

International Development Committee

Oral evidence: UK aid for community-led energy, HC 849

Tuesday 10 June 2025

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[Watch the meeting](#)

Members present: Sarah Champion (Chair); Tracy Gilbert; Monica Harding; Noah Law; Alice Macdonald; Brian Mathew; David Mundell; Sam Rushworth; David Taylor.

Energy Security and Net Zero Committee Member present: Torcuil Crichton.

Questions 1 - 34

Witnesses

[I](#): Nedjip Tozun, CEO of d.light, EarthShot Prize finalist; and William Kamkwamba, Moving Windmills Project.

[II](#): Dr Alycia Leonard, Senior Research Associate in Energy Systems, University of Oxford; and Sarah Roberts, CEO, Practical Action.

Examination of witnesses

Witnesses: Nedjip Tozun and William Kamkwamba.

[This evidence was taken by video conference]

Q1 Chair: I would like to start this first evidence session that we are taking on UK aid for community-led energy. We are joined by two panellists for the first session. Nedjip, could I ask you to introduce yourself and your organisation, please?

Nedjip Tozun: Yes, sure. First, Chair and members of the Committee, thank you so much for the opportunity to speak with you all today. My name is Nedjip Tozun, and I am the CEO and cofounder of d.light. Over the past 18 years our company has delivered clean, affordable solar energy to more than 200 million people across Africa and Asia. More specifically, we provide distributed renewable energy solutions that are designed for the roughly 685 million people in the world living without access to grid electricity, the vast majority of whom are in Africa. These are basically household-level solar home systems and appliances that provide energy access where the grid is not available. We develop, distribute and service the products to rural communities, and we also provide financing for the products, enabling the customers to pay in small daily instalments of 20 cents a day or 40 cents a day, similar to what they might have paid for kerosene or diesel. We take a private sector approach.

These renewable energy solutions have massively scaled up over the last five or 10 years, a bit similar to what happened with mobile phones, where basically mobile phones leapfrogged landlines entirely in Africa. We are seeing in many places the distributed renewable energy solutions leapfrog the traditional grid. We work hand in hand with local communities, with funders, development partners and the public sector. I am looking forward to the discussion today and sharing a bit more about the role that UK aid has played in delivering energy access and potential opportunities for the future.

Q2 Chair: Thank you very much. William, it seems somewhat perverse that we cannot see you because of your line, knowing that you are a Netflix superstar. For those who do not know about you and your project, can you tell us a little bit, please?

William Kamkwamba: Thank you so much. It is a great honour to appear before this Committee this afternoon. My name is William Kamkwamba. I am from Malawi. I grew up in a very small village in Malawi. The work that I am doing now is I am currently working for the Moving Windmills Project.

My story basically started with me building a windmill to generate electricity to bring power to my village. At that time it was the time that I could not go to school, but when I was dropped out of school I started



going to the library and reading books. Through reading books I found a book with a picture of a windmill on the cover and, when I read it, it told what you would use a windmill for. One of the things was you could use a windmill to pump water. That was the first thought that I had: "If I can build a windmill to pump water, I can start irrigation for growing food two or three times a year instead of one time." But I ended up building a windmill to generate electricity, because at that time I could not find parts to build a water pump.

I had an idea how electricity could be generated because, when I was growing up, I grew up very curious. When I see anything that is new, I always want to understand how it is happening. One of these was the radio. I thought that there were small, tiny people who speak, and being a child I started taking it apart. Whenever I did that, I did not have money to buy batteries because I was using the batteries, and then I started learning how electricity can be generated. That is how when I could not build a windmill to pump water, I ended up building a windmill to generate electricity for my house and for us to power a radio, but at the same time people were using it to charge their mobile phones and they listened to the radio as well.

Through that my story got picked up by a lot of people who were interested, so from there I was invited to attend a TED conference. I cofounded the organisation, called Moving Windmills, that I am working with now. We are doing a lot of projects related to energy, such as solar and wind power, but also using the same energy for mobility, charging electric motorcycles. We are converting petrol-powered motorcycles into electric ones, and using the solar system to be able to charge it in different communities and setting up and putting up small irrigation schemes that provide water through solar power for irrigation in many communities.

We are also building a community hub, but the big project that we are working on now is that we want to build an innovation centre and invite a lot of young people to design solutions to everyday challenges. We want to have a space where we can invite a lot of young people. We believe that talent is universal, but the opportunities are not there. If we can give those young people opportunities to design a solution to their everyday challenges in energy and in agriculture, we will be able to improve people's lives in their communities here in Malawi.

Chair: Thank you. It is a brilliant scheme, William. David Taylor.

Q3 David Taylor: Thanks very much, William. You have talked about this a bit in your opening remarks, but can you expand upon what you have said about the ways in which the windmill project has helped change people's lives in your village?

William Kamkwamba: It has changed lives in different ways. One of the ways is giving a chance to access information through the community hubs that we are building, so that people then will be able to come to our



community centres, where we are using renewable energy, solar power, and access computers and they the internet. That is one part, but we are also able to create a hub that has a water station that people will be able to use, solar-pumped water, so they can get water for irrigation but also clean drinking water. We are doing that for the farmers we are working with, using the mobility. They are using the electric motorcycles to go to and from the market when they have their produce instead of using the vehicles that rely on diesel. The cost is very high, especially with the cost of fuel here in Malawi, so a lot of people are saving a lot of money through this system that we have put in place in many communities.

We have also the maize meal that provides a service to almost 300 people that they can access. Instead of using some maize meal they use diesel, and instead of using the diesel they are also using the main power grid, which is not always on. Then they can still use the solar, which is just like the energy coming from the sun. Those are some of the areas where we are helping people to be able to use green energy to solve some of the challenges that they face in their own communities.

Q4 **Brian Mathew:** William, muli bwanji, bwana? Could you tell us what support would make the biggest difference to the Moving Windmills Project?

