

<b>TITLE</b>	<b>Barkham Solar Farm - Financial Business Case</b>
<b>FOR CONSIDERATION BY</b>	Overview and Scrutiny Management Committee on 8 September 2022
<b>WARD</b>	Barkham;
<b>LEAD OFFICER</b>	Deputy Chief Executive - Graham Ebers
<b>LEAD MEMBER(S)</b>	Executive Member, Climate Emergency and Resident Services – Sarah Kerr; and Executive Member, Finance – Imogen Sheperd-DuBey

## **OUTCOME / BENEFITS TO THE COMMUNITY**

The delivery of the Barkham Solar Farm is identified as a key priority of the Council's Climate Emergency Action Plan.

The project will also generate a considerable net income for the Council over 25 years which will be introduced into the Council's annual budget using an equalisation reserve.

## **RECOMMENDATION**

To review and scrutinise the soundness of the financial business case for the Barkham Solar Farm.

## **SUMMARY OF REPORT**

The purpose of this report is to present the up-dated business case for the Barkham Solar Farm.

Renewable energy generation comprises a key priority of the Council's Climate Emergency Action Plan (CEAP - 2020) and the Barkham Solar Farm is a specific target identified therein. Tree planting, a residual element of the solar farm project, is also a specific CEAP target.

The financial business case for the solar farm was initially approved by Executive and Council in 2021. The forecasted costs and revenues were based on best estimates at the time.

An update of the forecasted Capital Costs of the project, together with the General Fund Income and Expenditure forecast, is included at Part 2 of this report. The forecasts identify a net income (after capital financing costs) over the 25 year life of the development of £67.16m (£2.69m per annum on average). This is set against an initial capital expenditure of £26.85m.

The forecasted returns indicated compare extremely favourably against the forecasted returns of £480k per annum on average that were identified when the Executive/Council considered the business case in 2021.

Procurement of the contractor is progressing via a framework with appointment anticipated in November 2022. The current delivery programme for the project shows operation of the solar farm commencing in Summer 2024.

## **Background**

In response to the rising concern over the urgent need for action, in July 2019, Wokingham Borough Council members unanimously declared a climate emergency. In January 2020, the Council published its first Climate Emergency Action Plan (CEAP), establishing the eight key priority areas to focus on for reducing CO2. Renewable energy generation remains a key priority of the Action Plan and the Barkham Solar Farm is a specific target identified therein (Target 12.1). Tree planting, a residual element of the project, is also a specific Action Plan target.

The financial business case for the solar farm was initially considered and approved by Executive in July 2021 and by Full Council in September 2021. The forecasted costs and revenues were based on best estimates at the time. Since that date the industry has experienced considerable inflation in build costs and interest rates have risen. At the same time however there has been an unprecedented rise in energy prices. Whilst it is therefore evident that the solar farm will now cost more to build than was forecasted back in 2021, the forecasted returns to the council have significantly improved also.

Full planning permission for the project was granted in September 2021 and the farm tenancies on the sites have been determined such that the site will be available for development this month. In addition, a grid connection offer has been received from SSEN and formally accepted by the Council. These are key milestones in the delivery of the project.

On 30<sup>th</sup> June 2022 a Special Council Executive Committee: 1) approved the procurement strategy for the contractor required for the construction of the Barkham solar farm; and 2) delegated authority the Director of Resources and Assets, in consultation with the Executive Member for Finance and the Executive Member for Climate Emergency and Resident Services, to implement the procurement strategy. Procurement of the contractor is progressing via a framework with appointment anticipated in November 2022.

### **2021 Business Case and changes since that time**

The Executive/Council decisions in 2021 agreed a capital expenditure of £20,283,000 funded from borrowing; and delegated decisions around the final extent and configuration of the Solar Farm to the Deputy Chief Executive (S151 Finance Officer) in conjunction with the Lead Member for Resident Services, Communications and Emissions where scheme amendments would not result in the average annual net income after capital financing costs falling below £200k. At that time the net income (after running costs and capital financing costs) was forecasted at £12.0m over 25 years (equal to £480k per year on average).

The net income from the Solar Farm will be introduced into the Council's annual budget using an equalisation reserve. The equalisation reserve will hold all the revenue costs and income for the project across its life cycle, smoothing the impact on the General Fund; of net costs in the early years, and significant net profits in later years. An "average" annual net income will be transferred from the reserve into the General Fund each year, allowing the Council to manage its overall revenue position in a consistent way and reflecting the overall financial benefit to the Council evenly across the full term of the project.

