



WEST OXFORDSHIRE
DISTRICT COUNCIL

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Name and date of Committee	EXECUTIVE MEETING 12 JULY 2023
Subject	COMMERCIAL SOLAR PHOTOVOLTAIC INSTALLATIONS ON COUNCIL ESTATE
Wards affected	All
Accountable member	Councillor Andrew Prosser, Executive Member for Climate Change Email: andrew.prosser@westoxon.gov.uk
Accountable officer	Claire Locke, Assistant Director Property and Regeneration Email: claire.locke@publicagroup.uk
Report author	Hannah Kenyon, Climate Change Manager Email: hannah.kenyon@publicagroup.uk
Summary/purpose	To seek agreement to invest in the installation of solar PV on the roofs of buildings owned and in some cases leased by the Council based on the business cases set out within this report. To agree to enter into a contract with the preferred contractor for the installation of the solar PV.
Annexes	Annex A - EXEMPT Procurement tender outcome summary Annex B - EXEMPT Business cases Annex C - Climate Impact Assessment Annex D - EXEMPT Lease risk summary
Recommendation(s)	<i>That Executive resolves to:</i> <i>(a) Recommend to Council to agree to proceed with investment in roof mounted solar PV based on the business cases in this report, and that,</i> <i>(b) Agree to enter into sale agreements for the electricity generated, with the tenants, where financially viable and delegate decisions on whether or not to proceed with individual agreements to the Chief Finance Officer in consultation with the Executive Member for Finance.</i> <i>(c) Agree to enter into contract with the preferred contractor identified in Annex A, for the provision and installation of Solar PV</i>

	<p><i>and related equipment.</i></p> <p><i>(d) Delegates to the Chief Finance Officer in consultation with the Executive Members for Finance and Climate Change the decision to exclude any tenanted sites based on further Due Diligence associated with energy usage or vulnerability around continued tenant occupation.</i></p> <p><i>(e) Delegates to the Chief Finance Officer the decision to adjust the indicative electricity sale price to tenants as long as changes to the projected project returns are in-line with projections contained within this report.</i></p> <p><i>(f) Recommend to Council to agree that funding for contingency costs of £27,634 is approved with delegation to the Chief Finance Officer for expenditure of contingency subject to the business case still being viable or expenditure being unavoidable due to structural condition of the building.</i></p> <p><i>(g) That revenue funding of £11,200/year is allocated for the part-time shared Energy Manager post and included in the next budget update. Noting that this will be funded from Solar PV income.</i></p>
Corporate priorities	<ul style="list-style-type: none"> ● Responding to the Climate and Ecological Emergency ● Working Together for West Oxfordshire
Key decision	Yes
Exempt	<p>Yes (Annexes only)</p> <p>Exempt Annex A containing named bidders - commercially sensitive</p> <p>Exempt Annex B containing commercially sensitive information</p> <p>Exempt Annex D containing details of leases</p>
Consultees/ consultation	<p>Chief Finance Officer</p> <p>Procurement team</p> <p>Legal team</p>

I. EXECUTIVE SUMMARY

- I.1 This report seeks Executive approval to bring to Full Council a recommendation to invest in Solar Photovoltaic (Solar PV) electricity generation (including battery storage) at Woodgreen council offices, Des Roches Square in Witney, and Talisman Business Park in Bicester.
- I.2 In round numbers the total investment sums will be £50,972 for Unit 2 Des Roches Square (site 1), £22,318 for Unit 6 Des Roches Square (site 2), £65,015 for Woodgreen council offices (site 3), and £138,040 for Units 4-5 Talisman Business Park (£276,345 total, if all sites proceed).

