

The Telegraph

Is solar the future for energy production?

Green entrepreneur Jeremy Leggett advocates following China and Germany's move towards investment in solar power now that start-up costs are falling drastically.

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Wall Street has developed an aversion to solar-company stocks. Yet in the USA, solar jobs now outnumber steel jobs and in Germany solar jobs outnumber nuclear jobs.



Jeremy Leggett

Most big energy companies and half of Whitehall profess that solar can never be a serious player in national energy plans. Yet the UN and others have recently concluded that solar could play a major role in a world mostly run on renewable energy.

Who to believe?

“Follow the money” is a useful guide. The global average cost of manufacturing solar photovoltaic (PV) panels has been falling 18% for every doubling of capacity in factories for many years now. As a consequence the average price for a solar PV power plant in the US was \$7 per watt in 2007 and \$3 per watt this year. In the 6 years it would take to build a new coal plant in America starting today, solar PV will be the cheaper option.

This inexorable fall of 18% in cost means that solar electricity ever nears costing the same as conventional electricity: “grid parity”, as energy pundits call it. Grid parity is coming in every country. The timing varies with domestic electricity pricing, but there can be little doubt that solar electricity is going to be cheaper than conventional energy almost everywhere within the decade. Those who say “solar is more expensive than gas and coal” take a misleading snapshot in time: they make a one dimensional statement about a two dimensional phenomenon.

[The Coalition's vision for renewable transport \(http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741602/The-Coalitions-vision-for-renewable-transport.html\)](http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741602/The-Coalitions-vision-for-renewable-transport.html)

[Building a sustainable and successful future \(http://www.telegraph.co.uk/sponsored/earth/the-age-](http://www.telegraph.co.uk/sponsored/earth/the-age-)

[of-energy/8741595/Building-a-sustainable-and-successful-future.html](http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741595/Building-a-sustainable-and-successful-future.html))

[Jeremy Leggett \(http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741799/Jeremy-Leggett.html\)](http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741799/Jeremy-Leggett.html)

[Norman Foster \(http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741803/Norman-Foster.html\)](http://www.telegraph.co.uk/sponsored/earth/the-age-of-energy/8741803/Norman-Foster.html)

A nuclear plant takes more than ten years to install, a solar PV plant of similar output one year. As for rooftop solar, zero-emission solar homes can be built in a matter of months, as SSE and Solarcentury have shown in practice in the UK.

A revolution is unfolding. At least some investors appreciate this. A record \$211 billion flowed into clean energy in 2010, driven in the main by Chinese wind power and European solar roofs.

British industry must not miss out on this revolution. Neither must our increasingly hard-pressed citizenry, few of whom will want to be paying ever rising Big 6 electricity prices based on coal, gas and nuclear, beyond the UK's solar grid-parity crossing point.

It is no longer credible to say that solar can't play a major role in a sustainable energy mix. Deutsche Bahn intends to run the entire German railway system on wind, solar and hydropower. The German economics ministry has collaborated with German companies to run a scaled model of the national economy on a real mix of renewables, including solar, and concluded that a healthy modern economy could be run on renewables, including baseload electricity. In a report due out later this year, the International Energy Agency will admit that solar can provide 60% of global electricity by 2060.

It is not good enough to say, as some do, that if a global mass market is inevitable, the UK should sit back and partake come the day, not before. This is a strategic miscalculation. We do not want to be importing every aspect of our energy infrastructure ad infinitum. National security considerations such as peak oil increasingly demand that we have domestic industries that are as stand-alone as humanly possible.

In this respect there should be many opportunities for the government. The prime minister has emphasised the Big Society idea as a flagship programme of his tenure, and he envisions many of the jobs that must countervail the austerity measures will come from British participation in the green industrial revolution that he says is unfolding around the world. Solar is an important part of that. Ask the Chinese. In 2000 they had little solar. Now every second solar cell is made in China. The government would not have to do much to fashion a Big Society/green industrial revolution case-history worth boasting about.

Around the nation, as things stand, thousands of jobs are being created in the embryonic British solar industry. Tens of thousands of citizens are in the process of being empowered in community projects. The cause of this is a solar-energy feed-in tariff: a market-enablement process used by over 40 countries around the world that entails premium pricing for solar photovoltaic (PV) electricity funded by a small levy on all energy bills. With its feed-in tariff introduced in April last year, the UK has belatedly joining the party in one of the fastest growing markets of any kind globally.

The opportunities extend well beyond solar. Solar generation would soon be marriable at scale with the energy efficiency measures due to be stimulated by the government's Green Deal. Innovative integrated energy-services financing would become possible, unleashing substantial net energy cost savings.

Feed-in tariffs are supposed to decrease annually, as solar prices fall. That is part of their innate attraction. Unlike nuclear, solar does not need subsidising forever. But the staged reductions in tariff, down to zero within the decade, have to match the market. It is no good introducing sudden deep cuts. That stalls a market, as a number of governments have discovered this year.

The first reductions for UK rooftop solar PV tariffs will begin in April 2012, and are under review right now. The government has to get this just right. Reductions in tariff have to be deep enough to fairly reflect falling solar prices, and not too deep to stall the development of a domestic UK solar industry.

Ministers like Greg Barker and Chris Huhne understand. Others do not. They listen to the calls of the nuclear and gas industries, who among others lobby to slow or kill the solar rollout in multiple countries by cutting feed-in tariffs to the bone. In France, for example, the nuclear industry has all but emasculated the French solar feed in tariff, and hence market.

Creating a Big Society/green-industrial-revolution case-history worth bragging about will involve the government creating a smooth glide path to solar grid parity in electricity markets. This in turn will involve not listening to many of the lobbyists working for the big energy companies, and many civil servants too. They are too wedded to the past, and cannot see what Silicon Valley investors, and the Chinese, see.

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