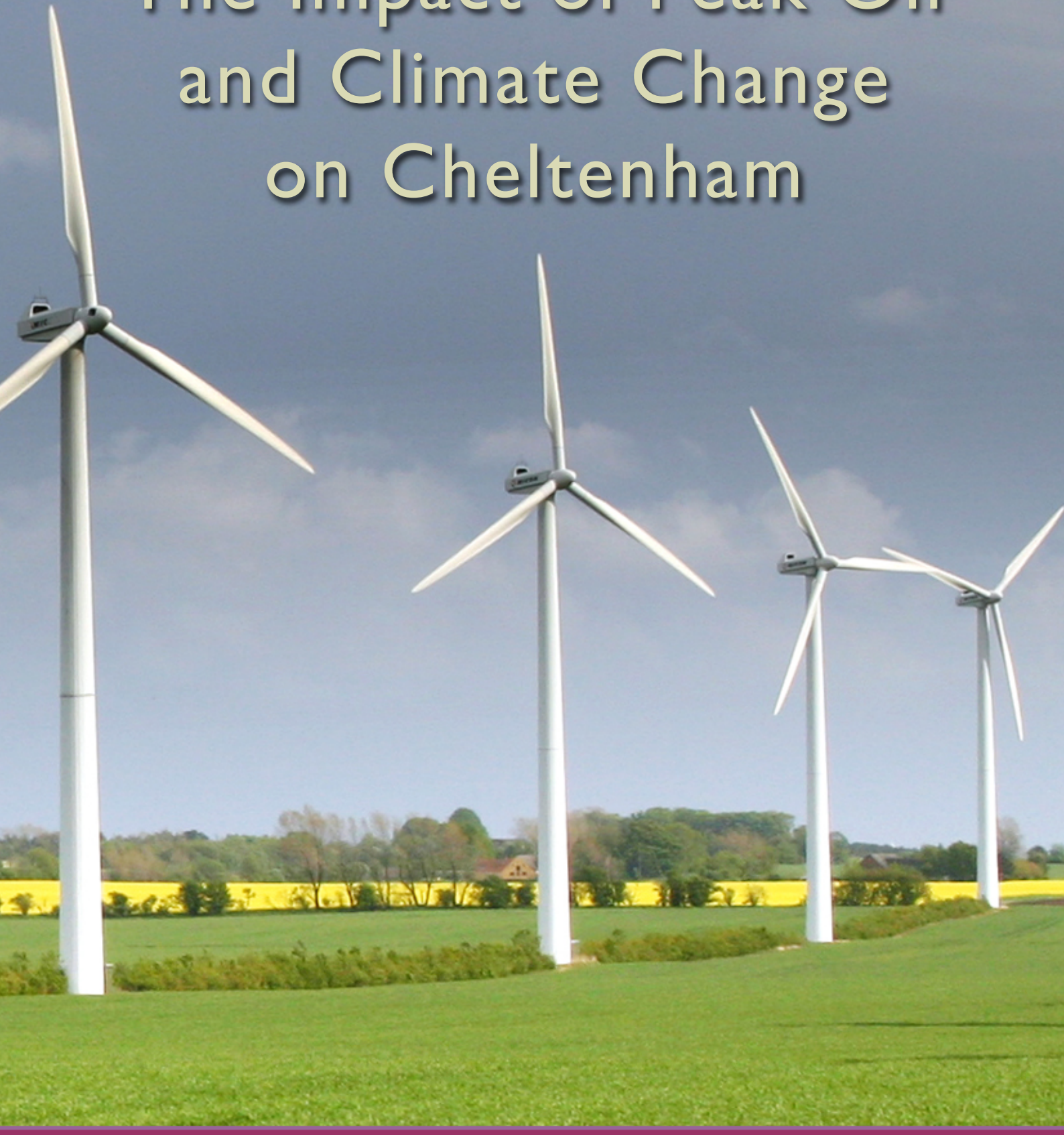


## The Impact of Peak Oil and Climate Change on Cheltenham



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## **FOREWORD**

The recent floods should be taken as a wake-up call for politicians and planners. What the experience indicated was the power of the weather and how climate change can suddenly and cruelly blow away our daily routine and create social and economic chaos.

Had electricity supply been disrupted there was talk of evacuating the Severn Vale. The scale and duration of flooding was not sufficient to justify this, but a sustained loss of power would create very substantial disruption indeed and affect every aspect of our lives.

The best that we can hope for in meeting the challenge of climate change, while at the same time developing more benign forms of energy, is a gradual transition that, with proper resource allocation and good planning, will allow some prospect for success.

The probability, however, is the prospect of fairly regular 'events' – more floods and more droughts, with everything that goes with this, against the background of energy shortages and price hikes. We need to prepare for these.

These developments also challenge many of the social and economic assumptions we have made and accepted about where we are going and how we should get there. The Government has developed the idea of 'sustainable development' in order to continue its policy of growth. The reality is that the development going on is adding to the production of carbon and therefore stimulating climate change. Most of it is not 'sustainable' at all. Things will only get worse unless we are really serious about reducing carbon emissions. We should not be considering growth until we are confident that we can achieve this.

**Richard Tibbles**  
**Chair, Vision 21 Gloucestershire**

**August 2007**

## EXECUTIVE SUMMARY

- A) **This report identifies Civic Leadership as being critical in coordinating the initiatives necessary to tackle the impact of climate change in Cheltenham and the need for improved Emergency Planning. Vision 21 believes we need to pursue a policy of localism, dividing the town into smaller ‘community units’ and nurturing stronger communities so that as things change or there are ‘crises’, local communities will be more self-reliant and less dependent on public infrastructure and emergency services.**
- B) This report argues that the emphasis on economic growth is tugging in the opposite direction to the avowed aims of environmental strategies, and that ‘sustainable’ growth as it is practised at the moment is not, in the main, sustainable at all. All planned growth should be subject to a rigorous scrutiny to ensure that it is as low, or non-, carbon generating as possible.
- C) **Today the population of the world is increasing by 211,000 people a day – almost equivalent to two Cheltenham. As things stand all cheap energy is carbon based. Coal, Oil and Gas have been locked into the earth for millennia and are being released back into the atmosphere at an alarming rate in such a way as to produce a greenhouse effect which is de-stabilising the world’s climate. Oil is critical to the world’s energy systems and reserves have ‘peaked’ and are half depleted. It will get more expensive as demand for it accelerates and new economies dash for growth.**
- D) Regardless of what measures we take now to introduce alternatives to carbon-based energy systems to minimise carbon release, the world’s climate is predicted to change and we need to adapt to the changes. The need to find alternatives to carbon based sources of energy coupled with the increasing scarcity of oil will lead to price increases which will be de-stabilising to the world’s economy. Such oil shocks and climatic events will have a very rapid economic and social impact because of the interdependence of the globalised economy. The globalised market economy has already increased social polarisation.
- E) **Current Government strategy promotes ‘sustainable’ growth. Economic growth will demand more labour which is to be provided by in-migration to both the South West and the country. The indigenous population of both the UK and the South West is stable and showing signs of decline as the birth rate falls.**
- F) The increase in the demand for housing comes from a changed population structure with an ageing population and smaller household units, plus the in-migration needed to supply labour for economic growth. If the emphasis is put on productivity growth rather than labour based growth then the need for extra housing – current prediction 12,500 additional units in the Cheltenham area by 2026 - will be substantially cut, with the main demand

being for 'affordable' housing for that section of the indigenous population that cannot afford the cost of current 'market' housing.

