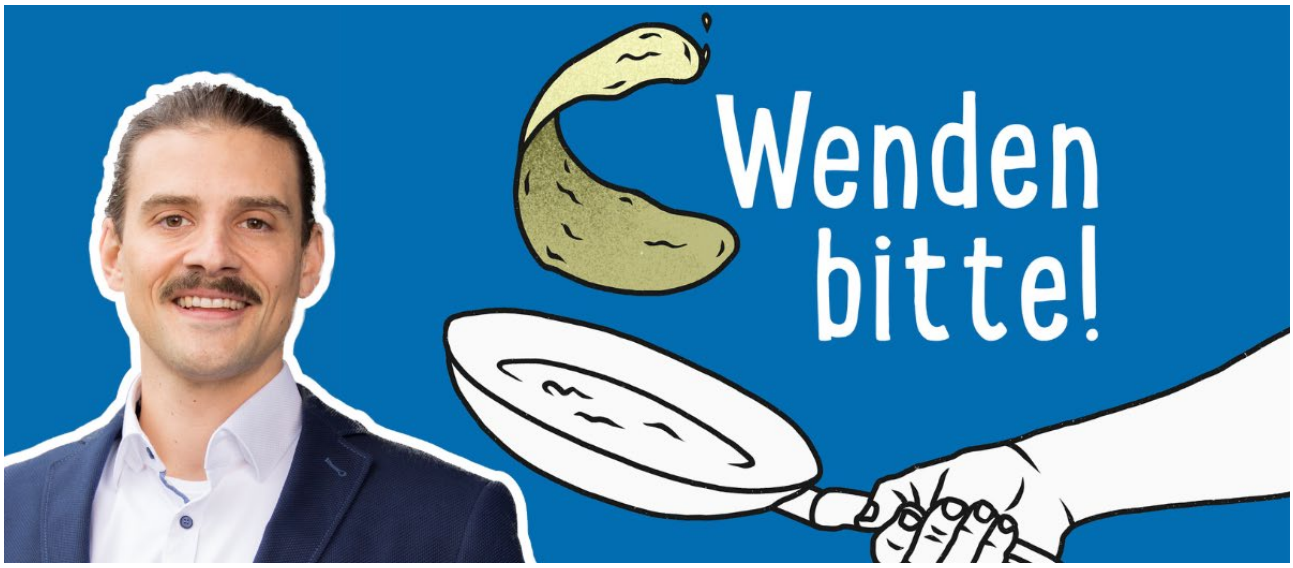

Transcript of the "*Wenden bitte!*" podcast:

Faster progress on the energy transition?

Introducing the subject and today's contributors

Nadine Kreutzer:

Hello and welcome, everyone. Energy for heating, for transport, for industry: we need it everywhere, and it should always be as climate-neutral as possible. The energy transition has been on our minds for some time. Much has already been done, but there's still some way to go. And that's what we're discussing in this episode of our *"Wenden bitte!"* podcast. As always, we are very pleased that you're interested and have joined us today. At the microphone, we have Mandy Schossig from the Oeko-Institut …

Mandy Schossig:

… and, of course, Nadine Kreutzer, who you've just heard. When it comes to mitigating climate change, time is running out and the expansion of our renewable energy systems needs to make much faster progress. At the Oeko-Institut, we were already talking about the energy transition in a study in the early 1980s. It could be said that we were something of a pioneer then and still are today. What's interesting here, Nadine, is that we're now recording the 25th episode and yet this is the first time we're discussing ways to expand renewables.

Nadine Kreutzer:

How did that happen?

Mandy Schossig:

Yes, how did it happen? So let's catch up now and jump straight in.

Sound clip (brief subject overview)

Renewable energies are already among Germany's most important sources of electricity. Their expansion is a central pillar of the energy transition, which is intended to make our energy supply climate-neutral while ending our dependence on imports of fossil fuels for combustion, transport and heating. In line with the German government's energy and climate targets, 80 percent of electricity is to come from renewable sources by 2030. Renewable electricity is needed everywhere, in homes and businesses due to the growing trend towards electrification, but also in sectors such as transport. To meet rising demand, new wind, solar, hydro and biomass energy installations must be constructed without delay in order to achieve a largely climate-neutral power supply by 2035. However, the latest figures show that in some areas, the expansion is not progressing fast enough. Complex bureaucratic procedures and limited availability of land are examples of the kind of obstacles that are slowing progress. Which other barriers are impeding the renewable energy expansion, and which solutions are available to overcome these and other blockages, thereby clearing the way for a climate-neutral energy supply?

