



DERBY CITY COUNCIL

## SCRUTINY MANAGEMENT COMMISSION 12 SEPTEMBER 2006

Report of the Director of Corporate and Adult Social Services

### Review of Energy Use by the Council – Draft Final Report of the Planning and Environment Commission

#### RECOMMENDATION

1. That the Commission consider and comment upon the report.

#### SUPPORTING INFORMATION

- 2.1 At its meeting on 5 September 2005, the Planning and Environment Commission agreed that as one of its work plan topics for 2005/06 the Commission would investigate the City Council's use of energy.
- 2.2 The review was prompted by the spiralling world energy costs and by the Commission's concern about:
  - a) the likely impact of those costs on the City Council
  - b) the future availability of fossil fuel and the implications that this would have for Derby
- 2.3 The draft final report contained in Appendix 2 sets out the outcomes of the review which was intended to:
  - Examine the implications for the Council and Derby as a whole of the current and likely future cost and availability of fossil fuels and energy derived from fossil fuels
  - Consider and where appropriate make recommendations on the actions that the City Council might take in order to minimise the effect of energy price increases or energy shortages on Council services and the City.
- 2.4 Completion of the report was delayed by the involvement of the Co-ordination Officer in the 2006 local elections. The draft final report has been brought to Scrutiny Management Commission because its portfolio now includes Energy Conservation.

2.5	The Commission is asked to consider and comment upon the report and its recommendations, and if the report is approved, to make the recommendations known to the appropriate Council Cabinet member.
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<p><b>For more information contact:</b> David Romaine 01332 255598 e-mail david.romaine@derby.gov.uk</p> <p><b>Background papers:</b> Appendix 1 – Implications</p> <p><b>List of appendices:</b> Appendix 2 - A Review of the Council’s Energy Use – Draft final report</p>
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## Appendix 1

### IMPLICATIONS

#### Financial

1. None arising from this report.

#### Legal

2. None arising from this report.

#### Personnel

3. None arising from this report.

#### Equalities impact

4. Energy conservation by the Council will be of benefit to all Derby people.

#### Corporate Objectives, Values and Priorities

5. This report has the potential to link with all the Council’s Corporate Objectives,

SMC Energy rev rep

**DRAFT REPORT**

**Planning and Environment Commission**

# **A review of the Council's Use of Energy**

**July 2006**

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## Second Draft

### Planning and Environment Commission

## A review of the Council's use of Energy

### Executive Summary and Recommendations

At its meeting on 5 September 2005, the Planning and Environment Commission agreed that as one of its work plan topics for 2005/06 the Commission would investigate the City Council's use of energy.

The review was prompted by the spiralling world energy costs and by the Commission's concern about:

- a) the likely impact of those costs on the City Council
- b) the future availability of fossil fuel and the implications that this would have for Derby

This report sets out the outcomes of the review which was intended to:

- Examine the implications for the Council and Derby as a whole of the current and likely future cost and availability of fossil fuels and energy derived from fossil fuels
- Consider and where appropriate make recommendations on the actions that the City Council might take in order to minimise the effect of energy price increases or energy shortages on Council services and the City.

The table below compares the Council's gas and electricity costs in 2004/05 with those in 2005/06.

	2004/05 Costs (£)	2005/06 Costs (£)
All Gas	1,127,534	2,568,845
All Electricity	1,973,597	2,596,431
Total Cost	3,101,131	5,165,276

It was agreed by the Commission that the objectives of the review should be:

1. To examine the implications for the Council of:
  - The increasing cost of energy
  - Any likely constraints in energy supply
  - Forthcoming legislation on energy use
2. To consider ways in which the Council might:
  - Reduce its energy consumption and energy costs
  - Minimise the effect of energy price increases on its services and the City

- Increase its resilience to possible energy shortages
- Utilise alternative energy sources in Derby.

To obtain the information that it needed to achieve its objectives the Commission interviewed relevant Council officers and representatives of the Centre for Sustainable Energy and the Carbon Trust. The Commission also engaged Professor Paul Fleming of De Montfort University to carry out a desk top study aimed at providing some of the information the Commission needed about energy cost and supply and the ways in which the Council might reduce its energy consumption.

From its review the Commission concluded that:

1. In the short to medium term, all forms of energy will become scarcer and hence more expensive. This will inevitably affect the Council, Derby businesses and domestic consumers.
2. In the longer term, some current forms of energy may no longer be available and alternatives will have to be found or there may be energy shortages.
3. The Council should organise access to auxiliary power sources that could be used in the event of a prolonged failure of the gas or electricity supply to Derby.
4. The increasing cost and scarcity of energy will exacerbate the risk of fuel poverty for people on low incomes and the Council needs to look at ways of dealing with this.
5. To minimise its costs, the Council should identify all its uses of energy and ensure that it only pays for the energy that it uses.
6. The Council should as a matter of urgency take all practicable steps to reduce energy wastage and to improve its overall energy efficiency.
7. It is essential that Council staff are actively engaged in any process to minimise energy wastage and improve energy efficiency.
8. Developers should be actively encouraged to install energy and water conservation features in all new dwellings and conversions built in Derby.
9. The Council should investigate and where possible implement methods of generating, or encouraging others to generate, some of the energy required by the City.

To address these conclusions, the Commission proposes the following recommendations:

### **Recommendation 1**

That the Council identify any premises where back-up power sources would be needed in the event a prolonged power outage and put in place arrangements to provide them if required.

#### Reasons 1

Ian Shuttleworth, the Chief Emergency Planning Officer, told the Commission that one of the Council's vulnerabilities was its lack of back-up power sources. Tim Findlay, the Principal Services Engineer, confirmed that the Council would not be able to cope in the event of a failure or reduction in the level of the gas or electricity supply to Derby.

### **Recommendation 2**

That the Council should identify the likely impact of increasing fuel costs on the level of fuel poverty in Derby.

#### Reasons 2

To ascertain the likely scale of any problem and assist with the planning any response.

### **Recommendation 3**

That the appropriate officers of the Council should prepare a report detailing the actions that the Council would need to take to conform to the forthcoming energy conservation legislation, the timescales, likely cost, and practicability of complying, and the implications for the Council if it did not comply.

#### Reasons 3

To fully quantify and publicise the implications of the forthcoming energy conservation legislation for the Council.

### **Recommendation 4**

That Council Cabinet adopts the recommendations contained in the Audit and Risk Management Section's report on the Payment of Utility Bills.

#### Reasons 4

A clear understanding of where and how energy is being used, and the cost implications of that use, is essential if the Council is to use the energy that it buys in the most cost effective way.

### **Recommendation 5**

That action is taken to ensure that all Council Directorates are fully engaged in the Carbon Management Programme that is being developed with the Carbon Trust.

Reasons 5

To ensure that all the opportunities offered by the Carbon Management Programme are fully exploited by the Council.

### **Recommendation 6**

That the Council embarks on a high profile programme to make Council employees aware of the Carbon Management Programme and of the need to conserve energy and reduce energy wastage.

Reasons 6

To ensure that Council employees are aware of the Carbon management Programme and to encourage them to engage in it.

### **Recommendation 7**

That the Council works with developers in the City to ensure that new dwellings are designed to minimise energy consumption and where possible incorporate energy saving features such as solar water heating and that any conversion of existing buildings incorporates all practicable energy saving features.

Reasons 7

To minimise the energy demand of new and newly converted dwellings in the City.

### **Recommendation 8**

That the Council investigates possible methods of locally generating energy and seeks to implement any which appear practicable.

Reasons 8

To identify any methods of energy generation that could be used to reduce the City's dependency on bought-in energy.



## 1. Introduction

At its meeting on 5 September 2005, the Planning and Environment Commission agreed that as one of its work plan topics for 2005/06 the Commission would investigate the City Council's use of energy.

