

EXETER CITY COUNCIL

**SCRUTINY COMMITTEE – ECONOMY
21 JANUARY 2010**

**EXECUTIVE
9 FEBRUARY 2010**

**REDUCING CARBON EMISSIONS IN EXETER: THE ROLE OF PLANNING AND
TRANSPORTATION STRATEGY**

1.0 PURPOSE OF REPORT

- 1.1 The purpose of this paper is to look at the longer term strategy for reducing carbon emissions in the City and to define a range of short and medium term measures in respect of planning and transport issues.

2.0 BACKGROUND

- 2.1 In the last few years the range and depth of scientific evidence regarding man made climate change has grown dramatically. It has been acknowledged for some time that the rise in the Earth's temperature and in greenhouse gas emissions, primarily CO₂, over the last 250 years has been more or less continuous and has more recently been accelerating rapidly. What has been in dispute until comparatively recently has been the issue of causation and what still remains a matter of debate is the likely impacts of those increases in CO₂ emissions. In terms of causation it is now accepted, across a very wide spectrum of scientific opinion, that this change is indeed man made and although rising temperatures can also be attributed to other causes (for example changes in the activity of the sun), the overwhelming view is that rising temperatures are driven by the inexorable rise in CO₂ emissions. Those rising temperatures have been illustrated graphically by the extension of desert zones in the world, the greater propensity for unstable and dramatic weather events, in particular hurricanes, and the impact on biodiversity with a significant decline in that diversity already recorded, as well as it being forecast to accelerate in the future. With the rise in temperatures, the ice caps are melting at a dramatic rate and glaciers are retreating across the globe with a resultant long term rise in sea levels. These trends and the consequences are now almost universally acknowledged as being upon us and a need for action also acknowledged.
- 2.2 The scientific debate has matured and gained very widespread acceptance. The recent highlighting of a range of email exchanges involving researchers at the University of East Anglia has caused some to argue that the data have been manipulated. Whilst the University has set up an Inquiry into this matter, which will report shortly, there remains a very substantial body of evidence which confirms a marked rise in the Earth's temperature and strong evidence that this correlates with recent human activity leading to a marked growth in CO₂ emissions. The will to act to tackle the crisis is littered with accusations of whose fault it is, who needs to act first and which sectors are the most to blame. At a global level, depending on which criteria you adopt, fingers point towards the U.S. or towards China, leaving others to say it's not their problem to lead. Until very recently both the aviation and shipping industries were remarkably adept at avoiding any recognition of their contributions to emissions. At the local level, debates about transportation seem to focus almost universally on the issue of

congestion, which is a short term issue compared with the more fundamental, longer term issue that the pollutants from the transport sector are a major national problem and that the availability of the oil which we use to power those vehicles which cause the problem, has probably passed peak supply. [see Appendix 1]

- 2.3 The bottom line is that all communities need to act – international, national and local. This paper is only about one part of the local story which is to identify what contribution the potential changes in our planning and transport strategies and associated actions can contribute towards tackling such a critical issue.

3.0 THE BASIC NUMBERS

- 3.1 The general consensus is that a greater than 2° Centigrade rise in the Earth's average temperature is likely to be catastrophic in terms of the effects on plant and animal life on the planet. In order to stand any chance of reducing that temperature rise, the CO₂ content of the atmosphere needs to be capped at around 450 parts per million; the current level is 430 parts per million. The government has adopted two very tough targets in order to make Britain's contribution to meeting this challenge with targets of reducing carbon emissions by 26% by 2022 and by 80% by 2050 from a 1990 baseline. The Climate Change Act 2008 has a target for the reduction of greenhouse gas emissions through a series of five year carbon budget periods and requires reporting to Parliament by an independent body of experts currently chaired by Lord Turner. The total volume of greenhouse gases emitted in 2007 was 636 million tons. Some 85% of greenhouse gases comprise CO₂ so this is the critical focus of policy.

- 3.2 The principal sources of CO₂ emissions are:

Residential buildings	22%
Commercial buildings	11%
Transport	20%
Power sector	26%
Industrial sector	21%

- 3.3 Lord Turner's Committee on Climate Change has just published its second report^[1] and the analysis and recommendations of the Committee were recently described by *Planning* as: "Turner's prescription involves nothing less than changing the face of the country as we know it"^[2]. The Committee has set targets which is for a 35% reduction in emissions from homes by 2022, compared to the 2007 base and a 27% decrease for non-residential and industrial premises by the same date. For the transport sector, the Committee is looking for a 25% cut in emissions by 2022. Within the transport sector cars are responsible for 58% of the total emissions. The context of these targets is not particularly auspicious as between 2003 and 2007 greenhouse gas emissions were falling at less than 1% annually but for the period 2007 to 2012, they need to fall by 2% a year on average and thereafter they need to fall by 3% per year if the 2050 target is to be met. It is worth adding that the recent reduction in emissions is pretty much down to the Recession rather than to any impact of policy. Moreover, transport emissions rose by 11% between 1990 and 2007, during which time car use rose by 20%.

