Reducing carbon emissions from buildings

In summary

The Chartered Institute of Building (CIOB) supports a three-pronged attack to cut carbon emissions from the built environment:

1. Decarbonisation of the grid.
2. Radical improvement in the performance of existing buildings.
3. Promotion of zero carbon new build.

The issues

Decarbonisation of the grid

The CIOB believes that a large part of the solution to reduce carbon emissions from the built environment must be found at the source of the problem. Electricity, heat and transport represent the three main energy consuming sectors - all of which are fundamental to the construction and lifecycle of the built environment.

The CIOB encourages a greater level of investment in renewable energy alongside other low carbon sources such as nuclear power, tidal power and carbon capture and storage. This will result in a more diverse mix of technologies and less dependence on imports of fuel from abroad. With the right incentives, we believe the construction industry would respond quickly to a changing energy market, and that decarbonisation of the built environment would follow.

In a UK context, the CIOB supports the target of reducing carbon emissions by at least 60% by 2050, as set out in the Climate Change Bill. We also applaud the Government's commitment to the EU Renewable Energy target of 15% renewable energy supply by 2020.

We believe these are the right targets, with the right level of ambition, at a time when we have to make radical changes, however they are the targets which we can not afford to miss.

Radical Improvement in the Performance of Existing Buildings

The CIOB believes that dealing with the huge energy wastage in the existing building stock must be a higher priority for the Government. We believe this presents the most important, and potentially the most effective, area where carbon emissions related to buildings could be significantly reduced.

A major part of our existing building stock lacks sufficient insulation, heating controls or other measures to save energy and reduce carbon dioxide emissions.

More than 80% of the 2025 building stock is already built. Half of the houses in the UK are more than 50 years old and a fifth are more than 100 years old.

Typically, buildings experience a number of refurbishments throughout their life, with a major refurbishment every 20-30 years. These refurbishments represent an opportunity to reduce carbon emissions through refreshing a building's fabric and services equipment.

Much of the technology to make these improvements already exists, yet take-up has been poor.

The CIOB therefore supports the introduction of the Energy Performance of Buildings Directive which aims to improve the energy performance of buildings through the use of minimum energy requirements, certification and regular inspection of boilers and air-conditioning systems. We call on the government to provide the industry with details of this certification methodology, as a matter of urgency, to allow owners and inspectors to prepare for implementation in 2009.

The CIOB believes that government should also explore the use of market incentives, taxation, grants, or the planning process to encourage owners to improve the energy performance of their buildings. This is particularly important to encourage the upgrade of insulation, walls, windows and roof spaces.

Reducing carbon emissions related to our existing building stock must be a priority, and new regulations or guidelines for dealing with energy wastage from such buildings need to be developed.

Promotion of low and zero carbon new build

Tackling emissions from the existing building stock remains the biggest challenge to the construction industry. However, it is also essential to ensure all new homes and buildings are highly energy efficient, and where possible, are able to meet their energy needs from renewable energy sources.

The CIOB believes that renewable energy sources such as natural lighting, natural ventilation, and passive cooling must be actively promoted if we are to design and deliver sufficient numbers of cost-effective zero carbon homes.

The UK Government has set a goal for all new homes to be zero carbon by 2016. Ministers have also set out an ambition to require all new schools to be zero carbon by 2016; all public sector buildings by 2018; and potentially all new buildings by 2019.

The CIOB believes that achieving these targets is only possible with a new definition of zero carbon (see CIOB policy statement on 'The Definition of Zero Carbon' for more information). This will provide more certainty to the construction industry, and in so doing, allow it to invest in zero carbon technologies, practices and innovations for the future.

The CIOB recommends and supports:

A three-pronged attack to cutting carbon emissions from the built environment.

1. Decarbonisation of the grid:
   - A greater level of investment in renewable energy, in particular at the strategic/macro level by established UK energy generators and suppliers.
   - The proposed UK Renewable Energy Strategy.
   - EU renewable energy target of 15% renewable energy supply by 2020.
2. Radical improvement in the performance of existing buildings:
   - A co-ordinated national strategy for reducing energy wastage in the existing building stock.
   - An energy rating and certification scheme that includes identification of cost-effective energy efficiency measures for all buildings.
   - The use of market incentives to encourage owners to improve the energy performance of their buildings.
3. Promoting low and zero carbon new build:
   - The Code for Sustainable Homes.
   - The development of a Code for Sustainable Buildings.
   - A new definition of zero carbon.
   - A greater level of investment in zero carbon technologies, practices and innovations for the future.

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