DISTRIBUTED ENERGY – INITIAL PROPOSALS FOR MORE FLEXIBLE MARKET AND LICENSING ARRANGEMENTS

SUBMISSION FROM THE HOME BUILDERS FEDERATION

Introduction

The Home Builders Federation is the principal trade association representing private sector home builders in England and Wales. The Federation has some 300 members ranging from large national companies, to regional firms and smaller more locally based builders. Between them the Federation's members build about 80% of the new homes annually in England and Wales.

Since late 2006, the HBF has been working closely with Government on the objective that new homes should be built to a zero carbon standard from 2016. This is an extremely challenging objective and will require the provision of suitable forms of low and zero carbon energy supply for developers to be able to achieve the proposed standard effectively. It is likely that distributed energy – heat and cooling as well as power – will play an important part in achieving the zero carbon homes standard and the HBF therefore believes it is of great importance that the Government's strategy for distributed energy takes full account of the role such energy supply has in facilitating achievement of the zero carbon homes objective.

The definition of zero carbon homes – and its relevance to the debate on distributed energy

The definition of what will constitute a zero carbon home has yet to be finalised. The Government announced in the Budget that it would be holding a further consultation on the definition with a view to agreeing this later in 2008.

The current working definition has in any event acknowledged that suitable energy supply solutions will not be solely on-site for new residential development. The need to allow for the import of power to developments at certain times is recognised – for example, if the output of on-site facilities is insufficient for any reason at a given time or capacity is unavailable because of maintenance requirements. The working

definition is therefore expressed as a standard of there being no net carbon emissions over the course of a year from use of the new home, including its appliances.

In addition, allowance is made for supply from private wire arrangements as well as on-site generation to count towards achievement of the zero net emissions standard. In practical terms, therefore, if power is imported from the grid at any time the standard would require the export of zero carbon energy from the development or private wire system at another time to at least balance any carbon emissions stemming from the imported energy.

Taking these aspects of the working definition into account necessarily means that even before the definition of zero carbon is reviewed the home building industry has an interest in the outcome of thinking on potential changes to the policy and regulatory framework relating to distributed energy.

It is also likely, however, that since most developments of new housing are quite small (an average of 27 units) - and increasingly built in infill locations in existing urban areas – forms of energy supply that serve more than the new development itself will be important in helping the industry to achieve the zero carbon homes standard on a mass market basis (240,000 new homes a year in England) from 2016.

For this reason the Federation considers that the availability of suitable distributed energy supply will be significant for future residential development.

<u>Other major policy considerations to be taken into account</u>

The HBF believes there are three further major considerations that should inform the policy and regulatory framework for distributed energy.

First, the proposed EU target that the UK should meet 15% of its energy needs by 2020 from renewable sources has transformed the context for considering issues such as distributed energy.

Our understanding is that given the limits on what can be achieved on biofuels – and to some extent on heat – there will need to be a particular push to promote renewable forms of power generation if the UK is to meet its EU target. A number of commentators have suggested to us that the EU target might require 35% or more of the nation's electricity to come from renewables by 2020.

If such a level of renewable electricity generation is necessary, it seems likely that a significant scaling up of distributed systems as well as facilities feeding more remotely into the national grid will be required. Such a scaling up could be very timely for the purposes of the zero carbon homes objective and we would wish Ofgem and the Government to give full consideration to what we believe could be real synergies between these two sets of objectives.

The **second** major consideration arises from the recent Planning Policy Statement (PPS) on Climate Change.

The PPS sets out a number of important responsibilities for local planning authorities in relation to climate change mitigation and adaptation. There is a major focus on the reduction of carbon emissions, including the role that local authorities can have in promoting new forms of low and zero carbon and renewable energy supply in their areas. In practice such policies might well include "planning in" new distributed energy systems for future development as well as for existing communities.

Again the requirements of the PPS seem to the Federation to create an opportunity to both help promote distributed energy and to facilitate the achievement of the zero carbon homes objective. The scope for viable development of distributed systems under the PPS will, however, also depend on the regulatory rules relating to distributed systems and the investment signals these send.

Thirdly, the issues around promoting renewable heat are also of great importance.

The Federation shares the view of several other organisations participating in current consultations that it is desirable to develop an integrated strategy for renewable electricity and renewable heat as far as is possible.

For residential developers this is desirable because such an integrated strategy will maximise the technological options available to achieve the zero carbon homes standard. In particular, an integrated strategy would assist the deployment of sustainable forms of combined heat and power which may in many cases be the most proven and/or economic solution.

