



World Leaders in Heat Pump Technology

**CALOREX RESPONSE TO THE JUNE 2008 ELEMENT ENERGY REPORT ON
THE GROWTH POTENTIAL FOR MICROGENERATION IN
ENGLAND, WALES AND SCOTLAND**

As industry leaders in domestic heat pumps, Calorex welcomes the publication of the Element Energy report into the Growth Potential for Microgeneration in England. Predicting industry trends over the next forty years is no easy task and, as the authors of the report point out, their model is very sensitive to assumptions about future government policy, as well as the rate of technology development. However, many interesting and valuable conclusions emerge.

It is clear from the report that much higher levels of support for microgeneration will be required if the UK is to meet its obligation under the EU's Renewables Directive to supply 15% of the total UK energy requirement from renewables by 2020. The assortment of short-lived grants so far available have had a minimal impact on building the microgeneration market and the report suggests that schemes which reward energy generation or carbon savings on a sustained basis are far more likely to succeed.

In arriving at their baseline scenario which assumes the continuation of selected currently announced support policies, including LCBP up to 2011 and CERT-type policies up to 2020, the authors opted to exclude the impact of the Code for Sustainable Homes policy and local authority Merton Rules policies. These policies are already having a positive impact on the uptake of heat pumps and should not be ignored.

It is true to state that the definition of Zero Carbon Homes will be crucial in determining renewables policies. The option of banning all grid electricity is surely a non-starter since, as the report points out, it would take more than 500,000 roof-top PV installations to provide 1GW of peak output capacity out of a UK total of 70GW. If off-site electricity is available at the cost of today's Renewable Obligation Certificates (ROCs), electric heating will dominate and no energy or carbon saving will be made. The middle road of allowing off-site electricity for heat pumps is surely the way to go as substantial energy and carbon savings will be delivered.

In looking at scenarios involving a deemed (10 years projected subsidy paid up front) feed-in tariff (FIT) for renewable electricity and the equivalent for renewable heat, the report shows that in 2020 the renewable heat FIT is three times as cost effective in delivering carbon savings as compared to the renewable electricity FIT. Adoption of the renewable heat FIT policy would result in over 850,000 heat pumps being installed by 2020, more than the combined totals for Sterling Engine and Fuel cell CHP's.

In terms of policy cost-effectiveness, the report concludes that “Micro-CHP and air source heat pumps are the two microgeneration technologies best poised to grow rapidly and deliver meaningful energy and CO2 savings in a supportive policy environment. These technologies have economic fundamentals which make the offer to the consumer close to compelling relative to the incumbent. Other technologies (e.g. biomass, wind and solar thermal) have potential in niche locations or if directly supported. Policies which support micro-CHP and heat pumps will therefore be most likely to achieve widespread adoption of microgeneration.”

We agree with this conclusion but must also point out that micro-CHP is not yet available, or likely to be on a commercial scale in the near future. As the report points out “The Carbon Trust micro-CHP field trial and more recent study by DEFRA highlights the immaturity of smaller CHP systems and that significant improvements are required to achieve meaningful cost and CO2 savings from CHP technologies.” CHP manufacturers are reported to be optimistic that performance improvements and cost reductions are possible over the coming decade.

In contrast, heat pump units, optimised for UK conditions, are a proven technology available today. The installation cost of an 11kW air source heat pump at around £6,500 is also much lower than the £8,500 quoted in the report. The report states that there are no published independent field trials into the UK seasonal COP values of heat pumps. However, Calorex, in partnership with E.ON, have installed over 750 units to date and have extensive monitoring experience which we are happy to share. The significant running cost and carbon savings available with heat pumps, where properly sized and installed, are confirmed beyond doubt.

The report confirms that air source heat pumps are the only all-in-one energy solution suitable for all properties with ground source heat pumps suitable for all new build and existing rural and suburban properties. Whilst gas fired boilers may deliver comparable running costs, heat pumps offer considerable cost savings against alternatives outside the gas network as well as considerable carbon savings in both situations.

Heat pumps and, in particular air source heat pumps, can satisfy the key customer requirements identified in the report – low up-front cost, all-in one energy solution and high reliability/low maintenance. Calorex’s major challenge in establishing the market is to get the message across. We cannot be complacent when, according to the report, consumer research revealed “virtually no existing knowledge about heat pumps, CHP or biomass boilers”.

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