

Empowering local organisations to help meet global climate change goals: podcast transcript

Introduction: [00:00:00] You're listening to a podcast from The University of Manchester.

In this podcast series, hear The University of Manchester's, Dr Nic Gowland, interview some of our leading experts about how their research is helping to deliver the UN Sustainable Development Goals for global health, equality and sustainably.

Dr Nic Gowland: [00:00:25] Today, I'm speaking to Professor Carly McLachlan, a Professor in Climate and Energy Policy and Director of Tyndall Manchester, and also Associate Director of the ESRC Center for Climate Change and Social Transformation. Thanks for joining me today Carly.

Professor Carly McLachlan: Hi, thanks.

Dr Nic Gowland: Today we'll be discussing your research, which is aimed at empowering local climate change action, specifically helping local authorities to adopt carbon budgets.

Before we get into your research, as with all these podcast interviews, I'm interested to know how someone like you becomes a Professor in Climate and Energy Policy.

What was your route to this position and this interest?

Professor Carly McLachlan: [00:01:09] I suppose a non-conventional one really, so I came to Manchester as an undergraduate to go to Manchester School of Management, and I was very driven, to be a kind of management consultant, I was really interested in marketing and things like that, and I thought it was a great degree and I really enjoyed it.

It's actually, I think now would be, pitched as a very interdisciplinary degree because you picked up all these different areas that pooled on theories from psychology, sociology... and then you would get into maths and finance stuff, so in some ways that gave me a really good grounding in this kind of interdisciplinary approach... It's very central to how we do our work now in the Tyndall Centre.

But during that time, I became very interested in environmental management and basically at that..., before the end of my degree, I had kind of changed direction and wanted to go into the climate change research kind of world.

I remember standing outside my dissertation supervisor's office and there was this advert for this really new research center called the Tyndall Centre for Climate Change Research. And I thought, you know, this place looks great... That's exactly where I want to be, but I don't think they're going to want me because I've not really done the right kind of degree for that.

And actually I ended up getting a post straight out of my degree, covering someone's maternity leave, as a Research Assistant and I've kind of just hung around ever since.

It's such a rewarding and exciting place to work. I've done all kinds of different projects. I've worked in such different collaborations over that time, but I've been in the Tyndall Centre for a very long time. I did my PhD within the Tyndall Center and so, you know, it's great, and quite kind of incredible to me, that now I lead a part in it by leading the Manchester group.

Dr Nic Gowland: [00:02:58] I suppose that's quite key is it, to the to the Tyndall Centre, is that you need that multidisciplinary spread of people and experiences and everything?

Professor Carly McLachlan: [00:03:05] Yeah... It's absolutely essential because you know, climate change doesn't drop into any particular discipline, it's right across everything that we do. And so you need these different perspectives and you need to create an environment where it's really easy to speak across them and that people can listen to other perspectives and different ways of working. And that you can build those relationships to be able to really tackle a problem from those different angles, but collaboratively. And I mean, there's a bit of a kind of joke in the Tyndall Centre that one of our key team building items is our massive teapot... But it actually is! It is true that we have a massive teapot and people make a huge big brew and everybody comes around and has a chat and a little break from their work and it's because of kind of building those informal networks that then when you've got like a problem and you need a physicist to help you understand it, you can just go and knock on your colleagues door, who is also a physicist, and you've got that kind of basis to be able to talk with each other and understand where each other are coming from. I think it's really important.

Dr Nic Gowland: How big are we talking? How many cups?

Professor Carly McLachlan: I think that we've grown a bit recently, so I think maybe it needs to get even bigger, but yeah, I mean, you can get 10 cups out of that thing... no problem! And if we've got more people than that in, in the office, which we usually do, there's a very collaborative approach that only having half a mug so that you can get the chat benefit, but not quite as much tea.

Dr Nic Gowland: [00:04:36] Yeah. Nice. Well, when, when the COVID restrictions end I might, I might try and get a cup of tea out of that teapot.

Professor Carly McLachlan: You'll be most welcome!