The forecasted costs and revenues were based on best estimates at the time, informed by technical advisors with market experience. The project has evolved since that time and the market and economic climate have changed significantly also.

In the first instance the business case previously presented in 2021 was based on a 36MWP solar farm. Following various amendments required to secure planning permission, the size of the solar farm (number of panels) has subsequently been reduced to a 29MWP installation. The project also now includes new greenways and woodland planting; costs for which have now been incorporated into the overall project costs. In addition, the Council has now received and formally accepted a 'Grid Connection' offer from SSEN which gives certainty over the costs of that element of the project.

Whilst the solar farm may have reduced in size, the industry has experienced significant inflation on construction and materials/equipment costs. Interest rates have also risen. These all put pressure on the overall costs of the development.

At the same time, however, there has also been an unprecedented rise in energy prices; such that the forecasted returns to the Council over the lifetime of the project have dramatically improved.

### **Financial Business Case – August 2022**

A breakdown of the forecasted Capital Costs of the project, together with the General Fund Income and Expenditure forecast, is included at Part 2 of this report.

Subsequent to Special Council Executive Committee approval of the procurement business case for the main contractor (June 2022), the Council has now commissioned LHW Partnership to support the delivery of the Barkham Solar Farm project. LHW are a specialist consultant with extensive experience in the delivery of low carbon energy projects. LHW are undertaking an Owner's Engineer / consultant role and will provide technical support to enable the Council to appropriately procure and manage thereafter the build contract. The appointment of the consultant is integral to delivery of the solar farm and has been factored into the budgeting across the lifetime of the project.

The forecasts presented in Part 2 of this report (and summarised below) therefore have been developed using expert advice on costs and performance, provided by external consultants with significant experience in this field.

It is important to note that the costs/values included in the forecasts are at this time best estimates and reflect a base case scenario. That said, the cost of connection into the grid is now fixed with SSEN; as are LHW's consultancy fees. The actual costs of construction of the solar farm will, however, only be established following procurement of the main contractor. The forecasts have therefore taken a prudent approach to costings, informed by market knowledge, and inclusive of a 10% contingency.

The current financial forecast for the project is as follows – Note: figures in red/brackets indicate income/surplus, figures in black (without brackets) indicate expenditure:

<b>Capital Expenditure</b>
£m

Capital cost (to 24/25)	26.85
<i>End of life costs (after 25 years)</i>	
Decommissioning Cost	0.95
Scrappage receipt	(1.00)

<b>General Fund - Income and Expenditure</b>	<b>£m</b>
Revenue income	(126.50)
Revenue operating expenditure	19.48
<b>Revenue operating surplus</b>	<b>(107.02)</b>
Repayment of capital expenditure	26.85
Interest costs	13.01
<b>Revenue surplus after financing costs</b>	<b>(67.16)</b>
<i>Average surplus per year</i>	<i>(2.69)</i>

As identified above, the forecasts identify a net income (after capital financing costs) over the 25 year life of the development of £67.16m (£2.69m per annum on average). This is set against an initial capital expenditure of £26.85m.

The above forecast assumes 4% annual inflation on energy prices in line with industry advice. If inflation is included at a lesser rate of 2%, it is still forecasted that the net income over the 25 year life of the development would be £34.45m (£1.38m per annum on average).

The returns indicated above compare favourably against the £480k per annum identified when the Executive/Council considered the business case in 2021. The return also significantly exceeds the £200k per annum threshold that allowed delegation of decisions around the final extent and configuration of the Solar Farm to the Deputy Chief Executive (S151 Finance Officer) in conjunction with the Lead Member.

The MTFP currently identifies an equalised net surplus, after capital financing costs, of circa £1m per annum from the Barkham Solar Farm. Based on these forecasts, the scheme would deliver (and exceed) the current MTFP expectations.

It is anticipated that the costs of decommissioning and returning the land to agricultural use following the 25 year operation of the facility will be directly offset at that time by the scrap value of the solar farm equipment; such that a sinking fund for the decommissioning need not be factored in.

### **Additionality**

It should be noted that the General Fund Income and Expenditure presented in Part 2 is a base case scenario based on project specific income and expenditure. As is set out, a prudent approach has been taken to the inclusions, informed by expert technical advice.

