

Three Rivers District Council

**Committee Report**  
**Outline Business Case for the**  
**Installation of Additional Rooftop**  
**Solar PV at Three Rivers House**

Date: 19/08/25

**Policy and Resources Committee**  
**8th September 2025**

PART I

**Outline Business Case for the Installation of Additional Rooftop Solar PV at Three Rivers House**

**1 Summary**

- 1.1 This report proposes that additional rooftop solar PV is installed at Three Rivers House, funded by council capital budget and repaid electricity savings.
- 1.2 The solar PV system is predicted to generate 35,646 kWh of solar electricity which represents 8% of TRH's electricity usage. The solar PV system will save 6 tCO<sub>2</sub> and £8,635 per year in utility costs, resulting in a capital payback period of 7.4 years and a Net Present Value of £88,410.75 over 25 years
- 1.3 This report recommends that the Outline Business Case (OBC) is recommended to the Joint Leadership Team and from there the 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 3<sup>rd</sup> biggest concern for households.
- 2.2 Most of the council's carbon emissions are emitted from two main sources 1) council buildings 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<sub>2</sub>) 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 additional rooftop solar PV at Three Rivers House (TRH).
- 2.4 Significant carbon savings have already been made at TRH primarily through the installation of a rooftop solar PV system to two roof aspects of the west wing (2018), a server room upgrade (2022/23) and the installation of an Air Source Heat Pump (2023/24). These decarbonisation projects helped reduce TRH's carbon emissions by 95 tonnes (or 40%) in 2023/24 compared to the previous year.

- 2.5 While significant progress has been made, TRH consumed 430,297 kWh of electricity in 2023 and is one of the biggest electricity consuming buildings in the council estate. Therefore, the installation of additional rooftop solar PV would have a meaningful impact on the council's efforts to become net zero by 2030.
- 2.6 In February 2025, the council allocated £500k of additional capital funding per year (for financial years 2025/26, 26/27, and 27/28) for decarbonisation projects to help the council to achieve its net zero target.<sup>1</sup>
- 2.7 As such, council officers recommend the installation of additional rooftop solar PV at TRH and an Outline Business Case has been created which can be found in Appendix 1.
- 2.8 We acknowledge that local government reform introduces uncertainty around the future ownership of Three Rivers House. However, with a payback period of only 7.4, combined with the added benefits of improving the building's saleability and rentability, council officers suggest installation of additional solar PV is still a sensible investment.
- 2.9 Solar PV Design**
- 2.10 Normally, a feasibility study would be undertaken to confirm the viability of installing rooftop solar PV at TRH. However, the presence of existing rooftop solar PV already demonstrates its viability. Additionally, in 2023, a structural roof survey was completed which raised no significant concerns about the installation of additional rooftop solar PV at TRH.
- 2.11 Development Management have been consulted, and full planning permission is not required but prior approval is, as it is likely it can be installed under permitted development.
- 2.12 To facilitate the creation of the Outline Business Case a competitive tender process was completed in May 2025, supported by Watford Borough Council. That tender process identified the optimum solar PV design and installer to a maximum budget of £50,000.
- 2.13 The council received ten tender proposals which were scored on quality (60%) and price (40%). The highest scoring proposal was submitted by Chiltern Solar.
- 2.14 Chiltern Solar is a Microgeneration Certification Scheme (MCS) accredited solar PV installer established in 2011 and based in Chesham, Buckinghamshire. Chiltern Solar installed the existing solar PV system at TRH in 2018 utilising Fronius Symo invertors.
- 2.15 Chiltern Solar have proposed a 47.70 kWp comprising of 106 450w PV panels. The PV panels will be connected to 2 Fronius Symo invertors which will convert Direct Current (DC) electricity in mains electricity (AC).
- 2.16 Figures 1 identifies the roof area where the proposed solar PV system will be installed.

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<sup>1</sup> <https://moderngov.threerivers.gov.uk/documents/g1461/Agenda%20frontsheet%2025th-Feb-2025%2019.30%20Full%20Council.pdf?T=0>

