Three Rivers District Council

Policy & Resources Committee Report Outline Business Case for the Installation of Rooftop Solar PV at South Oxhey Leisure Centre

Date: 08/09/25

THREE RIVERS DISTRICT COUNCIL

Policy & Resources Committee Report
8th September 2025

PART I

Outline Business Case for the Installation of Rooftop Solar PV at South Oxhey Leisure Centre

1 Summary

1.1 This report proposes that rooftop solar PV is installed at South Oxhey Leisure Centre, funded by council capital budget and repaid through a Power Purchase Agreement[1] with Sports and Leisure Management Ltd (SLM).

1.2 A previous version of this report, based on an estimated cost of £118,421, was considered by the Climate Change, Leisure and Housing Committee on 2nd July 2025. This updated version of the report features an actual cost of £111,202 following the completion of a procurement process.

1.3 This report recommends that the Policy & Resources Committee approve the installation of rooftop solar PV at South Oxhey Leisure Centre as outlined in the Outline Business Case, which can be found in Appendix 1.

2 Details

2.1 Three Rivers District Council are committed to achieving net zero by 2030 for our own emissions and to inspire and enable a net zero district by 2045. Achieving net carbon zero and being climate resilient is one of four core pillars of the corporate framework. Residents endorsed this as a priority in the recent resident survey conducted in February-March 2024 when environment/climate change ranked as the 3rd biggest concern for households.

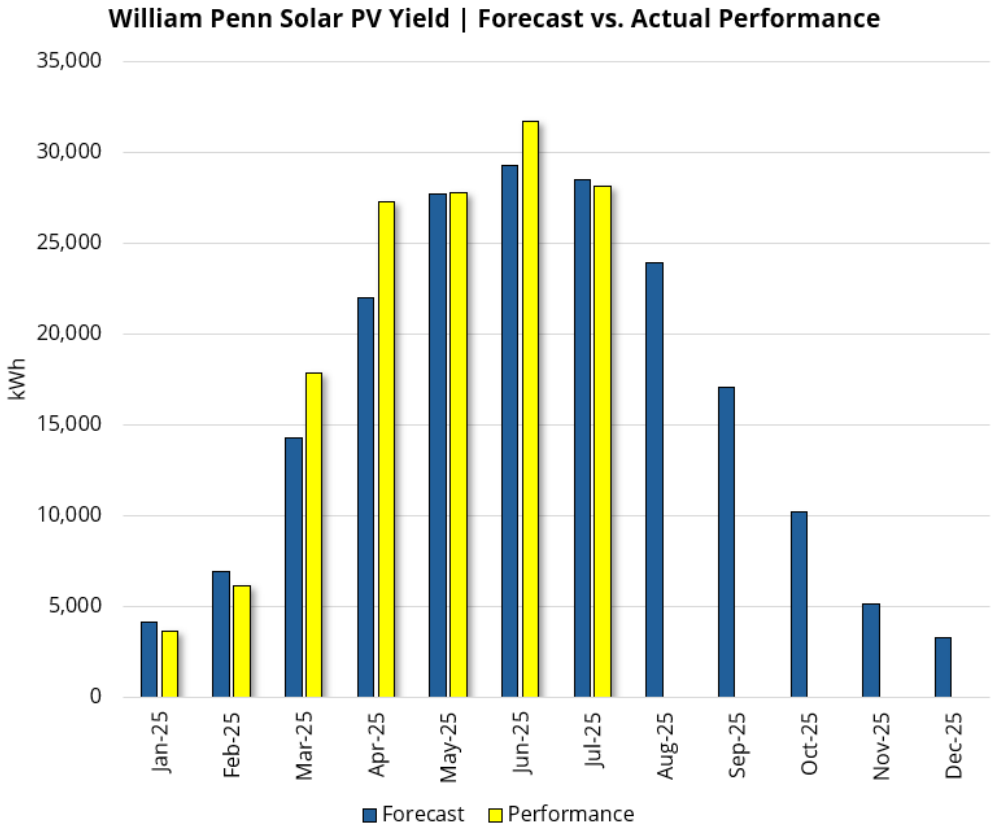
2.2 Most of the council's carbon emissions are emitted from two main sources 1) council buildings (including leisure centres) and 2) council vehicle fleet. To achieve net zero, the council must reduce carbon emissions from its vehicle fleet by ~850 tonnes per year by 2030 and reduce carbon emissions from its "core buildings" (excluding small buildings like pavilions) by ~838 tonnes per year by 2030.

