THE REALLY INCONVENIENT TRUTH OR "IT AIN'T NECESSARILY SO"

Andrew Turnbull
Foreword by Nigel Lawson

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Foreword

The Global Warming Policy Foundation is proud to publish this dispassionate but devastating critique of UK climate change policies, and of the alleged basis on which those policies rest, by one of our trustees, Andrew Turnbull.

What makes Lord Turnbull's analysis and conclusions particularly telling is the unique authority he brings to bear on the subject. Cabinet Secretary and Head of the Home Civil Service from 2002 until 2005, before that permanent head of the Treasury for four years, and before that permanent head of the Department of the Environment for four years, Lord Turnbull has had unsurpassed experience of policy-making at the highest level under governments of both parties.

His measured verdict provides important lessons which ministers and senior officials in particular, but also parliamentarians, eminent scientists and the media, all need to reflect on.

Nigel Lawson
July 2011

Lord Turnbull

Andrew Turnbull was Permanent Secretary, Environment Department, 1994-98; Permanent Secretary to the Treasury 1998-2002, Cabinet Secretary and Head of the Home Civil Service 2002-05. He is now a crossbench member of the House of Lords.

Summary

The UK Government has put in place an extensive and ambitious set of measures as part of a programme to reduce man-made emissions of CO_2 by 80 percent from 1990 levels by 2050. This is a unilateral undertaking, enshrined in a legal duty by the Climate Change act 2008.

This objective is based on the narrative created by the Intergovernmental Panel on Climate Change (IPCC), who believe that man-made emissions are the principal driver of climate change in recent decades; that in the absence of policy response the global temperature is likely to rise by 3°C by the end of this century (this is derived from a variety of scenarios ranging from 1.0° to 6.0°C.) [1]

An increase of 2°C has been adopted in international policy debates as a threshold beyond which serious detrimental impacts will occur such as, e.g. sea level rise, drought, flood, retreat of glaciers, spread of disease, threat to food supplies etc. CO_2 emissions should be reduced to a level which would prevent that threshold being exceeded. For the UK, that is held to require a reduction of 80 percent.

Although there is agreement among scientists that global temperatures have been rising (around 0.8°C in the past 150 years), that CO_2 is a greenhouse gas, that CO_2 concentrations have been rising; that, other things being equal, a doubling in CO_2 concentration would on its own generate about a 1°C increase, there is little agreement beyond that. Virtually every step in the chain of causation is disputed and even the basic data on measurements is challenged. There is huge controversy about the relative contribution of man-made CO_2 versus natural forces such as the sun, cosmic rays, clouds and the oceans. Many scientists would support an alternative hypothesis, that the globe has been on a gentle warming trend since the end of the Little Ice Age around two hundred years ago, with alternating periods measured in decades of faster and slower growth, or even periods of moderate decline. Such an alternative view would not justify the alarmism which characterizes much of the public debate.

The Really Inconvenient Truth is that the propositions of the IPCC do not bear the weight of certainty with which they are expressed. However, the purpose of the paper is not to argue that there is another truth which should become the new consensus, but to point out the doubts that exist about the IPCC viewpoint and the serious flaws in its procedures. It is also to question why the UK Government has placed such heavy bets on one particular source of advice.

Even if the IPCC scenarios were correct, the impacts are frequently selective and exaggerated. The economic policy choices being made will not minimize the cost of achieving a given target for CO_2 reduction. The paper concludes with a call for more humility from scientists, more rational reflection from politicians, and more challenge from our parliamentarians.[2]

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[1] IPCC Summary For Policy Makers, 2007

[2] The text of this briefing paper has been updated to take account of the Government's May announcement on the post-2020 CO2 targets.

UK Government Policy

The UK Government takes great pride in its framework for climate change. It sees it as both comprehensive and ambitious, as one of the most advanced in the world, providing a platform for moral leadership in global negotiations.

