Microgeneration Checklist Report

calculated by program SAP Calculator version 3.3, printed on 13, October 2009, at 14:37:08
SAP assessment by Site Measurement Services Ltd
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Applicable regulations: England and Wales
The results of the calculation should not be accepted without first checking the input data

Example Solar Water Project

SOLAR WATER HEATING

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1. Comparison in Dwelling Emission Rate (DER)

Dwelling existing heating system DER = 31.99 kg/m²
Dwelling with microgeneration included DER = 29.69 kg/m²

Projected reduction in carbon emissions 7.75%

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2. Fabric U-values

U-values:	Element	Average	Highest
	Wall	0.30 (max. 0.35)	0.30 (max. 0.70)
	Floor	0.84 (max. 0.25)	0.84 (max. 0.70)
	Roof	0.40 (max. 0.25)	0.40 (max. 0.35)
	Openings	1.80 (max. 2.20)	1.80 (max. 3.30)

2.1 Heating efficiency

Main heating system: Central Heating systems (wet), Regular (condensing)1 / 1 (manufacturer)
Efficiency: 86.0 %
Minimum: 86.0 %
Secondary heating system: Room heater systems, Electric (direct-acting), Panel, convector or radiant heaters
Efficiency: 100.00
Minimum: 100.00

2.2 Cylinder insulation

Hot water storage Nominal cylinder loss: 2.11 kWh/day
Permitted by DHCG 2.62
Primary pipework insulated: (Yes)

2.3 Controls

Space heating controls Programmer + thermostat + TRVs

Hot water controls:
None

2.4 Microgeneration system details - solar water heating

Solar water heating input data:

area: 3.00 m2
Evacuated tube
collector zero-loss efficiency: 0.60
collector heat loss coefficient: 3.00
orientation: E 45°
overshading: None or very little
dedicated solar store volume: 100 litres (Separate Solar Cylinder)
solar powered pump

Calculations:

Aperture area of solar panel	3	(H1)
Collector zero-loss efficiency	0.6	(H2)
Collector heat loss coefficient	3	(H3)
Collector performance ratio	5	(H4)
Annual solar radiation per m^2	829	(H5)
Overshading factor	1	(H6)
Solar energy available	1492.2	(H7)
Solar/load ratio	0.69	(H8)
Solar utilisation factor	0.77	(H9)
Collector performance factor	0.72	(H10)
Dedicated solar storage volume	100	(H11)
Effective solar volume	100	(H13)
Daily hot water demand	101.92	(H14)
Volume ratio Veff/V	0.98	(H15)
Veff/V factor	1	(H16)
Solar input	814.96	(H17)

The performance of solar heating systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This estimate is based upon the Government's standard assessment procedure for energy rating of buildings (SAP) and is given as guidance only. It should not be considered as a guarantee of performance.
