



Policy and Resources Committee – 7 November 2011

Energy Efficiency Project – outcomes and proposals

Purpose of report

This report provides an update to Members on the outcomes of the energy efficiency review project and makes proposals based on the project findings.

1.0 Background

1.1 The energy efficiency project was commissioned to research and appraise the options for improving the energy efficiency of East Northamptonshire House, reducing the carbon footprint, and reducing energy use.

The project brief included a review of the following:

- lighting, heating, and insulation options
- Renewable energy sources – solar, wind, ground source heat taking account of any related Planning issues
- Actions that can be taken by staff to reduce energy use
- Financial implications of any proposals

2.0 Lighting, heating and insulation options

2.1 Significant work had already been undertaken in relation to improving the energy efficiency of lighting at East Northamptonshire House. Funding was approved in February 2011 (P & R 14 February 2011 minute 4c) to improve the lighting and this work has been ongoing as planned.

2.2 Changes to the heating system such as new radiators and boilers would require significant investment and invasive building work. The project team considered and dismissed this option as the least likely invest to save option and no further work was considered appropriate at this time.

2.3 The insulation of the building was reviewed by the Amenities Team. The current insulation meets the standards and thickness advised by the Carbon Trust. Guidance received indicated that adding additional insulation would have a minimal impact in reducing energy consumption and cost.

3.0 Renewable energy options

3.1 A number of potential options for renewable energy sources were discussed and considered. Research by members of the project team was carried out on wind power, solar power and ground source heat pumps.

3.2 To generate sufficient energy to make a serious impact on the energy use at the council offices, a large turbine would be required. Consultation with the Planning Team confirmed that planning permission for this would be unlikely to be approved due to the proximity to housing and being within the boundary of the listed part of the building. No further research was considered appropriate.

3.3 A small amount of research was undertaken on the potential to install a ground source heat pump. This requires a large area of land to bury enough heat collector units to generate useful quantities of supply. It would also require installation of new boilers to process the heat generated. This sort of local energy production is more suitable for

new build projects where heat collector units can be buried as part of the build, and appropriate boilers installed. No further research was considered appropriate.

3.4 The installation of solar panels on the South facing side of the roof of the modern building was considered. The Planning Team indicated that permission could be granted for such an installation. Research was carried out and a local company provided a free assessment and quotation for the installation of photovoltaic (PV) panels. The following paragraphs summarise the quotation provided.

3.5 The renewable energy company provided quotes for two different models of PV systems. The following table indicates the comparative investment costs, Return on Investment, and payback period. Feed in Tariffs payments are available to offset the cost of installing equipment and are payable for 25 years.

Model	Capital cost (exc VAT)	ROI	Payback period	Year 1		Year 1
				Saving from energy used for our own consumption	Feed in Tariff income	Estimated saving*
BP Solar	£194,305	8.22%	14 years	£2,715	£11,693	£14,208
Hanwar Solar One	£178,168	8.36%	14 years	£2,623	£11,297	£13,720

* includes deduction of annual maintenance agreement cost of £200/yr

3.6 These estimated savings do not include the cost of interest foregone if the capital cost was met from the council's reserves. This is estimated at £2,700 per year of lost income at the current investment rates. This would increase the payback period to around 16 years for both models but would still generate revenue savings of over £11k in the first year and a similar relative amount in future years.

3.7 Revenue savings are estimated to increase over the term of the scheme as the Feed in Tariff increases each year in line with the Retail Price Index and is payable for 25 years. The lifespan of both the PV panel systems is 30 years.

3.8 The current Feed in Tariff Scheme is under review by the government as it has been subject to exploitation by individuals creating large schemes (solar fields) for personal gain. The FIT Scheme was devised to encourage investment in small scale local green energy, and the tariffs are being revised to lower levels for any schemes that are not installed and operational by 1 April 2012.

3.9 The FIT Scheme schedule of rates for schemes installed after April 2012 has not yet been determined and published therefore no calculations have been produced to show the comparative reduction in savings if the council did decide to approve a scheme, but at a later date.

3.10 All figures included in this report are for indicative purposes. If Members decided to approve the installation of a PV panel system, then a tender exercise would be undertaken in accordance with the council's procurement rules. Potentially this could result in differences in capital cost and rates of return. This would be examined as part of the procurement process and the most economically advantageous tender would most likely be selected.

3.11 Calculations predict that the reduction in carbon emissions by installing a PV panel system is estimated at over 450 tonnes over the 30 year lifespan.

4.0 Equality and Diversity Implications

4.1 There are no equality and diversity implications arising from the proposals.

5.0 Legal Implications

5.1 There are no legal implications arising from the proposals.

6.0 Risk Management

6.1 There are some risks associated with the proposal to invest in photovoltaic panels to generate local energy and save money on electricity costs.

6.2 The amount of electricity generated may not reach the predicted levels and therefore FIT payments would be less than expected. This risk is mitigated in that the calculations are based on an 80% power output and have taken into account the pitch and angle of the roof. All calculations are based on the Microgeneration Certification Scheme guidelines.

6.3 Feed in Tariffs may be reduced in the future. There is no way to manage this risk, but it would require a change in legislation to reduce the FIT payments for schemes installed and operating before 1 April 2012.

7.0 Financial Implications

7.1 The potential capital costs and income generated are reported in sections 3.5 and 3.6. One further one-off cost would be the planning permission cost of £170.

8.0 Corporate Outcomes

8.1 The recommended decision would positively influence the delivery of the following Corporate Outcomes:

- Good Quality of Life
- Good Value for Money
- Effective Management

9.0 Recommendations

9.1 The Committee is recommended to

- (1) Consider the option of investing £200k capital in an invest-to-save installation of photovoltaic panels on the roof of East Northamptonshire House.
- (2) If considered an appropriate scheme, the Committee is requested to recommend to full Council the allocation of £200k in the capital programme for 2011/12. (*Reason – To authorise a tender process to ensure the scheme can be supplied and installed by 1 April 2012 in order to maximise Feed in Tariff payments*)

Legal	Power: Local Government Act 1972. Section 111				
	Other considerations:				
Background Papers:					
Person Originating Report: Katy Everitt, Head of Resources and Organisational Development					
Date: 24 October 2011					
CFO		MO		CX	