Introducing the expert, Moritz Vogel

Nadine Kreutzer:

Why is the energy transition not making fast enough progress? As usual, Mandy, you've invited an expert from the Oeko-Institut to join us, and this time it's the turn of your colleague Moritz Vogel.

Mandy Schossig:

Moritz Vogel works as a Senior Researcher in the Energy and Climate Division in Freiburg, where he analyses our power system and how it can transition to renewables. Hello, Moritz, it's good to see you.

Moritz Vogel:

Hello, Mandy. Hello, Nadine. It's good to be here.

Nadine Kreutzer:

Moritz, in parallel to your research, you also go into schools and explain to the children what the energy transition is all about. Just briefly, can you take us on that journey? What does a visit involve?

Moritz Vogel:

Yes, it's a task that I personally have set myself alongside my scientific work. It's about conveying what it's really about and where we should be heading. Students then come up to me with questions. So they might ask: What can I do on a personal level, and can we make this work? And then there are the quite normal every-day topics, such as: How can I improve my diet? Or: What about holiday travel – should I take the train and cut down on flights? These are every-day questions that students have and they are very interested in helping to shape their future.

Mandy Schossig:

And when you tell them what the future should look like, what kind of reaction do you get? By that, I mean the changes that we're always talking about, including here in the podcast.

Moritz Vogel:

Yes, they find it very exciting, of course, because it conveys a sense of how they themselves can make a contribution and that the things we do day-to-day can genuinely help us to make a success of protecting the climate in future. So for that reason, there is a great deal of interest and also a desire to make change happen.

Renewable energies: the status quo

Nadine Kreutzer:

As we have just heard, we need electricity in a wide range of sectors. Where is most of this electricity required?

Moritz Vogel:

As you said, electricity is needed in many different sectors. Here, we can clearly differentiate between conventional electricity users and new consumers. So there are the existing electricity users – households, businesses, industry and commerce – and the every-day appliances that have to be powered, such as cookers and fridges, but also things like metal-smelting in industry or the operation of data centres in the commercial sector and cold chains for food storage. And in future, there will be the new consumers, namely in the heat sector or mobility. That will push up demand for electricity even further in future.

Mandy Schossig:

If we look at renewable energies in terms of the status quo, how much energy has come from renewable sources? In Germany, I mean?

Moritz Vogel:

In Germany, we are currently on around 500 terawatt-hours of energy here, but it's spread across different sectors. Electricity accounts for roughly half – 254 terawatt-hours **–** with 200 terawatt-hours in the heat sector and around 35 terawatt-hours in mobility. These are all sectors where renewable energies are already in use. With heat, for example, it may be biomass that's used, but also, and increasingly, the now familiar heat pumps, which produce heat using an input of electricity. In mobility, biofuels, for example, are also conceivable, but it's mainly about the electrification of transport, of course.

Mandy Schossig:

And when you say 500 terawatt-hours, what does that amount to in total, as a percentage of our consumption?

Moritz Vogel:

With electricity, we're achieving a little over half. According to the Federal Network Agency, our electricity consumption stands at 484 terawatt-hours, so the contribution of renewables is slightly more than 50 percent. But in the heat sector, we are slightly lagging behind. That's because we have a substantially larger total heat requirement – in excess of 1,000 terawatt-hours. Here, we are achieving around one-fifth, perhaps, at most. And with mobility, the figure is only around 35 TWh.

Mandy Schossig:

50 percent isn't too bad, is it? We can give ourselves a pat on the back.

Moritz Vogel:

Yes, indeed. We have achieved a lot in our expansion of renewable energies. But it must also be said that there have been occasional lulls in the rollout of solar energy, and wind as well. So we need to pick up the pace again. That is already happening with solar but wind needs a boost.

Nadine Kreutzer:

Speaking of a lull, that brings us to the myth of the *Dunkelflaute* – the "dark doldrums". What do you say to the sceptics who are asking whether we will actually have enough energy when there's no wind or sunshine?

