



Cambridge Society for the Application of Research

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www.csar.org.uk

SUSTAINABLE ENERGY (without the hot air)

Dr David J C Mackay
Cavendish Laboratory, Cambridge

7.30 p.m., Monday 1st December, 2008
The Wolfson Lecture Theatre, Churchill College, Storey's Way, Cambridge

Dr Mackay writes:

"How easy is it to get off our fossil fuel habit?"

Could Britain live on its own renewables?

How does our current energy consumption compare with our sustainable energy options?

David MacKay will offer an assessment of the numbers, and discuss how to make energy plans that add up."

Five energy plans for Britain are presented, all of which reduce the energy demand by electrifying transport and by electrifying heating (using heat pumps).

Electric vehicles serve a second convenient function: the charging of their batteries could be timed to take place when overall demand is low (e.g. at night). This would help match supply to demand in a scenario which relied heavily on renewables or nuclear electricity.

The electrification of transport and heating would require a substantial increase in electricity generation. The five plans which I explore strive to meet this need using five different mixes of the carbon-free options.

The mixes represent different political complexions, including

Plan G, the Green plan, which forgoes both "clean coal" and nuclear power;

Plan N, the NIMBY plan, which makes especially heavy use of other countries' renewables; and

Plan E, the Economist's plan, which focuses on the most economical carbon-free choices: onshore wind farms, nuclear power, and a handful of tidal lagoons.

These plans make clear the building blocks from which we must create our low-carbon future.

About the Speaker:

It is difficult for a simple Organising Secretary to say very much about Dr Mackay. He is a polymath with a professional interest in Bayesian Algebra; this makes him difficult to define (Bayesian Algebra was used to fix the date of the Holme Next Sea tree circle at June 2050BC, you will of course recall?)

Best you look at <http://www.inference.phy.cam.ac.uk/mackay/>

David's interests include extreme frisby (a highly popular pastime in Cambridge) and playing the viola; as well as saving the planet, of course!

The Organising Secretary adds.....

This lecture coincides with the launch of Dr Mackay's book on this subject. We hope to have something of a pre-Christmas party **after** the lecture, when copies of his book will be available for purchase at a reduced rate

Best Regards

Richard Freeman, CSAR Organising Secretary

Coffee available, as usual, in the foyer outside the lecture theatre from ~7.00 p.m.

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