What are the components of this framework?

a) A clear vision of the science which is based on the work of the Intergovernmental Panel on Climate Change (IPCC). Driven by man–made emissions of CO_2, the CO_2 content of the atmosphere has risen from 280 ppm in the pre–industrial era to over 400 ppm and, unless checked, will double to around 550 ppm during the course of this century.

b) This rise in CO_2 is the principal cause of the increase in temperature of 0.8°C over the past 150 years. In the business-as-usual scenario, temperature is projected to rise by 1–1.5° C within the next 50 years, and by around 3° C by the end of the century

c) If temperature rises more than 2°C, various adverse consequences will ensue, eg rising sea levels, droughts or floods, increased violence of storms, damage to food production, the spread of disease etc.

d) To limit temperature change to no more than 2°C, global emissions of CO_2 need to be halved. Given their contribution to CO_2 to date, the developed nations should take the lion's share, i.e. reducing their emissions by around 80 percent.

The UK Government has argued for this in climate change treaty negotiations, but in the absence of any agreement (a legally binding set of international limits now seems unattainable) it has set its own limits.

The UK Government has created a powerful structure through the Climate Change Act. It starts by stating that its principal aim is to prevent temperatures from passing the 2°C limit and then goes on to create a legally binding obligation:

"It is the duty of the Secretary of State to ensure that the net carbon account for the year 2050 is at least 80 percent lower than the 1990 baseline."

Taking account of growth in the economy, this means that over the period of 60 years from 1990-2050 (one third of which has already passed) each unit of GDP must be produced with only 5 percent of the CO_2 that was produced in the base year.

The Act then goes on to establish the Committee on Climate Change (CCC), whose job it is to set 5-year targets on the way to the final goal. In May 2011, the Government accepted the advice of the Committee to set an indicative 2030 target 60 per cent below1990 levels (46 per cent below 2009 levels), making the UK the only country in the world to have set legal targets that far into the future. The Committee also reports to Parliament on whether the actions being taken will deliver those targets.

A wide range of instruments has been introduced. At the EU level there are targets for 2020 to reduce CO_2 emissions by 20 percent, with an offer to go to 30 percent as part of an international agreement, and an obligation to produce 15 percent of energy from renewable sources. To achieve this, electricity generation from renewables will need to exceed 30 percent. The EU has also set up an Emissions Trading Scheme (the ETS), targets for the efficiency of vehicle fleets and a mandatory component of road fuel to come from biofuels.

At the UK level, numerous other schemes have been set in place including:

- The Climate Change Levy; the Carbon Reduction Commitment; feed-in-tariffs, targets for wind energy, a carbon capture and storage (CCS) obligation for coal-fired power stations, and changes in the planning system to speed up replacement of our nuclear fleet.
- In the pipeline are proposals for a carbon price floor and an energy efficiency Green Deal.

It will no longer be simply larger energy users who are in the business of carbon reduction but every firm, large or small, and every household will be affected.

But there is an Inconvenient Truth, and it is not the same Inconvenient Truth of Al Gore's film. The Really Inconvenient Truth is that this whole structure is built on shaky foundations and there is controversy about virtually every link in the chain of causation.

One can analyse this agenda at three levels:

- First, the basic science, i.e. the relationship between CO_2 and temperature
- Secondly, the impacts, i.e. for any given rise in temperature the real world impact on sea levels, rainfall, drought etc
- Thirdly, for any given picture of impacts, what are the appropriate economic policies for the mitigation of climate change?

The three tiers correspond to the three working groups in the IPCC structure.

Science

Let us look first at the science. What is frequently described as a "consensus" is no such thing. There is a huge controversy at each level of the analysis. In its Third Assessment Report (TAR, 2001), the IPCC's view was compared to an ice hockey stick (Fig 1). For the past thousand years, global temperatures were presented as fluctuating within a narrow range, possibly around a slight downward trend. But since the arrival of industrialization, the output of CO_2 has risen sharply, producing the sharp rise in global temperatures, the so-called man-made or Anthropogenic Global Warming (AGW).

This has been challenged on a number of fronts:

- Has the back history been correctly described? Many scientists believe that in the IPCC's later reports the fluctuations in the past 1000 years have been wrongly flattened out, underplaying a Medieval Warm Period (1000 -1350 AD), followed by a Little Ice Age (1550-1850), and the recovery from it over the last 150 years (Fig2).

FIG 1
IPCC First Assessment Report (FAR) – 1990 - Original IPCC depiction of the MWP and LIA. The dotted line represents early 20th century as the base line.

