

Paula Kivimaa_episode

Thu, Feb 16, 2023 3:09PM 56:24

SUMMARY KEYWORDS

energy, finland, transition, energy efficiency, people, electricity, lng, security, russia, countries, market, policy, developments, role, bit, crisis, research, companies, system, renewable energy

SPEAKERS

Paula Kivimaa, Michael LaBelle



Michael LaBelle 00:00

The landscape shocks reframing the energy transition interview with Paula Kivimaa episode 76. Research Professor of climate and society at the Finnish Environment Institute, Paula holds a long research record focused on energy efficiency, decarbonisation and innovation. One of her current projects is focused on national defense and the low carbon energy transition. This is our starting off point to understand the changes Finland is experiencing in its shift away from Russia, and how energy security is reframed. Welcome to the My energy 2050 podcast where we speak to the people building a clean energy system by 2050. I'm your host Michael LaBelle. As you'll hear towards the end of the interview, Bala introduces the concept of landscape shocks, how multiple crisis impact and shape the rollout of the energy transition, how regimes emerge and shift over time, the landscape was viewed as external, so not playing a big part in the energy transition. But as we know, from the pandemic, these things actually do have an impact on the energy transition. So essentially, in our conversation, today, we're working backwards. First, we start off talking about small changes that are building up and fostering and driving the energy transition. So for example, we engage with Finland shifting the relationship with Russia, to the role that energy efficiency can play in national security. The undertone of our conversation is how we conceptualize the energy transition. For example, energy security is moving away from stockpiles of natural resources, that thinking about the impact of renewable energy production, and the role this plays in the future. Therefore, demand response becomes important not only for grid management, but also for security. Further informing the landscape events are issues of energy, justice and security, how global justice is tied to resource flows from the Global South. And the role this plays in the energy transition, an impact on energy security, perceiving this through different scales if the north because more secure with renewable technologies, with resources used from the Global South, what happens to those countries selling their resources and where our security benefits, you'll find our conversation wide ranging but academically engaging. Bala has published widely in a range of energy topics and she's well versed in Finnish, British and EU energy policy. I hope you enjoy our conversation as much as I did. A final note This interview was done for my 2022 roles and open society University Network Senior Fellow at Chatham House, the Royal Institute of International Affairs funding was generously provided to produce the podcast for these episodes I recorded in 2022. So I met with Paula in December of last year. So I'm really happy to get this episode out today. And now for this week's episode. I'm here today with Bala

Gyimah. She's a research professor of climate and society at the Finnish Environment Institute. So Paula, welcome to the My energy 2050 podcast. Thank you. But my first question is about your academic journey. So you've seemed to have lived in different places. And also, I'm aware of being in different countries provides different contexts. So maybe you could start off about well, I'll just let you start off wherever you want about your academic journey.

P

Paula Kivimaa 03:36

Yeah, so Well, first of all, I never thought of becoming a researcher. So what happened was that I specialized in energy policy in my master's, which I did in Imperial College London, and I was kind of looking for energy related jobs. But then I noticed that the Finnish Environment Institute was looking for an evaluation research and I rang them up and and I got selected and after I started work in a project that actually looked at sort of effects of international air pollution policies on Finnish energy power plants, I really got more interested in in academic research and how to improve my academic research skills. And this is why I signed up to a Ph. D program at the Helsinki School of Economics. It's now called Aalto University Business School. So it has changed a bit. And even though I was looking in my PhD, I was obviously interested in environmental innovations in the Nordic forest industry and the role of environmental policies into these sort of changes. My sort of study was or my doctoral program was in the unit of organizations and management. So I also kind of like got a little bit of perspective on on what happens within organizations and how companies operate. Yeah, so it's sort of been calling onwards from there. So after my PhD, I got the interest between sustainability transitions, which a theme would with, which I've worked since. And then in 2015, I got, I saw a perfect job advert for me looking at energy innovation and energy demand at the Science Policy Research Unit at the University of Sussex. So basically, then I, I went there for to work for for several years. And then I returned in 2019, to become a research professor in the Finnish Environment Institute. So that's kind of the

M

Michael LaBelle 05:28

and then you have this, maybe, and you can correct me on this. So as management focus or management, education, not management, education, but a management focus or business.

P

Paula Kivimaa 05:40

Well, actually, I have a very multidisciplinary background. So for my undergraduate studies, I've studied environmental science and business management, sort of a combination of the two. And for my master's, I focused on energy policy. And then for my PhD, I drew a little bit on organizations and management. But I've also always been interested in sort of policy studies and public policies, I guess, I'm really like, I can't associate with any particular disciplinary background, but I'm sort of product of multidisciplinary education.

M

Michael LaBelle 06:11

Yeah. And I really appreciate that. And the so I guess, what does that how does that make your research different? Do you think from others than just multidisciplinary approach?

