



## Position paper on climate change:

**[1] Climate change is here and now.** There is some scope to squabble over the trajectory of global warming but the fact that our climate is changing cannot be reasonably disputed.

For the water sector, we have seen that wetter winters and drier summers (in the UK) mean that more water conservation (demand as well as supply management) is needed in the summer while during the winter, excess rainfall needs to be dealt with. This means for example that higher standards of wastewater treatment are needed (lower flow rates of warmer water in the summer means that nutrient loading has a higher effect), more advanced water monitoring and metering (making sure we know where the water is going and what state it is in), separate foul (household) and storm (rainwater) sewerage systems, grey and rainwater recycling and harvesting and so on.

**[2] Climate change demands adaptations and responses.** Again, the day to day realities as to what is happening and what looks like will happen need to be addressed and this creates the sort of opportunities the Fund is concerned about.

A century ago, people made small fortunes in the nascent automotive industry by investing large fortunes in them. The same happened a decade ago with the Internet. Subsequently, the automotive industry enjoyed several golden decades and the same can be seen for the savvy survivors of the first Internet generation such as Google and second generation leaders such as Facebook. The renewables sector has experienced a long, hard adolescence as most graphically shown by first generation biofuel companies. A well qualified and experienced team such as at WHEB avoided exposure to the first generation biofuel market because of its inherent inefficiency and negative environmental impact. Second and third generation biofuel companies are likely to demand a closer appraisal.

**[3] The need for renewables and energy efficiency will not go away.** Irrespective of climate change, oil, gas and coal supplies are getting scarcer and will become more expensive. This means that demand for energy efficiency and optimisation will grow. Likewise the economic case for renewables will grow.

Investing in climate change is not just about energy generation, it is concerned with making energy resources work more efficiently. Indiscriminate interest in areas such as photovoltaics results in inappropriate valuations, which (as the Internet fall out showed) remain subject to the laws of fiscal gravity. A creative approach is often more rewarding, especially as higher energy prices across the board drive the need for new approaches such as smart grids and data capture and application.

**[4] We need to be sceptical about the sceptics.** The 'FOI' requests at UEA's CRU (that's enough TLAs for now) were only in part concerned with finding out information. The intensity of their demands was meant to disrupt researchers and prevent them from carrying out their work. The information they demanded was often excessive and these demands went beyond mere curiosity.

The Oxburgh (CRU science review panel, chaired by Lord Oxburgh) and HoC (House of Commons Science and Technology Committee) enquiries were meant to consider alleged errors in process, the management of information and how these related to external concerns such as FOI requests and the desire to find causalities between human activity and climate change. The subsequent reports appear to have found a number of areas where room for improvement has been identified, but no fundamental flaws in conduct. The angry dismissals of the Oxburgh and HoC reports into the CRU by elements of the sceptic community demonstrate that this is a personal issue. The sceptics want the scientists in question to lose their credibility and their careers because they are in the way. There is also an element of 'pour encourager les autres' about this.

**[5] The green lobby's fondness for self-destruction.** As the oil / energy lobby pointed out after Copenhagen, environmental activists and NGOs did its work for them. By disrupting the negotiations and demanding idealistic outcomes, they made pragmatism impossible to attain. When it comes to attaining practical outcomes, the idealists are sometimes just as 'bad' as the sceptics.

Likewise, a desire to return to a pastoral idyll has many superficial charms. Unfortunately, the soft focus imagery overlooks the deprivation, disease and death that go with a life expectancy of forty years or less. That was the lot of those who lived in cold, damp places such as Britain. Scientific and technological progress can be forces for good and the astute investor can support this.

**[6] Scepticism is an inexact science.** The differences detected between the various reasons for a case for man-made climate change are small when compared with the differences posited for non man made climate change and indeed, it appears that the fall out between the various sceptic camps as to the real cause of climate change are far greater than their objections to the IPCC. It is interesting to note that few of the sceptics are scientists (most appear to be economists - 'the dismal science' - or read Classics) and that Lomborg accepts human causality in climate change while differing in stating that adaptation matters more than prevention.

