

TEWKESBURY BOROUGH COUNCIL

Report to:	Executive Committee
Date of Meeting:	30 March 2022
Subject:	Solar Car Park Canopy
Report of:	Head of Finance and Asset Management
Corporate Lead:	Head of Finance and Asset Management
Lead Member:	Lead Member for Clean and Green Environment
Number of Appendices:	None

Executive Summary:

Funding secured from the Public Sector Decarbonisation Scheme has been realigned to support the delivery of a solar car park canopy rather than the replacement of the heating systems within the Council offices as originally intended. A recent tender for the solar canopy has revealed total costs to now be at £533,000 rather than the £303,000 as per estimates in Autumn 2021.

The increased cost results in a funding shortfall of up to £317,000 and it is recommended to Members that approval is given to utilise existing reserves in order to deliver this project.

The delivery of the solar canopy will help the Council reduce its carbon emissions and provide an ongoing financial saving. In the worst-case scenario, a return on investment over seven years is calculated whilst it is expected, as a result of rising energy costs, the additional sizing of the system and full use of external grant funding, that the return will be over a much shorter timeframe.

Recommendation:

To APPROVE the use of up to £317,000 from the asset management and carbon reduction earmarked reserves to enable the delivery of a solar car park canopy.

Reasons for Recommendation:

The grant funding secured is insufficient to deliver the project in full given the recent cost increases and so the use of Council reserves is recommended in order to enable delivery.

Resource Implications:

As detailed within the report.

Legal Implications:

None arising from the report.

Risk Management Implications:

A detailed risk register containing eighteen identified risk associated with the delivery of this scheme is managed and monitored by the project team. A number of risks have recently been mitigated as a result of the tender process and the granting of planning permission.

The immediate risks around not approving the recommendation are the loss of funding of up to £284,000, the continuing reliance on the purchase of energy at a time of rapidly increasing prices and the reputational impact of not progressing a key action within the carbon management action plan.

Performance Management Follow-up:

The project is subject to regular monthly reporting at the Council's Programme Board, monthly reporting to the external funding and quarterly updates to the Climate Change and Flood Risk Management Group.

Environmental Implications:

It is anticipated that the solar canopy could generate approximately 260,000kWh of energy of which over 75% would be consumed directly by the Council offices with the balance being 'exported' to the Leisure Centre. As a result, carbon emissions are expected to reduce by 76 tCO₂e pa which is equivalent to 5% of the Council's overall baseline emissions.

1.0 INTRODUCTION/BACKGROUND

- 1.1** In December 2020, the Council, as part of its year 1 carbon management action plan, submitted a grant funding application to the Public Sector Decarbonisation Scheme (PSDS) led by the Department for Business, Energy and Industrial Strategy (BEIS), for funding towards the replacement of the heating system at the Council Offices with an air sourced system. The application was successful and an award of £284,200 was made.
- 1.2** Following the award, tenders were sought for the delivery of the air sourced scheme which highlighted a significant increase in cost. As a result of the increased cost, the external funding support was removed and the project was postponed. However, successful negotiation with PSDS led to the agreement to use of the approved funding to provide a solar car parking canopy at the Council Offices. A small canopy (44kw) had been recommended as part of the original heat replacement project but was significantly enlarged (225kw) given the external funding now available.
- 1.3** It has been estimated that the solar canopy, which would be located on the central section of the staff car park to the rear of the Council offices, could produce in the order of 260,000kWh of energy to support the move away from imported energy and reduce the Council's carbon footprint. The solar canopy would also deliver significant ongoing financial savings and provide a visible demonstration of the Council's commitment towards its 2030 carbon neutral objective.
- 1.4** At the time of agreement with PSDS in Autumn 2021, an estimate of delivery cost was established in the order of £303,000.

