The installation of a 14.8 kW photovoltaic array at Yeovil Innovation Centre Extension

Executive Portfolio Holder:	*Henry Hobhouse, Property and Climate Change*
CEO:	*Alex Parmley*
Lead Officer:	*Keith Wheaton-Green, Climate Change Officer*
Contact Details:	*Keith.wheaton-green@southsomerset.gov.uk or 01935 462651*

Purpose of the Report

1. To seek authority to invest in a 14.8 kW photovoltaic (PV) array on the roof of the new Yeovil Innovation Centre Extension

Forward Plan

2. This report did not appear on the District Executive Forward Plan but this potential installation has been discussed at Income Generation Board.

Public Interest

3. The council aims to reduce energy use to make savings and hence reduce the cost of operating council buildings.

Recommendations

4. That District Executive:

    a. approve spending of £16,111.70 (or any revised quote that does not compromise the rate of return) to install a photovoltaic array on the roof of the Yeovil innovation Centre extension;
    b. agree that the net savings of £1,020 should be added to the medium term financial plan for 2018/19 and beyond.

Background

5. The council have installed 6 photovoltaic systems since 2010. The business case was made by the feed in tariff (FIT) subsidy and the fact that peak generation matched peak demand because the buildings have high day time occupancy.

6. During 2016 the FITs reduced dramatically and no business case could be made for further installations. During 2017 the FITs continue to reduce and are currently only worth 4.36p/kWh for new installations with an EPC of D or above. However, panel and inverter costs have dropped twice in the last few months and a reasonable business case can now be made. Further price drops may occur due to continued world demand and increasing sales volumes as well as decreases in tariffs from China due to Brexit but this cannot be predicted with accuracy.

7. The architect specified space for 44 PV panels on the extension roof in an unshaded area between all the other services placed on the roof. Use of 320 watt panels will maximise the generation potential of the installation. Quotes from three supplier/installers have been considered and Spectrum Electrical chosen based on their quote and the success of their previous installation for us at Brympton Way.

Financial Benefits

8. Spectrum Electrical have used industry standard methodology PV Sol to estimate the annual electricity generation, which is designed to ensure that generation is not overestimated. Financial benefits are based on the current feed in tariff rate of 4.36p/kWh, electrical import at 8.1p/kWh and deemed 50% export at 5.03p/kWh

System size (kW)	Estimated annual output (kWh)	Annual value of feed in tariff , electrical export and reduced bills		Cost	ROI (20 yr interest at 2.23%)
14.08	13,576	Feed in tariff	£ 592	£16,111	8.4%
		Reduction in electricity bill	£1122		
		deemed 50% export	£ 341		
		Total	**£2,033**		

9. Based on experience to date of our current six arrays, the reality will be different. Our current portfolio of five PV arrays generated 20% more during 2016 than the pre-installation annual estimates. The decision by Income Generation Board to proceed was based on was based on the 8.4% ROI achieved with 20% enhancement of the PVsol estimate. However, the financial analysis above is based on standard PVsol estimates.

10. The electrical output generally peaks at midday (dependent on cloud cover), which matches very well the peak in electrical demand at the Yeovil Innovation Centre. The electrical output over the course of a year represents about 6% of the buildings demand. It is expected that all the electricity generated during working days will be used on site, thus giving it the highest possible value. Feed in tariffs for this size of installation are 4.36 p / kWh. The day time rate for imported electricity at the Yeovil Innovation Centre is 8.1 p / kWh.

11. Once installed, the Feed in Tariff rate for this installation will increase in line with the consumer price index (CPI) and this will occur annually throughout the 20 year period that the scheme will attract the FIT.

12. The panels chosen are one of the most efficient on the market and have a 12 year guarantee. Each panel will have an optimiser to maximise the performance of the array in partially shady conditions. The inverter allows for remote monitoring from any computer which will allow officers and the supply company to monitor the array over time, easily see how each panel is performing and be alerted to any defects arising. The cost above includes the continued monitoring by Spectrum electrical.

Financial Implications

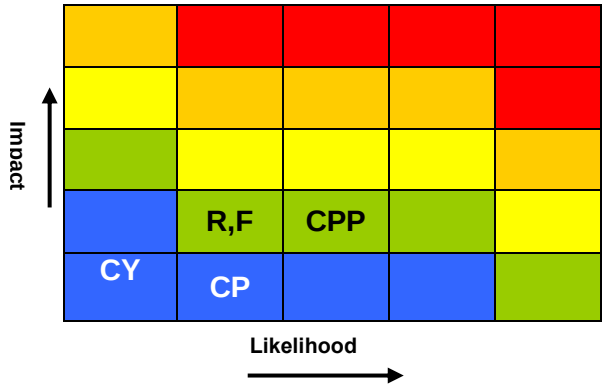
13. If Members agreed to this project it will be funded from the £15m allocated by District Executive in April 2017 for land, property and renewable projects. This will leave a balance of £7.2m.

14. The net savings of £1,020 can be added to the medium term financial plan for 2018/19 and beyond.

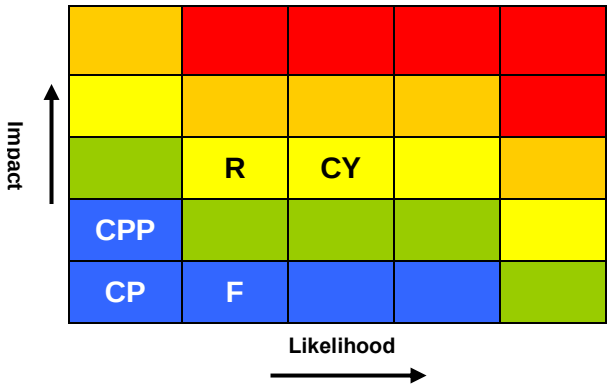
Risk Matrix

15. This matrix identifies the risk associated with both taking the decision as set out in the report as the recommendation(s) or not proceeding. Should there be any proposal to amend the recommendation(s) by either members or officers at the meeting then the impact on the matrix and the risks it identifies must be considered prior to the vote on the recommendation(s) taking place.

Proceeding with project



Not proceeding with project



Key

Categories			**Colours** *(for further detail please refer to Risk management strategy)*		
R	=	Reputation	Red	=	High impact and high probability
CpP	=	Corporate Plan Priorities	Orange	=	Major impact and major probability
CP	=	Community Priorities	Yellow	=	Moderate impact and moderate probability
CY	=	Capacity	Green	=	Minor impact and minor probability
F	=	Financial	Blue	=	Insignificant impact and insignificant probability

Corporate Priority Implications

Environment - To keep South Somerset clean, green and attractive

Carbon Emissions and Climate Change Implications

This is a carbon reduction project expected to save 6.5 tonnes of carbon p.a.

Equality and Diversity Implications

There are no implications.

Background Papers

Installation of 14 kW photovoltaic array on the roof of the new Yeovil Innovation Centre extension