



**C.J.Richards Electrical**  
 30 Dorset Close, Bletchley, Milton Keynes,  
 MK3 7HZ  
 Phone:01908 639928 Mobile:07855 771273  
 E-mail [electricalexpert@aol.com](mailto:electricalexpert@aol.com)  
 Website:[www.electricalexpert.co.uk](http://www.electricalexpert.co.uk)



**2.5kW Solar PV System based on a south facing 30° pitched roof with no shading.**

**Solar Photovoltaic (PV) Feed-In Tariff Calculator SAP 2009**

Table H2 Annual solar radiation, kwh/m<sub>2</sub>

Tilt of collector	Orientation of Collector				
	South	SE/SW	E/W	NE/NW	North
Horizontal	933				
30°	1073	1027	913	785	730
45°	1054	997	854	686	640
60°	989	927	776	597	500
Vertical	746	705	582	440	371

Table H3 Overshading Factor

Over shading	% of sky blocked by obstacles	Overshading factor
Heavy	>80%	0.5
Significant	>60%-80%	0.65
Modest	20%-60%	0.8
None or very little	<20%	1

Correction factor	x	Peak Power (kWp)	x	Solar Radiation (Table H2)	x	Overshading Factor (Table H3)	=	Electricity Produced (kWh/year)
0.8		2.5		1073		1		2146

kWh/Year		Feed-in Tariff £		Feed in tariff payment £
2146	x	0.21	=	450.66
				+
kWh/year ÷ 2 (50% occupation)		Feed-in Tariff sell back rate £		Sell back payment £
1073	x	0.031	=	33.26
				+
kWh/year ÷ 2 (50% occupation)		Current rate £ per kWh		Saving on current electricity bill
1073	x	0.144	=	154.51
				=
		Total Income/ Savings 1st year		£638.43





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**Estimated Return over 25 Years**

Summary:	Outlay	Feed-In & Savings	Pay back time	Profit over 25yrs
2.50kWp	£7,430.00	£ 638.41pa	9y 5m	£25,083.39
Year	FIT Generation	Export Income	In-house savings	Balance
1	2,146kWh x 21.00p = £ 450.64	1,073kWh x 3.10p = £ 33.26	1,073kWh x 14.40p = £ 154.51	-£6,791.59
2	2,146kWh x 21.75p = £ 466.77	1,073kWh x 3.21p = £ 34.45	1,073kWh x 15.84p = £ 169.95	-£6,120.42
3	2,145kWh x 22.53p = £ 483.38	1,073kWh x 3.33p = £ 35.68	1,073kWh x 17.42p = £ 186.90	-£5,414.46
4	2,144kWh x 23.34p = £ 500.46	1,072kWh x 3.45p = £ 36.94	1,072kWh x 19.17p = £ 205.48	-£4,671.58
5	2,143kWh x 24.18p = £ 517.98	1,071kWh x 3.57p = £ 38.23	1,071kWh x 21.08p = £ 225.85	-£3,889.51
6	2,140kWh x 25.04p = £ 535.94	1,070kWh x 3.70p = £ 39.56	1,070kWh x 23.19p = £ 248.16	-£3,065.85
7	2,137kWh x 25.94p = £ 554.32	1,068kWh x 3.83p = £ 40.91	1,068kWh x 25.51p = £ 272.57	-£2,198.05
8	2,133kWh x 26.87p = £ 573.10	1,066kWh x 3.97p = £ 42.30	1,066kWh x 28.06p = £ 299.26	-£1,283.39
9	2,128kWh x 27.83p = £ 592.27	1,064kWh x 4.11p = £ 43.72	1,064kWh x 30.87p = £ 328.42	-£318.98
10	2,122kWh x 28.83p = £ 611.80	1,061kWh x 4.26p = £ 45.16	1,061kWh x 33.95p = £ 360.27	£698.25
11	2,115kWh x 29.86p = £ 631.68	1,058kWh x 4.41p = £ 46.62	1,058kWh x 37.35p = £ 395.01	£1,771.56
12	2,107kWh x 30.93p = £ 651.88	1,054kWh x 4.57p = £ 48.11	1,054kWh x 41.08p = £ 432.89	£2,904.44
13	2,098kWh x 32.04p = £ 672.37	1,049kWh x 4.73p = £ 49.63	1,049kWh x 45.19p = £ 474.15	£4,100.59
14	2,088kWh x 33.19p = £ 693.12	1,044kWh x 4.90p = £ 51.16	1,044kWh x 49.71p = £ 519.06	£5,363.93
15	2,077kWh x 34.38p = £ 714.10	1,039kWh x 5.08p = £ 52.71	1,039kWh x 54.68p = £ 567.90	£6,698.63
16	2,065kWh x 35.61p = £ 735.27	1,032kWh x 5.26p = £ 54.27	1,032kWh x 60.15p = £ 620.96	£8,109.13
17	2,051kWh x 36.89p = £ 756.60	1,025kWh x 5.45p = £ 55.84	1,025kWh x 66.17p = £ 678.55	£9,600.12
18	2,036kWh x 38.21p = £ 778.03	1,018kWh x 5.64p = £ 57.43	1,018kWh x 72.78p = £ 740.99	£11,176.57
19	2,020kWh x 39.58p = £ 799.53	1,010kWh x 5.84p = £ 59.01	1,010kWh x 80.06p = £ 808.62	£12,843.73
20	2,003kWh x 41.00p = £ 821.03	1,001kWh x 6.05p = £ 60.60	1,001kWh x 88.07p = £ 881.80	£14,607.16
21	1,984kWh x 42.47p = £ 842.47	992kWh x 6.27p = £ 62.18	992kWh x 96.88p = £ 960.88	£16,472.70
22	1,964kWh x 43.99p = £ 863.81	982kWh x 6.49p = £ 63.76	982kWh x 106.56p = £ 1,046.24	£18,446.50
23	1,942kWh x 45.57p = £ 884.95	971kWh x 6.73p = £ 65.32	971kWh x 117.22p = £ 1,138.24	£20,535.00
24	1,919kWh x 47.20p = £ 905.83	960kWh x 6.97p = £ 66.86	960kWh x 128.94p = £ 1,237.26	£22,744.95
25	1,895kWh x 48.89p = £ 926.37	947kWh x 7.22p = £ 68.37	947kWh x 141.84p = £ 1,343.69	£25,083.39

**About our calculations**

The above table assumes an RPI of 3.584% and an annual energy price inflation of 10%

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