P

Paula Kivimaa 06:25

I mean, I think what I like to do is I'm kind of if I'm looking at a particular problem, I'm more thinking what theories or concepts or, or disciplines would be useful analytical tools. So rather than starting from a particular discipline, I often sort of try to think about how I can utilize different research fields to look at the problem. And actually what I'm doing in my current project, which started about three years ago, I decided to, again, to jump into a new world. And I've been looking at geopolitics and security studies. So again, I think that's what makes research work. Interesting. But of course, at the same time, you realize that when you jump into a new field, it takes quite a long time to really get to the start understanding about the theoretical debates in in that field.

M

Michael LaBelle 07:17

Yeah, yeah, no, I actually, I think we have similar approaches where it's the one that use a theory as a tool, rather than as a, how do I say this, like, you're rooted within this background and academic framework? Okay, my geography, so but it's still quite, quite wide. But you look at a specific theory or specific framework? And is that the right tool to apply in this case to maybe highlight or bring out the answer to a research question or something.

P

Paula Kivimaa 07:50

But that's why I also like the sustainability transitions research field, because it actually brings together people from different disciplines or different disciplines, scientists that have a background in innovation studies, geography, evolutionary economics, and it's increasingly drawing on sociology. So it's kind of a fascinating field to work in, because it's people who come from diverse backgrounds, too.

M

Michael LaBelle 08:16

And then within this area, because you've been working in this area for some time, at least, but But it's much more bring out sociology, for example, this is a social science approach to the energy system, where further in the past, in the 2000s, even going back to 1980s, it was much more focused on the engineering aspect of it or the economic aspect of the energy system. And how do you see or how have you gone with this, this greater focus on social sciences and what it brings to the energy system?

P

Paula Kivimaa 08:53

Yes, I've always in a way, I've been interested in technology. But I've I've always been a social scientist. In a sense, I think it's a good development. But it's also very interesting, because Finland, where we are now is very engineering based society. And with my colleagues, when we first tried to propose a new project, looking at the energy transition, I think it was around 2007, or eight, and there was an energy theme program. None of the funded projects were social

science projects, and we didn't get funding on that round. And we got it later on. So when I started when I came back to Finland, after my master's and started working on energy, literally, it feels like there was no social science on energy in other countries like the UK, it started a little bit earlier. But but we can see that it's still it's a relatively recent sort of research area as well, but it's increasingly now acknowledged that it also in respect to the energy transition, that it's not enough that we have the new technology, but we really have to think about how it diffuses in the society, how can people how are people able to use it, but also what institutional restriction And so enablers are needed for for the energy transition.

M

Michael LaBelle 10:03

And then maybe maybe I go off of it and follow that a little bit. And we go right into policy. Because there's the terms like energy justice and adjust transition being used. And these come from the literature and I would say from from the research area as well, and policymakers have adapted this. So moving from innovation and management business focus to much more policy focus, how useful are kind of maybe, how do I, I want to ask your opinion, but maybe I'm trying to phrase it in a different way is, how useful is it that policymakers are using these terms like a just transition and having a just transition mechanism, this type of language being used in policy, framing?

P

Paula Kivimaa 10:51

I mean, it is, I think it's useful that these terms are used. And it kind of shows how the policy field is developing and becoming more interested in the social aspects of transitions. And certainly, for example, now, I'm a member of the Finnish climate change panel, as a sort of sort of a scientific advisory body for the government. And we even the ministry has even wanted us to conduct a project on climate policy justice. So they're certainly kind of interested in, which is really valuable, because we have to think about how about the broader societal implications of the energy transition. But of course, there is always this risk, as with any term that becomes popular in policy and politics, that it's just used as sort of a language that and no substantial changes are made in the face of it. So we have to kind of make sure that the the integration of concepts such as justice to energy politics doesn't just remain merely symbolic, but actually become implemented in into policies.

M

Michael LaBelle 11:54

Yes. And I would say that's probably goes along with like the research design that that's in place, or the expectation of what is the outcome of a particular study, then talking about the UK, your UK experience and experience in Finland as well? And so my question is, what has been your experience? Or how do you see how the energy transition is being tackled in these two different countries,

P

Paula Kivimaa 12:19

in very different ways, but I think also, if we, but also what it highlights but when whenever one person studies multiple countries, or lives in multiple countries, that it's so much conditioned by the cultural setting where you're at but and also like how differently for example public

the cultural setting where you're at, but and also like how differently for example, public policies are being made. So if I think of the UK where I studied energy efficiency developments for several years, and it turned out that the government's role has been very weak. And the UK sort of trusting on the emergence of these sort of local, local community energy initiatives, and this kind of a lot of lot of motivation and enthusiasm on the bottom of level. But then there's very little kind of government government steering, and I think that's actually reflecting the culture of the UK, in a sense more generally, that perhaps, people are a little bit left to their own devices in life and, and how they then organize his collectives. Whereas in Finland, a lot of activity, there's been a lot of drive from previous governments on energy efficiency, not as much as there should be. But in general, but also I think Finnish is very Finland is very much a society where you're kind of waiting for and reliant on government or public sector, steering. And then there's also downsides to that, that there's perhaps less of there is obviously a little bit of this collective activity bottom actor activity, but there's perhaps people are a little bit more passive that they're waiting for, for the government to make changes. So I think there's like two sides to this to this.