Dr Nic Gowland: Thank you. So you mentioned the Tyndall Centre... Do you want to just give a kind of summary of what the Tyndall Centre is and what it's focused on?

Professor Carly McLachlan: [00:04:49] Yeah, sure... so it was set up in 2000 and it was the UK's first climate change research centre that had an interdisciplinary focus and had a policy relevance focus. Now both of those things are really quite common now in the framing of climate change research, but at that time, in 2000, it was very unusual and new to really be focused so heavily on conducting research that could help policymakers and could accelerate action on climate change and that brought these different disciplines together.

So we had around nine years of core funding from the Research Councils and then since then, we've been a kind of coalition of the willing that's carried on and thought that this network was important to what we do and how we have impact in the world.

And so we've kept it going and you know, done some really impactful and exciting work in that second phase as well. So it was great that the Research Councils funded it and got us started and then great that the people within it managed to continue and keep it going so that we're now celebrating our 21st birthday this year.

Dr Nic Gowland: [00:05:59] Jumping into your research then... So I believe this all starts with the UN Paris Agreement, when we're talking about carbon budgets, is that a good place to start?

Professor Carly McLachlan: [00:06:07] Yeah... So starting at that global level of, you know, what's the global community committing to on avoiding dangerous climate change. And you go from that level, the IPCC <Intergovernmental Panel on Climate Change>, in their reports, give a range of budgets of how much carbon can be emitted in line with the temperature goals that we're setting at that global level. And the work, that particularly colleagues Kevin Anderson and Alice Larkin have done, is around going from those global budgets down to what is a fair allocation of carbon emissions in different countries.

And, you know, obviously that involves some maths, but it also involves value judgments about what is a fair distribution of that carbon. And so it's not just a simple application of, you know, a division of the budget because you need to explain and justify kind of why this group of countries would get more and why this group of countries might get less.

Dr Nic Gowland: [00:07:08] Can you give an example of why you would not split it evenly by population?

Professor Carly McLachlan: [00:07:15] The main thing is around development and the degree of industrialization in countries and if we don't just target climate change, but target wider prosperity and sustainability, then it's about allowing enough space within the carbon budget for nations to build their infrastructure and improve standards of living.

So, you know, if you look at countries like the UK, that have got a lot of physical infrastructure that had huge amounts of emissions embodied within those, and then you look at other countries where actually you might want to increase the road network, the electricity network itself, in order to support development, then actually that is going to require more carbon.

And so you would argue that actually that there's a need to allow a bit more space for that. There's another side of the argument as well, of course, which is about the emissions that we've had on the way to this point, so a sort of historical responsibility, and therefore you would say those that have emitted in the past should now accelerate their emissions reductions to give that space to others to develop because they haven't already managed to do that.

And I suppose there is also a third rationale, there's probably many more, but a third that I'll tell you about, around ability to do it, you know, and who has the capital to be able to invest in those changes, and where we're consuming in ways that actually we could change our practices, our behaviors, to reduce our emissions without impacting substantially on quality of life or development.

Whereas if you ask some nations to really constrain that consumption, then actually you're not allowing people to get up to a good standard of living.

Dr Nic Gowland: [00:09:00] That makes sense actually. Yeah, totally understand. So, where a country is still developing it would be unfair to kind of put the same caps on them, that we're putting on countries that are there already.

Professor Carly McLachlan: [00:09:09] And often those are the countries that will really suffer the impacts of changes in climate, so, you know, there's a lot of connections there and it's quite an incredible process really to go through at that global level to try and make agreements about who should do what, when, and you know, what the dangerous level of climate change we're trying to avoid is and things like that.

And of course, at the Paris Agreement, we have this development where, for many years, we've been talking about 2 degrees as the threshold of dangerous climate change, and to keep below that to avoid dangerous climate change, but actually in Paris, there was this push, and acceptance, of a desire to pursue a limit of 1.5 degrees because of the impacts that are actually now being forecast above that 1.5 level. So actually, you know, you're finding that the challenge is even greater to really try and get emissions down even quicker and even lower in order to protect people from those impacts.

