Buildings, Energy and Money

Bob Skelton gave his second talk on Energy and the Environment on Sunday evening 6th December. He pointed out that over a quarter of our greenhouse gas emissions (27%) come from buildings, because our houses, factories and offices are so energy inefficient.

Half of our heat loss is through the walls and roofs. Both of these can be easily dealt with. Roof insulation is readily available and so is insulation for cavity walls. Grants are also available, especially to pensioners. It is only solid stone walls which cannot be insulated. Another quarter of our heat loss is from hot water, much of which goes straight down the drain. Proper lagging on your hot water tank helps a great deal. Condensing boilers are 90% efficient as against the 75% efficiency of ordinary boilers. Fitting radiator thermostats and modern boiler controls can save much money, energy and emissions; so can turning down your central heating controls. One of the most wasteful uses of energy is to heat your conservatory through the winter months, as all the heat is almost instantly lost to the open air. Tumble driers are one of the most profligate wasters of energy and so are patio heaters.

Many of the new technologies are most easily incorporated in new buildings rather than existing ones. Grants will be available from next April for photovoltaics. The government hopes that by 2020, smart meters will be installed by the power companies, in every UK home, so that householders can see where most energy is being used and conserve it. The average house spends £1,200 a year on heating and lighting: technology to reduce this by 60% would cost £22,000.

Many UK power stations are nearing the end of their life. E-on has withdrawn the plan to build Kingsnorth power station, though BP may look again at plans to build in Scotland. There are plans for four new nuclear power stations and one coal-fired station. If these are not built, by 2015 we shall be reliant upon imported gas, brought in by pipeline through unstable countries, with all the uncertainties of supply which that entails, or else liquefied and brought in by tanker. The public is naturally worried by nuclear power, but we should remember that as long as the nuclear waste is kept separate, and dealt with separately, much of it has a very short half-life. There is only a very small amount of nuclear waste which retains its radioactivity for a very long time. It would be almost impossible for terrorists to carry out a raid on a power station. The threat which terrorism poses to nuclear power stations is tiny -- far, far less than the threat posed by global warming.

Renewables will never provide more than 20% of our energy requirements. Wind power, for example, is only available for about a quarter of the time. Energy from imcinerating waste is a promising source and the scheme for an incinerator at Peterborough is going ahead. We really should not waste gas, which is needed directly for heating, to fuel power stations to generate electricity, which could come from other sources. Biofuels are useful if they are made from waste wood, waste cooking oil or straw but the problem is that they are mostly grown on land which otherwise would be farmed for much needed food. The one-third increase in the price of food which occurred last year was caused by giving over farmland to produce biofuel. Or, perhaps worse still, forests are cut down to grow the biofuel -- forests which are desperately needed to capture and sequester the carbon emissions which are causing rapid global warming.

After the talk, there was a lively and well-informed debate on possible sources of energy or ways to conserve it. There was much discussion of the nuclear option and of other sources, including under-water turbines. There was general agreement on the immediate and serious effects on global warming, and on the morality of wealthy nations continuing with a lifestyle which is already causing catastrophic flooding in some areas and droughts in others and which will certainly cause more famines and a problem of immigration as millions of people are displaced from their homes.

We were left with the question, of how much we are willing to pay to counteract the effects of our greenhouse gas emissions upon the whole world, but especially upon the poorest countries. Or to what extent are we willing to change our lifestyle to avoid causing those emissions in the first place. Those who would like to know the amount of emissions for which they are responsible can find out through Google by typing in Climate Justice Fund. They would then know the cost of dealing with their emissions and how they might mitigate this by donating to schemes to preserve the rainforests or develop clean energy.

The next Environmental talk will be at William Westley School on Sunday 10th January 2010 at 6:30 p.m. It will be on 'Gardening with wild life in mnd – not planting' and the speaker will be Dr Gibson.