

**TO: ENVIRONMENT AND ECONOMIC POLICY COMMITTEE-
7TH JUNE 2006**

SUBJECT: ENERGY MANAGEMENT

FROM: HEAD OF PROPERTY SERVICES

1. PURPOSE OF REPORT

That the Committee supports the actions taken to date and the recommendations made for future energy efficiency/conservation within Council buildings that will contribute to reducing CO emission levels within the Warwick District.

2. BACKGROUND

2.1 A new Energy Manager was appointed last October 2005 following the retirement of George Elkington.

He was asked to undertake an appraisal of the level and effectiveness of the energy efficiency/conservation measures currently in place. In doing this he was given valuable assistance by the Carbon Trust who offered WDC the opportunity of an assessment of its general energy management procedures and specific surveys of the three sites within its property portfolio that had the highest energy demand and a diversity of functions.

Their survey was carried out on the 15th and 16th of February 2006 by a Mr Doug Stenson of energyTEAM.

The total energy consumption and spend for WDC at the time was approximately 16,000,000 kWh/year at a cost of £421,000.

Assessments and recommendations were made under three main headings:

- Energy Management systems and procedures generally.
- Energy saving opportunities that are applicable to all WDC sites.
- Energy saving opportunities specific to the three sites assessed.

A brief summary of the report's findings and recommendations in these areas are:

2.1.1 Energy Management systems and procedures generally

WDC were considered to be well advanced in implementing energy management and in the report's overview analysis were scored very favourably at 82% - the highest rating yet awarded.

It advised that areas of relative weakness be improved by:

- Development of internal benchmarks and setting of appropriate targets.
- Involvement of general staff in energy saving initiatives and plans.
- Monitoring and management of the CHP systems.

It is forecast that fully implementing the suggested improvements in this area will offer an estimated annual saving of over £20,000 and 80 tonnes of CO₂ for an estimated cost of £5,000.

2.1.2 Energy saving opportunities that are applicable to all WDC sites

Actions recommended for all sites were:

- Improvement of valve and pipework insulation within boiler/plantrooms.
- Investment in low-energy decorative luminaries.

Forecast annual savings for fullest implementation of these measures are £1,750 and 15 tonnes of CO₂ for an investment of £4,000.

2.1.3 Energy saving opportunities specific to the three sites assessed

Specific actions advised for these sites were:

- Introduction of pool covers to Newbold Comyn and other pools.
- Installation of a destratification fan in Newbold Comyn canteen area.
- Light meter control of lighting at the Royal Pump Rooms.
- Use of a water turbine to provide HEP to Jephson Temperate House.
- Use of the river for cooling A/C condensers at Newbold Comyn, Royal Pump Rooms and Jephson Gardens.

These proposals offer the prospect of annual savings in the region of £21,000 and 135 tonnes of CO₂ at a cost of £18,000.

The report further affirmed the positive impact on energy usage to be expected from implementation of home working/ "hot desking" arrangements at present under consideration by WDC.

It gave clear recommendations regarding the priority to be given to the various actions advised.

It provided (in the table attached as appendix 1) calculated payback periods and a suggested timetable for implementation for each of its detailed proposals.

- 2.2 The Energy Manager also has an involvement with a Warwickshire County Council led group and work has been undertaken to assess the viability of Biomass heating for use at WDC sites. Biomass heating relates to the use of waste organic matter for fuel, in boilers designed specifically for the purpose.

Wood chippings – from tree thinning that would previously have been considered waste, or from sustainably managed forests – is the prominent choice.

Oakley Woods Crematorium has been deemed the most technically suitable location, with the clear potential for the Biomass technology to offer a financial saving over the off-peak electricity presently used to provide overnight pre-heat as well as an opportunity for WDC to “showcase” sustainable energy technology.