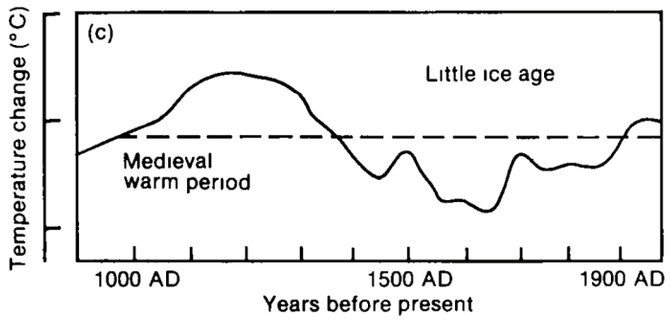
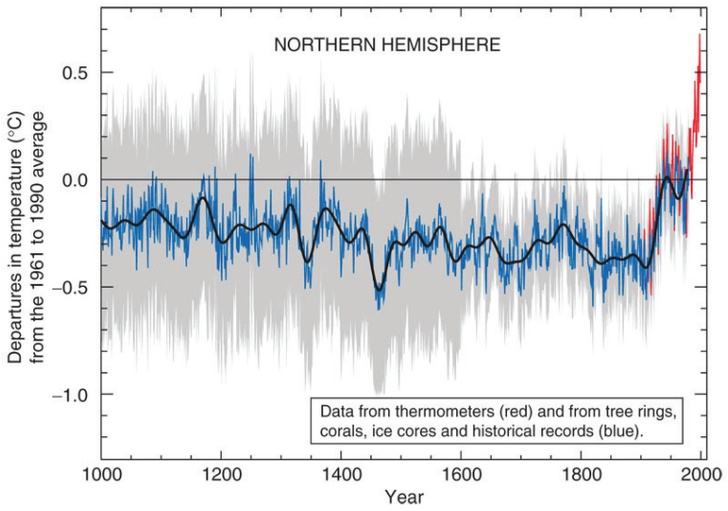


FIG 2
IPCC Third Assessment Report (TAR) – 2001
The so-called Hockey Stick got rid of the Medieval Warm Period



This alternative view indicates that our climate has been variable long before the recent movements in CO_2. Early reports from the IPCC acknowledged these fluctuations but, of course, they are inconvenient to the AGW believers, one of whom e–mailed another saying "We must get rid of the Medieval Warm Period." Writing the MWP out of the script made it easier to claim that present temperature levels were unprecedented.

- Even the history of the last 150 years presents a lot of problems.

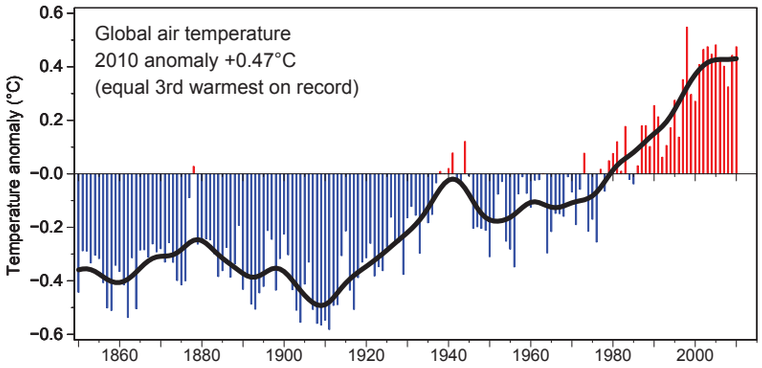


FIG 3
Global Temperature Record 1850-2010
Source: Climatic Research Unit, 2011

Over this period the global temperature has risen by 0.8°C but, unlike the rise in CO_2, which has been pretty steady, there have been markedly different phases. Temperature rose rapidly from 1900–1940 when the CO_2 increase was modest, followed by a small drop in temperature between 1940–70 despite CO2 growth being particularly strong at this time. Between 1970 and the late 1990s both CO_2 and temperature increased strongly together. Over the past 12 years or so temperature has been on a plateau, while CO_2 has contined to grow to record levels.

