

Summary by Bryan Leyland

About 60 people listened to an memorable and thought-provoking presentation by Michael Kelly that IPENZ Auckland had organised.

The theme of the presentation was a pragmatic engineering analysis of the climate change question and what could – and could not – be achieved by current efforts to reduce emissions of carbon dioxide.

He responded to the frequent projections of doom and disaster from overpopulation, man-made global warming, “peak oil” and the like by quoting Baron Macaulay FRS who, in 1830 said “On what principle is it that, when we look we see nothing but improvement behind us, we are to expect nothing but deterioration before us?” He pointed out that, in spite of 180 years of steady improvement, we still hear the same story.

He started off by looking at future expected economic growth and pointed out that massive increases in world energy consumption would be needed over the next 40 years and that this can only be achieved by burning more coal and gas. Nuclear power can certainly play a part but there was a limit as to how fast the stations can be built. New renewable energy technologies – that many people believe will dominate electricity generation in 40 years or less – now provide less energy than was provided by the nuclear power stations that were shut down in Japan and Germany in response to the Fukushima incident. This is all that they have achieved in more than 20 years of intensive development.

If you look only at the UK, it turns out that the scale of the engineering challenge to meet the carbon dioxide reduction target is massive and unprecedented in peacetime. Among other things he pointed out that successful new technologies improve the lot of mankind and questioned how “decarbonisation” will substantially improve the lot of mankind. He also pointed out that new energy technologies should only be deployed when they are mature and economic and that subsidies for premature rollout are a recipe for disaster.

The final section of the presentation was on climate change where he compared the difference between the continued rapid warming predicted by the computer models and the fact that the world had not warmed for the last 18 years. He quoted Richard Feynman as pointing out that if the predictions based on the hypothesis don't match reality, then the hypothesis is wrong. This statement is fundamental to good science.

He closed the presentation by pointing out that the only sure way of solving the overpopulation problem was to allow people to become more prosperous because it causes a dramatic reduction in the number of children. At the moment, the only humane way of doing this than by allowing them to use more energy. If we restrict the energy supply people will continue to live with poor health and misery – and have lots of children!

The vote of thanks pointed out that a good lecturer should challenge your beliefs and leave you with lots of new ideas. Prof Michael Kelly certainly did this.

Note: Prof Michael Kelly is New Zealand born and is the Prince Philip Professor of Technology in the University of Cambridge since 2002, and a Professorial Fellow at Trinity Hall. He was also Chief Scientific Advisor to the Department for Communities and Local Government. He is a Fellow of the Royal Society of London, the Royal Academy of Engineering and the Royal Society of New Zealand. He is a Fellow of the Institute of Physics, Fellow of the Institution of Engineering and Technology and Senior Member of the Institute of Electronic and Electrical Engineering in the USA. He has won prizes for his work from the Institute of Physics, the Royal Academy of Engineering and the Royal Society.