

## Carbon Reduction Strategy

### Report of the Chief Fire Officer

For further information about this report please contact Paul Raymond, Chief Fire Officer, on 01743 260201 or Andrew Kelcey, Head of Resources, on 01743 260240.

#### 1 Purpose of Report

This report sets out the actions, which Shropshire Fire and Rescue Service is taking to monitor and reduce energy usage and carbon emissions.

#### 2 Recommendations

The Committee is asked to note the actions being taken to monitor and reduce energy usage and carbon emissions.

#### 3 Background

Central Government has set targets for reduction of UK carbon emissions by 34% of their 1999 levels by 2020. This supports the wider commitment to reduce the UK's total carbon emissions by 80% by 2050 in support of its Kyoto protocol commitments. One of the tools it is using is the 'Carbon Reduction Commitment', a carbon trading scheme for large non-energy intensive organisations, including local authorities, which aims to reduce carbon emissions by 1.2 million tonnes per year by 2020.

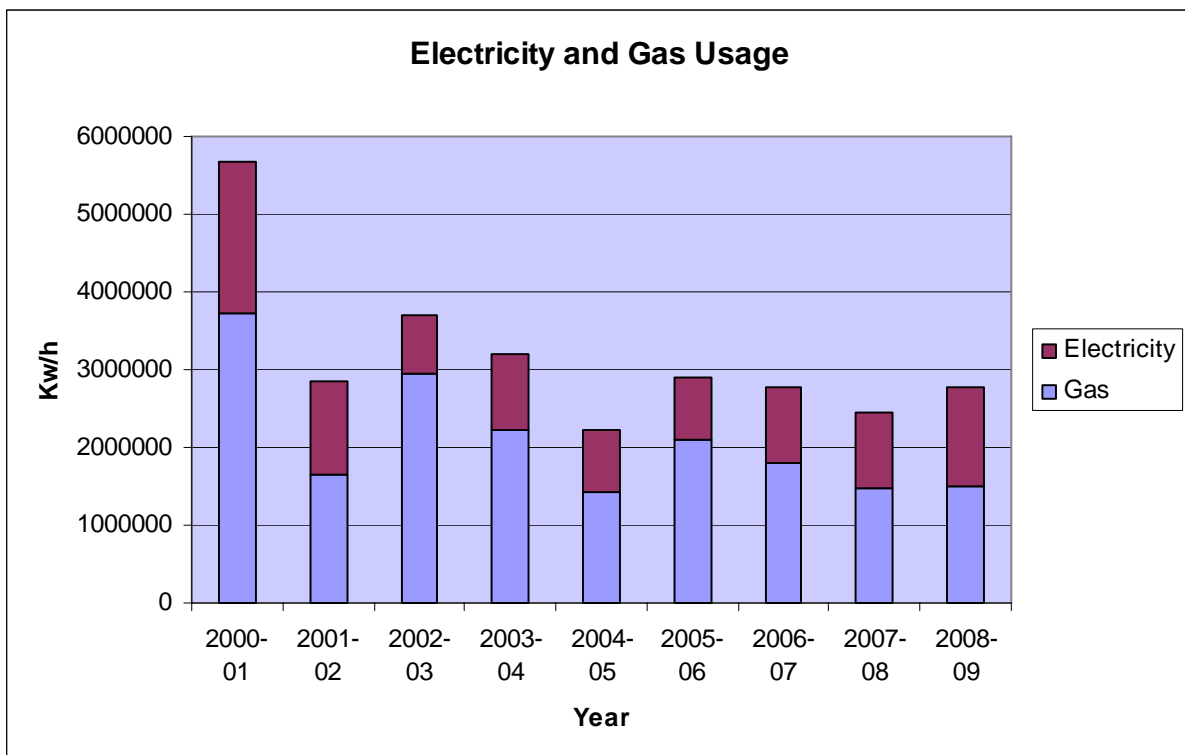
Due to our relatively low usage of energy, Shropshire Fire and Rescue Service is not currently covered by these regulations, however this is unlikely to continue indefinitely, and use of natural resources will be assessed in future Comprehensive Area Assessment audits. The Service has a full ISO14001 Environmental Management System (and remains the only Service to have achieved this), through which we have identified our environmental improvement priorities. After making improvements in other areas, energy use is now a priority. Energy is also increasingly expensive, so carbon reduction measures are likely to result in financial efficiencies.

