revenue cost been budgeted for or would this make a revenue pressure	Revenue to be included in the capital total so no pressure overall.						

Which cost centre would the revenue pressure be shown	n/a		**Has this been reviewed by the budget manager**		Y		
Name of budget manager	Peter Walker						
Loan value	n/a	**Interest Rate**	n/a	**Term Years**	n/a	**Annual Repayment**	n/a
Revenue code for annual repayments	tbc						
Service area or corporate borrowing	n/a						
Revenue implications reviewed by	Peter Walker						

Version Control: *(The version control table must be updated and signed off each time a change is made to the document to provide an audit trail for the revision and update of draft and final versions)*				
Author of Business Case	**Date**	**Document Version**	**Reviewed By**	**Date**
Paul Elliott	07/10/2022	v 1.0		13/10/2022
	00/00/2022	v 2.0		00/00/2022

SECTION 6: RECOMMENDATION AND ENDORSEMENT

Recommended Decision

It is recommended that Cabinet:

- Approves the business case, including the requirement for quarterly monitoring and annual review of the Virtual Power Purchase Agreement.
- Agrees to enter into a Virtual Power Purchase Agreement with Chelson Community Solar on the basis set out in the report.
- Delegates authority for negotiation of the terms within the Virtual Power Purchase Agreement to the S151 officer in consultation the monitoring officer.
- Note that the S151 wills sign the agreement subject to it not being signed as a deed. Where it is a deed it will be signed by the Monitoring Officer or other authorised signatory.

Cllr James Stoneman – Climate Change and Governance		***Strategic Director : Anthony Payne***	
Either email dated:	*20 February 2023*	**Either email dated:**	*14 February 2023*
Or signed:		**Signed:**	
Date:		**Date:**	