

## **REPORT OF PORTFOLIO HOLDER FOR FINANCE AND PROPERTY**

### **THE SUN VOLT PROGRAMME – A CAPITAL INVESTMENT PROPOSAL FOR PHOTOVOLTAIC SYSTEMS ON CORPORATE BUILDINGS.**

#### **Purpose of the Report**

1. To seek approval for the investment of £800,000 in photovoltaic (PV) systems on various corporate properties in order to maximise the financial benefits of the Government's Feed in Tariffs Scheme (FITs) to the Council.

#### **Information and Advice**

2. At the Waste and Energy Management Members Reference Group in July 2011 Members expressed general support for the principle of installing photovoltaic panels on corporate buildings and schools where appropriate.
3. Further to this, on 12 September 2011 a report was presented to the Corporate Asset Management Group (CAMG) that set out the business case for the Council to investment in installing solar PV systems onto the roofs of its corporate buildings. The report demonstrated an annual Return on Investment (ROI) in excess of 10% per annum over 25 years was possible through the use of the FITs scheme and was supported by CAMG providing that (a) the return is sufficiently high for each individual installation with modelling based on prudent assumptions and (b) that funding will be available only for installations which will be completed by 31 March 2012.
4. The FITs scheme, launched in April 2010, is part of a suite of Government initiatives aimed at increasing the proportion of energy used in the UK that is generated from renewable resources. Through the scheme, generators of renewable electricity are paid for every unit of electricity that they produce. The tariff levels are guaranteed for 25 years and are linked to the Retail Price Index (RPI). The scheme is designed to provide an annual return on investment of around 8%. Since the commencement of the scheme over 80,000 installations have been undertaken within Great Britain, many by local government and housing associations, as well as the private sector. Locally, Lincolnshire County Council has a programme of investment of £1 million in PV, Derbyshire £500k and Nottingham City over £8.5 million.
5. Currently the Government is consulting on a range of changes to the FITs scheme. These are addressed later in this report and their implications have been fully taken into account in the business case presented herein.

6. The Council already has experience of PV systems, having installed a PV system at the Turbine Business Innovation Centre in 2005 which currently reduces the site's energy consumption by approximately 3,000kWh per year. The Council has also installed a PV system at the new Eastwood Young Peoples Centre and is planning to incorporate PV systems into the West Bridgford library extension, the new Carlton Digby Special School and possibly the new highways depot at Bilsthorpe (saving £3,000 per annum in electricity costs per year from this site alone).
7. In addition to providing an attractive rate of return on investment through the FITs income, the Council will also benefit from the free electricity generated by the panels, reducing each site's energy costs. In many cases this saving will be in excess of £1,000 per year and will increase in line with the inevitable energy cost increases.

## **Reason for proposing the programme**

8. The Council is faced with continuing reductions in Central Government funding and continuing increases in energy and carbon taxation costs. The FITs scheme can play a part in mitigating both of these by creating an income stream and reducing exposure to future energy price increases.
9. The Sun Volt Programme will contribute to three Strategic Plan Objectives:

Priority 2 - Promoting the economic prosperity of Nottinghamshire and safeguarding our environment - Reducing the amount of CO<sub>2</sub> produced by the council's properties and operations. The installations will reduce the amount of electricity that the affected sites consume from the national grid, thereby reducing the carbon emissions associated with the energy of those sites.

Priority 4 - Securing good quality, affordable services  
Take actions to achieve significant reduction in the costs of delivering our services. Energy costs are an overhead of the Council's operations. By generating its own renewable energy the Council will offset the cost of increasingly expensive energy imported from the national grid, thereby saving money.

Priority 5 - To be financially robust and sustainable  
To have extracted maximum value for money from all of our assets including our buildings (and land and from our use of energy and fuel). Through utilising the air space above the Council's building's roofs the Council can receive an income from this asset and in addition reduce energy costs.

10. To assess the effectiveness of the FITs scheme a feasibility study was undertaken at Lawn View House. A commercial organisation specialising in PV system design was approached to design a scheme for Lawn View House and set out a proposal for investment. Table 1 below shows the proposal, which demonstrated a return on investment of 15% in year 1, based on the FITs rate at the time.