Given the technical and other limitations on the distances that heat can be successfully distributed, it is probably the case in our view that the integration of policy and regulation for heat and power in distributed energy systems is particularly important. We would therefore wish the current consultation – and the Call for Evidence on Heat - to give very thorough consideration to optimising the potential for such systems.

Specific residential development considerations

There are two key considerations that apply to future new residential development that we would wish to be considered in policy-making and regulation for distributed energy.

(i) The technical and economic case for distributed systems to provide energy for new housing

Studies carried out to date – including the Renewables Advisory Board's report *"The role of onsite energy generation in delivering zero carbon homes"* published in November 2007 – have established that there are likely to be some instances where in the light of currently known or foreseeable technology it will not be possible for new residential developments to meet all their zero carbon energy requirements from on-site sources.

More generally, on-site solutions will tend to be more expensive than solutions that provide suitable forms of zero carbon energy on a larger scale than required for the average, comparatively small new development.

Both these factors therefore point towards the likely reliance of new zero carbon homes on energy supplies that are either distributed systems or remote systems providing energy via the national grid in the case of power.

Equally, – for policy and practical reasons – zero carbon energy systems serving new homes will need at certain points to export their output. So, even if such systems were only directly connected to the development they chiefly served (that is, were designed as on-site facilities) they would in some circumstances need to be able to function as distributed systems in order to be able to export their surplus output. If such export was difficult or commercially unattractive for any reason the outcome would then clearly be sub-optimal both for the development concerned and the wider promotion of decarbonised local energy supply.

(ii) Heat issues for new residential development

From the work undertaken to date our assumption is that zero carbon homes will have a minimal requirement for conventional space heating as they will be built to very high standards of thermal fabric efficiency. Leaving aside the likely prospective use of solar-based technologies for water heating, the use of suitable forms of CHP such as biomass may well, however, be one of the favoured options for providing other energy requirements in view of existing knowledge and cost factors.

If that is the case, there will be a need to consider use of heat outputs from such systems. There may be scope for use in relation to cooling requirements in summer, but otherwise the commercial case for such systems would clearly be stronger if there were scope to export surplus heat outputs from the new development to other local users. The productive use of such outputs by other local users would also be the best outcome environmentally.

Our view is accordingly that this aspect of achieving the zero carbon homes objective does require a policy and regulatory framework that truly supports and promotes viable distributed energy systems. It also strongly underlines the need for an integrated strategy providing sensible and balanced investment signals for distributed systems producing heat as well as power.

Overall conclusions

Based on the above analysis of the issues, we conclude that we need a more radical strategy than that set out in the consultation document to promote the potential for distributed energy systems, including those producing low and zero carbon energy, effectively.

The need for a more radical approach is to ensure that EU renewable targets can be met, to provide cost-effective and environmentally efficient energy solutions for future residential development and to ensure an integrated policy framework for heat and power.

This triple bottom line is a major prize if we can achieve it and we would wish to take part in a further policy debate with Ofgem, BERR and other partners to this end.

The Federation does not currently have the expertise to comment in detail on the specific proposals set out in the consultation document. Many of these appear to be sensible in their own terms, but they are incremental rather than transforming changes as we consider is probably necessary.

Particular points we would make are that:

- There is a strong case for looking at a (feed in) tariff to incentivise the export of outputs from distributed systems – particularly those producing low or zero carbon energy.
- In principle, such a tariff structure should apply to heat as well as power outputs on a fair basis to ensure optimal system design, investment flows and trading patterns
- Conversely, the current arrangements involving private wire systems, licence exemptions and other detailed rules relating to the size and nature of systems are arguably sub-optimal since they will always tend to skew investment decisions to fit the categories created
- It would be preferable to create a policy and regulatory framework that positively established a new market space for distributed heat and power

systems – including trading in their outputs - with appropriate licensing requirements for this market space rather than the current system which creates probable barriers to entry or expansion of distributed energy facilities.

- From the home building perspective it would also be desirable to establish a market within which production from different distributed systems could be traded on a liquid basis, providing choice for developers and their customers and assurance that prices would be competitive
- Within such a market space trades could also take place in purely low or zero carbon energy as necessary in order to help satisfy the requirements of the zero carbon homes policy
- By creating such a market space, incentivising optimal facility design and empowering investment flows into facilities based on or linked to new development such a policy and regulatory framework would enable more decarbonised distributed capacity to come forward than would otherwise be the case.

John Slaughter

Director of External Affairs

26 March 2008