Moritz Vogel:

Well, it's a reasonable question and a justified concern. But there is a simple solution. The solution to the problem is flexibility. This means that if our power generation can't be scheduled for when we need it, we have to align our consumption with when electricity is being produced. And we can apply a variety of solutions to achieve that.

On the one hand, it may mean expanding the electricity grid. This is the backbone of the energy transition. For example, if no electricity is currently being produced in Berlin, where you are, it can be brought in from the south of Germany, from here in Freiburg, for example, where the sun is shining. But we need this flexibility in terms of time as well as space. It could mean shifting our consumption from midday today until this evening, for example, or storing electricity. Battery

storage systems could then be used, but hydrogen and longer-term energy storage are options as well.

Expansion targets

Mandy Schossig:

We'll talk about these flexibility issues again later, but I would like to ask another question since it's relevant here. Two weeks ago, I read a new study which claimed that the expansion of solar energy is moving far too fast because it is leading to very high costs for the expansion of the electricity grids. I just wanted to bring that to the table and ask, what would you say to that?

Moritz Vogel:

Well, I'm not a fan of slowing the expansion, because in order to protect the climate, we really do have to act fast. I would probably suggest that we should try to rapidly expand the power grid so that we avoid energy losses while also limiting the associated costs that might arise in connection with feed-in management. I don't have a detailed knowledge of the study and what they have to say about that, but the rapid expansion of the power grids is necessary and it is certainly a task that we have to address.

Nadine Kreutzer:

Are there any specific expansion targets for Germany?

Moritz Vogel:

Yes, there are expansion targets, which are set out in the Renewable Energy Sources Act (EEG). There is a specific pathway that we have to follow with our expansion and targets that we have to reach every year. And they are ambitious, to say the least. These are very high numbers that have to be achieved.

For onshore wind energy, the goal is 115 gigawatts (GW) by 2030. We currently have 60 gigawatts of installed capacity, so this means almost doubling what we have today. For photovoltaics, 215 gigawatts is the target that we have to reach. We are currently on 80 gigawatts, so it's nearly a threefold increase. And there will be further hikes to 2040: our targets for that date are 160 GW for wind and 400 GW for photovoltaics – and that, of course, is a very big number.

Mandy Schossig:

And are we on the right track, would you say?

Moritz Vogel:

As regards solar energy, I'd say it's going well. Last year in particular, we reached the annual targets early and managed to exceed them. In September, we broke the new gigawatt targets and by the end of the year, a total of 14 gigawatts of solar energy capacity had been newly installed in Germany. Wind is lagging behind somewhat. Here, we were unable to reach the targets last year, so we have an even bigger task ahead of us until the end of this year.

Support for the construction of new installations

Nadine Kreutzer:

There are support schemes to ensure that the expansion progresses well. You've already mentioned the Renewable Energy Sources Act. In the past, direct funding was provided under the Act. What's the situation today?

Moritz Vogel:

The remuneration that you're talking about still exists for small-scale projects with a capacity up to 100 kilowatts (KW). The funding runs for 20 years and the level of funding is defined in the Renewable Energy Sources Act. Plant operators sell electricity to the grid operators, who then sell the electricity on the exchange so the small-scale market players don't have to do this themselves. The costs that arise here because of the difference between this direct payment and the market price is covered from the federal budget. In the past, this was known as the EEG surcharge and it was shown on consumers' electricity bills. It no longer exists, however, partly in order to ease the burden on consumers.

Larger projects no longer receive this direct feed-in payment; instead, they operate within what's called the market premium scheme. Instead of benefiting from a fixed payment for their electricity, they merely receive a premium based on the proceeds from the sale of electricity on the market. The premium that they receive covers the difference between the market price and the remuneration that is paid to the smaller plants. This ensures that the installations receive a minimum level of revenue. During periods of high electricity prices, however, they don't receive the premium because they are able to generate enough revenue from the electricity market. One effect of this is that the government doesn't have to provide so much funding at times when market conditions are conducive to the sale of renewable electricity.

Nadine Kreutzer:

Now that you've explained this model to us, would you, as the expert, say that enough funding is being channelled into the expansion overall?

Moritz Vogel:

Yes, I think the figures show that projects can be delivered in an economically efficient manner, especially bearing in mind what we've just heard, namely that 14 GW of solar energy capacity was newly installed last year and we are currently on 60 GW for wind. Granted, things are lagging behind right now, but projects are still being implemented nonetheless. And if you talk to wind energy planners, it is the case that they are searching for sites and want to deliver projects.

