

YOU SHOULD READ THIS..... IF YOU DON'T YET.....

# TAKE GLOBAL WARMING SERIOUSLY



## THE UNHEARD SCIENTIFIC MESSAGE

There is still a great deal of confusion and cynicism among the general public concerning Global Warming. Bellamy, Lawson and similar denier voices (some orchestrated by vested interest groups like the US oil industry) continue to obscure the true scientific message. While governments are beginning to talk seriously about the problem, they still push real action away into the future. NIMTOO ism (Not in my term of office) continues to rule and local projects are ham-strung by NIMBY ism.

The most authoritative source of scientific advice is the IPCC (Inter-governmental Panel on Climate Change). This is an international body of climate scientists whose function is to review all the evidence and to report their consensus view on what research indicates, by producing reports about every 5 years. By its nature and methodology it is a conservative body.

The most recent IPCC report the Forth Assessment Report (AR4) was produced in 2007. Because of its 5 year time span it is already quite out-of-date (the more recent research has indicated that the problem is more serious and is coming upon us more rapidly than was reported in AR4, nevertheless that report already showed that we face a huge and urgent problem, the scale of which is still not being recognized by people or politicians. Recently world leaders have fanfared that they have agreed to stop the temperature rising by more than 2°C. However this is not new; this target was accepted in 1992 when governments signed the UNFCCC.

Scientific predictions are not definite (there are things we do not know) instead they are made in the form of probabilities. Despite the politicians assurances an intelligent reading of the AR4 makes it clear that (because of the GHGs [greenhouse gasses] already released) it is much more likely than not, that the temperature rise will exceed 2°C, and that in order to give us a chance of keeping anywhere close to this target we should drastically reduce the quantity of GHG emitted over the next 2 decades. But currently world emissions are predicted to rise until 2030.

## WORKING OF THE GREENHOUSE

GHGs constitute a minor part of the Earth's atmosphere but act as a very effective blanket. Short-wave radiation from the sun heats the Earth (and atmosphere) and the GHGs keep the warmth in by stopping the long-wave warmth from radiating straight back out into space.

Like throwing more blankets on a bed, adding more GHGs increases global temperatures. Since the industrial revolution, CO<sub>2</sub> levels, the major driver of global warming, have increased by 50% - that is 50% higher than at any other time over the last 400,000 years, the period for which we can construct an accurate record.

The 0.6°C rise in global temperatures over the last 30 years has only one cause - manmade global warming. (Ice ages were -5°C and warming took 1500 yrs so +0.6°C in 30 years is a lot.) Man, by releasing carbon which has been imprisoned in rock strata for thousands of millions of years, threatens to topple the stable cycle of the Earth's climate which, with its recurring ice ages, has held sway for a million years.

There are massive natural cycles of carbon – 100GtC cycles between atmosphere and vegetation with a similar

amount cycling between oceans and atmosphere. (1GtC = 1 billion tons of carbon, 1GtC = 3.67Gt of CO<sub>2</sub>) In the year 2004, mankind released 6.8GtC from fossil fuels & 2GtC from changing land use, less than 5% of the natural cycles. Sadly, year on year, this man-made addition is enough to affect the world's climate.

## FIVE REASONS FOR ACTION NOW

- (i) The IPCC advice is that a temperature rise beyond 2°C is very likely to produce dangerous climate change.
- (ii) The IPCC suggest that CO<sub>2</sub> concentrations to cause a 2°C rise in temperature will lie within the range 350-400 ppm. Currently we are at about 389 ppm and this is rising at 2 ppm per year.
- (iii) So:- even if everyone halved their use of oil, coal and gas tomorrow, global temperatures would probably rise by more than the 2°C danger limit. But far from reducing we are planning to use the stuff faster than ever.
- (iv) This means that **already** we are likely to have dangerous climate change.
- (v) The problem is getting much bigger as the huge populations of China, India etc. rush to join the consumer society using the old technology, which made us rich, and which continues to support our affluence.

## Other worrying factors are:-

- (vi) The oceans presently absorb 35% of our carbon emissions, making the seas more acid. Rising acidity and temperature is reducing this absorption.
- (vii) Plants eat CO<sub>2</sub>. Presently absorbing 25% of our CO<sub>2</sub>. As the temperature and CO<sub>2</sub> levels rise (to unprecedented levels, for modern plants) increased plant growth will cease and will actually reverse. Plants will no longer be absorbing our GHGs, they will be adding to them. Future CO<sub>2</sub> emissions will have 75% greater effect as a result of this.
- (viii) The fast melting ice caps and snow fields will no longer reflect large amounts of sunlight back into space. The Earth will thus have more heat to radiate away, promoting more warming.
- (ix) Rising world temperatures will increasingly release methane from the environment. This has the potential to add a staggering 7°C or so to global temperatures.
- (x) The full strength of global warming was being masked by pollution. Recent research suggests the impact will not be as bad as the 50%-300% increase first estimated.
- (xi) Higher temperatures increase water vapour in the air. Water vapour is a GHG so this will increase global warming.
- (xii) Clouds also affect global warming. Research suggests changes in tropical cloud cover will boost global warming.

## WHAT CLIMATE CHANGE WILL BRING

- (i) More violent weather events & moving of rain belts causing droughts in some places and floods in others. Leading to famine and disaster.
- (ii) Complete melting of the North polar ice cap in summer is already predicted before 2020. (At the time of the AR4 it was thought it would survive until 2100. This indicates how recent research is more worrying). Significant sea level rise (1-2m) will occur by 2100. Catastrophic sea rise (13m), which will eventually flood 90% of human residential areas, will hopefully take longer, but is on the cards.
- (iii) Major changes in weather. The halting of the Gulf Stream (which slowed alarmingly in the late 1990s) is now thought unlikely. But severe failure of the monsoons is expected – likely to necessitate relief for perhaps 300

million people. Deaths from such natural disasters will be unparalleled, perhaps equal to one tsunami a week for a century.