- G) The impact of climate change could follow 3 scenarios:**
- i. Transition - long-term gradual climate change – V21 believes that this phase has probably passed but that this represents the most optimistic reading of the situation.**
  - ii. Disruption - interrupted energy supplies and localised severe weather events (the most likely scenario and one that V21 believes we are experiencing now).**
  - iii. Disintegration – an extreme but by no means impossible scenario where there are long-term dramatic energy crises and prolonged severe weather events that permanently disrupt civil society.**
- H) V21 believes we have missed the opportunities to make small long-term adjustments as suggested by Scenario 1. We believe that we must make more significant changes to mitigate the effects of Scenario 2 to try to prevent the consequences of Scenario 3.
- I) Unless the town prepares now there will be chaos as the multiple impacts of climate change alter the environmental, social and economic life of all Cheltenham's citizens.**

## INTRODUCTION.

This document explains briefly what we mean by climate change and ‘peak oil’<sup>1</sup> and why they are connected and then looks at the **impact** on a range of issues that are directly affected by them. Following a brief digest of key information describing the town, it puts forward suggestions to **adapt** to the consequences and to **mitigate** the effects of climate change and increasing energy costs.

The probability that oil and gas supplies are depleting and that other energy supplies need to be found to replace them (**just** as a consensus has been reached that it is the carbon dioxide that results from their use that is causing **climate change**) is used as the **catalyst** for exploring their joint impact on Cheltenham. The response to this ‘double whammy’ needs to be coordinated with a range of complementary initiatives.

### 1.0. BACKGROUND

- 1.1. It is the utilisation of carbon based energy sources that is the basis for the world’s economic and population expansion seen over the last hundred and fifty years – first in the developing world, and then in the rest of the world, as technologies dependent on these cheap sources of energy have spread. In 1802 the population of the world was 1 billion. In 2007, it is 6.7 billion and increasing by 211,000 a day – equivalent to almost two Cheltenhams<sup>2</sup>. **The annual global increase is significantly greater than the total population of the United Kingdom.**
- 1.2. Without coal, oil and gas the population of the world and the technology it has fuelled would be nothing like it is today. Cheap energy is at the heart of the progress of the human species. **It is coming to an end.** The realisation that **not only** is it running out **but** that it is the source of climate change means that it is imperative to address the consequences.
- 1.3. The three main functions that will be **directly** affected by peak oil and natural gas are transportation, heating and power in buildings, and the productive processes that use oil or natural gas. However, it is also necessary to consider **indirect** impacts.
- 1.4. For instance, food supplies are affected both directly and indirectly – directly in the oil that powers the machinery used in its harvesting, and indirectly on fertilisers and animal foods, processing and transportation costs. An increase in transport costs impacts on the cost of food indirectly. Similarly a reduction in the use of fertilisers because of an increase in costs of gas has an impact on crop yields, while an increase in its use pushes up costs. The direct and indirect impacts of peak oil need to be thought through and managed.
- 1.5. It was decided that the best approach was to look at the **impacts** of peak oil on a range of issues, assessing their scale and speed of impact at the same time. These issues were identified as:
  - Transport and Urban Development
  - Food Supply and distribution;
  - Energy Supplies;
  - Infrastructure and Services (both ‘hard’ and ‘soft’) and

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<sup>1</sup> ‘Peak Oil’ is used to describe the coming depletion of oil and gas reserves.

<sup>2</sup> Wikipedia

- Population and Social Cohesion.

Finally, after examining the various impacts and against the backcloth of a sketch of some of the town's vital statistics, options as to how they can be **addressed** are suggested.

## 2.0 CLIMATE CHANGE AND PEAK OIL

- 2.1. The process of global warming is now widely understood and accepted. There have been fluctuations in the temperature of the earth in the past that have affected weather patterns that have been caused by changes in the sun's output, volcanic activity and so on. It is now widely acknowledged that it is the relatively sudden release of greenhouse gases, principally carbon dioxide, into the atmosphere as a result of **human activity** that is primarily responsible for global warming and that is changing the world's climate.
- 2.2. In the South West of England the short term impact of this is anticipated to be warmer and dryer summers, and milder and wetter winters<sup>3</sup> but the key thing is that weather will become less predictable. Unpredictability has always been a feature of the British Climate, but it is now likely that Atlantic storms will increase in severity as the sea warms up and depressions gain more power. There will be more intense downpours of rain – and longer periods without rain.
- 2.3. These changes may appear to be of not much significance but will have a bigger impact than is currently believed. The population of the UK is densely concentrated in urban areas which are very sensitive to disruption. The impact of energy shortages or significant increases in their price is quickly felt in an increase in costs and supplies of commodities and food. The impacts of global warming in other parts of the world will probably be more severe than is the case in the UK and this will have a knock-on impact. The trade that the UK economy relies on for its standard of living will be affected by these changes.
- 2.4. Even if all greenhouse gases being emitted into the atmosphere were to cease overnight, the impact of existing emissions will still change the climate. Efforts to replace sources of energy with non-polluting alternatives will be necessary, but will not be a miracle cure, especially given the timescales of transition that are likely to occur. The changes predicted will not be reversed for generations **regardless** of what is done to address them and therefore it is imperative to take decisive and significant action immediately.
- 2.5. What will **force** change is the realisation that oil and gas supplies have 'peaked' or are about to. The central concept involved here is that approaching 50% of the world's oil and gas reserves have been used and that only 50% is left. Some people may believe that this gives us a lot of time to adapt, but they would be wrong.
- 2.6. First, the rate of emissions is accelerating quickly as countries, particularly China and India, develop. China<sup>4</sup> generates more carbon dioxide in 6 weeks

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<sup>3</sup> 'Warming to the Idea: meeting the challenge of climate change in the South West': SW Climate Change Impacts Partnership January 2003

<sup>4</sup> According to the Guardian June 1<sup>st</sup> 2007 quoting EIA (Energy Information Administration – USA) sources, the USA produced 5.9 billion tonnes of carbon dioxide and China 4.7 billion tonnes of carbon dioxide in 2004 as

than Britain does in a year and its use of carbon based energy is accelerating. Second, security of energy supplies is a major issue and behind much geopolitical strategic thinking<sup>5</sup>. Third, and most critically, the costs of carbon-based sources of energy will escalate as it runs out and price rises may be sudden and disruptive rather than gradual.<sup>6</sup> **The interconnectedness of the world's economies means that impacts will be felt between countries very quickly.**

- 2.7. Even if the climatic effects of global warming could be ignored, the fact that oil and gas reserves are depleting will have a profound impact on life. However, the appreciation of the probable greenhouse effects in the use of fossil fuel energy sources **combined** with the certain knowledge that oil is depleting means that it is vital to develop alternatives to fossil fuels. The alternatives include both finding acceptable substitutes that reduce or remove **reliance** upon them, as well as **coming to terms** with the physical effects of climate change – in other words, by **doing** things differently and/or **living** in a different way.
- 2.8. There are no energy sources available that are as cheap and ubiquitous as oil. Oil has been and still is a staple of modern human life. The alternatives to the diet of oil are varied. There is no single substitute. In looking at carbon free alternatives we need to consider more than the **cost, impact and practicality** of them. We also need to consider the already **known impacts of expected climate change** and the speed of such change so that we can plan and adapt to it.
- 2.9. The planetary escalation in the use of fossil fuels has been both a product and a cause of the **globalisation** of production and trade. The UK is now a niche economy in a bigger global economy concentrating at the 'high' end of the market. This has meant massive and speedy urbanisation in China and India and other parts of the developing world as they have grown to provide the goods for western consumers once produced by domestic industry. **This has lengthened the economic cycle with over a decade of continuous growth and has substantially increased the wealth of the UK and the average standard of living.**
- 2.10. However, another dimension of this has been the collapse of unskilled blue-collar work in the UK with the resulting marginalisation of a substantial minority of traditional blue collar workers. This reserve of labour is, literally, surplus to requirements and evolving into an 'underclass'.
- 2.11. This underclass<sup>7</sup> is largely dependent on state support and is poor, and least capable of fending for itself, and includes many elderly and disabled people

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against the UK's output of 590 million tonnes. China and the USA between them produced 10.6 billion tonnes of CO<sub>2</sub> in 2004. The next 18 biggest energy users produced 10.75 billion tonnes between them. <http://www.eia.doe.gov/emeu/international/carbondioxide.html>

<sup>5</sup> There have already been two 'Carbon Wars' – both involving Iraq in which strategic planners acknowledged the role of oil, even though political attempts have been made to play it down.