Dr Nic Gowland: [00:10:06] Before we move on from the..., kind of ..., Paris Agreement, carbon is mentioned a lot..., is carbon, kind of..., the key measure that links to climate change... to simplify it?

Professor Carly McLachlan: [00:10:16] Yeah... So we talk about carbon in particular, it's wider greenhouse gases as well, because we work a lot on energy, carbon is the main thing for us, but you also need to look at other greenhouse gases, for example associated with agriculture. And one of the big issues there, I mean why we talked so much about carbon, is that there are pathways to decarbonize the energy system, whereas, although you can, of course, reduce your emissions in agriculture, just the production of food will create greenhouse gas emissions.

And so we have a kind of..., what's often called 'a floor of emissions' that we can't just mitigate our way out of. So in some ways, you have to accelerate the action on the decarbonizing energy to leave that space for the floor for food production.

Dr Nic Gowland: [00:11:03] So the research we're talking about relies on carbon budgets... What is a carbon budget?

Professor Carly McLachlan: [00:11:09] So the carbon budget is this total amount of carbon that I talked about that the IPCC calculate and put in their reports, that's associated with a

percentage chance of the temperature changes, that I mentioned before, that's the global carbon budget and that's the total amount of carbon that you can emit.

And then what we do in our work is try and break that down to national and sub-national levels, which means that in the end you get somewhere like Greater Manchester that gets a carbon budget, that it can emit, in order to play, you know, it's sort of fair share... make it's fair contribution to the Paris Climate Change Agreement.

Dr Nic Gowland: [00:11:53] So do you want to tell us a little bit about what you did? What the small bit of work is that started with Greater Manchester Combined Authority, because that's where this kind of starts with this budget tool... Is that right?

Professor Carly McLachlan: [00:12:03] Yeah. So we've made a budget tool that allows any local authority in the UK, just to log on and get a sort of automatically-generated report for their area, that will include a carbon budget as well as a set of budgets over five-year periods, and an indicative rate that you should be trying to hit each year.

And it's really important actually, that you get all three of those, because what carbon budgets allows you to, kind of..., focus on, is that this is the total amount, you know, like this is all you can emit. So if you keep spending it at the high level you are at the moment, you're going to use it up really fast.

So we tried to give these different measures of interim budgets, the total budget, and an annual reduction rate, to get across to people that this..., if you set a date for net zero out into the future, it doesn't mean the action comes in the future... the action has to start right now to get emissions, you know, as, as low as we can, as fast as we can.

So yeah, we made this tool, we developed it with Greater Manchester Combined Authority and the work was funded by the Department for Business, Energy and Industrial Strategy. And it was broadly under a banner of SCATTER < Setting City Area Targets and Trajectories for Emissions Reduction >, and that combined two tools - our carbon budget tool and a tool developed by a consultancy called Anthesis, that was about the different measures you can implement to reduce your carbon emissions in a local authority.

And that was a fairly small bit of work that really just pulled together the work that colleagues had done for many years on carbon budgets. Trying to make it something that was useful and usable for local authorities, because, basically, local authorities were saying 'we want to make this contribution to the Paris climate change goals... what level of action is required for us to do that? How do we work that out? We'd like to know what the right level of ambition is'.

And so we worked with Greater Manchester to develop that and pilot, and really work through how you talk about it, how you communicate it, so that the targets make sense to different policymakers, because it's such a significant challenge that this has to be a target that goes right across your local authority area.

So that's all different kinds of policymakers within like a council, but also all kinds of stakeholders in the city or the local authority area itself and so once we piloted that we could then develop a tool that we could roll out for everyone.

In-between we did a few budgets for local authorities that came to us and asked for us to do the same process for them and then we thought, actually, we feel like we could automate this and then we can just make it available for everyone without charge. We've had a lot of feedback that that's been helpful for people, particularly when authorities are often, you know, a bit strapped at the moment. So if they can get their budget done without having to pay out for any consultancy from us. So they can just use the tool then. That's been really helpful for them, I think.

Dr Nic Gowland: [00:15:10] So what did they have before this tool then? Did they just have the national targets that they...?