M

Michael LaBelle 14:03

So maybe I won't ask which society is going to be more successful in the energy transition? I think that would be the wrong question to ask, but maybe how this bottom up approach that's kind of lacking though some more centralized motivation or incentives for greater change? Or what do you see the problem with a bottom up approach?

P

Paula Kivimaa 14:24

I mean, I think it's very good for sort of experimenting and innovating. But then, if you think of how many like markets operate, and energy efficiency, for example, in buildings, and it is an issue that it's very difficult to create kind of a market that operates also in the beginning without any kind of government regulation. So I'm actually a very strong proponent of regulation. If we really want to improve the state of our environment. We have to have regulation created markets for new innovations, of course, when these innovations become more widely accepted under this law, Go hold sector developing then it should be it can be removed. But yeah, I think in the early phases, things don't change. And we often say like, okay, or a lot of some people advocate for free markets. But then actually, even if you look at the kind of established energy system, we do have a lot of fossil fuel subsidies in place globally. And there's a lot of hidden support institutional support for also the old system. So it's not like it's still operating. Even the old system is not operating on a free market basis anyway.

M

Michael LaBelle 15:31

Yes. No, I love the role of regulation plays, and I get really excited when I teach it. So my students don't understand what I'm like, now we get to talk about regulation, the real regulation plays in the energy sector, because it's, yeah, it's it. There's these Well, I don't call them hidden subsidies, but for example, subsidies you have for the oil sector or for fossil fuels, but also just the shape of the Yeah, how, because everything is so tightly connected within like trading, electricity, or gas, all these types of things rely on regulation to work. So if we want to change the energy system, we have to change the regulations and have different types of

regulations for different types of technologies then, and have it bring out so that's my spiel the supporting your, your role in regulation? And how, what is the one of the barriers or one of the issues with a top down approach?

P

Paula Kivimaa 16:24

Um, I mean, obviously, what first of all civil servants do not have all the knowledge that it's needed, and often are not the most like innovative either. So often that like bureaucracies are built in a way that civil servants might get penalized for, for being too experimental. But also, in a way, I think the energy transition involves so much also, in terms of technical and market based knowledge that we need, businesses and other societal actors come on board. And also Polit, we all know about politics and politics is has a very short term approach. So there is also a risk that if you kind of rely on politics and policy to change, things will come too late. So in that sense, we also need need this bottom up activity and sort of innovative and driven people to drive the change.

M

Michael LaBelle 17:16

Yeah. And they we can use the UK as an example of, yeah, limited political push, push on policies, or how things change and backslide as well. My next question, though, is about the current energy crisis, or what I'm framing, I'm calling it an energy crisis. But I think maybe that's the wrong term to use. But essentially, we have supply shortages for gas. We have high prices and electricity. And we have this dramatic especially maybe I asked you in general terms about the current environment as a whole, we'd say for Europe, and then specifically about Finland. But how would you frame our current environment as an energy crisis or an energy? Challenge? What how would you frame what we're experiencing now?

P

Paula Kivimaa 18:08

Yeah, I certainly think it's an energy crisis. But maybe like you say, maybe it's sort of broader than that. It's sort of energy security, societal crisis. And of course, we're experiencing problems with food and medicine supply as well. And not just energy, but but going to, to the energy, I think we are, maybe add an era of major changes, and whatever decisions and developments are made now will affect the decades to come. And I think it's really unclear how things will unfold. So on the one hand, I think there's much more attention now on the opportunities provided by renewable energy, electrification, energy efficiency. So there's a lot of more buy in, and there's the demand for these technologies have have increased a lot, and people actually getting this to us. But of course, we also now have supply sorted use for the for renewable energy technology for heat pumps for other solutions. But at the same time, of course, it looks like politicians are now facing tough decisions on how to replace the gas supply from Russia. And what we are what I also see as a bit of a worrying development is the investments made for liquefied natural gas, LNG. And okay, they're building LNG terminals now in different parts of Europe. But another one when we talked about institutions is the institutional ones. For example, I've heard that Germany is negotiating at least a 20 year contract with the US on the supply of LNG. So at the same time, we're creating these new relatively long term institutional structures. And there is of course the risk that are we now creating a new, different type of fossil fuel looking for the future. But then I think it's this is a

broader question than just energy. Of course, energy is required in different ways. are functions of the society to work. But also I think it's about foreign policy and and diplomatic relations as well that okay, we're facing the security crisis in Europe and why maybe and this is purely speculation, but maybe, for example, doing contracts with certain LNG suppliers, European countries, and also maybe create try to create international collaboration and safeguard kind of diplomatic relations in this difficult time we're living.