With the funding set out in the Renewable Energy Sources Act, projects can be delivered for less money. That's because projects exceeding 1 MW have to participate in auctions, which is a competitive process to determine the level of the premium that they receive. Bids are submitted stating how much funding would be required for a large-scale project to proceed, and the lower the bid, the more likely it is that the project will be chosen over its competitors, which means that it can then go ahead. We see here that projects are being implemented on a small scale, such as domestic solar energy systems, but also that large-scale projects can manage with less cash than initially laid down in the legislation.

Mandy Schossig:

And what's the situation with the EU targets? Are there rules in place at that level for the renewables expansion?

Moritz Vogel:

Yes, there is an increasingly high level of ambition to protect the climate, not only in Germany but also at EU and global level. At EU level, the target is for 42.5 percent of final energy consumption to be met from renewable energies – that covers not only electricity but also the heat and transport sectors, for example. The target was lower in the past – just 32 percent. And as I mentioned a moment ago, at the international level, there is the tripling target, which was agreed at COP 28 in Dubai. The aim is to increase the world's installed renewable energy capacity to at least 11 TW. That is a very large figure, of course.

Requirements for the construction of renewable energy installations

Nadine Kreutzer:

There are enough targets, in other words, so let's take a look at how they can be reached. To build a photovoltaic installation or a wind farm, various conditions have to be met – an infrastructure is needed, for example. What are all the various requirements here? How might we imagine this?

Moritz Vogel:

Purely in terms of the technical requirements, in order to build a renewable energy plant, you need an infrastructure. A grid is required for the plant to connect to. The connection costs are borne by project developers themselves, which can be a hindrance if someone has a particularly good site that's hard to reach with the grid.

And on top of that, there is the land that is required. Here, there is competition between the various forms of land use: between photovoltaics and wind – in other words, renewable energies – but also agriculture and nature conservation or forests at the sites. And then you need the right local conditions for power generation from renewables; there has to be enough sunshine or strong enough wind, for example.

Nadine Kreutzer:

While we're on the subject of sites, there's the issue of the type of terrain: Bavaria and Baden-Württemberg like to claim that there is not enough space in the mountains for wind turbines. What's your view on that?

Moritz Vogel:

If I look out of the window here, there are three or four wind turbines spinning merrily up on the Schauinsland mountain.

Nadine Kreutzer:

Where you are, in Freiburg?

Moritz Vogel:

Exactly, where I am in Freiburg. We need to make it very clear that there is enough space. And as for the argument that it's not windy enough in the south, that's not correct. It always depends on the site where the installation is to be built. I think it's fair to say that if you put up a turbine at the top of a mountain, you'll probably find that the conditions are pretty good. Of course, the first step is to access and develop the site.

Mandy Schossig:

And are all these requirements that you have just mentioned addressed in the targets and plans for the renewables expansion? Do they form part of that?

Moritz Vogel:

Yes, with wind, for example, they are covered in the reference yield model. The name sounds quite complicated and bureaucratic, but what it ultimately means is that at the sites where conditions are less favourable, higher tariffs are paid to the plant operators, and where the conditions are especially good, the tariffs per kilowatt-hour are lower. The aim is to ensure that renewable energies are rolled out everywhere, not just at particularly windy or sunny locations.

In the long term, we need to develop all the sites in order to reach our climate targets. And there are some projects that are based on alternative forms of use, such as agrophotovoltaics, which involves the dual use of land for agriculture and solar energy production. This form of use also has its place and features in the innovation auctions under the Renewable Energy Sources Act.

Decentralised electricity system

Mandy Schossig:

One phrase that always crops up in this context, when it is claimed that it's windy here and sunny there, is decentralisation of the power system. Perhaps you could give us some insights here. What's it all about and why is it important?

Moritz Vogel:

Yes, happily. Decentralisation essentially means exactly what we see happening at present. In the past, the power system was highly centralised. There were relatively few power stations, coal or gas, supplying consumers. These days, this old-style system is becoming fragmented and we now have a system in which electricity is generated by many individual small-scale power plants that are located close to consumers, who may also have a battery storage system in the basement. And if we compare it with the world gone by, where relatively few power plants supplied everyone, we can see that it has become rather more decentralised than before.