(iv) Collapse of eco-systems (eg In oceans, poles & Amazon). Extinction of huge numbers of species.

(v) Masses of refugees, the use of military force to secure resources & collapse of the present world order.

### **SOME HISTORY**

The theory of global warming dates back to the 1930s and was well established by 1980 when the first signs had appeared for real. Initially world response was promising. By the 1992 Rio summit, it was agreed that a 2°C rise in global temperatures was to be avoided and generally a limit of 550ppm CO<sub>2</sub> in the atmosphere should be set to prevent this. Steadily reducing national emissions to 40% of 1990 levels by 2050 was a widely accepted target.

Since that time, science has shown the problem to be far worse than initially estimated. The feedback effects described above are now better understood. Meanwhile international agreements have failed completely to address the totality of global warming. The 2°C temperature rise limit remains a claimed political objective but is very unlikely to be realistic.

Politically, since Rio there has been little good news. Kyoto took from 1997 to 2004 to enact due to political inertia. Now things look a little better, but politicians including Obama are still being unrealistically optimistic. Gordon Brown appears to have undergone a conversion, but has still not faced up to the reality that flying must be curbed. No politician has yet faced the need to prevent an increase in world (and UK) population.

There is to be a major conference of world leaders in Copenhagen in December. At it world leaders must be persuaded to deliver an immediate program of cuts.

### **WHAT HAS TO BE DONE**

To counter global warming, GHG emissions must be drastically and rapidly reduced. It is almost impossible to set targets. We are already in trouble and big cuts should already have been made.

Present per person world average emissions are 1.2tC. The UK figure is 2.7tC, and the US is 5.5tC. The scientists say the world average should be reduced to no more than 0.4 tC. Current UK plans are to cut our emissions to 20% of 1990 levels by 2050. This figure remains in excess of the target set by science, further it is our view that the target should be achieved by 2030. Current plans are:- far too little, far too late. Instead drastic cuts should be made immediately. The developed world must take the lead. That means us.

### **HOW TO ACHIEVE IT**

We must explain to the population just how serious the threat of global warming is and that sacrifices must be made to address it. The pretence that we can continue our wasteful consumption-led growth must be dropped.

It would be possible to cut 20% of our emissions in 2 years, but this cannot be painless. UK CO<sub>2</sub> emission breaks down roughly into the quarters – Home energy, Travel and transport, Industry, & Commerce. Industry and Commerce can be made more efficient, although some energy intensive industries will be needed, but

everything produced is produced for us to consume and it is our excessive consumption that will have to be reduced.

We must be prepared to give up things. We should ration fuel for travel and transport, in particular rationing flying (which is a very major contributor to Global Warming). Instead of inefficiently used private cars we need to travel less and use good public transport.

Almost all our buildings are old and leak heat, 60% of home energy is used for heating yet new homes are well insulated and can cut this to 5% or less. We should launch a national plan for the rapid insulation of the poorly insulated existing houses.

We must move from a throw away society to one of making do and mending.

Energy must be produced more efficiently and homes could contribute with:-micro-powerstations on our roofs & heat pumps. Efficient local powerstations and district CHP systems?

Instead of these things we witness outdoor patio heaters and wasteful set-top boxes. Politicians promote nuclear power and sequestration (burying the CO<sub>2</sub>). Wind turbines are often opposed, and their benefits remain unappreciated. As for the development of other forms of renewable power, solar, tidal, hydro, wave, geo-thermal, bio-mass, little money or effort is deployed.

### **WILL A SUSTAINABLE LIFESTYLE BE AWFUL?**

Some of us do not think so. Perhaps the worst thing about modern lifestyles is the pressures they impose on us – to earn more, to consume more, to fit more things into the day. A spin off is the noise and congestion of traffic caused by the pressure to fit more into each day. How much pleasanter our home localities would be if there was only 10% of the current traffic levels – a feasible option if we abandoned our private car obsession and made suitable adjustments to our lifestyles (shop less and shop local; holiday locally and visit local attractions; use local schools, hospitals; live near your work; make fewer but longer visits etc.). If we started to live more locally in tightly packed communities that supported all their own amenities (including plenty of open space), local communities would interact more and would thrive. We do not need the rush and hassle of our present dispersed consumerism.

### **CHANGING HEARTS & MINDS**

With economy, technology and renewable energy, UK could become close to being carbon neutral. For the sake of our grandchildren, we must do so. Global warming must truly be put top of the political agenda. Politicians do not act for fear of adverse public opinion so public opinion has to be changed. This is a battle for hearts & minds. The issue is staggering in scope, involving physics & geology, engineering & socio-economics. The whole community must appreciate what is at stake.

Visit [www.TGWS.org.uk](http://www.TGWS.org.uk) and read more. Register your support on line (or by post). Donations are good. Most importantly, discuss global warming with friends, family, colleagues.

Make sure they know it is high time that we all:-

## **TAKE GLOBAL WARMING SERIOUSLY**

To register support by post send your details to:- T.G.W.S. 7, Ridgeway, Broadstone, Dorset BH18 8DY

The National Campaign Launched by **Poole Agenda 21** member of the **Stop Climate Chaos** Coalition