

## Domestic Case Study

### The Professional Couple in a detached bungalow

Greg and Eleanor were keen to install solar PV in order to reduce their electricity bills and generate income from the government's feed-in tariff scheme. Skyline Solar installed a 4 kWp system comprising 16 solar panels on the back of the couple's southeast-facing, detached bungalow in Denham, Buckinghamshire.

The solar PV system has been a great success. Not only does it complement their home, blending in with their scenic village surroundings, but it produces more than enough electricity to run the appliances that use energy during the day – such as refrigerators, freezers and electrical equipment on standby. In fact, most of the electricity generated during the week when the couple are at work is being exported to the grid – meaning they benefit from the additional export element of the feed-in tariff.

#### In brief

<b>Home type</b>	Semidetached bungalow
<b>Average annual electricity bill before installation</b>	£1,200
<b>PV system size</b>	4 kWp
<b>System installation cost</b>	£7,995
<b>Payback period</b>	8 years
<b>Estimated total financial benefit over period of feed-in tariff</b>	£27,059

The couples' installation cost a total of £7,995. It is eligible for a feed-in tariff comprising a generation element of 21p per kWh and an export element of 3p per kWh. As a result the couple will benefit from a projected annual return of 9.54% and a payback period of 8 years. Over the 25-year period of their feed-in tariff, they will enjoy an estimated total financial benefit of £27,059.

<b>Client Name</b>	Project address Holtye, Denham Village, Bucks				
Greg Homer	Post Code UB9 5BG				
Type of Building	Retrofit	Direction of Roof	South		
Angle Roof	45	Shading	None or Very Little		
Size of PV Panels Wp	250	No of Panels	16	Size of System kWp	4
Annual Solar Radiation kWh	1054	General Inflation %	3	Fuel Inflation %	3
PV System Output kWh/year	3373	Cost of electricity/unit	£0.12	Export Rate/unit	£0.031
Feed-in Tariff	<b>0.21</b>	Client Use %	<b>30</b>	Export %	<b>70</b>
<b>Estimated Financial Returns</b>					
CO2 Saving Kg	Year	FIT Payment	Fuel Saving	Export Income	Total Benefit
1451	<b>1</b>	£637	£121	£73	<b>£832</b>
7110	<b>5</b>	£3,315	£631	£381	<b>£4,328</b>
13871	<b>10</b>	£6,970	£1,328	£800	<b>£9,098</b>
20367	<b>15</b>	£11,042	£2,103	£1,268	<b>£14,413</b>
26651	<b>20</b>	£15,609	£2,973	£1,792	<b>£20,374</b>
32731	<b>25</b>	<b>£20,730</b>	<b>£3,949</b>	<b>£2,380</b>	<b>£27,059</b>
<b>Estimated Payback</b>					
System Cost	£ 7,995	Average annual return on investment			
System cost returned in	<b>year 8</b>	<b>9.54%</b>			

\* These calculations are based on a very conservative fuel inflation figure of 3%. Fuel inflation has averaged 12% over the last 5 years and is expected to increase further. At 12% inflation, the total financial benefit increases to £37,152 for a return on investment of 14.6%.

"We have a beautiful bungalow in the very picturesque village of Denham, and so I was worried about how solar panels would impact the way our house looks. I needn't have worried. Skyline designed the solar PV system to blend in with our roof – including around our skylights – in what was a really professional job. The result has been just what we wanted, and the solar system has reduced our monthly electricity bills considerably. Solar PV is just what you need with a young family."

Eleanor Payne – Homeowner