Table 1: Lawn View House Feasibility.

<b>100% Council Ownership: Nationwide Solar 46.2 kWp</b>	
System Cost (£)	<b>£109,785.00</b>
Generation Tariff (£, 25 year total)	£403,528.80
Export Tariff (£, 25 year total)	£5,313.14
Total INCOME (£, 25 year total)	<b>£408,841.94</b>
Value of displaced electricity costs (£, 25 year total)	£109,698.15
Maintenance costs	£46,552.11
Total system VALUE (£, 25 year total)	<b>£471,987.98</b>
<b>Return on investment (incl. electricity benefit and maintenance costs)</b>	<b>429.92%</b>

11. The feasibility study proved that the FITs scheme makes sound financial sense and, like many other Councils, that it would be prudent for NCC to take advantage of this opportunity by installing PV systems at other corporate sites. A further desktop feasibility study has been carried out that identifies a range of sites that may have the potential to deliver a similar level of return on investment as Lawn View House.
12. Table 2 shows the list of sites initially proposed to be included within the programme. This may be subject to change as the programme progresses should any issues arise as a result of the detailed site surveys that will be carried out on each building. A reserve list of additional sites has been developed. Planning applications have already been submitted for all of these sites.
13. Provided the roof area of the proposed sites meets certain criteria, it is possible to scale-up the Lawn View model to demonstrate the output from a capital investment of £800,000. This is shown in Table 3. CAMG have examined this model, checked the source data and performed a sensitivity analysis and have confirmed that the outputs are valid.

## Affect on property asset value

14. If any sites upon which PV has been installed are disposed of within the 25-year FITs scheme period it is intended that the PV system will be transferred to the purchaser, along with any outstanding FITs benefit. This will enhance the saleability of the property by providing an income stream to the purchaser and reduced electricity costs.

## Recent changes to the FITs scheme

15. On 31 October, the Department of Energy and Climate Change (DECC) launched a consultation to review the FITs scheme. This was in response to the rapid decrease in the cost of installing PV systems since the scheme was launched in April 2010. The two most significant proposed changes in the consultation, which is open until the 23 December, are:
  - (a) a reduction in the FITs rate for installations between 10 – 50 kilowatts (kW) in size from 32.9 pence per kilowatt hour (p/kWh) to 15.2 p /kWh. This change will potentially be effective from 12 December 2012.
  - (b) The introduction of new multi-site tariff rates which will aggregate new projects owned by one organisation into a single installation. The FITs tariffs that an installer receives are dependent upon the size of the installation. The larger the installation the lower the tariff paid. This has the potential to cause any new projects completed after the 31 March 2012 to receive a lower tariff rate.

16. The Council is not in a position to benefit from the current high tariff rates due to the very tight deadline of the 12 December 2011 before which there is no possibility of any installations being completed. However, the original business case was revisited using the newly proposed 15.2p tariff and it was found that a good return on investment could still be made as Table 3 below demonstrates.
17. The Council must ensure that all installations are completed before the 31 March 2012 in order to maximise its financial return. After this date the new multi-site tariffs may be introduced which will reduce the FIT rate that the Council will receive for any future installations as they will be aggregated together and treated as a single installation.

Table 2: Proposed list of sites to be included within the Sun Volt Programme

<b>UPRN</b>	<b>Site Name</b>	<b>Site type</b>	<b>Building Construction Type</b>
00759	Thoresby House	Corporate offices	Brick
00758	Bevercotes House	Corporate offices	Brick
00735	Lawn View House	Corporate offices	Brick
07572	Northern Area Highways Office	Highways Depot	Brick
00760	Welbeck House	Corporate offices	Brick
00761	Ollerton House	Corporate offices	Brick
03364	Worksop Library	Library	Steel Frame
06422	Butlers Hill Children's Family Centre	Youth Centre	Brick

## Procurement

18. Yorkshire Purchasing Office (YPO) has developed a national public sector procurement framework for the purchase of micro-generation technologies. This framework has been approved by Corporate Procurement and Legal Services as suitable for use by the Council. Therefore this will provide the most efficient means of procurement in order to expedite the project.