2.3 In 2022, the Association for Public Service Excellence (APSE) conducted a survey of the council's core buildings to establish a baseline of emissions. The survey revealed that the core buildings emitted 942 tons (t) of carbon dioxide (CO_2) in the 2019/20 fiscal year. APSE also projected a trajectory towards net-zero based on the completion of a suite of building decarbonisation projects. One of the projects recommended by APSE was the installation of rooftop solar PV at South Oxhey Leisure Centre (SOLC).

2.4 Since then, several decarbonisation projects have been implemented (or planned) across the council estate, which are expected to result in savings of 104 tCO_2. Most recently, a 500-panel rooftop solar PV system was installed at William Penn Leisure Centre which by August 12th 2025 over this calendar year

[1] A **power purchase agreement (PPA)** is a **long-term contract** between an electricity generator and a buyer. In this agreement, the buyer agrees to purchase electricity at a pre-negotiated price for a specified duration, usually ranging from 5 to 20 years. The PPA outlines the terms of energy delivery and pricing, ensuring a stable revenue stream for the energy supplier.

has saved over £24,000 and 62 tonnes of CO2 and is performing 10% ahead of forecast at the end of May. See Figure 1.



2.5 The rooftop solar PV at William Penn Leisure Centre was funded by a grant from the Swimming Pool Support Fund and Sport England. The council also applied to Sport England for a grant for rooftop solar PV at SOLC, but our application was unsuccessful.

2.6 SOLC consumes 440,000 kWh of electricity per year and is one of the biggest electricity consuming buildings in the council estate. Therefore, the installation of rooftop solar PV would have a big impact on the council's efforts to become net zero by 2030.

2.7 As such, council officers have been working to 1) confirm the feasibility and cost of installing rooftop solar PV at SOLC and 2) exploring alternative potential fundings sources.

2.8 One potential funding source officers have explored is using council capital budget to fund the solar PV, repaid through a Power Purchase Agreement (PPA).

2.9 A Power Purchase Agreement (PPA) is a financial arrangement whereby the council would install and fund the solar PV and agree to sell SLM the solar electricity at a unit rate of £0.1393 pence per kWh which aligns to Schedule 18 (Utilities) of the leisure contract. PPA's are commonly used in conjunction with solar PV. Schedule 18 of the of Leisure Contract addresses risk arising from utility tariffs. The current rate of 13.93p is the original 11p rate agreed in Schedule 18 with indexation applied each year since 2018. This rate will increase each year with new indexation and will be reflected within the contract variation if the solar install goes ahead.

2.10 A PPA requires specialist legal advice to setup which will cost £2,900. Proper repair and maintenance (which would be the council's responsibility) is important.

2.11 The Council will need to procure a maintenance and repair contract to keep the solar PV operational. The projected cost of £1,000 per year this is likely to increase in line with the utility price indexation. At present SLM have sole responsibility for maintenance at South Oxhey Leisure Centre so this will also require a variation to the existing SLM contract.

2.12 The current Leisure Services Contract with SLM expires in 2038. A new price for the solar electricity will form part of the negotiations with the new Leisure Services Contract provider. A normal PPA unit rate is based on the market rate of electricity at the time the PPA is agreed. PPA unit prices are typically ~5p less than the market rate, to incentivise the use of a renewable tariff. The present open market price to supply William Penn is 20p, which would equate to a potential PPA rate of 15p/ kwh.

2.13 The Outline Business Case can be found in Appendix 1.

2.14 Solar PV Design

2.15 Following approval to proceed from the Climate Change, Leisure and Housing Committee on 2nd July 2025 a competitive tender process was completed, supported by Watford Borough Council.

2.16 The council received twenty-four tender proposals which were scored on quality (60%) and price (40%). The highest scoring proposal was submitted by Geo Green Power.

2.17 Geo Green Power are a Microgeneration Certification Scheme (MCS) accredited solar PV installer established in 2001 and based in Loughborough.

2.18 Geo Green Power previously installed a solar PV system at Whitwick & Coalville Leisure Centre in Leicestershire which is operated by SLM. SLM were asked for feedback and stated their experience of working with them was very positive and they support the appointment of Geo Green Power.

2.19 Geo Green Power have proposed a 145.60 kWp solar PV system comprising of 320 455w PV panels. The panels will be connected to 1 Solar Edge Invertor which will convert Direct Current (DC) electricity into mains electricity (AC).

2.20 Figure 2 identifies the roof area where the proposed solar PV system will be installed:

Figure 2 Proposal Solar PV Locations

2.21 The solar panels will be installed using the Van der Valk system which is a ballasted (non-penetrative) modular roof mounting system. Using the Van der Valk system will help avoid damage to the leisure centres roof.