4.0 GOVERNMENT STRATEGY – A VERY BRIEF SUMMARY

- 4.1 Government strategy has evolved over the last few years with a marked build up of pace over the last two years. The centrepiece of the framework driving this

change is the Climate Change Act 2008 which has set out the ambitious targets outlined above and established the Committee on Climate Change, the intention of which is to both drive change through the system and to report on progress in the form of external auditing. A range of initiatives have been launched which include carbon trading; the option of a “feed in tariff” to encourage the development of renewables; the setting of enforceable performance standards for new buildings; the vehicle scrappage scheme (also aimed at countering the Recession); the establishment of the Infrastructure Planning Commission, designed to speed up the consent system for major planning applications; the announcement of a programme of electrification of the rail network; the publication of the supplement to Planning Policy Statement 1 which is the guidance document for planners, which deals with climate change.

- 4.2 The Committee on Climate Change has recommended a raft of initiatives which are intended to enable the country to meet these demanding targets. The Committee recommended that the government adopt specific maximum levels of carbon emissions in the first three carbon budgets which each span five years. These were adopted by Parliament in May 2009 and are legally binding. The Committee will deliver annual monitoring reports on progress against these budgets. There are two key points made by the Committee in their recent report: first, the recession will ‘produce an over rosy impression of progress against budgets and undermine steps to drive long-term reductions’. Second, they state that ‘a step change in pace of reduction is essential’. To hit the demanding targets, action will be required across the power, buildings and industry and transport sectors.

(i) Power Sector Measures

- 4.3 Delivering low carbon power requires, by 2022, in the Committee’s view:

- o the addition of 23 gigawatts of new wind capacity
- o four CCS (Carbon Capture and Storage) power plants
- o three nuclear power plants

The Committee also believe that the current market arrangements are not sustainable for delivering low carbon technologies and that government lending and price support mechanisms (such as the feed in tariff or renewable heat incentive) may be needed to drive investment in the right direction. There also needs to be urgent and significant moves to ensure grid access for wind generation where investors can’t guarantee that the electricity generated by wind power can be used by customers because of grid congestion. The Committee also emphasises the urgency of timely approval of planning applications for wind projects – research has shown very long approval times and a high rate of refusals.

(ii) Buildings Sector Measures

- 4.4 In addition to the legal requirements already in place through Part L of the Building Regulations, the headline measures are:

- o 10 million lofts and 7.5 million cavity walls insulated by 2015
- o 2.3 million solid walls insulated by 2022
- o 12 million (i.e. all) non condensing boilers to be replaced by 2022
- o much greater penetration of A+ rated washing machines and dishwashers (80% by 2022) and A++ rated fridges (45% by 2022).

- 4.5 In terms of dealing with the existing building stock, the Committee advocates a ‘whole house’ approach involving an energy audit, followed by a package of

measures with effective financing mechanisms so that take up is not inhibited by the comparatively long pay back of some measures. The Turner Committee also sees the need for a street by street or neighbourhood approach, with local government taking the lead in partnership with energy companies to design and implement energy supply and building insulation measures. In the non domestic sector the government is currently consulting on the adoption of a path to zero carbon new buildings (in stages by 2019). Under the Carbon Reduction Commitment all major energy consumers (with bills over £500,000 p.a.) are required to participate in a carbon emissions trading scheme from April 2010. The City Council falls below this threshold. The Turner Committee is also recommending that all cost effective measures in central and local government sector buildings covered by the CRC should be implemented by 2018.

(iii) Transport Sector Measures

- 4.6 A significant advance in reduced emissions will come from the new EU emissions target which is that the current fleet average emissions for new cars should fall from 158 gm of CO₂ per km driven to 130 gm by 2015 and 95 by 2020. The Committee highlight that there is a practical limit to the scope for reduced CO₂ emissions for conventional cars which means that much greater reliance will need to be placed on the purchase and use of electric vehicles with the fleet rising to 1.7 million vehicles by 2020. The need to roll out many more electric vehicles should be trialled first by pilot projects in several cities. Eco driving habits also need to be encouraged on a widespread basis given that fuel consumption rises markedly with rapid acceleration and with speed increases from 60 to 70 mph and upwards. The Committee is also convinced that road pricing can contribute significantly to emission reduction as can a programme of 'Travelsmart' type initiatives. Finally, the Turner Committee also advocates more effective land use and transport planning with urban regeneration, sustainable urban extensions, mixed use schemes and investment in public transport infrastructure being strongly supported.

