



ZERO CARBON HOMES

Position Paper

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Prepared

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GHA Zero Carbon Definitions

1. We believe that a zero carbon country is a good target, but that zero carbon housing is the wrong target for most of the sector. Housing must focus on radical reductions in energy use/ carbon emissions and not be completely diverted by renewable energy generation (particularly electricity generation), which in most situations can be far more effective at regional and national levels. The task of radical energy reduction is too important and too challenging in itself to allow it to be confused and complicated by sometimes ineffective requirements for on-site energy generation or complex bureaucratic offset accounting.
2. In regard to energy/ CO₂ reduction we propose a simple and transparent 2 stage process. We propose the use of absolute figures based both on energy and carbon dioxide emissions. For example, these absolute figures might be:
 - i. an initial target of 80kWh/m²/yr (and equivalent kg CO₂/m²/yr)- as this can be achieved by improvements to the thermal performance of the building fabric (with additional minor improvements to hot water design and appliances and/ or solar thermal). This roughly equates to a 70% reduction in energy use and carbon emissions compared to current UK housing stock. This standard is achievable with proper resources allocated by both government and industry, but will require a significant change in behaviour and performance for the industry, and will therefore be challenging to achieve in its own right (see Item 8 below); an interim target might be necessary to help the industry move to this level of performance. The target should be constant till 2016 for the majority of housing.
 - ii. a longer term target of 40 – 50kWh/m²/yr (and equivalent kg CO₂/m²/yr). This equates to an 80-85% reduction compared to building stock current usage/ emissions. The energy/ CO₂ reduction should include a mandatory 90-95% reduction in heating & hot water energy use/ CO₂ emissions (compared to current building stock), thereby prioritising energy reduction through the fabric of the building. This level has been set as there is an existing methodology and experience (PassivHaus), which enables this to be achieved. This standard is extremely challenging and in the next few years should only be introduced in exemplar schemes, and for a proportion of social housing and all high value housing over a certain value.
3. The methodology of assessment must be simple and robust. SAP is not fit for purpose at present and should be adapted or substituted by a suitable methodology such as Passive House Planning Programme (PHPP). Furthermore assessment through monitoring should be undertaken on buildings on completion and when occupied in order to ascertain real performance. Information gained through this monitoring should be fed back to all parties (developer, contractor, designer, user) as well as being collated centrally. Lessons learned from this monitoring should inform further development and design as well as legislation. Only with real monitored data will the industry and country be able to reverse the current increase in energy consumption and carbon emissions from the housing stock.

4. Adopting the above targets and methodology will ensure that the fabric of new homes is as efficient as possible, so that once a decarbonised energy supply is available, this will give further CO₂ savings by reducing emissions from electricity demand in the homes.
5. Reduction of electrical energy demand in housing by the use of low energy appliances and through staggered use of appliances (to reduce peak demands) should be driven forward by both legislation and market mechanisms, including use of the proposed energy use and CO₂ levels in the Code for Sustainable Homes, and the possible use of electrical energy use limits for dwellings. More generally there should be a much stronger link between energy demand and supply whereby both builders and energy suppliers are driven by legislation and market incentives to work together to reduce and manage demand and to ensure the cleanest energy supply possible. These should be fully investigated with a view to introduction in later editions of the Code and Regulations.
6. Decarbonisation of the energy supply and/or other reductions in energy demand (e.g. improvements to the existing building stock) should then be resolved at a regional or national level, which would allow the most efficient investment decisions to be made, leading to maximum CO₂ savings per £ of investment.
7. If the zero carbon target has to be retained as a last resort, then the current proposals outlined in the CLG consultation paper (December 08) are far too complicated. In order to ensure maximum focus on energy use / CO₂ reduction through improvements to fabric we believe that developers should be allowed to provide either a directly connected measurable on-site/ community solution, a measurable off site solution of net new renewable energy generation, or to contribute to a centralised fund at a set rate. This fund would allocate investment to renewable energy supply projects according to maximum CO₂ savings per £. Such a fund need not just be housing focussed, but could take contributions from many sectors, and would be comprised of experts in carbon reduction and renewable energy generation, rather than house-building experts.
8. Overall we believe that current policy is focusing on the wrong question. We should be focusing on how to get the mainstream industry to achieve a 70 or 80% reduction target, rather than worrying about zero carbon. Everyone seems to assume that energy efficiency improvements will sort themselves out, which they won't. Energy use in buildings is increasing on an annual basis and the only large scale assessment of new housing found that heat loss from buildings was 100% more than designed (see work on Stamford Brook by Leeds Metropolitan University). Considerable resources need to be put into the training, education & behaviour change programmes which are needed to make level 1 happen. Furthermore and fundamentally, considerable resources also need to be put into gathering the evidence of what does & doesn't work, as without this the training and behaviour change programmes cannot be properly formulated or integrated with current reality.