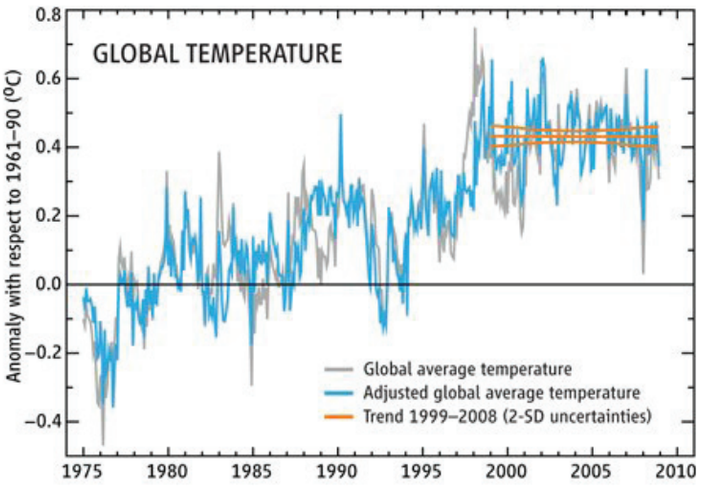


FIG 4
Adapted from J. Knight et al., Bull. Amer. Meteor. Soc., August 2009

If CO_2 were as important as many AGW theorists claim, why has temperature not followed a steady upward path? Immediately it becomes obvious that the increases of CO_2 and of temperature are poorly correlated and that one needs to bring other factors into the story such as the sun, clouds and the way heat is stored in, and distributed around the oceans. So it is very unclear what is the relative contribution of natural forces and what is man-made. The allocation between anthropogenic influences and natural influences produced by the IPCC has been strongly challenged.

- One needs to look at climate sensitivity, i.e. the coefficient between CO_2 and temperature. No one questions that CO_2 has greenhouse properties. An atmosphere with 550 ppm in it will retain more heat than one with 280ppm. But most scientists will admit that a doubling of CO_2 alone will not produce the 3°C or more that is built into the IPCC models. The pure CO_2 effect for a doubling in concentration is probably closer to 1°C. So where do the higher figures come from?

- They come principally from what is assumed to happen to water vapour, which is a much more prevalent and powerful greenhouse gas than CO_2. A hotter atmosphere will hold more water vapour. But does this automatically mean that there will be a positive, i.e. amplifying, feedback effect? Not necessarily. Low level cloud does have an insulating property but high-level cloud also has what is known as an albedo effect, reflecting the sun back into space, which is why cloudy days are cooler. The IPCC models have assumed but not proven a strongly positive, ie amplifying, feedback, but have ignored the possibility of negative feedbacks. Some scientists, such as Professor Lindzen of MIT, argue that the net effect could go either way.

The problems of measurement are formidable. Even in the era of reliable instruments, which have been available only for the last 150 years, there are problems of aggregation of individual readings[3] and there are so-called heat island effects where urbanisation may have affected the time series. But tracing the history back over millennia presents even greater problems. Efforts are made to splice together records of proxies such as ice cores, tree rings, ocean sediments and also social history. But the statistical manipulations of the data required make it possible to achieve almost any result.

Also controversial is the way the IPCC, despite all the difficulties of measurement and the substantial 'play' in the various linkages, has made categorical statements of its findings. For example, its Fourth Assessment (2007) states:

> *"Most of the observed increase in global average temperatures since the mid-20th century is very likely due to anthropogenic greenhouse gas concentrations."*

[3] See presentation by Professor Vincent Courtillot at the International Conference on Energy and Climate Berlin 3-4 December 2010

In IPCC usage "very likely" means better than 90 percent chance. Far from being a consensus conclusion, this has been specifically challenged by many scientists.

To summarise this part of the argument:

The IPCC view, upon which the UK Government has based its policy, and around which much of the international debate takes place, sees anthropogenic CO_2 as the principal driver of the increase in temperature. It also foresees a substantial acceleration in temperature change, possibly reaching 3°C by the end of the century. An alternative view is that there has been a gentle rise in temperature as the world comes out of the Little Ice Age, with multi-decadal oscillations around the trend. In this view, the increase in temperature by the end of the century is likely to be significantly lower than foreseen by the IPCC. We experienced a faster phase of temperature rise from the early 1970s to the mid 1990s and we have been in one of the slower phases for the past 10-12 years. In this view, both the trend and the fluctuations are largely the result of natural influences, with CO_2 providing possibly a modest net addition.

