

Rupert Dorey

██  
██

6 Nov. 08

Dear John, RE: OUR Buy Back Rate Review Oct. 2008

Thank you for forwarding your recent discussion document regarding micro generation in Guernsey, which I found thorough, thought provoking & informative.

As both a user & supplier of micro generated energy for domestic use, I hope I can provide some thoughts of my own which may assist you in developing policy for Guernsey & which may encourage wider use of this technology.

It is perhaps worth considering the reasons why individuals & The States may wish to employ & encourage the use of this technology.

For my own part, I chose to invest in this technology for the following reasons:

- I believed that energy would increasingly be a scarce commodity & wished to secure a guaranteed supply of power at a reasonable price.
- I believed that it made economic sense to make the investment & that I could achieve a satisfactory rate of return
- It was the right decision to make from an environmental perspective
- Insulate myself from unpredictable changes in energy prices.

From The States perspective, micro generation can benefit the island by:

- Helping meet carbon emission targets
- Reduce reliance on external sources of energy (oil & gas & electricity) & increase energy security
- Provide a long term economic benefit by improving the balance of payments, by reducing the islands dependence on imports
- Assist in obviating the need for their own capital investment in generating equipment
- Portray themselves as socially & environmentally responsible.

As a domestic user I am unlikely to invest in generating technology for more energy than I could reasonably expect to use on an aggregate annualised basis. I imagine, in this regard, most domestic users would take a similar stance, unless tariffs were set well above current levels. Domestic generators are therefore displacing the supply & use of GELs electricity with their own, leading ceteris paribus, to lower aggregate demand.

My principal micro generating investments have been an 11 kW Ground source heat pump (not really a "generator" but a reducer), & 1.8Kw PVs. In conjunction with other features such as solar glass, high quality insulation etc., my overall energy consumption has reduced in absolute terms by approx. 60% (9 month annualised) & on a comparable square foot basis by 70-75%. Additionally I use no oil at all.

- Having read the various proposals for tariffs, I am of the opinion that a variation of Net metering system used by the Isle of Man (ref note 6.5) would be most appropriate for Guernsey, where the overriding principle should be that domestic suppliers of energy are paid for any excess energy they

produce at the same rate as they would pay for it if it was consumed. The main variation being that the net metering should be able to be operated on an Economy 12 ie: dual rate, possibly requiring the installation of a second meter. The alternatives of the Feed in Tariff or the Avoided Cost approach are too heavily skewed in favour of the domestic generator (Feed in) or the supplier (Avoided Cost). The Net metering approach appears to be the most equitable way of encouraging micro generation , balancing the interests of all parties.

- While I believe firmly that the cost of special meters should be paid for by the household as part of the initial capital cost, I feel that the charging of an annual £250 pa micro generation charge (as per the IOM) would offset almost the entire benefit of the value of the electricity produced. You should note that I have produced approx. 1500 kWh in 9 months ( worth approx. £135 at av. charge rate) It is a feature of PVs that they produce most electricity when you need it least, ie: during the summer & in the daytime. This period generally coincides with peak electricity rates & demand. It is therefore rather inequitable for a supplier of PV produced electricity in Guernsey to be paid approx. 5ppKwh to GEL , who then sell it at approx. 12ppKwh to another consumer as they have made no contribution to its creation & have taken a net 7ppKwh profit. Wind generated & micro hydro generated electricity operates under a different set of albeit less predictable parameters, but the same principle should apply.
- You may be interested to know that I do not subscribe to the heat pump tariff as I believe that in my installation it is cheaper to use Economy 12 blended rate , on the basis that the heat pump can do most of its work in the off peak hours & drawing occasionally at the peak rate when required.  
For your own information, my experience with PVs is that they produce on an annualised basis an amount equivalent to approx. 20-25% of their peak output (due to darkness, cloud , occlusions etc.) so my 1.8Kwh system produces the equivalent of 450W continuously throughout the year.

From an "investment " perspective, the risk free returns I am achieving from the PV & Heat Pump are as follows: assuming 0% & 10% & 15% pa increases in energy prices over 25 years, representing the expected life of the installation.

	0%	10%	15%
HP	3.5%	13%	17%
PV/ Wind	-5%	3.5%	8%
Combined	1.5%	10.5%	14.5%

Guernsey electricity prices have increased at approx. 7% pa over the last three years, by my estimation ( but you would know this better than I). An 11 kW HP system costing £20k (your figures) will achieve economic break-even in approx. 8 years with energy price inflation of 7% pa.

I notice that in your report there are only two suppliers of electricity to GEL , both of whom are negligible. You should bear in mind that the success of this micro generation initiative cannot be measured in terms of the amount of electricity supplied to the grid, but more in terms of how much more electricity would have to be supplied to the grid if the micro generators did not exist. The key difference being the the electricity supplied by GEL is a net figure of total energy used. The gross amount of electricity used would have to include all of the electricity generated by the micro generators that is used internally & never gets to the GEL grid. As an example you would have to add back the 1500 kWh that I have produced (& used) that is not included in any GEL figure.

In conclusion , I believe that any initiatives put forward to encourage micro generation whether it be Feed-in , cost avoided or variations of net metering would be welcome. I believe the cost of these initiatives will be negligible as micro suppliers will in reality only produce enough for their own needs (your figures support this) making any subsidy virtually cost free, even using the more generous feed-in tariff. GEL / States could get good headline copy in this regard at very little expense by appearing to be generous , for what in practice will cost them very little. In measuring aggregate supply of electricity by GEL one has to make allowances for the substitution of one form of energy for another, such as from oil to electricity. In my own case, I was using a substantial amount of oil, but am now not using oil at all.

From GELs viewpoint, they think that my electricity consumption has risen (which it has), but my overall consumption of energy has fallen dramatically as my consumption of oil is now zero. A useful conversion equivalent is that 1 litre of heating oil is equivalent to 9 kWh of electricity.

The key determinant for investors being attracted to micro generating technology will be driven by a combination of economic return, ideology & security of supply. The latter two of which are largely subjective, but no less important.

Needless to say , I have plenty of practical advice which I am happy to share, but which would not be appropriate in this letter..Please don't hesitate to call me if you need clarification or assistance.

Sincerely yours,

Rupert Dorey