Responses to Climate Change Climate Change

The internal society debate on "Responses to Climate Change" was structured around ten themes identified by John James from the recent Intergovernmental Panel's Report on Climate Change. Whilst it was an over ambitious hope that all these would be addressed, the debate centred on the themes on which members had volunteered to lead discussions, namely energy/power supply and agriculture. However the discussion of these at least touched on several of the others.

Fuel cells as an alternative source of energy/ power have a number of advantages the main ones being that the conversion of hydrogen into water and electricity is a very efficient process and creates zero carbon emissions. Fuel cells have been used with some success to power cars and offer a real alternative to providing power to remote areas. However until the scale of production is significantly increased, their costs remain high. Concerns were expressed about the costs, both economic and environmental, of producing and storing quantities of hydrogen sufficient to make a major impact.

Meeting Government targets for reducing carbon dioxide emissions, whilst meeting the growing demands for electricity, poses major problems for the electricity generation industry. Whilst efforts are being made to find ways of using renewable sources in line with regulations set by government, about 75% of the capital investment must be paid for before any energy is produced. Discussion indicated that wind energy generation beyond about 30% of the total would result in problems with feeding power to the national grid. The issue of using renewable energy sources remains one of scale. It is therefore likely that the reliance on carbon sources such as coal, gas and oil will continue and hence there is a need to research more efficient ways of using them. It was accepted by some members that further nuclear plants would be required to meet the base load but others disagreed. At present carbon capture is a very innovative technology and thus there is no obvious best way forward and the risks should be spread.

Agriculture uses about 30% of the world's total energy and thus has significant impacts on climate arising from the production of greenhouse gases, (CO_2, methane and nitrous oxide) from deforestation, livestock and rice production and the use of artificial fertilisers. Research is looking at genetically modifying cereals, to enable them to act as legumes to fix nitrogen, thus reducing the need for artificial fertilisers, together with better land and crop management.

Climate change is in turn producing problems for agriculture with significant changes in weather patterns and increased variability. This will require a much more flexible and rapid response to planning.

However the main problem is the need to feed an expanding world population (35% growth in the 20 years to 2005) and the increasing use of productive land to produce biofuel.

There was no overall consensus on the way forward but members were given a glimpse of the complexity of the problem.

Given on Wednesday 9 July at the Cirencester Parish Centre