Earth scientists tend not to be statisticians and it is evident that are the most open to attack from this angle. This is in part due to the way geography has evolved in recent decades (like social science, it is sometimes appears to be used as a proxy for social or political dissent rather than as an academic discipline, which is why I value my 'Chartered Environmentalist' status (Chartered Institute of Ecology and Environmental Management) above my 'Chartered Geographer' status (Royal Geographical Society) even though I am a Member of the IEEM and a Fellow of the RGS) which means that keenness to address issues is not always balanced by the rigour needed to establish causalities. In ecology, the move from describing and interpreting natural interactions into appreciating the impact of human activity has been slow, cautious and subject to intense scrutiny. Professional ecologists are a bit shy as a species, but their interventions are robust.

At the same time, I am even more sceptical about the credentials of the average sceptic. My question to them is this: As you draw on your experience as an economist or classicist to reject scientific process in this debate, will you likewise elect to be operated on by an economist or a classicist rather than a brain surgeon in the event of your having a brain tumour. If not, why not?

**[7] There is little or no peer reviewing amongst sceptics.** The sceptic community is happy to attack papers, often latching onto relatively trivial areas. There is minimal evidence (if any) of their work undergoing any form of peer review let alone the opportunity for open and critical analysis. We have an asymmetric contest here.

The temptation here is to advise the scientific community to behave as the sceptics do. But to lower one's conduct to their standards undermines the scientific process. The scientific community needs a new Thomas Huxley, who announced "I am Darwin's bulldog" as he undertook the task of defending evolutionary theory.

**[8] The IPCC needs to polish up its act.** The IPCC made a number of blunders in its last review (e.g. the Himalayan glaciers melting in 30 years) which ought not to have been able to get through the editing and fact checking process. Sceptics are not interested in the 95% probabilities or the 95% of work that was carried out correctly, they are only interested in the 5% which is open to doubt.

Thus the IPCC has to stop accumulating great rafts of data and its sundry interpretations and concentrate on reporting in a manner that can withstand the most hostile of climates. This may reflect the perceived need to respond to an attritional climate by seeking to overwhelm the opposition through deploying more 'firepower' than was in fact necessary. The IPCC needs to concentrate on quality rather than quantity.

**[9] Scientific censorship is a sub-urban myth.** One theme used by the sceptical community is that the 'scientific establishment' blocks peer-reviewed articles that dispute man made climate change. However, a blog called 'Pete's Place' lists 202 peer-reviewed sceptical papers and 'Popular Technology' lists 500 sceptical papers as of the end of January 2010. Skimming these, quite a few are opinion pieces in journals such as 'Nature' (in other words, articles designed to stimulate debate), do not in fact refer to climate change, can be interpreted either way (for example, a 1,500 year temperature cycle can be quite separate from the human factor) or they contradict each other. In addition, when I was at the OECD in 2007, I was told they were banned from researching climate change because the Bush Administration had threatened to withdraw their funding if they did. So, it is not so one sided as it appears.

Indeed, 'Science' (the US equivalent of 'Nature') reviewed 928 peer-reviewed papers covering climate change published between 1993 and 2003 and found that they all concluded that there is a link between human activity and climate change. I have not been able to find an update, but it is fair to say that this assertion and the opposite one posited in the previous paragraph show that an impartial study is urgently needed.

## Conclusions

**Post modernity and the Internet age needs to understand scientific process.** Post structuralism is one of the keystones to post modernism, or the current way the world is meant to be viewed by intellectuals. Post modernism (along with its cousin, relativism) that there is no such thing as a truth, only a compact between the transmitter and receiver of a message. For those of us who have to earn a living, this is rather boring, but it does highlight that the climate change debate is taking place at a time when even the notion of truth is held in low regard and when the Internet has created unparalleled opportunities for the dissemination of contrarian thought whether for better or for worse.

**The debate will continue, as will the realities.** I suggest the most pragmatic position we can adopt is one based on acknowledging that climate change is taking place and that it is reasonable to assume that human activities are responsible for at least some of this. As change is taking place, we need to adapt to it, which creates unparalleled investment opportunities in the energy and water sectors. This also links

in with the need to manage energy more efficiently and to develop new energy sources as the cost of carbon based energy rises and its general availability falls.

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