5.0 LOCAL PROGRESS

- 5.1 Policy and practice across the planning and transport sectors requires a massive change of direction compared with the established wisdom based on practices going back many decades. Changing the direction and focus of policy is like turning the proverbial super tanker. There are individual signs of good practice which can point the way to the future. A range of public and private organisations are focused on reducing their carbon footprint and there are strategies in hand that address this through better construction, changes in transport practices, better recycling and changes in personal behaviour. The City Council has adopted a comprehensive strategy for addressing Climate Change which was reported to Executive in January 2008. This commits to action in five policy areas:
- o raising the energy efficiency of buildings, including the Council's own stock
 - o reducing transport linked emissions
 - o reducing emissions linked to waste disposal
 - o proving community leadership
 - o taking measures to adapt to Climate Change
- 5.2 The City Council has more recently initiated work on reducing carbon emissions across the city, to look at areas of particularly high impact, focusing on Exwick and the industrial estates. That work will be reported to Members shortly and will help the preparation of specific initiatives, one for social housing in Exwick and a further for commercial properties at Matford and Marsh Barton. The Cranbrook

scheme will deliver a high level of sustainability with homes reaching the Code for Sustainable Homes Level 4, which is underpinned by the provision of a Combined Heat and Power plant at Skypark.

5.3 Despite these beginnings of good practice, and despite an acceptance at an intellectual level that we have to do something about our carbon emissions, the day to day level of the argument has barely advanced. The normal dialogue with developers demonstrates the continuing reluctance to accept that with respect to building design, energy supply and transport provision dramatic change has to happen. The normal response is: “we can’t afford to do this, particularly in the current Recession”. As the Stern Report^[3] pointed out, we simply cannot afford to ignore this challenge and if we don’t make the requisite investment now, economic losses in due course will be far greater. Neither has the transport debate moved on greatly. There is an acceptance by transport professionals that we need to switch to public transport, cycling and walking which a significant proportion of the public appear to share.^[5] But, the practical measures that are taken to deliver this modal shift, such as bus lanes, cycle lanes, pedestrian crossings and pedestrianised streets, are often met with hostility from many, with accusations of being “anti-motorist” or simply unrealistic in expecting people to leave their cars at home more often. One understands the allure of door to door transport and the convenience it provides, but the bottom line is that our carbon profligate lifestyle is unaffordable in terms of its impact on climate change. There is also every indication that our hydrocarbon supply that underpins the lifestyle enjoyed by many during the last century has passed its peak^[4]. [see Appendix 1] The price rise to \$150 a barrel in September 2007 was a pointer to what will happen as the economy picks up and new reserves are harder and harder to find.

6.0 WHAT SHOULD WE BE DOING LOCALLY?

6.1 With an emerging framework from the Copenhagen Conference setting the global agenda and the Climate Change Act 2008 setting the national framework, there is a strong need to be clear about the opportunities for local action and our responsibility to deliver a contribution to this framework. We are at a crucial moment for defining planning and transport strategy for the next 10 – 15 years. Regarding the former, we are well down the road in preparing the City’s Core Strategy which is designed to provide the statutory framework for the period up to 2026, and for the latter, the County Council has begun work on its third submission of the Local Transport Plan. Both these documents will shape Exeter’s growth and provide the context for a whole range of investment decisions affecting new development and future behaviour. It needs to be recognised, however, that both these documents could easily be a collection of warm words and high level aspirations. If, however, they focus on the carbon challenge and on the recommendations of the Turner Committee, these will help set the tone and direction for a new set of initiatives that we need to consider in Exeter to address our responsibilities.

6.2 The papers that follow cover the three principal areas of concern:

- (i) Land use planning and development management (primarily for Planning Member Working Group)
- (ii) Transportation Strategy (primarily for Scrutiny Economy)
- (iii) The City Centre (primarily for Planning Member Working Group)

6.3 There are a range of other initiatives and actions that contribute to meeting the necessary reduction in carbon emissions in the City that fall outside these three

areas. These are the subject of separate reporting to Community Scrutiny, the most recent of which was in November 2009 and flagged the resource shortages in pursuing the scale of programme needed for improvements to the existing stock of public and private rented sector housing.