2.22 More information on the proposed solar PV system and how it will be installed can be found in the Outline Business Case (Appendix 1).

2.23 The Geo Green Power proposal was competitive on price when compared to the other proposals. However, it scored higher on quality because it was the best technical solution when considering the council will be selling the solar electricity to SLM through a Power Purchase Agreement (PPA).

2.24 Under a PPA, the council will own the PV system and be responsible for its ongoing maintenance and repair. A PPA is a contractual arrangement between an energy provider and a buyer, and failure to properly maintain the system could lead to a contractual dispute between the council and SLM. To mitigate this risk, it is in the council's interest to adopt a solution that enhances reliability and reduces the likelihood of system failure. This may include installing high-quality equipment, securing extended product warranties, and/or entering into an annual maintenance and repair agreement.

2.25 The Geo Green Power proposal features high quality components backed by extended warranties (panels 30-years, invertor 20-years, optimizers 25-years, mounting system 20-years).

2.26 The proposal also features optimisers which make the panels touch-safe during maintenance or in the event of a critical incident and adds a rapid shutdown button also known as a "firefighters switch". Optimizers also add enhanced monitoring functionality which helps proactive maintenance.

2.27 Geo Green Power have also offered a free annual health check service for two years to ensure the panels are cleaned, maintained and operating at optimum efficiency. Thereafter we will secure a maintenance contract.

2.28 Outline Business Case Summary

2.29 The setup of a PPA requires specialist legal advice at a confirmed cost of £2,900. Proper repair and maintenance (which would be the council's responsibility) is important, failing to keep the solar PV operational could invalidate the PPA. While the Geo Green Power proposal features a free annual health check

service and extended equipment warranties, it is sensible to anticipate some additional maintenance and repair costs. Therefore, the council should anticipate solar PV maintenance and repairs projected to cost ~£1,000 per year. £5,400 has been allocated to cover the cost of procurement and installation.

2.30 The quoted cost of the rooftop solar PV is £102,902 and is predicted by Geo Green Power to generate PPA revenue of £17,823 per year.

2.31 Additionally, the council is forecasted to benefit from a £9,659 revenue saving per year from a reduction in the subsidy it pays SLM under the utility indemnification clause of the leisure contract.

2.32 The total cost of the solar PV is £111,202 (solar PV cost + consultancy cost + PPA setup cost) plus an ongoing repair and maintenance cost of £1,000 per year.

2.33 The total benefit to the council is therefore forecasted to be £26,482 per year. The capital financing costs are estimated to be £8,340 resulting in a net income of £18,141 per year. Excluding capital financing charges there is a payback period of 4.9 years after allowing for interest costs of £3,892 per year. The net present value is £314,262 after 25 years. Appendix 4 provides a detailed financial appraisal.

2.34 The inverter may need to be replaced once during the 25-year period, and cost £14,632 at today's prices, which is less than the revenue for one year. This would need a contingency from year 20 when the warranty expires.

2.35 The rooftop solar PV is forecasted to save 25.73 tCO_2 per year and 772 tCO_2 over its lifetime. The estimated embodied carbon of the rooftop solar PV is 86 tCO_2 resulting in a carbon payback period of 3.3 years.

2.36 The rooftop solar PV will be owned by the council and therefore will not be impacted by the end of the leisure contract with SLM. Additionally, SLM have agreed to the submission of this OBC and entering a PPA with the unit rate aligned to the leisure contract.

3 Options and Reasons for Recommendations

3.1 The council has the option of not installing rooftop solar PV at SOLC. However, this option results in Strategic Risk 10: Failure to deliver net-zero carbon commitments - Impacts negatively on the council's ability to achieve net zero by 2030.

3.2 The council has the option to wait until more grant funding becomes available. However, at the time of writing no grant funding is available. Please note that grant funding is often awarded through a competitive process, so even if eligible grant funding becomes available, there is no guarantee the council will be successful in its grant application.

3.3 The council explored and proposed to SLM the option of funding the rooftop solar PV at SOLC through a council loan to SLM and repaid through a management charge increase. However, SLM have stated their preferred approach is using a PPA rather than a council loan.

3.4 Due to the availability of capital budget for council building decarbonisation, the lack of available grant funding, SLM's preference for a PPA approach and that achieving net carbon zero is one of four core pillars of the corporate framework,

our recommended approach is to use capital budget to fund the solar PV at SOLC, repaid through a PPA with SLM.