The review was prompted by the spiralling world energy costs and by the Commission's concern about:

- a) the likely impact of those costs on the City Council
- b) the future availability of fossil fuel and the implications that this would have for Derby

This report sets out the outcomes of the review which was intended to:

- Examine the implications for the Council and Derby as a whole of the current and likely future cost and availability of fossil fuels and energy derived from fossil fuels
- Consider and where appropriate make recommendations on the actions that the City Council might take in order to minimise the effect of energy price increases or energy shortages on Council services and the City.

Although this review was conducted by a small working group comprising the Chair and two members of the Planning and Environment Commission it was recognised that there was widespread interest in the Council's use of energy and the evidence gathering sessions of the review were opened to all members of the Council.

## 2. Background

At the scoping stage of the review the Planning and Environment Commission were told that:

- The September 2005 edition of DTI Energy reported that in the United Kingdom between June 2004 and June 2005, average industrial electricity prices, including the Climate Charge Levy (CCL), increased in real terms by 33.8%. Over the same period, average industrial gas prices, including the CCL, increased by 36.4% in real terms and average coal prices by 24%.
- Between June 2004 and June 2005 average domestic electricity prices rose by 7.5% in real terms and gas prices by 10.5%. The price of heating oils increased by 24% in real terms and that of coal by 8.8%.
- In the year to mid September 2005 road fuel diesel prices increased by 14.4 pence per litre (equivalent to an increase of 11.5%) and those for unleaded low sulphur petrol (ULSP) by 13.2 pence per litre (equivalent to an increase of 14.4%).
- On 27 September 2005 the BBC reported that the utility consumer group Energywatch had voiced its concerns about the increased costs to a

meeting at the 2005 Labour Party Conference and had called for government intervention to help lower prices. The BBC also reported that at the same meeting the CBI had warned that firms may be forced to lay off staff and close down this winter because of a shortage of power.

- The CBI chief Sir Digby Jones reportedly told Energy Minister Malcolm Wickes that low energy reserves were posing a serious threat to business and said that companies were ‘incredibly worried’ about the threat to supplies in the coming months. He said that this was because ‘inadequate’ planning meant that the UK only had enough gas in reserve to supply companies for 11 days as opposed to 55 days in other European countries.
- David Workman, the Director of the glass manufacturers association British Glass said that forecasts for the first quarter of 2006 suggested that gas prices would have increased by 166% compared with the first quarter of 2003. He said that one company, British Optical, had already moved its operations to the Far East because of high energy prices.

The Commission was also told that the City Council’s energy costs for 2004 were in the order of £3.7 million. A breakdown of these costs is shown in Table 1 below.

Table 1 – Actual 2004 FY energy costs

Detail Code	Narrative	Amount (£)
<b>Direct Fuel Related Costs</b>		
CCD02	Premises Fuel Oil	26,240.94
CCD20	Electricity	1,500,185.55
CCD25	Street Lighting Electricity	447,837.56
CCD26	Traffic Signal Energy	25,575.00
CCD40	Gas	1,094,556.10
CCD43	Gas Communal Heating	32,978.92
DDA46	Petrol	24,713.53
DDA47	Fuel Oil	93,929.93
DDA49	LPG	486.28
DDA51	Fuel Derv	486,033.91
<b>Sub Total:</b>		<b>3,732,537.72</b>

In the scoping report the City Council’s energy costs for 2005 were approximately estimated by applying three quarters of the increases set out in the September edition of DTi Energy to the Council’s 2004 energy figures. This very crude estimation suggested that the Council’s 2005 energy costs would be as shown in Table 2.

Table 2 – Estimated 2005 FY energy costs

	2004 Costs (£)	Corrected % increase for 2005	Estimated 2005 costs (£)
All electricity	1,973,597	25.35%	2,473,903
All gas	1,127,534	27.3%	1,435,350
All Fuel Oil	120,169	18%	141,799
All road fuel			
Diesel	486,033	8.62%	527,929
Petrol	24,713	10.8%	27,382
			Total 4,606,363

The Council's actual gas and electricity costs for 2005/06 were:

**Electricity - £2,596,431**

**Gas - £2,568,845**

**Total - £5,165,276**

Compared with the figures provided for 2004/05 for the scoping report this represents an increase of 30% in Electricity costs and 128% in Gas costs.

As the Council's Gas supply is now halfway through a 2 year contract there should be no increase in the unit cost of gas during 2006. The Electricity contract is out to tender in October 2006 and the expected increase in unit cost is 50%. This would result in gas and electricity costs for 2006/07 of £6,463,491. This is an increase over 2004 costs of more than 100%.

At the scoping stage of the review, the Commission considered that the recent and projected increases in energy and fuel costs were likely to have significant implications for the City Council and might also impact on the way in which it operated and delivered its services. It was also thought that the cost increases were likely to impact on companies and organisations that deliver services to the Council and the people of Derby.

### 3. Objectives of the Review

It was agreed by the Commission that the objectives of the review should be:

1. Obtain information on likely future UK energy costs and any supply constraints and use this to assess the current impact and short/medium term implications of the Council's current energy policies and energy procurement arrangements
2. Examine the implications for the Council of any forthcoming legislation on energy/fuel use
3. Consider and where appropriate make recommendations on the actions that the City Council might take in order to:
  - a) Reduce its energy consumption and energy costs
  - b) Minimise the effect of energy price increases or energy shortages on Council services and the City
  - c) Increase its resilience to possible energy shortages
  - d) Utilise alternative energy sources

#### 4. Methodology of the Review

There were two stages to the review. For Stage 1 the objectives were to:

1. Obtain information from officers on the Council's current and short/medium term energy policies and identify the current consumption of energy by the Council and the associated costs and carbon dioxide emissions.
2. Obtain information from specialists on the likely trends in UK energy demand, supply and prices.
3. Consider the implications for the Council of any forthcoming legislation, either UK or EC, on energy/fuel use.
4. Relate the Council's current and short/medium term energy use to likely projected energy demands and determine the cost implications for the Council.
5. Obtain information on the actions that the Council could take in the short term to reduce its consumption of energy.
6. In time for any suggestions to be considered as part of the Council's 2006/7 budget proposals, issue an interim report to Council Cabinet identifying:
  - a) the likely energy costs for the Council in 2006 and 2007, and
  - b) short term actions that the Council could take to reduce its energy costs and the cost/time implications of implementing those actions

The Stage 2 objectives were to:

7. Interview relevant witnesses to see how the Council might:
  - a) Reduce its energy consumption and energy costs
  - b) Minimise the effect of energy price increases or energy shortages on Council services and the City
  - c) Increase its resilience to possible energy shortages
  - d) Utilise alternative energy sources
8. Identify any realistic alternative energy sources for the Council
9. Issue a final report setting out the Commission's findings and making any appropriate recommendations to Council Cabinet.

To obtain the information needed for the first stage of the review, the Commission conducted a scene setting meeting on 13 October 2005 with the following Council Officers:

- Dawn Moran – Head of Procurement
- Neil Norwood – Energy Group Leader
- Tim Findlay – Principal Services Engineer

The Commission also engaged Professor Paul Fleming of De Montfort University to carry out a detailed desk top study that covered points 2-5 of the Stage 1 programme and on 18 November 2005, Professor Fleming

subsequently presented his report and findings to a meeting of the Commission and other interested members of the Council.

The key points extracted from the meeting with officers and from Professor Fleming's report are set out in Part 2 of this report. The full text of Professor Fleming's report and a detailed account of the Commission's meeting with the officers is available from the Co-ordination Team.