M

Michael LaBelle 20:29

And so there's so much there. There's so much there. First, maybe we'll so so this, I'm going to ask you a leading question. So there's no differentiation between how people are? Could you explain the differentiation? Or the I don't know, the chain? There's one way this energy chain to describe IT value chain of how people consume and use energy domestically, and then we'll just keep it domestically and International Relations, this this foreign affairs? Well, what is this connection there?

P

Paula Kivimaa 21:07

Oh, that's a quite a difficult start opening up. But of course, the connection is that, well, first of all, any given country consumes a certain amount of electricity or heat energy, and an also each country has, has a certain capacity to produce that if we, for example, look at electricity, you have a certain amount of capacity to produce electricity and any excess that the consumption when the consumption exceeds demand has to be imported from other countries. And that already kind of creates the link, whether it's electricity, which has to be which is more challenging, because it also has to match every given minute of demand, but also fuels. So we kind of think that, okay, what are the heating the where the policymakers are trying to estimate the heating needs, in countries for the winter, and then whatever access we need to then bring from elsewhere. And of course, the Europe, Europe now has an Energy Union. So it's operating on a slightly different basis. But if we think then any energy imported outside Europe, then is subject to different bilateral contracts with within countries. And I'm not by no means an expert in foreign policy and politics. But I could imagine that, for example, for instance, when high level politicians negotiate large scale, energy input agreements, it's not only about the companies, but it's also about okay, government politicians creating the avenues to why should they import LNG to us and I've even read and maybe everyone has read the news, how even ships that are transporting fuels to a particular country, it might actually be diverted to a different country that then might offer a higher price. So there's a lot of different elements involved. And I think the kind of diplomatic relations are important in a sense that what how maybe the government's in particular countries might

M

Michael LaBelle 23:08

supply security and these diplomatic relations matter.

P

Paula Kivimaa 23:11

But but this is like speculative, because

M

Michael LaBelle 23:14

no, no, you should you should pursue it. But but then you actually might okay, maybe I jumped forward a bit, because you published, you're a co author on the article, I have the title here, interplay between low carbon energy transitions and national security. I'll read the whole title and analysis of policy integration and coherence and Estonia, Finland and Scotland. But what I'm interested in this article is that it came out in 2020 21. And what I'm interested in this article is that you identified national security as an important aspect of this. And this was a few years ago, before people were really taking this this role that national security and energy efficiency and energy, just production plays. But what what prompted you to start to examine the role that energy security plays in these relations?

P

Paula Kivimaa 24:05

Well, it actually started my my former boss, your hotshot, it's through said that people are seldom looking at the kind of negative sides of sustainability transitions or even war. And that was kind of influential factor when I started thinking about this and then I got interested to think about, well, actually, there are links between energy policy and security policy, but they might be hidden. And now that we're also facing an energy transition, what type of potentially hindering or advancing effects to national security considerations have. And this was also prompted by me being a fin. Were living always next to Russia, which is which has been an interesting relation ship in a sense that I think all the Finns kind of all have always recognized that there is Russia is unpredictable and there's a certain risk, but at the same time, there's been this culture that and this also connects to this, this foreign politics argument that Finland has pursued always, before this year, the strategy of try to keep friendly terms with Russia. So even before the Finland joined the European Union, there was this sort of friendship and cooperation agreement between Finland and Russia. And we have kind of this whole cultural Finland isation, where we don't want to say things that upset the Russian politicians. So that also sort of played a role that in a sense, we had a large share of all of our gas was imported from Russia, but also a large set of electricity was imported from Russia, Russians were involved in new nuclear power developments. So there's been a lot of energy collaboration. And I was also interested in why why what role does national security play and why hasn't it been discussed?

M

Michael LaBelle 25:53

And why? Why did Finland have to play this relationship in such a delicate way?

P

Paula Kivimaa 25:59

I mean, yeah, just as background, so Finland has in in history being part of Sweden or greater Sweden, but also Russia, and before Finland gained its independence from Russia in 1917, it was sort of a specific, I think it has some sort of regional autonomy. And then then, sort of, via a war, we won our independence. So there's, of course, this history of being part of Russia, even though we've also been part of Sweden. And I think this, this is kind of this this broader context. But then, also, during the Second World War, Finland sided with Germany, because it

faced, again, the risk of Russia. And as a result of the Second World War, the the land area of Finland became smaller. But also that started this period where we wanted to keep out in friendly terms. And, and it's like a population, even now, it's only 5.5 million population. So we're kind of a small country, next to this giant country that that we have, like different historical relationship with. But of course, it's interesting that you can have different stances. So if we compare this to Estonia, who actually also gained initially independence in I think 1918, but then, as a result of the Second World War, became part of the Soviet Union, and then only getting independence in 1991. And they have a completely, they've had a completely different stance towards Russia. And they've kind of very explicitly since 1991, tried to kind of disconnect ties disconnect energy relations. So it's also interesting how you can with, not with a similar history, but historical connections pursue quite different strategies in security terms towards a large neighboring country,

M

Michael LaBelle 27:49

and Finland has been so Finland has taken this engagement approach with with Russia. And one of the results of that is building or building Russian nuclear power plants from racetam. And using gas as well, maybe you could explain the role that gas plays Russian gas used to play in Finland, and also the nuclear aspect Well, gas

P

Paula Kivimaa 28:11

is not as important as it is in many other European countries. So So that's like the plus side because 100% of gas, like I said, has come from Russia, but it's we have district heating systems in many larger cities. So which has been mostly based on natural gas, and also industrial processes. So now we're kind of facing facing the need to find solutions to first speed up the electrification of industry, but also find different solar power sources for the district heating system. We have like some bio based plants, but it's still been mostly natural gas.