- I.3 Making an investment in solar PV contributes to reducing the climate impact of electricity consumption within the council's estate (both council-occupied and tenanted). Benefits to the Council include a) delivering a part of its commitment to becoming carbon neutral by 2030, b) generating a return on investment (as per the financial model in the business case annex), and c) supporting a tenant organisation in their own carbon reduction journey.
- I.4 An open procurement process has been undertaken to establish accurate installation costs, and the winning contractor is an established PV installer. No substantive costs will be incurred and no contract for installation will be entered until full Council decision.
- I.5 A key investment decision factor is the likely future price of power, which affects the value of PV electricity consumed at Woodgreen, and the price of power sold to the tenants in the Des Roches Square and Talisman Business Park properties. Most power sector commentators expect power prices to remain firmly above the levels that were common a few years ago, but professional economic forecasters give a range of expectations. This lack of certainty must be considered when reviewing the financial model in Annex B.
- I.6 Investment has been modelled on an assumption of borrowing from the Public Works Loan Board (PWLB). The 25 year financial model at Annex B takes account of the cost of power to the Council which is largely known for the next two years, and from then on takes a reasonable central estimate of future power provided by a professional consultant. For the tenanted properties, there is uncertainty at this point whether the proposed price for selling power, necessary to support the Council's business case, will be acceptable to the tenants. A firm price proposal will be put to the tenants following the Executive decision. Solar panels have a realistic expected lifetime of 25 years or more.
- I.7 The business case for installing panels on Woodgreen appears strong, even with inevitable uncertainty over future power price. The business case for the tenanted properties is less strong, and depends on the agreement of the tenant to take the power. The investments in aggregate have a reasonable business case.
- I.8 This PV installation is viewed as a pilot project that should give the Council confidence and experience in replicating such installations in other council-owned and tenanted properties, subject to future business cases.
- I.9 To ensure that PV assets are maintained and their performance monitored, and that tenants are correctly charged for PV power consumed, additional technical / financial staff resources will be required. This report identifies in outline how such additional resources could service, and be combined with, other related energy needs.

2. BACKGROUND

- 2.1 West Oxfordshire District Council declared a Climate and Ecological Emergency in June 2019, with the aim of making the Council carbon neutral by 2030 and the District net zero by 2050. Following public consultation in May 2020, the Council adopted a Climate Action Plan in October 2020 and subsequently a Climate Change Strategy was adopted in February 2021.
- 2.2 The Council has identified a number of Priorities within its Corporate Plan which include climate action, supporting local businesses and ensuring the financial sustainability of the Council.
- 2.3 Solar PV, whilst not a panacea, is an important part of meeting the council's objective of becoming carbon neutral by 2030.
- 2.4 The Council owns a number of buildings which are let commercially to provide a return on investment which underpins the delivery of core services to the public. A number of these office and warehouse buildings have large roofs which could be suitable for the installation of Solar PV and could generate energy to power the activities within the buildings.
- 2.5 Tenants are responsible for paying their own utility bills but the Council could sell PV-generated energy to tenants in parallel with their existing supply arrangements, subject to suitable legal agreements being in place.
- 2.6 The capital investment is capable of providing a return on capital sufficient to meet the council's expectations and reflect future uncertainties, and this commitment to decarbonisation would align well with the council's Carbon Action Plan.
- 2.7 Viability for rooftop PV is highly site dependent, so the focus of this pilot phase is on larger buildings. Smaller properties could be considered in future phases.
- 2.8 A fully compliant open procurement has been undertaken, including a "meet the buyer" event at pre tender stage in order to attract both local and national PV installers to partake in the procurement exercise. Four bids were received and the summary of those bidders is set out in Annex A. Bidders were assessed on a combination of quality and price. The preferred bidder achieved a combined score of 78.75%.

3. ENERGY MANAGEMENT

- 3.1 The Council procures energy (gas and power) through a broker. Due to extreme market volatility since the invasion of Ukraine, the council's energy costs have risen dramatically in the last 12 months, with the estimated spend for WODC projected to be £86,000 for gas and £313,994 for electricity in 2023/24. Future energy costs are uncertain, but most energy sector commentators warn that prices are unlikely to fall to pre-Ukraine levels for many years. With this level of expenditure there is potential for significant savings if the contract

and billing can be carefully managed and usage can be analysed to identify areas where investment in improved systems could reduce usage and therefore costs.

