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PARLIAMENTARY BRIEFING

Zero carbon homes

31 March 2011

Summary

- **The Government announced in the Budget that the definition of a 2016 zero carbon home would not include its energy use for appliances. This dilutes the standard by a third.**
- **The ZCH policy had cross-party support. By removing appliances and their energy use from the definition this policy can no longer be defined as zero carbon. The challenge of tackling climate change requires ambitious action to decarbonise our housing stock (new and existing) as well as the power sector and transport. This could have been a truly innovative policy.**
- **The announcement effectively makes it harder to decarbonise the power sector by 2030 to help meet our climate change targets.**
- **It is not entirely credible to claim that because the EU Emissions Trading Scheme (ETS) covers the power sector that these extra emissions will be dealt with adequately. The Government elsewhere has recognised that the ETS is too weak to be effective and has brought forward additional decarbonisation measures because of this.**
- **The change sends the worst possible signal to companies that have planned their investments on the basis of the original zero carbon homes policy. By changing the goal posts the substantial progress businesses have made in gearing up their supply chains for 2016 standard is at risk of being undermined.**
- **The decision means the wider general public will pay to decarbonise the electricity use for these new homes from their energy bills where previously it was intended the homebuilder/home owner would do so.**

a) Background

The zero carbon homes policy was introduced in 2006 and received cross party support. WWF has contributed to the development of the detail of the policy by sitting on the 2016 Zero Carbon Task Force since 2007 and the Zero Carbon Hub since 2008.

Contained in the Budget, published on 23 March, was an announcement that the definition of 2016 zero carbon homes (ZCH) would be weakened effectively by a third. Instead of the new homes accounting for (and providing clean power for) all the energy used in the building the 'unregulated' energy use – namely appliances – have now been excluded. This means the considerable electricity use by household items such as fridges, freezers, washing machines and TVs will not, as originally planned, be covered by the house builder with clean energy solutions.

The exclusion of unregulated energy has significantly reduced the incentive for house builders to maximise energy efficiency and sustainable energy systems onsite. Given that we need to do all we can to reduce emissions from homes this could lead to these new homes having to be retrofitted to a higher standard in the future. Experience from energy efficiency programmes over the last 10 years have shown how difficult it is to get into existing homes to retrofit energy efficiency and low carbon energy measures.

The decision effectively shifts the task of decarbonising the electricity used for appliances in the new homes from the homebuilder to the wider public. This makes decarbonising the wider power sector harder as there will be more demand than planned as the new homes will not provide for all their electricity use. In order to meet the emission reduction targets in the Climate Change Act the Committee on Climate Change (CCC) has recommended that the power sector is largely decarbonised by 2030 and this has now been made more challenging. The Department for Energy and Climate Change (DECC) will now have to take these changes into account.

The decision has also undermined business certainty and those that are progressive in this sector. One of the major benefits of the original policy was that it sent a strong and clear message for companies to plan to and with plenty of time. A key advantage of including all the stakeholders (business, Government, NGOs) in what was a consensus decision making process was that this would provide policy stability. Many companies were gearing up their supply chains in the expectation of tough housing standards and the demand caused by the ZCH policy for community renewable projects. The change sends the worst possible signal to companies that have planned their investments on the basis of the original zero carbon homes policy.

The announcement also represents a transfer of the cost of decarbonising this extra electricity demand from the house builder/home owner to everyone paying energy bills. Ultimately, the change means that the majority, regardless of income, will now pay for cleaning the electricity supply of these new homes which previously was to be paid by the homeowner.

b) Environmental concerns

The Government has stated that because the power sector is covered by the EU Emissions Trading Scheme then the extra demand on the power sector created by this policy change will be

addressed¹. It has also stated that the policy cannot account for every appliance the new homeowner chooses to buy².

WWF's arguments are as follows:

1. EU Emissions Trading Scheme (ETS) vs domestic action

- The Government has already recognised that the ETS is inadequate on its own to tackle climate change and decarbonise the power sector. The carbon cap is too weak, allows for extensive use of international carbon offsets and is not aligned with environmental/climate requirements.
- The current carbon price in the ETS is widely recognised as being too weak to incentivise investment in clean technology and risks lock in to long-lived high carbon infrastructure. For this very reason the UK has introduced additional climate policies and the Government, for example, is intending to introduce feed-in-tariffs for low carbon energy and an emissions performance standard. Creating more electricity demand than expected means these policies have to work at a greater scale.
- Focusing solely on compliance with the ETS in a particular year risks creating lock-in to high-carbon infrastructure. New homes offer a great opportunity to ensure maximum efficiency and to build in renewable energy technology from the outset. The least cost pathway to a future free of fossil fuels means that we need to build all new infrastructure to high standards now, rather than working out how to retrofit and improve it at a later date
- '*The ETS will cover it*' position is ultimately an argument for no additional action regarding anything that uses electricity. Encouraging people to switch to low energy light bulbs, for example, is a waste of time according to this logic.
- Reducing energy demand is the first step in the energy hierarchy and truly zero carbon homes would have ensured no additional burden to the grid thus ensuring the UK achieved its EU renewable energy targets in a cost effective way, saving energy rate payers millions of pounds. The removal of the unregulated energy from the definition will now add a significant additional demand to the grid and its infrastructure.
- To achieve the emissions reductions we need to see in all homes in the UK it is going to be crucial to change people's energy using behaviour. Zero carbon homes have the potential to better connect householders with their energy use, demonstrate to communities what can be done through social learning as well as protect those occupiers from ongoing rises in energy costs.

2. Policy cannot account for every appliance a homeowner buys

- Of course every household differs in the number of appliances it owns and uses. This does not, however, preclude the Government from setting a reasonable average default energy use for new homes which the house builder is then responsible for offsetting. It is not an insurmountable administrative barrier.

