Power in the City

Transcript E03: A sunny disposition

Intro

Melissa: Hello, my name is Melissa. I'm a researcher based in Oldham who interviewed many of the locals featured on this podcast. Before we begin this episode, we would like to make a dedication. In this episode, you will hear from the remarkable Philippa Whittaker. Though we did not know her long, we were deeply grateful to her for sharing her enthusiasm and considerable expertise across many topics and we're greatly inspired by her forward thinking and hopes for a more environmentally friendly future.

She sadly passed away since our interview, so we are dedicating this episode to her.

Britt: Hi, and welcome to Power in the City. This is a podcast about the everyday and on the ground ways that people are responding to the climate emergency.

[electro ambient sounds]
Mix of voices from the episode:
Solar is huge with Community Energy now.

Solar power is the only alternative for us.

It's one of those things that we can install and people will instantly see a cost saving.

My bill is zero point zero.

It was obvious that something could sit on that roof and do something.

Oldham's industrial heritage is actually really well suited to the new industrial revolution.

Hannah: The first season is based in Oldham and has five episodes. My name is Hannah.

Britt: And I'm Britt. - Hannah, do you actually know that Oldham is not a city?

Main episode

Britt: Hi Hannah

Hannah: Hi, Britt. So, here we are again.

[Hawaiian music in the background]
Britt: Yes. I'm looking forward to this episode because I think you said it's gonna be about the sun. So I'm thinking like, beach towel, you know, bikini. Is that what you are going for?

Hannah: Well, I think you might be disappointed. Well, no, you are not going to be disappointed cause it's going to be great. But basically that's not what we are going to be talking about.

Britt: Oh no!

Hannah: This episode is all about solar power, really. I mean, we hear a lot about solar power at the moment. You know, with the energy crisis and everything, I think people are thinking about: How can we use solar to power our lives?

And so since the last time that we talked, I've been back in Oldham. I've been meeting people and talking to people about how and if solar really can be a way of powering our homes and making the electricity that we need.

Britt: Yeah, I don't really remember Oldham as a particularly sunny place.

Hannah: No.

Several voices from interviews: People in Oldham know that they need to have an umbrella and a sun hat. [laughter] Yeah we are certainly one of the wettest parts of the country!

When you look at something like Oldham, I mean, it's just, I mean, as far as Google is concerned, it's in permanent twilight.

Weather in Oldham is temperamental. So you get up in the morning, it's sun shining and glorious afternoon - it's hail storming and in the evening it's raining. So you can't really trust the weather in Oldham.

I would say round here, it's like, I wouldn't say that we don't get sun, but I think of it as a watery plate. Yeah. Far more than a kind of like dry, sunny place.

Britt: All right. And so nonetheless you bring us to Oldham to talk about solar?

Hannah: I know it doesn't sound very promising, does it? But my thinking is that if we find out that solar energy can actually power a place like Oldham, then you know, solar could power anywhere in England.

[both are laughing]

Britt: Alright, so go ahead.

Hannah: So I'm basically gonna take you on a bit of a journey that I've been on talking to various people about how Oldham is actually already being powered by solar electricity. And I want to start by talking to a couple of people who've been basically harnessing the sun's power for quite a few years through solar panels that they've installed on their own roofs.

Hannah [talking from outside somebody's house]: So I've come up today to Oldham to speak to Ashraf and his son Kashif about the solar panels that Ashraf has got on his roof.

Ashraf: At this moment in my house, uh, we are using 434 watt, okay? And at this moment, the consumption, my bill is 0.0 per hour.

Hannah: So Ashra is showing me the app on his phone, which measures the electricity that's currently being generated by the solar panels on his roof.

Ashraf: I used since morning 3.9 kilowatt and it cost me only 50 p. At this moment it's not sun shining. No, but it's producing, it says it's generating 644 watt right now. And exporting 226 watt to the grid. Now, uh, at this moment, up till now, it's not sun shining. 1.8 kilowatt per hour it is generating, but at this moment, 0.5 kilowatt per hour is going to grid. So even when I can tell, see here, yesterday it was very good. Yesterday,, the sun shining and it was 6.2 kilowatt. But, uh, yesterday I consumed it 10 kilowatt and it cost me 90p only. That's good money as well.

Hannah: So Ashraf is explaining to me the relationship between the electricity that's being generated from his solar panels and the amount of energy that he's using, and then how that's translating into how much money he's paying for his electricity. Now to understand this, we really need to understand how a solar panel works.

So maybe Britt you want to share with us, so kind of give us a, like a little pity summary of how it works? How do solar panels actually generate electricity?

Britt: Yeah, I'll do that. I mean, I can't talk about how it actually generates electricity. I have no clue, but I can talk about how it travels. And how you sell it. So, you know, you have your solar panel on your house or wherever you have it. And then the sun hits the solar panel and it produces energy right there and then. So that energy that's produced right there and then, you gotta either use it while the sun is shining or you have to store it.

And there is what we call a 'private wire', but it's actually like, I always imagine it's just a wire that goes into your house and then you can use that energy right there. Or you store it in a battery. Any access that you don't use or don't store gets sent out to the wider grid. This is the network that, um, all the electricity travels on, so it goes into the regional grid and then it goes to somebody else - physically. But the thing that's important to understand and what Ashraf is talking about in this moment is that, when you sell your own solar energy to the grid you get a lot less money for it, than what you pay when you buy energy from the grid. So by using the energy you save money. And I guess that makes a lot of difference now that electricity costs are going up so much. I mean, it's amazing, right? Like, it's 0.0, it's nothing - while he's in the house using it in the daytime.