4 Policy/Budget Reference and Implications

4.1 The programme to decarbonise council buildings is set out in the Climate Emergency and Sustainability Strategy (2023-2027).

4.2 Installing rooftop solar PV at SOLC will contribute to 3 key themes in the Corporate Framework 2023-2026:

4.3 "Net Carbon Zero & Climate Resilient": The rooftop solar PV will remove 24.43 tCO_2 annually and 1,122 tCO_2 over it's lifetime. The council class carbon emissions from Leisure Centres as Scope 3 (indirect) emissions. Therefore, reducing SOLC's carbon emissions will support the council's commitment to be net zero by 2030.

4.4 "Provide responsive and responsible local leadership": By installing rooftop solar PV on one of our core buildings we will show residents and businesses that we are leading by example and will encourage others to follow.

4.5 "Support and enable sustainable communities": The rooftop solar PV will help improve both the environmental and financial sustainability of SOLC. SOLC is an important community building which rooftop solar PV will help make cleaner, greener and more resilient.

5 Financial Implications

5.1 It is recommended that existing council capital budget ringfenced for net zero projects is used to fund this project and therefore be considered by the Policy & Resources Committee on the 8th September 2025.

6 Legal Implications

6.1 The recommendations in this report are fully in line with the expectations on local authorities to take local action on climate change contained in the Climate Change Act 2008.

6.2 Installation of rooftop solar PV at SOLC will likely require a contract variation with SLM and may require modifications to the lease agreement with Hertfordshire County Council. Officers have reviewed the legal implications and do not believe they stop the installation of rooftop solar PV.

6.3 A contract will be required between the procured contractor and TRDC.

7 Staffing Implications

7.1 None

8 Equal Opportunities Implications

8.1 A Short Equality Impact and Outcome Assessment has been completed and can be found at Appendix 2. There are no negative impacts identified as arising from the project.

9 Climate Change and Sustainability Implications

9.1 A sustainability impact assessment can be found at Appendix 3 with an average total score of 3.00

Climate and Sustainability Impact Assessment Summary	
Homes, buildings, infrastructure, equipment and energy	3.50
Travel	N/A
Goods and Consumption	2.50
Ecology	N/A
Adaptation	N/A
Engagement and Influence	3.00
Total Overall Average Score	**3.00**

10 Community Safety Implications

10.1 None.

11 Public Health implications

11.1 None.

12 Customer Services Centre Implications

12.1 None.

13 Communications and Website Implications

13.1 Once installed the website will be updated, and communication will be required.

14 Risk and Health & Safety Implications

14.1 The Council has agreed its risk management strategy which can be found on the website at http://www.threerivers.gov.uk with the climate emergency listed as a strategic risk.

14.2 The subject of this report is covered by the Climate and Sustainability service plan. Any risks resulting from this report will be included in the risk register and, if necessary, managed within this/these plan(s).

14.3

Nature of Risk	Consequence	Suggested Control Measures	Response	Risk Rating
The Council fails to act to reduce its' CO_2	The council net zero target of 2030, corporate framework net zero carbon theme and	For the Committee to note and continue to provide a mandate for officers to progress	Treat	6

emissions	requirements of the Climate and Emergency Sustainability Strategy are unlikely to be met and importantly the council will not be addressing the climate emergency and thus will contribute further to the increase in global warming and its' consequences.	decarbonisation projects.		
Damage to the leisure centre roof due to solar PV installation.	There is an inherent risk with solar PV of damaging the roof either during installation or afterwards because of the additional weight.	The panel mounting system specified is non penetrative which helps avoid damage to the roof during installation. The solar PV installer will commission a structural roof survey before installation to confirm the roof can support the weight. The survey will be included in the total cost and will be shared with TRDC before installation.	Treat	6

14.4 In officer's opinion the risk that the council fails to act to reduce its emissions would prejudice the achievement of the Strategic Plan and therefore presents a strategic risk.

Recommendation

14.5 That:

The Policy & Resources Committee approve the installation of rooftop solar PV at South Oxhey Leisure Centre as outlined in this report and Outline Business Case.

The Policy & Resources Committee provide delegated authority to the Assistant Director For Environment to appoint the recommended solar PV installer at a cost of £102,902 (excl. VAT).

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Background Papers

None

APPENDICES / ATTACHMENTS

Appendix 1: Outline Business Case for the Installation of Rooftop Solar PV at South Oxhey Leisure Centre
Appendix 2: Short Equality Impact and Outcome Assessment

Appendix 3: Climate and Sustainability Impact Assessment
Appendix 4: Sustainability Finance Pro Forma


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