- 3.2 Energy supply contracts are currently managed from existing resources across council and Publica teams. Given the complexity of the administrative arrangements associated with Solar PV and EVCPs (e.g. energy generation and general PV performance, sale to the grid and billing to tenants) a dedicated role is needed to support the Council and maximise investment performance and returns. There is also a wider requirement for the Council to review energy consumption and identify investment that could be made to provide energy efficiency and reduce usage in future years.
- 3.3 WODC plans to install new charging points at the Woolgate car park in the summer 2023 and are also exploring chargers for Burford to complement the network of charging points installed through the countywide Park and Charge project in 2022. These public charging points will have fees set which aim to recover costs (installation, electricity, maintenance and back office services) and generate a small surplus for reinvestment. With costs fluctuating careful management is required to protect the council's income and ensure costs do not exceed income. When the installation at Burford was approved, a contribution to additional staff resources for EVCP management of £3117 per annum was agreed as part of the business case (Executive 16 March 2022 Minute 97 refers). However challenges presented by the flood risk at this site has meant the charging point installation has not progressed and this staff resource has therefore not been actioned.
- 3.4 Considering the energy management required across these three activities, the level of investment and revenue cost involved and the need for this across Cotswold, Forest of Dean and West Oxfordshire district councils, a dedicated shared Energy Manager would be of significant benefit. It is recommended that some of the projected income from Solar PV is top sliced to fund a part-time post. If this post demonstrates significant savings, a recommendation may be made in the future to increase this resource. Each council is asked to fund 1 day per week, to provide a shared post of 3 days (22.5 hours). This post is estimated to have a salary of £42,500/year, this equates to £25,500 pro-rata and totals £33,600 with on-costs. The cost to each council would be £11,200.
- 3.5 As part of these works, contractors will access the roof spaces of buildings. This offers the opportunity to informally review the building fabric from an energy perspective and maximise surveying onsite.

4. BUSINESS CASE METHODOLOGY

- 4.1 Business cases have been prepared which set out the capital costs and anticipated revenue return (annex B). This is based on the sale of energy to tenants, or the avoidance of purchased electricity, to provide a return on investment. Borrowing is based on 20 years and the principal assets (the solar arrays) have an expected life of at least 25 years.

4.2 The cost of electricity for Woodgreen is known with high certainty for one year ahead, and known with slightly less certainty for two years ahead. Thereafter it is assumed that power cost will be in line with the central estimate of market price of power provided by a professional consultant. It is important to recognise that the confidence level on such industry economic forecasts is relatively low, and confidence decreases the further in the future the projection is made. It is nonetheless necessary to use such projections in order to derive the IRR, RoI etc. on a 20 year business case. The known rate for Woodgreen is £0.52/kWh, provided by our Energy Brokers.

4.3 This report seeks approval for the Section 151 officer, in consultation with others, to agree an appropriate sale price for PV-generated electricity to the council's tenants. It is proposed that such a sale price would seek a mid-point between:

- firstly, the minimum target return identified by the Section 151 officer that relates both to the council's project-specific cost of capital and future revenue risk, and
- secondly, the currently known, and estimated future, cost of grid electricity to the tenant.

Such a price mid-point would seek a balance between the objectives of achieving carbon reductions, supporting the viability of a tenant's business (which in turn reduces risk to the Council as landlord), supporting a tenant's journey towards decarbonisation, and maximising financial return to the Council. Clearly if no such mid-point is achievable (for example if a tenant has a current or expected future cost of electricity below the council minimum) then the site investment is very unlikely to proceed.

4.4 The business case has modelled a first year electricity sale price to the tenanted properties, with suitable inflation and future indexing, which provides (on average) a rate of return above the council's minimum target. Further clarity will be gained on tenants' expected future cost of electricity before a sale price is offered, and binding agreement from tenants will be obtained before proceeding with installation.

4.5 It has been difficult to generate interest from tenants, despite the opportunity to buy 'green' energy which should be attractive to businesses. Those who have indicated some interest have shared their energy costs which has shown a dramatic variance in current charges (14.86p - 52.44p). Some are paying very low tariffs but are likely to be on limited time offers which will expire and result in charges rising substantially in the current market. Fee setting will need to reflect the fact that 5 of the 10 buildings across all councils have tenants currently paying less than 20 p/kWh. Setting charges above their current rate will almost certainly result in them declining the offer.

