

HAMPSHIRE COUNTY COUNCIL

Decision Report

Decision Maker:	Cabinet
Date:	27 June 2011
Title:	Solar photovoltaic
Reference:	3014
Report From:	Director of Culture, Communities and Business Services and Director of Economy, Transport and Environment

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1. Executive Summary

1.1. The purpose of this paper is to outline the case to proceed with the procurement of solar photovoltaic (PV) installations across the County Council's non-schools buildings.

1.2. This paper seeks to:

- explain why a proposal to procure Photovoltaic installations on corporate buildings is coming forward in advance of a wider Energy Strategy being considered by the Council;
- set the context for the proposals in terms of the County Council's Carbon Strategy and the Hampshire Climate Change Partnership aspirations;
- outline the maximum scale of the financial commitment and potential benefits the proposals would involve;
- set out the current Feed-in Tariffs (FITs) and the potential impact on the project of any change; and
- outline the timescales for the procurement process and the delivery of the project.

2. Introduction

2.1. In July 2010 Cabinet approved a Carbon Strategy which set down a number of short, medium and long term targets for carbon reduction over the next five, 15 and 40 years. There is a strong interrelationship with the Council's

use of energy and so Cabinet requested that an Energy Strategy be prepared to set the context for future decisions. Cabinet will be aware that an Energy Strategy is being developed which will consider reducing energy consumption, improve energy security and potentially generate income for the Council.

- 2.2. An opportunity exists to take advantage of Government financial incentives to produce electricity through installing PV on County Council buildings (the Feed-in Tariffs). This opportunity is time limited and therefore, exceptionally, Cabinet is requested to consider this proposal to install PV in advance of the approval of an Energy Strategy. Due to the long lead times for design and procurement, the process must commence now, otherwise the opportunity to secure current feed in tariff rates will be lost.
- 2.3. This proposal is not without risks. There are significant uncertainties which could impact on the financial benefits and the payback both in a positive and negative way. Government decisions on Feed-in Tariffs in the coming months would also impact on the viability of the scheme. The key issue for the Cabinet therefore is to position the County Council in such a way that it is able to take maximum advantage of existing incentives but keep its options open for the future.
- 2.4. This report seeks approval to commence the necessary design and procurement process, in order to secure an implementation opportunity within the Government's timescales for reviewing Feed-in Tariffs. Approval to let any contracts for installation will be sought in the autumn. It is currently estimated that approximately 25% of the total potential installation could be completed by the end of March 2012, when new Feed In Tariffs will be introduced.

3. Contextual information

- 3.1. Programmes of work and energy reduction projects to achieve the short term target of a 20% reduction (from 2008 levels) by 2015 are already in place and as part of this programme a number of alternative and renewable energy technologies have been adopted, including biomass boilers, ground source heat pumps, a wind turbine, solar thermal installations and solar PV installations. Feedback from the monitoring of the systems already installed across the estate indicate that solar PV can deliver a useful energy saving in the form of electricity generated and used on site.
- 3.2. To date, over a dozen small scale PV arrays have been installed on a number of County Council buildings to develop first hand knowledge of the installation process and to provide a test bed for the technology – a proof of concept. Careful monitoring of the systems has provided a detailed understanding of the installation requirements, performance, the maintenance required and electricity generation potential. Although not individually substantial in scale, each installation has delivered in operation the predicted

levels of energy generation resulting in a reduction in grid energy used by the building where the PV array is installed.

- 3.3. As a result of interest through the Hampshire Climate Change Partnership and a desire to progress the solar PV issues a viability study was commissioned in 2010. The viability study undertaken examined in some detail the technical, logistical and financial aspect of undertaking a large scale PV project of this type.
- 3.4. A study of the buildings identified a potential 31,000 square metres of unutilised roof area across the County Council's non-schools estate which could be suitable for the installation of solar PV. A further refinement of this study by a solar PV specialist surveying company has confirmed this data and has further informed the business case. It has shown that there are about 200 suitable locations, of which 92% are smaller than 50 kilowatts in size.
- 3.5. In November 2010 a Prior Information Notice (PIN) was issued to engage the market and to test our assumptions on the costs, technical viability, industry capacity to install and further examine the possible delivery models.
- 3.6. Using the data collected from the surveys and the information gathered from the industry via the PIN an Outline Business Case was developed (the financial model is included as an exempt Appendix) which demonstrated that a large scale PV installation programme:
 - would be technically feasible;
 - would produce financial benefits to the Council; and
 - could be delivered by the industry within the timescale required to take advantage of the current FITs.

