GREEN ELECTRICITY...
ARE YOU BEING CONNED?

Just change your electricity supplier and help fight climate change. Sounds to good to be true. Is it?

BY **JEREMY SMITH**
PHOTOGRAPHS **BY ANT UPTON**

'What should I do?' Working for *The Ecologist*, it's a question I regularly get from my friends. 'Should I buy organic apples from the supermarket, or non-organic ones from my local greengrocer?' 'If there are problems with Esso, Shell and BP, which petrol station should I fill my car up at?' 'Is it worse to drive to the Alps for a skiing holiday, or to fly to Spain to stay in an eco-lodge?'

These are all questions with no simple answers. So I was relieved a couple of months back when a friend asked what I thought was for once an easy one. He was fed up being bothered by people telephoning on a Sunday to try to sell him electricity. Having read a few copies of the magazine that I keep shoving in his hands whenever I visit, he wondered if there wasn't perhaps a green option.

I told him that for four years now I'd been with a company called Good Energy (it was known as Unit-E when I joined), and that it supplied me with 100 per cent renewable electricity.

He seemed impressed: 'That must have been a lot of work.'

'What do you mean?' I replied, incredulous. 'I just phoned up, they sent me a direct debit form, I filled it in and that was it. Easy.'

'So how is your electricity different?'

'Errr…' I was stumped. I had no idea. There are no wind turbines near my house in north London (not that I can see too many nuclear power plants or coal stations on the horizon, either). Just where did my electricity come from, and how on earth could it be called green?

I looked at one of my old bills. On it Good Energy declared that it was 'committed to delivering 100 per cent renewable electricity to its customers'. Sounds good, but didn't answer my question. How could Good Energy be delivering on its commitment to me? When I changed over to it no one had come and rewired my house. No one had unhooked me from my old power supply and connected me to the nearest wind turbine. So what was actually different about the electricity being delivered to my home? The answer is nothing.

The reality is that switching to Good Energy has made absolutely no immediate difference to the source of electrons that powered my kettle. My electricity, like everyone else's connected to the UK's national grid, still comes mainly from whatever the closest power station is. If you live near Sizewell B and have a 100 per cent green energy tariff, chances are most of your electricity was produced by the fission of uranium by British Energy – a firm that your taxes have repeatedly saved from bankruptcy. Neither green, nor cheap. Similarly, people like Margaret Thatcher's former press secretary Bernhard Ingham may despise wind power, but if any of them has a house in the vicinity of Delabole in Cornwall or any of the country's other increasing number of wind turbines they are probably sat there swearing at a TV powered by the very energy source they hate. (And however much they might swear, the screen doesn't flicker if there's no wind.)

So what is happening? When a company offers you a '100 per cent green' tariff what it is actually saying is that for every unit of electricity you use it will provide the national grid with the same amount but from a renewable source.

I called my friend and explained. He seemed happy and, for a while, so was I. I'd also discovered from Good Energy's website that it offers a carbon calculator which allows customers to 'find out how much you can cut your pollution' by signing up to the company. So I found a bill and followed the instructions, typing in how much I paid each year and how many kilowatt hours I used. At the end I learned the reassuring fact that I had saved '1,496 kilograms of CO_2 a year'.

And there I left it. Until a couple of weeks ago when I was reading George Monbiot in *The Guardian*. In an article describing the ongoing arguments over a proposed wind farm at Winash in Cumbria, Monbiot wrote: 'The Winash project, by replacing energy generation from power stations burning fossil fuel, will reduce carbon dioxide emission by 178,000 tonnes a year. This is impressive, until you discover that a single jumbo jet flying from London to Miami and back every day releases the climate-change equivalent of 520,000 tonnes of carbon dioxide a year. One daily connection between Britain and Florida costs three giant wind farms.'

I did the maths. By being with Good Energy last year, I had, according to the firm's calculator, saved the equivalent of a flight in a jumbo jet from London to… well, London: 1.496 tonnes of carbon is what a jumbo emits in a flight lasting just less than eight miles.

Had I let my friend off lightly? After all, last year he'd holidayed in the Caribbean and the south of Italy, driven his car to countless meetings across the country, and eaten daily food from a

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GREEN ELECTRICITY

By being with Good Energy last year, I saved the equivalent of a flight in a jumbo jet from London to… well, London. A mere 1.496 tonnes of carbon - what a jumbo emits in a flight of just under eight miles.

supermarket whose (organic) produce had flown more miles than he had managed by road and air combined. It was going to take more than saving eight miles worth of jumbo fuel to reduce the impact of his consumption by any significant amount.

