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Response from the UK Energy Research Centre (UKERC) to the Energy and Climate Change Committee's Inquiry on Electricity Demand-Side Measures

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Questions

Question 1: Are the Government's and Ofgem's current proposals for incentivising the development of demand reduction measures enough to ensure the potential energy savings outlined in the 2012 Energy Efficiency Strategy are achieved?

The Government's Energy Efficiency Strategy relates to the whole of energy demand. Its effective implementation therefore depends on a large number of policy instruments, across all end uses and fuels. In earlier evidence to the Committee we have expressed concerns about the design effectiveness of the Green Deal and Energy Company Obligation, based on UKERC research (Rosenow and Eyre, 2013) and these are exacerbated by the recent reduction in ambition of the ECO. These concerns now seem to have been borne out by the very low uptake of the Green Deal. They are widely understood and have been considered by the Committee in its recent inquiry.

In this evidence we will focus entirely on the Government's approach to demand reduction in electricity. The 2030 target identified in the Government's Electricity Demand Reduction strategy is 32 TWh/year, over and above what will be captured by existing policy. We believe this is quite a conservative estimate, as it excludes all the potential for savings in household lighting and appliances.

The Government's argument for this position is that this potential will be delivered through EU product policy – essentially product labelling and standards. We do not believe this is entirely credible for two reasons. First, it relies on EU processes being optimally designed, whereas in practice policy is likely to be designed as a compromise through a political process in which different influential stakeholders and Member States will take different positions. It would be useful, at a minimum, for the UK Government to be clear what levels of standards it will seek in negotiations. Secondly, arguments from innovation theory tend to indicate that information (through labels) and minimum standards are not alone the most effective policy. Neither is likely to encourage the development, marketing and purchase of new energy efficient products. Where life cycle costs of new products initially exceed those of less efficient products, some financial incentives are likely to be needed to allow sufficient volume production that can reduce costs to the manufacturers. A combination of standards, information and incentives is therefore likely to be needed. But EU product policy has no mechanisms for providing incentives: these need to be created at Member State level.

The UK used to have a mechanism for incentivising efficient lighting and appliances within CERT. However, this was abolished in 2012 as part of the move to Green Deal and ECO, so that there are currently no such incentives. Alternative mechanisms have

been proposed in UKERC funded research (Eyre, 2013), which would be similar in operation to feed-in tariffs. These were considered and rejected by Government during the process of EMR. As a result, energy efficiency in the electricity sector receives substantially lower levels of support than is proposed for low carbon generation. The only support is the proposed pilot on the Capacity mechanism (see response to Question 5).

It might be added that electrification of heat and transport at the levels foreseen under the 4th Carbon Budget scenarios will generate significant new demands for electricity by 2030. It is not clear how Government plans to ensure that these new demands are optimally efficient. Experience of earlier mass market products, e.g. condensing boilers, would tend to indicate that market forces alone will not ensure this.

Question 2: How will National Grid's new Demand Side Balancing Reserve (DSBR) enable demand-side response (DSR) to play a positive role in avoiding capacity shortfalls in the coming years? What improvements to the scheme are required?

Question 3: What problems (if any) are there with the proposed Capacity Mechanism (CM) Transitional Arrangements (TA) in relation to DSR? To what extent does participation in the TA limit the future potential of DSR in the CM?

Question 4: How can the Government ensure that new technology which facilitates DSR is deployed in a timely manner, now and in future, to reduce peak demand for electricity?

Question 5: What problems (if any) are there with the proposed Energy Demand Reduction (EDR) pilot scheme? How should the Government ensure that the pilot provides sufficient evidence to assess the viability of a long-term EDR scheme (including in the forthcoming CM)?

The pilot scheme is designed to assess the ability of permanent demand reduction to contribute to balancing supply and peak demand. There is limited evidence about this, especially in a UK context, and therefore a pilot is appropriate. Experience in capacity markets in the USA indicates that EDR may be able to play a significant role. We believe that it would be sensible to evaluate US experience very carefully as it may provide evidence about critical success factors.

It seems logical for the rules for EDR in the CM ultimately to be as similar as possible to those for new supply. In both cases, projects should be credited up to the marginal value of providing capacity to meet the chosen security standard. We have some concerns that current proposals may not achieve this. For example, it is proposed that EDR projects should only be able to claim reductions in year 1, rather than for the full

lifetime of the project. Yet no evidence is given to justify this. Provision for monitoring over several years would resolve this issue, while building up the evidence base for EDR interventions. Similarly, it is proposed that EDR projects, but not generation projects, should meet additionality requirements. In neither case has the inconsistency been justified.

It may also be worthwhile to consider whether the pilot should be designed to secure information rather than simply to mimic the proposed CM. It is currently planned that the pilot proceeds through auctions. This, like the CM, should deliver the lowest cost EDR to provide capacity, but it may result in very similar projects being successful, with limited diversity and therefore little information about the range of potential projects and the issues they raise.

In any event, there is no reason to believe that a capacity market in peak power is an effective substitute for incentives for energy demand reduction. The capacity markets in north-east of the USA operate in jurisdictions where there are significant other incentives through utility energy efficiency obligations and recycling of carbon market revenues. Capacity payments are additional to, not the primary policy driver of, energy efficiency programmes. We know of no experience anywhere in the world of capacity payments being the main driver of energy efficiency programmes. Capacity payments are not, and should not be, designed to recognise the full set of public benefits, e.g. carbon emissions reduction, of energy efficiency. Energy efficiency energy savings (i.e. kWh as opposed to peak kW) should be incentivised in a similar manner to low carbon generation, if this is the lowest cost approach to meeting carbon targets, which UKERC research (Eyre, 2013) indicates is very likely. At the same time, capacity market payments can complement incentives to consumers in the shape of static or dynamic time-of-use pricing.

The scale of EDR in the CM will therefore depend upon both other effective policy support and CM rules allowing capacity payments to be made in addition to these.

Question 6: How will the Government's latest detailed design proposals for the forthcoming CM help to develop an enduring regime for demand reduction measures?

As far as we know, the most recent CM proposals do not address EDR specifically. For the reasons set out above, there is no evidence that a CM alone is an adequate policy framework for EDR.

References

- Eyre, N., 2013. Energy saving in energy market reform – The feed-in tariffs option. *Energy Policy*, 52, pp. 190-198.

- Rosenow, J. and Eyre, N., 2013. The Green Deal and the Energy Company Obligation. *Proceedings of the ICE – Energy*, pp. 127–136.

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