Whilst business rates are included as a project expenditure, the forecast does not however record any of the revenue that WBC will receive corporately through the retention of business rates payable by the Solar Farm. WBC could retain up to 100% of business rates paid against renewable energy projects; in which case the Solar Farm could generate up to circa £2m of additional revenue to the Council over the 25 years of the facility.

In addition, for the purposes of the business case, it has been assumed that all electricity generated will be exported directly to the grid via an electricity supplier under a Power Purchase Agreement. The forecasts, at this time, do not seek to take into account further additionality as may be achievable through 'sleeving' the electricity output (through a licenced supplier) direct to WBC's operational portfolio. This would allow WBC to regulate its own energy prices to a greater or lesser degree. Where the solar farm equates to 73% of WBC's overall corporate Energy consumption, and with the recently experienced hike in energy prices, this has potential to capture significant operational savings to the Council.

These opportunities will be explored and progressed in greater detail with the relevant Members as the scheme progresses through to delivery. The ultimate decision on what WBC do with the electricity will be partly dependant on government and grid developments on energy pricing over the next year. LHW and WBC officers will review this as it develops; with a view to making decisions in late 2023 / early 2024 as to whether to retail the energy or use it for WBC's own purposes. The Council will need to be guided by the best 'payback' opportunity in this regard.

## **Market Engagement**

The project team has already engaged with the wider market through a recently completed market engagement event; wherein an advert was published on Find a Tender, Contracts Finder and ProContract inviting suppliers to participate. The intention was to test market interest in the project and to gather information in advance of going out to tender.

The market engagement was positive and identified 6-8 suppliers that have the capability and indicated availability to deliver the project in line with the currently outlined programme. All the companies that participated in the engagement meetings have been advised of the Council's procurement framework route; therefore giving them opportunity to register as suppliers on that framework and to competitively tender for the works. This should ensure competitive tendering and better value for money.

## **Delivery Programme**

The project team are currently in the process of procuring a contractor for delivering the solar farm. The current delivery programme for the project is as follows:

- November 2022: Appointment of main contractor
- December 2022 – Summer 2023: Contractor Mobilisation, Surveys, Design and Planning condition discharge

- Autumn 2023 – Summer 2024: Construction of Solar Farm (including testing and commissioning)
- Summer 2024: Connection of solar farm to grid

Please note that the above timetable is entirely contingent upon connection to the grid by the stated date. These connection works are to be carried out by SSEN so are outside of WBC's direct control.

## **Key Risks**

### **Grid Connection:**

The delivery of the project and the commencement of operation of the solar farm (and the revenue to the Council thereafter) is subject to the scheme connecting into grid. At this time a grid connection offer has been received from SSEN and accepted by WBC; with a drop dead connection date of Summer 2026. This is the latest date by which SSEN are contractually obliged to provide the connection.

Building on existing relationships with SSEN that have been developed during the grid connection application process, the project team will work proactively with SSEN to bring that date forward to enable earlier connection. However, to optimise the Council's ability to achieve this, contractor procurement is requirement so that SSEN can start to forward programme their work against better established completion dates. The Procurement Business Case, as approved, is cognisant of the requirement for early contractor appointment so as to increase the likelihood of positively influencing/securing a connection date better aligned to its delivery aspirations.

### **Inflating Costs:**

The business case has been informed by market experts and a prudent approach to pricing has been taken at this stage. Final construction costs cannot however be fixed until a contractor is appointed. The Framework route currently being undertaken to appoint the main contractor will allow for earlier contractor engagement, quicker access to the market and therefore earlier cost certainty. As outlined in the approved Procurement Business Case, these were significant considerations in light of the current market inflation, material availability issues and market demands in this industry.

### **Fluctuating Energy Prices/Revenues:**

Electrical energy prices have gone up in the UK by 120% over the last eighteen months and show no signs of abating. Current forecasts for quarter one 2024 show an uplift on the above figure of an additional 20%. Power Purchase Agreement Export Prices (PPAEPs) were in the region of 5 pence per kWh in 2021. The market is currently seeing some PPAEPs up to 3-4 times in excess of those prices, with prices forecast to rise yet further in the near future. In addition, as the UK grid network degasifies and moves towards ambitious carbon reduction targets, electrical energy from renewable energy will only become more in demand.

Electricity prices will be influenced by government and grid developments on energy pricing over the next year. The approach to energy prices adopted within the financial forecasting – as is set out in Part 2 – has therefore been very prudent.