4.6 Battery storage has been proposed by the successful tenderer for some WODC sites. The batteries enable excess solar electricity to be stored and used at times when there is little or no solar generation, thereby maximising the amount of solar electricity used on-site.

- 4.7 The supply and installation of Solar PV is a fixed price provided by the installer. Adding a contingency sum to cover any unforeseen costs is therefore likely to unfairly skew the business case. However there is a risk that unforeseen costs do occur principally associated with the building structure itself. For budgeting purposes a 10% contingency sum of £27,634 should be agreed and set aside but will only be incurred subject to agreement from the S151, that incurring the costs still delivers a positive business case, or ceasing the project at that point is not feasible, or costs are essential due to building defects and would have to be incurred anyway.

5. FINANCIAL IMPLICATIONS

- 5.1 The report proposes a methodology that will be used for assessing the financial viability for the installation of Solar PV on council-owned properties. The report recommends that in the first phase of properties to be assessed, Solar PV should be installed on four properties - council offices at Woodgreen, and tenanted properties in Witney and Bicester.
- 5.2 As discussed in the report, the principal driver for investment in Solar PV is to reduce the climate impact of the Council's energy consumption as part of the commitment to become carbon neutral by 2030. Solar PV installations will provide the Council with an ongoing financial benefit and return on investment, although members should note the volatility in energy prices over the last 12 months and projections of future prices does impact on the certainty of financial returns.
- 5.3 Initial capital expenditure of £276,345 is required to deliver Solar PV on the four properties in the first phase. The financial modelling undertaken by the project team (based on a number of assumptions around energy usage and future energy prices) indicates a return on investment of 10.5% with an average payback period of 9.5 years.
- 5.4 With significant volatility in the energy market over the last 12 months and a degree of uncertainty around when the market will stabilise over the medium-term, it is difficult to provide members with certainty around the financial returns on an annual basis. The financial modelling over a 25-year period shows positive cash flows from the investment taking into account running costs, annual inspections and routine maintenance. Where energy is sold to tenants, future electricity prices have been modelled based on market intelligence and an assessment of the size and scale of each Solar PV installation.
- 5.5 Whilst the business case has assumed capital financing costs, the Deputy Chief Executive and Section 151 Officer will consider the capital financing of the investment alongside the capital financing requirements associated with the wider capital programme. This will take into account the level and availability of internal resources (e.g. capital receipts) alongside external resources (e.g. prudential borrowing). Recent increases in the Bank of England base rate and expectations of further interest rate rises has led to increases in the Public Works Loan Board (PWLB) rates. Should the Council need to undertake prudential

borrowing to support the capital programme over the immediate short-term, this may put pressure on the revenue budget given the increased cost of capital and may make future capital expenditure and financing decisions more challenging.

- 5.6 The financial implications of the capital financing and treasury management decisions will be reported to members through the regular financial performance reports to the Executive and through the treasury management reporting to the Audit and Governance Committee.

6. LEGAL IMPLICATIONS

- 6.1 The responsibilities of the Council as landlord and its ability to alter buildings whilst tenants are in occupation will vary depending on individual lease agreements. Tenants will have existing energy contracts in place with third party providers. The Council cannot insist that existing tenants switch to the supply that the Council installs and therefore this needs to be mutually agreed, with a contract for the energy purchase put in place. Where PV is installed and a tenant ends their tenancy, the Council will market the property with green energy provision and would require that any incoming tenant purchases energy generated from the solar PV.
- 6.2 External legal support is being sought to amend the lease agreement and / or provide a side letter to the tenant setting out the terms of selling PV power. The cost of such external legal support is likely to be non-material in the context of the overall project investment cost, not least since such cost will be shared with Forest of Dean and West Oxfordshire district councils.
- 6.3 As a landlord, the Council will have a responsibility to meet the government's Minimum Energy Efficiency Standards (MEES) for non-domestic buildings. The current regulations require all tenanted non-domestic buildings to have an Energy Performance Certificate (EPC) of no lower than a rating of E. From 1st April 2018 any commercial property that has an EPC of lower than an 'E' cannot be rented out to new tenants, or renew any existing tenancy contracts until at least an 'E' rating is obtained. From 1st April 2023 all tenanted commercial properties must have an EPC rating of no lower than 'E' to continue being leased. There are exemptions to the MEES for properties such as listed buildings. The installation of Solar PV would therefore make a notable contribution to lowering the EPC. The Government is also currently reviewing the potential to introduce a further target of an EPC of B by 2030. The Council is currently preparing a plan to consider the works required in non-compliant buildings.
- 6.4 Save from the above there are no other legal implications arising directly from this report.

