

**Brighton Pavilion Partnership in Power**  
**Tackling Climate Change Policy Forum Working Group**  
**Minority Report by Jim Adams**

Members of the Working Group: *Jim Adams, Joyce Edmond Smith, Neil Harding, Nick Jarvis, George Moody, Christine Moody.*

The views expressed are my own. The following people, possibly unintentionally, shaped the report: *Peter Freeman, Bob Glaberson, Greg Hadfield, Maire McQueeney, Graham Ennis, Doly García, Nick Rouse, Peter Saunders, Tim Small.*

**International Issues.**

**Climate Change and Energy.**

Unless we take effective action, the world is on a road to climate catastrophe. Brighton Pavilion CLP presses upon the government to escalate the priority given to tackling climate change, both nationally and at international levels. We believe the action which it is prudent to take is greater than that indicated in the Stern Review and indeed the recent Climate Change Bill.

In particular, we note these issues:

- (1) The UK should set a vigorous example, to be at the forefront of promoting international cooperation, tackling energy supply, efficiency and consumption issues.
- (2) The government needs to highlight the significance of climate change to the general public and government officers, nationally and internationally, so that solutions are encouraged from everyone.
- (3) We stress the importance of collective international Trade Union action to reduce pollution and CO<sub>2</sub> emissions.
- (4) That production of oil from coal, and coal-burning technologies, are ‘bad news’ from the climate change point of view.
- (5) That the government must discuss at the international level all means, including by direct financial support, for the preservation of rain forests and forestation.
- (6) We press the UK government for intergovernmental action to support other solutions than the growing of bio fuel, when that is to the detriment of world food production or it increases carbon emissions [1].

Energy, in particular oil, is linked with climate change. As reserves deplete, oil could be substituted by coal - ‘bad news’ for reducing CO<sub>2</sub> emissions. Energy efficiency and transfer to renewables are thus critical components in combating climate change, both at the national and international level.

Labour Party policy must recognise that world oil production has probably reached a plateau, and is not set to increase as it has in the past. [2] - [10].

The world economy is heavily dependent upon energy supplies for the production of food and consumer goods.

Brighton Pavilion CLP calls on the government to promote world energy efficiency, in particular in cement production, which consumes a very large proportion of world energy resources.

### **Contraction and Convergence.**

The forthcoming Climate Talks in Bali are perhaps the last chance to get a viable international agreement to replace Kyoto. Given the need for a global framework which is independent, simple, flexible and which recognises the needs of developing countries we urge the government to reconsider the advice of the All Parliamentary Climate Change Group, and support the adoption of Contraction and Convergence as the global framework for achieving the objectives of the Intergovernmental Panel on Climate Change (IPCC).

On Tradable Energy Quotas (carbon allowances) – the CLP agreed that measures should not disadvantage the less well off (which green taxes could do). Whilst we are enthusiastic for some form of carbon allowance, we feel that the technology for this, which must not infringe civil liberties, is still some years away.

### **National Issues.**

Brighton Pavilion CLP call on the government, by planning, financial inducement and direct investment, to encourage by all means, and to exceed targets already in place, in the development, production and supply of alternative energy, including large-scale, especially off-shore, wind turbine generation [11], wave and tidal-power projects [12], and thermal solar and photovoltaic projects [13]. Combined Heat and Power (CHP) must also be further encouraged. We suggest an appropriate body needs to be set up to coordinate, control and invest in such a large programme, that this is preferable to a nuclear programme, that this is feasible, and an economically justified and appropriate response to the climate change and security of supply issues.

We believe solutions are political, and in particular should not be confined to free market solutions in terms of products and consumers. We need to overcome vested interests in energy production, which are retarding advance in combating climate change.

On the question of nuclear energy, some agree with the view of the government's advisory body – the Sustainable Development Commission – that nuclear energy is not an appropriate response to the climate change and security of supply issues. Others emphasised that strategy must be acted on, which is discussed in Appendix A.