The base case scenario runs the forecast on the basis of a 4% inflation in energy prices per annum. The appraisal has also been run with only 2% annual inflation on energy

prices as a sensitivity test - demonstrating that returns to the Council would still meet the equalised net surplus expectations set out in the current MTFP (£1m per annum).

Sensitivity testing has also been undertaken around the PPAEP; showing that even in the extremely unlikely event that energy prices drop back to 2019 levels (5 pence per kWh), the project would still generate a positive net surplus (£130k per annum on average) and therefore 'payback' to the Council.

### **Contractor Availability**

The project team has engaged with the market through a recently completed market engagement event; wherein 6-8 suppliers indicated interest and availability to deliver the project in line with the currently outlined programme. The project team are currently procuring the main contractor and are anticipating appointment in November 2022.

## **FINANCIAL IMPLICATIONS OF THE RECOMMENDATION**

***The Council faces severe funding pressures, particularly in the face of the COVID-19 crisis. It is therefore imperative that Council resources are focused on the vulnerable and on its highest priorities.***

	How much will it Cost/ (Save)	Is there sufficient funding – if not quantify the Shortfall	Revenue or Capital?
Current Financial Year (Year 1)	£4.9m	Yes	Capital
Next Financial Year (Year 2)	£13m	Yes	Capital
Following Financial Year (Year 3)	£9m	Yes	Capital

### **Other financial information relevant to the Recommendation/Decision**

The financial business case for the solar farm was considered and approved by Executive in July 2021 and by Full Council in September 2021.

The MTFP identifies an equalised net surplus, after capital financing costs, of circa £1m per annum from the Barkham Solar Farm. The project is forecasted to exceed this provision.

### **Cross-Council Implications** (how does this decision impact on other Council services, including properties and priorities?)

The net income from the Solar Farm will be introduced into the Council's annual budget using an equalisation reserve.

### **Public Sector Equality Duty**

An Equality Impact Assessment has been undertaken. The Initial Impact assessment did not identify any potentially negative impacts upon persons with protected characteristics

**Climate Emergency – This Council has declared a climate emergency and is committed to playing as full a role as possible – leading by example as well as by exhortation – in achieving a carbon neutral Wokingham Borough by 2030**

Renewable energy generation is a key priority of the Climate Emergency Action Plan (CEAP). Target 12 of the action plan specifically identifies the generation of renewable energy through investment in solar farms. Under target 12 the delivery of four sites is identified.

The solar farm proposal at Barkham is the first of these sites to come forward (target 12.1). The solar farm will have the capacity to generate in excess of 29MWp of energy. It is estimated that exported energy at year 1 of operation will be in the region of 27,263,000kWh; which equates to a 73% of WBC's overall corporate Energy consumption; or to a 51% reduction in overall corporate carbon emissions, from corporate Energy.

In addition to target 12, target 18 of the Council's Climate Emergency Action Plan commits to the planting of 250,000 trees throughout the borough by 2025 for the purposes of reducing carbon in the atmosphere through carbon sequestration. With the inclusion of 2.9ha of woodland planting (circa 11,000 new trees) as part of the landscaping of the site, the proposals would also contribute significantly towards that tree planting target. A Natural England Research Report estimates an average sequestration rate of 22.71 tCO<sub>2</sub>e in the first year and 39.73 tCO<sub>2</sub>e per year thereafter.

As part of this project a new rural greenway through the site will provide a publicly accessible Greenway to link existing PROWs from the south-west of the site (BARK BR 14) to the north-west of the site (BARK FP 10). Greenways are shared cycling, walking and horse-riding paths which encourage access to the countryside, exercise and more sustainable patterns of transport.

The site also presents significant opportunities for Bio-diversity Net Gain. Initial estimates indicate that the bio-diversity of the hedgerow habitats could be increased by up to 63% and area based habitats by up to 162% as a result of the development.

**Reasons for considering the report in Part 2**

By Virtue of Paragraph 3 of Part 1 of Schedule 12A of the Local Government Act 1972:

Information relating to the financial or business affairs of any particular person (including the authority holding that information).

**List of Background Papers**

Part 2 – Barkham Solar Farm Capital Costs  
Part 2 – Barkham Solar Farm General Fund Income and Expenditure  
Part 2 – Notes and Assumptions

<b>Contact</b> David Smith	<b>Service</b> Commercial Property
<b>Telephone No</b> Tel: 0118 974 6230	<b>Email</b> david.smith2@wokingham.gov.uk