

# Monbiot.com

Tell people something they know already and they will thank you for it.  
Tell them something new and they will hate you for it.

## The German Disease

Posted March 12, 2010

The scheme for supporting renewables that the UK is importing from Germany has been a disaster there.

By George Monbiot, published on the Guardian's website, 11th March 2010

This is my third and final salvo in the heated debate over feed-in tariffs. You can follow the arguments for and against through the following links:

<http://www.guardian.co.uk/commentisfree/2010/mar/01/solar-panel-feed-in-tariff>

<http://www.guardian.co.uk/commentisfree/2010/mar/03/solar-panel-workable-future>

<http://www.guardian.co.uk/environment/georgemonbiot/2010/mar/05/solar-feed-in-tariff>

<http://www.guardian.co.uk/environment/cif-green/2010/mar/09/george-monbiot-bet-solar-pv>

<http://www.guardian.co.uk/environment/georgemonbiot/2010/mar/11/solar-power-germany-feed-in-tariff>

<http://www.guardian.co.uk/commentisfree/cif-green/2010/mar/05/solar-panel-feed-in-tariff-benefits>

<http://www.guardian.co.uk/environment/2010/mar/10/feed-in-tariffs-solarpower>

Let me begin with a plea to tone down this debate. Jeremy Leggett and I have addressed each other politely and stuck to the facts. I have no ill-feelings towards him: I simply believe that he is wrong about solar power. But the level of viciousness displayed on the comment threads, by email and on other sites has to be seen to be believed.

Where does fury of this kind come from? In my experience it's often associated with denial. People who don't like the outcomes dismiss the facts and lash out at the bearers of bad news. Could we, just for once, please try to get past this reaction, and judge the case on its merits?

My own instincts press me to support solar power. Like most environmentalists I believe that small is beautiful. I hate pylon lines and I don't care for the sight of big power plants of any description, wind farms included. I detest the big energy firms which provide our electricity. I am deeply attracted to the idea of being able to produce my own power, just as I love producing my own fruit and vegetables. But my attempts to find the best means of tackling climate change, which I explain at greater length in my book *Heat*, have forced me to put my gut feelings to one side. Our choices must be based on the best possible information. Otherwise we waste our lives chasing chimaeras.

Against my instincts I've come to oppose solar photovoltaic power (PV) in the UK, and the feed-in

tariffs designed to encourage it, because the facts show unequivocally that this is a terrible investment. There are much better ways of spending the rare and precious revenue that the tariffs will extract from our pockets. If we are to prevent runaway climate change, we have to ensure that we get the biggest available bang for our buck: in other words the greatest cut in greenhouse gas production from the money we spend. Money spent on ineffective solutions is not just a waste: it's also a lost opportunity.

Environmentalists have no trouble understanding this argument when lobbying against nuclear power. Those who maintain that it's more expensive than renewable electricity argue that we shouldn't waste our money investing in it. But now I hear the same people telling us that we should support every form of renewable generation, regardless of the cost.

I'm delighted that Jeremy has accepted my bet that solar PV won't reach grid parity in 2013. I am also happy for the winnings to go to SolarAid. I agree with Jeremy that solar PV is an appropriate technology in Africa, where most people are off-grid and there's much more sunlight. It's in this country that it makes no sense. I suggest we each appoint two fair-minded, independent seconds, who will confer with the other side to agree the terms of the bet: the exact date on which it falls due, and how and by whom electricity prices will be measured. They will also be responsible for deciding who has won.

And I accept Jeremy's challenge to write a column admitting I'm wrong if he wins the bet (but I won't accept his subtle slippage, substituting "near" for "at"). If I am wrong, it won't be the first time. In 2005, before I had crunched the numbers, [I called on green NGOs to switch from supporting windfarms to promoting "decentralised micro-generation projects"](#), which I considered a more attractive option. After I discovered just how badly this would set back efforts to decarbonise our power supplies, I changed my views. What would it take to change his?

Jeremy and I can speculate about how useful solar electricity will be in the UK until we've worn our keyboards out. Until our bet closes in 2013, by which time billions of pounds will have been committed, no one will know which of us is right. But you don't have to rely on speculation to see how this is likely to pan out. As the old cookery programmes used to say, "here's one we prepared earlier." The German experiment, almost identical to the UK's, has now been running for ten years. [An analysis published in November by the Ruhr University](#) shows just what it has achieved.

When the German programme began, in 2000, it offered index-linked payments of 51 euro cents for every kilowatt hour of electricity produced by solar PV. These were guaranteed for 20 years. This is similar to the UK's initial subsidy, of 41 pence. As in the UK, the solar subsidy was and remains massively greater than the payments for other forms of renewable technology.

