

## Respondent 10

Hi, is that Alistair?

Hi, sorry go ahead, go ahead.

Are you sure? I can ring back another time?

No no this is absolutely fine, go ahead.

Ok, well I really just wanted to talk to you about your solar panels?

I do have solar panels! You're the lady whose doing some research about renewable energy. And you're up in uni in Edinburgh, that's right isn't it?

Newcastle, nearly!

Newcastle, right sorry.

So how many solar panels do you have?

Well I have a total of 16 panels, but its 3.74Kw.

When did you get them, when did you install them?

I got them in December 2011.

Ok, and have they paid back their capital cost?

Have they paid back their capital cost? Err I would say, how many years are we in? This would be 7 years, 7 times, er I would say they're approaching that point yeah, possibly by the end of this year. Yeah, yeah, yeah, in financial terms, but nothing to do with carbon, just in money terms.

Yes, and what was your reason for installing them in the first place?

Er primarily for CO<sup>2</sup> reduction to be honest, but obviously the incentives were good at the time. So there seemed to be an opportunity, a place to put them, so it seemed from my perspective that I was in a position to do it, so I did it thankfully!

And do you export that back to your energy supplier?

Yes they're mains connected so, I do export whatever I don't use. I assume I export about half what I've generated.

And do you try and match your consumption to what you produce, so say you produce electricity in the daytime, when the sun is shining, do you try and use electricity then rather than during the night?

I think I do but I think I do it more or less by default. Because, our home receives solely electrical power, we don't receive any other input into the property, because we live on a farm and the farm is not on the gas grid. So we would either have to have bottled gas, so in fact, we rely purely on electricity. So we have a high base load, as we call it, which you might be familiar about, so I think really we do use electricity every hour of the day, so because of that I think were using by default. So I possibly export less than some just because of that fact.

Do you get generation tariffs? Do you get paid for what you use?

I do, I receive what's called the feed-in-tariff. The rates were quite good, they gradually regressed. I don't know if you're familiar with this. Um, they started off, you know it's terrible I'm trying to remember. I think they started off something around 43p per kilowatt, but they're over 50 now because they're index linked as well. So for those who got in early, it was a good financial deal, as well as for anyone who was wanting to reduce CO2.

Who's your energy supplier then, or who do you export it to?

I export it to a company called Good Energy, which is a green energy supplier.

And then you receive energy in return when you're not producing?

Well, I receive energy by not importing as much than I would otherwise do. So it sort of mitigates if you like. If I've got my own power available and I'm demanding power, then I get my own power first, and I either top up, or by my own power when I'm either not generating energy, or when I'm not generating enough. I use all the power that I have available first, which is good. I like that.

And have you ever thought of installing batteries?

I have, but I understand that it's quite capital intense. I think on a small scale, when the technology is not perhaps certain in terms of its performance to cost, I for example, you know the lifespan batteries, over what period, you know, their cycle time, all this, how many times they can cycle, whether they need to be fully charged or fully discharged, has kind of put me off a little bit, particularly because relating to what I said earlier, I have a high base load. I would be using more than what I would be producing anyway.

Yes exactly, ok.

On a day like today it's still cloudy but of course they still generate when it's still cloudy.

Yes, a lot of people don't realise that.

No, which is good. So there is something there even when it's almost dark.

And have you ever thought about micro wind turbines?

I've got two wind turbines as well! Yeah! So I've got two 11Kw turbines. They are fantastic because we live on a reasonably windy place, with the average wind speed about 5.3m/s, and each of those turbines would produce something about 25Mw per year. So I also benefit from those.

Yes exactly, so you've got that if it's not sunny and it's not producing a lot of electricity.

But today's very disappointing because the wind's stopped its great Eastern flow. But you do get times like this.

There's usually wind in the UK.

You're absolutely right, most of the time the wind's blowing a little bit. But most of the time you get changes in weather systems, you get this lull for 6 or 18 or 24 hours and then it all comes back again.

Part of my dissertation is looking at Blockchain and how you could use Blockchain to trade energy on a local basis, and if you've got some excess electricity that you've not used, rather than exporting it to an energy supplier, you might export it to your neighbour or something. So there's a research team at the moment who are looking at how that might be possible. I wondered what you'd think about that.

Well I think that's an excellent idea. I don't understand it although I have heard of it. Although I didn't catch the exact phrase that you used. Did you say Blockscheme?

Blockchain. That's it yeah.

Oh excellent ok. Yeah so yeah I have hear of it. But Good Energy I was waiting to speak to them on the phone, in fact, and they said while I was waiting, all these messages kept coming through, and they said that on average people's energy travels about 2 and a half thousand miles, I think I heard. Good Energy's energy only travels 4 miles, or within 4 miles. And I thought that sounds good to me, because the way I understand it, transmission loss, so over long distances I understand that over 10% of the power just gets lost. Is that what you understand?

Yes, so if you're trading it on a much more local scale you won't lose quite so much electricity.

Yeah quite. So green energy being traded locally is the ultimate scheme.

Yes and hopefully the prices would also be higher for yourself, and lower for your neighbour.

Well, that would be perfect wouldn't it, because that would represent the lower costs of transmission.

Exactly.

But does it mean that we need local grid networks, or can the ones we've got be adapted.

I think you probably would need local grid networks, but I think distributed energy is becoming a lot more common nowadays, so I think it will start to happen, and hopefully they will get somewhere with this research.

Yes I hope so, because it would make a lot of sense wouldn't it. I know with a lot of these energy projects, there does seem to be a large upfront capital cost. I think that is the main thing that needs to be addressed. The payback is over a period of years, as with any infrastructure project.

Yeah that is true. Anyway thank you very much, that is very helpful.

Is that good, does that help. Also out of a matter of interest, I do also have ground source heat pumps, are you familiar with those. So I use them in my house and they produce underfloor heating and heat the house. And they're really good. So we try and be as eco as we can. And I drive a hybrid car as well, so I plug that in, so I great satisfaction when I plug that in and it's windy.

Yes!

Well I hope that's been helpful! And if you've got any further question do give me a call back! Id be delighted to help.