Stage 2 of the review comprised evidence gathering meetings of the Commission with:

- Richard Dunning of the Centre for Sustainable Energy
- Ian Shuttleworth – Emergency Planning Officer, Derbyshire County Council
- Dennis Wardle – Markets Officer, Derby City Council
- Colm Watling of the Carbon Trust

The key points of the interviews with these witnesses are contained in Part 2 of this report and a detailed account of the Commission's meeting with the witnesses is available from the Co-ordination Team.

## **5. Key Issues identified from the Review**

The following key issues for the Council were identified from the review:

- The security of energy supply
- The impact of increasing energy prices
- The impact of forthcoming legislation

These issues are summarised in this section of the report

### **5.1 Security of energy supplies**

One of the conclusions of the De Montfort University report was that energy supplies were likely to remain secure in the short and medium term, although costs were expected to rise significantly.

However the De Montfort analysis suggested that there might be a supply shortage with gas in the next five years which could lead to shortage of supply to consumers at times of peak demand. The De Montfort report also concluded that the rapid increase in the global demand for oil was like to result in a shortfall in supply some time between 2010 and 2015.

The oil companies are now openly saying that world supplies of mineral fossil fuels are coming to an end. In an interview in February 2006 Peter Robertson, the vice-chairman of Chevron told the BBC World Services that his company was now investing heavily in alternative sources of energy. The reserves of natural gas, currently for many countries the fuel of choice for electricity generation, are also showing signs of depletion and there is growing

concern in the West about political instability associated with supplies of oil and gas from the Middle East and Russia.

The vulnerability of the EU and UK energy markets to supply problems is illustrated by the dispute about gas prices that occurred earlier this year between the Ukraine and the Russian Gas supplier Gazprom. The dispute started when state-owned Gazprom increased the price to the Ukraine of 1000 cubic metres of gas from \$50 to \$230.

The Ukrainian pipeline network carries 90% of Gazprom's exports to West and Central Europe and some of Gazprom's biggest customers are Germany, Italy and France. During the dispute, Gazprom cut the Ukraine's provision of gas and Austria, Germany and France all experienced a reduction in gas supplies with France seeing a fall of 25-30%. This incident illustrates the dependence of the EU on external gas suppliers, and this dependence, and that of the UK, will increase rapidly as the output of the North Sea gas fields declines.

In the UK the problem of the security of energy supply will be further exacerbated by the projected closure of coal and nuclear power stations which currently generate around one third of the country's energy requirements.

This reduction in the UK's generating capacity was considered by a recent survey of industry, government, academic and environmental experts by the energy company Mitsui Babcock. The survey found that because of this future under-capacity, a large proportion of respondents were seriously concerned about the prospect of electricity blackouts during the 2012 London Olympics. Mitsui Babcock concluded that there was a growing gap in UK energy needs that would require an urgent investment of billions of pounds. This view was echoed by Sir Digby Jones of the CBI.

The Commission asked witnesses to the review for their views on the security of energy supplies in the UK. Ian Shuttleworth told the Commission that actions to improve resilience of energy supply were being taken at all levels of government from national to local. He said that the Derbyshire County Council Emergency Planning Group had developed arrangements with the public utilities which would give prior notification of energy supply problems and would prioritise the re-instatement of supplies to protect the most vulnerable. He also told the Commission that one of the Council's vulnerabilities was its lack of back-up power sources.

Tim Findlay, the Council's Principal Services Engineer confirmed to the Commission that the Council would not be able to cope in the event of a failure or reduction in the level of gas or electricity supply to Derby.

## **5.2 The Impact of increasing Energy prices**

All the contributors to the review recognised that increasing energy prices would have a major adverse impact on the Council.

The increasing prices are largely due to a declining supply. In 1999 UK oilfields produced an average of 2.72 million barrels per day (mbpd), but by June 2005 this had fallen by 34% to 1.7 mbpd. The steady decline in output is confirmed by the UK Offshore Operators Association which estimates that the decline will be around 7% per annum.

Shortfall in oil supply coupled with increasing demand and concerns about political instability have conspired to force up the price of oil prices, which in 1999 was about \$20 per barrel, from \$40 a barrel at the beginning of 2005 to \$60 at its close.

North Sea gas production is also declining. According to DTI figures, output fell by 5.5% in the second quarter of 2005 while imports increased by 53.5%.

The De Montfort report pointed out that the recent increases in the cost of gas and electricity to consumers were due to a 40% increase in the wholesale cost of gas. The authors of the report considered that these prices would rise further if there was an increase in demand for gas as a consequence of measures in response to climate change. A survey of local authorities conducted by De Montfort University as part of their desk top study showed that they expected costs to rise substantially and the De Montfort report suggested that this would occur in the short to medium term.

In February 2006, the BBC reported that the European Commission was investigating allegations that some European energy companies were holding back gas supplies, stifling competition and driving up prices. In the BBC article it was suggested that the excess prices were thought to have cost UK consumers £1bn over the winter of 2005/06. The increase in gas prices was been blamed on a lack of competition in the continental energy markets

The Commission asked witnesses to the review about the effect of increased energy prices on the City Council. Dawn Moran told the Commission that the Council's energy contracts were for a fixed rate over three years. This meant that there were big cost increases when the contracts were renegotiated. The Council's current electricity contract expires in October 2006 and the gas contract in March 2007.

Richard Dunning of the Centre for Sustainable Energy told the Commission that the Council's energy bill was currently around £3m/year and he thought that this might be expected to rise by £1.5m in the coming year. The Commission were also told that increased energy costs will also increase the Council's road vehicle fuel bill which is currently around £0.5m.

The recent and any future increases in the cost of energy have serious fuel poverty implications for the vulnerable sectors of the public and this is an issue that the Council must recognise and may need to address.

### 5.3 The impact of existing and forthcoming legislation

Contributors to the review told the Commission that a wide range of existing and forthcoming legislation would impact on the Council. The main UK policy affecting energy use is the **Energy White Paper of 2003** (DTI 2003). At the national level, the implementation of this White Paper is being taken forward by the **Sustainable Energy Policy Network** (SEPN). The main goals outlined by the Energy White Paper are to:

- Start reducing CO<sub>2</sub> emissions and put strategies in place to achieve a 60% reduction by 2050.
- Have a reliable energy supply.
- Raise the rate of sustainable economic growth and improve productivity.
- Provide all homes with adequate and affordable heating.

The Commission was told that the key to achieving these goals is investment in energy efficiency measures. There are a number of other pieces of legislation that are supporting the White Paper. These include

- Planning Policy Statement 22: Renewable Energy (Office of the Deputy Prime Minister, 2004)
- Sustainable and Secure Buildings Act (Great Britain, 2004)
- Fuel poverty Strategy and Warm Homes and Energy Conservation Act 2000 (Great Britain, 2000)
- The Sustainable Energy Act (Great Britain 2003)
- The Climate Change Levy
- Fuel duties

The Energy Performance of Buildings Directive will also impact on the Council and in 2006 will require many buildings to have 'A' to 'G' energy labels. Energy labelling will apply to larger buildings in the public sector visited by large numbers of the public as well as to the design and construction of new and refurbished buildings.

For the Council, the impact of the new legislation is the potential cost and practicability of implementing it and the image the Council will present if it fails to adequately meet the requirements of the legislation.

## 6. Suggested response to the Key Issues

The key issues identified from the review were:

- The security of energy supply
- The impact of increasing energy prices
- The impact of forthcoming legislation

The Commission considered that there were strong linkages between each of these three key issues and that to address them the Council would need to:



1. Identify the use of energy across the whole authority
2. Minimise its use of energy, which would reduce its energy bills and help it to comply with the legislation
3. Investigate and where practicable, implement, ways of minimising its dependence on 'bought-in energy'

The ways in which the Commission thought that this might be done are outlined in the following sections of this report.