**Table 3: Showing the estimated annual financial outputs, following an initial investment of £800,000, from the Sun Volt Programme over 25-years.**

Year	Gen Tariff income (3% RPI)	Export tariff income	Maintenance costs (3% RPI increase)	Subtotal income	Value of displaced electricity @ 80% (3%+ pa)	Total Annual Income & Cost Saving	ROI% without electricity saving	ROI% including electricity saving
1	£44,971	£877	£0	£45,848	£20,975	£66,823	5.73%	8.35%
2	£46,172	£874	£0	£47,046	£21,535	£68,582	5.88%	8.57%
3	£47,405	£871	£7,416	£40,860	£22,110	£62,971	5.11%	7.87%
4	£48,671	£868	£7,638	£41,901	£22,701	£64,602	5.24%	8.08%
5	£49,971	£866	£7,868	£42,969	£23,307	£66,276	5.37%	8.28%
6	£51,305	£863	£8,104	£44,064	£23,930	£67,994	5.51%	8.50%
7	£52,675	£860	£8,347	£45,189	£24,569	£69,757	5.65%	8.72%
8	£54,082	£857	£8,597	£46,342	£25,225	£71,567	5.79%	8.95%
9	£55,526	£855	£8,855	£47,526	£25,898	£73,424	5.94%	9.18%
10	£57,009	£852	£9,121	£48,740	£26,590	£75,330	6.09%	9.42%
11	£58,531	£849	£9,121	£50,260	£27,300	£77,559	6.28%	9.69%
12	£60,094	£846	£9,394	£51,546	£28,029	£79,575	6.44%	9.95%
13	£61,699	£844	£9,676	£52,866	£28,777	£81,644	6.61%	10.21%
14	£63,347	£841	£9,966	£54,221	£29,546	£83,767	6.78%	10.47%
15	£65,038	£838	£10,265	£55,611	£30,335	£85,946	6.95%	10.74%
16	£66,775	£836	£10,573	£57,037	£31,145	£88,182	7.13%	11.02%
17	£68,558	£833	£10,891	£58,500	£31,977	£90,477	7.31%	11.31%
18	£70,389	£830	£11,217	£60,002	£32,830	£92,832	7.50%	11.60%
19	£72,269	£828	£11,554	£61,542	£33,707	£95,249	7.69%	11.91%
20	£74,198	£825	£11,901	£63,123	£34,607	£97,730	7.89%	12.22%
21	£76,180	£822	£11,901	£65,102	£35,531	£100,633	8.14%	12.58%
22	£78,214	£820	£12,258	£66,776	£36,480	£103,257	8.35%	12.91%
23	£80,303	£817	£12,625	£68,495	£37,454	£105,949	8.56%	13.24%
24	£82,447	£814	£13,004	£70,258	£38,455	£108,712	8.78%	13.59%
25	£84,649	£812	£13,394	£72,067	£39,481	£111,548	9.01%	13.94%
<b>Total</b>	<b>£1,570,478</b>	<b>£21,099</b>	<b>£233,686</b>	<b>£1,357,891</b>	<b>£732,495</b>	<b>£2,090,386</b>		

## Other options considered

19. Three other options have been considered:

- (a) – **Do nothing.** The consequence of this would be that the Council miss out on the potential financial benefits of a scheme that provides a guaranteed income over 25-years and reduces energy costs.
- (b) - **Enter into a partnership with an external supplier on a shared equity basis whereby the Council invest 50% of the capital costs and receive 50% of the FITs scheme benefit.** This was the initial proposal to CAMG which would reduce the amount of capital required. CAMG felt that the level of return on the investment was of high enough value for the Council to commit to 100% of the funding. In addition the shared equity approach would require the Council to create leases on the affected sites which would be an additional administration burden.
- (c) - **Enter into a ‘rent a roof’ scheme, whereby the Council rents its roofs to an external organisation who fit PV systems to it for free.** The Council would benefit from the reduced electricity costs in the affected buildings, but would receive none of the FITs scheme income. Again the Council would have to enter into a lease for each site with the supplier for the 25-year period. Although this approach will provide some financial benefit to the Council, greater gains are to be had through the Council undertaking the investment itself.