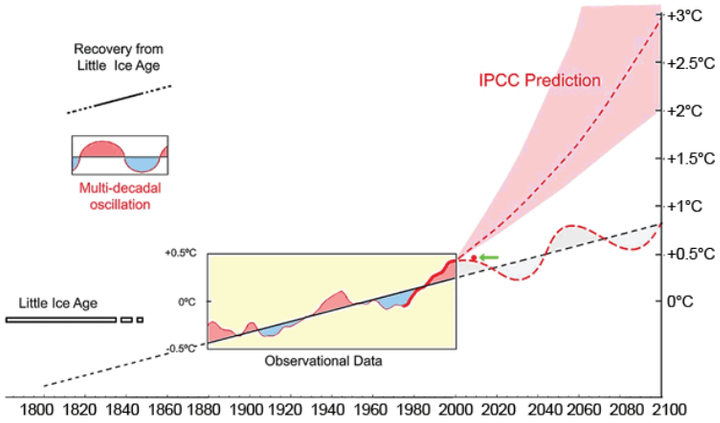


FIG 5

The figure shows that the linear trend between 1880 and 2000 is a continuation of the recovery from the LIA, together with the superposed multi-decadal oscillation. It is assumed that the recovery from the LIA would continue to 2100, together with the superposed multi-decadal oscillation. This view could explain the halting of the warming after 2000. The observed temperature in 2008 is shown by a red dot with a green arrow. It also shows the temperature rise after 2000 predicted by the IPCC. It has been suggested by the IPCC that the thick red line portion was caused mostly by the greenhouse effect, so the IPCC's future prediction is a sort of extension of the red line. For detail, see Syun-Ichi Akasofu: On the recovery from the Little Ice Age. Natural Science, 2:11 (2010)

The IPCC view is a narrowly based and over simplified one, concentrating heavily on the impact of CO_2 while downplaying the role of natural forces. David Whitehouse, the former BBC Science Correspondent, highlighted the difference:

"How many times have you seen, read or heard some climate "expert" or other say that mankind's greenhouse gas emissions are largely responsible for the unprecedented warming we have seen over the past century, and especially over the past 30 years. It is as if, to some, nature has stepped back, leaving mankind to take over the climate. In reality, whatever one's predictions for the future, such claims are gross exaggerations and misrepresentations. Natural and human climate influences mingle and even today the natural effects dominate."

The policy conclusions of these different viewpoints are quite distinct. One sees calamity just around the corner, producing calls for dramatic and early CO_2 reduction. The alternative sees changes which are within the capacity of the world to adapt, leaving time to develop measured and progressive policy responses rather than one big heave to solve the problem.

Impacts

I can deal with Level 2 of the IPCC's work on impacts very quickly. In my view this is where their work is at its shabbiest; lots of dramatic claims about sea levels, melting glaciers, ice, crop yields, extinction of species, eg polar bears. Much of this has been shown to have come from non peer-reviewed material, the so-called grey literature and, worse still, some of it was even drawn from material supplied by green NGOs. The InterAcademy Council (IAC), a collective of the leading scientific academies of the world, produced a report in 2010 which was critical of a number of IPCC's procedures [4]. It was very critical on the grey literature point, recommending that :

> "The IPCC should strengthen and enforce its procedure for the use of unpublished and non-peer reviewed literature, including providing specific guidance on how to evaluate such information, adding guidelines on what types of literature are unacceptable, and ensuring that unpublished and non-peer-reviewed literature is appropriately flagged in the report."

There has been a consistent pattern of cherry-picking, exaggeration, highlighting of extremes, and failure to acknowledge beneficial effects. By and large, humanity has prospered in the warmer periods. Plants grow faster and capture more CO_2 in an atmosphere that is hotter,

[4] InterAcademy Council Report 2010: *Climate Change Assessment. Review of the Processes and Procedures of the IPCC*

wetter and more CO_2 rich. Cold causes more deaths than heat. The main cause of more storm damage has been that we have put more people and property in harm's way. The fears about the spread of malaria are largely discredited.