### **6.1 Identifying the Council's use of Energy**

The increasing cost and likely future scarcity of energy makes it essential for the Council to do everything practicable to reduce its energy consumption. However during the latter part of 2005, officers who contributed to the review told the Commission that:

- There was no actual record of the energy consumed by the Council and that the only way this could be obtained was by working it out from the costs
- Different areas within the Council had their own budgets for energy and paid their own bills, and it was up to each area to check that the figures were correct
- It was possible to estimate the number of meters on Council premises but the figure was not known for certain
- Not all the meter locations were known. There was a list of meter locations but it was not known if they all existed.
- Bills were always estimates and the Council had even received bills for sites where there was no gas supply
- There was no centralised database for energy bills

The Commission was concerned that the lack of accurate billing made it difficult to understand how and where energy was being used. Members were also concerned that the Council might be paying of energy that it had not used. The appropriate Council Cabinet member was informed of the Commission's concerns at a meeting on 6 December 2005 and they in turn raised the issue with the Audit and Risk Management Section who subsequently carried out their own investigation into the matter.

The Audit Section's report, which was published in April 2006, concluded that the Council's current procedures for the payment of utility bills are not robust enough. Many bills were paid on estimates, and responsibility for bills is not always clear. The report recommended that:

- A Council wide policy for the management of energy bills should be developed and implemented consistently across the Council. This should include limits on the value of bills that can be paid on estimated readings and/or a minimum frequency that meter readings should be taken either by the utility company or the council.

- A record should be kept of all the meters, including their location, and unique reference number. Each meter on this list should be allocated to a responsible officer. The responsible officer should be responsible for ensuring that the meter is the responsibility of the Council and for informing the Energy Group Leader if the meter is removed, the property is unused or no it longer becomes the responsibility of the Council. Also, the responsible officer should be the point of contact for the Energy Group Leader regarding any queries regarding levels of usage and requests to provide meter readings.
- If the Council decides not to use an Energy Bureau, no bills should be passed for payment unless they refer to a meter which is on the list and has been verified by its responsible officer.
- If the Council decides to use an Energy Bureau, the Energy Group Leader should be responsible for all liaison with the Bureau, providing them with the required information, passing on information from responsible officers, and actioning issues raised by the Bureau. The provision of accurate and timely information to the Energy Bureau will be of key importance, as the Council will be relying heavily on the work of the Bureau for its control over energy bill payments. Periodic checks should be made of the list of meters to ensure the information on the list is accurate, and that meter readings have been taken sufficiently frequently. On the termination of supply the Energy Bureau should be informed immediately.

The Commission fully supports the recommendations made in the Audit Section's report. In 2004, gas and electricity costs made up around 83% of the Council's energy bill. A clear understanding of where and how that energy is being used, and the cost implications, are essential if the Council is to use the energy that it buys to in the most cost effective way.

## **6.2 Minimising the Council's use of Energy**

In the course of its review the Commission was told by Tim Findlay the Principal Services Engineer that Council employees did not generally seem interested in saving energy. This statement may not fully reflect the views of all Council employees but there does seem to be an attitude that wasted energy is not particularly important.

In the Council House for example, a cursory inspection of the Council House revealed very obvious examples of energy wastage such as:

- corridor lights left on in broad daylight
- hot water in the toilet wash basins that is so hot that warning notices are required
- a central heating system that is so uncontrollable that windows have to be opened in winter and which in warmer weather heats rooms to an uncomfortable level, even when all the radiators are switched off

- vintage, eight foot long, fluorescent tubes, with dirty diffusers and no reflectors, positioned ten feet above desk level that give poor levels of illumination for the power that they consume
- computer equipment left on perpetual stand-by – the Commission was told that switching off and unplugging computer equipment over night could save the Council £4,500 per year
- ill fitting windows that admit severe draughts during windy weather.
- windows left open in cold weather in corridors and meeting rooms
- a plethora of 'private' electric kettles and refrigerators in offices

Looking elsewhere in the Council there also seems to be evidence of much larger problems. For example, during its interview with Richard Dunning of the Centre for Sustainable Energy, the Commission was told that the Council's swimming pools had no pool covers, despite the fact that these could achieve energy savings of up to 30%, and so would pay for themselves in one year. In the same interview the Commission was told that the swimming pool extractor fans had no reclaimers, which could reduce heating costs by one third. If these statements are correct, the swimming pools will be wasting large amounts of energy.

It is accepted by the Commission that some of the problems in the Council House, in particular the heating system, the lighting and the windows are the inevitable consequence of working in a 70 year old building for which there has probably always been insufficient money for maintenance and improvement, and that the problem is exacerbated by the uncertainty about the future of the Council House. Conversely however some problems, such as the corridor lights, the computers that are left on standby, and the swimming pool covers, do seem to be symptomatic of a lack of concern about energy conservation and energy management.

The Commission was pleased that the Property Services Division officers who gave evidence to the review were fully aware of the problems of energy wastage and were keen to do something about them. Commission members were however concerned that at the outset of the review, energy efficiency and the reduction of energy costs did not seem to be high on the corporate agenda and that no Cabinet member seemed to be taking responsibility in this area. The Commission considers that if the Council is to significantly reduce its use of energy and thereby its energy costs, it needs a high profile corporate plan, with clear targets, to address these issues.

In January 2006 the Commission interviewed Colm Watling, the East Midlands Regional Account Manager for the Carbon Trust. Following that meeting, the Commission was informed that the City Council would be taking part in the Carbon Trust's Local Authority Carbon Management Programme. The Commission is fully supportive of this initiative and hopes that through the programme the Council will be able to achieve significant reductions in its energy wastage. However the Commission is concerned that unless staff can be persuaded to become much more aware of the need to avoid wasting energy it will not be possible to fully realise the potential gains of the Carbon Management Plan.

The Commission wishes to point out that a number of possible methods of reducing energy wastage and consumption were suggested in the report by De Montfort University. These included:

#### **No cost methods**

- Light switching maps for each bank of switches;
- 'End of day' instructions for each room;
- Setting all PCs to go to power save mode quickly (blank screen saver);
- Exploiting overnight cheap electricity
- Evening and daytime spot checks on compliance with any new rules
- Checking timers, thermostats and thermostatic radiator valves regularly;
- Checking weather forecasts managing heating proactively
- Checking and reading meters regularly, and cross checking with utility bills

#### **Low cost methods**

- Replace all remaining incandescent light bulbs with low energy replacements
- Draft proofing doors and windows
- Installing or repairing window blinds;
- Ensuring all windows can be easily opened or closed;
- Issuing desk or local lighting where appropriate (e.g. where one or two members of staff are at the back of an office).

#### **Medium cost investments**

- Installing external solar shading over windows;
- Replacing ineffective double glazing
- Installing push controlled timed lighting, most often seen in the stairwells of small blocks of flats;
- Reconfiguring existing lighting systems to make it easier to put lights on selectively in darker areas;
- Installing movement controlled lighting sensors;

The Commission hopes that these are the sort of initiatives that will be identified and investigated through the Council's work with the Carbon Trust, and that wherever the initiatives will be implemented.

Commission members consider that any initiatives to reduce energy use will not be wholly successful unless they are fully supported by staff. The Commission consequently suggests that in addition to its Carbon Management Programme, the Council needs to embark on a high profile programme aimed at raising the awareness of Council employees and the public of the need to reduce energy wastage. It is considered that, in order to be successful, this programme should be accorded a level of priority similar to that of Building on Excellence.