## Reason/s for Recommendation/s

- 20. The option to finance and own 100% of the installations was recommended by CAMG based on the potential level of return from the initial investment. CAMG felt that the level of return would support a greater level of investment.
- 21. This is also the easiest option to implement as there is no requirement to create leases, or conflicts with existing leases. In addition, because the Council is funding the installations fully it is not restricted to only using suppliers that can provide capital funding. This will greatly increase the amount of suppliers able to tender for the work, making the tender process more competitive and reducing costs.

## Statutory and Policy Implications

- 22. This report has been compiled after consideration of implications in respect of finance, equal opportunities, human resources, crime and disorder, human rights, the safeguarding of children, sustainability and the environment and those using the service and where such implications are material they are described below. Appropriate consultation has been undertaken and advice sought on these issues as required.

## Financial Implications

- 23. It is proposed that the capital costs of the installations should be financed from prudential borrowing. Detailed analysis, based on prudent assumptions, shows that the returns, which comprise the revenue savings and income, in each year will almost certainly be greater than the costs of borrowing to undertake this investment.

24. It is County Council policy to set aside a minimum revenue provision (MRP) on the basis of equal annual instalments over the estimated lives of assets. Therefore, assuming the PV systems have a 25 year asset life, the revenue impact of borrowing, including interest, will be less than 8.3% per annum.
25. By comparison, modelling predicts annual returns around or exceeding this level in the early years of the scheme, rising to nearly 14% per annum over a 25 year period. Sensitivity analysis shows that returns will be even higher than this if national electricity prices rise, which is a likely scenario. A variety of assumptions (e.g. different export levels, different RPI levels, etc.) have been tested and under each assumption the investment still appears comfortably worthwhile.
26. Each potential location for PV system installations will be slightly different (e.g. forecast yields will vary) and it will be necessary to repeat the analysis for each proposed installation to ensure returns will be sufficiently high before committing to investment. Such analysis will also take into account any changes in the borrowing rates.

## **Implications for Sustainability and the Environment**

27. The implementation of the Sun Volt Programme will reduce the amount of electricity that the Council imports from the National Grid, thereby reducing the level of CO<sub>2</sub> emissions associated with the use of the affected sites. However, as the Council will be claiming the FITs, for the purposes of the Carbon Reduction Commitment (CRC), the energy produced by the panels will be counted as grid electricity and the Council will still have to pay for allowances through the CRC for using it.
28. It will also contribute towards the low carbon economy through the purchase of PV systems and the trades associated with them.
29. It will contribute toward raising the profile of renewable energy within the County and provide awareness raising opportunities amongst site staff. It will also demonstrate leadership from the Council in implementing low carbon technology, reducing energy costs and improving local energy security.

## **RECOMMENDATION/S**

30. It is recommended that:
- a) Cabinet approve the implementation of the Sun Volt Programme and approve a variation of £800,000 to the Capital Programme to enable photovoltaic (PV) systems to be installed on various corporate properties in order to maximise the financial benefits of the Government's Feed in Tariffs Scheme (FITs) to the Council.
  - b) A further report be brought to Cabinet 12 months after the installations are completed that sets out the costs / benefits that have accrued from the programme and assesses the case for any further expansion.

**Cllr. Reg Adair**  
**Portfolio Holder for FINANCE and PROPERTY**

**For any enquiries about this report please contact:**  
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### **Financial Comments (SB 16/11/11)**

The financial implications are set out in the report.

### **Constitutional Comments (NAB 7/10/11)**

Cabinet has authority to approve the recommendation set out in this report.

### **Background Papers**

Lawn View House- Renewable Electricity Feasibility Study by MEA.

Feed In Tariffs - Government Response to the Summer 2009 Consultation (Feb 2010), DECC.

Feed in Tariffs scheme: Consultation on Comprehensive Review Phase 1 – tariffs for solar PV (Oct 2011), DECC

Except for previously published documents, which will be available elsewhere, the documents listed here will be available for inspection in accordance with Section 100D of the Local Government Act 1972.

### **Electoral Division(s) and Member(s) Affected**

ALL