<sup>6</sup> The Oil Embargo of 1973 cut world oil production by between 6 and 7%. Prices rose 50% in October 1973 and doubled in January 1974 and US gross national product fell from 4% in 1960 – 1973 to 1.8% in 1973 – 1982. 'Descending the Oil Peak: Navigating the transition from Oil and Natural Gas' Report of the City of Portland Peak Oil Task Force. March 2007.

<sup>7</sup> The underclass is an imprecise term that indicates those groups disengaged from economic activity and therefore poor and dependent on state support. It is **not** the 'lumpenproletariat' identified by Marx as being that group that was a reservoir of criminality and anti-social behaviour. However, its economic redundancy makes it a prime candidate for disruptive and anti-social behaviour, criminality and xenophobia.

as well as the economically redundant. Increasingly it lives in well defined pockets of Council and Social Housing or concentrated in Houses in Multiple Occupation. The impact of an increase in the costs of energy, of food, of almost everything, will be most acutely felt by this group and the impact of its reactions on the rest of society will be critical. The issues of 'social cohesion' and 'social exclusion' are raised by this acknowledgement.

### 3. SCENARIOS FOR PEAK OIL/GLOBAL WARMING

- 3.1. The impact of climate change and peak oil will be comprehensive with interconnected environmental, social and economic effects. To try to imagine what could happen various scenarios have been developed. Three possible scenarios associated with peak oil within the context of climate change have been identified in one such study<sup>8</sup> and were considered in order to identify the significance of a planned response.
- 3.2. **Scenario 1 – Transition:** In this scenario the impacts of peak oil are potentially severe, but the decline in oil supplies and the rise in prices will occur at a fairly gradual pace, allowing time to plan for and potentially mitigate some of the impacts. Climate change will occur but can be adapted to and planned for. In other words, dependence on oil and other carbon based energy sources will reduce over a period of time and be replaced by alternatives, and society will adapt to the new climatic circumstances and limitations facing it. This is the 'best' scenario.
- 3.3. **Scenario 2 – Disruption:** Climate change 'events' and the long term decline of world oil and natural gas supplies create sudden disruptions and energy price hikes, triggering periodic sustained emergencies. Long term impacts would be similar to the Long-Term Transition described above, but would require additional preparations and emergency planning to deal with the sudden dislocations that could persist for months or years. The possibility of economic crisis triggered by fluctuations in the cost of oil and climate change events is likely to increase. This is the most likely scenario.
- 3.4. **Scenario 3 – Disintegration:** Whether sudden or gradual, the impacts of energy shortages and climate change become so severe that the social fabric begins to disintegrate. Unemployment, hunger, crime and violence are rampant, with socially catastrophic competition for scarce resources, including food, shelter and energy. A Disintegration scenario could arise from failure of multiple global systems and structures – financial, currency or trade. In a globalised world the impacts will happen more quickly. This is an extreme but by no means impossible scenario.
- 3.5. The scenarios are not mutually exclusive but are distinguished by the speed and severity of the impacts. **Focusing on the Long Term Transition is the most pragmatic approach because it would reduce the likelihood of the Disruption scenario – but placing the Disruption scenario on the agenda as a possibility raises two immediate responses.**
- 3.6. First, the need for **Emergency Planning Procedures** capable of lasting longer than the current relatively short term disaster time frame planned for and the need for **political leadership** in this.

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<sup>8</sup> Descending the Oil Peak: Navigating the Transition from Oil and Natural Gas. Report of the City of Portland Peak Oil Task Force. March 2007.

3.7. Second, the need to acknowledge that whatever happens, the end of cheap fossil fuels is going to have a profound impact on **population size** and structure. This is extremely controversial but cannot be ignored. Implicitly there is a message that unless we **plan** for a different kind of future and use resources intelligently, **global economic collapse could occur with the prospects for conflict, disease and starvation that will result in a much more brutal reduction in population levels.**

		Severity of Impacts	Severity of Impacts
		LESS SEVERE	MORE SEVERE
Speed of Impacts	<b>Gradual Slide</b> (Steady or Bumpy)	<b>TRANSITION</b> (Long Term Planning, policies, programmes)	<b>DISINTEGRATION</b> (Limited ability to respond: Long Term Transition approach meant to help avoid this).
Speed of Impacts	<b>Rapid Decline</b> (punctuated by sudden shocks)	<b>DISRUPTION</b> (Need for Emergency Planning)	

3.8. The issues considered in the development of the above scenarios are evident in the recent Energy White paper which was introduced in the House of Commons in May 2007. It sets out Government energy strategy for the coming decades. The Secretary of State<sup>9</sup> highlighted the main challenges – *‘(tackling) climate change and maintaining stable and affordable energy supply in an increasingly unstable world’*. It argues for the reduction of carbon based energy sources (a low carbon economy) because it correctly sees climatic impact, security and cost as interconnected and complementary challenges.

3.9. What it failed to highlight was that the UK emissions targets set in the previous 2003 Energy White Paper<sup>10</sup> (when emissions amounted to 135 million tonnes of carbon) of between 110 and 120 million tonnes of carbon (MtC) by 2020 are now expected to **increase** to an estimated 151.2 million tonnes by 2020. **This represents an increase of at least 16.2 MtC over the real maximum anticipated at the 2003 level – not the decrease of between 25 and 15 MtC originally predicted.** <sup>11</sup> By 2050 the target of 64

<sup>9</sup> Trade and Industry Secretary, Alistair Darling. House of Commons May 2007

<sup>10</sup> ‘Our Energy Future – Creating a Low Carbon Economy’ Energy White Paper 2003

<sup>11</sup> Expert View Chris Goodall Business Independent 27<sup>th</sup> May 2007. The aim in the Energy White Paper is to reduce emissions by 2050 to 64 million tonnes of carbon – a 60% reduction on the 1990 figure of 161.5 MtC. The UK currently produces about 2% of world carbon output. Outputs are expressed as tonnes of carbon in the Energy White Paper, and as tonnes of Carbon Dioxide (CO2) in National Environmental Accounts. 1 tonne of carbon dioxide = 3.66667 tonnes of carbon. 1 metric tonne = 1000 kilograms, or 2205 imperial pounds. According to DEFRA calculations, the average person is responsible for producing some 4.48 tonnes of carbon dioxide a year – ‘a little under half of each person’s actual share of the national total’ (Observer 17<sup>th</sup> June 2007).

