

RENEWABLE ENERGY MATRIX

Developers or housebuilders should use the following approach to demonstrate how their development proposals meet the requirements for sustainable energy:

1. Calculate the predicted energy supply

This is the total baseline energy (electrical and heating) that would be consumed by the development when occupied per year, built to current Part L Building Regulations minimum requirements. There are a number of tools that can be used to calculate the regulated energy baseline including the National Home Energy Rating (NEHR) for residential development and Energy Consumption Guide ECON 19 for non residential development.

These do not include calculations for unregulated energy (cooking, appliance, outdoor lighting). Based on the BREDEM 12 (the BRT domestic energy model) used for estimating the energy consumption in dwellings for space heating, water heating, lighting and electrical appliances, and cooking an additional 20% should be added to account for the excluded items.

2. Describe the measures that are proposed to achieve design for energy efficiency

This should include all measures proposed to meet the appropriate Code for Sustainable Homes/BREEAM level.

3. Calculate the actual predicted energy consumption

This is the predicted energy consumption of the development after deducting the energy efficiency measures. For CSH3 that would be 25% and in 2013 for CSH4 it would be 44%. While for CSH 5 and 6 there is 100% improvement above Part L this does not include unregulated energy use.

Figures should be provided for the annual predicted energy demand for:

Heating (and where proposed cooling)

Hot water

Lighting

Electrical appliances

Energy figures should be expressed in KWh/year

4. Calculate the appropriate amount of renewable energy to be generated

This will need to be at least 10% for major developments and the Rest Of the Urban Area strategic location. Each site within each of the following strategic locations: the Town Centre, Town Centre Fringe, Central Park, North Western Urban Fringe, Eastern Urban Fringe and Durham Tees Valley Airport will contribute towards the overall minimum target of 20% for each broad location. The percentage target for each site within these locations will be set out in the Making Places/Accommodating Growth DPD.

5. Decide what measures will be used to generate the renewable energy

A range of options must be considered to demonstrate the viability of the chosen solution. Viability considerations include solar orientation, solar and wind resource, supplies of fuel (for biomass), visual impact and installation and running costs.

6. Complete the renewable energy matrix

A copy is overleaf. This should be submitted with the Design and Access Statement as part of a planning application.

Renewable Energy Matrix

				Predicted annual delivered energy requirements for:				Total predicted energy consumption
				Space Heating	Water Heating	Lighting		
Type of Fuel (delete as appropriate)				Gas/Elec	Gas/Elec	Elec		
Units	No. units/sqm floorspace	X	kWh/yr	Gas/Elec	Gas/Elec	Elec		
Source of energy consumption on the development site	Building type 1		kWh/yr					
	Building type 2		kWh/yr					
	Building type 3		kWh/yr					
	<i>Add lines as needed</i>							
	SITE TOTAL (Baseline)		kWh/yr	(1)	(1) + (1) x 0.2 = (2)			(1)
	Add 20% for unregulated energy e.g. appliances				(1) x 20/100 + (1) = (2)			(2)
	Deduct 25% for energy efficiency*				(2) - (2) x 0.25 = (3)			(3)
	10% Requirement				(3) * 0.1 = (4)			(4)
Renewable Energy	Proposed Technology	Amount proposed (e.g 4 x solar thermal panels at 2m² each)		Annual energy proposed from renewable technology (kWh/yr) (5)		At least 10% from renewable technology This should be more than (4)		
				(5)				

*This is the predicted energy consumption of the development after deducting the energy efficiency measures at CSH3. This matrix will be updated from 2013 to be 44%.

The matrix may be revised to reflect any changes to national guidance or Building Regulations.