

Three Rivers District Council

**Climate Change and Leisure
Committee Report
Outline Business Case for the
Installation of Rooftop Solar PV at
South Oxhey Leisure Centre**

Date: 02/07/25

Climate Change, and Leisure Committee
2nd July 2025

PART I

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

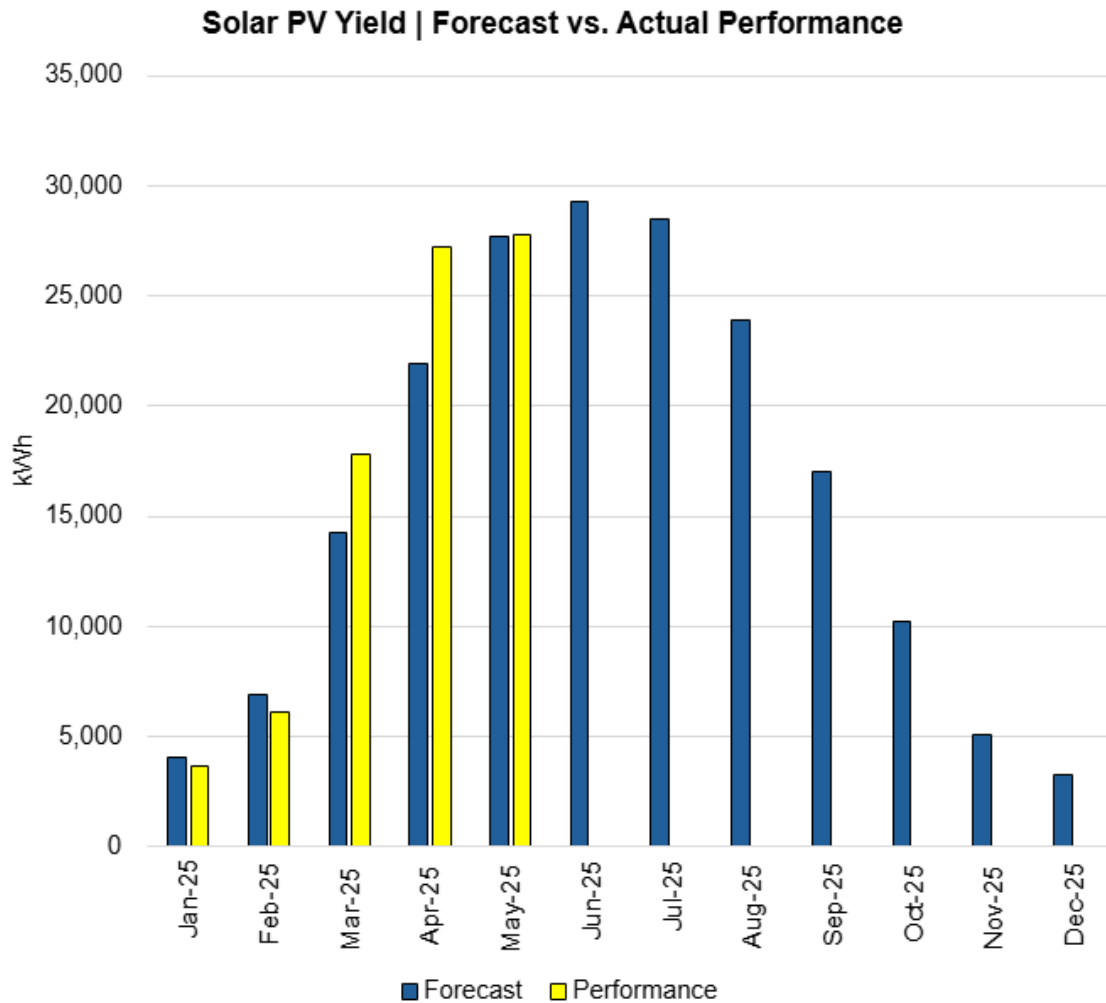
1 Summary

- 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 Agreement¹ with Sports and Leisure Management Ltd (SLM).
- 1.2 This report recommends that the Outline Business Case (OBC) is recommended to Policy & Resources Committee. This report provides background context and a high-level overview of the OBC, 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 (CO₂) 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 tCO₂. Most recently, a 500-panel rooftop solar PV system was installed at William Penn Leisure Centre which by June 17th 2025 over this calendar year has saved over £15,000 and 41 tonnes of CO₂ and is performing 10% ahead of forecast at the end of May. See Figure 1.

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.



- 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 153,594 kWh of electricity per year and is one of the biggest electricity consuming buildings in the council estate.² 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 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

² 2019/2020 data as per APSE energy audit.

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 typically costs ~£2,500. 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 ~£1,120 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 Feasibility Study Summary**
- 2.15 The feasibility of rooftop solar PV at SOLC has been evaluated from a technical, financial and legal (including planning permission) perspective.
- 2.16 The feasibility study showed that installation is feasible and that SOLC is a good candidate for rooftop solar PV.
- 2.17 The feasibility of a solar canopy at SOLC was also evaluated as part of a wider study across seven council owned car parks. While both rooftop solar PV and a solar canopy are feasible with less than 10 year return on investment, the roof top solar is the more favourable.
- 2.18 Table 1 below shows how the canopy and rooftop systems and benefits compare.

