From: WAH Hamilton
Sent: 10 March 2008 17:25
To: Anna Kulhavy
Subject: Distributed Energy - Initial proposals for more flexible market and licensing arrangements - 295/07 Comment

Dear MS Kulhavy

Comment

(may I first say, as a non-specialist in this area, your consultation document is admirably clear and useful.)

I note that this document and your work is stated to relate to medium-sized generation, and does not specifically address domestic microgeneration. This is understandable with regard to operations as exempt or licensed supplier.

However, with regard to arrangements involving trading the electricity in the wholesale market or selling 100% to a third party supplier, there is or there should be an overlap with domestic microgeneration. Domestic microgenerators face the same problems as larger distributed generators in disposing of surplus CHP electricity - or indeed of solar, wind or other renewable-generated electricity.

Domestic microgeneration should be at least of the same importance as group DE projects. This is because the overwhelming number of households in UK are existing and unsuited to district heating or communal CHP. But against this, domestic microscale CHP is potentially available to most existing households - a potential market of 20million units, aligning on your rule of thumb with 20GW of potential generation capacity of 80%+ thermal efficiency - formidable numbers in relation to emissions reduction targets.

Although domestic heating loads can be reduced by better insulation and similar, nevertheless heating requirements will remain a huge part of the total UK energy requirement. In the urban area and existing housing stock covering at least 80% of the population there is no realistic way providing this other than through fossil fuel (typically by natural gas). It is essential that the best possible use is made of this fossil fuel for low-carbon generation of electricity at the same time.

To put the issue in context, in the 1960's,70's most households moved to domestic heating from non-condensing boilers with conversion efficiency in range 50-75%. With the development of domestic condensing boilers, these older boilers have been being replaced roughly from the 90's with boilers with conversion efficiency in range 80-95%. However, none of these boilers have included any generation capacity.

Domestic CHP plant is just beginning to appear on the stage - PowerGen started promoting a stirling-cycle plant a year or so ago but have gone quiet on it. There are technical problems with widespread roll-out, somewhat greater than that of the condensing boilers, but nevertheless not beyond tackling.

Bigger problems are institutional, and include similar ones as for group DE projects. It appears that existing suppliers - anyway in London -have little or no interest in facilitating domestic microgeneration in any form, such as acting as consolidators, or in any way acting as agents for disposal of domestic generation output.

The institutional issue is very important for domestic generation, as from the nature of it it will frequently have surpluses of electricity. \Domestic CHP generation should be driven by the requirement for heat rather than for electricity.

The incorporation of domestic microgeneration into larger groupings could have the benefit of improving forecasting capability (ref yr para 4.18). This would come about from statistical smoothing of output from a large population of generators.

With regard to your specific questions, my discussion relates to those in Chapter 4.

1. Re question 7, it appears that existing suppliers at least passively obstruct arrangements for accepting microgenerated electricity. In one case of which I am aware, the local supplier preferred to provide a very small discount (under £10 per quarter) rather than setting up any proper metering or tariff for microgenerated electricity.
2. Regarding the other questions, there is a general effective monopoly situation for domestic microgenerated electricity with the area distributor.
3. There is a strong case for establishment of some sort of statutory champion - whether called a consolidator or specialist energy trader - for both microgenerators and larger DE projects, to facilitate more widespread use of both CHP and renewable generation on a DE basis.
4. Final point: I am not clear that use of CHP develops benefits for suppliers in relation to the Renewables Obligations. If not, it should do so, by assessment of the carbon saved by use of CHP vs non-CHP heating. This would provide an incentive for suppliers to take microgenerators etc more seriously.

Yours Truly

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