

# Green **energy** finance

How to make zero carbon profitable by Steven Harris,  
Technical Director, ZEDfactory Ltd, and ZEDfabric Co. Ltd.



**F**or housebuilders, zero carbon is a problem. To achieve any more than the minimum requirement, the builder has to spend a substantial amount of money. They are then likely to be told that the property is still only valued by multiplying the square feet of floor area by the going market rate in that location.

So it is not surprising that most housebuilders have learnt to only aspire to the minimum, in order to produce the square feet. To do any more will only eat into profit margins and lead to some difficult questions from shareholders and bank managers.

So if we are to start building zero carbon homes, and make a profit, what are we to do?

## Achieving

Now technically speaking, achieving zero carbon is easy, especially if you are building at under 50 homes per hectare. At these densities you have enough solar access to simply bolt some panels onto the roof and the job is nearly done. With a (very) well insulated and airtight 100m<sup>2</sup> house this can be as few as twenty 180W PVs and a couple of solar thermal panels. Add some form of biomass boiler or boiler stove, either communally or individually to provide the small amount of heat still required for sunless winter days, and (with a few other bits and pieces) there you are. What's the problem?

## Small bills

Well obviously, even at ZEDfabric consortium prices, 180W PV panels still cost £540 each so that is £11ks worth of kit before you start. However

the valuer will still be unlikely to give you any credit for your efforts.

The householder however will be very happy. They will have no electricity and very small heat and water bills and yet they will only be paying a mortgage on the 'location and size' value of the home, just the same as their high carbon neighbours with their high bills.

Now in buyers markets, making purchasers this happy might sell your homes while other's homes don't. However it doesn't make for a robust long term business plan, especially once mortgages start to be more readily available and purchasers will again just be happy to buy anything just as long as it is in the right county.

## Financial innovation

What is needed then is not technical innovation but financial innovation. This requires a complete change in the way we market houses.

We are never going to get away from the 'location, location, location' element of valuation. As much as we Architects would like to think otherwise, a well designed zero energy house in a bad location is never going to be worth as much as a badly (or even abominably) designed, energy profligate house in a good location. This has to be accepted.

So let the 'blind valuer' do their worst. This fixes the basic price of the floor area and becomes the base price.

## Optional extras

We then have to start marketing 'optional' extras, but instead of having to market them like car optional extras (this spoiler and metallic paint make

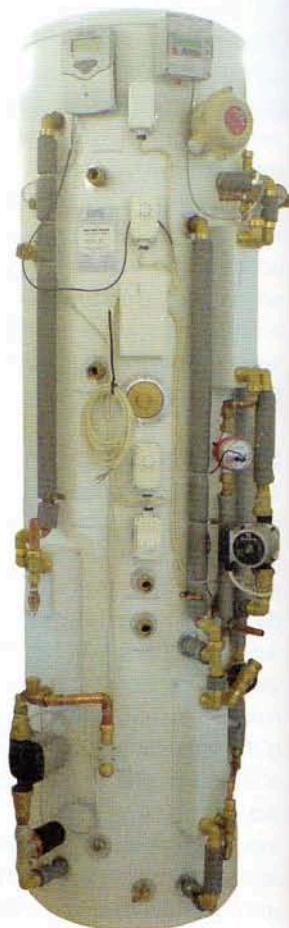
your car really cool), we can market them against how much they save and in some cases, *make* the householder. Success depends on explaining the concept to potential buyers – clearly. Here are a couple of examples.

### Optional extra 1 – solar thermal (month one payback)

- For £3500 extra we can install a two panel solar thermal array and solar optimised thermal store on your new house.
- If you add this amount onto a standard 25 year mortgage (at say 4.5%) you will pay around an extra £240 a year.
- The array should generate £135 worth of heat this year (meaning your gas bills will be £135 less)
- If you claim Renewable Heat Incentive (RHI) from the likes of Good Energy today or, in the near future, central Government, you will also receive around a payment of £120 a year.
- Total Income is therefore £255 this year.
- So the end of the first year you will be £15 better off!!
- As energy prices increase (which is the accepted long term trend) your income will increase.

### Optional extra 2 – Super Insulation (future proofing)

- For £1450 extra we can make your new home super insulated.
- If you add this amount onto a 25 year mortgage (at again say 4.5%) you will pay around an extra £102 a year.
- However this insulation should save you £64 worth of heat this year.
- If heat (fuel – gas and oil) continues



The ZEDstore by DPS, the brains of the solar thermal system.

Standard high performance PV panels have a far lower cost per harvested kWhr.



to rise in cost by an average of 4% over inflation, which given recent trends is a very conservative estimation, by 2015 you will be saving £105 of heat a year.

- By 2020 you are saving £150 worth of heat a year but still only paying out £102 for that saving.

Now there are many tweaks that can be done with these examples, but you get the general idea. You swap the money that the householders would have been paying month on month to utility companies for their energy and pay it instead to mortgage lenders. The mortgage lenders then pay it to you as part of the total asking price

### New breed

There has been much discussion recently, of a new breed of 'green' finance. This could either be as an energy mortgage, which is a second mortgage secured by a second charge but judged against equipment performance, or a straight extension to the first mortgage. Already mortgage lenders such as the Ecology Building Society are offering up to 1.25% discounts on the element of mortgages that cover the costs of materials and equipment that reduces carbon emissions. Other lenders, while slightly

distracted at the moment, have expressed great interest in tapping into this A+ prime market.

In the USA, solar lease companies already install panels on peoples' roofs for free as long as the house owner agrees for them to become your energy supplier for a fixed period. All the householder then experiences is slightly higher electricity bills, but with the knowledge that they will eventually have vastly reduced bills once the lease period has ended and their house could be worth much more should they wish to sell it.

### Profit?

Once the Housebuilder has added on the cost of the below the line extras they start selling a higher total value product. They are actually increasing their market share at the expense of energy suppliers. For the consumer, the process is pretty much cost neutral, just the same as swapping from Tesco's to Sainsbury's, but instead now they are swapping from an energy supplier to a housebuilder.

**Who would you prefer they gave their money to?**

Solar thermal – using evacuated tube collectors extends harvests into the winter.



“There has been much discussion recently, of a new breed of 'green' finance. This could either be as an energy mortgage, which is a second mortgage secured by a second charge but judged against equipment performance, or a straight extension to the first mortgage.”

### WANT TO KNOW MORE?

■ For further information on **ZEDfactory**, circle readerlink 102, or enquire online at [www.readerlink.co.uk](http://www.readerlink.co.uk)