The IAC was particularly critical of the IPCC's Working Group II on Impacts:

> "The authors reported high confidence in some statements for which there is little evidence. Furthermore, by making vague statements that were difficult to refute, authors were able to attach "high confidence" to the statements. The Working Group II Summary for Policy Makers (SPM) contains many such statements that are not supported sufficiently in the literature, not put in perspective, and nor expressed clearly"

Mitigation policies

Let me now turn to Level 3, economic policy responses.

- The first problem is that policy has been based on a preponderantly warmist view of the world. Many such as the Institution of Civil Engineers think that too little attention has been paid to adaptation, i.e. being more resilient whichever way the sum of natural forces and CO_2 takes us, up or down. This warmist view of the world may explain why we have been underprepared for cold winters.

- A major problem of UK policy is its unilateralism. Our Climate Change Act imposes legal duties, regardless of whatever else other countries do, or do not do. The UK, producing only 2-3 percent of world CO_2 emissions, can have only a minimal effect on the global warming outcome. If we push too hard on decarbonisation by raising the price of carbon through a range of instruments we will suffer double jeopardy. Energy-using industries will migrate and, if the climate pessimists are right, we will still have to pay to adapt, e.g. by raising our flood defences. In my view we should concentrate on those things which have a clear no regret benefit, of which there are many, and advance into the rest of the agenda only as part of international action. There is furious row in the EU Commission on precisely this point. The Climate Action Commissioner wants to go beyond the 20 percent target already agreed and adopt the more ambitious 30 percent target which was proposed only if there were an international agreement, while the Energy Commissioner is strongly opposed.

  The logical economist's approach is to rank policy responses according to the cost per tonne of CO_2 abated and then work through the merit order, starting with the most effective. Or, what amounts to the same thing, set a price on carbon and then let the various technologies – gas, coal with CCS, nuclear, wind, tidal, energy efficiency etc, fight it out for market share.

  But the EU Renewables Obligation is the denial of this logic. One particular set of

technologies, and especially wind, has been given a guaranteed market share and a guaranteed indexed price, regardless of how competitive it is. The current pursuit of wind power is folly. Its cost per kwh substantially exceeds that of other low carbon sources such as nuclear when account is taken of intermittency and the cost of extending the grid far from where consumers are located. There is a constant confusion between installed capacity for wind and its actual output, which is, typically, about 20-25 percent of the former. There is also the problem that the coldest periods in the UK often coincide with low wind speeds.

There has been in this country initially hostility to nuclear power and now at best a half-heartedness. The Secretary of State for Energy and Climate Change has called nuclear a tried, tested and failed technology. It may be that in the UK historically it has not been as successful as it might have been but it has for 50 years provided around 20 percent of our electricity reliably, competitively and safely. Just 20 miles from our coast, France has produced over 2/3rds of its electricity from nuclear and regards this as a great success. Clearly events in Japan are raising new questions about nuclear power in seismically active areas, but we cannot yet say whether there is a general lesson about current designs or whether the lesson is about 40 year old designs in seismically active areas.

One can only describe Germany's decision to phase out its existing nuclear power system without replacement as panic. There is also something profoundly illogical in Nick Clegg's demand that nuclear power can only go ahead in the UK if it receives no public subsidy whatsoever, while at the same time promoting huge subsidies for renewables.

The feed-in tariff mechanism is fast becoming a scandal. Those lucky enough to own buildings large enough on which to install solar panels, or enough land for a wind farm, have been receiving 30-40p per kWh, for electricity, which is retailed at only 11p. The loss is paid for by a levy on businesses and households. It is astonishing that the Liberals who attach such importance to fairness, turn a blind eye to this wealth transfer from poor to rich, running to £billions a year. If you live in a council tower block in Lambeth you don't have much opportunity to get your nose into this trough. The charity Age UK has calculated another 250,000 pensioners will be forced into fuel poverty by rising energy prices, bringing the total to over 3 million.

There is a major new development which fits the description of a disruptive technology, that is the introduction of new drilling techniques which make it possible to extract gas from shale[5]. This has dramatically widened the geographic availability of gas, has produced a massive upgrading of gas reserves and is decoupling gas prices from oil. There is no peak in hydrocarbons. Gas has the advantage that it produces less than half the CO_2 that coal produces. So we face a happy prospect that we can replace a lot of coal burning with gas, reduce energy prices, and make a big reduction in CO_2 emissions, albeit not the complete decarbonisation sought by some, achieving in effect a dash for gas at the global level.