William Kamkwamba: The support that would make a difference is we need support to do capacity building in most of the rural areas that we work in. We do work with some people who are capable of maintaining the system that we put up, but in some areas we do not have skilled labour that can maintain the system. By having that capacity building and being able to connect people in the community with other people who are doing similar, that would be very helpful to us, to the work that we are doing. Right now, with the innovation centre that we want to build, we are in the fundraising space. We have already managed to get 50% of what we are looking for to be able to build that innovation centre. We are hoping that after having that innovation centre we will be able to use human-centred design and design a solution, keeping in mind the people you are working with. That is our project that we want to be able to do. We want to have those centres and get people who can work with us to come to the centre to connect people all over Malawi. That is the support that we are looking for.

Q5 **Noah Law:** Ned, d.light has reached over 190 million people so far with off-grid solar, which is incredible scale. What do you think has been key to achieving that scale?

Nedjip Tozun: It has certainly been a journey. Over the last 18 years, when we started out there were not any solutions for solar that could scale in these off-grid communities, so we started out very much with an innovation approach. We started out with solar lanterns to replace kerosene lights that were able to be affordable and scalable in the local communities, and from there we grew into solar home systems.



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To achieve scale, there were three main things that we had to develop as a business. One was capabilities around developing a great product innovation business specifically for the base of the pyramid customers, families living in these rural communities. How do you design products for them that are both extremely affordable but also very durable to survive in these rural communities? With the conditions that a lot of our customers live in—it is tough; it is hot, humid and dusty—the products must be quite rugged to survive, but at the same time the affordability is so key to make these products at scale and replace things like kerosene lanterns or diesel generators. That is the first thing.

Second, to really get to scale we had to figure out last mile distribution. Our customers by living off grid by nature are living in places that are harder to reach and we had to build a distribution network through a lot of local partners, local retailers, local sales agents, people who were part of those communities, who could go in and demonstrate the products. We built after-sales service centres in these areas and built a whole distribution network across many countries in sub-Saharan Africa, in both east Africa and west Africa, and today we have about 15,000 commission-based sales agents that go to these communities and can demonstrate the products.

We aim to have a product for every household in the community, whether it is a very low-income household or a household with a bit more disposable income. We have solutions for everybody, because we want to make sure that everyone in a particular village or rural area has energy access. There is a product, there is the distribution, and the third piece was the financing, and this is an area where we also had to deal with quite a lot of innovation.

About 10 years ago we really started scaling up what is called the pay-as-you-go business model, and what is interesting about working in sub-Saharan Africa is that mobile money is almost ubiquitous. You go into a very remote area in countries such as Kenya, Uganda, Tanzania or Nigeria, and people will have access to mobile money. We are basically able to have customers pay us in small daily instalments and then we can remotely lock or unlock the device based on whether the customer has paid. They can pay 20 cents a day or 30 cents a day, similar to what they might have paid for kerosene, and instead of burning that money away on kerosene they are investing into an asset that they eventually then own. Building that consumer finance capability has enabled solutions that are beyond just these smaller solar lanterns, these larger solar home systems, to really reach large scale.

Those are the pieces that we built in place. It started out with a lot of experimentation and innovation. In fact, we and other companies in this space have received some grants from the Shell Foundation, the Acumen Fund, other organisations that have been supported by FCDO—at that time it was called DFID—to do these experiments. The pay-as-you-go model was funded by some grants and experiments because it was very



hard to raise equity in commercial financing for it, but once it was proven out, now we are in a scaling mode and able to attract commercial funding to scale that up.

It has been a journey for us; we were working very hard to solve this problem of wanting to provide universal energy access and had to experiment with a lot of different business models. There were a lot of failures along the way that we made and as we figured out the right model, and now over the last five years or so we are in a scale-up mode where we have really honed the business model that can scale. It is about unlocking commercial capital to continue to have impact and figuring out also how to unlock capital that reaches some of these harder-to-reach countries that are still very difficult to raise commercial capital for. We are at present in Kenya, Uganda and Tanzania, but getting into markets like Sudan or Somalia, these places where the products are still very needed, still needs some level of concessional financing to get there.

That is how we had this journey from idea and vision—we had 100 million people impacted was our founding goal and the fact that we have surpassed that and are continuing to grow is extraordinary. It is because of a lot of people and partners along the way that have come alongside to support not just us, but the whole sector as we figured things out and found models that are at scale.

Q6 Noah Law: You have done it before in countries that were previously lacking access, such as the ones you now describe. Clearly, you are firing on a lot of cylinders: you have a good product, you have good distribution networks and you have cracked the financing nut in creative ways. What about policy? How does the policy environment help or hinder you along the way? How can you perhaps replicate some of the successes that you have had, or how could others replicate the successes you have had on financing as well and even perhaps the business model aspects you mentioned?

Nedjip Tozun: There are a number of things on the policy side. Some countries have done better than others, but what we have seen in east Africa—and east Africa in particular has had a much higher penetration of these products and solutions—is there is much more adoption in those markets. I think a large part of that is because it has been a more favourable policy environment. Specifically, you have had in those markets lower customs duties for solar; not necessarily zero customs duties, but it at least provides more of a level playing field versus the alternatives such as diesel for the diesel generator and kerosene.

We believe if solar, when financed, is on a level playing field with the alternative solutions for these off-grid families, solar will win and scale. Having a policy environment that provides that level playing field is important. In many countries, kerosene oil and gas can be subsidised so at least having a place where solar imports are not taxed exorbitantly. There have been countries where the taxes are very high on solar imports, and you see very little adoption then of the technology in those



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areas. They are 10 years behind some of the other countries we work in. That is one of the key things we look for in a policy environment.

Chair: Could I pause you there? What is happening is we are expecting a vote, which means that we are going to have to end the session and I am keen that we get more members in, particularly Torcuil.

Nedjip Tozun: Okay. I will be brief in my responses.

Chair: Thank you. Torcuil is a delegated representative from the Energy Security and Net Zero Committee, so we are lucky to have him here. Can I bring Torcuil in now, please?