Professor Carly McLachlan: [00:15:15] Yeah... so often people were just trying to follow a national target. The really important thing, I think, that happened alongside the timing of this for us, was that the climate emergency movement really took hold.

And so lots of local authorities were declaring climate emergencies and one of the next steps, once you've declared a climate emergency, is to set your science-based target. And so, actually, when we had been doing this work initially, before the climate emergency movement had really taken hold, we had the sense of, you know, our targets are generally more stringent than people had been working to before, and how are these going to land? You know, 'cause people say they want to be part of Paris, but do they realise, you know, how small these budgets are going to be? So there's a sort of slight nervousness about how you communicate that and what reaction are you going to get?

But actually, <with> the climate emergency movement happening at the same time, lots of people were declaring a target, like a Net Zero 2030 target, without a particular link to a pathway to that decarbonisation, or a, sort of, science-based target like we've developed here.

The 2030 target obviously is linked to the IPCC as well, but I think that just meant it landed in an environment where people really wanted to up the ambition and they wanted the evidence to be confident in saying what that right level of ambition was.

Dr Nic Gowland: [00:16:41] I was going to ask you about aviation, a bit of a niche part of it..., but does that kind of create quite a big difference between some of these local authorities in the UK, those with, kind of, airports, those without...?

Professor Carly McLachlan: [00:16:51] So it's a big issue, aviation and climate change, and how it's dealt with regionally and nationally. In the way that we did the maths, if you like, of the carbon budget process, we took aviation out at a national level. Now that doesn't mean it's not considered at all, because it's made the remaining carbon budget for everyone smaller because there's an aviation budget coming out at a national level.

However, what we also say in the reports is that it's then incumbent upon local authorities to follow what we've made in terms of assumptions about that national level of aviation emissions, so we've got a plateauing of aviation emissions before a steady decline in the assumptions there.

Now, if you have a local authority, that's saying, 'oh, we are following this Tyndall Centre carbon budget, but we're also expanding our airport', that is inconsistent and, you know, we have made that point to local authorities where they want to expand aviation.

And I think it's really important that it's about choices for people, you know, there is a carbon budget, you can't exceed that and still expect to get to the same sort of level of temperature change. And so you have to make choices about what you're going to spend your limited carbon budget on.

What many local authorities say to us is that a national clear plan on aviation would help them because I think it's a challenge for, you know, people trying to bring in investment and business into local authorities... there's a very, sort of, traditional model that that requires aviation. I would challenge that. But it puts people in a kind of conflict and often they would like, you know, people within local authorities..., and so our national sense of where we're going with aviation in terms of demand and expansion would really help. So, I'd like demand to reduce and expansion to stop. And if you had those signals, then you wouldn't be devolving that down to local authorities to have to try and make those difficult decisions.

Dr Nic Gowland: [00:19:04] Sure. So, you've produced this tool, you're then working with local authorities to, kind of, produce their carbon budget. What's the feedback been like from the local authorities? Have they been shocked or pleasantly surprised or do they want more?

Professor Carly McLachlan: [00:19:17] Um, gosh, that's a good question. I think I've really been a bit shocked at how positive they've been. And so, as I was saying before, you know, our targets are more stringent than what they would have been doing before or what the UK target was at the time when we started the work and actually, I think just because there was this real buildup of needing to accelerate action, the IPCC 1.5 degree report came out and people got a sense of this needed a step change, a transformation. And so, when we were saying to people, look, this is like a 13% year-on-year reduction in your energy CO₂, it wasn't kind of shocking, I don't think, because it's like, well, yeah, that's what transformation looks like. That kind of level of change is what we need.

Dr Nic Gowland: [00:20:04] So they weren't horrified by the sort of figures you were giving them?

Professor Carly McLachlan: [00:20:08] I mean, you'd have to ask them but I didn't get the impression they were horrified. And many local authorities have adopted our budget as their policy, so if they were horrified they turned that into, I don't know, an acceptance of the need for change quite quickly.

