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## **BWEA Response: Proposal for introducing a Code for Sustainable Homes**

### **British Wind Energy Association**

British Wind Energy Association (BWEA) was established in 1978 and is the representative body for companies active in the UK wind energy and marine renewables market. BWEA's membership has grown rapidly in recent years and now consists of 310 companies. Over 20 of our member companies are involved in small scale wind (defined as turbines that are less than 50kW of installed capacity); either through research and development, manufacturing, installation or consultancy, and several others have an interest in this area.

This response has been prepared on behalf of the wind industry and BWEA members although individual member companies may provide their own individual responses in addition to this response.

### **Summary of key points**

BWEA welcomes the ODPM Consultation on the Proposal for introducing a Code for Sustainable Homes.

### **BWEA recommends the inclusion of microgeneration and small scale renewable energy technologies within the Code.**

BWEA welcomes the emphasis given to energy efficiency within the Code, but considers that it does not go far enough. We are disappointed that the Code does not propose incorporating onsite renewable energy generation, even as an 'optional' element. Therefore BWEA would propose the inclusion of onsite renewable energy as an essential requirement of the Code. Technologies such as wind turbines produce clean and renewable energy generation without harmful emissions. These technologies can have a key role to play in the reduction of domestic fossil-fuel based energy consumption and thus help tackle climate change.

Microgeneration<sup>1</sup>, particularly the small scale wind energy sector has large potential for growth over the coming years. The Government is actively supporting this sector and the Energy Minister has signaled the importance of microgeneration in contributing to renewable energy targets and increasing the awareness of the need to conserve energy. BWEA sees that it is important that a joined-up Government Strategy is established for the microgeneration market as soon as possible. With the right regulatory measures microgeneration can have a key role by helping tackle climate change, securing energy supplies and helping to address fuel poverty. Furthermore, microgeneration can reduce electrical losses on the transmission network and thus reduce energy costs. The Government's Microgeneration Strategy addresses all these issues; however BWEA would welcome the greater inclusion of microgeneration also within the Code for Sustainable Homes.

BWEA believes that the code should be mandatory and more rigorous, applying to all new buildings, not solely housing, as well as to refurbishments. By not including the non-housing sector a significant capacity of new buildings slips through the net – which includes large developments that have the economies of scale to implement extensive eco-standards and contribute to large energy, waste and water savings. Furthermore, a total of around 50% of CO<sub>2</sub> emissions in the UK come from buildings and BWEA believes that to tackle these emissions, the Code should cover the whole building sector.

The minimum EcoHomes energy efficiency requirement should be set at a greater standard than the requirements of the Building Regulations – if a given standard is already mandatory through the Building Regulations then minimum EcoHomes standard does not add any value. By applying the level of Building Regulations as a minimum standard, developments will also be given an 'eco' label even when the standard is no greater than for any other new development.

BWEA also believes that the requirement for 'daylighting' should be an essential element - all homes should maximise daylight whilst meeting energy efficiency requirements.

## **1. Do you welcome the concept of the Code for Sustainable Homes?**

BWEA supports the existing EcoHomes initiative and welcomes the concept on the Code for Sustainable Homes as a means of ensuring that homes in the UK are built according to the highest sustainability standards.

In its present form, the Code has a high emphasis on energy efficiency, which BWEA supports. However, in addition to energy efficiency, BWEA considers it is essential that small scale/onsite renewable energy technologies such as small wind turbines are included. Onsite renewable energy generation can

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<sup>1</sup> The Government has defined microgeneration as low or zero carbon technologies which generate heat at <45 kilowatt (kW) and electricity at <50kW. By small scale wind turbines, BWEA means wind turbines which are rated at less than 50kW capacity. Majority of these technologies range from 500 watt (w) to 15 kilowatt (kW), with most domestic technologies rated in the range of 500 watt – 2.5 kW.

considerably reduce fossil fuel-based electricity generation at homes by generating power directly at the point of demand and thus reducing domestic CO<sub>2</sub> emissions. Around 30% of the UK's CO<sub>2</sub> emissions come from homes and around 50% in total from all buildings.