M

Michael LaBelle 28:47

And now Now Finland, I want to go maybe, yeah, so Finland now is not importing Russian gas, but is looking to import LNG. And and so is its it has purchased an LNG ship, as I am aware of and is building the, like the dock or the infrastructure for it. And we talked about or you talked about path to oh, I wrote down path dependency. But I think you've spoken about this in the past is how does how does switch into LNG develop this path dependency?

P

Paula Kivimaa 29:18

I mean, of course, it's it's a necessary step because otherwise we would have cold houses this winter. So I'm not sort of criticizing that decision. It's more like I'm sort of thinking how do we make it in a way that is an in somehow an interim decision? So of course, it depends on how we now now that we are in this energy transition phase, I think the important decision is how much do we now invest on gas based infrastructure versus alternative solutions? Of course, in general, we already have this heating transition in place. So a lot of houses have are switching to ground source heat pumps, for instance, which has already been replaced by replacing

district heating based on on gas Ask which also, I mean, it has its own issues, in terms of whether its workers, we have very extensive district heating network, which has been effective. But yeah, I think I'm not an engineer. So I don't know exactly. And I've heard colleagues saying that there could be chances that you could then use the LNG infrastructure later on for hydrogen, green high hydrogen. So if it's somehow technologically organized in a way, that we could do it, and that we're not tied to institutional structures that then prevent us to using green associates. I think then it's not a risk. But I feel like there's still at least I think it would require some sort of more dedicated research project, I guess, on on the various potential implications of LNG investments,

M

Michael LaBelle 30:50

yes, no, I fully support that we need a big research project with a nice budget for us. To examine it. I would like to maybe turn to some of the questions have written as well, but and maybe Russia's war in Ukraine, and the the impact this has caused so we have higher prices? And you mentioned earlier about this is a also a unique period and could be a turning point. And is there an I think you've written about energy regimes, and you certainly know what energy regimes are. So is this a maybe we could just talk about this period, that's, you know, 2021 2022. And now we're moving to 2023 as a as a unique period in the energy system development? And how do you see it? How do you see as being unique or interesting?

P

Paula Kivimaa 31:43

I mean, I think the good thing is that in many countries, we've already have had developments where the the old energy regimes have been sort of destabilizing and new ones emerging. So we've haven't had like a blank slate, because otherwise I think this crisis would have been much bigger. But the war war has done in the ensuing energy crisis, I think it has speeded up certain developments that were underway. So for instance, wind power construction has been underway. But now, I know that, for instance, in Finland, they've made government decisions to speed up the permit processes for when new wind power developments. And because and certainly, because the gas and electricity import were cut off, now we're kind of in a more of a rush to find the alternative solutions. But I think it's also it's not kind of obvious that a new green energy regime emerges out of it in Finland or elsewhere in Europe. And I think there's a lot of conflicts and tensions around it. So in some countries, that have extensive domestic fossil fuel industries, this kind of maybe reemergence of German coal. But also, I think there's a lot of risks around populism and social media, because I've seen a lot of arguments where the green transition is actually blamed for the current energy crisis and somehow without the green energy transition, which I don't quite fully understand, because it okay, if you cut Russia supplies, I don't know how we would manage, even without, but somehow people are now blaming the wind power for the energy crisis, because obviously, we do have problems when the electricity prices, especially at least now in Finland, they're very high when we don't have enough wind. But yeah, yeah. So so in a way, I see that this is speeding up the new or the regime destabilization a new regime emergence, but I think it's still uncertain to know where things will lead. And we might actually see quite different developments even in different European countries.

M

Michael LaBelle 33:49

Now, I really appreciate you bringing up this uncertainty because I think what we get from policymakers, I would say maybe from the EU, EU Commission, particularly that this, we have to speed up the transition, and here's some money, we're going to make it happen. But there's the socio political interaction going on as well. And, for example, populist politicians kind of clamoring on this that that is these high prices because of renewable energy, or what I'm starting to hear more is it's these national markets, why why are we trading electricity with our neighbors are selling them our cheap electricity, when we should be keeping it and using it for ourselves? So I also am bit cautious on on that it's not just a given that we're speeding up this energy transition towards something that's sustainable, but rather, we may be lingering more with these fossil fuels for security aspects. And is there how and maybe I'll get back somehow I want to get back to your point on this LNG and these international relationship and the role of diplomacy. So from an energy security perspective, then how how would Because Russia certainly is now away, basically, I just put it like that way so and we start to see new relationships developing or relationships changing with others based on these energy requirements for European countries. So what what could be the role? Or how does this? I'm trying to come up with a question, how does this affect? How does the energy transition that may not be so stable as it was before, change the dynamics around international relations? Maybe put it that way?

