

Cirencester Science and Technology Society

The September lecture on “Introducing Renewable Energy to the Energy Mix” was given by Ken McCullough, Chief Operating Officer RWE Innogy.

The speaker said that much infrastructure rebuilding was required for UK energy generation over the next 10-15years, whether coal or nuclear. Also the world was aiming to reduce use of carbon fuels.

Currently, the UK produced about 2.5% of its power requirements from renewable energy, which compares poorly with Germany at 18%. The Government’s target is to produce 20% by 2020. UK renewable energy is an exciting field which must attract young scientists.

Mr McCullough reviewed the available renewable forms of energy for the UK. Hydro-electricity and landfill gas (currently the largest single source) were unlikely to increase. Currently biomass was being used to a limited extent, although palm oil could be used instead of coal. However there were problems of sustainability, arising from destruction of rain forests.

The most important renewable energy for the UK is wind on or off shore. Innogy is planning to build a 750MW wind farm in Liverpool Bay. The UK has 40% of the total wind resource of 27 European countries. It was possible to obtain full power from wind farms for 40% of the time.

Wave energy devices were being proposed by university researchers but the gap to full exploitation was severe. The speaker’s company was hoping to develop turbines to operate in the Pentland Firth and off Anglesea. He believed that by 2020, 100MW would be obtained from wave energy.

The speaker discussed issues and barriers to the development of wind power, notably the time taken by Government to reach decisions on planning applications. The windiest sites often had the greatest distribution problems. The predictability of wind generation was not a problem, since no plant works all the time. A further problem was ‘bananas’ (build absolutely nothing anywhere near anything).

Mr McCullough concluded that the UK needed a balanced mix of wind, nuclear, coal and gas stations.