## 4 Energy Use and Carbon Emissions

Within the Service we use energy (and therefore emit carbon) through 3 main activities:

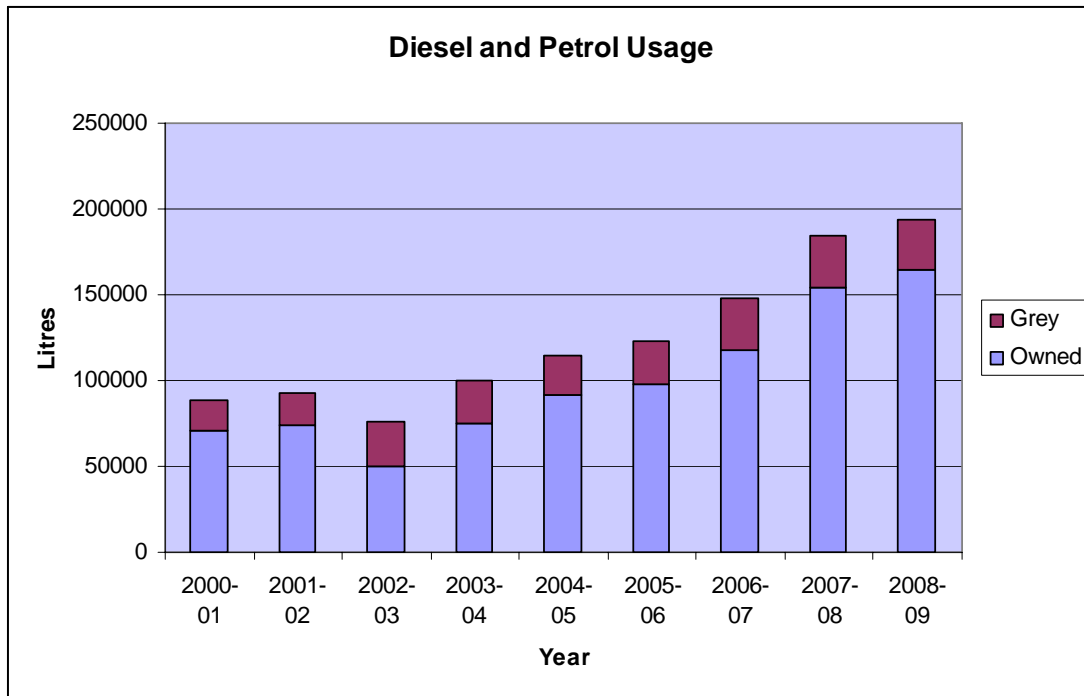
- Heating and cooling using both electricity and gas;
- Equipment use, particularly lighting and IT equipment; and
- Transport.

The following graphs show how usage has changed over the last 9 years. These are necessarily crude due to the limited availability of usage data.



