

Didcot Town Council

Civic Hall Management Committee

27th January 2021



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Solar Panels at Didcot Council Offices/Civic Hall

Introduction

1. The Committee identified the installation of solar panels (photovoltaic) (Solar PV) on Didcot Civic Hall as a potential future project. The Officer has met with two installers of solar panels (Company A and Company B) and this report considers the outcomes of those initial site surveys.
2. Company A is an established local company, based in southern Oxfordshire, with experience and testimonials from domestic and commercial clients.
3. Company B is based outside the County, in north Wiltshire, with experience and testimonials from domestic, commercial and local authority clients. Company B also works with groups of residents or building owners to install community schemes across the country.
4. Separately but related, Didcot Civic Hall has been surveyed by the team from Oxford Brookes University's *Energy Information Exchange* (EiE). The resulting report made recommendations for energy saving at the Civic Hall and is presented at appendix 1.
5. The best siting for the panels would be on the extension, which offers a large, almost flat roof of a suitable construction. The smaller triangles of the main hall and Council offices are tiled, which presents two immediate concerns, that installation on tiles is problematic and that the configuration would not be ideal.

Recommendation

6. The Committee consider the installation of solar PV panels on the extension roof of the Civic Hall as part of a wider project to improve the facility in

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pursuance of the Council’s declaration of a Climate Emergency. Any project could include:

- a. The recommendations arising from the EiE survey
 - b. Improvements to the kitchen to ensure environmental and other standards are met
 - c. Replacement of old or outdated Civic Hall equipment
 - d. Alterations to the room layouts to increase lettable space
 - e. Installation of electric vehicle charging points to make use of generated solar energy (separate grant funding may be available for this).
7. The Committee consider which company to engage with to pursue the work.
8. The Committee consider a similar approach to new construction and redevelopment projects for other premises under its control or ownership.

Detail

9. Up to 68 solar PV panels could be fitted to the roof of the Civic Hall. The more panels that are installed, the more the Council will save on its electricity costs.
10. There are a number of companies that manufacture panels, both companies had experienced supply chain and guarantee problems with some suppliers. The two companies that were used in the analysis were considered to be reliable.
11. Panels do generate less electricity over their working lifespan. The industry standard is for 20 years, after which the performance can reduce more significantly.

Table 1: Company A

Solar System Comparisons for:						DIDCOT CIVIC HALL	
Forecasted to spend on electricity over the next 10 years, using government inflation figures:						£248,444.72	
Forecasted to spend on electricity over the next 20 years, using government inflation figures:						£784,818.23	
System size in Kw	Product	Qty Panels	Solar Kwh Produced	Cost of System Incl Vat	10 year income/saving	20 year income/saving	
1 12.60	LG350 with Solaredge optimised Inverter	36	14285	£23,161.38	£32,281.53	£101,685.22	
2 21.00	LG350 with Solaredge optimised Inverter	60	23809	£37,622.43	£53,802.56	£169,475.37	
3 11.16	JA310 with Solaredge Optimised Inverter	36	10122	£18,178.08	£22,873.77	£72,051.24	
4 18.60	JA310 with Solaredge Optimised Inverter	60	16870	£28,302.41	£38,122.95	£120,085.41	

12. This detailed analysis demonstrates that









- a. with the 60 panel system, if 50% of the energy generated was used and 50% exported (at 3.5p per kW), an annual saving in excess of £1,500 could be made against the cost of electricity for then Civic Hall and approximately £500 could be received for energy exported.
- b. The estimation is that carbon emissions in excess of 8900kg could be saved per year.

Table 2: Company B

Project Summary				Total ex VAT
Supply of Solar PV Equipmet (Including)				£22,100.00
Mounting structure				
39 x 350W PV Panels				
1 x Smail Power Inverter				
All AC and DC cabling				
Testing and certification				
Handover Docs including O&M manual				
Scaffolding				
Labour				£ 6,628.00
Installation of the the above equipment in line with manufacturers instructions and recognised trade best practices.				
Sub-total				£28,728.00
VAT				£ 5,745.60
Total				£34,473.60
Payment Milestone			%	Amount inc VAT
1. Deposit	Due on contract signing		25%	£8,618.40
2. Panel delivery	Due on the date of arrival of main equipment to site		50%	£17,236.80
Commissioning payment	Due on successful handover of plant including certificates and warranties.		25%	£8,618.40
			Total (inc VAT)	£34,473.60

13. Company B did not provide quotes for cheaper system hardware, considering them to be a false economy on a public building.

Table 3: Company B system details

SYSTEM OVERVIEW				
 68 PV modules	 1 Inverters	 34 Optimizers		
SIMULATION RESULTS				
 Installed DC Power	 Max Achieved AC Power	 Annual Energy Production	 CO2 Emission Saved	 Equivalent Trees Planted
24.14 kWp	21.13 kW	21.16 MWh	5.95 t	273

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14. Company B considered that, based on electricity consumption as indicated by its bills, the Council use up to 98% of the predicted power generation.
15. The EiE report indicates that in the current financial year, the Civic Hall is estimated to be using 105,260 kWh of electricity. Both companies used the prescribed Government model for estimating solar PV generation.
16. To demonstrate the power generated and used by the Council may be displayed via an app that can be linked to the Council’s website. For a more readily available display, the Committee may consider the installation of an LED readout, visible to passersby, like the one shown below. These cost up to £700 inc. VAT but may be cheaper to an installer, £700 is the ‘off the shelf’ price.



Table 4: Electricity use predictor (2-year)

SSE Prices- Current

Address	Postcode	Current Supplier	Standing Charge (p)	Day Rate	Night Rate	Day Usage	Night Usage	Estimated Cost
Civic Hall, Britwell Road, Didcot	OX11 7JN	SSE	38.31	16.891		117348		£19,961.08
Civic Hall, Britwell Road, Didcot	OX11 7JN	SSE	579.62	3.779		264831		£12,123.58

Financial Implications

17. Table 4 above shows the predicted electricity use (and its cost) at the Council Offices & Civic Hall for the next two years. The building is estimated to use approximately £10,000 of electricity annually. The installation of solar PV cells could reduce this significantly. Should the Committee decide to seek a grant for the installation, then the cost to the Council could be as low as zero
18. The cost of installation is significant. The Officer has identified a section 106 developer contribution that could be used to fund any project that is undertaken.

08S35 Land west of Didcot, between A4130 and Park Road to both North and South of B4493 Wantage Road (Agreement dated 18 July 2008)

“Civic Centre Contribution” towards the costs of improving Didcot Civic Centre or other community centres/services either on or within the proximity of the site.

19. This allocation currently has funds of £106,817.
20. Installation may also require planning permission, a permitted development application would be required in the first instance to establish the requirements, at a cost of £52.50. Should a full application be needed, it would cost £462.00 (discounted by 50%).
21. Building Regulations would also be needed. Building control charge on a sliding scale, dependent on the cost of a project. Building control would charge £420 plus VAT.
22. Costs of planning permission and building regulations may be drawn from the S106 allocation (up to 5% of the allocation may be used for professional and other fees).
23. The Council would make savings against the cost of electricity supplied to the Civic Hall over the lifetime of the panels. As part of a wider project, the Civic Hall would be less costly to run and would offer the opportunity to increase revenue with further letting space.
24. The Civic Hall’s Distribution Network Operator (DNO), SSE, must be notified about the installation of solar PV and must give permission for larger systems to be installed.

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