

[The solar hydrogen house](#) [1]

Written by [Tim Worstall](#) [2] | Saturday 21 June 2008



One of my little fantasies over the years has been that there really is a solution to this fossil fuel and climate change problem. There's enough insolation (in many parts of the world, at least) onto the roof space of an average suburban house to provide the energy needs of that house. The major problem is always how to store the energy so that it can be used when the sun isn't shining: nights or in winter.

So I'm interested to see that someone has [actually built a house](#) [3] which does this. Solar PV on the roof powers the house when there is indeed sunshine, the excess going into batteries. When those batteries are full then the power is used in an electrolyser to separate the hydrogen and the oxygen in tap water. The hydrogen is then stored for when it might be needed, being used to power a fuel cell stack and produce electricity. The hydrogen is also used to run a fuel cell powered car or two (and can, in theory, be burnt in an internal combustion one too).

Now no, this isn't a "solution" to anything at all in fact. The system cost \$500,000 to install and that's not counting the actual labour costs. But then he prototypes of anything always cost a lot: the engineer thinks he could replicate his system now for some \$150,000, as he is on another house, given the steeply falling costs of many of the components. That again is still too expensive for more general use: however, it's worth remembering something about this capitalism shtick.

It might be that the system doesn't invest enough in basic research, which is the justification for government involvement in funding much of that. But what we do know about it is that when something has been shown to work, capitalism is extremely good at making it cheap. I would not be at all surprised (indeed, I would be rather surprised if it didn't happen) to see the costs of such a system come down to \$50,000 or less within a decade.

Yes, £25,000 is still a serious sum of money but when you think that you're getting a couple of decades worth of domestic utilities plus your petrol bill out of it, it might indeed be a rational purchase.

We've been told often enough in this climate change discussion that technology won't save us, that only a radical change in lifestyles will. But as the above at least allows me to surmise (if not quite prove) that could be wrong: that technological advance driven by enlightened self interest and the profit motive will indeed do so.

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