Realising this made me feel pretty stupid. Ever since I'd first changed supplier a few years ago I'd continued under the misguided impression that somehow I had just absolved myself of all concerns about how much electricity I used. Because I had been assured that my electricity was now being 'delivered' from renewable sources, I was convinced that I no longer had to think about whether I left the TV on standby, overfilled the kettle, or switched the lights on all across the house. I sincerely thought that as I was using green electricity, it didn't matter how much I used.

But of course this isn't the case. We don't use the wind's infinite energy. We use the finite amount of it that the total number of turbines in the UK manages to transform into electricity. And when we've used that up, we are forced to rely on climate-changing coal, Russian gas imports, and very expensive toxic nuclear power.

So what on earth does Good Energy's pledge actually mean?

Before 1989 the UK energy supply was centrally owned and in public hands. When it was deregulated that year the door was opened to private companies to buy up generators and sell the energy that they produced. Companies such as Good Energy could buy already existing wind farms or hydro power stations, and start selling 100 per cent renewable electricity.

Consumers such as me were now able to buy their power from companies that owned nothing but wind turbines and/or dams, but what difference did it make? The UK's total energy structure was still the same: the same amount of CO_2 was being released into the atmosphere; there was the same amount of nuclear power with all the associated risks of pollution, terrorism and radioactive waste. All that had changed was the price of my bill. Because, of course, for the peace of mind that renewable electricity was supposed to bring, I was paying a premium – a premium that I assumed was being spent on making more of the UK's power supply come from renewable sources.

If only it were. At the time the energy market was deregulated, the UK produced approximately 3 per cent of its energy from renewable sources. By 2002, that amount was still 3 per cent. In the 13 years since deregulation we hadn't increased the percentage of our power being produced by non-polluting means one inch. Yes we'd built some more turbines, stuck a few more panels on our roofs, but in the same period the amount of electricity we'd consumed had also gone up.

Npower has 1,000 times more customers than ecotricity, yet spent only seven times as much on building new renewable power sources

Then again, if companies like Good Energy have been building turbines, it's not their fault that we haven't cut our consumption. But what if they haven't?

In recent weeks a new website has been launched: *WhichGreen* **www.whichgreen.org.** It lists all the electricity companies that offer green tariffs, and shows how much they invested per customer in building new sources of renewable energy in 2004. According to the site (see the table on page 61), Good Energy has not spent a single penny. Nor has Green Energy, another supposedly '100 per cent renewables company'.

In fact, one company in the 'green energy sector' stands out, having spent £901.64 per customer in renewable infrastructure (the next biggest investor spent just £8.33). That company is ecotricity, the first company in the world to offer a green tariff (when I joined the then Unit-e, ecotricity was only available to business customers) and the creator of… the *WhichGreen* website.

This fact alone made me loath to believe anything the site had to say. However, all the information on the website comes from either the individual companies themselves, or from independent sources such as Ofgem – the energy industry's regulator. Furthermore, the site has a feedback area on which the companies are free to comment as they wish about what *WhichGreen* says about them, and to challenge or justify the figures. And although the way the site grades the various companies ensures that Ecotricity does much better than anyone else, it seems to be justified.

I've also looked through all the different companies' promotional literature and websites. All manner of green claims are made. '£9 a year will be donated to a fund to be spent on community energy projects.' 'For every new customer, we donate £10 to the RSPB.' 'We'll plant enough trees to absorb your CO_2 emissions.'

These are all good-sounding efforts, but none of them addresses the core issue. We currently produce 34 per cent of our power from coal, 22 per cent from nuclear, 37 per cent from gas, yet only 3 per cent from renewables. This balance has to be dramatically shifted. The only way to do this is to build more renewable energy sources so that when old coal and nuclear power stations get decommissioned over the coming years there is enough renewable electricity being generated to replace them.

Started in 1995, ecotricity was the first company in the world to offer green electricity. From the beginning it was set up with the express purpose of changing the way electricity in the UK is generated and supplied in order to bring about significant environmental improvement. (As a company without shareholders it can make decisions based on what is best for the planet, not what maximises profit.) Ecotricity built its first wind turbine a year after starting business. In 2004 the company spent £7m building new renewable power sources.