Q7 **Torcuil Crichton:** Hello, William and Ned. William, you are from a small village in Malawi. I am from a small village in Scotland. We have problems with the internet as well, so I understand why you cannot see us, and we also have windmills, William. Our district has built three windmills owned by the community, 9 MWh, £1 million a year between 2,000 people. It is transformative. Community energy is transformative in this part of the world as well, but it costs a lot of money. We spent something like £14 million to get these windmills up.

How do you balance that commercial viability, the commercial payback, with the social impact that it might have? The social impact can be fantastic, but you have to pay the banks, you have to pay finance. I know you have talked about the success of leveraging government money, but can you talk about leveraging international aid? You talked about sales, but there is maintenance as well. We have read that something like two-thirds of the solar panels in sub-Saharan Africa just are not working because they have not been maintained. Have you focused on that?

William Kamkwamba: Yes, that is one area that we are focusing on and looking to build up capacity, having more trained people in rural areas who can maintain and fix a challenge if it arises. One of the very big, difficult challenges in many of the communities I think right now is also the storage, especially where it is a stand-alone system that you are just using for light and you are charging batteries. I think the degradation of the batteries is becoming challenging.

With the system that we are putting up in many areas where some people are using it for charging cell phones and they are paying a fee to make it sustainable, to maintain it but also using the one that we are doing with the solar water pumping system where they are doing multiple crops per year, it is helping out people. Their income generation is going up.

The biggest challenge is to train more people. The people who can do the work are there, but training more people is one of the challenges that we see. Most of the time, when we are putting up a system, we are trying to work with the local communities, sharing ideas and training some other people there, so that whenever we are not there in person, they are



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going to be able to take care of it and maintain it. The biggest challenge is to train more people who can take care of the system once it is put up.

Q8 Torcuil Crichton: Ned, can I ask you how you see that balance between the commercial viability of these things and their social impact?

Nedjip Tozun: For us we are very mission-driven as an organisation. I think all the players in our sector are similarly minded. We see unlocking commercial capital, for example for the consumer finance side, we need local banks to start participating, and they have over the last few years, to lend through a securitisation vehicle where we can then on-lend to customers. To unlock the commercial banking capital is what has really enabled very large scale, so to make it commercially viable to us is very linked to unlocking commercial capital at scale and therefore impact at scale.

In terms of things that can help catalyse further impact and growth in addition to the private money coming in and the commercial money coming in, having things such as first-loss guarantee layers for these banking structures, because there are still a lot of local banks that are not comfortable yet putting money into this sector. Our customers for the most part are unbanked; they do not have a credit history, and we have been able to develop a very good track record of collections, but still it is perceived as a higher risk area, similarly with harder-to-reach markets.

I think having both the commercial approach but also having public sector funds or philanthropic funds to come in to help catalyse growth in these perceived higher risk areas is something that can further accelerate the growth and development.

Q9 Alice Macdonald: Thank you both very much. I want to ask about innovation and about being an entrepreneur. William, reading your story is quite remarkable and looking at the windmill on Wikipedia that you built when you were very young—I will not say exactly how young, but maybe you would like to. I cannot imagine building a windmill when you were not able to attend school. From your perspective as an innovator and an entrepreneur, what do you think is key to being able to do that and how do you think potentially specific policy can help enable innovators and entrepreneurs? I will come to Ned afterwards.

William Kamkwamba: I think one thing that could help is, as I already said, there are talented people everywhere, talented young people, but to have a chance to have an idea and build up on their ideas is one area that is mostly lacking. Having a space and the tools that people can use will encourage innovation in different areas. One of the questions that I always get asked from people is, "What did you wish you had when you were building your first windmill?" and I say that I wish I had a space and the tools and the mentors to guide me through the work that I was doing. Having a policy that could make sure that where young people have ideas, where they can take those ideas is easily available, or policies that can encourage creative problem-solving instead of just thinking about



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one way. I think that will increase in terms of innovation with a lot of people in different communities.

Some of this innovation happens because they are facing a lot of challenges, and they are trying to address those. Having the people who are facing those challenges be part of a solution will encourage a lot of innovation. I think doing grassroots-level innovation, working on a problem from a grassroots-level solution going up, is an area that might be able to help increase innovation.

Q10 Alice Macdonald: I have one quick follow-up question. I think you were part of the African Leadership Academy, and there are quite a lot of different leadership programmes particularly for young people in Africa that I am aware of. How valuable do you think those initiatives are about bringing young leaders together to share ideas?

William Kamkwamba: I was part of the inaugural class of the African Leadership Academy. It is an uplifting initiative because when I was there, I was working and learning from my peers from all over the continent. We are learning through each other sharing ideas, so having that, going through that programme, it does increase; instead of reinventing the wheel you can just borrow ideas from one area to another that might be able to work. You just might have to change a few things, but at the end of the day you are still able to work it out. Having those initiatives and a space where a lot of young people are building up their skills and sharing it always helps.

Nedjip Tozun: We really see innovation as—

Chair: Sorry, we are literally just expecting a vote so could I go to David Mundell, please?

Q11 David Mundell: I will direct my question to you, Nedjip. From your experience, what is the one insight you wish more decision makers understood about the real change that happens on the ground?

Nedjip Tozun: Our mission is to transform lives with sustainable products. What I want to emphasise is bringing universal energy access. We see when customers get access to solar, even if it is a simple solar light, but especially if it is a solar home system, their lives are fundamentally transformed. The kids can now read longer in the evening. They are not breathing in dangerous fumes from kerosene. There is opportunity that has opened up. There is dignity that is created because they have access to the 21st century and the technology. They are connected. There are so many benefits and there has been a clear correlation between energy access and GDP growth and economic productivity and stability even, with having people not migrate as much into these big urban areas because there are now opportunities in the rural communities.

I think energy access is one of these areas that has so many positive societal impacts and finding ways to accelerate the growth of things that



work and investing in innovations for new things that might be the next thing 10 years out. There has been investment through Transforming Energy Access, which is another FCDO programme, to solar-powered fridges and electric motorbikes. These are things that are nascent, maybe five or 10 years out, but can be the next big thing and building out an ecosystem of appliances and applications for energy use that can further transform people's lives. It is so important for just making sure that all people in the world have access to energy and the opportunities that provides, and are plugged in and connected to the world and just providing a huge uplift in their quality of life and economic productivity and wellbeing.