I feel like, you know, you're dealing often with an incredibly informed audience in local authority, and they really follow the science and the policy on this sort of stuff, so I think it,

in general, it wasn't that shocking to the stakeholders that we were working with because they are really clued up on this stuff and they knew that this transformation is where we need to be heading.

Dr Nic Gowland: [00:20:47] That's good to know. So the budgets that you, kind of, assign to them, not assign to them, but, you know, developed for them – they're then translated into policy by this other kind of consultancy group...?Is that right? That's how the process works?

Professor Carly McLachlan: [00:20:59] No, the other tool that was developed by Anthesis is an option for looking at, if you did these different kinds of things, if you rolled out EVs at this kind of rate, if you retrofitted homes at this sort of rate, what would that do to your emissions? So, it's one way that local authorities can have a look at like, what are the kinds of initiatives they need to be supporting in order to really make this kind of change.

And so they complement one another, but you don't have to have... They also work independently of each other.

Dr Nic Gowland: [00:21:32] Okay... And this might be a silly question, but is there a, kind of, a single most important..., or top two most important initiatives, that these local authorities have been advised to, kind of, put, you know... You mentioned EVs, is that the kind of biggest one, or is it heating of commercial property, domestic property? I don't know...

Professor Carly McLachlan: [00:21:50] So, in some ways, I think the most important thing is that you embed this in every element of your decision making. So, back to the idea of it being a budget, you know, you can't be like secretly spending it over here, whilst trying to conserve it over here. And I think that's the thing where we often see, you know, you've mentioned already about airport expansion, these kind of conflicts in local authorities or organisations in general, where they have all of this, like, good stuff that they're doing on reducing carbon, but there'll be a blind spot, or something where they just don't want to think like that.

And it really has to be embedded in, like, your DNA of your organisation that everybody's thinking about it, everybody's trying to pull in the same direction. Because there's not enough carbon for there to be just some activities that you..., you're just like, well, they're special and we don't want to reduce those.

I mean, there are obviously other technical things that you've hit upon, like the retrofitting of homes to get demands down. I mean, EVs for sure are a really important part of transforming personal transport. However, again, if we think about it as demands, actually it's not necessarily just dropping in one technology for another, but instead thinking about like, how do we make a substantial shift to public transport and active travel, rather than just taking, you know, very vehicle-intensive city centres and just swapping them for a different, you know, a lower carbon <one>, but still a vehicle that's in the city centre. So, I think it's a moment now for people to really think across everything that they do and, and it's not just about climate change, you know, it's climate change as part of like, how are we building sustainable, prosperous communities? How are we levelling up?

What does work look like in the future? What kinds of industries are we expanding? But it's that kind of big vision for local authorities, and for the country as a whole, that bakes in low carbon, as a central part of everything that we're doing.

Dr Nic Gowland: [00:23:59] Yeah... That's interesting, as you were explaining it then, it kind of makes sense that, you know, every local authority decision hits the bottom line in a financial kind of budget, and you're saying that every decision needs to do the same with the climate budget.

Interesting. So you mentioned Greater Manchester Combined Authority is, kind of, I think, the most-established authority working with you in these programmes. Can you say the sort of policies that have <been> enacted off the back of this?

Professor Carly McLachlan: [00:24:24] We're doing a bit of work as part of the Centre for Climate Change and Social Transformation, where we're building a decision support tool for local authorities, that tries to help them take this rounded co-benefits approach to decisions.

So, from next month, all decisions going through the Combined Authority will apply this tool so that you're looking at economic, social and environmental aspects, and articulating them and assessing them. And I think that, you know, I suppose, is the next step of what I'm suggesting we need to do in baking it into every single decision, but it's a big shift from where people have been before.

Dr Nic Gowland: [00:25:03] Okay... that's a nice example of Manchester, but I believe these impacts are being felt beyond Manchester as well. There was a case study in Sweden. Is that right? Sweden?

Professor Carly McLachlan: [00:25:12] Yeah, sure... So our colleague, Kevin Anderson, did a couple of secondments, placements, out in Sweden.

And so, while he was there, he worked with local policy makers, again to develop local budgets. So yeah, we have some impact there, which is great. And then we're also looking to develop a tool that does the process of giving every local authority a budget for a few countries, as well, just to try and broaden, you know, the value of the work and where that can be realised.