7. RISK ASSESSMENT

- 7.1 At a high level, key financial risks may be broken down into: a) uncertainty on quantity of electricity generated and either sold to tenant or consumed in Woodgreen; b) uncertainty over whether electricity will continue to be consumed at the assumed rate (either by the

tenant or Council), and c) uncertainty over the price charged to the tenant, or the value of displaced purchased electricity for Woodgreen.

- 7.2 On uncertainty over quantities of energy: Generation of solar PV is known to a high degree of confidence (typical variability of +/- 5-10% in an individual year, much less variability over the project length). Consumption of PV generated electricity can be modelled with a high level of confidence for Talisman (one year of half hourly consumption is available) and a lower level of confidence for Woodgreen and the Des Roches units (monthly consumption data). Where half hourly data is lacking, contractors have used standard industry estimates of daily consumption.
- 7.3 On uncertainty over maintaining consumption: The Council has a medium-long term commitment to Woodgreen. There is a level of uncertainty of tenant turnover across the council's tenanted estate. For all sites, electricity consumption in the future is more likely to rise than fall, since over time decarbonisation will push energy services (notably space heating and vehicle charging) away from gas and towards electricity.
- 7.4 On uncertainty over price / cost: For Woodgreen the financial modelling takes known (or close to known) prices for two years, and then assumes electricity cost will follow a central estimate provided by a professional consultancy. Nonetheless it should be noted that no economic models claim to accurately predict future energy cost. For the tenanted properties the tenants have disclosed their year-ahead electricity price. Agreements with the tenants would include both the starting price for PV power sold into the premises, and an escalator.
- 7.5 The business cases have been prepared based on capex costs provided by the preferred bidder. There is a risk that there are unforeseen costs, particularly relating to roof structures and therefore a contingency sum has been built into the business case to mitigate this risk. There is a risk however that an issue arises with significant costs that affect the viability of the scheme. Every effort will be made to avoid this and a decision to proceed would be made in consultation with the Section 151 Officer.
- 7.6 The current construction and materials market is volatile and inflationary pressures have seen costs rise dramatically in the last 12 months. Bidders have been asked to hold fixed prices for 90 days from bid submission, for the initial installations. Any delays in decision making or placing purchase orders could see prices rise. It should be noted that further phases of installations on additional buildings will be the subject of a re-tender process, with learning from this initial phase embedded. Further phases should be relatively quick and easy to tender as specifications, tender evaluation and the financial model are likely to stay fairly similar. It should be noted however that costs are likely to rise if inflation continues to increase material costs.
- 7.7 The business case is predicated on income being generated from the sale of energy to tenants (or for Woodgreen, purchased electricity cost being avoided). There is little income from sale to the grid at tenanted premises at this point in time but this will continue to be

reviewed. For Woodgreen any electricity 'spilled' to the grid will be able to attract a market value. There is risk around the continual purchase of the energy if the tenants breach the purchasing agreements, fail to pay invoices for energy, or terminate the tenancy and a prolonged void period occurs. As some of these risks will be largely determined by the demand for that unit, information on risk is provided on a building specific basis (see Annex D).

- 7.8 At present the volatile energy market means that purchase of green energy from the Council should be attractive to tenants. However, future market conditions are unknown and significant cost reductions could mean the council energy offer is less attractive to tenants.
- 7.9 The cost for a replacement battery at Units 4/5 Talisman Business Park has been included within future revenue costs at Year 15, in line with the expected useful life of a Tesla battery. Extended warranties will be explored but breakdown and repair or replacement costs will remain a risk.
- 7.10 Certain pre-investment risks cannot be resolved until further technical work is carried out as step one of the contract. These include gaining permission to connect from the electricity distribution operator, and confirming suitability of roof structures to support panels. Whilst unlikely, if such risks manifested and were unresolvable, installations would not be able to proceed. However the scheduling of activity means that any such blocks would precede any commitment of capital investment, and therefore capital would not be at risk.