MtC remains as a reduction of 60% over the 1990 level of 161.5 MtC.<sup>12</sup>  
**Given present trends this is most unlikely to materialise.**

3.10. The British Government maintained that it would **reduce** carbon dioxide emissions. **It is failing to do this.** The strategy for economic growth inevitably demands energy. **The take-up of fossil fuels worldwide is directly related to economic growth.** The aim of the British Government is to 'decouple economic growth from energy use and pollution' - but so far it is failing. At the same time the rate of carbon dioxide output in large developing countries like India and China is accelerating.<sup>13</sup>

3.11. **The price of energy will inevitably go up, at the same time as the impact of global warming and climate change will intensify.**

#### **4. THE CURRENT GOVT. STRATEGY TOWARDS GROWTH & DEVELOPMENT**

4.1. The likelihood is that there will be an increase in disruption caused by 'events' associated with climate change and an increase in the cost and insecurity of conventional energy supplies. These disruptions will increase risk and are likely to have an economic impact that will affect trade, investment patterns, stock markets and insurance. Life generally will become more unpredictable.

4.2. Regardless of this, British economic policy starts from the premise of 'growth' both in terms of productivity as well as size of workforce, with the increased energy requirements that this involves. It will also demand associated infrastructure and housing.

4.3. This is **despite** the fact that according to population projections the birth rate of the United Kingdom, including Gloucestershire, is actually **declining**. Were it not for the fact that people are living longer, the indigenous population of the UK and its workforce would be reducing.<sup>14</sup>

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<sup>12</sup> The Energy White Paper Annex B (Summary of Updated Energy and Carbon Emissions Projections) indicates:  
a 1990 base lines of 161.5 Million tonnes of Carbon (MtC);  
a 2003 output of 135 MtC  
a 2005 projection of 151.1 MtC;  
a 2010 projection of 146.5 MtC;  
a 2020 projection of 151.2 MtC  
and a 2050 target of 64 MtC.

The initial 'dash for gas' was the main reason for the reduction of 6% between 1990 and 2003. With the impact of the **European Emissions Trading Scheme (ETS)** the 2020 prediction of 151.2 MtC is expected to reduce to between 119.2 and 128.9 MtC 'equating to a reduction of 20% – 26%' over 1990 levels. **However, the real outputs are what need to be considered.** There was a reduction in carbon output during the 1990s, but it has since grown again and projections of future growth have been increased. Part of the reason for this is a switch back to coal for power generation as gas supplies decline. **The major reason for the growth of CO2 is the demand for energy that arises from an economic growth strategy.**

<sup>13</sup> The People's Republic of China (PRC) has recently announced that 'economic growth is more of a priority than tackling climate change'. It was reported on 20<sup>th</sup> June 2007 on 'Today' that the PRC is now building 2 coal fired power stations every week and has overtaken the USA as the main greenhouse gas polluter. Latest trade figures show that the combined USA/ European Trade deficit with China grew from 154.7 bn dollars in 2002 to 395 bn dollars in 2006 (over £200,000,000,000) (Observer 17<sup>th</sup> June 2007 & USA Bureau of Economic Analysis). It is this that is financing the pace of Chinese industrialisation and **therefore its carbon dioxide output.**

<sup>14</sup> Gloucestershire Population Monitor 2005, Gloucestershire County Council January 2007 – Executive Findings

- 'The mid 2005 population figure for Gloucestershire has been estimated as 575,200 people, which represented an average increase of 0.49% or 2,614 people per year since 1991. However, growth has slowed in most districts since 2001.

- 4.4. The Cheltenham/Gloucester area has been identified as a key economic driver<sup>15</sup> in need of labour and the housing that goes with this. According to the Office of National Statistics the total population in households (based on 2003 figures)<sup>16</sup> is due to grow from 111,200 in 2007 to 118,200 in 2026 within the Cheltenham administrative area, an increase of 7,000 over 19 years. During the period 1991 to 2005 (a period of 14 years) the population increased by some 4,700 from 107,000 to 111,700.<sup>17</sup>
- 4.5. During almost the same period the **Regional Spatial Strategy**<sup>18</sup> envisages an increase in **houses** (2006 – 2026) of 12,500 within the Cheltenham **Principal Urban Area** (which goes beyond the present borough boundaries and includes parts of Tewkesbury). The disparity in the population growth figures and the household growth figures indicates that substantial additional growth will take place **outside** the current Cheltenham administrative area but as a continuation of it, in Tewkesbury, on what is now Green Belt land. This is currently believed to involve something like 4,000 extra dwellings within the Cheltenham Borough boundaries and the residue of 8,500 in Tewkesbury with the main concentration being to the NW of Cheltenham along Tewkesbury Road on the western approach to the town, close to the M5 and junction 10.
- 4.6. **It is important also to acknowledge that this growth in households has not yet been statistically justified in the Regional Spatial Strategy.**<sup>19</sup> **There are some who believe the household projections are underestimates.**
- 4.7. The reality is that future housing numbers are premised on accommodating in-migration<sup>20</sup>. Without this the population of Cheltenham would decline slightly and ‘age’ more, and become **less economically active**. The assumption behind all this is that the economy **will and must** continue to grow in order to increase prosperity; that in-migrating labour is needed to achieve this, and that these people must have houses in which to live. **The ‘need’ to build more houses becomes a self-fulfilling prophecy**

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- Cotswold, Tewkesbury and Gloucester had the largest increase in population between 1991 and 2005. The latest population estimates put Cheltenham as the largest district in the county, closely followed by Gloucester and Stroud.
  - **The majority of population growth across the county over this period was attributable to net in-migration, which accounted for over 86% of the increase.**
  - The overall trend of falling fertility rates continued at county and district level despite an increase in the number of births in the latest year. The number of births in 2005 outstripped that of deaths by 275, the largest number since 1998. **Total fertility rates, however, continued to be below the required replacement fertility level, as is the case nationally.**

<sup>15</sup> SWRDA Regional Economic Strategy – One of its strategic objectives is to ‘develop the role of the Principal Urban Areas as the main centres of economic, cultural and academic activity in the region’. These will be the motors of growth and centres of employment.

<sup>16</sup> ‘2003 – based sub-national population projections for Cheltenham’: Office of National Statistics

<sup>17</sup> Gloucestershire Population Monitor 2005.

<sup>18</sup> The ‘Regional Spatial Strategy’ is essentially the Governments Plan for the future of the area and provides the context for local plans.

<sup>19</sup> ‘The projections were based upon 2003 ONS population data which was analysed to inform the RSS by the Chelmer population model. However, DCLG then released revised sub national household projections based on 2004 projections which represented a considerable increase in the annual rate of growth of households across all regions compared with the previous 1996 and draft 2002 based household projections (about 20% more households than originally projected). This has been a key area of debate for the RSS and the Panel will need to provide a clear response to these figures in their Panel report which is scheduled to be published October 2007’. Response from Strategic Land Use Planner, CBC May 2007.

