

INSTALLATION OF SOLAR PHOTOVOLTAIC (PV) ON THE COUNCIL'S CIVIC ESTATE AND HOUSING STOCK

1. INTRODUCTION

- 1.1 This report raises awareness of opportunities available to the Council through the use of renewable energy to make contributions to its objectives to reduce carbon emissions in its operations and in the community, reducing fuel poverty and for achieving financial benefits through income generation in the short, medium and long term. This is now all possible through the introduction of financial incentives through the Feed in Tariffs (FITs) and the Renewable Heat Incentive (RHI).
- 1.2 It also identifies schemes that have the potential for success for implementation prior to 31 March 2012 and beyond.
- 1.3 Its focus is on the use of solar photovoltaic (PV) on the Council's buildings – civic estate and social housing – which enables the use of free electricity generated at the time but which is not capable of storing electricity. Any surplus electricity is exported to the grid.
- 1.4 The Council hosted a Solar PV / FIT Seminar on 3 February which helped us and our colleagues around Hampshire to better understand the opportunities that are currently available and also to hear from the Environment Agency who had previously invested in Solar PV and had been very pleased with the results.

2. BACKGROUND

- 2.1 The existence of FITs now provides the potential for a much stronger business case to have renewable energy as part of our operations. The FIT was introduced by the Government in April 2010 to promote widespread uptake of a range of small scale renewable and low carbon electricity generation technologies. It is applicable to a range of technologies (photovoltaic, wind, micro combined heat and power (less than 2 kW) hydro and anaerobic digestion – all up to a maximum capacity of 5MW. The FIT is fixed for 25 years and is inflation linked. Different levels of FIT are applicable to different technologies eg up to 31/3/12 the FIT for Solar PV retrofit, up to 4kW, is 43.3p per kWh (Kilowatt hours). This will reduce to 37.8p for new installations from 1/4/12. In addition there is an export tariff of 3p per kWh which is paid. The larger the installation, the smaller the FIT. Installations between 4 kW and 10 kW are currently 37.8p per kWh and those greater than 10 kW and not exceeding 100 kW are 32.9p per kWh.
- 2.2 The FIT is payable by electricity suppliers for electricity generated through small scale low carbon generators (whether or not such electricity is exported to the national grid) and an export tariff where such electricity is exported to the grid. The future continuation of FITs should not be affected by pressure on public finance as the costs are spread across the customer base of the energy providers which in effect means that those who do not take up renewable energy options pay for those that do ie the “polluter pays” principle.

- 2.3 For a local authority such as ourselves solar PV can be provided in two main ways:
- By working with a solar PV company to supply, fit and maintain the PV panels free of charge and for them to take part of the benefit of the FIT after deduction of their costs – this might be something that would lend itself to our housing stock given the overall cost of provision. Our tenants could benefit from reduced cost of electricity consumed during the daytime (typically £100 + pa) and the Council would benefit from a share of the FIT as negotiated as part of the contract. The beneficiaries of the export tariff would be the subject of the negotiations with the company.
 - By procuring the solar panels ourselves and taking the whole benefit of the FIT over the next 25 years. This might be more appropriate for our civic estate.
- 2.4 A limiting factor of solar PV is that the roofs need to be South facing – South East and South West are fine but do affect the amount of renewable energy that can be generated. Also roofs need to be clear of shade – any tree cover etc will reduce the levels of effectiveness and affect the viability of schemes.
- 2.5 Installing solar PV on the Council's housing stock would not require planning permission as it is permitted development unless the solar panels project more than 20 cm from the roof surface or are higher than the main ridge-line of the roof. The installation of Solar PV on the Council's Civic Estate is also likely to be considered permitted development.
- 2.6 The New Forest has an excellent solar resource – on average a 1kWp system positioned on a south facing roof inclined at 30 degrees is likely to generate at least 850 kWh of solar energy per year. A typical domestic system would have a rated size of 2kWp (peak watts) occupying an area of approx 16 m² (4m x 4m) and would generate 1800 kWh (kilowatt hours) of electricity pa.