7.0 RECOMMENDATION

7. Members are asked to
- (i) note the considerable challenge facing the City and County Councils in securing the major reductions in carbon use that are necessary;
 - (ii) support the strategy and measures proposed by the Turner Committee;
 - (iii) endorse the actions in the attached papers as the City's contribution to meeting its carbon reduction obligations; and
 - (iv) report to Members annually on progress.

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DIRECTOR ECONOMY AND DEVELOPMENT

ECONOMY & DEVELOPMENT DIRECTORATE

Local Government (Access to Information) Act 1972 (as amended)

Background papers used in compiling this report:-

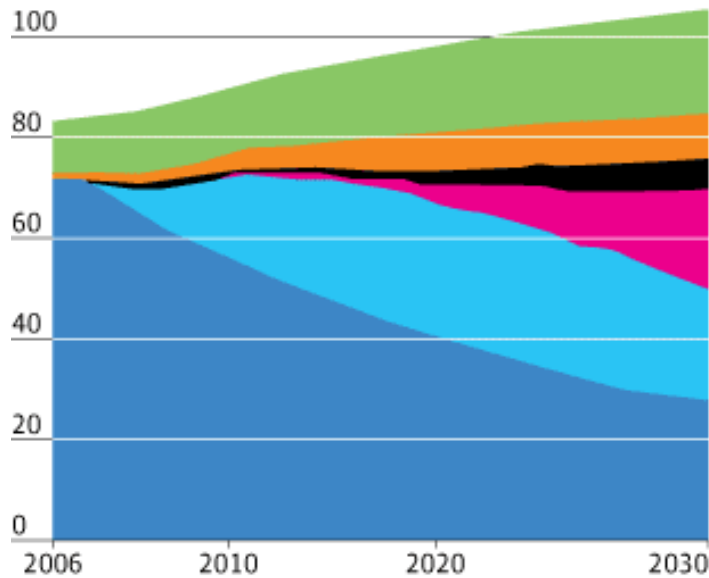
- 1 Meeting Carbon Budgets – the need for a step change. Progress report to Parliament. Committee on Climate Change. October 2009
- 2 Tough Acts to Follow. Planning. 23 October 2009.
- 3 Review of the Economics of Climate Change. Stern. 2006
- 4 The Peak of the Oil Age. Kjell Aleklett. University of Uppsala. 2009
- 5 Travel Behaviour Research. Baseline Survey – Exeter. Socialdata. 2008

APPENDIX 1

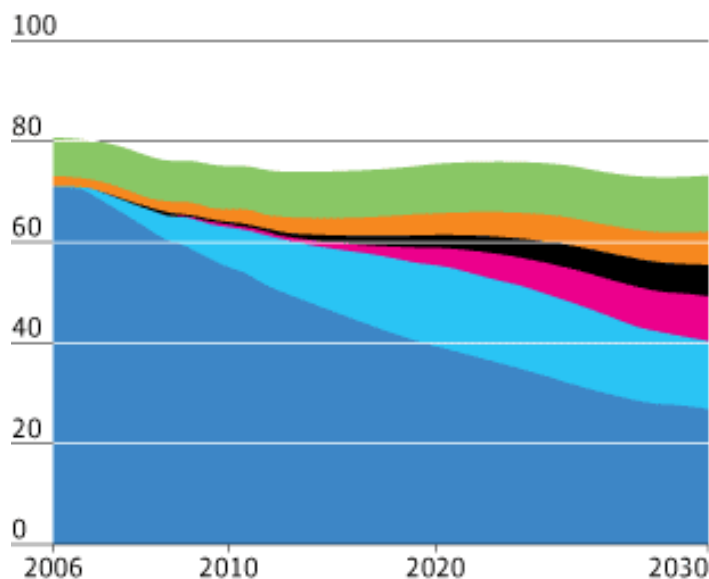
FUTURE WORLD OIL PRODUCTION

Contrasting views

IEA forecast for global oil production, million barrels per day



Uppsala forecast for global oil production, million barrels per day



- Natural gas liquids
- Non-conventional oil
- Crude oil - additional enhanced oil recovery
- Crude oil - fields yet to be found
- Crude oil - fields yet to be developed
- Crude oil - currently producing fields

SOURCE: IEA, UPPSALA

There are marked differences of view about the future global supply of oil. The International Energy Agency (IEA) has an allegedly optimistic view of future supply. The first graph shows the expected supply position according to the IEA though one of its senior staff claims that the Agency has been underplaying a looming shortage. Professor Kjell Aleklett of Uppsala University has in his recent report 'The Peak of the Oil Age' produced rather more cautious estimates which are also shown, suggesting that the Earth has already passed 'peak oil' supply.