<sup>20</sup> Technical Background Paper for RDA

**especially in the days of the increasing movement of people brought about by the globalised economy and the impact of climate change on countries more severely affected than Britain.**

- 4.8. The rate of household growth envisaged in the Regional Spatial Strategy is **unprecedented at twice** the previous 20 years of growth. The town will grow by a quarter over this period based on current numbers of households (51,287 at January 2007<sup>21</sup> within the boundaries of the borough).
- 4.9. Current settlement patterns are predicated predominantly on private transport outside of the best planned and most intensely developed areas. The argument is that growth is best accommodated in relatively densely packed areas where the opportunities for reducing energy exist by better use of public transport and shorter journeys. There is a logic to this, but it is tackling only one part of the equation. **The notion of growth also needs to be challenged.**
- 4.10. The argument for growth is that if we **do not** grow then our standard of living will decline and we will lose our economic position in the world and this would lead to a decline in our international profile. In order to grow, with a declining birth-rate, more labour is needed. **The commitment to growth is predicated on recruiting labour from other parts of the UK and, ultimately, from abroad.** Apart from the view that 'households' will continue to decline in size and that we therefore need more homes for these smaller households, this is the only way the projections make any sense.
- 4.11. Another argument employed is that while growth is dependent on energy and produces carbon dioxide, the amount is insignificant compared to other countries such as China. This is true but is a complacent argument for doing nothing to tackle global warming and fails to acknowledge the period of time that 'developed' countries like Britain have been major CO<sub>2</sub> emitters or the standard of living that produces some of the very highest per capita CO<sub>2</sub> levels of output in the world.
- 4.12. It is also argued that there is a need to accommodate young people in 'affordable' homes.<sup>22</sup> However, most of the new development will not be 'affordable' whether of the renting or buying variant. There is enough empty property to go a long way to meeting real 'need' overnight<sup>23</sup>. The problem is

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<sup>21</sup> Exchequer Services CBC – Council tax payers

<sup>22</sup> On June 12<sup>th</sup> 2007 there were 3481 people on the waiting list in Cheltenham – but none considered to be in emergency housing need or in emergency accommodation. Some 61 were in temporary accommodation and 9 in Bed and Breakfast (CBC Housing Options Team). The demand for cheap new housing is an **aspiration** rather than based on acute need. In the past densities in individual properties were much higher.

Smaller household units are one of the main drivers for the increase in housing, with households in Cheltenham declining in size from 2.36 in 1991, to 2.28 in 2001 and 2.24 in 2005 (Gloucestershire Population Monitor 2005). The other is in-migration which accounted for 86% of population growth in Gloucestershire between 1991 and 2005. The third, and most powerful, are estate agents and house-builders. If houses are built in Cheltenham they will be sold and labour will be sucked into the town. This is, in practical terms, what the policy for growth is about. Reduce the amount of housing available and labour will not come or households will increase in size. Like most other things, housing has become a **consumer commodity**. Very few people have nowhere at all to stay.

To provide adequate housing for local people it may be necessary to give more emphasis to residence qualifications, priority to those moving into an area that have a job or are key workers and reduce the planning gain rule of 40% of housing over developments of 15 or more units being social housing, to one unit of social housing where 3 or more new-build units are given planning permission. This would have the added effect of reducing land prices and slowing growth.

<sup>23</sup> According to 'Rightmove' (the most popular national web-site used by Estate Agents), there were 57 Agents in Cheltenham on 30<sup>th</sup> May 2007 marketing 1,185 properties of which 85 were new build.

that these properties are too expensive for the majority of those who want a home who already live here. This is precisely what a policy of attracting immigration produces. There is a demand **created** for housing and so the price goes up but only those that can afford to pay for it can buy it.

- 4.13. In order to make the expansion palatable, 'growth' has been re-packaged as 'sustainable' growth. The RDA maintains that all this new growth will have a **'zero carbon' footprint<sup>24</sup> and, as such, will be 'sustainable'**. The reality is that much of the development described as 'sustainable' is currently nothing of the kind and is merely used as a marketing ploy by developers and a smokescreen by politicians. The test for sustainable growth is very simple: **how much carbon dioxide (and other greenhouse gases) does any piece of development create both during construction and after completion, including movements to and from it.** If these criteria are applied, very little current development is, in truth, sustainable. The whole way in which the laudable notion of 'sustainable development' is being used is less than honest. In reality, it is being used as one justification – along with the other arguments indicated above – for new development<sup>25</sup>. **Whatever happens, one of the things we must do is institute stricter standards, controls and enforcement to ensure genuine 'sustainable development'.**
- 4.14. If 'peak oil' is a reality then it may be the most telling challenge to the fetish of growth. Perhaps it is only when the real cost of energy creates a crisis that the notion of growth that is currently being pursued will be challenged and concentrate people's minds on the pursuit of non-polluting energy forms and genuine 'sustainable' growth.
- 4.15. At any rate, there is **no plan** available that handles this growth in population against the background of climate change and peak oil. There is **no prototype** of how towns are to be designed based on how they will function in this new context. There is **no consideration** given to what the impact will be on the existing infrastructure of the town or its people, their institutions and governance, or their culture. **It is, in reality, left to the market.** It is, in microcosm, indicative of how **not** to tackle the greatest threat the human species has ever faced.
- 4.16. **It is this that has stimulated the need for this report. A planned approach is needed to tackle climate change and the prospect of an increase in energy costs makes this imperative. The alternative could be the Disintegration scenario indicated above.**

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<sup>24</sup> 'Code for Sustainable Homes' which maintains that all residential development must be carbon neutral by 2016: the code is voluntary and assumes that energy for household appliances will come from renewable sources.

<sup>25</sup> The case is that 'if we do this, everything will be alright'. It is only part of the answer unless existing sources of carbon based energy are replaced.

## 5. IMPACTS

The following impacts have been identified on a range of infrastructure and other issues:

### 5.1. Transport and Urban Development

- Car use will decline as the cost of fuel increases and government imposes further road pricing schemes.
- As the cost of motoring increases and the restrictions on it become more comprehensive, car ownership may drop and car sharing may be more attractive.
- Public transport will become more competitive and therefore better used.
- Transportation of freight will become more costly, likely leading to mode shifts from air and truck to rail and boat.
- People and businesses will relocate to be closer to each other and to transport options.
- More people will work from home.
- Walking and cycling will increase.
- Local produce and goods will become more competitive and the market for them will increase.
- Air travel is unlikely to decline significantly unless there are tight controls put on it. People will still pay for holiday flights unless they rise very significantly – although with a changed climate there may be more scope for holidays within the UK.
- Business trips may reduce as more business is done electronically or through video conferencing etc.
- Maintenance of road infrastructure will be increasingly difficult and costly because of loss of revenue and reliance on asphalt (a petroleum based product).
- Prices will rise and the number of business start-ups and failures will increase.
- Transport cost intensive businesses will suffer the biggest problems and the cost of their goods and services will increase and could become uncompetitive.
- Some businesses will experience significant higher production and distribution costs; others may be more impacted by changes in demand for their products and services.
- Unemployment is likely to increase in the short term.
- Impacts will vary in intensity by industry and business division depending on their position in supply chains.
- Housing will become more energy efficient and local means of renewable energy generation will become more attractive.
- Older homes will need to be ‘retrofitted’ to meet new energy conservation standards and expectations.
- Development will become more intensive and of a higher density – which could threaten the existing quality of the urban environment.

### 5.2. Food supply and distribution

- The era of cheap food will come to an end as climatic instability disrupts crops with an increase in drought or flooding.
- The amount and variety of food produced will decrease and there will be a move back to seasonality and more locally grown produce.
- The cost of fertilisers will increase and there will be a move back to organic farming, which is more labour intensive and less productive.
- There will be an increased demand for such labour to be located closer to agricultural work opportunities.
- Local food companies will develop to market local produce.
- Less food will be processed.

