



# Energy ratings

In this issue, **EcoConsulting** looks at the Energy category, one of the most important groups of credits in EcoHomes.



**B**uildings in the UK account for around 55% of the UK's emissions of carbon dioxide (CO<sub>2</sub>), the main greenhouse gas, which makes them the largest climate change contributors. It is crucial to establish a long-term strategy to tackle energy consumption in buildings at source.

## Ene 1: Carbon Dioxide

**Credit Background:** This credit type evaluates the likely amount of carbon dioxide related to occupying a residential development, and is directly linked to space and water heating requirements, as well as lighting and appliance's electricity consumption. The types of fuel used and the energy efficiency of the dwelling are the main factors influencing CO<sub>2</sub> emissions.

Each fuel type is associated with a CO<sub>2</sub> emissions factor reflecting the environmental impact of the fuel.

Essentially, electricity is considered the most polluting means of heating, while wood sources are the cleanest with a zero emission factor. Natural gas ranks well, especially if it is being used in a highly efficient modern condensing boiler.

In addition, the more energy efficient the dwellings are, the more credits are obtained. Hence, good insulation levels in walls, floors, and roofs, highly performing windows (double or triple glazed), and low energy light fittings all contribute to accumulating Ene1 points.

Finally, producing local energy from renewable energy sources, such as installing solar panels for heating water, and photovoltaic (PVs) or windmills to generate electricity offset CO<sub>2</sub> emissions and thus increase the number of Ene1 credits. However, adhering to green tariffs is not accepted to discount emissions, as it is impossible to ensure future occupants will remain with the same utility provider.

**Credit Benefits:** Lower running electricity and heating costs for the occupants, reduced impact on climate change over the life-time of the dwellings, less polluting sources of energy.

**Credit Requirements:** Full SAP (Standard Assessment Procedure) assessments of the worst-case scenario of each house type of the development have to be submitted. SAP worksheets need to be completed by an accredited SAP assessor, preferably an NHER-certified assessor.

Specifications describing low energy light fittings and their location contribute

to a maximum of one extra credit. Dwellings fulfil 'partial low-energy prerequisites if dedicated fittings in lounges, kitchens, and hallways only accept fluorescent strip lamps or compact fluorescent lamps (traditional bayonet or halogen fittings do not count). In addition, if other habitable rooms have low energy lamps specified, 'total low-energy' requirements are achieved, increasing likelihood of obtaining this extra credit.

CO <sub>2</sub> emissions kg/m <sup>2</sup> /year)	Credits obtained
60	1
50	2
45	3
35	4
30	5
27	6
25	7
20	8
10	9
0	10

■ **EcoConsulting (UK) Ltd** advises architects, developers, and housing associations on cost effective eco-building solutions to improve interior health and comfort, energy efficiency, and environmental-friendliness. As a certified EcoHomes, BREEAM Offices, BREEAM for Schools, and BREEAM Retail assessor, the company consults on achieving 'Pass' through to 'Excellent' BRE ratings.

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Ene 1	Ease of compliance		
<b>Urban Development</b>	EASY (1-3 credits)	MODERATE (4-6 credits)	COMPLEX (7-10 credits)
<b>Rural Development</b>	EASY (1-3 credits)	MODERATE (4-7 credits)	COMPLEX (8-10 credits)