

Estimated System Performance Calculation

The performance of solar photovoltaic 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 standard MCS procedure and is given as guidance only. It should not be considered as a guarantee of performance.

In order to calculate the estimated system performance, we are required to follow the 'Standard Estimation Method', for which the procedure is as follows;

1. Establish the electrical rating of the PV array (kWp)
2. Determine the postcode region taken from the figure given in the 'MCS ECA Guide to the Installation of Photovoltaic Systems'
3. Determine the array pitch
4. Determine the array orientation
5. Look up the kWh/kWp (Kk) for the location from the specific table given in the 'MCS ECA Guide to the Installation of Photovoltaic Systems'
6. Determine the shading factor of the array (SF) according to any objects blocking the horizon - using shad factor procedure set out in 3.7.7

The estimated annual electricity generated (AC) in kWh/year of installed system shall then be determined using the following formula:

$$\text{Annual AC Output (kWh)} = \text{kWp} \times \text{Kk} \times \text{Shading Factor (SF)}$$

Per Dwelling (4No)

Standard Estimation Method	
A. Installation Data	
kWp installed:	2.14
Regional Zone	Zone 1 - Thames
Array Pitch - degrees from horizontal:	34
Array Orientation - degrees from South	100
B. Calculations	
kWh/kWp Value (Kk) from table	748
Shade Factor:	1.00
Estimated annual performance (kWh)	1,601

This system performance calculation has been undertaken using estimated values for array orientation, inclination or shading. Actual performance may be significantly lower or higher if the characteristics of the installed system vary from the estimated values.

This shade assessment has been undertaken using the standard MCS procedure - it is estimated that this method will yield results within 10% of the actual annual energy yield for most systems.