### **6.3 Minimising the Council's use of bought-in energy**

Reducing energy wastage will reduce the Council's use of energy and will help it to comply with the requirements of the forthcoming legislation. However, the Council will still be reliant on external energy suppliers for the energy that it uses. As has previously been mentioned, it is expected that in Europe, the availability of oil and gas will diminish in the short to medium term. This is expected to result in increased energy costs for the Council, but it may also find that there is a lack of energy available for purchase, and this in turn may have a detrimental effect on the services that the Council can provide and on the inhabitants of the City. Consequently the Commission suggests that the Council should now start to consider how it, and the inhabitants of Derby, might produce some of the energy they require.

A number of local authorities, and notably Woking Borough Council, have taken the lead in developing their own sources of energy. The Government recognised the achievements of Woking Council and in 2005 conferred Beacon status on the Borough. In Woking the Council has successfully commissioned several high profile projects including a fuel cell powered CHP plant, a natural gas fired CHP plant that serves the Holiday Inn hotel, the Civic Offices and a number of other town centre buildings and which will also serve the new County Hall and the Woking Museum and Art Gallery. In the Borough there are also a number of large roof mounted photo-voltaic arrays that generate power directly from sunlight and which serve sheltered residential accommodation and community buildings. Woking is also investigating mini-CHP installations which will make sustainable energy more readily available to domestic users.

At the outset of its review the Commission was told by Tim Findlay that embedded generation was becoming more feasible, and he referred to a small combined heat and power (CHP) unit powered by a gas-fired Stirling engine that produced 1 KW of energy and 9 KW of heat. This type of installation is definitely worthy of investigation, but is still dependent on the availability of gas.

In his interview with the Commission, Richard Dunning of the Centre for Sustainable Energy suggested that there were a number of small scale methods of energy generation that the Council might consider. These included photovoltaic cells, which are not now prohibitively expensive, and micro wind turbines, which because of their small size do not require planning permission. Richard Dunning also told the Commission that bio-gas CHP plants offered the opportunity of using parks rubbish, tree prunings, etc to generate heat and electricity. He said that Bristol, Liverpool and Manchester Councils were all examining the possibility of installing wind turbines in urban areas.

In his interview with the Commission, Richard Dunning also stressed the importance of ensuring that new buildings are constructed to standards that offer the highest levels of energy conservation. He told members that local authorities were in a strong position to reduce the energy consumption of new

dwellings and could do this by imposing new energy conservation planning requirements on developers. These could include such conditions as the alignment of buildings to take the most advantage of sunlight and the requirement that developers install features such as solar water heating and 'smart' energy meters. He said that if the local authorities did not impose this sort of condition the developers would simply build to a minimum standard. Mr Dunning told members that incorporating energy saving measures in new houses would not greatly increase the cost of the houses as the developers had such great purchasing power, and he said that consequently, energy saving through planning conditions was a zero cost option for a local authority.

The Commission feels strongly that the Council should follow the lead of Woking and other local authorities and should take the opportunity to investigate the options for generating some of its energy requirements. This should be done in parallel with the Council's Carbon Management Programme.

In addition to wind turbines and big photoelectric arrays, other larger scale methods of energy generation that might be available to the Council include geothermal energy from boreholes, heat pumps using the river or geothermal heat, and a limited amount of hydroelectric power using the existing weirs on the river. It is suggested by the Commission that the viability of all these options is initially explored and that any that seem to offer practicable opportunities be subject to more detailed examination.

## **7. Conclusions arising from the Review**

The Commission considers that the following conclusions may be drawn from the review:

1. In the short to medium term, all forms of energy will quickly become scarcer and hence more expensive. This will affect the Council, businesses and domestic consumers.
2. In the longer term, some current forms of energy may no longer be available and alternatives will have to be found or there may be energy shortages.
3. The Council currently has no access to auxiliary power sources that could be used in the event of a prolonged failure of the electricity supply.
4. The increasing cost and scarcity of energy will exacerbate the risk of fuel poverty for people on low incomes.
5. The Council should identify all uses of energy and ensure that it only pays for the energy that it uses.

6. The Council should as a matter of urgency take all practicable steps to minimise energy wastage and to improve its energy efficiency.
7. It is essential that Council staff are actively engaged in any process to minimise energy wastage and improve efficiency.
8. Developers should be actively encouraged to install energy and water conservation features in all new dwellings building in Derby.
9. The Council should investigate and where possible implement methods of generating, or encouraging others to generate, some of the energy required by the City.

## Part 2

### Key Points arising from Interviews with Witnesses

The key points arising from the interviews are set out below.

<b>Key points arising from the Commission's scene setting meeting with Tim Findlay – Principal Services Engineer, Dawn Moran – Head of Procurement, and Neil Norwood – Energy Group Leader on 13 October 2005.</b>	
NN1	NN told the Commission that there was no actual record of the energy consumed and the only way that this could be obtained was by working it out from the costs. He said that this meant using the average gas costs, and that for electricity it was even more complicated because of the number of tariffs and because different sized sites throughout the Council were working on different tariffs.
TF1	TF confirmed that all the different areas had their own budgets and paid their own bills.
DM1	DM said that traditionally the different sites were metered and billed separately. The bill showed how many units each site had been charged for and it was up to each area to check the figures for themselves.
DM2	DM said that the other option was for the Council to have centralised bills. This would enable the cost/usage of energy to be compared for different sites and it would then be possible to see which sites were using more energy
DM3	DM confirmed that central billing could be cheaper for the Council as it would be possible to negotiate a better rate with the energy suppliers.
NN2	A Commission member asked if it was known how many units the Council paid for and how many meters there were in Council premises. NN told the Commission that it was possible to estimate the number of meters on Council premises but the figure was not known for certain. He said that for electricity consumption it was possible to get kWh but not bills. For gas it was better and they had started to get spreadsheets and other energy use data.
DM4	DM confirmed that it was known what the Council spent on energy, but in response to a Commission member's question she said that not all the meter locations were known.
NN3	NN told the Commission that the Council had received bills for sites that did not exist and the bills it received were always estimates. He said that the Council had even received gas bills for sites where there was no gas supply.
DM5	DM confirmed that a centralised data base would help as it would then be possible to reject bills that do not meet particular criteria. She said that the software was available to do this and that it generally achieved initial savings of around 3%. This would be on a combined energy bill of around £1.2m for the relevant Council properties. It would also help the Council to get a better deal from the suppliers.
DM6	DM told the Commission that energy prices will increase year on year



	and consequently the Council needed to address its energy consumption. However, to do this it needed to know how much energy it was consuming.
DM7	<p>DM said that there were only two contracted companies (for electricity) and told the Commission that the City and County Councils tendered together for their supplies. She said that even combined, the two Councils did not have a lot of power to negotiate on energy. She told the Commission that the contracts were for a fixed rate over three years and that this meant there were big increases in cost when they were renegotiated.</p> <p>A Commission member asked where the Council was currently with its contracts. DM said that the gas contract expired in March 2007 and the electricity contract in October 2006.</p>
TF2	TF said that there was a list of meter locations but they did not know that all these actually existed. He said that they had tried an account cleaning exercise with Severn Trent for water and that this had been successful, but it would be a bigger job for gas and electricity.
DM8	DM said that the Council paid about £30,000/year on the Shell card system for road vehicle fuel.
DM9	DM confirmed that the gas and electricity costs were fixed for the coming year but a big increase was expected for the following year.
DM10	A Commission member asked about buying energy from renewable sources. DM said that the suppliers offered this facility.
NN4	NN told the Commission that electricity was bought in half hour packages three hours in advance. He said that this meant a user could negotiate a better deal if they could predict their demand on this basis, which was why the Council was currently conducting trials of a half hour metering system.
DM11	DM confirmed that the trend was towards more metered supplies so the supplier was able to predict demand. She said that this information made for better decision making.
TF3	A Commission member asked whether there was scope for the Council to generate its own electricity. TF confirmed that embedded generation was becoming more feasible and referred to a small CHP unit based on a gas fired Stirling engine that produced 1KW of electricity and 9 KW of heat. TF said that organisations should only generate the energy that they needed as it was difficult to sell it back to the main suppliers.
DM12	DM said that this was not widely known that the Council would have a new gas contract in 2006, and she confirmed that there could be problems if service department energy users were not planning for the increase. She felt there was a need to publicise this but said that there was no formal mechanism for informing budget holders of the coming cost increases.
TF4	TF said that there were several pieces of legislation that would impact upon the Council. These were the EU Energy Performance of Buildings Directive and Part L of the Building Regulations.
TF5	TF said that some work to meet the requirements of EU Directive had