It is true (and far better than nothing) that a company such as npower (whose green tariff is called Juice) spent about £40m in 2004 developing new renewable energy sources. However, the company did so off a customer base of 5 million. Look at that from a different angle: npower has 1,000 times more customers than ecotricity, yet spent only seven times as much on building new renewable power sources.

THE RENEWABLES OBLIGATION CON

In 2002 the U.K. government established the Renewables Obligation (RO) – designed to substantially increase the amount of renewable energy being generated. That year, the RO committed every power company to provide 3 per cent of their energy from renewable sources, and for that percentage to rise by around 1 per cent year on year until they all reached the government target of 10.4 per cent by 2010.
So, how is the RO supposed to work?

CARROT AND STICK…
For every one megawatt hour [MWh] generated by renewable energy owned by an electricity company, they receive a Renewable Obligation Certificate (ROC). At each year end, the number of ROCs a company has generated is measured against it's RO target.
If they exceed their target, they can sell the excess ROC's, and so gain funds for further renewable energy power generation. (THE CARROT).
If they fall short of the target, they can meet it by either buying excess ROCs from the market or paying a 'buy-out' fee (fine) to the regulator to cover the shortfall. (THE STICK).

SO MUCH FOR THE THEORY, WHAT OF THE REALITY?
By the end of 2002, the UK's electricity suppliers only provided the government with enough ROCs to meet 58.9 per cent of their total renewable obligations.

SO WHY DID THE RO SCHEME FAIL IN YEAR ONE?
Flaw one: The carrot is mouldy
Companies could meet their RO shortfall by simply taking the 'buy-out' option, rather than pay the market price for the ROC's on the market. So companies couldn't sell their surplus ROC's, so the supposed financial incentive wasn't there.
Flaw two: The stick is broken
There is no stick if it's cheaper to pay a fine (buy-out option), than to meet the RO by either generating ROC's through building new renewable energy sources or to buy ROC's on the market.

Having missed the RO by 41.1% in year one of the scheme, what did the government do in year two (2003), to ensure the electricity companies met hit their RO targets?

SIMPLE, OR SO THEY THOUGHT.
(1) They redefined 'renewable'! In 2002, sources eligible for ROC's included: wind, hydro stations of less than 20MW capacity, burning landfill gas and solar. In 2003 they added co-firing – eg, shoveling olive pips in with coal.
(2) They raised the bar on hydro capacity. Following fierce lobbying from the companies that bought up the UK's large hydro power stations following deregulation, the Department of Trade and Industry allowed the output from hydro stations with capacities greater than 20MW to qualify for the RO, provided the electricity companies refurbished them. It wasn't until year two, however, that the companies began to complete this work.
(3) Thirdly (and allegedly) some of the hydro power stations who's capacities exceeded 20MW were allowed to split themselves in two! For example, an old 35MW station, now qualifies as one 15MW station and one 20MW plant. (We would like to emphasise the word allegedly here as this is from an unquotable source. If anyone can prove or disprove this please do get in touch)

AND THE RESULT?
Amazingly, even when the goalposts have been moved, in 2003 the power companies only provided enough ROCs to meet 55.8 per cent of their obligation. A miss of 44.2%.
This is even more extraordinary when you compare year on year figures. In year one of the RO, the UK produced 223 MW of renewable electricity that qualified for ROCs. Of this, 140MW came from newly built sources. In year two, the amount of energy qualifying for ROCs shot up to 765.3MW. Of this only 270MW was from new build. Much of the rest was the refurbished hydro.
Clearly the system isn't working. So it's been stopped? No. And worse than that, organizations that should know better are perpetuating the RO myth.

FINALLY… 'ROC' RETIREMENT
In 2003 Friends of the Earth (FoE) and power company Good Energy launched the idea of 'ROC retirement'. The thinking being that if you reduce the number of ROC's available to buy in the market, and demand for them remains constant / rises, then the cost of buying ROC's will exceed the cost of generating ROCS. This would than lead to more renewable capacity being built.
A sound theory, unless of course:
1 The number of ROCs on the market seems to bear no reflection to their price;
2 There appears to be no demand for ROC's whilst it remains cheaper to pay the fine for missing the RO than trying to hit it with sufficient ROC's.

