

sci.energy: Renewable energy payback is better than interest fromha money in the banks

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Now sun power is really hot

With interest rates negative in Japan and 2% in USA , it is better to spend \$20,000 on solar panels and get a higher return over twenty years and that is not even counting the govt grants.

Its time solar panels and small wind turbines were made compulsory for all homes , new or built

excerpts

Several studies have looked at this question over the years and have concluded that wind energy has one of the shortest energy payback times of any energy technology. A wind turbine typically takes only a few months (3-8, depending on the average wind speed at its site) to "pay back" the energy needed for its fabrication, installation, operation, and retirement. Solar panels are growing in popularity as home owners take up cash incentives to go green. reports

Phillip Inman
Saturday June 19, 2004
The Guardian

Sales of solar panels are on the rise as homeowners join the battle against global warming, government bodies said this week. Growing concern about the environment, coupled with a wide range of grants and subsidies worth as much as £10,000, have encouraged households to spend between £2,000 and £20,000 on systems that cut carbon dioxide emissions and fuel bills.

More than 3,000 homes in the last 18 months have been fitted with panels that heat hot water and hundreds more have been installed that generate electricity, said Clear Skies, a government-funded body charged with offering grants for renewable energy projects.

The cost of installation, especially for the newer photovoltaic systems that generate electricity, is also falling making them

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affordable for young families. The Energy Saving Trust which promotes the use of green energy, said the need to switch to different energy sources was desperately needed.

The trust revealed that the explosion of digital devices – set-top boxes and DVDs – along with video recorders and TVs – will lead to a sharp rise in carbon dioxide emissions. It estimates that over the next 10 years, the UK population will buy more than 70m set top boxes, 63m TVs and 14m VCR and DVDs. The energy consumed and carbon dioxide emitted will be triple current levels.

Tomorrow is SolarSunday, an annual event organised by the Solar Energy Society, that is designed to promote the environmental benefits of renewable energy.

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Solar panels fall into two main categories. Thermal systems use the energy of the sun to heat your hot water directly. They start at around £2,000 and can provide up to two-thirds of your hot water.

You are likely to be told the price is higher if you have restricted access to the roof, a three-storey house, or lots of chimneys (they cast a shadow). If your roof is not facing somewhere between south-west and south you are likely to be warned off buying a system.

A grant of £500 is available from Clear Skies to subsidise thermal systems, though this will fall to £400 from next month. A spokeswoman for Clear Skies said a government grant of £10m was due to run out in the middle of next year, but due to the popularity of solar systems, would be spent sooner without the cut.

Choosing a supplier can be tricky. Many thermal installers pay their sales staff commission and have been likened to double-glazing sales people. There is plenty of anecdotal evidence of homeowners finding themselves trapped in their own living rooms by a solar panel "expert" who refuses to leave.

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For a bona fide installer go to the Energy Saving Trust website. Anyway, you need to use an installer registered with the trust or Clear Skies to qualify for a grant.

Solar panels that generate electricity have only been around for four or five years compared to thermal systems, some of which have clocked up 25 years' service.

Chris Jardine, a solar energy researcher at the Environment Change Institute at Oxford University, says the technology is improving all the time and increasing demand has forced down prices. Grants of up 50 per cent are available to cover installation, cutting the costs even further. If the initial outlay is a problem, the systems are modular and you can start small and work up to covering your roof.

There is also the benefit of recent developments in the electricity supply market and government targets imposed on supply companies.

Once you have a photovoltaic system installed you can cut costs further by selling excess electricity back into the grid. All suppliers will knock this off your bill.

Recently, Npower and independent supplier Good Energy, launched schemes that will pay you 5p a kilowatt hour for all the electricity you generate.

They must reach targets for generating renewable energy and can include yours in their calculations if they have paid for it.

That means you not only save an estimated 6p for every kilowatt hour of electricity you generate, but can add the 5p from one of these suppliers. An 8m square solar panel will generate 950 kilowatt hours and that will save £60 a year off bills. The subsidy saves another £50.

A spokeswoman for installer Solar Century says anyone who approaches them purely wanting to cut their fuel bills, is discouraged from going ahead.

She says the major benefit is to the environment. "Though if you think of it as a way of investing your money, as if you would in a building society, you get a better return."

Most photovoltaic systems have a guaranteed lifetime of 20–25 years compared to a payback time of 40–50 years.

Energy Saving Trust – est.co.uk
Clear Skies – clear-skies.org
Green Electricity Tariffs – greenprices.co.uk
Good Energy – good-energy.co.uk
Solar Century – solarcentury.co.uk

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Advances in solar photovoltaic panels are happening at a fast and furious rate. Plus, the newest panels should have an even longer life expectancy than the older models—older panels have started to turn brown in the clear substrate the solar cells are mounted in, reducing their power output. This problem has been solved by using new plastics in the manufacturing process. The biggest advances in new solar panel technology recently have been in power density—the newest panels are the same size as older models, but put out more power per square foot.

A SOLAR POWER MYTH

We've often heard the myth that "it takes more electricity to manufacture a solar panel than it will ever put out." This is simply not true...this myth may have started during the Ronald Reagan era. This is of course a very difficult statistic to calculate, but according to the National Renewable Energy Laboratory in Golden, CO, a study has been done to answer the question. The study found that single-crystal panels reach the energy payback point in 5–10 years, polycrystalline panels in 3–5 years, and amorphous silicon panels in 0.5–2 years. Be advised that because the question is so vague, there is a large margin of error for these figures! We just discovered a recent, very detailed study about solar panel energy payback time in the January 2001 issue of Home Power magazine. This study, by Karl Knapp, PhD, and Teresa Jester, finds payback time for a standard module to be about 3.3 years, and 1.8 years on a thin-film panel. The study factors in energy costs for ALL parts of the panel and manufacturing process.