	been started but the Council had nobody in post who could carry out the work. He told the Commission that the work should be completed by April 2006 but was unlikely to be done by then.
TF6	TF said that it was possible to reduce consumption but not to avoid cost increases. Cost rises were in the order of 30% and it would be impossible to get a 30% reduction in usage without spending and estimated £100m across the portfolio. However it was possible to reduce the increase in energy cost.
TF7	Asked about the cost of operating IT equipment, TF said that switching off and unplugging all the IT equipment overnight would save the Council about £4500/year. He said the intention was to purchase extension cables with a feature that would do this.
TF8	A Commission member asked how the Council would cope in the event of a failure or reduction in the level of gas or electricity supplies. TF confirmed that if this happened the Council would not be able to function fully.
TF9	He said that Council employees generally did not seem to be interested in saving energy
TF10	A Commission member asked whether it would be effective for the Council to use embedded generation sources in Council buildings. TF said that to make CHP work it was necessary to have a heat base load, this was why they worked well for swimming pools.

**Key points arising from the Commission's meeting with Richard Dunning of the Centre for Sustainable Energy – 18 January 2006**

RD1	RD said that the aim of the Centre was to engage and meet real needs by the identification of affordable solutions.
RD2	Local authorities were likely to become drivers for sustainability. This was because they were in a position that enabled them to take a leading role in implementing central government initiatives on issues such as incinerators, road use charging, etc.
RD3	Local authorities and health PCTs were both faced with the requirement to reduce costs and environmental impacts.
RD4	Climate change and cost were that among the most important drivers for energy conservation.
RD5	The Council's energy bill was currently around £3m and that this might increase by about £1.5m in the coming year. A reduction by 10% of this would mean a saving of £450,000 per year to offset against the costs of changing behaviour.
RD6	Another of the big drivers was fuel poverty (more than 10% of income spent on fuel).
RD7	Other important drivers were security of supply and the reputation of local authorities. Local authorities needed a high level of strategic and policy commitment to sustainability.
RD8	There was now clear evidence of climate change and the key to addressing this was behavioural change.
RD9	Forthcoming EC legislation would require councils to display the energy rating, between A-G, of their buildings. To get the Council House up to the C rating would require a 40-50% reduction in energy

	use.
RD10	<p>The simple things that could be done to reduce energy consumption included:</p> <ul style="list-style-type: none"> <li>• Training staff to alter behaviour</li> <li>• A policy to replace all old style lights with low energy sustainable replacements</li> <li>• Replacing the automatic doors with ones that were normally closed and that were fitted with a control button for disabled users</li> <li>• Equipping all radiators with thermostatic valves</li> <li>• Providing desk lights so that staff do not need to use the ceiling lights</li> <li>• Installing movement switches to control lighting levels</li> </ul>
RD11	<p>Swimming pools equipped with pool covers could achieve energy savings of up to 30% which would pay for the covers in one year. Swimming pool extractor fans fitted with reclaimers could reduce heating costs by one third. (It was confirmed that the Derby pools were not fitted with pool covers and that there were no currently no reclaimers on the extractor fans).</p>
RD12	<p>Local authorities were in a strong position to reduce the energy consumption of new dwellings and could do this by imposing new energy conservation planning requirements on developers. These could include such conditions as the alignment of buildings to take the most advantage of sunlight and the requirement that developers install features such as solar water heating. If the local authorities did not do this, the developers would build to a minimum standard. Incorporating energy saving measures in new houses would not greatly increase their cost as the developers had such great purchasing power. Planning was a zero cost option for the Council.</p>
RD13	<p>The provision of water was costly in terms of the energy it required so the objective should be to use as little as possible and to reuse as much grey water as possible.</p>
RD14	<p>Bristol, Liverpool and Manchester were all examining the possibility of installing wind turbines in urban areas.</p>
RD15	<p>Biogas CHP plants offered the opportunity of using parks rubbish, tree prunings etc to generate heat.</p>
RD16	<p>There were a number of small scale methods of energy generation that the Council might consider. These included photovoltaic cells, which were now not prohibitively expensive, and micro wind turbines which because of their size do not require planning permission.</p>
RD17	<p>Local authorities needed to promote sustainability in all aspects.</p>
RD18	<p>Training was best cascaded down and should include Elected members, senior officers, managers and front line staff.</p>

**Key points arising from the Commission’s meeting with Ian Shuttleworth, Chief Emergency Planning Officer, Derbyshire County Council – 30 January 2006.**

IS1	Energy conservation was a topical issue. The Meteorological Office were forecasting a colder than average winter. The Emergency Planning Team were currently considering the impact of exceptionally cold weather which could include the disruption of power supplies and might also affect heating, lighting and communications.
IS2	Emergency Planning had developed arrangements with the public utilities which would give prior notification of problems and would prioritise the reinstatement of supplies to protect the most vulnerable groups.
IS3	A new business continuity strategy had been developed and was available via the Council’s website. The strategy identified the critical services for the Council and its vulnerabilities. One of these was a lack of back-up power and this was being addressed.
IS4	The main areas of concern were power supply and fuel and energy provision. The scheme covered bulk oil storage. This was now more of a problem since many organisations had removed with their own oil storage tanks and instead had agreements with local filling stations.
IS5	The Council only had a limited amount of stand by power.
IS6	Planning was based on: <ul style="list-style-type: none"> <li>• The loss of key buildings</li> <li>• The loss of key staff – for example because of a ‘flu epidemic</li> <li>• The loss of key infrastructure – IT, power, heating or fuel</li> </ul>
IS7	Problems with gas supplies were unlikely as it was understood that only 5% of gas was imported, although this figure was likely to increase.
IS8	Actions to improve resilience were being taken at all levels from national to local.

**Key points arising from the Commission’s meeting with Dennis Wardle – Markets Officer , Derby City Council - 30 January 2006.**

DW1	The markets are a large user of water and a previous proposal to meter wagon wash water had been dropped because of budgetary constraints. This proposal should be re-examined and arrangements to reuse water should be incorporated.
DW2	There was potential within the markets to make energy savings, to improve the recycling/recovery of waste materials and to introduce composting.

