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30 April 2009

Dear Sir/Madam

**Draft Policy Position Statement – Eco-towns - Response from the Institution of Civil Engineers,  
Institution of Engineering and Technology, Institution of Mechanical Engineers and the Royal Academy  
of Engineering**

On behalf of the above organisations, please find attached a response to the consultation document *Draft Policy Position Statement – Eco-towns*. The professional engineering community that we represent is keen to support CLG. We would be delighted to meet with you to discuss how we could provide engineering input into this initiative and future policy developments.

Yours sincerely,

Andrew Crudgington  
Senior Policy Manager  
Institution of Civil Engineers

## **1. Introduction**

Our major concern is that the Eco-towns initiative will be used to support the development of large numbers of low cost houses on green-field land, creating a strong likelihood of additional use of private cars for commuting purposes. Overall there will be little real improvement in environmental performance or consideration of energy use.

We have individually expressed several concerns about the Eco-towns initiative and collectively wish to reiterate the following.

Our particular concerns include:

- an unthinking emphasis on zero carbon at development level, which ignores the role to be played by offsite renewables in an economic renewable energy mix, and will result in potentially perverse technology choices
- transport being ignored in the carbon calculations, meaning that low carbon emissions at home become balanced or negated by high carbon emissions from travel
- insufficient emphasis on pushing the boundaries of innovation in all relevant areas
- no taking account of the extraordinary lack of consistency of home energy performance between apparently identical buildings owing to poor construction quality control
- the absence of an associated programme of dissemination and disbursement of the techniques developed so that the construction industry learns and upskills
- lack of explicit guidance on management of surface water arising from increased incidence of extreme rainfall.

We are also concerned that the intention to meet a zero carbon objective was announced before the definition itself was agreed. We hope that the recent CLG consultation on the 'Definition of zero carbon homes and non-domestic buildings', leads to standards and definitions that will be integrated into planning processes.

The current severe downturn in the property sector has now rendered much of this debate immaterial as there is little likelihood of eco-towns being built in the near future. In this new context we believe that the resources and political will committed to eco-towns should be diverted to a programme to retrofit existing towns, cities and their supporting infrastructure to those standards envisaged for eco-towns. There is overall a much greater opportunity for carbon saving through innovation in retrofitting existing buildings and urban environments. This would have a significant beneficial impact on UK carbon emissions and provide a major stimulus to the UK economy.

## **2. A better way forward**

We believe that a much better way forward would be to restructure the Eco-towns initiative to make it innovation-led, and focussed around existing urban environments rather than building new towns. Builders should be incentivised to come forward with proposals that enable a step change in construction industry practices, working alongside professional engineers to ensure the community's energy system is as sustainable, renewable and low carbon as possible. Consideration should be given to making this a precondition for planning consent for the most valuable sites.

For major developments all aspects of emissions should be considered including transport impacts, construction materials, measures to create behavioural change amongst residents, and the economic supply of renewable energy from both on- and off-site sources. The long-term aim for such developments should be that all their energy needs (for heat, power and transport) should be met from renewable sources available within and around them. The eco-towns concept thus becomes a movement to develop 100% renewable energy towns, or zero-carbon towns.

## **2.1 Innovations to be considered**

A non exhaustive list of innovations that would deliver a step change in practice and where demonstration at scale would deliver large benefits includes:

- modular new home construction, improving consistency of energy performance through offsite production under controlled conditions
- passive design and orientation to make the most of the site's potential for energy conservation
- new materials with superior insulation properties
- heat exchange of exhausted air with incoming air
- sustainable supply chain development
- materials minimisation
- smart metering grids to enable sophisticated control of energy demand
- smart appliances to enable best use of smart grids
- integrated onsite renewables such as solar water heating, building integrated photovoltaics (PV), heat pumps
- potable and grey water systems
- integrated planning for flood risk management
- low carbon transport and discouragement of high carbon transport
- IT systems to manage and minimise carbon through lifestyle change and smart control

## **Draft Planning Policy Statement on Eco-towns**

*Response to CLG from the Institution of Civil Engineers, Institution of Mechanical Engineers, Institution of Engineering and Technology and Royal Academy of Engineering*

- combined Heat & Power Energy from Waste schemes with district heating networks and thermal storage capacity
- community-led and owned renewable energy schemes, e.g. wind
- infrastructure to support use of electric and plug-in hybrid vehicles, as well as car-share schemes and public transport use
- ultra-low energy lighting systems

The benefits of demonstrating such innovations at scale include building of confidence in their practical viability, understanding the benefits they bring, and building of supply chain capacity in their delivery.

### **2.2 Dissemination**

An important part of the programme is dissemination of the knowledge gained from developing and applying innovations. A programme for dissemination and learning should be built in from the start and should address not only high level issues of interest to academics and major business but also issues relevant throughout the supply chain.

### **3. Conclusion**

The professional engineering community that we represent has for some time lacked confidence in the eco-towns initiative. We have been particularly concerned at the lack of engineering input into the project at all stages, including the lack of engineering expertise on the Eco-towns Challenge Panel. We believe that as currently constituted the Panel will not be sufficiently qualified to address the engineering and technological considerations that strongly underpin the ultimate target of sustainability.<sup>1</sup>

We would be pleased to support CLG in providing engineering input and expertise for further policy developments.

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<sup>1</sup> [http://www.raeng.org.uk/policy/responses/pdf/Eco\\_Towns\\_consultation.pdf](http://www.raeng.org.uk/policy/responses/pdf/Eco_Towns_consultation.pdf)