We call on the government to promote, including by continuing research, and to develop infrastructure in, energy-efficient transmission through the grid, and to reduce energy lost in power generation. We need to develop an extensive offshore wind, tidal and wave-power grid. The distribution system, which is separate, needs to be further

and massively linked to CHP projects. If a highly energy-efficient electricity system were in place to transfer (e.g. wind) power sources from Scotland to other, particularly southern, parts of the UK, our energy supplies would be increasingly secure.

To maintain the well being of its citizens, the UK must invest more of its GDP, year on year, in alternative energy sources and energy efficiency. We therefore agree that domestic energy efficiency should be promoted. We feel the government should initiate large-scale insulation projects, such as has been carried out in Germany. We welcome the commitment to free household energy meters. We recommend that the centralisation of energy supply should be reduced and decentralised systems encouraged e.g. around neighbourhood Combined Heat and Cooling (CHC).

We underline the importance of CHP, returning electricity to the grid with reversible meters, of installing solar heating panels in council housing, lifting planning conservation restraints on solar panels, and on the importance of large tidal power infrastructure projects in England and Scotland.

The CLP welcomes the Climate Change Bill but believes the long-range targets are too low. We also believe that there should be a yearly 3% reduction target and that the government should listen to the Environmental Audit Committee, which says 32% reduction by 2020 and 60% by 2050 is incoherent (some say we need 120% by 2050).

We urge that long-term contingencies planning should be undertaken by the government covering UK food, energy, raw materials and other resources security for the economy.

Brighton Pavilion CLP calls on the government to implement restrictions on 2.5 micron particulate emissions as has been defined and adopted by the Environmental Protection Agency in the U.S. [for those mailed by post, a printout is provided].

## **Local Issues.**

The CLP believes that every home should be a renewable energy producer – this could be by means of a range of microgenerators. The CLP was keen that more support should be given to a widespread system of microgeneration, both in terms of refitting existing domestic properties and as a requirement in new build.

In that context the CLP congratulates the previous Brighton & Hove Labour Administration for its visionary proposals in its Draft Supplementary Planning document “Sustainable Building Design”. If the government used these proposals for the thousands of homes to be built in coming years it would avoid the danger of “climate slums” in subsequent years and would be closer to its target of all houses being zero carbon by 2016. Without such measures we believe the 2016 target is too remote; action must be taken now. Local authorities should be given more powers to ensure that all new development is environmentally sustainable, and be given adequate financial assistance.

The government should also urgently encourage the decentralisation of energy production, particularly with local CHP.

There should also be a review of VAT on home improvement e.g. double-glazing instead of single. The energy companies must be forced to provide better information, and everyone should be provided with a free smart meter, so that we can monitor our own usage.

We emphasise the importance of the involvement of the general public, of educating the public on how not to waste energy and a skills academy for sustainability. We propose national public debates on issues of sustainability and climate change.

Local authorities should be encouraged to develop contingency plans on climate change and develop education policies in this direction. Locally, development planning guidance is out for consultation – every house will have eco-standards, as developed by the Sustainability Commission. Look at the Brighton & Hove website for this!

### **Transport.**

We raise only a few issues on transport, the essential one being that aviation and shipping should be in the Climate Change Bill.

We call on the government, by financial inducement and otherwise, to develop the uptake of electrically driven, and hybrid electric, vehicles.

We need to promote public transport and public transport integration. We favour the idea of Oyster cards for areas outside London, to encourage the use of integrated public transport.

### **A. Nuclear and Other Sources of Energy.**

The Brighton & Hove Sustainable Development Commission has advised that nuclear power generation is not the way to go. However, our nuclear power stations are being decommissioned and we have a major shortfall. This minority section calls on the government to firm up projections for the components of the future UK energy mix, in particular the nuclear energy component, and ensure that strategic decisions are acted on. We cannot allow a situation to arise by default, which in future years could endanger security of supply. We point out the finite global supplies of high-grade uranium, which at this stage is insufficient if we and other countries simultaneously reinvest in nuclear power generation on a large scale [14], [15]. Given the importance of the security of supply issue and decommissioning costs, so that nuclear power is not an economic option if left to market forces, and that proposed modular pebble bed reactors without a containment vessel, as proposed, constitute a security risk, we call on the government, *if* it has serious intent in reactivating the nuclear power programme as a UK component in combating climate change, to set up and fund an appropriate body, like NASA in the United States for the Apollo programme, to coordinate and direct such an implementation.