**Key points arising from the Commission's meeting with Colm Watling – Regional Account Manager, East Midlands, Carbon Trust – 31 January 2006**

CW1	The Carbon Trust is an independent company funded by Government and that its role is to help the UK move to a low carbon economy by helping business and the public sector reduce carbon emissions
CW2	The Carbon Trust is funded by Climate Change Levy and gets 2% from landfill tax. Its objective is to work towards UK Kyoto targets.
CW3	Aberdeen City Council's carbon management programme had identified emissions and set targets to achieve reductions. For outlay of £183k Aberdeen had managed to save £93k/year.
CW4	CW said that the Carbon Trust was working with lots of local authorities and had also started carbon management programmes with big industries that had different drivers to the local authorities.
CW5	CW told members that the Carbon Trust used a five step process and that its aim was to get people to change their behaviour. These steps were as follows: Step 1 – Mobilise the organisation Step 2 – Determine current/future vision Step 3 – Identify opportunities to reduce carbon emissions Step 4 – Develop a reduction strategy and implementation plans Step 5 – Implement the strategy and review its outcome
CW6	The starting point for a local authority was to ensure that key individuals, both members and officers, were committed to the process.
CW7	As a first step the Council needed to look at its energy expenditure and emissions.
CW8	Step 3 in the process resulted in spreadsheet of options for reducing carbon emissions. It was necessary to define the order in which to exploit the opportunities that were identified. Some of these may be low/no cost and others would have a cost implication.
CW9	It would be necessary to ensure that any changes are sustained. savings first.
CW10	If possible the right approach was to go for the options that gave big
CW11	A local authority would need to: <ul style="list-style-type: none"> <li>• Identify and understand the drivers for change</li> <li>• Compile its emissions baseline</li> <li>• Produce forecasts of its future emissions for different scenarios</li> <li>• Calculate the value of the options facing it</li> <li>• Develop its Vision and Strategic Goals</li> <li>• Present its 'Case for Action'</li> </ul>
CW12	The Carbon Trust has up to £0.5m/year to offer as grants to local authorities on a 50/50 basis. The money needed to be match funded but is a grant and no repayment is required.
CW13	In considering whether to support a proposal the Carbon Trust would consider: <ul style="list-style-type: none"> <li>• The amount of carbon saving likely to be achieved by the scheme</li> </ul>

	<ul style="list-style-type: none"> <li>• The cost of achieving that saving</li> <li>• The likelihood of the scheme being successful</li> </ul>
CW14	The Council should look for other possible high visibility savings. A balanced portfolio of initiatives was needed. The cost of carbon was now £9.00/tonne.
CW15	One issue that might be worthy of consideration was the energy efficiency of new housing developments.
CW16	Carbon Trust provides £20k of free consultancy/year to Councils that sign agreements with them. This can be used to identify options etc.

### **Key Points contained in the report prepared for the Commission by De Montfort University in 2005**

#### **1. Summary**

R1	The report looks at the security of supply and legislative issues around the use of energy in Derby City. The conclusions are that energy supplies are likely to be secure in the short to medium term, but energy costs are likely to rise in both the short and medium terms.
R2	Future EU and UK regulations and guidance will be favouring increased energy efficiency measures in buildings and greater use of renewable energy resources. The regional energy strategy will also be favouring energy efficiency and renewable energy measures in the move towards a low carbon economy.
R3	The Council should be responding to these anticipated price increases and legislative issues by developing and implementing an energy plan to reduce the council's electricity, oil, gas and solid fuel consumption and addressing the resulting economic, social and environmental issues.
R4	Derby City Council should be developing a comprehensive energy policy and implementing that policy.

#### **2. Draft Recommendations from the Report**

R5	<ol style="list-style-type: none"> <li>1. Develop a comprehensive energy strategy, involving all the key players in the city to address ambitious energy reduction targets.</li> <li>2. Guidelines should be established for new developments that maximise both energy efficiency and renewable energy. A target of a specific percentage on site renewable energy should be agreed for all developments</li> <li>3. Save cost through a combination of centralising existing utility billing procedures, more effective energy monitoring and investment in energy efficiency and renewable energy measures</li> </ol>
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#### **3. Likely future energy costs and supply constraints**

##### **3.1 General**

R6	The analysis suggests that there might be a supply shortage with respect to gas but not for oil in the next five years. However, ensuring security of energy supply is a key government priority and government
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	departments are working to achieve this.
R7	The results of a survey of local authorities show that local authority energy costs will rise substantially.
R8	The report suggests that Derby City Council should anticipate substantial energy cost increases in the short to medium term.
	<b>3.2 Gas</b>
R9	The analysis indicates that there is potential for consumers, including Derby City Council, to experience shortages of supplies in the near future especially at times of peak demand.
	<b>3.3 Oil</b>
R10	The rapid increase in demand by emerging economies, especially China and India is responsible for the overall surge for the global demand for oil.
R11	Calculations place the coming oil crisis some time between 2010 and 2015, perhaps earlier. Although the world contains large quantities of non-conventional oil and oil substitutes they cannot be brought into the market rapidly enough to compensate for shortfalls in conventional oil supply
	<b>4. Future Energy Prices</b>
R12	Experience suggests that it is impossible to be certain about future oil and gas prices
R13	Recent increases in the price of gas and electricity were due to the 40% increase in the wholesale price of gas caused by the decline in UK gas supplies and by its increasing reliance on imported gas
R14	Prices of fuels will also depend on actions taken by other countries – international demand for gas might for example rise if major economies adopt fuel switching to gas as a response to climate change
R15	It is very difficult to make accurate predictions of future energy prices. However, the signals are that prices will have an upward trend.
	<b>5. Existing and forthcoming Legislation</b>
R16	The main UK policy affecting energy use is the <b>Energy White Paper of 2003</b> (DTI 2003). At the national level, the implementation of this White Paper is being taken forward by the <b>Sustainable Energy Policy Network</b> (SEPN).
R17	The main goals outlined by the Energy White Paper are to: <ul style="list-style-type: none"> <li>• Start reducing CO<sub>2</sub> emissions and put strategies in place to achieve a 60% reduction by 2050.</li> <li>• Have a reliable energy supply.</li> <li>• Raise the rate of sustainable economic growth and improve productivity.</li> <li>• Provide all homes with adequate and affordable heating.</li> </ul> The key to achieving these goals is investment in energy efficiency measures.
R18	There are a number of other pieces of legislation that are supporting the White Paper. These include <ul style="list-style-type: none"> <li>• Planning Policy Statement 22: Renewable Energy (Office of the Deputy Prime Minister, 2004a)</li> </ul>

	<ul style="list-style-type: none"> <li>• Sustainable and Secure Buildings Act (Great Britain, 2004)</li> <li>• Fuel poverty Strategy and Warm Homes and Energy Conservation Act 2000 (Great Britain, 2000)</li> <li>• The Sustainable Energy Act (Great Britain 2003)</li> <li>• The Climate Change Levy</li> </ul> <p>Fuel duties</p>
R19	<p>The preferred role for local government in pursuing sustainable energy strategies is set out in the Local Government Association (LGA) position statement “<i>Energy Services for Sustainable Communities – The Local Government Position</i>” (LGA 1998). This recommends that local authorities:</p> <ul style="list-style-type: none"> <li>• Reduce the need for energy</li> <li>• Use energy more efficiently</li> <li>• Use renewable energy</li> <li>• Any continuing use of fossil fuels to be clean and efficient for heating and cogeneration</li> </ul>
R20	<p>The <b>Local Government Act 2000</b> places a duty on local authorities to prepare community strategies with the aim of promoting the social, economic and environmental well-being of their area. The UK Government see community strategies as an important vehicle for contributing to sustainable development in the UK.</p>
R21	<p>The UK <b>Building Regulations</b> ensure the health and safety of people in and around buildings by providing functional requirements for building design and construction.</p>
R22	<p>Part L1 of the Building Regulations covers thermal performance standards and airtightness standards for buildings.</p>
R23	<p>New dwelling requirements for 2006 include requirements to:</p> <ul style="list-style-type: none"> <li>• Minimise emissions of CO<sub>2</sub> from heating, hot water systems, lighting, cooling, fans and pumps</li> <li>• Reduce heating demand by reducing heat loss</li> <li>• Incorporate renewable energy and/or decentralised energy supply systems where technically, environmentally and economically viable</li> <li>• Reduce excess solar overheating, and therefore the need for cooling, by good design and construction.</li> </ul> <p>Provide energy certificates giving information about how the dwelling can be operated and maintained so as to minimise CO<sub>2</sub> emissions.</p>
R24	<p>The <b>Code for Sustainable Building</b> (CSB) is a government and industry voluntary initiative to encourage the building industry to take up sustainable practices such as using energy, water and materials resources more efficiently and using practices and materials designed with occupant’s health and well-being in mind.</p>
R25	<p>The <b>European Union Energy Performance of Buildings Directive</b> was published in the Official Journal on the 4th January 2003. The overall objective of the Directive is to ‘promote the improvement of energy performance of buildings within the community taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness.’</p>