Hannah: So in many ways it's working for Ashraf. And I want to go back to hear a bit more about the background to how he came to decide to install these solar panels on his roof.

Ashraf: And in the start it was a lot of money. I remember in 2014 and government grant was there as well, but, uh, very expensive, it was more than 10,000 pounds.

Britt: 10,000 pounds. Yeah. That's quite expensive. They're cheaper now because that was quite a while ago and they get cheaper and cheaper in the production.

Ashraf: But in 14, and they said 5,000 pounds.

Hannah: So Ashraf is talking here about a government grant that was available at the time when he put his solar panels on his roof. So the price of the solar panels was

10,000 pounds. But he discovered he could get a government grant, which meant that it basically halved the cost of the panels for him.

Ashraf: I talked to my family, my wife said: It doesn't look nice on the roof, the panels, especially on the front. The house value will go down.

But I said, no, we should try. When my neighbour asked me the money you spent there, you are not gonna get back. I said, no, I want to keep that atmosphere clean.
Hannah: So Ashraf is talking here about his neighbour who is very sceptical about the idea that you're ever gonna get the 5,000 pounds back.

But he's also telling us that the money wasn't actually what motivated him primarily to get his solar panels. He said he wants to have the solar panels because it will keep the atmosphere clean.

Ashraf: Yeah, yeah. For my new generation coming, yeah. For clean air and not for saving money.

Hannah: I found it really interesting hearing from Ashraf that even though he spent all this money on solar panels, his main motivation was actually keeping the air clean.

And I think what he meant by keeping the air clean was that by using the electricity that was generated from the solar panels, he wouldn't be using electricity that was generated by burning gas or burning coal or other fossil fuels. And so the knock on effect would be a cleaner environment. And as it turns out, pretty much everyone I spoke to about solar panels kept saying the same thing to me, that actually it was primarily making a cleaner environment that was motivating them in the first place to put solar panels on their roofs.

Philippa: The name of the game, as far as we were concerned, was that it was green to draw as little as possible from the grid.

Hannah: This is Philippa.

Philippa: Years ago, we made a concerted attempt to reduce our carbon footprint. So, um, I mean I originally stopped going to work in the car and started using public transport. We do now have an electric car. We've got, um, solar panels, we've got a storage battery. And, um, I mean, one of the things, again, with an electric car, it's green, if the power it uses is green. If it's produced from a power station, you're just moving the tailgate mission to somewhere else.

Hannah: So Philippa tells me that she's actually got quite a complicated arrangement in her house. It involves her supplier who gives a particular rate for the electricity. It involves the solar panels that are installed on the roof. And she's also got batteries, which store some of the electricity that she uses, so that she can use it when the solar panels aren't generating. And the whole motivation is to try to use as little energy, um electricity from the big grid, that we were talking about before, as possible.

Philippa: So I actually have a thing with EDF where I get five hours of very cheap power overnight, which is also good because it means of course that I can charge my storage batteries up in the winter, as well as charging the car up for, you know, 4.5p a kilowatt hour.

Hannah: So I asked Philippa to tell me a bit more about these batteries and how they fit with the solar panels. Cause this is something that you hear quite a lot about when people talk about solar panels.

Philippa: So this is a thing called storage, I've got, power vault storage batteries. All the makes are available, but these are the ones I've got.

Hannah: And now Phillipa turns to her phone and she starts showing me the app that she uses to explain what the batteries are doing.

Philippa: The yellow shows that virtually everything we've used actually has come from our panels. So we've actually drawn very little from the grid. The only time you do is when you use the shower, cause that takes eight kilowatts and that, you know, is more than the batteries can do. So the red is where we've exported to the grid. Now, of course I do get paid for. [Britt in interview]: So this is still under the feed-in tariffs?

Hannah: So Britt, that's you asking a question about the feed-in tariff. Do you want to explain a bit about what the feed-in tariff was because that's another bit of the jigsaw puzzle as to how solar panels work.

Britt: There was basically a government scheme, like a subsidy scheme that was going on for a while that was there to encourage people to buy solar panels and it would subsidise the price of what you sell to the grid so you would get a proper price for it. Or a good amount for it, basically. And people like Philippa who installed during that time still have that. That scheme runs on for them.

Hannah: Okay, so let's go back to Phillipa and hear about how effective this whole setup that she's got is.

Philippa: As with today, we've generated about 14 or 15 kilowatt hours, which is basically a daily usage. So the idea of the storage batteries is that you actually capture that and then you've got it available in the evening.

So, you know, I've actually got a loaf of bread baking at the minute, which is, you know, has been largely cooked off the battery, off the storage and from the panels.

Britt: So that's a lot of technology to make a loaf of bread.

Hannah: Still sounds tasty... So yeah, I mean all of this, this does involve lots of technology and I think as we've heard both from Ashraf and from Philippa, this doesn't come cheap.

Like Ashraf, who's a successful businessman, he could spend 5,000 pounds on some solar panels up front and get the money back over a period of time.

Britt: And didn't Philippa say that she used a lump sum from her retirement pension payment to pay for hers?

Hannah: That's right. So she also had access to some money for the first instalment of the solar panels. So it does require quite a bit of money in the bank if you want to install these panels in the first place and own them yourself and have them generate electricity for yourself.