[5]] Matt Ridley: The Shale Gas Shock, The Global Warming Policy Foundation, London 2011

Certainly the opportunity cost of renewables has risen, and perhaps that of nuclear power too.

Another defence of the AGW agenda is the so-called green jobs argument, ie we should be in the vanguard of adopting green technologies so that we get first mover advantage as a supplier of these technologies. Much of this is wishful thinking. There is no guarantee that being an early adopter of a technology secures the right to be a pre-eminent producer of the equipment. We may install wind turbines and solar panels but import them from Europe and China. Before taking credit for the putative jobs created, we must take account of the jobs being destroyed by the migration of enertgy intensive industries. A unilateral and compulsory switch from low-cost to high-cost sources of energy is a strange point of departure in the search for jobs.

If a technology can justify itself without massive subsidy we should build up our research and our skills. But if a technology exists only by virtue of subsidy we only impoverish ourselves by trying to build jobs on such shaky foundations. The good news is that, at last, the government is beginning to cut back on subsidies to large solar operators, following the trend set in Germany and Spain.

To summarise on economic policy:

We should concentrate on those measures which are no regret, which improve resource productivity, improve security of supply and with it our commercial bargaining position, and which do not depress living standards. In my book these are stopping deforestation, raising the energy efficiency of our buildings and our vehicle fleet (though the effect of greater energy efficiency on CO_2 reduction may be limited if consumption is sustained by lowering the effective price of energy), investment in nuclear power, an expansion of energy from waste. If we are going to adopt CCS, and the economics has yet to be established, it would be better to attach it to new gas-fired stations rather than retrofitting old coal-fired stations. It also means much less wind and solar energy, and an end to current encouragement of biofuels from land previously used for food crops.

IPCC

At the heart of the present debate is the IPCC. It likes to portray itself as an objective and independent source of advice on climate change. It is, in fact, no such thing. Its stated role is:

"To assess on a comprehensive, objective, open and transparent basis the latest scientific, technical and socio-economic literature produced worldwide relevant to the understanding of the risk of human-induced climate change, its observed and projected impacts, and options for adaptation and mitigation."

A body with these terms of reference is hardly likely to come up with the conclusion that nature trumps man. If you go to Barclays inquiring about setting up a bank account you are hardly likely to be advised that you should go to NatWest.

Its key personnel and lead authors are appointed by governments. Its Summary for Policy Makers (SPM) may sound like independent scientists speaking frankly to policy makers but, in practice, the policy makers join the drafting sessions and ensure they get what their political masters want. This was another concern of the IAC, who commented on the difference in content between the SPM and the underlying report:

> "The distillation of the many findings of a massive report necessarily results in the loss of important nuances and caveats that appear in the Working Group report. Moreover, the choice of messages and description of topics may be influenced in subtle ways by political considerations."

There is a structural flaw in the IPCC. Far from being a synthesis of the work of 2,500 scientists to produce a consensus, there is a core of 40-50 at its centre who are closely related, as colleagues, pupils, teachers, reviewers of each other's work. The IPCC has failed to operate a rigorous conflicts of interest policy under which such relationships would be disclosed. This core group has managed to define a very simple AGW message and has sought to prevent alternative voices from being heard. The IAC criticised a tendency not to give sufficient weight to alternative views.

In my opinion, the IPCC and its current leadership no longer carry the credibility which politicians need if they are going to persuade their citizens to swallow some unpleasant medicine. It is therefore regrettable that the UK Government has taken no steps to find an alternative and more credible source of advice.

Sociology and Politics

Let me conclude with a few remarks on the sociology and politics of the AGW phenomenon. First there is the change in the nature of science. Great figures of the past such as Galileo and Darwin did not receive large government research grants and were not showered with honours. They were driven by curiosity and were prepared to challenge the established order. Nowadays our environmental scientists have jobs and research ratings to protect, as well as celebrity and airmiles. There has been a shameful failure by the grandees of the Royal Society who should have been the guardians of scientific integrity, upholding its motto "Nullius in verba," i.e. no one has the final word. Instead we have seen scientists become campaigners, trying to close down the debate by claiming that the science is settled, and failing to review rigorously the Climategate e-mails affair.

