

## **Submission to Heat and Energy Saving Strategy consultation**

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The Energy Research Partnership (ERP) is a high-level forum bringing together key funders of energy research and innovation in Government, industry and academia, plus other interested bodies, to identify and work together towards shared goals. The Partnership has been designed to give strategic direction to UK energy RDD&D in the context of the Government's Energy Policy.

The ERP, together with the Energy Technologies Institute and Royal Academy of Engineering, organised a workshop in January 2009 to examine the role of heat in the UK's energy system. The workshop was designed to raise the level of thinking on heat as an issue, help guide ETI's future work on heat, and inform participants' responses to this consultation. Over 50 energy professionals from industry, academia and the public sector (including funders and policy makers) attended.

Our response to this consultation comes from the non-Government members of ERP, and covers research and innovation aspects, most appropriately addressed under question 2:

### **Q2: Do you agree with the Government's policy approach set out in paragraphs 1.31 onwards to achieving our ambitions on heat and energy saving?**

A report of the ERP-ETI-RAEng Heat workshop is being delivered to Government directly, and will be made publicly available on ERP's website at [www.energyresearchpartnership.org.uk/heat](http://www.energyresearchpartnership.org.uk/heat). We take this opportunity to emphasise some of the key messages that emerged which are relevant to the Government's policy approach:

#### ***i. Heat must be seen in the context of the UK's whole energy system***

The simplistic notion of addressing heat supply on the one hand, and demand on the other, treated separately from the wider energy system, should be superseded by a more sophisticated whole-systems approach. Optimisation of the UK's whole energy system to reduce carbon emissions from heat will be important and require a significant change in thinking that must be embraced.

Such an integrated approach is difficult because there is no commonly accepted picture of the future energy system for the UK. How, and how fast, a decarbonised, and possibly distributed, electricity generation system develops could impact on which technologies will deliver the most cost-effective CO<sub>2</sub> reductions from heat. The workshop heard views that a more established vision of the UK's evolving energy system could allow a focused approach to developing and deploying the appropriate technologies.

The Government's approach should be framed within the wider energy system, recognising the potential interactions between different energy vectors and technologies. This understanding will highlight opportunities to achieve greater carbon efficiencies and possible stumbling blocks before new technologies are embedded.

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### ***ii. There is an urgent requirement for large-scale demonstration of technologies, and better data on energy use for heating***

Many participants at the workshop saw a pressing need for larger-scale demonstration and technology trial activities and for reliable data. The £10m retrofit programme from the Technology Strategy Board is a welcome start, but more will be required, given estimates of £20,000 – £30,000 to bring a house to level 4 of the Code for Sustainable Buildings. A better understanding of real-world energy usage, and the practicality and performance of technologies, is needed to underpin policy and investment decisions on further interventions. Housing associations and local authorities may be suitable as test-beds for technology demonstration schemes, though current funding arrangements make this difficult to achieve.

A lack of available and trusted data on energy use in households more generally makes policy decisions on further interventions difficult, as the effect of previous measures are not well enough validated. Such an information deficit also hampers innovation, as consumer behaviour cannot be judged to show up potential gaps in the market for new technologies.

### ***iii. Further technological advances are needed***

Current technologies must of course be deployed more extensively and at a greater rate than in previous years; but these are likely to reduce emissions by just 30 - 40 % when fully taken up. To achieve the ambitious targets the Government has set itself, advances will be needed in insulation and window technologies, with improvements in appliance efficiencies, as well as integrating them into a more system wide approach of energy saving and emissions reduction.

Government's approach should include funding research and development programmes which can enable a wider range of new technologies to be brought through the innovation cycle to support further energy efficiency interventions, and to address the specific market challenges for these technologies.

### ***iv. R&D in support of policy interventions***

The need for regulation in this area to create a 'level playing field' is well known. It is important that a coherent plan for incremental enhancements, as has been put in place for energy efficiency in new buildings, be based on sound R&D and effective field trials.

***Submitted by Jonathan Radcliffe, Executive Analyst, ERP Analysis Team  
on behalf of the Energy Research Partnership  
8 May 2009***