Nadine Kreutzer:

At the start, we talked about complex bureaucratic procedures. How long does it take, on average, for a wind turbine or another type of installation to come on-stream? In some cases, the figures are hair-raising, aren't they?

Moritz Vogel:

Yes, indeed, that's certainly the case. If you talk to the planners, they find it quite frustrating. In the case of wind energy, it can take around five years. These are average figures, it must be said. For freestanding systems – solar power – we're talking about two or three years for approval and a year for construction. Four years, in other words, which is a very long time. It was quicker in the past. I've spoken to a planner whose project has been moving through these processes for 10 years already and still hasn't been implemented. We really need to pick up the pace here.

Nadine Kreutzer:

That is incredibly frustrating, or it can be. What's causing this, do you think? What's going wrong within the bureaucracy? Or are the people employed there not allowed or not able to make the right decisions, or don't have the knowledge? Why is it taking so long?

Challenges in the construction of renewable energy installations

Moritz Vogel:

Yes, these factors that you mention also have an effect. Broadly speaking, you can separate them into discrete topics: let's say the approval processes and authorities are one factor playing a role. Then there is the availability of land, but also the issue of acceptance and problems with residents' buy-in if there are plans to build an installation close to communities. And more recently, the equipment itself is not always available – so someone may have a project for which the planning is more or less complete but the technical equipment can't be delivered. So I think these are the four major problem areas where we need to look at how to move forward.

Mandy Schossig:

Let's come back to that again in more detail in a moment, but first, a general question, perhaps: do the four blockages that you have just mentioned apply to all the technologies equally, or are there differences depending on whether it's wind, solar or hydro?

Moritz Vogel:

There are differences, certainly. As regards hydropower, I think it's fair to say that Germany has more or less exhausted the potential. This is not the main focus of the energy transition, which is more about wind and solar.

With solar power, we can differentiate further between systems that are mounted on rooftops and freestanding systems that are erected on open ground. Problems tend to arise if planners, owners and operators are not one and the same person. For example, this becomes a problem if someone wants to put up an installation on communal land but local citizens don't get any benefit from it. But if someone wants to install a system on their own rooftop or a business wants to set up a large-scale scheme at its company site, that generally causes fewer problems.

Nadine Kreutzer:

Moritz, coming back to the keyword "approval", also in relation to wind power, what exactly is the problem here?

Moritz Vogel:

Let's think for a moment what a public authority is like. This is where we find the staff who issue the permits, and they are faced with a great influx of applications because the aim is to build large numbers of installations, all of which require approval. However, the public authorities are not always well-resourced when it comes to staffing and it also takes time for them to review the applications and issue permits that are legally compliant. And in view of the possibility of legal action, they want to be absolutely certain that the decisions are safe. So they scrutinise the applications and perhaps also request new specialist reports. At least, that was the situation previously – and it's a time-consuming process.

There has now been a move to simplify the permit-issuing process so that individual plants will not be required to conduct a detailed environmental impact assessment in every case. This is often

one of the starting points for legal challenges – there may be concerns that a plant poses a threat to the red kite, for example, or another protected bird species. In the past, the individual installations had to be assessed, whereas under the new system, installations set up at sites designated for wind energy expansion will no longer have to undergo assessment once the site itself has been appraised.

Even so, plans can be challenged and so can the installations themselves. In some circumstances, it may be reasonable to launch a challenge if there are genuine problems with a plant. However, it is important to be able to differentiate between a challenge that is brought to ensure that everything is in order and one which simply aims to block an installation altogether, which, of course, is not a reasonable course of action.

Speeding up the approval processes

Mandy Schossig:

You mentioned that these assessments take a relatively long time and you've also just said that some aspects have already been simplified. What else can be done to simplify or speed up the approval process?

Moritz Vogel:

What's important is that the authorities are in a position to review and approve these applications at a satisfactory pace. A significant issue is that if there is a challenge, the person issuing the permit then has to deal with it. Of course, there are more pleasant experiences than being confronted with a challenge to a decision that you've made. Backing from the authority is important here. Let's see how the situation evolves with these new rules and the new sites that will soon exist; they are being identified at present and will be developed on the basis of the Wind Energy Area Requirement Act.