3. ASSESSING THE POTENTIAL

3.1 – Civic Estate

An initial assessment of roofs on the Council's buildings has been carried out. This shows we have 6969 sq metres of roof space that is suitable for solar PV on our main buildings (Appletree Court, Lymington Town Hall, 4 of our 5 health & leisure centres and 2 depots). The two best opportunities taking into account roof structures and certainty of tenure are Appletree Court and the Town Hall.

The benefits of progressing solar PV on the civic estate would be income generation via the FIT and the export tariff, reduced spend on energy, reduced carbon emissions and opportunities to enhance the reputation of the Council.

3.2 – Social Housing

The Council has 5200 properties in its housing stock including 3,700 houses and bungalows, 900 of which are scheduled for re roofing in the next 5 years. 124 of our properties have no access to mains gas. 70% of our tenants receive some form of benefits. All these factors can be used to influence the prioritisation of work. This will

be required as there may well be capacity issues within the industry to respond to that size of contract alongside demands from other local authorities trying to maximise the benefits of the FIT. An initial assessment of roofs has yet to be undertaken but would be worthwhile to help develop a strategic approach over the next few years.

The benefits of progressing solar PV on our housing stock are income generation via the FIT, reduced energy spend by the tenants, reduced fuel poverty, enhanced investment in the stock and enhanced reputation of the Council. As not all properties would benefit from installation as a result of their roof alignment it would need to be considered whether the Council should look at ways to share the benefit across all tenants. There may also be some potential for negotiating preferential rates for our residents who are not our tenants should they wish to engage with the same contractor.

4. THE PROPOSALS

- 4.1 For the Civic Estate it is proposed to pursue installation of Solar PV on the roofs of Appletree Court and the Town Hall, Lymington maximising the amount of roof space available. Installation would be targeted by 31 March 2012. Those two locations provide the best opportunities for investment given that other options either have less certainty about the Council's occupation of the buildings or that the structures may not lend themselves to additional weight on the roofs without additional investment. These schemes could be regarded as pilot schemes with a view to extending the technology to other sites in the future. A small amount of consultancy will be required to fine tune the Council's proposals. This will come from existing budgets.
- 4.2 For the Housing stock it is proposed to explore further the potential for entering into an arrangement with a Solar PV provider for the free fit, supply and maintenance of the panels for a share of the Feed in Tariff. Consideration will also be given to the broader environmental agenda. Given that there is a fair amount of work to be done to satisfy ourselves about legal and procurement issues it is proposed to develop a scheme for implementation after 1 April 2012.

5. FINANCIAL IMPLICATIONS

- 5.1 There is no denying that the existence of the FIT does provide a financial incentive for local authorities (and others) to use renewable energy – especially Solar PV. Where it already has the finance in place the rate of return is tempting even using the cautious approach adopted in this report. This is backed up by the amount of pension funds and other private sector investors attracted to this route. Even where there is a need to borrow to fund schemes there is still an opportunity to consider. However the best rate of return is obtained through the use of the Council's own funds.
- 5.2 **For the Civic estate** a business case has been prepared including allowances for inverter replacement, maintenance, financing and end of life costs. The FIT income and electricity savings for Appletree Court and Lymington Town Hall amount to £17,065 pa (£426,642 over the 25 year period). This is for schemes that maximise the amount of solar panels on the available roof space. This would result in an array of 7.83 kWh and a FIT of 37.8p/kWh for Appletree Court and an array of 29.66 kWh and a FIT of 32.9p / kWh for the Town Hall. Such an approach results in pay back periods of 10.7 years for Appletree Court and 11.9 years for the Town Hall. The total cost of the two schemes is £149,900 for which there is currently no budget provision.

25 Year Business Case	Lymington Town Hall - £	Appletree Court - £	Total - £
Capital Cost	118,600	31,300	149,900
Income			
Feed in Tariff	251,912	76,446	328,358
Energy Saving	77,467	20,817	98,284
Total Income	329,379	97,263	426,642
Revenue Expenditure			
Maintenance Costs	-38,739	-10,232	-48,971
Net Benefit	290,640	87,031	377,671
Average Net Revenue Benefit per annum	11,626	3,481	15,107
Average per annum Net Revenue Benefit on Capital Investment	9.8%	11.1%	10.1%
Less Financial Benchmark	5.0%	5.0%	5.0%
Net Benefit Return	4.8%	6.1%	5.1%
Payback (years)	11.9	10.7	

- 5.3 So far as the **housing stock** is concerned, using figures quoted at the seminar held on 3 February and assuming about 30% of the Council's housing stock (1560 properties) is suitable a potential income of several million pounds over the 25 year period is possible for no investment by the Council.