Britt: Yeah. I mean, it does actually still pay off over time. So when you put, um, solar on your house, you know, over the time that, that you're getting the energy that you don't have to take from the grid, basically, you know, you're getting back your investment. So that's a return on your investment. It's a question of scale and how much energy you use in the daytime. So then the return on investment on a home is just a bit longer than it would be on a bigger property, for example.

Hannah: Yeah. So, I mean, it can work really well and if you've got a south facing roof, you've got nice big roof space to have lots of solar panels, you know, it's brilliant, you can make that money back, but obviously not everybody has that, you know, maybe you don't own your roof because you live in a rented house or maybe you live in a block of flats or your roof faces north and it's not going to generate very much, uh, energy from the solar panels. So I wanted to not just talk about people who are able to put solar panels on their roofs, and to actually hear about what do we do, what do people do, what are the other ways that you could end up having solar or the sun generating your electricity for you? So to start to hear more about that side of solar generation I went to speak to Simon.

Simon: I'm Simon Davis. I'm the sustainability manager at First Choice Homes in Oldham. And I guess the biggest part of my role is around making our homes more energy efficient.

Hannah: So I'd come to Simon because I'd been told that First Choice Homes had recently started installing solar panels on some of the housing association properties as part of their energy work on houses.

Simon: So solar PV is a, we, we think it's a, it's a really important piece of technology, uh, to fit to our customers' homes generally because it's one of those things that we can install and people will instantly see a cost saving.

Hannah: Now, one of the things I want to stress is that the way that, uh, First Choice Homes are using solar panels is part of a much bigger program of trying to make houses energy efficient. So that's something that we're actually gonna talk about in another episode. It's really important and in some ways it's more important than the electricity that you can generate from solar energy.

Um, and First Choice Homes has been putting a lot of insulation into a lot of their homes, but once their homes are insulated, then they've been starting to put solar panels onto those homes to help people by reducing their electricity costs. So over the past year, first Choice Homes has been running a pilot project with six households where they've installed insulation, some have had heat pumps, and they've also put solar panels on their roofs.

Simon: What the customers have been saying, customers have all been very positive about the solar PV element of it, because they say that they're already noticing a difference. So we've got a couple of them that are on prepayment metres and so they've already noticed that they're topping up less frequently.

And then we've got a couple that have got smart metres. And so they've already noticed that essentially during the day when the sun is out, you know, the smart metre readings are zero.

Hannah: So I'm getting the impression when I'm talking to Simon, in general, he is pretty positive about the benefits of solar panels for their residents.

Simon: People who have had these solar panels installed on their homes, generally they say that they're happy. There's been quite a lot of interest from neighbours and stuff like that. And saying: “Oh, when's mine getting done?” And so people are quite enthusiastic about it.

Britt: Yeah, it seems such a good idea to do that because I imagine if, you know, we had done this like 10 years ago and like people wouldn't be so, um, dependent, or at least you know their residents wouldn't be so dependent on the big energy companies and would have much lower prices.

Hannah: Exactly. And I think, you know, you could hear that there was an enthusiasm for solar, um, and a promise that it could provide cheaper electricity for people, which is great. But as I talked to Simon, he also warned me against being too kind of enthusiastic about how easy it is to pursue solar. And he started to tell me some of the reasons why it's actually been quite hard for housing associations to just go out and put solar panels on everybody's roofs.

So the first issue he started to tell me about is that residents are often really suspicious of people coming around and knocking on their doors and saying that they're gonna reduce their bills through all kinds of energy savings schemes.

Simon: We certainly encountered that again, with our 213 whole house retrofits, that we're planning through this year, struggling to get through the doors. You send letters, you send text messages, you send emails and people don't respond

Hannah: And Simon is pretty candid cuz he tells me that one of the reasons people don't respond is because they don't really trust all the claims that are being made.

Simon: There was a Facebook message on one of the community pages to say, well I've had this from, from this company that FCHO have appointed.

Hannah: That's First Choice Homes who've appointed them.

Simon: To do some energy improvement works to my house. Is this a fake? And then the community on Facebook, you know, they all go: “Yeah, that must be a fake, that can't be real.” And, uh, so I guess sometimes customers look at it and think it must be too good to be true.

And we fuel that, you know, the housing association, we're constantly telling customers to be on their lookout and not trust anybody. You know, if they don't have an FCHO lanyard and an ID badge, you know, they are fraud. And we scare people as an organisation, I guess, into having that kind of response and for good reason. But it can, I guess sometimes backfire when we want to gain access to properties to do really good stuff to their homes. And they don't trust messaging. So this issue of trust I think is really important. It's really key.

Hannah: Simon also tells me that there are other practical challenges particular around funding solar panel installations because housing associations are not bottomless pits of money and whilst they want to make a difference to people's lives, uh, they don't necessarily have the money to put solar panels on the majority of people's homes who are living in housing association homes.

Simon: We've just gotta come up with probably more inventive ways of being able to fund it and get it out onto people's roofs quicker because we've got eleven and a half thousand homes in First Choice Homes, and we've just done six and we're gonna do another couple of hundred this year. It's still a really small percentage of our whole stock.

Hannah: So this is where solar energy starts to get a little bit more complicated and we start to move away from just putting a solar panel on a roof and expecting it's gonna generate electricity. But it also shifts us into a whole other way of thinking about solar energy, which we are gonna focus on really for the rest of this podcast.

