

**OBJ/552/002**

Mid Wales (Powys) Conjoined Wind Farm Inquiry  
Session 4 – Cumulative Matters

Welshpool - Community Evening Session

Venue: The Assembly Room, Welshpool Town Hall, 40 High  
St, Welshpool, Powys

Time: 18:00 – 21:00 (approximate finish)

STATEMENT BY CHRISTOPHER PENFOLD OBJ/552/002

I first gave evidence to this Inquiry on 9th October 2013 and I would like now to repeat just one paragraph of that evidence to indicate the speed at which significant elements of the argument have become more acute.

"In May of last year carbon levels measured at Mauna Loa on the island of Hawaii reached the milestone of four hundred parts per million. The last time levels were this high was probably the mid-Pliocene, about 3 million years ago, when sea levels were 75 feet higher than they are to-day. With carbon emissions increasing at the terrifying rate that they now are, that presents us with the probability that, during our grandchildren's lifetimes they will be saying "Good-bye Cardiff, good-bye London, good-bye New York and good-bye all of the great coastal cities of our world."

Twenty days later, at about 8 p.m. on Oct. 29, Hurricane Sandy made landfall in the United States, striking near Atlantic City, New Jersey, with winds of 80 mph. A full moon made high tides 20 percent higher than normal and seawater surged over Lower Manhattan's seawalls and highways and into low-lying streets. The water inundated tunnels, subway stations and the electrical system that powers Wall Street and sent hospital patients and tourists scrambling for safety. According to IHS Global Insight, a forecasting firm, Sandy will end up costing about \$60 billion in property damage and lost business, making it one of the costliest natural disasters on record in the United States.

And, much closer to home, of course, on 3rd of January, flood waters struck the west coast of Wales in what was to prove only a foretaste of disastrous coastal flooding that continued through January and February. The Grantham

Research Institute on Climate Change and the Environment at the London School of Economics has made an assessment of the economic impacts of the storms and floods that have been gripping the UK since 2007. They estimate the overall economic costs of this bout of extreme weather during which a number of town and city centres were submerged may now be close to £5 billion.

[The UK Climate Change Risk Assessment](#), which was published in 2012, concluded that the annual costs of coastal and river flooding in England and Wales could rise to £7 billion by the 2050s. And if global warming continues on its present ominous path, then by 2100 coastal flooding could be costing the planet's economies \$100,000 billion a year.

On Monday of this week the UN's Intergovernmental Panel on Climate Change reported that the impacts of global warming are likely to be "severe, pervasive and irreversible". This latest document highlights the fact that the amount of scientific evidence on the impact of warming has almost doubled since the last report in 2007. And on Tuesday of this week U.S. Secretary of State, John Kerry acknowledged the validity of the report when he said, "Unless we act dramatically and quickly, science tells us our climate and our way of life are literally in jeopardy. Denial of the science is malpractice". In other words, climate change denial is now virtually criminal.

And if that isn't enough doom for you, you might like to try New Yorker journalist, Elizabeth Kolbert's book, *THE SIXTH EXTINCTION*, in which she describes the way our planet now looks from a contemporary geological perspective. Officially we are living through the Holocene epoch, but the geologist Jan Zalasiewicz believes that it would be more accurate to say that we have entered the Anthropocene. Humans are so radically refashioning the planet, he argues, that its geology has been permanently altered. We are already into the sixth extinction; it's all our own work and unless we take radical action to reverse it, the inheritors of our desolate Earth will not be our grandchildren's grandchildren but rather the new and more vigorous strains of giant rats who will prove to be the fitter survivors.

In the face of this evidence it might seem that I am preparing to support the proliferation of windfarms in mid-Wales that are the subject of this Inquiry. Yes, they may offer a low-carbon source of modest amounts of electricity but my case is that they are pathetically inadequate, anachronistic and destructive; they are - even more seriously - a catastrophic diversion of our attention from the paramount need to address the fundamental problem which is: how to generate sufficient base-load and domestic electricity to sustain the rising population of this beautiful planet without choking the atmosphere with carbon and either drowning or suffocating the entire human race.