Small scale renewable energy technologies also have a positive impact on people's awareness and behaviour towards energy use. This has been demonstrated by various studies, most recently by a report from the Sustainable Consumption Roundtable which found that those who install microgeneration also tend to be aware of their energy use and take further energy saving steps in their homes<sup>2</sup>.

The Government's consultation on Microgeneration Strategy specifically noted the need to take a holistic approach to microgeneration and energy efficiency:

*"6.4 ... But more emphasis could have been placed on the opportunities for energy efficient measures and their interaction with the renewable energy technologies that are the focus of the support.*

*6.5 In terms of achieving the maximum contribution to reducing carbon emissions, it is clear that more efforts need to be made in terms of ensuring that microgeneration and energy efficiency technologies are seen as complementary and mutually reinforcing."*<sup>3</sup>

BWEA therefore recommends the inclusion of microgeneration and small scale renewable energy technologies within the Code.

## **2. Do you think that the coverage of six essential elements and other optional elements is correct?**

Yes – however, BWEA supports including the use of onsite renewable energy generation within the Code.

BWEA supports the proposal by the Micropower Council, which states that the Code should have explicit reference to the use of micropower and small scale renewable energy technologies within the Code so that:

- all new buildings with microgeneration (above a minimum capability for a particular size of building) should automatically qualify as Level 3 provided they meet the requirements of Level 1 across all other categories;
- it should be impossible to achieve Level 5 status without the inclusion of microgeneration (above a minimum capability for a particular size of building)

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<sup>2</sup> Sustainable Consumption Roundtable (2005), Seeing the light: the impact of micro-generation on the way we use energy (2005)

<sup>3</sup> DTI, Microgeneration Strategy and Low Carbon Buildings Programme Consultation June 2005, para 6.4; 6.5

- the hurdle for achieving Level 3 and Level 4 status, without micropower, should be raised as the micropower industry matures. We suggest that within 1 year it should be impossible to achieve Level 4 without a minimum level of micropower and within 3 years it should be impossible to achieve Level 3 without micropower
- BWEA also believes the Government should set a target for a minimum number of buildings to be built at the exemplar (level 5) standard.

### **3. Is a mix of essential and optional 'tradable' elements helpful?**

Yes – However BWEA would support the proposal whereby increased level of energy efficiency and the inclusion of small scale renewables should be compulsory in order to achieve higher levels of the Code. BWEA believes that a five star home, i.e. a carbon neutral home, could only be achieved if the home incorporates microgeneration technologies.

### **4. Do you think that a scoring system in terms of points out of 100 is workable?**

Yes – it is the elements that make up this score that are the main consideration, and if these elements are weak then a high score has less relevance. However, BWEA believes that there should also be minimum standards for micropower at a number of levels.

### **5. Do you think the concept of a one to five-star rating system is right?**

Yes – BWEA supports the idea of a five-star rating system. We would also strongly support the inclusion of onsite renewable generation as a requirement at Level 5 of the Code as mentioned previously. BWEA also believes the Government should set a target for a minimum number of buildings to be built at the exemplar (level 5) standard.

BWEA would also welcome the proposal that more of the detail of the building's sustainability is given to the house buyer when they purchase their home.

### **6. If you are a house-builder, will you use the Code?**

BWEA does not represent house-builders.

### **7. Do you agree that no certification should be awarded until a post construction check to verify that the home complies with the design assessment rating?**

Yes – BWEA would support the proposal that no certification should be awarded until a post construction check has been carried out to verify that the home complies with the assessment rating. BWEA would support a mandatory construction verification of installation. According to UK ACE, there is evidence

within the building industry which shows several breaches of even minimum building standards, and 2 out of 3 new homes are built below minimum energy standards<sup>4</sup>. BWEA would therefore support a credible monitoring system of the Code.

### **8. Do you have comments on the costs and benefits identified in the draft Regulatory Impact Assessment (RIA)?**

Yes, however there should be some cost-benefit analysis of energy efficiency savings over the lifetime of the building. While this is appreciably difficult as energy prices are regularly changing, this analysis could be reviewed on a regular basis – the lifetime savings of super-insulation of the lifetime of a building are becoming increasingly significant. Furthermore, BWEA would like the following costs of domestic wind turbines to be noted for this consultation:

- An average 1 kW-1.5 kW small rooftop-turbine costs between £1,500-£3,500, however manufacturers and financiers are forecasting prices to fall over the coming months as manufacturing volumes increase [see Annex].
- An average free-standing 5 kW-6 kW small wind turbine costs around £18,000-20,000.