Simon: There are a couple of solar PV schemes where essentially the solar PV is used almost as a, you know, as a substitute for a power company. So people are paying for the energy that's produced from the solar panels, uh, at a produced rate.

Britt: Hang on, I think,we should explain a bit more what he means.

Hannah: Shall I? Or do you want to explain?

Britt: Go on. Go on.

Hannah: Okay. So the idea here is that the housing association would put solar panels on their customer's roofs, but rather than the individual houses getting that free electricity from the solar panels, the housing association who effectively own the panels would then sell that electricity that's being generated to the householder.

But the key is that they would sell it at a much cheaper rate than they could normally get electricity from their current energy supplier.

Britt: Okay. I mean, I imagine that people would rather prefer to get their electricity for free.

Hannah: Well, I mean, I think people would of course. But the point is, the housing association just can't afford to just pay for people to have solar panels on their roofs. So effectively, if they went down that route, then no one would be getting their electricity for free because they wouldn't be able to afford to do it. Whereas with this

model, it creates some money for the housing association. That money goes to the housing association rather than a big energy company.

And then the housing association can use that money to put some solar panels on more people's roofs so it might not benefit one household as much as having a panel on their own roof that they're getting the electricity for, but it could end up benefiting a whole lot more people in the neighbourhood.

Simon: It's quite a novel idea because essentially it becomes a business case then where as a housing association could potentially take out a loan or whatever it might be to procure those solar panels knowing that they're gonna get money back for all the energy that the customer then uses through those solar panels.

Britt: Alright, I think I understand now. So this is more about a way of using solar energy to benefit more people rather than just the person who has the panels on their roof. I know actually that schemes like this have been done and it's really interesting and I know that there have been some problems with communication because people all of a sudden have two energy bills and it can get a bit complicated, but it's definitely really interesting.

Hannah: Yeah, I mean you could probably make a whole podcast on some of these different models, but, uh, but I think the thing is that the thing to kind of, um, take away from this is that this is a space of experimentation and people are actually trying out all kinds of new things to try to support people living in social housing to be able to reduce their bills.

But I want to move on now from Simon and from social housing cause I want to hear about some other experiments that are taking place in Oldham and beyond Oldham, where people are also trying to find out some different kinds of ways of creating collective benefit from generating solar energy.

Kate: I'm Kate Gilmartin. I work for the Northwest Net Zero Hub and I've always had a particular interest and worked a lot with communities trying to help them scope and seed and develop community owned renewable energy assets.

Hannah: So Kate works in a, in a kind of area or sector, which is often known as the community energy sector. Um, and I think I'm right in saying that that's something that you've actually got quite a lot of experience with Britt.

Britt: Yeah. Yeah. Or some experience anyway. Some experience, absolutely.

Hannah: So do you wanna tell us a little bit about what Community Energy is?

Britt: Yeah, absolutely. So Community Energy is basically a form of a community business and it basically means that the business or the organisation is collectively owned by its members or by many people. These might either be like, you know, in the same place, or because they might all have an interest in doing this kind of, this kind of work, so community energy groups, basically. They can provide services in the energy transition or own low carbon infrastructure. So they might own solar panels on somebody's roof, or they might own like a whole solar field or, uh, wind energy together.

Or they might do more like what we do at Carbon Coop, which is providing energy efficiency services for people in their homes. So helping people figure out how to save energy in their home. You could also have a car sharing club, for example. All of that is possible. But what they all have in common is that they work for a social and environmental purpose mainly and not for profit. That doesn't mean they don't make profit, but that that is not their sole purpose.

Hannah: Okay. I think that's really helpful just to understand a bit about what these community energy people are doing. So Kate works in this area and I wanted to find out from her where it is and in what way community energy projects are actually working with the sun. Like how are they using solar for community energy projects?

Kate: Solar is huge with community energy. Now there's been loads of solar cooperatives. They're all set up through a community benefit society, which is a cooperative and they're not for profit. So any surplus goes into a community benefit fund.

Hannah: Ah, here's another term that I think it would be helpful for you to explain to us. Community Benefit Fund. What's that?

Britt: Absolutely. So it's basically just when a community organisation makes profit, so, you know, after they have paid all of their expenses and their staff and so on, um, this can go into a community benefit fund and that basically means there's a pot of money that they then invest into community projects or education in the community, or maybe energy efficiency in people's homes for people who cannot fully afford those services by themselves.

Hannah: Okay, great. I think that's helpful. So before talking to Kate, I had assumed that people who invest in community energy are from the community. That they're from the place where this kind of wind turbine or hydro project or whatever it is, is located.

But one of the things that Kate explained to me is that actually the people who invest in this could actually be people living anywhere. They don't have to be living close to the community energy project.

Kate: There's a lot of people out there nationally who look out for investment, um, opportunities in community projects because they're kind of ethical, they're green, they're not-for-profit. They support local community action. It's great to have local people investing because they can get a return on their investment, but for me, I think the key is that you get investment coming into a community. So it might be the energy savings that the building owner or the tenant within the building will get, which means that a company's more likely to stay there and keep the jobs there.

And then there's obviously the community benefit fund, which wouldn't be there if the renewable energy generation project hadn't been installed.

Britt: I'm just gonna intersect because I think we wanna make sure that everyone understands. So it works in a way that you have to invest in projects, especially renewable projects. And the investment here comes to parts or often also all of it from shareholders, but they are community shareholders. So what that means is that every single person only ever has one vote. So it doesn't matter how much money I invested, I can never take over the company basically. That's the idea.

