



Renewable Obligation Certificates

By Ray Berry¹

I am asked time and time again: “If what you say about windfarms is true, why would anybody ever consider investing money in them? How come there is this scramble to erect windfarms all over the country? If the electricity that they supply is intermittent and unreliable, why would people spend so much on these huge turbines?”

Actually the answer is very simple. It isn't only about the electricity they generate for the grid, what makes them so profitable to erect and for international banks to invest in them is something else entirely.

That something else is what is globally known by several curious acronyms: TRECs, RECs, ROCs or simply Green Certificates. The UK version is the ROC: Renewable Obligation Certificate. That puts us between a ROC and a hard place I'm afraid because this is what makes windfarms in particular the source of the latest goldrush.

So let me explain from the beginning. Most people assume that wind turbines are designed to generate electricity — well so they are and this electricity is sold on the local grid for whatever the going rate is — around 3 pence per kWh or 30 pounds per MWh.

That is one product. The wind turbine actually generates a second product — this product is the ROC which has a value of its own in addition to the electricity sold to the grid.

Think of it as two distinct products being produced by the windfarm both of which have a marketable value.

How does this work?

Well the ROC is part of the government's plan to increase the use of renewable energy used and generated in the UK in line with Kyoto and other agreements. Non-renewable energy producers, coal, gas etc are now obligated to supply 3 percent of all of the energy they sell as coming from a renewable source. To do this they can buy a Hydro Dam or a Windfarm and hope it constitutes 3 percent of their sales. Most of the time it doesn't come close so the government fines them so much per kWh. The other way is to buy ROCs from renewable energy producers to the amount of MWh they are short. So there is a market for ROCs right away. But it isn't the only one.

So how does a ROC get issued. It works like this: OFGEM, the government's energy regulator is the issuing body. When a windfarm or whatever is built they register with OFGEM and OFGEM then comes along and inspects the facility to see that the output metering is correct etc. Then as electricity is generated (and sold on to the local grid for cash) every MWh generated creates one ROC. Thus each ROC is worth 1MWh (or 1000 kWh depending how you count these things.)

Every ROC generated is kept on OFGEM's register of ROCs — its database. These ROCs can then be used by power companies to offset their 3 percent fines or they can be sold on the open market through a growing network of traders. How much are they worth? Well in the last auction (yes they are auctioned too) the average price was about £67 per ROC or per MWh. And this is for the NEXT year's generation — future generation. Thus if you add together the sales from the local grid mentioned above — £30 per MWh PLUS £67 per ROC you get every Megawatt-hour turned out by a windfarm being worth close to £100.

So let's do a few sums.

If we have one 2.2 MW turbine putting out just 1MWh for 12 hours a day (25 percent rated capacity) it earns around £1200. If we multiply that by

365 days in the year we get £438,000 or getting on for half a million quid – and that is just very conservative output on one turbine. Multiply that by say 30 turbines in the average windfarm and we have over £13,000,000 or thirteen million pounds per annum. If you own ten windfarms.....over say 20 years we start getting into big numbers like two and a half billion green ones – and that is only at 25 percent efficiency.

Of course you have the capital costs of buying and erecting the things and a pittance in comparison on maintenance, but look at the rewards. How much do they pay the landowners? Not a lot in fact, and the communities get say £30,000 a year.

So perhaps you can see why banks and investment houses are scrambling to get a slice of the action. Right now trading markets are being set up world wide to deal in Green certificates and the EU is jumping firmly on the bandwagon. The price for Green certificates is on the rise and who knows what they will be worth ten years down the road when even more stringent carbon emission penalties are imposed.

Lovely jubbly as someone frequently says, and less than a third of the bonanza comes from actually generating electricity.

Dr Malcolm Swinbanks has commented:

“The separate matter of the ROC's and the role of investment organisations attracted by a public end-user financed, failsafe source of over-generous income is undoubtedly correct. Wind energy has been described as “low-value” energy, because it cannot be depended upon. Studies by the Oxford-based management consultants Poyry, who claim to have access to 8 years of comprehensive hourly wind-records for at least 36 sites around the country, recognise that in 2050 wind-energy could reduce from 90 Gigawatts output to 4 or 5 Gigawatts within only a few hours, then back to 90 Gigawatts again. So there will be a requirement for a corresponding amount of readily available back-up. But since the requirement for this backup itself will now be unpredictable, it will become financially impossible to invest in providing this back-up, unless it is also subsidised! The original data (over 2,500,000 data values) was from 2000-2007, but presumably they have continued to update their data since then. To my knowledge, they have not made any of their raw data publicly available. But their overall conclusions about useful energy generation were little different from Stuart Young's report which he derived using publicly available data.

See - http://www.jmt.org/assets/pdf/Report_Analysis_UK_Wind_SYoung.pdf

So wind energy is subsidised because it is unreliable and uneconomic. Yet the most reliable form of backup will in future have to be subsidised because it has to support this unreliable source, and consequently will itself become a financially unpredictable operation.

Subsidies leading to yet more subsidies.”

Taken from Windfarm Action Group

windfarmaction.com

¹ <http://windfarmaction.wordpress.com/the-dummies-guide/renewable-obligation-certificates-explained/>