4. Hampshire Climate Change Partnership

- 4.1. The Hampshire Climate Change Partnership builds on the Local Area Agreement (LAA) and is led by the County Council. Working together, the public sector organisations in Hampshire are developing a set of key overarching collaborative actions which will enable Hampshire to achieve a step change in its efforts to reduce its carbon footprint and to become more resilient to climate change.
- 4.2. At the Climate Change Summit on 9 December 2010 there was unanimous support for the narrative underlying the vision for the Partnership. The Partnership gave the following three energy outcomes the highest priority in terms of resource allocation and delivery timescales:
 - Domestic Retrofit (including Area Based Insulation (ABI));
 - large scale Solar PV in the public sector; and
 - energy efficiency in public sector buildings.

- 4.3. The County Council began technical work on these options, which has led to the procurement of the ABI scheme and to the production of the Business Case for solar PV. This work has been shared with the Partnership and a number of partners have recently announced schemes on their own buildings.
- 4.4. This proposal is to procure a phased roll-out of solar PV arrays to be installed on suitable roofs across the County Council's buildings (excluding schools) commencing with suitable projects in Winchester early in 2012. A phased roll-out will allow key options for installation to be kept open should there be changes in the financial background to the scheme as a result of the FIT review: for example, number of buildings included, location, size of installation, timing, total amount of scheme undertaken, etc.
- 4.5. The Department for Energy and Climate Change (DECC) produce regular data on energy prices and consumption. The last set (2010) contained scenarios for the next 20 years based on assumptions about movements in the prices of most forms of energy consumed in the UK. Based on the DECC price data combined with estimates of carbon taxes, County Council expenditure on non-schools energy could rise from the current £4 million to nearly £8 million by 2020 and £12 million by 2030. If this were to happen, it would substantially improve the business case contained in this report and would notionally reduce the payback period.

5. Finance

- 5.1. The Outline Business Case (OBC) makes a number of high level assumptions about the likely costs and income associated with this investment proposal. These can be summarised as follows:
 - initial capital expenditure of £15.8 million to be completed by March 2013;
 - revenue costs over 26 years of £6.7 million for maintenance and inverter renewal;
 - income from FITs of £27.4 million; and
 - energy savings of £10.6 million at present prices.
- 5.2. This produces a net positive cash flow over the 26 year period of £15.5 million and a payback period of 15 years. Whilst the length of this payback period is well beyond normal expectations, the long term nature of the scheme and the other significant benefits it produces justify a longer payback period, particularly as income streams from the FITs are guaranteed for the life of the project once the schemes are completed.
- 5.3. It should be noted that the above figures assume that the County Council will fund the up front investment from existing capital resources. If prudential borrowing were used to finance the investment this reduces the overall

positive cash flow to £5.2 million and produces a net present value of £2.2 million based on an Equal Instalment of Principal (EIP) loan at 4.74%. The financial model for prudential borrowing is shown in the exempt Appendix.

- 5.4. This report recommends that 25% of the programme is implemented before 31 March 2012 to take advantage of the higher FIT rates available up to that date. This would represent a capital value of just over £3.5 million and would attract FIT rates well in excess of those used in the OBC and would therefore show an improved cash flow position for this initial spend.
- 5.5. The key risk factors are: the potentially reduced income from the FITs for installations not connected to the grid until after March 2012; and, the speed of installation, since it is almost certain that connections to the grid after March 2013 will attract a lower tariff rate.
- 5.6. FITs are explained in more detail in section 7, but it should be noted that the majority of Hampshire County Council installations would be in the lower generation categories and therefore would currently attract a high tariff rate. The OBC used an average rate of around 30 pence per kilowatt until March 2013. This is prudent compared to the current average rate of around 33 pence per kilowatt. An announcement on the FIT rates after March 2012 is expected later this year. This could have an impact on the financial viability of the later phases of the project if they are reduced much below the currently published figures. A further detailed business case will be prepared setting out the phasing dependency around the FIT rates.
- 5.7. This scheme will be considered alongside other priorities for capital expenditure which will be considered as part of the Medium Term Financial Strategy due to be presented to Cabinet in July. Any amendment to the Capital Programme will be considered by County Council in September.
- 5.8. If an implementation programme is agreed later this year, there will be a need to make rapid progress with installations before March 2012. This report therefore seeks to authorise officers to commence the procurement process, which can be met from within existing budgets.