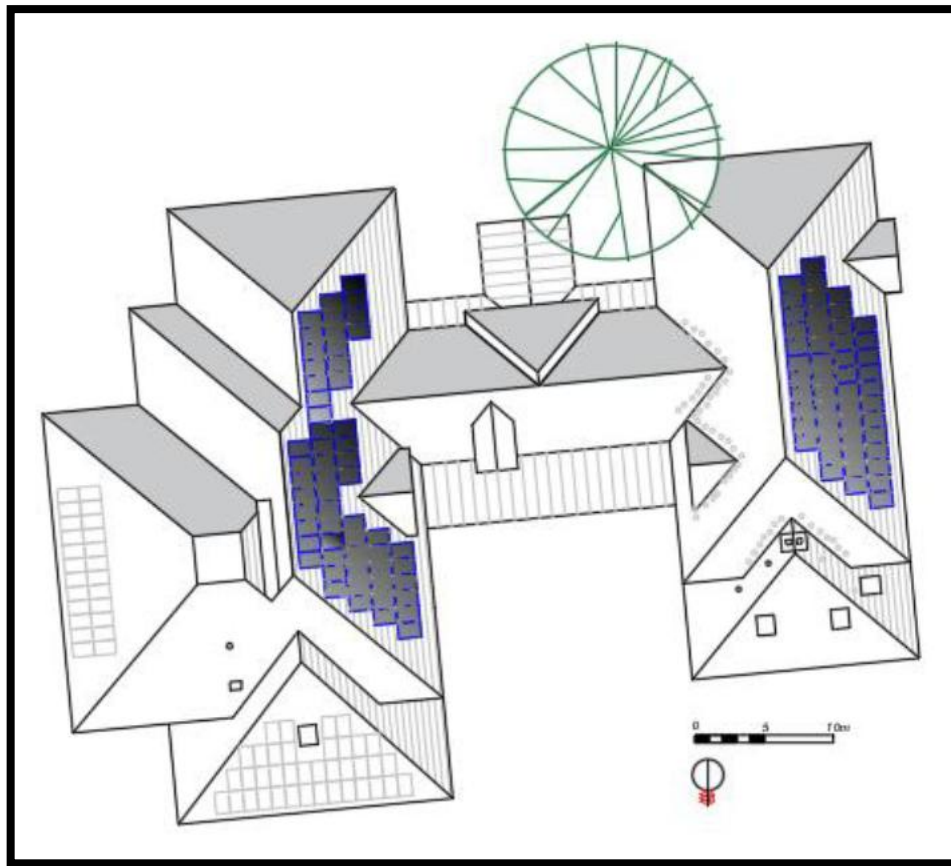


Figure 1 Proposed Solar PV Locations (Plan)

- 2.17 More information on the proposed solar PV system and how it will be installed can found in the Outline Business Case (Appendix 1).
- 2.18 The warranties are 25 years for the solar panels, 10 years for the inverters and 2 years for installation and workmanship.
- 2.19 Outline Business Case Summary**
- 2.20 The quoted cost of the solar PV system is £48,038 (excluding VAT).
- 2.21 Please note that this cost does not include two additional items that council officers would recommend:
- 2.21.1 Structural Survey: Chiltern Solar did not specify a structural survey because one was carried out in 2023. However, that structural survey was not based on a specific solar PV design. Now we have the proposed design (roof location, number of panels, panel layout etc) another, more specific structural survey could be completed. The estimated cost of the survey is £1,075 (exc VAT).
- 2.21.2 Bird Blocker: A bird blocker is a mesh that stops birds nesting under the PV panels. The estimated cost is £1,700 (exc VAT).
- 2.22 Including the above items increases the project cost to £50,813 but would help mitigate the risk of significant structural and operational issues in the future.
- 2.23 The system will be self-cleaning, and due to prohibitive access issues to the roof a maintenance contract will not be included, operating like the existing array. Instead, the business case, **and Sustainability Fund Financial Appraisal**

**(Appendix 4)** includes a provision of £1,000 per annum towards ad hoc maintenance, repairs and equipment replacement.

- 2.24 The solar PV system is predicted to generate 35,646 kWh of solar electricity which represents 8% of TRH's electricity usage. Additionally, the solar PV system will save 6 tCO<sub>2</sub> and Appendix 4 Sustainability Fund Financial Appraisal shows it save ~ £8,635 per year in utility costs, resulting in a capital payback period of 7.4 years and a Net Present Value of £88,410.75 over 25 years.

### **3 Options and Reasons for Recommendations**

- 3.1 The council has the option of not installing additional rooftop solar PV at TRH. 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.

### **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 TRH 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 6 tCO<sub>2</sub> annually and 152 tCO<sub>2</sub> over its lifetime. The council class carbon emissions from TRH as Scope 1 (direct) emissions. Therefore, reducing TRH's carbon emissions will support the council's commitment to be net zero by 2030. The programme to decarbonise council buildings is set out in the Climate Emergency and Sustainability Strategy (2023-2027).
- 4.4 "Provide responsive and responsible local leadership": By installing additional rooftop solar PV on our headquarters, 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 TRH. TRH 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 8<sup>th</sup> 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 A TRDC design and build standard contract will be agreed, which will require legal approval.

## **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 3.13.

<b>Climate and Sustainability Impact Assessment Summary</b>	
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
<b>Total Overall Average Score</b>	<b>3.13</b>

## **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 <sub>2</sub> 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. A structural roof survey before installation to confirm the roof can support the weight.	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:

Policy and Resources Committee instruct officers to install the proposed PV Solar Array on Three Rivers House, to be installed by Chiltern Solar who were the successful bidder from the competitive tender process.

The Policy & Resources Committee provide delegated authority to the Assistant Director For Environment to appoint the recommended solar PV installer at a cost of £50,813 (excl. VAT).

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**Background Papers**

None

**APPENDICES / ATTACHMENTS**

**Appendix 1: Outline Business Case for the Installation of Rooftop Solar PV at Three Rivers House**

**Appendix 2: Short Equality Impact and Outcome Assessment**

**Appendix 3: Climate and Sustainability Impact Assessment**

**Appendix 4: Sustainability Fund Financial Appraisal**