We are obviously very passionate about this and believe there are many impacts for individuals, for communities, for countries, in getting everyone access to energy, even if the grid does not reach their community.

Q12 Sam Rushworth: Mine is a two-part question about international development stakeholders that work in the same communities as you, and the degree to which they are either a help or a hindrance. You can answer both sides, and the question is to both of you.

Nedjip Tozun: I can start. I will be brief. I think that we have seen both, where sometimes there are projects that are not co-ordinated well with the private sector or with the local governments and end up not having an impact. You mentioned solar panels that are in disrepair because an after-sales network has not been built out. A lot of times solving these things requires a very holistic approach and a collaborative approach. There were a lot of chaotic initiatives 50 years ago across many different philanthropic funding and public funding, some of which worked well and some of which did not.

Now at least in the distributable renewable energy space there are these umbrella programmes. There is the Mission 300 programme, which is the World Bank and African Development Bank. There is Acumen's Hardest-to-Reach programme and a few others that have consulted well with the private sector and local energy Ministers and so on. I think plugging in with those programmes that are getting inputs from everybody is going to enable these solutions to scale and not be misused.

Q13 Chair: Nedjip, thank you to both you and William. Your absolute passion and commitment have come across loud and clear. I think you are both inspirations and I hope that we will be able to do a strong report based on what you have told us. I am aware that we both started late and are cutting the session early because of votes; if it is all right, we will probably come back to you with additional questions, because we do not want to lose your valuable experience. Thank you both hugely for what you have done, and I know will continue to do, in this space. I will watch your careers and businesses with interest.

Examination of witnesses

Witnesses: Dr Alycia Leonard and Sarah Roberts.

Q14 **Chair:** We will now resume our inquiry on community-led energy. We have two new witnesses in front of us. Could I ask you to introduce yourself and tell us a little bit about the work that you do?

Dr Leonard: Thank you very much for having us today. It is a great honour to be here. My name is Alycia Leonard. I am a Senior Research Associate at the University of Oxford. Most of my research focuses on energy systems, with a large focus on energy access, particularly regarding decentralised energy planning in Kenya and Zambia. I worked for a number of FCDO-funded research programmes on those topics, such as the Climate Compatible Growth programme and the UK Partnering for Accelerated Climate Transitions programme. I want to highlight that I am representing a cohort of researchers who have put forward some written evidence from the Universities of Oxford, Manchester and the University College London.

Chair: It was really helpful evidence, thank you very much.

Sarah Roberts: I am Sarah Roberts. I am the CEO of Practical Action. We are an international development organisation with local staff in Africa, Asia and Latin America. We have been working on energy access in different ways for almost 60 years. I am representing a lot of people who know a lot more about energy than I do, but I will do my best to bring it to life.

We were founded by the radical economist EF Schumacher; he did many things, but he also wrote the seminal book, "Small is Beautiful: A Study of Economics As If People Mattered". His whole philosophy when he set up our original organisation, the Intermediate Technology Development Group, which was all about development being community led, appropriate technologies and development being context specific, not bringing in solutions from outside that were not designed by communities, and very much making sure that everything that is done is done within planetary boundaries.

Our mission is to contribute to changing the systems that keep people living in poverty and vulnerable to the impacts of climate change, biodiversity loss and pollution. We have been working on energy in a range of ways, as I say, for over 50 years. There is a lot of work directly with communities, a lot of community engagement, community design, mostly off-grid energy work, but we also work a lot with Governments on policy change.

We focus particularly on energy for the left behind, a lot of work on ensuring that energy is delivered well for women as well as men, and for people in displaced settings. We work a lot with the organisations that we have just heard from, so a lot with social enterprises and businesses. We host an organisation called the Global Distributors Collective. That brings together 240 organisations like d.light, so the people who are distributing



energy to these last mile settings, mainly rural, some low income communities.

Chair: Sarah, I am going to pause you because we would like to ask some questions. Can I bring in Torcuil, please?

Q15 **Torcuil Crichton:** Thanks for coming in. A simple but profound question, I guess: why is community energy important?

Sarah Roberts: You have heard from the previous panel how transformational it is. We are an organisation that is about people being able to lift themselves out of poverty, and energy is a fundamental enabler of that. If you are not able to access energy, you are often not able to have good education, you are not able to have productive agriculture and you are held back from so many opportunities.

What we see is that there is good energy access for a lot of people, but there is a whole suite of people who are left behind, primarily in sub-Saharan Africa. The majority of people who have neither clean cooking nor access to electricity are in sub-Saharan Africa, primarily in rural communities. That is holding back a whole section of people. More people do not have access to energy than live in the entirety of the European Union.

Q16 **Torcuil Crichton:** Is community energy the way to give people access to energy, or can commercial provide it as well?

Dr Leonard: Maybe I can come in on that one. There are barriers to having these remaining communities that are off grid connect to national grid infrastructure. When you speak to utilities in the different countries in the global south, there is a certain distance beyond which it is just not economically viable for them to extend transmission lines, knowing the amount of demand that is liable to be at the end of that line is going to be low.

Torcuil Crichton: You are describing rural Scotland there rather well.

Dr Leonard: I am also originally from a fairly rural area of Canada, and I have just moved to Scotland, so I understand. With that, these smaller-scale systems can help. Of course, there is still the challenge of affordability and financial viability in smaller-scale systems, but the trade-off is a bit clearer than with the national grid systems. There is also, of course, the opportunity for these systems to be greener than the national grid is at present, which is always a good selling point and is also critically important in a climate crisis—not that rural global south communities should be responsible for that.

Of course, by having these community-specific implementations you can help to make sure that for these very vulnerable communities their specific needs are taken into account and the systems are tailored to match those, whereas a national grid may provide a large level of service. To get going some of these productive uses that Sarah mentioned, you



might not need the biggest most industrial-level service; you might just need a solar home system to get started and then build up from there. There are a few different aspects.