6. Timescale Factors

- 6.1. There are a number of time constraints which impact on the proposed large scale PV project, not least of which is the potential for a reduction in the published FIT rate for 2012/13, details of which are set down in Section 7 of this report.
- 6.2. A further constraint is the capacity of the industry to deliver this scale of programme in the timescale required to take advantage of the FITs currently available before April 2013. Data gathered from the PIN indicates that industry capacity could deliver around 600 square metres of installed panels per week. This would mean it would take over a year to install all of the estimated 31,000 square metres of panels, if it were decided that this should

be the total size of the programme. In addition, the time necessary to arrange detailed surveys for each site, mobilisation of the contractor's workforce and the lead-in time required for the manufacture and supply of the panels and associated equipment could mean that an overall programme of around 15–16 months would be required.

- 6.3. There are various consents that the County Council is required to consider, and if needs be to obtain. It will be crucial that arrangements are made to secure these consents in a timely manner and this is likely to require the management of a number of complex timetables in parallel. This will allow commencement of the scheme once the procurement process has been completed. Any scheme connected to the grid will require consent under the Engineering Recommendations to ensure that the grid-connected generation system will not cause safety risks to engineers working on the network, and that electricity fed into the network complies with mains power quality requirements.
- 6.4. Procuring a contract of this size, scale and value will require an Official Journal of the European Union compliant procurement process to be followed. The time required for this process is set under EU regulations and is a minimum of 65 calendar days plus a 10 day standstill period after the selection process is complete. To this timescale needs to be added a period to evaluate the Pre Qualification Questionnaires (PQQs) and the Tender Submissions, which will add a further 15 days to the process. Therefore, from the date the approval to procure is granted to the formation of contract is a minimum of 18 weeks which, from end of June, means a contract cannot be in place until early November 2011. With a 15 month delivery period and working back from March 2013, the procurement period set out above would fit within the working timescale.

7. Feed-in Tariffs (FITs) and the national context

- 7.1. The small-scale FIT was implemented in 2010 with an upper limit of five megawatts. The rate at which generators are paid is dependent on both the capacity of an installation and the type of technology installed. Payments are guaranteed for 25 years and payment rates are index linked to inflation (using the Retail Price Index). To encourage early implementation, the scheme contained incentive rates for systems installed before the end of March 2012 and published the rates which would be paid for 2012/13. A comprehensive review of the rates to be applied after that was programmed to take place during 2012. On 18 March 2011 the Coalition Government announced a fast-track review of the FITs ahead of the comprehensive review in 2012. The fast-track review arose from concerns that the FIT budget identified in the 2010 Comprehensive Spending Review – £360 million for the Spending Review period and already representative of a 10% reduction in budget - would be insufficient given the higher-than-expected uptake of larger-scale FIT installations up to five megawatts.

- 7.2. The fast-track review of FITs proposed a new banding system and lower tariffs, significantly so in the case of schemes above 50 kilowatts. Installations below 50 kilowatts completed before March 2012 remain unaffected by the fast-track review. There has been a widespread response to the consultation from the public sector, requesting the Government to fully or partially exempt public sector PV installations from the impacts of the >50 kilowatts review. The results of the review of schemes above 50 kilowatts were announced on 9 June 2011. The Government has confirmed its proposed cuts in FITs for these larger schemes and announced it will consult over the autumn on proposals to reduce FITs for smaller schemes implemented after March 2012.
- 7.3. Whilst there is strong national cross-party support for renewable energy and the FIT mechanism for providing financial incentives for small-scale generation, the PV industry is suggesting that the review will reduce the FIT levels already published for 2012/13. For this reason, work on solar PV needs to be progressed as quickly as possible to maximise potential financial gains. It will also need to be phased so that the implications of the FIT review can be included.
- 7.4. Prior to the formal consultation period for the fast-track review of FITs, the Government published ambitious proposals for electricity market reform and a new Carbon Price Support mechanism. In the last few weeks, Government has accepted the Climate Change Committee's 4th Carbon Budget which will require substantial cuts in the UK's carbon footprint of 50% from 1990 levels by 2025. The Committee indicated that targets at this level would require a substantial move away from fossil-fuel based electricity generation.