- 2.3 In addition, work to replace of the rooftop-mounted air-chilling plant at the Royal Spa Centre with reliable, efficient new units has commenced and new boilers and a CHP unit will be installed at Acorn Court VSH scheme this summer.
- 2.4 In giving consideration to producing a new Energy Policy we concluded that as opposed to producing a lengthy document we should focus purely on our key objectives. This is what we have done in Appendix 2. Hopefully you will support this approach.

3. **POLICY AND BUDGET FRAMEWORK**

- 3.1 There is in place an energy management budget which is self financing from predicted payback periods on various schemes that have been implemented. Schemes involving energy from renewable sources can often have longer payback periods, therefore funding for this budget may need to be reviewed at some point in the future although not at present.
- 3.2 Replacement of major items of equipment such as boilers can generally be funded from the Corporate Property or Housing repair and maintenance budgets.

4. **OUTCOME (S) REQUIRED**

- 4.1 The recommendations of the Carbon Trust will be implemented/evaluated as scheduled in the list of ‘Key Actions’ in Appendix 1.
- 4.2 An evaluation of the Biomass proposal will be undertaken and a report be submitted to the Executive for its consideration.
- 4.3 Replacement of obsolete plant at the Royal Spa Centre and Acorn Court is being progressed.
- 4.4 Work will continue in conjunction with Warwickshire County Council on an effective County-wide Carbon Management Programme.

Mark Perkins
Energy Manager

BACKGROUND PAPERS:

Nil

Areas in District Affected: All

Executive Portfolio Area and Holder: Councillor Margaret Begg

For further information about this report please contact:

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Appendix 1

Priority	Recommendations and key Actions	Estimated Annual Savings			Estimated Cost (£)	Payback Period (years)	Suggested Timescale for Completion
		Cost	CO2	Energy			
		£	tonnes	KWh			
1	Energy management Improvements (aggregated)	20,842	81.9	640,065	5,000	0.24	0 – 3 months
2	Pool covers (some operational issues will have to be resolved)	20,693	136.0	898,018	15,000	0.72	3 – 6 months
3	Insulate large valves and strainers and repair pipe insulation	1,475	15.1	79,313	2,000	1.36	6– 12 months
4	Light meter control of lights in Royal Pump Rooms	165	0.0	3,750	600	3.64	12 – 18 months
5	Use the runnel on the town weir to power a turbine to generate electricity for Jephson Gardens	704	0.0	16,000	2,500	3.55	12 – 18 months
6	Use the river for cooling air conditioner condensers	99	0.0	2,250	400	4.04	18 – 24 months
7	Invest in low energy luminaires for decorative lighting	300	0.0	3,218	2,000	6.67	> 24 months
	Total	44,278	233.0	1,642,614	27,500		

Warwick District Council Energy Policy

Warwick District Council recognises the benefits of Energy conservation. The Council is committed to responsible Energy management and to improving Energy efficiency in the District to help ensure the comfort and wellbeing of all. It will seek to reduce emissions of greenhouse gases, particularly Carbon Dioxide, and will lead by example as it implements Energy efficiency measures in Council owned and run buildings.

This is evidenced by commitment to the following objectives:

- Ensure the use of Energy efficient technology in all future additions or refurbishments undertaken in the Council's Corporate buildings and housing stock. In addition, encourage the installation of such technology in Private properties within the District.
- Closely monitor energy usage in all Council owned and run buildings to enable measures to be taken to reduce consumption and to ensure fuels are being consumed as economically as is practical.
- Provide advice on Energy efficiency to both staff and the public. Actively promote Energy efficiency and raise awareness of its effects on the environment.
- Investigate and implement the use of sustainable energy sources for Council buildings wherever appropriate and strive to reduce our dependence on fossil fuels.
- Increase public support for sustainable energy, promote the use of "green" electricity and raise awareness of available energy efficiency grant schemes.
- Work in partnership with other authorities and organisations where this will further the aims of this policy.

ENERGY MANAGER

HEAD OF PROPERTY SERVICES