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Subject	LENS Consultation Response	

Erik

Here are my views on your five consultation questions for the LENS interim report:

Q1. Do you have any comments on the energy and network scenarios for 2050 set out in the interim report, or on the method used to derive them?

In particular: **Q1(a).** Do you agree that all of the network scenarios are plausible? If not, please explain *why* you think that one or more of the scenarios are not plausible.

I do believe that the network scenarios with local active control, CHP/DG and DSM are plausible over this timeframe. I can also see that as areas become more self sufficient, their need for support by 'large' transmission may diminish. However, as these scenarios are associated with acute environmental concern, they are likely to encourage the development of renewable resources, particularly where the renewable resource is available. This suggests considerable renewable generation from wind and wave offshore, including off Ireland and NW Scotland. This will require a strong transmission system to transport this energy to consumers (unless it will be transported via an alternative energy vector, such as hydrogen). Of course, if most of the GB areas are self sufficient, they may only need a relatively weak link to a strong transmission spine, which may in fact be mainly used to transport energy into Europe.

This may be one weakness in the future scenarios, in that they tend to treat GB as a near self sufficient island, but this may not be a valid assumption. I suggest that this is at least discussed in the final analysis.

Q1(b). Do you agree that the interim report demonstrates that the network scenarios, between them, span a suitably wide range of plausible outcomes for GB electricity networks in 2050? If not, what essential features do you think are missing and could these potentially be accommodated within the existing scenarios?

I agree that the network (and energy) scenarios in the interim LENS report span a suitably wide range of plausible outcomes – perhaps with the one caveat above.

Q2. What are your initial views on transitional issues and 'way-markers' for 2025, in light of the scenarios for 2050 set out in the interim report?

I note that the LENS network scenarios were chiefly generated by 'orthogonal axes' rather than 'pathways' (ref 3.3), which makes it more difficult to reverse along pathways to derive an interim (2025) view. However, by developing reasonably detailed 2050 scenario storylines, it should be possible to derive 2025 'way markers'.

I note that under all future energy scenarios, initial Markal modelling indicates a reduction in final energy demand, although electricity demand appears to increase. If [peak] electricity demand initially rises and then decreases, a key issue to consider is the significant capital investment expected between now and 2025 (and indeed in the next decade) in both generation and networks. If significant new large generation (CCGT, coal and nuclear), with a typical expected life of 30-60 years, is constructed in this period (perhaps 20-30GW), the prospects for moving toward the 'Energy Services market facilitation' or 'DSO lean transmission' or 'Microgrids' network scenarios may be constrained. That is unless inefficient stranding of the capex incurred between now and 2025 in large generation and transmission is to be tolerated.

Q3. What are your initial views on the most important issues for networks and for the regulation of networks that arise in light of the scenarios for 2050 set out in the interim report?

Under some scenarios, the current DNOs seem to evolve into more active DSOs. It is likely that they would have the financial strength etc to kick start local markets for DSM and perhaps encourage CHP and microgrid development. Current regulatory ring fencing requires that such activities are carried out by separate entities, but this may pose a barrier to development. Clearly under these scenarios, we move away from a national market into more localised markets, which would require radical changes to the current electricity market arrangements. As some of the changes in generation mix may arise due to government intervention – whether this be in constraining generation options (e.g. a minimum thermal efficiency hurdle to encourage CHP) or perhaps mandatory retrofitting of insulation, district heating etc to existing buildings – network regulation will have to keep pace.

Q4. Do you see benefit in a fourth (and final) stakeholder event for the LENS project, following publication of the June draft scenarios report?

I feel that a further stakeholder prior to the final (September) report may not be needed. However, I do believe that this work is flagging some crucial issues, which need to be fully publicised. One option would be to run a conference towards the end of the year or early in 2009, perhaps with one or more of the engineering institutions or economic policy groups.

For wider context, I would commend Arup's work looking to 2050 "Drivers for Change" led by our Foresight and Innovation team <http://2006.driversofchange.com>.

Q5. Do you have any other comments or views about the LENS project that you wish to raise at this stage of the scenario development process?

I look forward to the early publication of the Markal modelling, that Nick Hughes outlined at the workshop last week.