Under the same caveat, as part of the security of supply issue, we call on the government to invigorate European and international research and development into the production of thorium-fuel reactors [16], which do not have proliferation problems, or the same decommissioning problems. Currently known thorium reserves are three times that of uranium reserves. Given that thorium-fuel reactors (energy amplifiers) can be ‘turned off’ by switching off the linear accelerator, there is not the problem of ‘meltdown’ as there is for PWRs.

Fusion research is not a feasible option for replacement of fossil-fuel energy resources in the time frame necessary for tackling climate change. Research into less conventional energy producing systems, such as unconventional physics, is a ‘long shot’, but worthwhile, given the risks involved and the significance of the energy issue.

## **Notes and References.**

### **B. Climate Change or Climate Catastrophe?**

A wide consensus in the scientific community on Climate Change is represented by the IPCC *Fourth Assessment Report*. However, many climate scientists consider the IPCC Reports excessively conservative. The alternative view states that political and vested interest pressures have forced the IPCC to restrict its analysis only to data that can be rigorously verified. Given the number of scenarios available, this view says a consequence is that the data and science is systematically skewed in a conservative direction [17].

The *Stern Review* on the Economic Effects of Climate Change used data largely drawn from the IPCC *Third Assessment Report*. We note that levels of CO<sub>2</sub> equivalent above pre-industrial levels have already breached the limit set in the Stern Review for a 2°C rise in global temperatures, which states that this would result in the extinction of between 14% and 40% of species [18].

We note that the Hadley Centre “Business As Usual” computer climate change model *AIFI* predicts land-mass, but not oceanic, temperature rises of 10°C by 2099, and that current CO<sub>2</sub> equivalent emissions exceed these model projections [19].

The Earth’s polar ice-masses are not just melting, but breaking up at an accelerating rate. We note disparities between accelerated Greenland ice-mass loss data, which indicate no Greenland ice by 2188, and IPCC acceptance of research based on linear loss models. Loss of Arctic albedo will result in higher Arctic Ocean temperatures, and together with higher world temperatures, will result in water expansion and higher sea levels.

We also note that at high temperature increases, non-linear effects kick in, for example methane emissions from (e.g. Siberian) peat bogs, and clathrate emissions from the bottom of shallow oceans. Like the heating of a kettle, which takes a while to reach maximum temperature at constant heat, the 30°C temperature rises indicated in such models, which include 60 – 70 year time lags between CO<sub>2</sub> equivalent emissions and temperature equilibrium, must be described as ‘climate catastrophe’.

## **C. Notes and References for the Minority Report.**

[1] F. Pearce. *The Bog Barons*. New Scientist. December 1 2007.

[2] M. Klare. *Beyond the Age of Petroleum*. The Nation. November 12 2007.

[3] J. Leggett. *Half Gone*. Portobello Books 2006.

[4] UK proven oil reserves are 0.5 billion tonnes, and production is declining, so that we will soon have an oil deficit.

[5] The German-based Energy Group claims that world oil production peaked in the third quarter of 2006, and that production will fall by half in 2030. Some industry sources (see [1]) claim there is going to be no peak with current production for another 10 years. The IEA reports that consumption next year will be 88 million barrels a day. World crude oil demand has been increasing over the past decade by 2% compound per year. OPEC countries are currently unable to satisfy demand, despite a wish to do so and oil being more than \$90 a barrel. It is in the interest of oil companies to encourage investment, by hyping exploration prospects.

[6] There are claims of untapped oil resources in Antarctica – clearly difficult to extract, and recently of offshore Brazilian reserves.

[7] Depletion continues in many fields, which has to be balanced by new production. The ‘bell curve’ one would expect for oil extraction from a field no longer applies with modern extraction techniques. Extraction is stabilised and then rapidly depletes, leading to overall global ‘step-like’ declines.