Hannah: Yeah, I think that's helpful to know. But I think one thing that's really interesting about what Kate is saying is that you have these people who want to invest in ethical projects. Maybe it's 100 pounds, maybe it's like 200 pounds. They aren't necessarily investing loads of money, but it means it's a way of bringing revenue, bringing money into communities which maybe don't have the money themselves to invest in these kinds of projects. And so this really made me think, well, like how could somewhere like Oldham, we've just heard from Simon, who's told us about the difficulties of supporting people in social housing in Oldham. How could a place like Oldham itself start to get kind of community investment through these kinds of community energy projects? And so I ask Kate to tell us what she thought.

Kate: Often in urban areas, the first thing you look at is, well, how do we get solar on buildings? And usually the first thought that comes into green energy group's heads is let's get solar on the local school, right?

Hannah: So there's a few reasons why schools seem like a really good site for community energy. So first of all, they use quite a lot of energy. They have to heat quite a big space, particularly in the winter. They're also short on capital, so schools don't have much money to invest in things like solar panels on their roofs. So they

can't really afford to pay or get a loan to install their own solar arrays. And the other thing is they're also really often very tied in with the community. So the idea is that community energy projects come along, they raise money to install solar panels on a building like a school. The school pays the community energy project a reduced rate for their electricity, and then the community gets the money to spend on other kinds of community activities that they want to do, which is absolutely amazing.

Britt: It's actually quite complex, in action, but I think Kate will probably talk about that anyway.

Hannah: Yes, she does.

Kate: Unfortunately, it's quite complicated doing solar on schools because you've got to get through the school gates, which is obviously difficult when teachers are very busy. And then you've gotta get through the governors and make sure they're happy with the scheme.

And then you've got to get the building owner, which is usually the local authority, on board. And that can be quite tricky as well. So there's a lot more barriers to solar on schools than you immediately think. But if it brings people together to start thinking about Net Zero, then that's a great thing.

Bill: It brings the parents along. Because if we're saying, well, do you want to become a member of Oldham Community Power? And you explain what it is, the kid says, oh yes, this is our school. We want it.

Hannah: So this is Bill.

Bill: I'm Bill Edwards. Um, I'm chair of the, uh, board of directors of Oldham Community Power. And we were formed mainly to get solar power onto the top of public buildings.

Up till now, we've largely focused on schools and we've got five schools with solar panels on. We've got one community centre with solar panels on, and we're looking for more community centres. We've got everything from about, uh, 50 kilowatts to 200 kilowatts.

Hannah: So we've been talking in general about community energy, but it turns out Oldham has its very own community energy group - Oldham community power.

Britt: Of course they do.

Hannah: So our researcher, Melissa, went out to talk to Bill all about the work that Oldham Community Power have been doing, in particular the work that they've been doing with schools. And so he starts by telling her about some of the reasons why solar on schools can actually work in spite of the challenges that Kate just outlined for us.

Bill: There are the ones at schools particularly where they've got environmentalists in the physics department are the equivalent. And they're chasing us and encouraging us to do things like install a display panel in the entrance hall to show just how much electricity has been generated for the kids to go out and tell the parents what they learned about and to take some pride and interest and know that their school is doing something good for it.

We also have got a small link with a software company who are happy for us to build equipment that would be suitable for a teaching environment so that it can be adapted, so the teachers could capitalise on what's there, and translate it into terms of how many trips to the moon is being saved or, or what happened.

Melissa [in the interview]: It hadn't really occurred to me that in a school setting, it becomes an educational tool in itself.

Bill: But, well, well, if I gave you an example at one school, uh, we had the children coming along to look at our installation, but we had to explain what energy was. So we had them jumping up and down on shouting and getting hotter, getting colder to understand what energy was, what waste energy was.

I don't think many of the people on that course will forget that noise usually equals weighted energy , so that's why it should be quiet in class . But it was absolutely, absolutely amazing when we went outside and there was a ripe plum tree and they started picking them up and eating. And one of them says: “Food energy, Mr., food energy.

Hannah: So Bill has some interesting experiences there on some of the more surprising ways that you might want to engage schools in solar panels. But he also does tell me that there are cases where schools are not so engaged.

Bill: If, if you're going to a large school, it could be a large company, it could be a large school. And they don't identify it as key to their business’ interest. Then, uh, having people like us coming to read the metres and check that all the panels are on, it's just a nuisance to them and we've even had someone saying, well come and take them all away. I had to sit down with them for a long time to show them how much energy they were saving because they'd never done the sums. It wasn't important to

them, and the solar panels were up and working. Then we might as well pull them down, they said, look, we've got huge bills, just the same. We had to tell them what the bills would be if they took the solar panels down. It's frightening the general lack of information or the lack of awareness.

Hannah: So I think Bill's making a really important point here. We talked earlier about people wanting to have solar panels because it's good for the environment, but he's also pointing out that it's also really important to understand the business case for solar panels and that this might be just as important as being environmentally friendly if you're trying to set up a community energy project.

So I'm going to return in a little while to some of the other things that are happening around community solar in Oldham. But first I wanted to share with you a conversation that Melissa had with one of Oldham's businesses.

David: Uh, my name is David, David Weidenbaum. I'm a garment importer and, uh, proudly known as a mill owner up until recently of two Lancashire textile mills, each mill 240,000 square feet, so rather large.