The real net cost of the solar PV installed in Germany between 2000 and 2008 was E35bn. The paper estimates a further real cost of E18bn in 2009 and 2010: a total of E53bn in ten years. These investments make wonderful sense for the lucky householders who could afford to install the panels, as lucrative returns are guaranteed by taxing the rest of Germany's electricity users. But what has this astonishing spending achieved? By 2008 solar PV was producing a grand total of 0.6% of Germany's electricity. 0.6% for E35bn. Hands up all those who think this is a good investment.

After years of these incredible payments, and the innovation and cost reductions they were supposed to stimulate, the paper estimates that saving one tonne of carbon dioxide through solar PV in Germany still costs E716. The International Energy Agency has produced an even higher estimate: E1000 per tonne. There are dozens of ways in which you can save carbon for 100th of the cost of solar PV at high latitudes.

The paper comes out against using feed-in tariffs to stimulate wind power as well, but in this case it shows that largescale wind in Germany is likely to become cheaper than conventional power by 2022, at which point subsidies will become redundant. It makes no such prediction for solar PV. It reinforces the point I made in my first sally: that while Germany, like the UK, belongs to the European emissions trading scheme, any carbon savings made by feed-in tariffs merely allow polluting industries to raise their emissions. The net saving is zero. The paper suggests that a far more cost-effective mechanism would be to crank down the emissions cap under the trading scheme, then let renewable technologies fight it out to offer the biggest carbon savings per euro.

As for stimulating innovation, which is the main argument Jeremy makes in their favour, the report shows that Germany's feed-in tariffs have done just the opposite. Like the UK's scheme, Germany's is degressive. What this means is that the earlier you adopt the technology, the higher the tariff you receive: if you waited until 2009 to install your solar panel, you'll be paid 43c/kWh (or its inflation-proofed equivalent) for 20 years, rather than the 51c you get if you installed in 2000. This encourages people to buy existing technology and deploy it right away, rather than to hold out for something better. In fact, the paper shows, the scheme has stimulated massive demand for old, clunky solar cells, at the expense of better models beginning to come onto the market. It argues that a far swifter means of stimulating innovation is for governments to invest in research and development. But the money has gone in the wrong direction: while Germany has spent some E53bn on deploying old technologies, in 2007 the government spent only E211m on renewables R&D.

In principle, tens of thousands of jobs have been created in the German PV industry, but this is gross jobs, not net jobs: had the money been used for other purposes, it could have employed far more people. The paper estimates that the subsidy for every solar PV job in Germany is E175,000: in other words the subsidy is far higher than the money the workers are likely to earn. This is a wildly perverse outcome. Moreover, most of these people are medium or highly skilled workers, who are in short supply there: they have simply been drawn out of other industries. The researchers say that

“any result other than a negative net employment balance of the German PV promotion would be surprising. In contrast, we would expect massive employment effects in export countries such as China”

Germany's solar exports (E0.2bn in 2006) have been greatly outweighed by its imports (E1.44bn in the same year). And it's not getting any better:

“Recent newspaper articles report that the situation remains dire, with the German solar industry facing unprecedented competition from cheaper Asian imports.”

The UK's prospects of building the major export industry Jeremy dreams of are even slighter, as it will now have to take on Germany as well as China and Japan. We've missed the boat by years.

While I've been taking plenty of flak for arguing this case, I've also received a lot of support from green energy experts. [Chris Goodall](#) and [David Thorpe](#), for example, have both come to similar conclusions, by working the case out from first principles. If you doubt what I say, I urge you to read their analyses, and the astonishing figures they have produced.

I have no horses in this race: no products to sell, no shares in any company, no favours to discharge or lobbyists to please. I am simply trying to work out what's best. I realise that there is no persuading some people: that they will believe what they want to believe. But I hope that some of you might be able to see that this is an honest attempt to get to the truth of the matter, and to find the most effective means of preventing runaway climate change.

www.monbiot.com

 

## Stay Updated

Get new articles by email:

## Categories

- [advertising](#)
- [Books](#)
- [climate change](#)
- [corporate power](#)
- [culture](#)
- [economic justice](#)
- [education & childhood](#)
- [employment](#)
- [environment](#)
- [farming](#)
- [food](#)
- [foreign affairs](#)
- [General](#)
- [genetic engineering](#)
- [globalisation](#)
- [health](#)
- [health & safety](#)
- [hunting & the countryside](#)
- [interviews and debates](#)
- [landrights & planning](#)
- [law & order](#)
- [media](#)
- [nuclear](#)
- [oil](#)
- [politics](#)
- [privatisation](#)
- [protest](#)
- [racism](#)
- [religion](#)
- [science](#)
- [supermarkets](#)
- [tourism](#)
- [transport](#)
- [war - afghanistan](#)
- [war - general](#)
- [war - iraq](#)

## Links

- [About George Monbiot](#)
- [Careers Advice](#)
- [Contact](#)
- [Discuss these articles](#)
- [Talks](#)
  
- [Articles by RSS](#)

Copyright © 2006 Monbiot.com | site by [Tom Dyson](#)