- Food imported from a distance will cost more which will help local produce become more competitive
- Low income households are most vulnerable to higher prices and could see a decline in diet and nutrition.
- The kinds of food produced and processed will shift, introducing business pressures and opportunities for food producers and processors.
- Households will experience increased pressure to grow, process and handle their own food.
- More time will be needed to prepare food.
- There will be an increase in the demand for allotments and some urban green space may have to be dedicated to this.
- Food retailing options will shift. Large supermarkets which generate traffic may have to be discriminated against in order to reduce CO<sub>2</sub> and safeguard smaller food-shops.
- There will be less food waste and changes in packaging.
- Composting will increase.
- People will be fitter and less obese.

### **5.3 Energy supplies**

- All energy will increase in price – petrol, oil, and gas as well as renewables.
- Zero-carbon homes will be mandatory from 2016, and phased in to increasingly higher levels approaching this.
- Historic homes will need to be upgraded to reduce energy take-up.
- The overall demand for power (electricity, oil and gas) will increase if the forecast for new homes is imposed despite the emphasis on reducing CO<sub>2</sub>.
- Heating, maintenance and monthly housing costs will consume a larger share of household budgets and encourage people to install insulation and energy saving/efficient products.
- Population densities and mixed use development will increase.
- An increase in the costs and supply of energy may challenge the whole notion of 'growth' and consumerism as real income levels fall, and energy costs and restrictions on CO<sub>2</sub> production increase.
- With hotter summers there will be a demand for air conditioning, and though winters may be milder, there will be unpredictable 'cold snaps' that will put a strain on the energy infrastructure.

### **5.4 Population and Social cohesion**

- Population is projected to increase as a result of people living longer and an increase in in-migration to supplement the labour force.
- There will be more immigrants from overseas coming to the UK as a result of the impact of climate change events in other parts of the world and to bolster the skilled labour market.
- The population is projected to grow faster than in the past as a result of in-migration.
- Social friction could increase.
- Anti-social behaviour and crime could increase.
- The proportion of older and economically inactive people will increase, with elderly care becoming more in demand.
- Those without skills will become poorer
- Competitive individualistic responses could erode community spirit and cohesion
- Increasing poverty and the price of food will reduce life-spans.

## **5.5 Infrastructure and services including – Public Health; Education; Police; Social Services, Water and sewage; Refuse collection; General Urban maintenance.**

- Vulnerable and marginalised populations will grow and will be the first and hardest hit by an increase in the cost of living including the workless, the poor elderly and the disabled, along with single parent families on average or low wages.
- Increasing costs and decreasing incomes will affect taxation and investment in public services, particularly health and education.
- Taxes will have to increase or services decrease.
- Voluntary sector organisations will become more important.
- Part-time work and contract workers will become more prevalent.
- Protection of Public Health will be at an increased risk as poverty increases and the climate changes so that new vectors for disease spread to the UK and the risks of pandemics increase.
- Demand for social services and housing will increase, but the ability to provide services will decline.
- First responders to social crisis, especially police, may become primary service providers as social services struggle to meet demand.
- Water supply and sewage disposal could be affected significantly if flash floods increase or where single pipe sewage systems exist.
- Serial flooding will dramatically increase the price of insurance premiums making it a luxury item.
- The risk of flooding will increase
- The impact of repeated flooding will create ghettos of poorly maintained housing in flood plain areas and significantly increase the price of other housing creating further pressures on already limited housing stock.
- Landfill sites will fill up.
- The possibility of droughts will increase and have an impact on parks and open space.
- The risk of fire will increase.

## **6.0. AUDIT OF TOWN: A THUMBNAIL SKETCH OF CHELTENHAM**

The following is a statistical thumbnail sketch of Cheltenham. The source and the year of the information is cited wherever appropriate,

- 6.1. **Size of town:** Cheltenham covers some 11,500 acres (18 square miles/47sqkm). Within this there are 7 Conservation areas extending to 1661 acres. The central Conservation area is about 1500 acres (600 hectares). There are 2540 listed buildings, 450 Tree Preservation Orders, 10 parks and 16 playing fields and a further 475 pieces of open space controlled by the Council or other public bodies. (CBC figures)
- 6.2. **Transport:** There are 221 miles (355km) of LA controlled highway with pavements and/or verges that need maintaining. (CBC Engineers). There are more than 8000 roadside trees. 77% of Cheltenham's Households own cars (2001 Census). Over 180,000 vehicles travel in and out of the town every weekday. The volume of traffic in Cheltenham has increased by 15.4% in the

last ten years – lower than Gloucestershire's (18.2%) and the national average (28.1%) (CBC website 2007). There is one north/south main line railway station about a mile out of the town centre.

- 6.3. **Population:** The population of the town is estimated to be 111,656 (Maiden – 2005 mid year estimates Stats) with 54,621 males and 57,035 females. Of these:

5,666 are between 0 and 4  
23,296 are between 0 and 17  
19,141 are 65 or over.

The non-white population at 2001 was 3757.

In the last two years a large number of eastern European immigrants have come to the town. At least 2,671 migrant workers registered in 2003/4 and 2005/6 – but this is almost certainly a large underestimate. Immigrants must be registered in order to qualify for housing and benefits.<sup>26</sup> In particular Polish shops and food counters in supermarkets have been established which indicates a buoyant demand for Polish food<sup>27</sup>. It is almost certain that this new wave of immigrants **substantially** exceeds the non-white minority ethnic population recorded in the 2001 Census. The population of Cheltenham is almost certainly much bigger than indicated. Counting students and non-registered immigrants it is probably nearer 125,000.

- 6.4. **Households/House prices:** As of January 2007 there were 51,287 households in the town, and 3753 business properties. (Council Tax 2007) Average household size in Cheltenham in 2005 was 2.24 and declining (Glos. Population Monitor 2005).

A House Condition Survey (PPS consultants) undertaken in 2005 indicated:

37,600 owner occupied  
1,700 Housing Association  
4,773 Council rented  
6,100 private rented.

Average House Price (Oct – Dec) 1998 – £90,669.

Average House Price (April – June) 2003 - £180,043.

Average House Price (Jan – March) 2007 - £243,378.

National Average House Price May 2007 - £178,423

(source: Land Registry)

House prices have increased by almost 270% in almost ten years and are substantially above the national average.

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<sup>26</sup> 'New Europeans have to be 'authorised workers', and have a registration certificate confirming this. They need to be an authorised worker for the first 12 months (continuously) in order to qualify for benefits/housing register during their first year. Once they have completed this 12 month stint the position normalises'. AD Community Services CBC 4/06/2007.

<sup>27</sup> 'Migrant Workers in Gloucestershire' Nov. 2006, Fiona Williams, Chief Executive's Support Unit, Glos. County Council. 'The recorded numbers are almost certainly a significant underestimate of total inward migration into Gloucestershire, since migrant workers will not necessarily have registered for work and there is no method of recording family members who may have travelled to Gloucestershire with the migrant worker or have joined them subsequently..... A local organization setting up a Polish language newspaper/magazine for the Polish community estimates that there are between 40,000 and 50,000 Polish people now living in Gloucestershire (including those who have lived here for many years). Their estimate is based upon the knowledge of the local community and their contacts with local agencies and companies who report that large numbers of migrants have no idea that they need to register for work or how to go about it. In addition they are aware that many of the very first wave of new Polish migrants, who came here over two years ago, are now bringing not just their partners and children over to Gloucestershire but are also bringing their parents to settle here'. The population of Gloucestershire at mid 2005 was 575,200 people (Glos. Population Monitor 2005).