In the same way that The Guardian newspaper has boldly championed the exposure of abuses by the intelligence communities in our own country and the United States, the New Yorker magazine and reporter Raffi Khatchadourian have championed the even more pressing cause of finding that non-carbon solution to our energy generation needs. Throughout this long campaign to prevent the ruination of our countryside by Tan 8 and the plethora of futile windfarm proposals that document has spawned, I have insisted that THERE IS AN ALTERNATIVE. So I would like, Sir, a few more moments of your time to draw your attention to that alternative in the hope that you will recommend to the Secretary of State not only that he should reject these proposals in their entirety but that he should open his eyes to the visionary work now under way in an Alpine forest at Cadarache in the south of France.

Let's begin by establishing what is NOT the alternative. Burning fossil fuels is a paramount ecological ill, but no existing form of renewable energy can replace it. Cambridge University physicist David MacKay has calculated what would need to happen for the United Kingdom to stop using fossil fuels entirely. He arrived at this instructive hypothetical: even if we cut energy consumption by half, it would still require a wind farm the size of Wales, along with fifty new nuclear-fission plants, and photovoltaic cells with twice the surface area of Greater London - but situated in a far-off desert - with the electricity somehow delivered to British consumers.

Nor is the alternative the dirty technology of nuclear fission, in spite of our current chancellor's enthusiasm for inviting the Chinese Communist Party to build, own and operate new reactors here in Britain. It is now estimated that, with the current reactor technology, the world's supply of uranium will be consumed in about a century and by then the world will be littered with entombed toxic time-bombs like the one up the road at Trawsfynydd, liable at any moment of unforeseen activity in the Earth's crust to spew out deadly radiation with a life of thousands of years.

But whereas nuclear fission achieves the release of energy by splitting uranium atoms apart, fusion achieves even more dramatic outputs of energy by forcing hydrogen atoms together – and hydrogen is the most abundant atom in the universe, a potential fuel that poses little risk of scarcity. A working fusion reactor will generate terawatts of power with no carbon, virtually no pollution, and no radioactive waste. It would run on no more than seawater and lithium. It would never melt down. It would create the reaction that powers the sun under contained and controlled conditions here on Earth.

It is this certain knowledge that drives the dedicated but desperately underfunded team of physicists and engineers who are building the International Thermonuclear Experimental Reactor at Cadarache. Initially the brainchild of the dissident Soviet physicist, Andrei Sakharov, the ITER was first proposed in 1985 by the visionary Mikhail Gorbachev who miraculously managed to persuade Ronald Regan to join forces with Russia in what has become the greatest, most complex scientific endeavour in the history of our world.

For the machine's creators, the process of sparking and controlling a self-sustaining synthetic star in a bottle of superconducting magnets will be the culmination of decades of preparation, billions of dollars' worth of investment, and immeasurable ingenuity, misdirection, recalibration, infighting, heartache, and ridicule. No engineering feat can compare, in scale, in technical complexity, in ambition or hubris.

Even the ITER organization itself, a makeshift scientific United Nations, assembled eight years ago to construct the machine, is unprecedented. Thirty-five countries,

representing more than half the world's population, are now invested in the project. Yet this human life saver is perennially starved of funds. Elected politicians see no further ahead than the next election and sadly believe that their machismo is measured in cuts. As leaders come and go, so pledges of funding ebb and then falteringly flow. What the world desperately needs is visionary leadership of the kind that drove John F Kennedy to put Americans on the Moon.

No one knows ITER's true cost, but estimates have been rising steadily and a conservative figure rests at twenty billion dollars – a sum that makes ITER the most expensive scientific instrument on Earth. The United States spent more than a hundred billion (in today's dollars) on NASA missions in the fourteen years after being stung by the Russian launch of Sputnik – almost eight billion per year. Scientists now believe that a fast-track commitment to make fusion a reality would cost thirty billion and the need is, without question, more pressing than it was for Apollo.

Sir, the money that would pay for the three windfarms over whose future you are here presiding, will be taken whether we like it or not from the pockets of UK taxpayers. I would urge you to save it from going down the short-sighted and disfiguring drains through which the Welsh Government and the Department of Energy and Climate Change seek spuriously to burnish their green credentials at the ballot box. It is within your remit to recommend refusal of these wasteful, destructive and ineffective proposals, so please, on behalf of our grandchildren's grandchildren would you encourage our politicians to look further into the future by rejecting these proposals and committing increased investment in the thermonuclear reactors that will save our world from carbon catastrophe.

Christopher Penfold