UNIVERSITY OF OXFORD NEWS
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Stopping the lights going out: Oxford researchers launch the METER study

Researchers at the University of Oxford have launched a five-year programme to investigate ways of relieving peak demands on the UK's electricity grid. Peak demand is posing an increasing challenge to the UK's electricity system. A government commission set up to look at the UK's future needs for nationally significant infrastructure recently reported that up to £8.1bn could be saved if we became 'smarter' about electricity, including use of electricity at down times rather than at peak times. The researchers are inviting thousands of Britons to take part in a 24-hour diary of their activities to find out when they are most likely to use electricity in the home, and whether there are activities that could be shifted outside of peak times to reduce or shift the national demand and thereby keep the lights on in future.

The METER project launched today with the release of a short online animation called 'Power People' (http://www.energy-use.org/vid/intro.mp4). It explains how reducing or shifting some of this load would make our energy system cheaper, more secure and allow for a more sustainable use of electricity. The film says that at times of peak demand, households make up half of the nation's electricity usage.

This study is the first of its kind. 'We are inviting thousands of UK households to fit a special electricity meter and to record activities for one day only, using a diary or a smartphone app. These data will tell us for the first time what people are doing at the times when national demand peaks. We also want to find out about the flexibility people have over the timing of their use and how best to support them to be flexible, ' said Deputy Director of Energy Research and Principal Investigator of METER at the University's Environmental Change Institute, Dr Phil Grunewald.

The researchers need the public to take part in the online survey at www.energy-use.org. Participants will receive an electricity recorder to install in their home, as well as a personal activity leaflet. Research participants will also get the chance to have their names put in a draw to win a year's free electricity.

Up until now, little has been known about what appliances and activities lead to the high demand during the most critical periods. The Oxford research team will use the data to build a picture of patterns of electricity use in the UK in order to identify new approaches to shift or reduce electricity usage in ways that are acceptable to the public.

Dr Grunewald, said: 'This is an exciting opportunity for everyone to get a picture of their own electricity use, while contributing towards the big challenge of making sure that our sustainable energy future will also be secure and affordable.'

Professor Jim Watson, Director of the UK Energy Research Centre, which is a partner organisation for the METER project, comments: 'We still don't know enough about the social, economic and behavioural drivers of electricity consumption in our homes. This exciting new project will significantly improve knowledge about the opportunities and limits to change, and help us identify new approaches to shifting or reducing consumption'.

This research is led by the Environmental Change Institute at the University of Oxford and is funded by the Engineering and Physical Sciences Research Council (EPSRC). Partner organisations include the Department of Energy and Climate Change; the National Grid; UK Energy Research Centre (UKERC); Dynamics of Energy, Mobility and Demand (DEMAND); Bioregional; Moixa; Pilio and Linköping University.

To find out more or to register to participate in this trial visit the project website www.energy-use.org. Images can be provided at request.

Dr Phil Grunewald will be available to talk to media about the objectives of the METER project. Please contact him via the University News Office at news.office@admin.ox.ac.uk or tel +44 (0)1865 280534.

NOTES FOR EDITORS

For high resolution stills from the launch video 'Power People' and other project related images please contact news.office@admin.ox.ac.uk.

The animation and background material was produced by Oxford Sparks.
Oxford Sparks is the University of Oxford's science engagement portal creating animations and resources that allow the public to explore and discover cutting edge science. Each animation is accompanied by a set of high-quality, teacher-approved teaching resources to help secondary science teachers enrich their lessons with examples of real world research.

Find out more at www.oxfordsparks.ox.ac.uk. ***(http://www.oxfordsparks.ox.ac.uk/)***

About the METER project

METER is a national research project to understand what we use electricity for. We need thousands of UK households to submit a one day record of their activities. During this day we also measure electricity use minute by minute.

The scale of the project is ambitious. Unlike previous studies that typically involve tens of households, Meter is designed to include thousands. This is made possible by a new approach and the innovative use of smart phones.

Instead of focusing on appliances, Meter is interested in the people themselves and their activities. After all, future flexibility doesn't come from appliances alone, but ultimately relies on our own willingness to be flexible in their use. For example, a smart washing machine can only 'shift' a washing cycle as far in time as we – the users – are prepared to accommodate.

Project aims

The combination of activity and electricity data can give us valuable insights into the timing and flexibility of electricity. METER data is intended to help us to develop new approaches to reduce demand at critical times, while avoiding inconvenience for users. METER will test different forms of incentives and interventions to establish an evidence base for load shifting against a statistically robust baseline. This becomes especially important when we try to make better use of variable renewable sources of electricity. If we can identify a load shifting potential of only 1kW (half the power of a washing machine) in 1% of UK households, the national cost saving could easily exceed a quarter of a billion pounds.
METER is funded by the Engineering and Physical Sciences Research Council (EPSRC) under the Early Career Fellowship scheme. Ref. EP/M024652/1.

About The Environmental Change Institute (ECI)

The Environmental Change Institute (ECI) was founded in 1987 in The University of Oxford "to organise and promote interdisciplinary research on the nature, causes and impact of environmental change and to contribute to the development of management strategies for coping with future environmental change." With a portfolio of 50 active projects, 350 partners and 60 researchers working across 40 countries, the ECI is an active and influential player in environmental change science.

The ECI's energy research programme in the Lower Carbon Futures team focusses on policy relevant research on decision making, energy system flexibility, demand and efficiency.