Nadine Kreutzer:

What kind of political leverage is required to make a difference here, not only locally but also at regional state – *Land* – level, so that the people on the ground who have to make the decisions have an easier time of it?

Moritz Vogel:

At *Land* level, there are individual regulations that really do put the brakes on the expansion of renewable energies, especially wind. Many of the problems arise in relation to wind turbines because they are such an eyesore for some people. With freestanding photovoltaics, there are far fewer problems, although they are on the increase now as well.

Coming back to the *Land* level: in Bavaria, for example, there is a rule which sets a minimum distance between wind turbines and the nearest houses and settlements. It states that the minimum distance between a wind turbine and the nearest settlement must be at least 10 times the height of the turbine. As the height of the turbines increases, this will ultimately mean – in effect, it already means – that land in Bavaria will be completely excluded for the purpose of wind power generation and only a few individual sites will be usable. Rules of this kind should be framed differently so that they protect communities but also facilitate the energy transition.

What's important at the local level is not only that sites are identified and that the municipal authority carries out renewable energy planning and maps a pathway towards decarbonisation –

protects the climate, in other words – in its locality; it is also important that the benefits and opportunities associated with renewable energies actually reach the public. This is where leverage can be exerted for site development, because expanding renewable energies then becomes a genuinely attractive prospect for local authorities. It can also improve the situation for the local authorities if the proceeds from the renewables expansion are spent on implementing mobility strategies, on funding an open-air swimming pool or on building a pre-school, for example.

Mandy Schossig:

And that's also an incentive for local citizens to get involved in project planning and delivery.

Citizen participation in planning and delivery

Moritz Vogel:

Exactly. Planning and delivery – that's a key phrase. With planning in particular, the processes should be open-ended so that citizens feel that they can bring influence to bear and voice their concerns. For example, there may be a site that would be very suitable for a wind turbine but hasn't been considered by the planners. Incidentally, we are involved in an exciting project on this topic with my colleague Melanie Mbah; perhaps she'll be a podcast guest at some point.

Mandy Schossig:

Yes, next time, in fact.

Nadine Kreutzer:

Aha, that's interesting, Mandy. I wasn't aware of that. As for acceptance, that's a very, very important topic. Many people are all in favour of the energy transition but don't want wind turbines to be sited right next to their garden. They then say to themselves: "I won't benefit at all if a wind farm is built right next door!" Is that the reality, and how can we bring people on board?

Moritz Vogel:

Yes, in the past, that was often the reality, but it shouldn't be this way, let's be clear about that. The Renewable Energy Sources Act includes a provision which requires operators to pay a share of the profits or proceeds to local authorities, based on the amount of electricity produced. But as I see it, this is merely a minimum provision that should always be offered and delivered because – and this is an important point – it is simply reimbursed by the grid operators and does not increase the cost of the projects. It is a win-win situation for everyone. The local authorities obtain an income stream and the planners have access to sites that can be developed more easily and perhaps gain a bit more acceptance for their projects.

But there are many provisions that go further, so the question is, what kind of policy is sensible? There are some regional states, such as Brandenburg, which have adopted legislation stating that every wind energy installation must pay EUR 10,000 pro rata to neighbouring local authorities annually. These are attractive figures, of course, and provide a revenue stream that the local authority can utilise in a meaningful way.

But it is especially beneficial if local authorities themselves take an active role by making municipal sites available and generating revenue by leasing them to renewable energy projects. And if local citizens – depending on their financial scope – are directly involved in projects, that's positive as

well. But in order to bring benefits to people who are less well-off, I think the local authority route will always be a very attractive option.

Mandy Schossig:

That all sounds great, but if I think back to the time factor that we mentioned at the start, doesn't it all take an awfully long time? There are discussions and then changes, perhaps, and then more consultations. You yourselves are working on a project, so perhaps you could tell us a little about how it looks in reality and whether it genuinely does take longer at the end of the day.

Moritz Vogel:

I should mention that it is my colleagues Melanie and Ryan who are the specialists in this field. It is certainly the case that the processes must be designed to be as open-ended as possible. And in addition – and this is what we are trying to do now in a research project – it is important to genuinely consider local conditions, not only which site will yield the most electricity, but also aspects such as: Which site is especially important to people? It may be quite acceptable to site a wind turbine on a mountain peak in one case, but there might be another where a community picnic is always held once a year, for example. And that is the kind of information that planners don't always have at their fingertips, and it may take a little longer.