[8] World growth is projected to reach 4.9% in 2007. China and India are set to grow with a 13-fold and 10-fold increase respectively in GDP by 2050. This is clearly not compatible with projected levels of oil production.

[9] Chinese construction of coal-powered stations is very worrying, and they are not, and very often cannot be, linked to carbon capture and storage sites.

[10] Over *at least* the next 20 years the UK and Europe in general will have gas dependency on Russia. It is therefore in our interests to maintain good (and better) relations with Russia. There is the possibility of Russian gas supplies being diverted to China. Hence the increasing importance of the ‘security of supply’ issue.

[11] We suggest a 25% to 30% target of power generation from wind turbines, comparable to projections in Denmark and the Netherlands. Coupled to a weather prediction system, the variability of supply can cope combined with compensating (e.g. gas) base-load generation.

There is need for further development of energy storage. With efficient bulk energy storage the profile of wind-turbine production could be increased beyond these levels. Nick Rouse has suggested that the two-pond solution for the Severn barrage could provide three times the power storage of the 4 hour 1.6 Gw hydroelectric storage at Dinorwig in Wales. Another possibility is to use electrolysis of water and store the hydrogen underground. This is more efficient than storage by compressed air used in the U.S., which generates heat, although that heat could be stored in liquid salts in the compression stage and be reused in decompression.

Wind turbine power depends on the *cube* of the wind velocity. Thus an offshore wind turbine with wind speeds *twice* that of on-shore, has *eight* times the power output. Wind generation is greater at higher elevations, and area swept out and power output goes as the *square* of the blade length. Seashore wind turbines have easier maintenance than offshore ones and generally higher wind velocities than interior land-based ones. Roof turbines require planning constraints for safety of installation, are subject to turbulence, and the relatively small energy output probably does not

justify expenditure in low wind speed areas of the country, given the lifetime of the turbine. Decommissioning costs of wind turbines are negligible.

[12] Tidal power engines can be coupled to the structure of offshore wind turbines. As is well known, tidal barriers could be constructed both in England and Scotland.

[13] We suggest schemes for training engineers in the installation of solar panels and photovoltaics, and financial incentives for installation. We need easy access to 'reverse metering' for consumers putting electricity into the distribution system via photovoltaics and domestic wind turbines.

[14] Major sources of supply of high-grade uranium are Australia, Canada and Kazakhstan. Following the collapse of the Soviet Union, Russian supplies outside the Russian Union ceased. As a consequence of the insufficiency of local production, Russia is converting high-grade weapons uranium to low grade reactor use. Industry sources quote ample reserves - 50 years supply, incomplete geological surveys and alternative sources of supply. This supply is not adjusted for temporary Russian uranium conversion, or the fact that, say, if reactor construction were widely adopted, this time horizon for reserves decreases. Others claim only 30 years supply is available at current usage, and the incomplete survey claim is also disputed, on the ground that extensive searches for uranium were made during the Cold War, and the presence of uranium is not difficult to detect. Some claim the Canadian source is a secure supply for the UK.

[15] Modular pebble bed reactors are uneconomic except without a containment vessel. There are issues of safety involved in such reactors in terms of interdependent failures of safety features, and of air attack.

[16] Thorium reactors have many possible designs. Carlo Rubbia of CERN has developed a thorium-fuel reactor. A small linear accelerator is used to trigger nuclear reactions of the thorium fuel. It is switched off when the power is turned off. There are not the proliferation problems with thorium, because of the lower plutonium production, or decommissioning problems with this type of reactor as there are for uranium-based ones. India is developing a thorium reactor. Uptake of these reactors would reduce natural uranium requirements by 20%.

[17] Editorial, *Climate omissions* & F. Pearce, *Climate Report 'was watered down'*. New Scientist March 10 2007.

[18] P. Baer & M. Mastrandrea. *High Stakes*. IPPR 2006.

[19] The Ecologist, January 2007.

[20] Graham Ennis, The Ecologist, page 20, November 2007.