Having said this, why would a company retire ROCs if they can sell them for money? For a company committed to building new renewable sources, it would be shooting themselves in the foot to cut off such an essential revenue stream. On the other hand, for a company interested only in maximising return to shareholders, such seeming altruism won't go down well. ROC retirement has got a lot of coverage, most notably via a league table of green electricity suppliers on the FoE website. FoE made ROC retirement a requisite for being listed as a 'recommended' green energy company. (When I spoke to FOE, however, it was keen to distance itself from the table, and said it intended to remove it from the site. A month later, the table was still there.)
Last year the Advertising Standards Authority (ASA) criticised an advert by RSPB Energy (see the main article) for claiming that ROC retirement led directly to the creation of more renewable energy sources. The ASA adjudged that it 'had seen no evidence to prove the assumption on which the claim rested'.

WHICH COMPANY DID THE MOST TO COMBAT CLIMATE CHANGE LAST YEAR?

How much did the various companies offering consumers a 'green option' spend on the construction of new renewable energy generation (per customer) in 2004?

RANK	SUPPLIER	£ / CUSTOMER
01	Ecotricity	901.64
02	Powergen	8.33
03	Npower	7.20
04	ScottishPower	4.46
05	EDF Energy	0
06	Good Energy	0
07	Green Energy UK	0
08	Scottish & Southern Energy	0

Furthermore, npower is owned by RWE, which aside from being the second biggest energy firm in Germany is also the biggest water utilities company in the world and the owner of Thames Water, which came top of the Environment Agency's list of most polluting companies in the UK last year. Personally, I want my money going to a company completely committed to building renewable energy, not one which is just a small, clean part of a much larger, dirtier whole.

On that basis alone, I would also discount London Electricity and SWEB, as they are both owned by EDF: the French state-owned utility, which generates 88 per cent of its energy from nuclear power. In 2002 the European Commission ordered EDF to return €900m derived from tax breaks which the firm had used to finance foreign acquisitions. EDF invested nothing in renewable power in the UK in 2004.

What is more disturbing is who the other companies that haven't invested in renewables claim to be. Scottish and Southern Energy (SSE) runs two tariffs: RSPB Energy and power2. SSE calls RSPB Energy the 'UK's greenest energy company'; each time a new customer joins the tariff, SSE donates money to the RSPB (which also, conveniently enough, audits the scheme). Yet SSE, according to Dale Vince at ecotricity, did not spend a penny on building new renewable electricity supply in 2004. Power2 is even worse, as it makes the ridiculous assertion that its customers can 'decrease greenhouse gases just by ironing' – irresponsibly implying that consuming more electricity is something positive.

Almost all of SSE's 'green electricity' comes from old hydro stations that the firm bought after deregulation. When I challenged the company's spokesman about this he replied: 'We know some environmentalists have a problem with dams. But as far as we see it, it's power from water running down hills. The water would still run down the hills even if there wasn't a dam there. We think it's the greenest form of electricity there is.' However green he might think SSE's dams are, the fact remains that they were there before deregulation and should not be used to give the impression that SSE is actually doing anything to decrease our reliance on fossil and nuclear fuels.

> 'Green energy' supplier Power2 makes the ridiculous assertion that its customers can 'decrease greenhouse gases just by ironing', irresponsibly implying that consuming more electricity is something positive

Most disturbingly, both Good Energy and Green Energy claim to offer only '100 per cent renewably powered' energy (at a premium), yet neither has built any new renewable power generators. Green Energy has only been in existence three years, and says that it intends to start investing in renewable infrastructure in a couple more – once it has built up some capital. It may still come good.

Just today I received a letter (on 100 per cent recycled paper) from Good Energy saying 'thank you for choosing [us] to supply you with 100 per cent renewable electricity'. Renewable maybe. But certainly not new. In the eight years since it started trading, says *WhichGreen*, Good Energy has not spent a penny of my or anyone else's money on building new renewable electricity generators. Every kilowatt of power it has supplied has been bought up from already existing renewable power sources.

Which leaves me with ecotricity. Next year the company plans to more than double its spend on building new renewables to £15m. And before people comment that the UK cannot be powered on wind alone, the company also derives some of its electricity from solar power and has plans to get involved in wave power. By 2008 it plans to be investing at least £40m in new renewable infrastructure each year. By 2010 it aims to be generating 500 megawatts from new green sources, and hopes to have recruited a million customers.

Or rather 999,998, as, having finished my research into the green electricity market, I made two calls. One to ecotricity, telling them I wanted to sign up. And one to my friend, telling him to do the same.