But if we can encourage buy-in and avoid any major opposition to the project, this can balance things out, so that ultimately, there is no argument over which sites are being considered. So I think it always depends on the individual case to some extent.

Land competition

Nadine Kreutzer:

We have a few questions for you about the shortage of land as well. What exactly is at issue here? In other words, what does it mean if we look at Germany as a whole? Do we really not have enough sites?

Moritz Vogel:

Well, there is a shortage, of course. There will always be a shortage if popular demand exceeds the supply. And land is to be used for agriculture and recreation, but also, of course, for renewable energies. The Wind Energy Area Requirement Act – or WindBG, for short – now states that 2 percent of Germany's national land area should be used for wind energy projects.

And right now, we're in a situation in which all the planning authorities are producing new regional plans. This means that we don't have many plans available yet. They are being drafted now and they should, of course, be legally compliant, because if they are contestable, if certain aspects have not been considered, then there is the prospect of legal challenges at that level again. But this is a mechanism that is now being used to access sites. Another question is: who else decides what should be done with the land? Ultimately, of course, it is not only the planning authorities that decide what the sites are suitable for and what can be built on them and whether exemptions from some of the assessments may therefore apply. Clearly, that's also a matter for whoever owns the land. This may be the local authorities, and they may be open to persuasion if the strategies are sensible.

But there are other landowners as well – ordinary people like you and me – who might say yes or no to whatever is planned for the site. And they might take the view that there should be no

restriction on agriculture on their land. What we can say for sure is that renewable energies are characterised by very high land-use efficiency in relation to output. Wind energy, for example, has a relatively small footprint, but a single wind turbine can produce a very large amount of electricity.

Mandy Schossig:

If there are so many players – the local authorities, as you mentioned, the regional states, the supra-municipal planning authorities – who ultimately decides who should take priority in land-use decisions?

Moritz Vogel:

Exactly! The major targets – how much land is available – are decided at federal level, as with the Wind Energy Area Requirement Act and the 2 percent target at present. But when it comes down to the practicalities and looking at where land is available, where installations should actually be sited, that's done by the planning authorities: they draw up plans showing exactly where sites are to be designated – where wind turbines can be set up, for example.

Nadine Kreutzer:

Are there any solutions for site-sharing? Every so often, I read about solar panels on the verges of motorways or in vegetable gardens. Do you have a few examples of where or how this has worked well, perhaps?

Moritz Vogel:

Well, of course, solar panels are the ideal solution if you happen to have some space available – on a rooftop or at the side of a motorway, for example; in other words, they are suitable for the kind of site-sharing scheme that you've just mentioned. They can used to protect pome fruits like apples from hailstones, for example. And the effect of that is not only that they can be installed on a site that is already being used for another purpose, resulting in site-sharing, but that they actually produce added benefits. After all, the apple crop would have to be protected from hail anyway and that is now being accomplished with the solar panels. There are similar schemes here in the Breisgau, where wine producers are experimenting with setting up these systems above their vines. This is a further form of use that is being explored in ever more detail.

Mandy Schossig:

Yes, I think your colleagues are currently working on a study which looks at how many of these sites actually exist in Germany, which we will be publishing in the near future. It's very exciting. And every so often, we cast a glance beyond our borders. For a long time, Germany was regarded as a frontrunner in the energy transition. Is that still the case today, would you say?

Moritz Vogel:

Well, I would say that if we look at the international context, we don't rank first when it comes to the renewables expansion; that would probably be China and the US, and then Brazil and India, with Germany following behind. I think we've shown that we do have the potential to take the top spot, but we need to move into the fast lane to avoid falling behind.

Nadine Kreutzer:

So would you say that it's not quite snail's pace and that we're now starting to step on the gas?

Moritz Vogel:

Exactly, that's certainly the feeling I get with wind power. With solar, things are already going well.

Looking abroad

Mandy Schossig:

We have talked a lot about the obstacles and also the solutions to address them here in Germany. What about other countries? What kind of barriers exist and which solutions are being applied in other countries that we can learn from?

