



Could our lights actually go out.....?

Webmaster, Graham Cliff, co-wrote the Summer 2006 Challenge article titled "Is light pollution killing our birds?" Here he writes about energy, global warming and climate change!

Brian Wallis has written "Never Mind the Giga Gap Ming" in Challenge, Autumn 2006, where he outlined the reality behind energy supply in the UK. The tenets of Brian's energy ideas are that demand will outstrip

supply! Graham Cliff, at a recent conference, pointed out the need for a balanced energy portfolio in respect of energy supply. In short, keeping too few "eggs in one basket" would lead to supply reliability being compromised. The lights would just have to go out!

Emeritus Professor Ian Fells CBE, FREng, FRSE of Newcastle University, has repeatedly pointed out that, if decisions are not made now, within 10 years or thereabouts, **the lights certainly will go out!**

This is a good idea for the author, from a light pollution perspective, but it is hardly a desirable outcome of the continuing failure to make the right decisions now.

Our government should be actively pursuing policies of conservation and efficiency. Turn off lights which are not needed. Primary school children are already doing this at their schools near where Graham lives. Perhaps more parents should be following the example of their children? After all it is the future of their children which we want to preserve and to protect. Conservation is well and good but we need to start to employ renewable energy resources on a larger scale if we are to have a sufficient energy supply and reduce CO2 emissions. Terence Blacker, writing in the UK Independent newspaper, has remarked that the likes of B&Q stores selling wind turbines makes him think of wind turbines as the "air guitar of environmentalism"! The author has contacted a real guitarist, Brian May, who agrees with the campaigns to reduce light pollution, because they reduce energy wastage, but nobody seems to want wind turbines in their backyard. Is this a worst case scenario of NIMBYism?

Modern society, which we enjoy today, in the West, needs energy and usually in the form of electricity. It is electricity which powers our industry, powers our food production, preservation and supply. It is electricity that powers our electronic offices and the electronic economy. It powers our communication infrastructure. In short it is vital to modern day life!

How then do we solve the problem of supply coping with increasing demand? The simplest solution, in the short term, would be to reduce demand. At night if every other street light was turned off after midnight we would then see a 50% reduction in street lighting demand. We can insulate our homes better to further reduce energy consumption and we only turn lights on when we need light. We should not leave systems on standby. In short we need to get educated to energy conservation.

Energy, however, has long been known to be a quantity which is "conserved" under the laws of physics. This is called the "Law of Conservation of Energy", well known to physicists as a fundamental physical principle. Everyone knows of Einstein and his equation that $E=MC^2$. This equates energy E, to matter M, and C= the speed of light! Over the aeons solar energy was converted to plant matter, the plants were buried and became coal, gas and oil. We are now burning this stored reserve of ancient solar energy. We are converting massive amounts of fossil fuel into manifest heat and work energy today. In the case of nuclear power, matter is converted directly, under control, to energy.

Where then does all this energy go? The law of conservation of energy cannot be denied and so this energy is somewhere out there, in the environment and adding to global warming. It took millions of years to consolidate the solar energy which once fell on Earth. This is now being released into the environment in a very few years on the timescale of the Universe. * The temperature balance on Earth has taken the same time scale to equilibrate. The energy does not go away except that which is radiated at night. Greenhouse gases will one day dramatically upset this equilibrium. We are pumping up the energy in the environment and we are seeing its effect on global warming causing climate change, although it seems that only Sir David Attenborough believes this to be true. We will pass the tipping point before we can say I told you so.

By then, however, it will be just too late!

Graham Cliff. (web master www.lightpollution.org.uk)

* (These ideas were briefly discussed by Dr. Paul Aron in a recent letter to the UK's Independent newspaper, 31st. October 2006).

