



ENVIRONMENTAL CHANGE INSTITUTE

Press Release: EMBARGOED until 00.01am Thursday, 22nd October 2009

Energy Security DIY? Microgeneration market needs makeover says Oxford University

South-West England tops renewables league but consumers need much more help to combat wide cost variation and lack of advice

A new report from Oxford University, the first to analyse what consumers are actually paying, raises serious concerns about the progress of the UK market for domestic renewable energy. The report says there is a lack of clear signals and opportunities for householders and installers from the Government.

Power from the People: domestic microgeneration and the Low Carbon Buildings Programme comes hard on the heels of this month's Ofgem report about rising energy prices and future energy security concerns, and last week's report from the Government's Committee on Climate Change calling for "street-by-street makeovers". The new Oxford report analyses the first two years (May 2006 – May 2008) of the Government's Low Carbon Buildings Programme (LCBP) and its grants for "microgeneration". Microgeneration is the onsite generation of low- and zero-carbon heat and electricity in domestic, public and commercial properties. It is a central plank in the UK's strategy for reducing greenhouse emissions from homes and buildings.

Power from the People analyses over 5,500 installations which received grants through the Low Carbon Buildings Programme. The majority (3,339, 60%) were for solar thermal, with the bulk of the remainder spread across four other technologies: solar photovoltaics (PV), ground source heat pumps (GSHP), microwind turbines, and wood-fuelled boiler systems.

One of the stated aims of the LCBP was a holistic approach to carbon reductions. To this end, householders must meet certain requirements – insulation and energy efficiency measures – before being eligible for grants. However, householders do not have access to independent, holistic advice on the best carbon saving actions for their house, nor does the programme provide a plan on how to change customers' attitudes. The report's authors found no sign of installers considering the house as a whole system, nor any incentive for them to do so. There is also little incentive for the skills development needed for a larger market.

"A more holistic approach should treat microgeneration as part of a wider energy and emission savings agenda for the UK housing stock. Microgeneration can make a significant contribution to UK emissions reduction. It can also increase energy security, as part of a diverse and resilient decentralised generation system; and it can help combat fuel poverty, and increase competitiveness." said report co-author Dr Noam Bergman from Oxford's Environmental Change Institute.

Analysis of costs showed a mixed picture in response to the expectation that prices would be reduced over time. Three technologies (solar thermal, heat pumps, and wind) showed no price

reduction, wood-fuelled boilers showed a probable reduction and solar PV showed a definite reduction, of ~10% over the two years. “The lack of price reductions could indicate lack of institutional learning, or the lack of a competitive market resulting in high profit margins – a *price umbrella*. The solar thermal market warrants further investigation: it is the largest and most mature, and should no longer be in a price umbrella, yet there were no signs of prices dropping, and large price variations between installers, brands and regions.” said Dr Bergman.

Power from the People is the first to analyse prices consumers pay for microgeneration, using real data from LCBP installations. Price variations for seemingly similar installations, and the lack of correlation between price and the generation capacity of the installation were two of the report’s major concerns. This was especially so for solar thermal and wood-fuelled boilers, and the report identifies wide variations in profit margins among the 300 different installers. In contrast, solar PV installations had excellent correlation between capacity and total cost.

Power from the People shows how the LCBP has constrained the market due to the limited size of the grant pot, reductions to maximum grants for some technologies, and the lack of clarity surrounding its continuation and eventual replacement. It recommends that Government policy and grants for microgeneration need to be clear and consistent, allowing longer term planning for the industry and clarity for consumers. One promising option for change is the forthcoming feed-in tariff (FIT) system. However, the FITs, which do not involve government spending, should not replace the grant scheme of the LCBP, as help with upfront costs is one of the most important and useful policies. This is clear from the report’s finding of a drop in installed PV capacity when grants were reduced. The government has inadvertently supplied the best help for installation in the cross-over period: those installing (electricity-generating) microgeneration between now and June 2010 can benefit from the LCBP grants, and will also be eligible for the maximum feed-in tariff.

Fellow author Dr Chris Jardine said “Householders need independent holistic advice on home energy, from insulation to microgeneration, including the potential energy and CO2 emission savings of different technologies. They can then weigh the pros and cons of each technology in the context of a real purchase decision for their home. Publishing price guidelines for different types of installations could help combat the high variability of prices, which in some cases is due to high profit margins, by giving consumers a benchmark for comparison.”

END

Contacts:

Dr Noam Bergman, +44 (0)1865 285161 noam.bergman@ouce.ox.ac.uk

Dr Chris Jardine, +44 (0)1865 285172 christian.jardine@eci.ox.ac.uk

Ian Curtis, +44 (0)1865 275849, ian.curtis@eci.ox.ac.uk

Notes for Editors

1. **Power from the people: domestic microgeneration and the Low Carbon Buildings Programme** is published by the **Environmental Change Institute** (ECI) at Oxford University. A full copy of *Power from the People* is available at: <http://www.eci.ox.ac.uk/publications/downloads/bergmanjardine09powerpeople.pdf>
2. ECI’s Lower Carbon Futures Team is one of Europe’s leading research groups on personal energy use, and a core partner of the UK Energy Research Centre. It was the only organisation to have two ideas selected for the Sustainable Development Commission’s 21st Century Breakthroughs project this year. ECI’s *40% House* was the first report to look at a longterm low carbon strategy for UK housing, and its *Building a Greener Britain* report identified a minimum £3.5bn potential market for low carbon refurbishment.
- 3) The average prices for LCBP installations, excluding VAT, are as follows:

- Solar PV prices were £2,000 in fixed costs + £5,000 per kWp installed. A 1kWp installation should therefore cost around £7,000, and a 2kWp installation around £12,000 (although there are signs of a ~10% price drop over the two years analysed).
 - Solar thermal prices were considerably more variable, with low correlation between size of installation and price, but averaged nearly £3,000 in fixed costs and £500 per kWh/year, so a 2kWh/year system should cost an average of £4,000.
 - Ground source heat pumps have high – and quite variable – fixed costs, averaging £4,400, with an additional £460 per kW thermal output. So, a 10kW GSHP should cost an average of £9,000.
 - Wood-fuelled boiler systems cost an average of £8,900, with high variability and no correlation to thermal output of the system.
 - Wind turbines are best classified by product: the 1kWp Windsave WS1000 cost an average £1,375 including rooftop installation. The mast-based 5kWp Iskra AT5-1 cost an average £18,425 (£3,650 per kWp). The mast-based 6kWp Proven Engineering WT6000 cost an average £19,170 (3,200 per kWp).
- 4) Power from the People was funded by the **UK Energy Research Centre (UKERC)**. The UK Energy Research Centre is the focal point for UK research on sustainable energy. The Centre's role is to promote cohesion within the overall UK energy research effort. It acts as a bridge between the UK energy research community and the wider world, including business, policymakers and the international energy research community and is the centrepiece of the Research Councils Energy Programme. The data for Power from the People was provided by the Government's Department of Business, Enterprise and Regulatory Reform (DBERR).