6. THE WAY FORWARD

- 6.1 Many councils are now looking at solar PV in both their civic estate and social housing. There are many private sector providers who are keen to work with us on either a turnkey approach (social housing) or for a supply and fit approach (civic). The turnkey approach places all the work – supply, installation, maintenance, insurance etc with the company whereas supply and fit would require the Council to be responsible for the ongoing liability of the scheme.
- 6.2 Discussions are taking place with other councils in Hampshire to identify any potential to work together to enable the best use of resources – legal, technical, procurement etc. Sharing information and research and discussing the potential joining up of contracts are the main areas of focus.
- 6.3 Installations after the 31/3/12 will attract a reduced FIT but the capital cost of the equipment is also likely to fall – the current rate of decrease in cost is currently outstripping the projected reduction in the FIT.
- 6.4 One of the challenges with this project is to unravel the EU Procurement Regulations and how they might apply to the social housing scheme. Further work is required that might include legal advice on this issue.
- 6.5 A group of officers from across the Council (P&SD, Energy Management, Housing, Planning & Accountancy) have been working together on this issue. Given the potential impact of the project it is suggested that a project board be formed to oversee the development of the project.

7. ENVIRONMENTAL IMPLICATIONS

- 7.1 The carbon debt of manufacturing the panels (the amount of CO₂ emitted during the manufacturing of the panels) is somewhere in the region of 7 years.
- 7.2 The potential reduction in CO₂ pa is significant. Preliminary estimates suggest that for a scheme to retrofit solar PV on say 30% of the housing stock (1560 properties) would result in 1,335 tonnes saved pa – 20 – 40,000 tonnes over the 25 year period. An assessment of what solar PV on Appletree Court and Lymington Town Hall would save in terms of CO₂ shows an annual saving of 16 tonnes (400 tonnes over the 25 year period). This provides a good opportunity to demonstrate the Council's commitment to support schemes that benefit the environment.

8. CRIME & DISORDER IMPLICATIONS

- 8.1 The potential for solar PV panels to be targeted for theft is something that would need to be considered. The component parts of solar PV do not in themselves attract theft but if a second-hand market for the panels emerges, the risk of theft would increase.

9. CONCLUSIONS

- 9.1 The proposals represent a measured approach to developing a renewable energy programme that can contribute to a range of the Council's objectives. Solar PV retrofit on both our civic buildings and housing stock offer realistic opportunities to make a difference in the short, medium and long term. The pace of any future programme will largely depend on what financing route is taken, which will be determined by whether the Council wants no risks and less return or some risks with maximum returns.
- 9.2 There are a wide variety of renewable energy options available and developing the Council's approach should consider the best mix of options to be delivered in a longer term strategy. This should make best use of financial incentives such as FITs and Renewable Heat Incentives. Part of that will be to consider renewable energy planning in localities to maximise the potential for energy savings, taking people out of fuel poverty and reducing emissions.

10. PORTFOLIO HOLDERS' COMMENTS

- 10.1 The Environment, Finance & Efficiency and Housing & Communities Portfolio Holders all support the recommendations in this report.

11. RECOMMENDATIONS

- 11.1 That, subject to 11.2 below the development of PV schemes for both the Civic estate and housing stock be supported;
- 11.2 That for the Housing stock the potential for entering into an arrangement with a Solar PV provider for the free fit, supply and maintenance of the panels for a share of the Feed in Tariff be explored further;

- 11.3 That appropriate procurement processes be identified that satisfies legal requirements;
- 11.4 That a project board be set up to oversee the implementation of these projects and that delegated authority be given to the Executive Directors in consultation with the portfolio holders for Environment, Finance & Efficiency and Housing & Communities to agree contracts that achieve the best financial return to the Council, benefits to the tenants and the environment; and
- 11.5 That the Council be recommended to agree to the provision of £150,000 to fund the installation of Solar PV schemes at Appletree Court and Lymington Town Hall for implementation by 31 March 2012.

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