Q17 Torcuil Crichton: I think you anticipated my next question. Sarah, how can we ensure that community energy projects reduce inequality and poverty? Can we guarantee that?

Sarah Roberts: I think that comes from good community engagement and understanding the realities of the situation that communities are in. It requires some engagement that goes beyond talking to village leaders and to men, to make sure you are talking to women and to young people. We have seen a lot of failed projects that are product-led rather than community needs-led. If you do not understand people's ability to pay and the variability in their income, if you do not understand the way they cook, if you do not understand how they want to use energy to pump water, you tend to find that the solutions are then not sustainable, because they are either not meeting needs that people have in the way that they want them to be met, or the business model that goes around them is not sustainable in the long term.

It was great to hear what was talked about earlier, but if I look at situations such as rural Malawi, for example, the communities that these off-grid last mile distributors are working with are not utilising mobile money, for example. Those pay-as-you-go services are not yet working for them. You must build your approaches up from there and that is why you need the distributors. I have some pictures here to bring it to life. That is why you need the distributors who are out there in the community, the women who are trained in the community, the people who say, "If you want to do solar irrigation, maybe that product will work, because that is what you need and there is a business model that will work for you". That is why community energy matters so much.

Q18 Torcuil Crichton: Finally, I am interested in failure as well as success. You have talked about projects that are vanity projects or inappropriate infrastructure. What are the ones that fail?

Dr Leonard: I can again perhaps speak to this. A colleague of mine, who speaks quite openly about this and contributed to our submissions, has previously worked for GIZ implementing micro hydro projects that were technology-led. Because of a mismatch with local context, a mismatch with the upkeep and maintenance, as was previously highlighted, that was needed, most of those projects failed. It is quite frequent that if you lead with a technology, if you say, "Right, we have X amount of money to implement X type of generation" and the community is trying to shape itself and shape its energy use around that, it is not a real collaborative partnership. They are not going to feel ownership and then it is going to fall apart. I do not know if Sarah has examples.

Q19 Chair: If I can come in on that, of the projects that you are talking about, do you know any that were DFID or now FCDO-funded?



Dr Leonard: In terms of failures, I am racking back through my brains. I think I could probably provide additional written evidence on that.

Q20 **Sam Rushworth:** Thinking about agency and ownership, what does localisation mean in the context of access to energy in the communities that you work in?

Dr Leonard: From my perspective again—perhaps it would be great to have others from the implementing bodies on the ground come in on this—it first means that communities and implementing partners are treated as true co-creators. There is decision-making power in a democratic way across everyone. That includes vulnerable groups as well as powerful groups. As Sarah highlighted, if you are localising energy, it is important to speak to, for instance, local chiefs and local governance, but it is going beyond that to say, “Okay, these people are culturally powerful”, or, for instance, “Who else is being overlooked?”, and localising that understanding.

Beyond that there are the technological aspects of bringing the energy system closer to the community. It is more about the sense that the system meets the community’s needs and meets them where they are, meets the productive uses that they have. As Sarah said, solar irrigation is one example. There are other communities who might prefer a maize grinding mill as was brought up by the previous speakers. It is about determining how people might use energy at that local level and building the system from the ground up based on that.

Sarah Roberts: I completely agree. I think it is investing in organisations like the ones we have heard from earlier who have these long-standing relationships in communities and are there for the long term. That does require quite a lot of capability building in all sorts of ways. There are a couple of things to highlight. One is making sure that you are building capacity for that long-term maintenance in communities. That is one of the reasons that so many projects fail because you have not localised the ability to govern them well and then to maintain them well.

Another is finding ways to ensure that there is access to finance that works at that level. That is important because, if you do not have the right finance and if you are looking at rural community energy, there will almost always need to be some subsidisation. You cannot localise without looking at the financial mechanisms that are going to work as well. I think that is important.

Dr Leonard: This prompted one more thought from me. I brought up the local productive uses and Sarah brought up the finance aspect. It is about a more holistic understanding when you implement these projects. Maybe you know the productive use and you have the finance, but the people who are in that community still need some capacity built or still need businesses incubated so that they can scale up their energy uses. I would



encourage viewing it as not just energy and technologies, but also the capacity building to then be able to use it as well.

Q21 Sam Rushworth: In your experience, to what extent is a community homogeneous in agreement about these issues?

Dr Leonard: It is interesting. We have done some research about this that I think points to some hopeful findings, but on surface level, if you ask community members, they will express very different needs and that is fully understandable. For instance, one example might be that if you were talking to people who are disabled, they may have different energy needs because of their need for different transport services. You might talk to different men who have different money-making aspirations in the community from women, who express needs to support their children or their education. They express these needs differently initially.

We have done some research within Oxford to look at what are the values and underlying needs, and they align more than at first blush. It is about finding the alignment between the different actors in the community—and that requires engagement. You cannot just say, “Right, everyone agree. Figure out what you want and talk to each other.” There needs to be some process that is locally appropriate where people can come together and discuss this, but they may be at the root motivated by wanting better for their family, for instance. Men might see that through money and women might see that through children’s education, but you can find that root cause of wanting better for the future for their kids.

Sarah Roberts: If I can add something, one of the areas of energy that has been fundamentally neglected is clean cooking. You still have 2.1 billion people who are cooking using dirty biomass technologies and you have 3.2 million premature deaths a year from the health impacts of that. The majority of people who suffer because of this are women and children.

I think there is often a huge focus on electrification. Lots of people are looking at charging stations and entrepreneurial approaches, and women want that as much as men, but if you look at a huge issue that is affecting women and children more than men and is not being invested in properly, it is clean cooking. That is an entirely soluble problem that has just not been properly engaged in because it has been seen as more of a women’s issue.

There are some fundamental approaches there. Organisations such as the Global Distributors Collective that will be selling solar home systems will be selling clean cooking products as well. You do have to understand women’s needs and there is quite a lot of behaviour change; you have to get men onside, because it means a change in behaviour. There is a lot of community engagement work that you do but if you just ask at the surface level you will not get to some of these fundamental needs.