¹ Hansard, Written Answer, Grant Shapps, Column 272W

² *ibid*

c) Social equity implications

WWF does not believe that the ZCH policy would have restricted provision of housing stock or had a negative social outcome. Indeed weakening the standard will have the opposite impact over the long-term.

The whole additional cost of the 2016 ZCH policy represents a very small percentage of the overall regulatory cost on homes. Affordable housing requirements, for example, represent a much more significant financial requirement. It is estimated that the complete ZCH requirement would have added an additional cost of £14,000 to an average detached home compared to the 2006 building requirements. By reducing the ZCH requirement by a third, the change is saving roughly £5,000 in the short-term per detached home. This figure will be lower for a semi-detached home and for flats. In the long-term an ambitious ZCH policy would have financially benefitted the owner. Significantly reduced energy use and micro-generation on the house would have minimised fuel bills. Indeed, the new homes could have benefitted from policies such as feed-in-tariffs which would have generated an income for the household. The new policy would have effectively paid for itself.

In addition, house builders have had years to prepare their business models for this policy and still have five years to scale up and make further cost savings.

Finally, and as mentioned, the announcement also represents a transfer of the cost of decarbonising this extra electricity demand from the house builder/home owner to everyone paying energy bills. Ultimately, the change means that the majority, regardless of income, will now pay for cleaning the electricity supply of these new homes which previously was to be paid by the homeowner.

d) Economic concerns

Since 2006, when the zero carbon homes policy was announced, businesses have been gearing up their supply chains. Significantly changing the scope and ambition of the policy will undermine those companies who were planning new products to meet stringent housing requirements and local community renewable energy projects.

According to the UK Green Building Council³:

“Low carbon construction has been one of the few sectors showing genuine green shoots of growth. This U-turn will result in loss of confidence leading to lower investment, less innovation, fewer green jobs and fewer carbon reductions.”

³ UK Green Building Council press release, ‘Government’s U-turn on zero carbon is anti-green and anti-growth’, 23 March 2011, <http://www.ukgbc.org/site/news/show-news-details?id=398>

ANNEX - the definition of zero carbon homes and a timeline**Zero Carbon Homes Definition**

The original definition of zero carbon included both regulated and unregulated energy use within the home. To summarise, regulated energy use is that covered by Building Regulations and includes energy used in the home for space and water heating, lights, pumps and fans. Unregulated energy use is that which is consumed in the home by the occupants for activities such as cooking and by the use of household electrical appliances such as fridges, freezers, TV's and computers.

Zero Carbon Percentages

In order to define how zero carbon would be achieved in practice the emissions from regulated energy use were defined as being 100% of the emissions from the home (emissions that are easier to predict in terms of occupancy). Once the unregulated energy use is taken into account this gives us a figure of 150% of emissions from a home that need to be accounted for. The journey to zero carbon on eliminating this 150% was spread across three areas, to be tackled in the following order:

Stage 1**Fabric Energy Efficiency Standard (FEES)**

The thermal efficiency of a home to reduce losses that relates to fabric only – i.e. floor, walls, roof, doors and windows. Reducing emissions by 20% to 25% out of the overall 150%

Stage 2**Carbon Compliance**

Meeting the energy needs of the home through onsite solutions like micro-generation technologies (and can include better fabric efficiency beyond the FEES to further reduce losses) and linked offsite solutions such as connection to a district heat network. Reducing emissions by between 44% and 60% out of the overall 150%.

Stage 3**Allowable Solutions**

Meeting the remaining energy needs of the home through more progressive onsite solutions, or more likely via offsite solutions. This includes regulated and unregulated energy use taking emissions reductions to the full 150%.

Zero carbon timeline

- In **2006** Yvette Cooper MP, Housing Minister, announces the Government's intention that all new build homes will be zero carbon from 2016 (simultaneously launching the holistic Code for Sustainable Homes, the highest level of which enshrines the zero carbon standard) and subsequently the 2016 **Zero Carbon Task Force** is convened co-chaired by the Housing Minister and Chief Executive of the Home Builders Federation. WWF is invited to join. The long, 10-year range for the zero carbon ambition was purposefully set to give industry the time to prepare and scale up.
- The Task Force assigns a group of experts, under the auspices of the UK Green Building Council, to undertake a detailed assessment of the definition of zero carbon homes and provide recommendations. In **May 2008** the **Zero Carbon Task Group** (including WWF representation) reports back recommending a hierarchical approach starting with energy efficiency first, followed by carbon compliance (largely onsite) and allowable solutions (largely offsite).
- **June 2008** the **Zero Carbon Hub** is launched with a mandate from Government to take day-to-day operational responsibility for co-ordinating delivery of low and zero carbon new homes reporting directly into the Zero Carbon Task Force.
- **December 2008** Government Consultation on the Definition of Zero Carbon Homes launched based on recommendations from the task group in May.
- **July 2009** – Housing Minister announces that the Carbon Compliance level will be set at 70% and tasks a specialist group to investigate the minimum energy efficiency standard for new build homes.
- **November 2009** – recommendations for the minimum fabric energy efficiency standard published by the Zero Carbon Hub as an output of the specialist task group. WWF takes part in this task group.
- **September 2010 to March 2011** – Zero Carbon Hub convenes a task group on setting the level of carbon compliance. WWF takes part in the negotiations and after negotiations and significant compromise by the green lobby, consensus is achieved on minimum recommended levels of carbon compliance for detached homes (60%), all other homes (56%) and low rise apartment blocks (44%).
- **March 2011** – Budget announcement by Government that zero carbon homes will no longer take into account unregulated energy use within the home, reversing much of the work of successive government and external task groups over the previous five years.

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