

## **Correspondence in Guardian in April 2008 relating to PV and issues relating to German approach.**

**The letter is shown first and the original article second**

### **Reply to guardian article about PV 19 April 08**

Sir,

The figures in Ashley Seager's article 'Solar so good for our house' (Guardian April 19 2008) do not add up. Seager claims his £17,000 solar unit would have cost £9,000 in Germany without a grant, and that it generated 2,730 kWhr of power over one year. Yet he says it earned him 12p per kWhr, which would give a total return of \$327.60 for the year.

This is an annual 1.93% return on the £17,000 investment (born by him and the UK government!), not a 3% return.

If the unit had cost £9,000 the return would have been 3.6%, not 6-7%.

Further, solar power is not this cheap in Germany. The 2004 legislation guarantees a payment of around 50 eurocents per kWhr, about 5 times the market price of electricity. This is because the actual return on an un-subsidised solar unit in Germany is only around 1.75% per year - about the same as in Britain.

The real scandal is that the Germans are now paying a billion euros a year to subsidise the deployment of an immature technology that gives a pathetically small amount of power per euro compared to wind, landfill gas, geothermal and other renewables. A billion a year spent instead on research and development would hasten the arrival of the day when solar power could, actually, pay its way. The sooner the Germans wake up to this the better.

Britain has a sensible approach to solar panels - leave them to the enthusiasts to dabble with, and spend the money on wind power where it will make a real dent in greenhous gas emissions.

Ray Galvin  
34 Linden Close

Cambridge CB4 3JU

(I am a Climate Change student at the University of East Anglia, current researching photovoltaic policies in the E

### **Solar so good for our house**

<http://www.guardian.co.uk/money/2008/apr/19/householdbills.consumeraffairs2>

Ashley Seager, The Guardian, Saturday April 19 2008

It was with some trepidation that I went into the cellar this week to take some meter readings in order to find out how the solar panels we had fitted on our house exactly a year ago have been performing. Was the hefty sum of £8,500 we forked out last year a good investment or a waste of money?

Well, the news is better than I had expected. We, a family of four, have produced 92% of our electricity usage from the roof of a century-old terraced house in south-east London - laying to rest the idea that Britain is not sunny enough for solar power. It also disproves any suggestion this sort of technology only works in state-of-the-art, modern detached houses.

Not only will we not pay for any electricity, we should get a rebate of about £50 once a payment from the so-called renewables obligation (RO) scheme, which rewards microgeneration schemes with cash, is included.

In all, the saving for the past year will be around £500, giving a return on our investment of 6%, which is not subject to tax. Next year, when the payments from the RO scheme will double for photovoltaic (PV) solar installations, we will get about £150 back, giving a total return of 7%. That will rise further if energy prices continue to climb - which is likely after oil prices hit yet another high this week.

There is an important caveat here. I received a 50% grant for the system from the government's low-carbon buildings programme - the total cost of buying and installing the panels was £17,000. Unfortunately, the government is so pathetic at supporting low-carbon technologies that it last year cut the maximum grant to £2,500 because the scheme was so popular. As a result, demand has collapsed to the extent that the small company that fitted my system has gone out of business.

That means your return on a system purchased now will be lower - little more than 3% for one like mine this year, rising to close on 4% when the RO payments increase next year. Still, 4% that is not taxable is comparable to a building society account that you do pay tax on.

What is particularly annoying about all this is that in Germany, where a proper system of support has boosted volumes - the Germans kitted out 130,000 houses with solar PV last year, while the UK managed less than 300 - costs have fallen dramatically and a system like mine would only cost about £9,000 without a grant.

Our system works by producing power - up to 3 kilowatts - during the day and exporting much of it to the grid because we are out at work and school most days. It's fun to watch our old-fashioned meter spinning backwards when the sun is shining. We get 12p per kilowatt hour (kwh) for what we export, though we pay more for what we import in the evenings. But the RO payment of £105 makes up the difference. Mind you, in Germany, we would get about 35p/kwh. No wonder the Germans have gone mad for PV.

We are now with npower, although Scottish and Southern Energy offers a flat 18p/kwh including the RO payment which, in terms of sheer simplicity, has to be a winner, although my 12p plus RO is equivalent to around 18p. They also fit an export meter for free whereas npower estimates our exports at 50% of what we produce. I

will soon have a new meter fitted because none of the power companies likes the idea of them turning backwards.

I left Powergen last year because the npower deal was the best on the market. Powergen, you may not be surprised to hear, was really difficult about my going. It couldn't grasp that my meter had gone backwards and unilaterally added 4,000 kwh (a year's consumption) to our final bill - daylight robbery, if you will pardon the pun. I had to really battle with them to get a final refund. This whole thing can be a hassle so make sure you choose the right supplier at the outset to avoid having to change.

Just as exciting as our solar output was the fact that, at the same time as fitting the panels, we took a bunch of measures in the house to cut our electricity consumption. We changed every bulb in the house (except the fridge and microwave) to low-energy ones, and replaced our ageing fridge and freezer. Meanwhile, our electric oven packed up last summer, so we replaced it with a gas one, figuring that generating heat with gas was probably a lower-carbon solution than doing it with electricity.

The upshot is that we cut our electricity use from 4,000 kilowatt hours a year over the previous five years to a tad under 3,000 kwh, a reduction of 25%. As our 3kw peak solar panels produced 2,730 kwh over the year, we only used about 250 kwh of electricity from the grid.

The PV system is not even on a south-facing roof - it faces south-east - and is at a shallower angle than would be ideal. But still it performed well, and will go on doing so for decades. The estimate of panel "degradation", or loss of performance, is said to be 0.5% a year, so negligible.

People seem fixated with asking how many years the system will take to pay back. I could answer the question at the current yield of 6%, but that is up to 7% next year, so the payback time will shorten. And if oil prices continue to rise, pushing up electricity prices, my yield will rise and the payback will shorten. So it is impossible to predict.

But all that misses the point. The system represents an improvement to the house that saves money. So it should generate a higher sale value if I move. People don't ask what the payback time is of a new kitchen or bathroom - also home improvements - so why do they ask about a carbon-saving technology?

What has been interesting is the effect it has had on us as a family. You might think generating your own power would make you relaxed about leaving lights on or the TV on standby. But the contrary is true. It has woken us all up to the realities of energy use. The computer, TV, lights, everything, we now turn off at the wall when they are not in use. We have some of those remote control switches to turn off wall sockets that are hard to get to. In future when we go on holiday, we will empty the fridge and freezer and switch them off. The challenge now is to raise that 92% figure to 100%.

The tumble dryer has long gone, and I feel that hair-dryer use may be excessive. But in a family with two girls, that may prove a struggle. However, I have my eye on the electric toothbrushes next! We are also turning our attention to our use of gas. Last year, our boiler packed up (it was an expensive year!) so we fitted a new, condensing

one which will use less gas. And I am going to double the thickness of the loft insulation.

Longer term, I plan to fit a solar thermal system which should provide between 50% and 70% of our hot water. Then it would probably be worth plumbing a hot-water feed into the dishwasher and washing machine rather than using cold water heated by electricity.

If any readers have views on this, please let me know. The aim is to see how little energy a fairly average Victorian terraced house can use and what the costs involved are. So far, it has been about £10,000 to achieve the electricity savings mentioned above.

The additional loft insulation will be a few hundred pounds. A solar thermal system will be about £3,500.