	Solar Canopy	Rooftop Solar
Solar Capacity (kWp)	143	140
Annual Generation (MWh)	134.7	126.3
No. Panels	318	280
Indicative Capital Cost (£)	£287,868	£118,421
Project IRR (%)	12.7%	20%

Net Present Value (£,30-year)	£290,998	£313,528
Breakeven Year	9	4.5
Cumulative Net Income (£,30-year)	£664,835	£534,929
Carbon Savings (Lifetime, tCO ₂)	815	1,122
Estimated Embodied Carbon (tCO ₂)	253	83

Table 1 Solar Canopy & Rooftop Solar Comparison

- 2.19 The rooftop solar PV and solar canopy arrays are of a similar size and comparable in terms of energy generation and carbon savings. However, rooftop solar is cheaper and so compares favourably in financial terms such as breaking even 4.5 years earlier than a solar canopy so officers recommend prioritising rooftop solar PV

2.20 Outline Business Case Summary

- 2.21 A PPA requires specialist legal advice to setup which typically costs ~£2,500. Proper repair and maintenance (which would be the council's responsibility) is important, failing to keep the solar PV operational could invalidate the PPA. Therefore, the council would seek to enter a solar PV maintenance and repair contract projected to cost ~£1,120 per year. £5,500 has been allocated to cover the cost of procurement and installation.
- 2.22 The forecasted cost of the rooftop solar PV is £110,421 and is predicted to generate PPA revenue of £17,585 per year. **Please note that the exact cost of the rooftop solar PV will be confirmed through contractor quotations before consideration by the Policy & Resources committee.**
- 2.23 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.
- 2.24 The total cost of the solar PV is forecasted to be £118,421 (solar PV cost + project management cost + PPA setup cost) plus an ongoing repair and maintenance cost of £1,120 per year.
- 2.25 The total benefit to the council is therefore forecasted to be £26,134 per year. The capital financing costs are estimated to be £16,579 resulting in a net income of £9,555 per year. Excluding capital financing charges there is a payback period of 4.5 years or 5.1 years after allowing for interest costs of £4,737 per year.
- 2.26 The Inverters may need to be replaced once during the 25 year period, and likely to cost approximately £15,000 at today's prices, which is less than the revenue for one year. This would need a contingency from the year when the warranties expires, which would be established at procurement but likely to be between 5-25 years.
- 2.27 The rooftop solar PV is forecasted to save 24.43 tCO₂ per year and 1,122 tCO₂ over its lifetime. The estimated embodied carbon of the rooftop solar PV is 83 tCO₂ resulting in a carbon payback period of 3.4 years.

- 2.28 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 of funding the rooftop solar PV at SOLC through a council loan to SLM and repaid through a management charge increase. This option was considered and provisionally proposed to SLM. However, SLM have stated their preferred approach is using a PPA rather than a council loan.
- 3.3 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 tCO₂ annually and 1,122 tCO₂ over its 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 is used to fund this project. Therefore, it is recommended that the OBC should be considered by the Policy & Resources Committee on the 8th September 2025.
- 5.2 The exact value of the solar PV system will not be known until contractor quotations have been received which identify the actual cost of the rooftop solar PV. It is envisaged that this will be prior to the Policy & Resources Committee meeting so the actual budget requirement can be considered.

- 5.3 The capital financing costs will be considered by the Policy & Resources Committee, when contractor quotations will have been received.

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 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 The Leisure Assets Team will be responsible for the ongoing maintenance contract and invoicing requirements
- 7.2 The Property Team will be supervising the design and installation with support from Climate Change Team and the SOLC Manager and SLM Regional Manager.
- 7.3 The Climate Team will oversee the procurement and project management

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 3.13.

Climate and Sustainability Impact Assessment Summary	
Homes, buildings, infrastructure, equipment and energy	3.40
Travel	N/A
Goods and Consumption	3.00
Ecology	N/A
Adaptation	N/A
Engagement and Influence	3.00
Total Overall Average Score	3.13

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 emissions	The council net zero target of 2030, corporate framework net zero carbon theme and 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.	For the Committee to note and continue to provide a mandate for officers to progress decarbonisation projects.	Treat	6
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.	This risk will be mitigated by carefully reviewing (with help from the Property Team) the panel mounting system and installation method the solar PV design recommends. The solar	Treat	6

		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. A Building Surveyor (in house) will oversee and sign off the design and installation.		
--	--	---	--	--

- 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 Climate Change and Leisure committee recommend officers seek contractor quotations and then recommend the OBC to the Policy & Resources Committee.

Report prepared by: Joanna Hewitson, Climate and Sustainability Strategy Officer,

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