See Annex for more detailed examples of small wind energy costs.

### **9. Do you have any other comments on the draft RIA?**

N/A

### **10. Do you have any other comments not covered by your responses above?**

BWEA would support the inclusion of a home user guide, which would advise purchasers on the details of the sustainability of their home. There are several studies which show that awareness of sustainability has a direct impact on behaviour, hence BWEA would support a home user guide as an awareness building exercise not only on the sustainable home in question but also on wider sustainability issues.

BWEA also supports the Sustainability Checklists for Developments, which, once published, will give clear and consistent guidance to housebuilders on the sustainability performance of developments.

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<sup>4</sup> Andrew Warren, Director of the Association for the Conservation of Energy, Time Is Running Out For UK Buildings MOT, October 2004, <http://www.ukace.org/pubs/articles/eibi2004-10.pdf>

## ANNEX

BWEA would like the following costs of domestic wind turbines to be noted for this consultation.

### Rooftop turbines

Small wind turbines that can be installed directly to the side of the house. Depending on the type of the wind turbine and the available wind speed, small scale wind turbines can save up to 1/3 of the average domestic electricity consumption. Below is a list of BWEA members companies who supply small rooftop turbines:

- **Ampair (Boost Energy Systems)** manufacturer of a 0.6 kW rooftop wind turbine (also 0.1kW and 0.3kW models). Prices at present start at around £1,500 for a 0.6 kW turbine.
- **Renewable Devices Ltd** is a manufacturer of a 1.5 kW Swift rooftop wind turbine. At present the system itself costs £3,500 plus installation, which for a standard domestic property begins at the price of £1,950. A final installation cost would be subject to site and structural surveys, and is exclusive of VAT, which for this system is 5% for domestic properties, 0% or new build properties and 17.5% for industrial or commercial properties (figures as of 13/02/2006). The manufacturer is however, constantly working on reducing the cost and is confident that the price will go down gradually over the next months.
- **Windsave Ltd** is a manufacturer of a 1 kW small rooftop wind turbine. Prices at present start at around £1,500 plus 5% VAT, fully installed (subject to survey) and must be installed by an accredited Windsave installer.

### Free-standing turbines

Larger size wind turbines can make a substantial addition to a sustainable energy system in new and existing buildings and are ideal for example for schools, business centres and offices with outside space.

- **Iskra Wind Turbine Manufacturers Ltd** is the manufacturer of a 5 kW free-standing wind turbine. Depending on site specifications, the average price of the Iskra 5 kW turbine ranges from £18,000 to £22,000.
- **Brumac Wind Systems Ltd** manufacturers a larger end small wind turbine at 50 kW wind turbine. The turbine costs an average of £80,000 including installation.
- **Proven Energy Ltd** has provided the following price information for the range of their free-standing wind turbine systems.

<b>Wind Turbine System</b>	<b>Basic Cost</b>	<b>Tower Upgrade</b>
WT600 Grid Connected	£7,800	£250
WT600 Battery Charging	£7,600	£250
WT600 Direct Heating	-	-
WT2500 Grid Connected	£11,000	£1,400
WT2500 Battery Charging	£15,800	£1,400
WT2500 Direct Heating	£9,600	£1,400
WT6000 Grid Connected	£18,300	£800
WT6000 Battery Charging	£23,500	£800
WT6000 Direct Heating	£15,200	£800
WT15000 Grid Connected	£40,000	£4,000
WT15000 Battery Charging	£48,800	£4,000
WT15000 Direct Heating	£30,000	£4,000

These package costs are for sites within the UK. Cost estimate includes delivery and installation but excludes any foundation work which may need to be carried out.

**Tower Upgrades**

600W from 5.5m to 12m (guyed).

2.5kW from 6.5m to 11m.

6kW from 9m to 15m.

15kW from 15m to 25m.

Budget Costings are all excluding 5% VAT, and are estimate.