- 6.5. **Earnings:** Average individual earnings in Cheltenham at 2005 were £23,970 against an England and Wales average of £23,854 (Maiden). According to the 2001 census mean household income varied from £35,299 in Battledown to £21,333 in Oakley. The poorest wards are Oakley, Hesters Way/St Mark's, Springbank and St. Pauls. These are all identified as Community Regeneration Areas.
- 6.6. **Crime and Disorder:** There are 5 Police Stations in the town and 444 employees in the Cheltenham and Tewkesbury Police Division made up of 291 Police Officers; 50 Police Staff; 47 Police Community Support Officers; 44 Special Constables and 12 Custody Detention Officers. (Police: April 2007). Theft & Handling was the single largest crime type, accounting for 40% of all recorded crime. The second largest was Criminal Damage, which accounted for 20.6% and Violence against the Person was the third largest band, with 14.5% of offences. In all 14,143 crimes were committed in the year 2003/2004. (Source: Crime and Disorder Audit 2004 – Cheltenham Crime and Disorder Partnership).
- 6.7. **Education:** In September 2006 there were 13,139 pupils in 39 LEA schools including 6 Secondary Schools and 3 Special Schools. There are 3 private secondary schools and associated pre-schools. In addition there are 8,304 students (5,952 f/t & 2,352 p/t) + 1,360 staff (671 f/t & 689 p/t) at Gloucestershire University in Cheltenham (source Glos University 2007), and approaching 19,000 at GlosCat (3,024 f/t and 18,753 p/t - Source GlosCat website 2007 – figs include students at Gloucester and Cheltenham)
- 6.8. **Health:** There are 14 Medical Practices with 91 Doctors; 18 Dental surgeries with 52 Dentists; 23 Ophthalmic Surgeries with 54 Opticians; and 25 Pharmacies with 97 Pharmacists. A total of 270,620 outpatients were also dealt with by other Health facilities, including the 493 bed General and Delancey Hospitals; Linton House; St Paul's Medical Centre and Hesters Way Healthy Living Centre.
- 6.9. **Economy:** Cheltenham ranks second only to Bristol in the South West as a shopping centre with 486 retail shops in the town, and 519 catering restaurants, cafes and bars and a total of 1819 commercial premises (CBC Environmental Health Feb 2007).
- 6.9.1. In 2003 employment stood at 61,996. Finance and Business is the biggest sector of the economy (36%) followed by Distribution (inc. Hotels and Catering) at 28%; Public Services at 18% and Manufacturing 13%. As a sector, manufacturing is declining relative to the growth of others, but its productivity is also increasing.
- 6.9.2. In 2003 Gross Value Added (GVA<sup>28</sup>) per head in Cheltenham stood at £22,280, 135% of the national average of £16,549. In 2004 it declined to £21,480, 123% of the national average of £17,451. This was because of a decline in construction (the completion of GCHQ) and an ongoing decline in manufacturing. Some 6,000,000 tourists and day visitors come to the town each year with an average spend of £27.57 per head (April 2000 statistics).

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<sup>28</sup> GVA is the value of any outputs minus the inputs, such as materials costs, before taking taxes and subsidies into account (source GLMIU)

- 6.9.3. Most shops are in the town centre, but there are secondary centres at Hesters Way; Bath Road; Prestbury and Tewkesbury Rd – with supermarkets on the Battledown/Oakley border, Kingsditch Retail Park in Tewkesbury Rd. and Up Hatherley. There are about 260 retail food shops including 8 major supermarkets (including LIDL supermarket in Tewkesbury DC) and 9 local supermarkets in the town.
- 6.10. **Energy Use:** In 2003 the town consumed some 2229.1 Gigawatt hours of energy with gas being the most consumed (1184.3Gwh); Petroleum second (534.3 Gwh) and Electricity third (485.3 Gwh). Much electricity is generated in gas powered generating stations. 46% of the energy was consumed by the Domestic sector; 37% by Industry and Commerce, and 17% by transport. This compares with a national profile for all areas (both urban and rural) of 38% for Industry and Commerce; 33% for Domestic and 30% for transport. (Source: DTI – Regional Energy Consumption in Gwh).

## **7.0. ADJUSTING TO CLIMATE CHANGE.**

Consideration of the general potential impacts of energy shortages and climate change in the context of an audit of the town translate into a specific range of actions that need to be considered in Cheltenham.

### **7.1. Civic Leadership**

- 7.1.1. The importance of acknowledging the criticality of global warming by the political and civic leadership in everything that the Council does is a pre-requisite for effectiveness. An awareness of this should be applied to all the functions and activities of local government and should be a foundation of all partnership work. The Council leadership must embrace the need for change and take the leading role in instigating change. A dedicated unit should be established to do this.
- 7.1.2. The leadership needs to be factual and honest in explaining the seriousness of climate change and about the impact of its policies on it, and report annually on progress and developments.
- 7.1.3. There needs to be a significant and determined campaign of public information on the need to take urgent action to mitigate the impact of climate change led by the council.
- 7.1.4. The Civic Leadership should make sure that all people, including children, know what the challenges of global warming are and what it intends to do about it locally. They should adopt a plan that dovetails in with county, regional and national plans.
- 7.1.5. The Civic Leadership should ensure that an understanding of climate change and energy use is applied to the way it runs all its services and activities.
- 7.1.6. The Civic Leadership should set stretching targets on reducing its CO<sub>2</sub> emissions and lead by example by using renewable energy sources, clean vehicles and low carbon installations in all its buildings.
- 7.1.7. The business community need to be encouraged to play its part in this activity.

## **7.2. Immediate actions and Emergency Planning**

- 7.2.1. The Council should establish an emergency planning team that meets regularly to review the situation, and has the necessary responsibility and power to intervene in order to coordinate activities should a sudden climatic or economic change threaten the town. In this situation it should have the ability to advise the Leader to declare a state of alert or emergency, and identify what resources are needed to tackle it.

## **7.3. Mitigation**

- 7.3.1. The Council needs to institute stricter standards, controls and enforcement to ensure genuine 'sustainable development' and ensure that all its activities are considered in the light of greenhouse gas production.
- 7.3.2. It should promote all forms of micro-energy generation – including solar and wind.
- 7.3.3. It should promote real zero-carbon homes, and develop a programme to retro-fit existing homes to reduce their carbon footprint. This should recognise the impact of transport to and from homes and encourage car free developments close to public transport routes. Standards to reduce travelling need to be introduced that apply to all development. Even greater emphasis must be put on walking and cycling.
- 7.3.4. The town should develop a plan and adopt targets to reduce its consumption of energy generated by coal, gas or oil, and concentrate on taking up energy from renewable sources.
- 7.3.5. Planning applications should be evaluated and judged on what their carbon footprint is as well as the accepted criteria. Every application should indicate how much greenhouse gas will be produced and carbon models should be used to judge the impact of any development. The Planning department should insist that all developments address the standards set out in the council's own supplementary planning guidance on Sustainable Development.
- 7.3.6. Recycling should be intensified as part of a comprehensive 'waste minimisation' strategy.
- 7.3.7. Green areas and gardens need to be protected against infilling from development in order to protect against flooding and to safeguard urban food production and community 'wellbeing'.
- 7.3.8. There should be no more development of allotment land unless it is compensated with alternative convenient allotment space.
- 7.3.9. The Council needs to adopt a hierarchy of preferred transport solutions – walking, cycling, public transport, private transport – when considering the location and design of new development and the improvement of existing development.
- 7.3.10. The town should refuse plans for expansion until it is confident that it has the capacity to absorb it and that all new development is genuinely carbon neutral, and until transport infrastructure is in place.