8. Conclusion

- 8.1. A programme of this nature is not without risks. There are significant uncertainties which could impact on the financial benefits and the payback both in a positive and negative way. Government decisions on Feed-in Tariffs in the coming months would also impact on the viability of the scheme. The key issue for the Cabinet therefore is to position the County Council and the project in such a way that it is able to take advantage of existing decisions but keep its options open for the future. This would be consistent with approving the project to proceed through the procurement stages and, as suggested above, reconsidering the viability of the scheme in line with future decisions and the cost benefits and opportunities that exist in the review of the Capital Programme which will take place over the summer. While not without risks, this course of action positions the County Council in the strongest possible way but leaves a final decision and a robust financial case to be made early in the autumn.

9. Recommendations

- 9.1. That the Directors of Culture, Communities and Business Services and Economy, Transport and Environment be authorised to commence the procurement of a large scale solar photovoltaic project.
- 9.2. That approval, in principle, be given for a first phase of about 25% of the total to be implemented by 31 March 2012 so as to maximise the benefits of the current Feed in Tariffs available, subject to approval of the detailed business case and the addition of the project to the Council's Capital Programme.
- 9.3. That the Director of Culture, Communities and Business Services be authorised to initiate any necessary statutory consent procedures or any other processes to enable works to proceed once financial approvals are in place.
- 9.4. That the Directors of Culture, Communities and Business Services and Economy, Transport and Environment, together with the County Treasurer, present a more detailed business case to Cabinet to support a recommendation to County Council for the potential inclusion of the project in the Capital Programme.
- 9.5. That the Directors of Culture, Communities and Business Services and Economy, Transport and Environment present an Energy Strategy for the County Council to a future meeting of Cabinet.

CORPORATE OR LEGAL INFORMATION:**Links to the Corporate Strategy**

Hampshire safer and more secure for all:	yes
Corporate Improvement plan link number (if appropriate):	
Maximising well-being:	yes
Corporate Improvement plan link number (if appropriate):	
Enhancing our quality of place:	yes
Corporate Improvement plan link number (if appropriate):	

Other Significant Links

Links to previous Member decisions:		
<u>Title</u> Carbon Strategy	<u>Reference</u> 1152	<u>Date</u> 26 July 2010
Direct links to specific legislation or Government Directives		
<u>Title</u>	<u>Date</u>	

Section 100 D - Local Government Act 1972 - background documents

The following documents discuss facts or matters on which this report, or an important part of it, is based and have been relied upon to a material extent in the preparation of this report. (NB: the list excludes published works and any documents which disclose exempt or confidential information as defined in the Act.)

<u>Document</u>	<u>Location</u>
None	

IMPACT ASSESSMENTS:

1. Equalities Impact Assessment:

1.1. No impact.

2. Impact on Crime and Disorder:

2.1. No impact.

3. Climate Change:

3.1. How does what is being proposed impact on our carbon footprint / energy consumption?

The full proposal would reduce the County Council's carbon footprint by an estimated 1,500 tonnes per year or a total of 39,000 tonnes over 26 years.

Projects and programmes of work already in place are expected to achieve over half of the County Council's short term carbon reduction target of 20% by 2015. The solar PV programme would improve this position by a further 12.5%.

If completed the programme would also contribute 10% of the electrical energy used in the non-schools estate, reducing the energy cost.

3.2. How does what is being proposed consider the need to adapt to climate change, and be resilient to its longer term impacts?

Local generation of electricity would provide resilience of supply should there be an interruption to the mains supply through extreme weather events or other causes.