Q22 Alice Macdonald: I have one quick question. I say this as a Labour and



Co-operative MP, but it is the UN Year of the Cooperatives, so internationally there is a big focus on them. How have you assessed the role of co-operatives in energy in these local community models? Is there a lot of appetite for them? Are they seen to be effective?

Dr Leonard: It depends on the context and the community. The way I perceive it is that, just like every community in the UK, if you ask them, they are not going to say, "Yes, of course we will do an energy co-operative." They might not have the interest. Maybe there are more pressing issues in their neighbourhood; maybe they do not have the time because they are from a more underprivileged area. Similarly, you are not going to have every community very interested in forming a co-operative in the communities that you are working in through UK aid.

At least that is true in the initial stages—once you get to a deeper level of engagement, maybe, but I think coming in guns blazing saying, "Co-operatives are the way," is not always the best solution. Of course, we point to it as an ideal solution theoretically, but not every community is going to have the capacity to self-govern that kind of thing. That is my perception, but I would invite Sarah to chime in. It is a great structure where it can work.

Q23 Alice Macdonald: That is fine for that question, and you have teed up this area well. What are your reflections on the role of development aid in the context of energy access? How can it be used most effectively?

Sarah Roberts: We have had a range of funding over—I cannot speak for 50 years ago, but I think through the course of what we have done from UK aid and quite a lot of other Governments. It has been fundamental for making sure that those who are most vulnerable are getting the energy services that they need. We work a lot with the private sector. We work a lot with organisations like d.light, but even in those organisations the pay-as-you-go model is not suitable for some very remote and vulnerable communities with very unpredictable incomes. We work a lot in displacement settings.

Q24 Alice Macdonald: Could you speak specifically to a few examples of how you see foreign aid being used?

Sarah Roberts: For example, I think there was UK Government funding in something called the Moving Energy Initiative, which looked at the needs of people in displacement settings. From that there has been a range of work that we and other organisations have been involved in to get renewable energy into refugee camps and places where there has been massive displacement. We are now doing that. We have been doing that for almost the last decade in Rwanda. That came out of some groundbreaking research that was development aid funded.

Another type of UK Government funding that we have had has been looking at energy for the extreme poor. That was the example that I was trying to get to earlier. Without UK aid funding looking at energy for the extreme poor, why current approaches are not delivering for them and



what business models can and cannot work, I do not think we are going to be able to get energy to the people who are most left behind. I think it is a fundamental role of development aid. You need it to look at the people who are left behind. Business on its own and the standard Government approaches are not going to deliver. Otherwise, we would have 14% electrification in Malawi, 2% in rural Malawi. It would have happened.

Q25 Alice Macdonald: That is great. Alycia, maybe just to pick up on that, but also just in terms of the role of the state, so Nigeria for example, have you seen good examples of where in the past—we have talked a lot about direct budget support and how aid money is delivered. Obviously the best model is that it is led in-country, but how do you think that is best applied in aid funding?

Dr Leonard: Maybe first I can just add something to the previous point, which tees nicely into the next one. One concrete example of one way I have seen aid money from the FCDO have a strong impact is within this work we have been doing on county-level energy planning in Kenya. A lot of the work that we have done there as a more researcher-oriented programme is building capacity, working in collaboration with sub-national-level energy planners in Kenya's county-level governments. They are energy directors who are going to do energy plans for each county.

By building that capacity and bringing all the county directors together to learn from each other, peer to peer, as well as us providing technical assistance where it is appropriate, needed and requested, there have been certain examples of counties that have really thrived. For instance, a colleague of mine, Yvonne, a former planning director in the county of Meru, who engaged with these capacity-building sessions. She was already quite a big champion of this energy agenda—you need to identify those champions. Through the connection she was able to build through this UK aid-funded work she was then able to work with another FCDO-funded project to have a solar installation placed on a hospital in Meru County. She was able to pitch that to the relevant parties and be like, "Look, my county needs this" and now they are diverting the money they used to spend on diesel into improved child healthcare.

There are these knock-on effects of the capacity building that you see as these snippets and examples. It is something that I think is harder for the FCDO to measure so when it is deciding how to allocate aid, these things can seem a little bit less sexy than implementing a project, but it is critically important.

The other thing I will mention is that, just on a personal level, I think there is much more room academically for more funding to be allocated directly to global south academics. In our programmes, the budget allocated to them is quite minimal compared with UK academics. We work with them, but in terms of a value for money argument, knowledge knows no borders, and there is a huge amount of local knowledge that could be tapped into, which I think should be considered.



Sarah Roberts: One short addition to that is that development assistance paid for a number of people, including one of our Kenyan staff members, to be seconded into the Kenyan national Government. They started out giving a whole range of advice to the Kenyan national Government on energy policy, including how to make it more relevant for women, and that was really important.

That then linked into the work that Alycia is talking about, which we are involved in in a different way, which is taking that national policy down to the county level, which is where you make it absolutely relevant for communities. Because you have had that investment in capability building and that focus on women, that flows down. I think that is a good use of development money as well.

Q26 **David Mundell:** I think you have answered my first question, which was going to be what the UK does most effectively. I will follow up by asking you this: is the UK achieving the right balance between supporting rapid scale-up and supporting inclusive and meaningful development outcomes? I think Torcuil will agree that in Scotland sometimes we have fallen into the trap of volume over bringing onside the most remote and rural as we have rolled out projects, such as internet access, for example. Is that the same in the context of energy? Is scale sometimes given more priority over those who are the most remote, rural or vulnerable?

Sarah Roberts: Certainly, where we have had money from UK aid in recent years, it has been focused on the people who were left behind and the extreme poor. The UK Government have, through the Total Energy Access programme, been funding the Global Distributors Collective that I mentioned since its foundation in 2018. I think that is an innovative way where you can get inclusivity and scale. If you are going to reach rural communities left behind, you are going to have to go through off-grid usually, you are going to have to go through local distributors, you are going to have to work with these organisations that are in the communities.