Dr Nic Gowland: [00:25:48] So, the statistic I got was that around 18% of the UK population live in areas formally adopting carbon budgets from your tool, which is pretty cool. But that comes to about 12 million people, which is quite impressive for impact from, I mean, from not a small piece of work, but you know, a small piece of work that finished off a fairly substantial piece of work. That's quite impressive impact, are you quite proud of that?

Professor Carly McLachlan: [00:26:10] Yeah. I'm proud of the project because it brought together a number of people in the team, and really close working relationships with stakeholders in Greater Manchester Combined Authority, for example, and it's because we've really been focused on trying to support policy makers, it's also felt like it's moved quite quickly and I think sometimes, when you work in research, it can feel like there's quite a lag between the work that you do and then trying to get it, kind of, adopted. Whereas this

felt incredibly dynamic, you know, we're doing the calculations and then presenting them to them and asking, you know, how they interpret it. Do they understand what we're seeing here? And I think the fact that it's then been adopted by other authorities, and we've supported them in various places, has been great. And I think just, you know, with this framing of how urgently we need to act on climate change, if your work can make a contribution to trying to drive that, then yeah, it does feel rewarding.

Dr Nic Gowland: [00:27:07] So this all started, I suppose, with the Paris Agreement at COP21. COP26 is meant to be held this year <2021>, in the UK, hosted by the UK. Is there anything you'd kind of hope to see emerge from that? Anything substantial?

Professor Carly McLachlan: [00:27:20] Yeah. I mean, it's just the ratcheting up of ambition that you want to see. You want to see, like, real plans and delivery.

So I think, you know, gone are the times of pledging to make a difference. Like, what we have to see now is, like, the how, and really that rolling out. So, what have you done differently already in order to meet these targets and making sure that we really call out action that is against these goals.

And so, yes, it's great that we can do all the positive things, but, you know, the budgets are so constrained now, because we've kept emissions globally so high for so long, that we can't afford to just have areas that we, you know, that we just allow to keep going in terms of high emissions.

So I'd really like to see lots of examples, of really significant, substantial delivery that countries can share and learn from each other and adopt and get going with.

Dr Nic Gowland: [00:28:20] My last question to you is about young people, the kind of next generation. In my role at the University, I've been quite shocked every time we've had school visits and things, they are so on the ball about sustainability and climate change, and plastics, and things like that. And it shocked me every time at the Green Summit as well, there was a lot of children, young people, speaking really well. Does this kind of give you huge encouragement to see the, kind of, young generation so passionate and so knowledgeable about this?

Professor Carly McLachlan: [00:28:48] I think what's incredible about what young people have achieved recently in the climate movement is that they have held adults to account and they have challenged whether we have done enough, which we have not.

And I think that's a fantastic role for them to play. The role I really don't enjoy, that people give to young people, is that like they'll come through and they'll change everything, so it will be fine in the next generation.

Because it's up to us to sort it out now, we should have already done so, and we can't do a further delaying tactic of saying, 'Oh, well, the kids really care about it', so by the time they're, you know, in all of these powerful positions, it will be fine because that, that's too late.

And so I think it's brilliant that young people haven't accepted that that's where they're going to be, like, when we're running the show, it'll be like this. Instead, they've been like... ..'look, you lot running the show, this is not good enough' - and I think that's, that's been incredible, you know, there's been this kind of combination of things coming together to really, sort of, ramp up public awareness, public support and various organisations really committing to ramping up their effort on climate change.

And so that is positive, but we have to make sure that that is genuine and that it's delivered, and that it's realised. Because making the big pledges is one thing, but, you know, the very next day, how is it being delivered? And are we monitoring and evaluating that to make sure that we're doing it well and effectively.

Dr Nic Gowland: [00:30:22] Well, Carly, I think that's a good place to leave it. That was a fascinating chat. I really enjoyed it. Thanks very much for your time.

Professor Carly McLachlan: [00:30:33] Great to talk to you, thanks very much.

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