2.0 SOLAR CAR PARK CANOPY

- 2.1** Progress towards the delivery of the canopy has been good with further work undertaken to understand likely energy production and use, the granting of planning permission and a tender undertaken for the supply and installation of the canopy.
- 2.2** The estimate of energy production in the order of 260,000kWh has been substantiated with the production of a detailed study which also mapped energy production against energy consumption for the latest full year period available. This highlighted that for the subject year, the Council would be able to consume 202,000kWh for its own needs leaving approximately 58,000kWh of excess generation available for other purposes. These figures mean that approximately 44% of the Council's energy needs could be met through the new car park canopy.
- 2.3** The excess energy generated during the non-peak consumption demand of the summer months was reviewed so as to determine the optimum use of that energy. Options such as battery storage (high capital costs) and export direct to the grid (low financial return per kWh) were considered but dismissed in favour of providing an export direct to the leisure centre. This option has a low capital cost (£7,500), returns of around three times that of export to the grid and the added benefit of a direct reduction of emissions levels within the council's carbon management plan.
- 2.4** The detailed studies completed over the winter also highlighted a high baseload use of energy at the Council. This is the minimum level of energy required by the offices during off peak demand. Comparison against similar business types suggest that a 15% reduction in this baseload could be readily achievable. Monitoring the sources of this off peak demand has already begun and plans are being drawn up to meet this target.
- 2.5** Bringing together the three elements – the solar canopy, the export of excess energy to the leisure centre and an expected reduction in the baseload of 15% - will result in a significant reduction in energy consumption and an income from the sale of excess energy. To quantify this in financial terms, the current cost of electricity has been used and results in an annual saving/income of £45,222. Should energy costs continue to rise, this annual return will increase.
- 2.6** The tender for the delivery and installation of the canopy closed earlier in March and resulted in four bids being submitted. As with most things over the last six months, the costs associated with the scheme have increased dramatically with the lowest bid received coming in at £481,000. Other bids went as high as £844,000. The lowest price bid has been reviewed for viability and has met all criteria. In addition, it has also been noted that the lowest price bid has quoted for the delivery of a 270kWh system which is in excess of the expected system. The project team are currently reviewing the additional financial benefit provided by the larger system which will further benefit the business case.
- 2.7** In addition to the tender bid of £481,000 there are pre project costs associated with structural engineers input and a recommended contingency to provide for. In total, it is anticipated that the total scheme cost will be £533,000.
- 2.8** Of the grant funding available, PSDS have so far agreed to release £216,000 to support the delivery of the project. The project team are confident that this figure can be increased and remain within the grant parameters, particularly given the increased sizing of the scheme, and are hopeful of securing the full grant of £284,200. Therefore, there is a funding shortfall of between £248,800 and £317,000 that will need to be met by the Council in order to deliver the project.

- 2.9** The Council currently holds earmarked reserves of £490,000 for asset management and £100,000 for carbon reduction. It is recommended that members approve the use of up to £317,000 from these reserves to ensure the delivery of the canopy.
- 2.10** Despite the capital cost increase there remains a strong business case for investment. Even at the current cost of energy and not allowing for the larger sized system an annual return of £45,222 against a maximum capital outlay of £317,000 allows for a return on investment over 7 years. Should the full external grant be available this return on investment drops to 5.5 years. It should also be noted that the Council's earmarked reserves are currently in a healthy position whilst there is severe pressure on the ongoing revenue budget making invest to save schemes such as these highly desirable.
- 2.11** The highly visible demonstration of the Council's commitment to carbon neutrality will also deliver an annual saving of approximately 76 tonnes of carbon dioxide emissions and will take the Council a long way towards the target for the carbon neutrality of the offices. This scheme is even more important given the recent disappointing news that the Council's second bid for funding towards the replacement of the heat system has not been successful. Despite passing all of the assessment, the PSDS was unfortunately over subscribed and sufficient funding was not available to support our bid. Investigations are currently underway into alternative grant funding opportunities.
- 2.12** The modular nature of the design for the solar canopy means that in the future the canopy can be extended to help meet the remaining offsetting needs of delivering carbon neutrality against other aspects of service delivery such as the collection of waste and recycling and the leisure centre provision.
- 2.13** Whilst the increased cost of capital is disappointing, there remains a sound business case to proceed with the canopy and to utilise up to £284,200 of external grant funding available.

3.0 OTHER OPTIONS CONSIDERED

- 3.1** The Council could decide not to proceed with the solar car park canopy project at this time and wait for a change in market conditions that may result in lower prices for the delivery of the car port. There are no guarantees that this would occur and there are no guarantees that replacement external funding for the current grant, which needs to be spent or returned by the end of June, could be found.

4.0 CONSULTATION

- 4.1** Consultation has taken place with the Climate Change and Flood Risk Management Group.

5.0 RELEVANT COUNCIL POLICIES/STRATEGIES

- 5.1** The Council has approved a motion declaring the intention to have carbon neutral office provision by 2030 and subsequently approved the Carbon Management Baseline Report and First Stage Action Plan.

6.0 RELEVANT GOVERNMENT POLICIES

6.1 United Nations Framework Convention on Climate Change's (UNFCCC) 21st Conference of Parties (COP21) and adopted on December 12, 2015, (The Paris Agreement).

International Panel on Climate Change (IPCC) special report on 'Global Warming of 1.5°C', following the UN Framework Convention on Climate Change in 2015. (October 2018).

Climate Change Act 2008.

7.0 RESOURCE IMPLICATIONS (Human/Property)

7.1 As set out in the report.

8.0 SUSTAINABILITY IMPLICATIONS (Social/Community Safety/Cultural/ Economic/ Environment)

8.1 The recommended funding of the solar car park canopy is one of a number of actions required to achieve carbon neutral status for the Council by 2030.

9.0 IMPACT UPON (Value For Money/Equalities/E-Government/Human Rights/Health And Safety)

9.1 As set out in the report.

10.0 RELATED DECISIONS AND ANY OTHER RELEVANT FACTS

10.1 Climate Change and Carbon Reduction Audit and Action Plan – Council 28 July 2020.
Replacement of the Council Offices heating system – Executive Committee 31 March 2021.

Background Papers: None.

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Appendices: None.