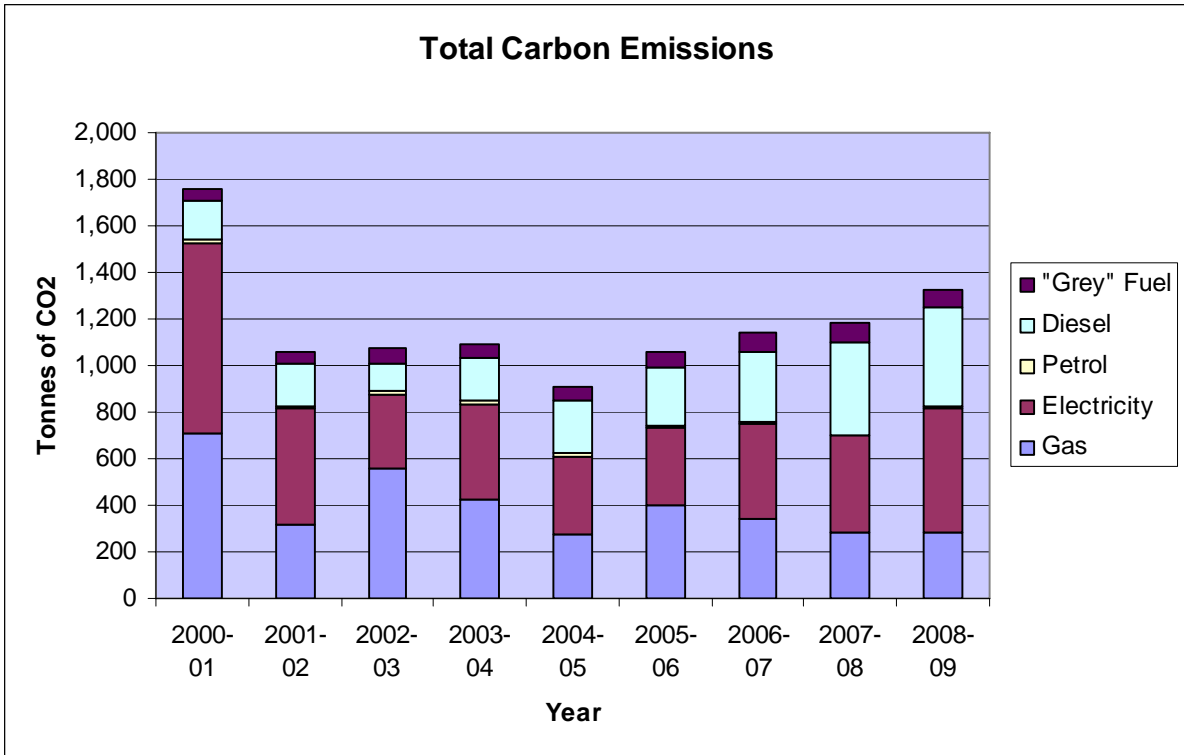
Electricity and Gas usage has been estimated from budget records and the amount of units used based on average unit costs in each year recorded. Much of the energy is used to provide heating and this graph makes no adjustment for changes in temperature (i.e. cold or mild winters). Significant increases could be expected as a result of Tweeddale's becoming a wholtime station, the appointment of Retained Support Officers and ambulance use of stations, all of which will have resulted in an increased demand for heating.

The increasing level of IT provision will also have increased electricity demand, but this will have been balanced by the increased efficiency of individual units.

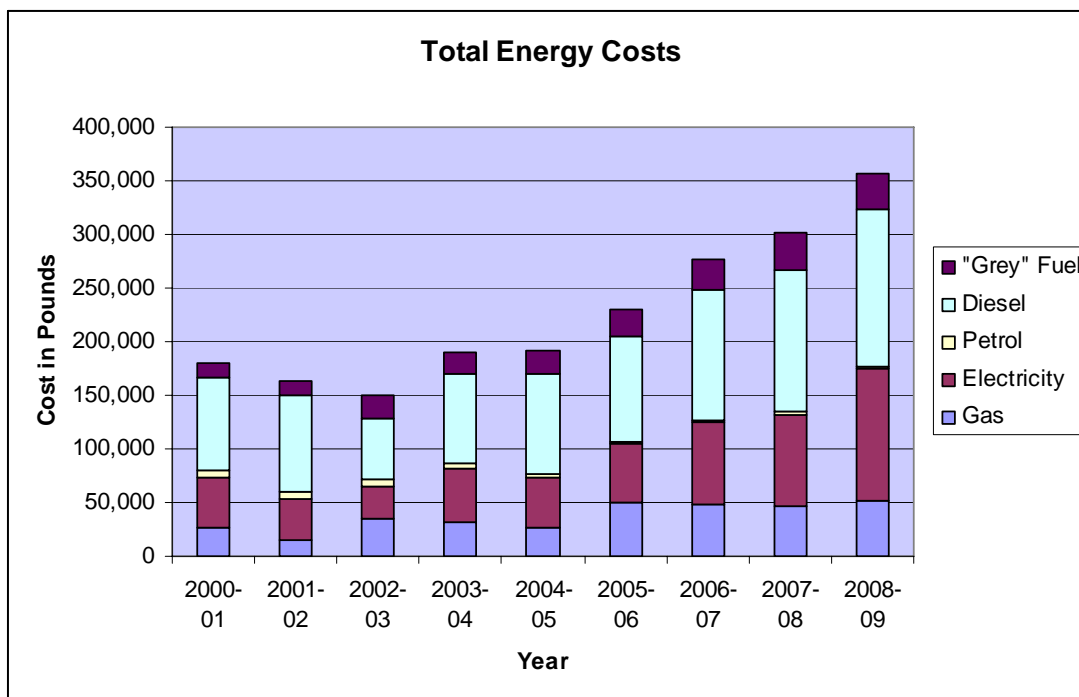


Diesel and petrol usage has again been estimated from budget records and the number of litres used based on average costs in each year recorded. Fuel usage in drivers' own cars (the 'grey' fleet) has been extrapolated from mileage claims.