P

Paula Kivimaa 35:33

I mean, I think a very interesting example is even within Nordic countries, so for those not aware, I think the Nordic countries, Finland, Sweden, Norway, Denmark, and Iceland, they've there's even a Nordic Council of Ministers. So there's been very tight collaborations. And the Nordic electricity market node pool has existed for a long time, even before the EU Energy Union. And an interesting aspect here is that even though we've had this Nordic solidarity, I feel like even that is now affected by the high electricity prices. And I think in Norway, for example, some politicians have argued that we have to limit transmission elsewhere. And we've I think Sweden has already limited somewhat sort of breaking the market rules, in certain instances, limited transmission because of high area prices. But at the same time, I feel like there's this confusion about the role of the state and the role of companies. So it is effectively companies that operate on these international energy markets and not the states. Okay, I talked about the diplomatic relations. And I think what the states can do, they can of course, facilitate things and they can they create the regulations and the market rules. But it is actually companies exchanging and it's also a bit weird that there's always been these people who argue that, okay, we can't support renewable energy, because we have to follow the market logic. But then when we follow the market logic, when things turn around and start going badly, then they will all of a sudden want a strong state of interference on on markets and and how the companies operate. That said, I think the, the electricity market system would probably require some reexamination because at the moment, and I don't know how it's in other countries, but in Finland, we have this very interesting situation where electricity suppliers are hardly offering now any other type of electricity contract and spot price based contracts. And it's very difficult for consumers, especially those with electricity heating, but also others that we're now seeing tenfold increases in electricity prices. And I think at least yesterday, the the price per kilowatt hour was like 60 cents or something like that, because the market system is based on this logic, that the price is always determined by the most expensive form of production. And there has been discussion on on windfall taxing, as we are living in this unusual circumstances. And the profits made by the companies cannot be seen to kind of be based no longer on a kind of normal operating process. I'm not an economist. I don't have like a strong view on this. But I do

think that and of course, countries are now reducing vat or doing the sort of any other alleviation. But I think it probably requires a whole new look at how the market operates to create some mechanisms where we still safeguard that people get enough heating and electricity. Yeah, and I think the energy poverty, which has not been an issue in Finland before, it will probably will. But when I've worked in the UK, energy poverty has been in the discussion for a long time. And I think that is a really associated issue, not only to the energy transition, but the crisis. But of course, what we also see from the energy transition, that it's often the the poorest, who also cannot afford to get their own solar panels or do the energy efficiency improvements. So the energy crisis is kind of making worse than the energy poverty situations we might have had, because these people are less able to take advantage of the the new technologies.

M

Michael LaBelle 39:07

So would you say, it was very eloquent, how you brought out the market and the constraints with it now because on one side in renewables are really incentivized to be deployed to be developed, because they're very competitive now. But on the other hand, we have this increased energy poverty that's emerging. And you're not an economist, but I think you're grasping the role of the market and we could say, part of the energy regime or the previous energy regime was neoliberal markets and the competition in the market. So is this one of the elements that could be changing in this current time to to influence a new energy regime, how the market is structured and how the price of energy in the market

P

Paula Kivimaa 39:53

um, I find it very difficult to know yet how it should be changed. I just know that But yeah, I think we really have to have another look at how the markets operate and the market rules. Because in a way we okay, we talk about free markets. But all any markets have rules set by institutions and laws. And when we're living in unusual times, I think it's good to look at how those rules are still applicable.

M

Michael LaBelle 40:20

I just want to emphasize, I said this before we started recording that one of the advantages, great things about the podcast, it's not a journal article. So so we can only kind of speculate on things when we're writing our research. It takes years months to years to write out think through these ideas and examine the issues. And even now it feels a bit uncomfortable, I think talking about the impact of the energy crisis, we can start to see it like energy poverty, that this will be increasing, because the cost of it, but also, one of the aspects of this is the role that the new word, I think I wrote this in your questions for 2022 is demand destruction. So and that could transition to energy efficiency. But But is this demand destruction? Also, one of the the impacts of of this new energy regime, and maybe I'm using that too much this new energy regime, but what what is the role? What is why is there demand destruction now?