Hannah: So in 2012 David installed a 200 kilowatt, so that's 600 panel solar array on the roof of his mill in Oldham.

Britt: Wow!

David: If you ever get the opportunity to go on a mill roof, you'll appreciate the size because if I took you on a floor, you wouldn't appreciate the size because of the racking and the cartons and, and everything. You go on the roof and it is empty.

Well, not, not now, of course! Um, and the one thing that struck me was there must be something I can do with this roof. It was obvious that something could sit on that roof and do something.

Hannah: So it's very much a businessman's way of looking at the world, I think. So David actually wasn't totally new to solar power. And he told us that his interest in solar actually goes back 45 years to when he was doing his dissertation on the use of solar energy to heat water. And so he says he was looking at the roof and he remembered this dissertation that he had done, and he began to wonder whether the roof could actually be used to generate some kind of solar energy.

David: Even if it was just to heat the water for the mill, it would've been something advantageous. But when I started going into it, I thought solar power was the only alternative for us.

Hannah: Now, this was back in 2012, and actually what David was doing here was really, really unusual. And it was for him, it was pretty much a leap into the unknown.

David: We got a lot of hype and a lot of PR through this because it was the largest rooftop installation in theNorth of England. The BBC and ITV caught wind of this. And both came down to interview us. And, and it was quite comical really, because as you can see today is grey and, and raining. And I was on the roof with the ITV crew and, and it was fine rain, as it always is in Oldham and very grey.

And the gentleman was asking me, so do you think this is viable? And it was at that time, I thought to myself, do you know, I don't know if it really is. But you know what, it was the best thing we ever did. We ended up generating 90% to 95% of the scheme's capacity. Which is excellent. And again, you know, in grey Oldham, you know, that is fantastic.

Britt: That's amazing. It's such an Oldham entrepreneur story.

Hannah: Yeah. On a mill as well! So it all turned out really well in the end. But for David as a businessman, putting solar panels on the roof did involve taking quite a lot of risk.

David: It wasn't money in any way that motivated us. It was first the ability to do something that hadn't been done before. To be able to say we were the first to do this, that was a massive motivation to take a big risk and do what we did. Had it not have paid off, it would've been one of our biggest disasters. Spending 400,000 pounds on something that would boil a cup of tea, maybe at best. The fact that it wasn't that way and the fact that it was very successful actually made me very proud.

Hannah: So after putting solar on this first mill, Devon Mill in Oldham, David later moved to another mill in Bury, and recently he just installed a similar solar array on this other building.

David: In September, October of 2021, we engaged the solar power for this mill, which now contains 600 plus panels on the roof. It's a 200 kilowatt scheme. It will provide the building's requirements throughout the summer months, less so clearly through the winter months with a payback of around seven years, which is a really good return on investment. But it wasn't installed for that, it was installed to make us as green as possible. We're moving more and more to EV, electric vehicles, and we have our own charging units. And of course these units charge directly from the roof. So it's free energy. And the reason for going straight into installing the solar array

here was simply because we experimented with our other mill in Oldham and that was a real experiment.

Hannah: And one of the things about experiments is you learn things. And so for David, one of the things he learned, which was really interesting, is that mill buildings are actually really well designed for solar energy. Um, and this is something that I think is kind of quite surprising in a way.

Britt: Oh, really? How so?

David: You've got to understand the size of the mill. I mean, you're talking of, I don't know if this means anything to you, but each floor is 40,000 square feet. That's the equivalent of an acre near enough. The fact is it's a flat roof. So you can, you can angle the panels to whichever orientation it optimises the sun's direction across the sky. So actually it, again, ironically, it's as if the building was built for something like that.

Hannah: I think this is really amazing that something that's just in our towns, you know, a mill building that was built for something totally different could be the basis upon which our, like future energy could be generated.

Britt: Yeah, it's fascinating that mills, which were built to be powered first by water, right and then coal. And now they're being transformed to be suitable for solar.

Hannah: And interestingly, he talked about the size of the mill building and the fact that these panels could be oriented to any direction as making them suitable for solar generation. But actually in addition, it's um, the case that their roof design is also uniquely adapted to solar panels

Andy: The way these mill buildings are constructed, the roof of these buildings is, is incredibly strong. Incredibly strong.

Hannah: This is Andy from Oldham Council.

Andy: And this is because when the mills were operating, of course there was no powered cooling in those days. And these mill buildings are getting incredibly hot, you know, with all the coal fired, you know, machinery and all the rest of it, steam. And the way they would actually cool these, uh, the mills is that the roofs were essentially a large pond. So the roofs are reinforced. They were waterproofed and they would collect water in a huge pond. And the evaporative cooling driven by the heat of the mill below would actually cool the mill. So the roofs of these mills, they're

perfect for large solar PV systems. You can't pierce the roof, so you put, you know, essentially concrete blocks on them to stop them blowing away. But you could put an enormous amount of weight on the roofs of these old mills. So they're perfect. It's, uh, you know, Oldham's industrial heritage is actually really well suited to the new industrial revolution.

Hannah: Yeah, so I've met up with Andy and we are in the beautiful grounds of Alexandra Park, which is something of a green oasis right in the middle of Oldham.

So Andy is the green energy and sustainability manager for Oldham Council, and he's been thinking about how solar energy could benefit Oldham residents and businesses for nearly 10 years.