It is likely that the significant increase in fuel use is as a result of the growth in the number of light vehicles and increased community fire safety activities within the rural community. The increasing size of operational appliances, required to meet the demand for more equipment and personnel, is likely to have counteracted the improved efficiency of the modern vehicles. It should also be noted that the average appliance age is approximately 6 years old (with a planned life of 12-15 years), so many recent improvements will not be incorporated on much of the fleet.



Carbon emissions are taken from the number of units consumed multiplied by average carbon emission factors. They take no account of our early move to bio-diesel or the mix of electricity we purchase. When reviewing purchase arrangements, we were unable to identify significant benefits from moving to a 'green' electricity supply, on the basis that our low level of spend was unlikely to result in an increase in demand for, and provision of, renewable generation capacity. Bio-fuels remain controversial from both a bio-diversity position, and from the true level of carbon savings achieved when production and transport emissions are included.



Energy costs are taken from budget monitoring records and can be regarded as the most accurate of all of the graphs provided in this report, although annual costs are affected by delays in receiving bills.

## 5 Actions Taken

As the graphs show, our energy use, carbon emissions and costs have increased significantly over the past 9 years. This is despite efforts being made to reduce demand, including:

- Retained station refurbishments, which include more efficient heating controls, improved lighting, draught proofing and insulation works
- New appliances which are more fuel efficient and the introduction of computerised pump controls have improved efficiency during pumping operations
- Some user awareness raising activities through the Service's weekly newsletter, 'The Pink'

## 6 Way Forward

Any significant attempt to manage our carbon emissions is going to require the monitoring, management and reporting of significant amounts of information, for which there is no capacity within Technical Services. It will also require an education programme to encourage personnel to change their attitudes to energy use, which will require external expertise.

Due to the complexity of modern meters and the inability of suppliers to raise accurate bills, we are unable to rely on these to monitor electricity use at sites and have arranged for the installation of “smart electricity meters” at all sites. These provide regular readings back to a monitoring company, enabling the early identification of excessive use and comparisons between stations. This should enable the adjustment or repair of defective controls, or improved user awareness at problem sites.

The Marches Energy Agency has been approached to develop a carbon management plan. This will consist of a more accurate review of our energy use and carbon emissions using 2008/9 as a baseline. Following this a number of high priority and example sites will be assessed to identify potential improvements and a full reduction plan developed, including potential carbon and cost savings. It is also planned that the Agency will carry out a full analysis of the monitoring data from the smart meters once 3 months figures are available. The value of this assessment will then be reviewed to determine future frequency of this activity. Information will also be entered to the DEFRA ‘Carbon Reduction Toolkit’ and reporting tool developed as part of the Carbon Reduction Commitment.

The Shrewsbury site is a major user of energy and the new buildings and systems are being designed to minimise future demand and offer the greatest flexibility on fuel supplies.

## **7 Financial Implications**

Funding for the works will be taken from the Environmental Improvement budget. Implementation of proposals will be subject to a cost benefit analysis and further approval, if required.

## **8 Legal Comment**

There are no legal implications arising from this report

## **9 Equality Impact Assessment**

This report is an update on our environmental management system, for which an Equality Impact assessment has been prepared.

## **10 Appendices**

There are no appendices attached to this report.

## **11 Background Papers**

There are no background papers associated with this report.

Implications of all of the following have been considered and, where they are significant (i.e. marked with an asterisk), the implications are detailed within the report itself.

Balanced Score Card		Integrated Risk Management Planning	
Business Continuity Planning		Legal	
Capacity		Member Involvement	
Civil Contingencies Act		National Framework	
Comprehensive Performance Assessment		Operational Assurance	
Efficiency Savings	*	Retained	
Environmental	*	Risk and Insurance	
Financial	*	Staff	
Fire Control/Fire Link		Strategic Planning	
Information Communications and Technology		West Midlands Regional Management Board	
Freedom of Information / Data Protection / Environmental Information		Equality Impact Assessment	*