8. EQUALITIES IMPACT

- 8.1 There is no identified Equalities Impact from this proposal.

9. CLIMATE AND ECOLOGICAL EMERGENCIES IMPLICATIONS

- 9.1 Installing Solar PV will reduce the use of fossil fuels in the council's estate (it will reduce 'Scope 2' emissions in the council's annual carbon emissions reporting). It will provide tenants with a renewable form of energy, which may also offer them cost savings.
- 9.2 Information on the estimated carbon savings from the commercial PV installations is shown below:

Site 1 Unit 2 Des Roches Square, Witney:

Annual avoided emissions impacts:			
Average avoided monthly kWh		2,992 kWh/month	
	Nitrogen Oxides	49	kg/yr
	Methane	23	kg/yr
	Carbon Dioxide	9,081	kg/yr
Annual avoided emissions equivalencies:			
Avoided	CO ² avoidance	22,477	average passenger vehicle miles
emissions	CO ² emissions	1.1	average home's annual electricity use
equivalencies	Carbon sequestered by	413	tree seedlings grown for 10 years

Site 2 Unit 6 Des Roches Square, Witney:

Annual avoided emissions impacts:			
Average avoided monthly kWh		2,128 kWh/month	
	Nitrogen Oxides	35	kg/yr
	Methane	17	kg/yr
	Carbon Dioxide	6,460	kg/yr
Annual avoided emissions equivalencies:			
Avoided	CO ² avoidance	15,991	average passenger vehicle miles
emissions	CO ² emissions	0.8	average home's annual electricity use
equivalencies	Carbon sequestered by	294	tree seedlings grown for 10 years

Site 3 Woodgreen council offices, Witney:

Annual avoided emissions impacts:			
Average avoided monthly kWh		3,829 kWh/month	
	Nitrogen Oxides	63	kg/yr
	Methane	30	kg/yr
	Carbon Dioxide	11,622	kg/yr
Annual avoided emissions equivalencies:			
Avoided	CO ² avoidance	28,768	average passenger vehicle miles
emissions	CO ² emissions	1.4	average home's annual electricity use
equivalencies	Carbon sequestered by	528	tree seedlings grown for 10 years

Site 4 Units 4-5 Talisman Business Park, Bicester:

Annual avoided emissions impacts:			
Average avoided monthly kWh		10,506 kWh/month	
	Nitrogen Oxides	173	kg/yr
	Methane	82	kg/yr
	Carbon Dioxide	31,888	kg/yr
Annual avoided emissions equivalencies:			
Avoided	CO ² avoidance	78,932	average passenger vehicle miles
emissions	CO ² emissions	3.9	average home's annual electricity use
equivalencies	Carbon sequestered by	1,449	tree seedlings grown for 10 years

9.3 The project has a number of climate and ecological impacts which have been considered and mitigated where possible. For a full breakdown, please see Annex C.

- While delivering renewable energy to the selected buildings and to the grid will reduce greenhouse gas emissions (GHGs), there will also be emissions produced from the manufacture, delivery and installation of the solar panels, known as the embodied carbon. However, research shows that carbon savings and energy generation across the lifetime of the solar panels will be significantly more than the carbon emitted or energy consumed in their manufacture and installation¹. Additionally, the Council have requested that contractors minimise the embodied carbon of the contract.
- The mining and material extraction processes associated with manufacturing the solar panels will affect soil and waterway health in manufacturing and mining locations.
- There are known issues around the sustainability of materials used for solar panels over which we do not have control. However, the Council has requested that consideration be given to decommissioning so that the panels can be repaired as needed and recycled at end-of-life.

10. ALTERNATIVE OPTIONS

10.1 The Council could decide not to install Solar PV for its commercial estate.

11. BACKGROUND PAPERS

11.1 The council's approach to carbon reduction can be found on the council's website: <https://www.westoxon.gov.uk/environment/climate-action/>.

(END)

¹ e.g. <https://www.carbonbrief.org/solar-wind-nuclear-amazingly-low-carbon-footprints/>