P

Paula Kivimaa 41:26

Yeah. I mean. I haven't heard that term before. But certainly, maybe you can. You can think

Yeah, I mean, I haven't heard that term before. But certainly, maybe you can. You can think about it in this terms that, and I think in a lot of not in all countries, but certainly I think in in the Nordic countries, at least, before energy has been so still so cheap, that people don't really think about it that much. I mean, it has been rising. And in a way, now we see that this sort of normal model, no longer works. And I think it has good long term implications that I think people are now more aware that energy is not an indefinite resource. I mean, I've had people that argue that, okay, it's enough that if we have renewable energy, replacing everything, but I've been arguing that we still need energy efficiency, because also renewable energy production, uses land, it uses minerals, and metals, and it's not like environmental impact free. So anything that we use has its environmental and social implications. So I think this sort of awareness that it is now something that we need to pay attention to, and I think, for example, already now in Finland, we see I think, 9% Decrease in electricity consumption compared to previous years. So it sort of shows that there is kind of slack in the system. Yeah, of course, like we discussed, I think it can be caught cold. In a way I think destruction is a good word, because it has negative impacts on certain households and industries and certainly more vulnerable population. So So I think maybe it requires rethinking, I remember thinking like, since this is a podcast, I can say I think it would pass like 18 years ago, I remember thinking like why do electricity companies sell electricity? Or why can't they just sell the service? And why do we need to own our own household appliances? What if energy companies sold us kind of a specific temperature they sold us? Okay, you get your food cooked? And then they wouldn't have an incentive to sell as much energy as possible? Yes. And I think it's never been kind of taking off. But maybe this also brings back this issue that do we actually what what what do the consumers need to buy? Do they need to buy the energy or the hour can they kind of buy the service that you need to live a life, which would then create also impetus for the energy companies to to improve efficiencies,

M

Michael LaBelle 43:51

energy as a service, rather than energy as a product that we buy? Where I remember, in the 90s, when I was teaching English in Budapest, so and I but I was teaching this how I kind of became interested in I was teaching English to the German executives at this local electricity distribution company. And so we would often talk about electricity. And they had an incentive program to sell more air conditioners. So they would give like a rebate or a coupon to their consumers to go out and buy air conditioner units because then they could sell more electricity. So and yeah, I mean, that's a perverse incentive, basically is promoting, okay, now things have changed. There's other companies that you monitor, and you can compare your bills with your neighbors so you can kind of understand how to reduce your consumption and there is slack in the system, like you said, 9% reduction, so maybe on one hand, it's too much for some households, but maybe for others, they don't notice the difference by just changing their habits then in Then in, in this area of energy efficiency and energy as a service, then do you think going forward? Government policy will emphasize this even more, because as you mentioned, if we have more renewable energy, you know, we need to have it just to cover up the waste that's in the system. So how do we go about removing some of this waste?

P

Paula Kivimaa 45:26

I mean, just to go back to energy efficiency, which I've also researched for years, and I just feel like even now, okay, we see it in the EU repower policy, and we see mentioned, but I'm still surprised in how little at least the countries I've looked at still emphasize energy efficiency. So

Finland, we had like an energy efficiency, energy saving campaign is awesome. But I also think that that wasn't as visible as it could have been. In the UK, certainly energy efficiency has never been popular for policy or of companies. I think it's because it's in a way, also something invisible. But I'm still surprised that somehow it's not, not popular. I don't know, why is it because of its invisibility? Or it's not like a fancy engineering design that you can automatically see, or what's, what's this kind of issue and and also, this kind of service based business logic has taken, it's been quite difficult to, we studied energy services, I think about seven years ago, and the energy service market in Finland, and it was still very small, and there wasn't kind of enough companies offering this to consumers. I think it's, we've seen a little bit more now. But I somehow think that the take up of services is also different. I've started also mobility as a service and the development and now seems to have dwindled a little bit. So it's somehow easier to sell people these solar panels and electric vehicles. Yes, this this sort of random idea,

M

Michael LaBelle 47:00

like a demand reduction service. Is, is there a way for policy makers? I get to ask the questions. And it's great because you get to answer them so so I can come up with hard questions. That may be hard to answer. But this connection between energy efficiency and energy security, in my mind that there is a connection there? And how How How could be a way to maybe emphasize his connection with demand reduction energy efficiency measures, and how to make a country if you even want to become a bit more nationalistic, right, how to make the country more energy secure? How, in what ways could this this connection be emphasized?

P

Paula Kivimaa 47:43

Yeah, I think that's a good point. And it kind of takes us back to the 1970s energy crisis when actually was a time when energy saving and energy efficiency sort of became on the agenda. Yeah, I think it's also I mean, I don't have a direct answer some kind of answering question. Besides it. And I think what the energy transition changes is how you the conceptualization of energy security. So of course, when we talk about oil or gas, the traditional way of security or sort of safe guarding, it has been stockpiling. So countries have gas reserves and oil reserves, and probably coal and everything stockpiled. But if we think of renewable energy production until, okay, we have some ways of energy, storing energy in hydro power dams. But otherwise, this until energy storage technologies gets improved, we don't have the same ways of sort of securing it. And they're kind of this idea of demand response becomes much more visible. And I think they've sort of intelligent demand response solutions would be somehow that, for example, you give weather industries are, of course, more important, but even households, you give kind of electricity or companies to permission to regulate how your when, when you do like, you might have certain devices that you don't notice, and they can kind of switch them off when there's a supply crisis. And I think this kind of automated demand response, you know, especially in an intelligent ways would be two ways to go about it. Whereas of course, now we're in a situation that, for example, in Finland now, there's been a lot of information on that there might be electricity cut offs in the winter, and how households and companies and schools have to respond. So it's this kind of, in a way, not nice, disruptive way of reducing demand when you have to at certain points of time, but I think developing this and I'm sure I hope that there will be more company incentives but also policy attention on on the further

development of this demand response. I have colleagues who talked about it already, like 2015 was to develop the demand. But we said to me now that we have the intelligent systems that we could also create sort of Smarter systems for for demand response.