	The contents of this EU directive need to be integrated into UK law by January 2006.
R26	The Energy Performance of Buildings Directive will in 2006, require many buildings to have 'A' to 'G' energy labels. Energy labelling will apply to larger buildings in the public sector visited by large numbers of the public, and to the design and construction of new and refurbished buildings.
R27	The <b>European Display Campaign</b> is a voluntary scheme designed by energy experts from 20 European towns and cities. It is aimed at encouraging local authorities to publicly display the energy and environmental performances of their public buildings using the same energy label that is used for household appliances.
<b>6. Derby City Council Energy Strategy</b>	
R28	In 2002 the Local Government Association (LGA), the Improvement and Development Association (IDeA) and De Montfort University surveyed the progress that local authorities in England and Wales were making on addressing Climate Change. The main assessment was based on the authorities approach to reducing energy related greenhouse gas emissions. Of the 207 (out of 410) local authorities responding, Derby came below average when ranked against other councils. Derby therefore has substantial opportunities for both developing and implementing an energy strategy.
R29	Local authority energy policies require strong leadership and good technical knowledge across the entire local authority. They also require partnership with other public and private sector bodies and a strong engagement with local communities.
R30	Research has shown that only a handful of UK local authorities are actually implementing policies that will lead to measurable large cuts in energy consumption.
R31	It is important to set relatively ambitious targets and to have a comprehensive energy policy in place. Setting ambitious targets results in a different approach to saving energy in buildings than setting un-ambitious incremental targets.
R32	It is important for the local authority to show leadership. The London Plan is an example of such leadership where there is a requirement for new developments to incorporate on site renewable energy generation.
<b>6.1 Developing a comprehensive Energy Strategy for the Council</b>	
R33	An energy strategy could be subdivided into different areas. It could include, for example, the following: <ul style="list-style-type: none"> <li>• Overall policy and guidance.</li> <li>• Energy Supply – including renewables and procurement.</li> <li>• Energy Demand reduction. <ul style="list-style-type: none"> <li>○ Homes.</li> <li>○ Businesses.</li> <li>○ Transport.</li> <li>○ Waste.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>• Monitoring and Evaluation.</li> </ul>
	<b>6.2 Summary of actions that could be taken</b>
R34	Ensuring that the council has detail of all the electricity, gas, oil solid fuel and water bills are effectively monitored and checked. Using “intelligent metering” to get half hourly data from major energy consuming buildings can identify substantial savings and identify billing errors and excessive consumption.
R35	It is important that the council considers energy efficiency and savings before extensive investment in renewables generation and other sources. This is because investments in energy efficiency and savings cost less per pound sterling (and kg of CO <sub>2</sub> ) saved. RE (renewable energy) is attractive but invariably less cost effective than energy efficiency.
R36	It is recommended that water savings are considered in addition to gas electricity savings etc. as the cost savings can be just as important (water provision does of course also involve the use of energy by its suppliers).
R37	An officer or team should be appointed (or seconded for a long period) to work on energy (and water) issues.
R38	An interdepartmental working party should be established to overcome the ‘silo’ mentality which can often constrain successful actions. Also consider a member-level working party.
R39	An energy strategy can only be successful with the support of senior management, members, officers and other staff. Indeed initially the most success can be achieved with zero cost initiatives, which involve only the time of one or a few specialist energy staff, and the cooperation of everyone else.
	<b>6.3 Potential Energy Saving measures - grouped by level of investment</b>
R40	<p><b>No cost methods</b></p> <ul style="list-style-type: none"> <li>• Mark all equipment with typical standby and in-use power consumptions</li> <li>• Light switching maps for each bank of switches;</li> <li>• ‘End of day’ instructions for each room;</li> <li>• Set all PCs to go to power save mode quickly (blank screen saver);</li> <li>• Reduce the frequency of urinal flushes</li> <li>• Exploit overnight cheap electricity</li> <li>• Evening and daytime spot checks on compliance with any new rules</li> <li>• Check timers, thermostats and thermostatic radiator valves (TRVs) regularly;</li> <li>• Check weather forecasts and thus act and communicate proactively</li> <li>• Check and read meters regularly, and cross checking with utility bills</li> </ul>
R41	<p><b>Low cost methods</b></p> <ul style="list-style-type: none"> <li>• Replace all remaining incandescent light bulbs with low energy replacements</li> <li>• Put water saving blocks in every toilet cistern;</li> <li>• Draft proof doors and windows</li> <li>• Install or repair window blinds;</li> </ul>

	<ul style="list-style-type: none"> <li>• Ensure all rooms and areas have max-min thermometers;</li> <li>• Ensure all windows can be easily opened or closed;</li> <li>• Repair leaky windows, doors, walls and ceilings etc;</li> <li>• Secondary double glazing (100 mm gap helps to cut out external traffic noise etc.);</li> <li>• Install thermostatic radiator valves - TRVs;</li> <li>• Issue desk or local lighting where appropriate (e.g. where one or two members of staff are at the back of an office).</li> </ul>
R42	<p><b>Medium cost investments</b></p> <ul style="list-style-type: none"> <li>• External solar shading over windows;</li> <li>• Insulation of roofs, walls etc.;</li> <li>• Replacement double glazing (100 mm gap helps to cut external traffic noise etc.);</li> <li>• Convert vehicles to run on liquid petroleum gas (LPG or autogas);</li> <li>• Install push controlled timed lighting, most often seen in the stairwells of small blocks of flats;</li> <li>• Reconfigure existing lighting systems to make it easier to put lights on selectively in darker areas;</li> <li>• Movement controlled lighting sensors;</li> <li>• Install solar hot water - but only as part of a bigger project, e.g. installing showers for staff members who cycle to work.</li> </ul>
R43	<p><b>Higher cost investments</b></p> <ul style="list-style-type: none"> <li>• Replace heating, lighting and cooling systems with more efficient ones (electrical heating especially should be replaced with gas)</li> <li>• For cooling purposes, consider building alterations to increase natural ventilation rather than purchasing powered air conditioning systems.</li> <li>• Install combined heat and power systems, especially to replace worn out existing heating systems;</li> <li>• Convert or purchase vehicles to run on compressed natural gas (CNG)</li> </ul>
R44	<p><b>People involvement and public dialogue</b></p> <ul style="list-style-type: none"> <li>• Put a requirement for the “energy efficiency” in all job descriptions for new staff.</li> <li>• Emphasise the risk to jobs from energy costs.</li> <li>• Appoint departmental, floor and building energy champions, supported from the top</li> <li>• Get caretaking, cleaning, maintenance, security staff involved in “switching off”</li> <li>• Create an intranet site to share information.</li> <li>• Instigate campaigns to turn air-conditioning, photo-copiers, printers, audio visual equipment, computers and lights off when not required and to shut windows, etc. – but remember turning off equipment may increase heating demands in winter;</li> <li>• Ask for help and co-operation from trades unions, staff associations, etc.</li> </ul>

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|  | <ul style="list-style-type: none"><li>• Appropriately relaxed dress policies so staff can cope with changing temperatures;</li><li>• Encourage walking, cycling or public transport to get to work – they are more likely to be warmly dressed or to feel warm in once arriving at work, even if the heating has been turned down.</li></ul> |
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DRR 4 July 2006.