By funding things such as GDC, the Global Distributors Collective, that is a vehicle for getting an inclusive approach to scale. My personal experience of UK aid has been quite positive in the energy space. As I say, it has been innovative in looking at energy for displaced people, which is going up and up and up. It is something that we as Practical Action are doing more and more work on, partly because of the things we have been funded for.

Obviously, it is devastating that aid is being cut. One of the other things I would say is that we really need to not cut aid and turn that on its head, because we cannot continue to reach the most vulnerable people without investment in the things that everybody has been talking about. That is something I think is important as well.

Dr Leonard: I would just echo a similar experience from a personal level. Within the programmes I have been involved with, there has been



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a significant focus on including marginalised voices. For instance, just the other week one of my colleagues, Gerald Arhin, who is a researcher at University College London and is visually impaired, was conducting a workshop bringing together folks with disabilities from Kenya, Ghana and Zambia to discuss how their disabilities interacted with energy and transport systems. That was within the Climate Compatible Growth programme funded by the FCDO.

There is interesting, innovative work happening in the inclusion and within these programmes that do ultimately have a focus on empowering economic development at a larger scale, but it is something that goes on the chopping block when aid is reduced in volume. Despite our passions and efforts, there is prioritisation that comes into play. It is something that needs to be considered in those decisions.

David Mundell: It is good that you can put that on the record.

Dr Leonard: I would say so, yes.

Q27 Tracy Gilbert: You have already stated that women are not really taken into account in policymaking when it comes to energy, when you spoke about 3.2 million premature deaths and the clean cooking policy. With that in mind, what recommendations would you make to ensure that gender is at the core of policymaking so that no one is left behind?

Sarah Roberts: There are a number of things. Investing in making sure that gender is front and centre in energy policy, which we have seen some Governments contribute to through their aid programmes, is essential—investing in women.

We have a programme called Women Energy Entrepreneurs in Kenya that has again been funded by a number of Governments through development aid in different ways. It has been building a whole cohort of women across Kenya who are energy leaders now and are now very active in the Clean Cooking Association of Kenya. That support, which again has got good development aid in it, is really important.

I think making sure that in any energy work that is done the needs of women are understood as well as men. That takes more effort, it takes talking to different people and it takes a mindset shift, but that is fundamental, and I think aid can help with that.

Q28 Tracy Gilbert: Do any examples of good practice in that regard spring to mind?

Dr Leonard: I have one that springs to mind immediately, which is actually quite related to the entrepreneurship topic. We did some work looking at climate adaptation entrepreneurship in Kenya, along with the Kenya Climate Innovation Centre, which is a hub that incubates different climate businesses, and speaking to different entrepreneurs. There was one session where the Kenya Climate Innovation Centre, for instance,



helped us reach out to ensure that we were speaking to entrepreneurs across the board.

One woman in particular who came to one of the focus group discussions was explaining how her business was. Her husband had died, and she was looking for a way to support her family. She became involved in a women's group that had a talk about energy. She started a business producing more sustainable briquettes and clean cooking technologies. Now she is being supported by the Kenya Climate Innovation Centre to scale that up. Those stories, if you can replicate them, are so powerful for that family and that woman, as well as her family, her children.

How do you do that? Well, the first thing was that someone asked her to come to that meeting. Someone has formed that women's network. There are often grassroots movements that do this. It is seeing where those exist, building upon that, recognising where local women are already holding each other up and supporting that.

Sarah Roberts: I have a very practical example that was part UK Government funded through the Carbon Trust. We worked with a local Malawian expert organisation where the entire focus was women's agriculture in Malawi. It was about enabling aggregation of their produce using solar chilling under a greenhouse approach. It was an innovation project, to test the business model and to test whether it raised incomes and whether the aggregation, because you had solar chilling, led to new markets. In this case, it was for tomatoes. It was very interesting. It did lead to new markets—it did not lead to the markets that were expected—but that entire focus was on women.

By utilising the greenhouse approach and the aggregation centre, it was a very labour-efficient way of improving agricultural productivity that fitted into their lifestyle. That was a very good example as well. I would say that their incomes went up and they got to about 60% of living income from that one project, which is a really good result. We learnt a lot from the business model work and that Malawian producer can now take that learning and adapt it in other places.

Q29 **Noah Law:** This is a question to both of you. We have discussed localisation at quite some length, and we have discussed the gender aspects. What about reaching those most marginalised groups of people? Is enough being done, in your experience, to reach those groups and could you talk a bit more about who that might include?

Dr Leonard: I would say Sarah probably has good examples on poverty. From an academic perspective, I would just say that the focus has been strongly on gender and increasingly disabilities, which is great, but there is less of an intersectional lens. One element to highlight that has been good from an FCDO funded side, has been within that UK PACT project I mentioned. There was a strong focus on studying different energy uses among different groups beyond that.



It is still not really the full scope; particularly, I think, the FCDO projects struggle with this occasional difference in cultural understanding of who is marginalised and what you can talk about. For instance—and I am happy to say this on record—I am a member of the Climate Compatible Growth programme. That programme works in Ghana and I am gay, so that is difficult, for instance. I do not think I can impose that, and I do not impose it on any other context I work in, of course, but it makes it more difficult for when you are dealing with groups that are more sensitive culturally in different areas.

There is a shying away, I would say, from those groups. At this point, culturally, on a global level, I think lots of people can come on board with gender and disability, but some other groups are harder to address.

Q30 Noah Law: Are there particular challenges with regard to energy access that you have experienced on some of these?

Dr Leonard: Yes. There is a study from a colleague of mine. Her name is Antonella Mazzone. She did a study recently looking at the experiences of particularly trans women experiencing extreme heat. The trans women she worked with, for instance, some of them were sex workers, were living in insecure housing and experiencing side effects from some gender-affirming medication they were taking. They experienced extreme heat and had different cooling needs within their day-to-day life from other groups.