M

Michael LaBelle 50:09

I think your comparison you're thinking of the 1970s is accurate in this. And I think politicians learned it was also, it was a bit of problem for them to frame energy efficiency measures are concerned conservation and energy security as a failure of political leadership. And so people kind of will just say, Carter did this. And then it wasn't taken so well. And then Reagan came, or Margaret Thatcher, with the the coal miners as well. So there was a lot of social turmoil at the time. And there was a lot of security issues and the high prices really led some some societies to see demand reduction as a failure. Like it's this consumerism, I think this is why things sell like solar panels, or electric cars. Yeah, we could get we won't go into capitalism and the deep, deep economic system and the social system that we have today. But there Yeah, the tying into this neoliberal market approach that emerged from the 1970s kind of shows the difficulty in trying to reduce demand in a market market way. But my one of my last questions, because I'm pressed for time is, is Yeah, going forward, is a research agenda. So and we kind of laid out very nicely the current issues, also bringing in your past research and knowledge of, of how this energy crisis is unfolding. But how, for other researchers working in this space, what what are maybe some key areas that should be examined?

P

Paula Kivimaa 51:53

Ah, this is quite a difficult question, because of course, it depends on one's field, but also what take on to take on things I think. So I've worked on security the last few years. But I've also dealt with some issues of energy justice. And I think also one interesting areas, how kind of the justice and security how to intertwine with each other. I think certain aspects are mutually supportive, but certain might, certain aspects might be conflictual. So somehow looking at that, at that in different settings. And certainly what I haven't mentioned yet is this element of global justice and how we're sort of tied into global trade and resource flows and how Western countries are using minerals and metals from the Global South, as we have used before fossil fuels. So. So really looking at this kind of intertwinement ment of the geopolitics and security and justice on different scales, both I think the global scale is interesting, but also the very local scale and individual people's houses and lives. And so I think it's a really fascinating field, because you have these different scales where where things happen. So that would certainly be one. I think we still have a lot of uncertainty around kind of new technological developments that the political decision makers are lobbying for. One is the the hydrogen there's a lot of political attention put on on green hydrogen, but I think, and it's been technically technically developed, but I think also early social science research on would be interesting to complement that. And, and yeah, going back to this energy efficiency, energy saving, it's again, I think, even though it's a bit it's sort of intimidating sometimes to live in these times of crisis. I think, for researchers, it also provides an opportunity to look at how things might be shifting. So might also be an interesting area to look at how things are things now shifting for energy efficiency, energy saving, what things are taking place, and in my transitions failed, or you describe this as the pandemic and the war and now started as sort of landscape shocks and how these shocks kind of influence the regimes and the emergence of new innovations.

M

Michael LaBelle 54:11

So landscape shot, yes, because we have the energy landscape.

P

Paula Kivimaa 54:15

I mean, I mean, the landscape is sort of seen as as an external context for for the energy regime or energy regime. So it involves a variety of issues like global markets, wars, natural disasters, and that that sort of things. But it has been in my area, it's probably the least developed areas, the landscape, it has kind of always been assumed as an external environment for the development of new innovations and the regime changes but it has been a little bit less. It looked at in less details that what are the mechanisms for example by which there certain landscape events actually affect and make changes?

M

Michael LaBelle 54:55

I think it's a really nice way to put it because you can put different there's there seems to be All these unexpected things emerging, right? And so you can put them on the lands on this landscape like the pandemic war. Who knows what comes next. So, exactly. So, Paula, I just want to thank you so much for coming on to the podcast today. This is excellent. Wow, amazing discussion that we've had. And yeah, thank you very much.

P

Paula Kivimaa 55:20

Thanks for inviting I think I really enjoyed this conversation,

M

Michael LaBelle 55:24

too. Thanks. Thank you for joining us. For this episode, we produced the my energy 2050 podcast to learn about cutting edge research and the people building our clean energy system. If you enjoy this episode, or any episode, please share it. And remember, each episode is equivalent to consuming 10 journal articles one book and 500 charts and how to implement the energy transition. And you get it all in less usually than 60 minutes for each podcast guarantee. I can actually say no other podcast makes this guarantee. The more we spread our message of the ease of an energy transition, the faster we can make that transition. You can follow us on LinkedIn where we are most active on the My energy 2050 page or on Twitter and Facebook. I'm your host Michael LaBelle. Thank you for listening to this week's episode.