There are now plenty of vested interests in the green agenda, whether consultants, suppliers of green technology or those taking advantage of the economic opportunities. It is not just

the traditional energy suppliers who have positions to defend.

Uncritical adoption of the green agenda by the Conservatives has helped them push the Blue is Green message as a way of escaping from the nasty party image; but one suspects that for many in the party the allegiance to the green agenda is more expedient than committed.

It is regrettable that the UK Parliament has proved so trusting and uncritical of the IPCC narrative, and so reluctant to question the economic costs being imposed in pursuit of decarbonisation. It verges on the unconstitutional that the payments being made under the renewables obligation and feed-in tariffs, and the levies being raised to pay for them, are routed invisibly through the accounts of the electricity industry rather than being voted on by Parliament as public spending or in the Finance Bill.

What of the advice that Ministers have been receiving? We know that the community of scientific advisers - the Chief Scientists in departments, the Met Office and the Committee on Climate Change - are strong supporters of the AGW orthodoxy. Of the civil servants in departments we know less. Are they failing to speak truth unto power? Or are they overwhelmed by the dominance of green politics? There are signs, however, that the Treasury and the Department for Business, Innovation and Skills may just be beginning to fight back.

The media, too, have failed in their mission to challenge and have bought into the groupthink. It has been left to the blogosphere to provide a platform for different viewpoints.

Where does the religious moralising tone come from? It can be traced back to Chapter 3 of the Book of Genesis. Man was born into Eden in a state of grace, but has damaged his environment and now must repent and pay for his sins.

Conclusion

The purpose of this paper has not been to plump for an alternative orthodoxy to replace that of the IPCC, but to recognize the major uncertainties that still exist and the wide range of scientific opinion. We need to acknowledge that there have always been fluctuations in our climate. Rather than writing natural forces out of the script, we need to build them into the analysis.

We have witnessed a warming tend in the last 150 years but it has not followed a steady upward path. We are currently on a plateau. CO_2 has probably, ceteris paribus, made a small positive contribution. Our understanding of the effects of water vapour is still limited and not enough to justify the weight that is put upon it. It is therefore regrettable that the UK Government has chosen to rely so heavily on one source of advice about which numerous challenges have been made, and whose procedures have such serious flaws.

In conditions of uncertainty, one should adopt the principle of progressive adaptation,

[6]] Inaugural Annual GWPF Lecture 2010

initially doing those things that are inherently sensible such as improving energy efficiency, strengenthing security of supply and slowing deforestation. Only where and when the evidence strengthens, should more (and more expensive) measures be called for.

We need a more eclectic approach and certainly a more modest one. In the words of President Klaus of the Czech Republic.

> "To reduce the interpretation of all kinds of climate change and of global warming to one variable, CO_2, and to a small proportion of that one variable – human induced CO_2 – is impossible to accept."[6]

If climate change is due to many factors, it is nonsense to think that by controlling just one of them, man-made CO_2, we can stabilise the climate.

From our politicians we need open-mindedness, more rationality, less emotion and less religiosity; and an end to alarmist propaganda and to attempts to frighten us and our children. Also we want them to pay more attention to the national interest and less to being global evangelists.

Finally we need from our scientists more humility ("Do not claim to be wiser than you are" Romans 12), and a return to the tradition of scientific curiosity and challenge. We need more transparency and an end to attempts to freeze out dissenting voices. There should be more recognition of what they do not know. And acceptance of the Really Inconvenient Truth - that our understanding of the natural world does not justify the certainty in which the AGW views are expressed. Maybe the government's proposal for a review in 2014 of what the rest of the international community is doing is the first crack in the UK's dogged unilateralism.

Andrew Turnbull
July 2011

The Global Warming Policy Foundation is an all-party and non-party think tank and a registered educational charity which, while open-minded on the contested science of global warming, is deeply concerned about the costs and other implications of many of the policies currently being advocated.

Our main focus is to analyse global warming policies and their economic and other implications. Our aim is to provide the most robust and reliable economic analysis and advice.

Above all we seek to inform the media, politicians and the public, in a newsworthy way, on the subject in general and on the misinformation to which they are all too frequently being subjected at the present time.

The key to the success of the GWPF is the trust and credibility that we have earned in the eyes of a growing number of policy makers, journalists and the interested public.

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