That is an extremely marginalised example and perhaps it is not something that could be globally applicable. However, there are sub-pockets that lie in different groups; elderly women's needs are different from those of a younger woman. As an energy researcher with a spatial focus, I often think about the projects that we saw a fair bit a while back, thinking about charging hubs, where people swap in their batteries and swap out their batteries. How are those placed with relation to the elderly people, the disabled people in the community? Can they actually get there to swap their batteries? Those are the questions I think about.

Sarah Roberts: At the top level, the people who do not have access to energy and clean cooking are mostly rural, low-income communities in sub-Saharan Africa, and then people in displacement settings. That is the big groups where there needs to be focus.

The example of elderly women is a good example. That is where a pay-as-you-go approach is probably not going to work. Those are the people who are in smoky huts inhaling terrible fumes and do not have what they need.

If I can just give an example from Rwanda, I had never been to a refugee camp before I went to Rwanda, but they are essentially small towns in very marginal areas in a very poor host community. You have people living there almost for decades. Again, you have the elderly people, who do not find it safe to go out at night because there is no street lighting,



and young women who cannot go out at night because there is no street lighting. Once you get street lighting in, for example—that is not just in a refugee camp, but I saw it in a refugee camp—you change the ability of people to have a social life, to study at night.

The person who stuck in my mind the most was an older woman who was somewhat disabled. She had access to a solar radio and that gave her just an outlet to life and something to talk about with her neighbours. That was the thing, out of all the things, apart from the streetlights going on and all the people coming out to play football at 6 o'clock, was that woman just passionately talking about how this solar radio had changed her life. That is where the needs are very different.

Q31 Noah Law: This question is particularly to Alycia, but I am interested in both your thoughts: what changes in FCDO practice do you think could make a difference to getting energy access to some of those most marginalised groups?

Dr Leonard: One thing that we also highlighted in written evidence is looking at the fact that you have to structure this somehow. One thing that you could do would be to mandate that projects at least have some way of measuring distributional impact as a condition of funding.

There are lots of different ways you can measure the impact of a project. Often we talk about cost-effective access. There is room for the FCDO to say, "Okay, and for who, and what does that look like for them?". I think it is often shied away from. Again, it seems a bit more qualitative, a bit more fuzzy, but if there was at least some stipulation that the impact across different marginalised groups could be measured, that would help.

Sarah Roberts: I would agree. I would also say, and I am sure you will know this, you cannot take energy in isolation. It is fundamentally important to think about how your approach to development on energy links to other things. If you are expecting energy systems to work in a place such as Malawi, where you do not have good mobile money, maybe one of the things that needs to be done is thinking about how you work with others to invest in good systems for mobile money, for example. How do you make sure you have the policies right?

I would totally agree with Alycia. I would always say, "Just ensure that, at the very least, you are looking hard at the outcomes for women, for men, for different age groups." That is fundamentally important.

Q32 Noah Law: If I may press just a bit further on the data point, we have seen that there are challenges in actually getting this data beyond basic age and gender, these very basic metrics. Do you think it is possible for the FCDO to adopt such an approach?

Dr Leonard: I think so. We have done a lot of work looking at this problem. We know we need to collect this data, but the countries and Governments we are working with often do not have too much capacity internally. For instance, in Kenya, when we have broached the topic of



gender and social inclusion in energy, the county energy directors are passionate and interested in accounting for these metrics, but are less certain about how to measure them.

I think there is room for the FCDO, for instance, to undertake capacity building within, for instance, country statistical offices with the countries that are working in tandem with the FCDO as beneficiaries on some of these topics, to say how this data could be better collected. What we have focused on quite a lot at Oxford is saying, "This sounds difficult, and a lot of this data sounds hard to get. What is the base-level understanding of different demographics that you could collect easily in some of these different surveys and longitudinal studies that happen on these projects?"

There are frameworks out there. For instance, again in Kenya, all the counties undertaking their energy planning do baseline assessments and line assessments. It is just that often the data is a bit patchy, hidden and not centrally aggregated. Even providing support on ensuring strong management of that gender equality and social inclusion data within countries could have a big impact on that.

That is honestly a significant part of what we ended up doing on that project was staring at this issue of everyone wants more data about how this is going; no one can find it; is there some way we could aggregate it so that policy makers within the country can at least see this? I think there is room for—

Noah Law: Getting that ambition from FCDO to at least try to collect that data?

Dr Leonard: Yes, 100%. I think it is possible—and, again, there is interest.

Q33 **Chair:** Thank you. This has been fascinating. You both spoke about global learning. With GB Energy being high on our minds for the renewable energy system in the UK, one thing I would like to know is whether you ever see any of that learning from probably lower middle income countries coming back to countries like the UK.

Sarah Roberts: That is a great question. I would say we have definitely found that in broader development topics, particularly on climate resilience, for example, and how to adapt. There is so much experience from low and middle-income countries on those approaches. I think that absolutely there should be good learning from community energy systems for the UK, yes.

Dr Leonard: I would just add to that on more the academic side. For instance, within my research group, we have teams working on community energy in low and middle-income countries and on community energy in the UK. We do learn from each other. We can run into the same issues of a lack of synchronisation between county-level planners and



national planners, for instance, or policies that tell someone to plan something at one level, but also say to plan it down here in a different way.

A lot of these structural issues still do exist within UK structures as well. We definitely speak about it. I do not know if we have formalised that learning but, yes, there are a lot of parallels basically, and we learn from them.

Q34 David Mundell: One of the biggest challenges in the UK, certainly representing a rural area, is that people in the immediate vicinity rarely benefit from significant energy projects within the curtilage of their community. Overcoming that within the structures that we have in the energy market in the UK is a huge challenge.

Dr Leonard: It is the same everywhere. The example that comes to mind for me is the Lake Turkana wind project in Kenya. The community was not going to benefit from that project because it served the national grid and they are pastoralists, so they are in motion and not grid-connected. Yes, it is another parallel of the types of social dynamics maybe not looking the same, but having the same root.

Chair: Thank you both. It has been absolutely fascinating. We have really enjoyed this session.