Andy: I've been with Oldham Council since 2013, and when I arrived we were looking at opportunities for solar power.

Hannah: So Andy tells me that there are a couple of different ways that the council has been involved in generating power from the sun in ways that can benefit local people.

Andy: Um, the first is where the solar panels are on a building or attached to a site, which is using the power.

Hannah: So in this first scenario, basically the council pays for solar panels and they just put them on their own buildings. Um, and these are buildings that the council are paying for the electricity bills for. So they put the solar panels on and it helps them save money on their electricity bills over time.

Britt: Which is the same as for Ashraf. So on their own buildings.

Hannah: Exactly. Just on a bigger scale.

Andy: We installed a 120 kilowatt system on our market hall, Tommy Field Market Hall. Um, the council just installed that directly. You may know that the council is redeveloping the spindles complex. So this is a large shopping complex which the council purchased,you know during the pandemic and is refurbishing. But we've got an opportunity to put solar panels on the roof. It's got a huge roof, but those solar panels will feed directly into the building.

So the council pays the electricity bill. Uh, the solar panels will save the council money on its electricity bill, and in a sense that benefits the community because of course, it's saving the council money. And the council is funded through council tax.

Hannah: So this first model is putting the solar panels on your own buildings. But what Andy tells me is that they were also trying to think about how they could put solar panels on other council owned buildings, so schools or community centres. But unlike the shopping centre or even the council offices, the trouble with schools and community centres is that even though the council owns the building, they don't pay the electricity bill.

So this makes it complicated in terms of getting the benefit back from the money that they've invested to put the solar panels on top of the buildings in the first place.

Andy: And this makes it a bit tricky for the council to invest in the solar panels because of course, it's not the council getting the benefit of the financial payback.

And, you know, although the council would do it to save carbon as part of our environmental commitment, the council doesn't have an infinite amount of money. So we have to focus our investment on where it makes sense. So we were looking at schools and we thought, well, well, how can we do this?

Hannah: And this is where community energy in Oldham comes back in.

Andy: So we thought, right, well, we need to speak to the community. So we held a bit of a workshop at the Civic Center and invited all sorts of people and members of the community to come along and sort of imagine what could be possible in the borough. And you know, we looked at all sorts. We looked at wind power, we looked at hydro power, we looked at solar power, and the conversation came round to the solar power on schools in particular. And some members of the community that were invited, expressed an interest in actually working with the council to set up a community energy group, which is actually what happened in the end. So that's back in 2016, this is when Oldham Community Power was born.

Britt: Ah, so this is Bill of course.

Hannah: Yeah. So we've come full circle.

Bill: Fully off we were started by Oldham Council. Oldham Council had a plan to put solar panels on their own buildings, but found all sorts of obstacles, which made it difficult. I mentioned a couple of them. One is that we can more easily get hold of grants aimed at communities. But another one concerns leases.

Hannah: I'll let Andy pick up the story from here.

Andy: The intention was to install as much solar PV as possible, you know, on schools and buildings in Oldham. So Oldham community power, it's a completely independent organisation. However, because it was council owned buildings that the solar panels were going on, when it was set up, it was agreed that there would be a place on the board for an elected member from the council. The council also owns shares in Oldham Community Power.

And there's, again, there's a bit of a story behind this. When they launched their share offer, they started selling some shares, but it wasn't really going fast enough. I think Community Energy was new to Oldham at the time, with the exception of Saddleworth Community Hydro. And I think it's probably fair to say that Oldhamers at the time just weren't really familiar with what Community Energy actually was, weren't familiar with the concept of investing a bit of money. And getting a bit of return and reducing carbon, tackling climate change. So, you know, although shares were being sold, it was going quite slowly and Oldham Community Power were really worried that they wouldn't raise the money.

So basically the council gave Oldham Community Power a loan. And that was enough to enable them to get the solar panels installed on the sites and meet the feeding tariff deadlines. And Oldham Community Power repaid most of the loan after that. Because what it was, is that it was much easier then for them to raise money from the community shares. They could say to people, look, you know, the solar panels, they're up. They're generating. You know, the only thing now is that the financial benefit is going to the council and we want it to go to the community and, you know, they, they've got a lot more take up of the shares then.

Britt: That is actually a really incredible story because that in the UK hardly ever happens, that a council gives an upfront loan and it makes so much sense, doesn't it, to just get it going and then the money comes back and then people start seeing the solar on the roof and they go, oh now I know what you mean. Oh yeah, I'm absolutely happy to put some money into that. It's a real thing.

Hannah: Exactly. And we heard earlier about the problem of trust, like how can you trust in something you've never seen before, but once it's actually there and functioning, then it becomes much easier to trust in it. So one of the reasons I was in Alexandra Park with Andy whilst he was telling me about the history of Oldham Community Power was to hear about a new community energy project that the council are involved in, which is actually part of a massive eco park project called Northern Roots.

So Andy and I had trudged our way down from the manicured lawns in the main part of the park, and we'd arrived at a slightly derelict and overgrown area near a

road. And funnily enough, I could only really tell that it might be the site of a future eco park because there was a little allotment where there was some food growing and then there was a fenced off area behind some kind of green fencing. And inside it you could see a cluster of beehives. And then there was a green shipping container in there, which had a sign that seemed to indicate that it was being used as a temporary community centre.

