

How should we keep the lights on?

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This was the question at a debate at the University of Birmingham last week held as part of the British Science Festival. Around one-fifth of the power stations in Great Britain will close within five years as air pollution rules get tougher, and most of our nuclear stations will reach the end of their expected lifetimes soon after 2020.

Rachel Cary from the Green Alliance pointed out the difficulties that uncertainty can cause investors, while Sara Vaughan of E.ON UK warned that the public would be unwilling to pay a significant premium for low-carbon energy in a society that doubted climate change was real. All of the speakers, including former energy minister Lord Hunt of Kings Heath, stressed the need for a wide range of energy sources, and to use energy more efficiently. The debate had to end with an apology to any audience member who had come wanting to hear a disagreement – there had been a high degree of consensus.

While there may be consensus on the need to build a broad range of power stations the government is considering whether to change the way the energy market operates. Broadly speaking, electricity companies in Great Britain buy and sell power in a number of decentralised markets, with the transmission system operators intervening only as far as is necessary to ensure that the power can actually be delivered. I would argue that this system is unlikely to deal efficiently with large numbers of wind power stations with intermittent output, many of them far from most consumers. Instead, we should adopt the market design already successfully used in the North-Eastern United States for ten years, which has an (optional) centralised market, prices for electricity that reflect the generator's location, and a market for spare capacity that can fill in when other stations are unavailable.

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A full article written by Professor Richard Green on this topic can be read here www.supergen-networks.org.uk/filebyid/528/file.pdf (<http://www.supergen-networks.org.uk/filebyid/528/file.pdf>). (PDF document, 260KB)