- 7.3.11. The Council should work with Public Transport providers to reduce fares by promoting public transport and providing subsidies.
- 7.3.12. The Council should pursue the installation of a light transit system from Quedgely in Gloucester to Ashchurch in Tewkesbury, through Cheltenham, linking in with main line stations.
- 7.3.13. The council, in conjunction with Gloucester, Tewkesbury and the County Council should create two express bus lanes on the B4063 (Old Gloucester Road).
- 7.3.14. Emphasis should be put on increasing productivity rather than employment; tele-conferencing should replace all but essential journeys and the town should consider introducing a road pricing regime to reduce car trips. A sustainable mobility policy should be developed and enforced.
- 7.3.15. Emphasis needs to be put on composting and recycling with a potential in the future for reducing waste collections and cutting costs.
- 7.3.16. Areas of development should be mixed, and places of work should be located as near as possible to residential areas, depending on the level of intrusiveness.

#### 7.4. **Adaptation**

- 7.4.1. The Council should divide the town up into smaller communities, each with a discernable centre with appropriate community facilities, and plan public transport so that these facilities are interconnected. The restrictions on and costs of transport will encourage this, but there should also be a policy of '**localism**' that breaks the town down into sub-areas that reflect local communities, and reinforce them by locating services at the centre of each, so that no service centre is more than half a mile walking distance from any home. Each centre should contain shops and services, and community facilities.
- 7.4.2. Food shops should be encouraged to relocate and the large town-wide supermarkets reduced to make local shops more competitive.
- 7.4.3. Effort needs to be put into creating local jobs that provide local goods and services, particularly food production and distribution where there will be a significant increase in job opportunities as organic farming increases.
- 7.4.4. Partnerships between local farmers and food-shops should be encouraged.
- 7.4.5. The Council should provide support structures in communities by encouraging voluntary sector organisations to provide appropriate services, and should provide Community Resource Centres at the heart of all communities as bases from which this work can be done.
- 7.4.6. Communities will need to become more self-reliant: people will have to do more for themselves and this should be encouraged through the network of Neighbourhood Resource Centres.

- 7.4.7. Schools may have to take on a wider community role as centres for local services. Teachers will live closer to their schools. Pupils will go to local schools as car travel is restricted. Catchment areas should be reinstated.
- 7.4.8. There will be an increased demand for new practical and vocational skills in relation to food production, construction, energy production etc.
- 7.4.9. Staverton Airport should not grow beyond its current level of activity and should be promoted as the County's prime high tech research and development site linked to IT, engineering and research.
- 7.4.10. More urban maintenance will be required as the growing season is extended due to climate change.
- 7.4.11. The Council should encourage food production by its citizens.
- 7.4.12. Drainage capacity in and water supply to the town needs to be reviewed; people need to be encouraged to store water and use it on gardens, and consider the use of 'grey' water.
- 7.4.13. Flood defence works will need to be upgraded.
- 7.4.14. 'Green Environment' needs to consider varieties of plants and trees that can adapt to the dryer summers and wetter winters and consider the way it uses trees and green spaces to ameliorate the effects of heat, and what the impact of this different climate will be on all infrastructure including road and rail.
- 7.4.15. The Fire and Rescue services will need to reassess fire risks and flooding risks within the town, and the Environment Agency will need to assess the long term viability of settlements within the Severn Vale and how they can be protected.
- 7.4.16. The capacity of the crematorium should be increased and additional burial space identified beyond the town's boundaries.

## **7.5. Population And Social Cohesion**

- 7.5.1. The Council needs to ensure that resource shortage or the results of policies designed to reduce greenhouse gases do not unduly impact on the poorest sections of the population, and that **social impact assessments** are carried out before policies are adopted.
- 7.5.2. Practical skills appropriate to the new circumstances should be taught – relating to food and energy production.
- 7.5.3. People should be encouraged to look after their neighbours and do more things for themselves. Support mechanisms to protect this population need to be put in place – the Neighbourhood Resource Centres need to be rolled out to the whole of town to provide educational and practical support (such as care for children and old people).

- 7.5.4. The development of schemes such as Fair Shares<sup>29</sup> need to be encouraged and developed.

## **8.0. POSITIVE ECONOMIC AND SOCIAL BENEFITS**

- 8.1. A more active lifestyle with an emphasis on locally grown food and walking as the most encouraged form of transport will lead to a more healthy population.
- 8.2. Home working, tele-working and the creation of mixed developments will reduce the need for commuting and create communities where a wider range of people have a greater stake in their success.
- 8.3. Locally grown seasonal produce will offer a more healthy diet.
- 8.4. Local facilities and the need for people to work together will improve social cohesion, and reduce anti-social behaviour and indigenous crime.

## **9.0. CONCLUSION.**

- 9.1. **There is a pressing need for clear and determined Civic Leadership that will take the opportunity to unite the community around taking action to tackle the single greatest challenge the people of Cheltenham face in the coming century.**
- 9.2. The Council needs to prepare now what it can to combat Climate Change and the threat of crises in energy supply and to adapt to some of the inevitable consequences.
- 9.3. **It needs to seriously examine whether the Government's emphasis on growth is in the interests of the area and the current population and only agree to adopt growth targets for housing when there is agreement reached on transport infrastructure and a real prospect of producing zero carbon development.**
- 9.4. It needs to establish a dedicated unit to coordinate and monitor activities, and the Executive needs to make a clear political declaration that it is committed to take whatever action is necessary to tackle climate change. Policies need to be informed as to the exact nature of the conditions as they exist, and be based on the kind of information contained in the audit above.
- 9.5. **In particular, it needs to examine how the town can be broken down into smaller 'community units', and how public transport can be developed so that there is less reliance on private transport, and so that walking and cycling are encouraged. At the same time, smaller 'community units' will make it more possible to create more cohesive communities and thus tackle issues of social exclusion, crime and anti-social behaviour. Community Resource Centres should be rolled out so that there is such a resource in every community unit.**

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<sup>29</sup> Fair Shares is based on an American scheme called Time Dollars which has been running successfully in the USA for 20 years. Time Dollars places a value on volunteering and community support work that is otherwise unpaid. The scheme strengthens communities by promoting reciprocity.

- 9.6. The council should take the opportunity afforded it via the planning system to signal the changes it expects to see in new developments, of whatever size, in the town.

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Our purpose is to encourage more sustainable ways of living and working and the better use of our resources to improve the quality of life for present and future generations.

By providing a centre where people can meet and develop their ideas, we aim to develop public awareness of the issues surrounding sustainable development and to promote community involvement and group partnerships in practical projects.

Adhering to the principle of think globally, act locally, our goal is to help protect our environment through such means as: encouraging local trading and sources of finance, advising on the best use of available resources such as building materials and locally grown produce, and promoting increased waste-reduction, recycling and energy efficiency.

What we do:

- **Encourage participation** - We provide a focal point for local people to learn about sustainability issues and become involved with local activities and groups.
- **Promote Co-operation** -We work to stimulate collaboration with people and organisations from the public, private and voluntary sectors on initiatives concerned with sustainability. We also seek to establish links locally, nationally and internationally. Through this interaction, we hope all will benefit from the global pool of knowledge and good practice that ensues.
- **Form partnerships with local businesses** - We seek to foster trends in sustainable practice by establishing working relationships between communities and local businesses. This process holds potential benefits for the environment, local firms and communities and the development of a thriving local economy.

Visit our website at: [www.vision21.org.uk](http://www.vision21.org.uk)

### **A word about the Authors**

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