Moritz Vogel:

Well, we were involved in an exciting project for the European Union on this topic, called RES Simplify. We looked at Europe in order to identify best practices or good practices that can be applied to address these obstacles. In Italy and the United Kingdom, for example, there were some very well-crafted information materials on participation for project developers – in other words, how to design these processes well. And in Spain and Denmark, there is a well-documented database online showing where suitable sites can be found. Clearly, there are always differences between countries and how they are organised in political and administrative terms, but there is inspiration to be found within the European Union.

Nadine Kreutzer:

Is it a question of mindset to some extent as well? If I remember correctly, people in Denmark, for example, are much more interested, whereas in Germany, people tend to complain or look at whether it's a big enough distance and so on. And in other countries, there is more demand and also more willingness to engage, as well as more interest. Or is this impression deceptive?

Moritz Vogel:

Well, I get the impression that there genuinely are cultural differences in relation to the expansion and the acceptance and, indeed, the role of renewable energies. This project that I talked about and which we are involved in is called PlanTieFEn (Planning transition through the transdisciplinary integration of regional and socio-cultural factors in the development of local energy transition measures). So we want to look at the role that energy plays in a region's culture. For example, what do people think about energy here in the Black Forest? Do they think that solar is marvellous because the sun is always shining here? Or another example: in the northwest of the country, wind energy has always played a role in people's lives and there was a large number of windmills. And that raises another question: Is there an equally positive attitude and perception of the new wind turbines and wind energy installations?

So my answer is yes, there are differences between regions, cultures and countries and that really does have to be considered in the implementation processes.

Outlook and conclusion

Mandy Schossig:

Well, that brings us almost to the end, but as always, we conclude the episode with the usual question: if you were the German Chancellor, Moritz, what would you do right away to accelerate the expansion of renewable energies?

Moritz Vogel:

Well, if I were Chancellor right here, right now, I would try to ensure the fair and equitable distribution of the costs and benefits of the energy transition. I say this because the energy transition is not just a climate change mitigation mechanism; it is also a participatory and redistribution mechanism that offers opportunities for local authorities and citizens who may be less well-off than others.

Nadine Kreutzer:

Very good. Let's hope that you soon become Chancellor and can put that in practice. And Moritz, do you have any suggested reading for listeners who may want to take a deeper dive into the energy transition? What would you recommend?

Moritz Vogel:

There are some great resources on the Internet. Germany's Renewable Energy Agency always provides some very exciting information about the Energy Municipality of the Month. It has been doing this for years, showcasing excellent examples of municipalities that are implementing some really good energy transition policies at the local level. And there are also websites like endura kommunal, which has developed a local land-pooling scheme which enables landowners to merge their sites to deliver a project and become stakeholders in renewable energy schemes. And on a slightly larger scale, a broader level, the German Environment Agency (UBA) is always a very good resource if you want to find out about renewable energy generation and expansion.

Mandy Schossig:

Wonderful, we'll provide the links for you all in the shownotes. And that brings us to our next episode, which we have touched upon throughout the show today. Next time, we will be talking about how citizens can – indeed, should – be involved in shaping the transition, and how this engagement – or participation, as we often call it – can lead to more acceptance or motivate people to play an active role in the energy transition. And we'll be finding out what's behind the somewhat unwieldly term "transdisciplinary research". So that's for next time.

Nadine Kreutzer:

But first of all, many thanks, Moritz, for sharing your expertise and also for updating us on the energy transition in the various sectors. Give my regards to Freiburg!

Mandy Schossig:

Yes, thank you, Moritz.

Moritz Vogel:

Many thanks for inviting me to join you to discuss this very exciting topic.

Mandy Schossig:

Thank you!

Nadine Kreutzer:

And if you have any questions about our topic for next time – participation, acceptance, transdisciplinary …

Mandy Schossig:

One more time …

Nadine Kreutzer:

My apologies – “transdisciplinary research”. You might be saying, “What do you mean, an unwieldly expression? I think it’s fantastic! Here’s a question for the expert …”. If so, please send your questions in advance, as always, to podcast@oeko.de. We’d be very happy to hear from you and will pass them on. And do please give us a star rating – with as many stars as possible.

Mandy Schossig:

That would be great.

Nadine Kreutzer:

It would indeed!

Mandy Schossig:

Join us next time – until then, all the best.

Nadine Kreutzer:

Goodbye.

Moritz Vogel:

Goodbye.