Andy: So we've just come down from Alexandra Park and we're now at a place called Snipe Clough, which is just Southeast of Alexandra Park. We're right at the beginning of the site. There's a lot of, um, you know, a lot of trees. There's quite a lot of wildlife and biodiversity on the site. But the plan is to turn it into the UK's biggest eco park. And there'd be all sorts of activities, you know, woodland activities, biking, walking, and food growing.

This is where the solar array is going. The plan is to put a 300 kilowatt solar array here. That's the equivalent of maybe 300 homes, basically that size. So that's where the solar array is going, obviously. Facing south, south is that way. So it's the perfect aspect. Perfect aspect.

Hannah [in interview]: And a big open space, which looks like a playing field at the moment.

Andy: Exactly. Well, it is a playing field at the moment. So, um, the playing fields aren't going, they're just moving. But this, this area, I think it's this area. So maybe up a little bit further. So this is intended for the new visitor centre.

Okay. It's gonna be built here. So the solar array will power the visitor centre. Okay. And it's quite close by. Um, and it'll also help to power some of the other facilities on the site. And, um, when it comes to fruition, the whole thing's gonna be fantastic, I can say. It's a 160 acre site.

Hannah: It's huge. I really got this sense talking to Andy about all these possibilities, there are new projects on the horizon, there are things that are underway at the moment, there's this set of activities that they've already done with Oldham Community Power, and it was quite inspiring really to talk to him about all the different ways that solar energy could be more than just ‘get a solar panel and put it on your roof’.

So before we finished, Andy said that he had one more thing that he was really keen to share with me about one of these projects that they had on the horizon. Um, and he really felt that this was something that if it came to fruition, it could radically

transform how people in Oldham get their electricity. And you've guessed it involves the sun.

Britt: Beach towel!

Andy: What I think is a much more interesting situation, and something that I'm working on with the council is the idea that we can build local renewable energy generation, that goes into the grid, but from the grid can be purchased by Oldham residents and businesses. At the moment, we've got this situation where everybody gets their electricity from, you know, one of the big energy companies. Um, we're all seeing our electricity bills go up. So if we're generating our own energy locally, if it's going into the grid, we don't get the benefit of that. So what the council wants to do is set up what we call a local energy market.

And this is in effect, um, a system and it's, you can have it on your phone as an app, but it's basically a sort of buying and selling system. You know, like any marketplace really, where local generators of energy can sell directly to local customers. So, you know, as an Oldham resident or say I'm an Oldham resident, I could go on my phone and with an app I could choose to buy any surplus electricity from Oldham Community Power. So if, say during the summer when the schools are closed and the electricity's going into the grid, I could, you know, do a deal over, over an app with Oldham Community Power to buy their electricity. And I would be getting a much better price for that electricity than buying it from the grid, you know, buying it from one of the main energy companies.

But Oldham Community Power would also be getting a better price for selling it to me than they would just by exporting it into the grid. And so what we want to see and I say it's a key part of the Oldham's Green New Deal, we wanna set up this local energy market. It's easier said than done. It's very new technology, something that we're working on at the moment, um, so that we can really help Oldham businesses to stay competitive by cutting their bills. We can help Oldham residents, you know, who are having trouble paying their electricity bills. And we can give a bit of an incentive to local renewable energy generators to actually invest in this technology.

And, you know, the upshot is that the borough cuts its carbon footprint, you know, and we get to tackle climate change, but with these knock on effects of affordable energy really for residents and businesses actually.

Britt: Yeah, that's really fascinating. I think it's really interesting to look at these models. And then something that Andy doesn't talk about is, there is of course then a level of like who owns that infrastructure and who governs that infrastructure, which is an interesting question I guess that we often ask about like who owns, who

benefits, who is it accountable to, you know, these kind of questions that, that we also discussed during Oldham Energy Futures with many citizens, and the importance that people locally can benefit as much as possible.

Hannah: I think it opens up some big questions definitely about, you know, why should people in Oldham get cheaper energy than somebody in another part of the country? I think maybe that's another podcast. But I wanted to end just by going back to Kate because she had a really nice kind of reflection on why these kinds of projects are being pursued.

Kate: I mean, I kind of think that, you know, when you think about energy spend, so the money we spend that leaves our local economy through paying for our energy bills, whether it's EDF or Eon or you know the big six. That money leaves our economy and there's billions of pounds that leaves our economies in energy spend.

So the more energy we can generate locally, that's sold locally and bought locally, stays local. So that's money that's not leaving the local economy. And that has a really big impact. It's using that natural resource to benefit local people. And I think renewable energy generation is a great way to capture that revenue and use it for local communities.

Britt: Yes. I mean, who can own the sun, right?

Hannah: Well, exactly. We might not be able to own the sun, but maybe we can benefit from it in a way that the big energy companies have been benefitting from fossil fueled power for the past 200 years.

Britt: Absolutely. Oh, thank you Hannah. This was incredibly insightful and also very nerdy. I like a bit of nerdy.

Hannah: It was a bit nerdy, so thanks everyone for sticking through it, if you've made it to the end of the podcast. Alright.

Britt: Alright. Bye Hannah.

Hannah: Bye!

Outro

Thanks for listening. Want to get involved? So this week's question is: Do you know of any renewable generation in your area that is owned by local groups or the council?

Tell us about it. As always, we'll add it to the show notes and do a shout out. Email powerinthecity@carbon.coop.

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You can find a list of all episode contributors and lots of additional information and links in the show notes.

Tune in for the next episode on the 2nd of February, 2023. It's about home.