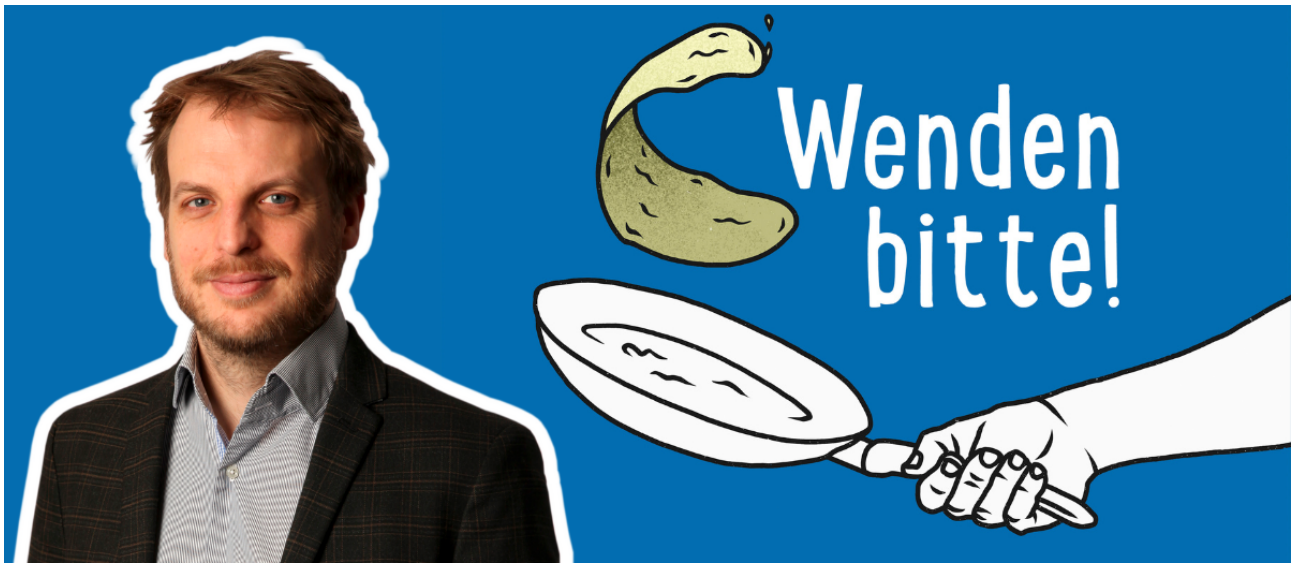

Transcript of the “Wenden bitte!” (All change please) podcast:

Episode 17: “Will transport make the transition?”

Introducing the subject and today's contributors

Nadine Kreutzer:

Hello and a very warm welcome to another episode of "All change please". As always in this podcast, we take a look at current issues from the science of climate action and sustainability. And today we devote the show to what I'm tempted to call the slowcoach sector of climate policy. Because today we are talking about transport, the sector that has barely reduced its emissions at all since 1990. I'm Nadine Kreutzer, presenter and journalist, and beside me as always is Mandy Schossig.

Mandy Schossig:

Yes, hello from me too, I'm Head of Communications at the Oeko-Institut. Now as we know, transport is a problematic sector which is still not doing enough to address climate change, unfortunately, or as Nadine said, not yet addressing it at all.

Nadine Kreutzer:

Yes, and in actual fact, we need to get emissions down to zero there, too.

Mandy Schossig:

Exactly. And that's why our question today is, "Will transport make the transition?". To answer it, we have invited Peter Kasten. He is deputy head of the Resources & Transport Division at the Oeko-Institut here in Berlin. Peter works on the transport transition and alternative fuels and advises on policy instruments for improving climate performance in transport. So he's the ideal guest for our show. Hello Peter!

Peter Kasten:

Hello, good morning!

Nadine Kreutzer:

And a warm welcome from me as well. We are glad you could make it. You've been working on transport for many years. Just before we get into that, here's a quick question for you: isn't it demoralising to be involved with this sector where progress is so sluggish?

Peter Kasten:

It's not demoralising, I wouldn't say. We've achieved a certain amount at EU level. We have the CO2 fleet targets. These have been discussed in recent weeks along with the phase-out of internal combustion engines, and we managed to get certain things going and initiate the transformation towards electromobility.

But of course there are many, many unresolved issues, especially regarding the transport transition or the mobility transition. Especially when it comes to the national level. At the European level we have made quite good headway. What is missing is the national level, where there's simply been almost no policy on climate action in transport for a long time, certainly for 20 or 25 years. That is the big missing element.

Mandy Schossig:

As a starting point, that doesn't sound nearly so negative. That's good to hear. In a moment, we want to delve even deeper to get a better understanding of all this. And to pave the way, especially for our listeners, here comes an overview of the topic.

Sound clip (brief subject overview)

Mobility is a basic prerequisite for people's participation in all the activities of society. Our current understanding of mobility is dominated by the idea of getting from one place to another quickly, conveniently and efficiently. To do so, we use various means of transport, which often have negative impacts on the environment. Cars with internal combustion engines cause air pollution, and the expansion of transport routes leads to the loss of biodiversity. Under the Federal Climate Change Act, transport – like other sectors – is obliged to be climate neutral by 2045. Under the Act, transport emissions are to fall by 48 per cent to 85 million tonnes by 2030.

But up to the year 2019 the sector failed to achieve any reduction whatsoever. The latest forecasts show that the interim target for 2030 cannot be met either. So when it comes to climate action, the transport sector is the problem sector. But why is that? After all, a whole range of measures are in place for the implementation of the transport transition, going far beyond the electrification of private cars. What will it take to make this transition in the transport sector a success, and what consequences will the much-needed transformation have for society?

Climate action gap in transport

Mandy Schossig:

So there are a few questions to be answered today, Peter. And I'd like to start our conversation with a little reality check. As we've just heard, transport is lagging behind the targets. So the first question is this: What level of reductions should have taken place in this sector already? And how much of that was actually achieved?

Peter Kasten:

Well as it said in the sound clip, up until 2019 no reduction of greenhouse gases was actually seen in the transport sector. Then along came COVID, and because we were less mobile, doing less travelling, the emissions fell. There is a Federal Climate Change Act, which sets out a path on which greenhouse gas emissions must be reduced by the year 2030. And we can see that from the year 2021 onwards, we are not sticking to that path. In 2021 we were two to three million tonnes over the target specified by the Climate Change Act. And not long ago, the Federal Environment Agency presented the preliminary figures for 2022. By then, we were already nine million tonnes above the target we set for the year 2022.

Looking at the Federal Government's position, this gap will continue to grow. In the German government's latest official projection report, in 2030 alone, the gap was 40 million tonnes. This gap has to be closed. But having said that, it probably will be somewhat smaller in the new projection report.

In any case, we are not on the path we need to be on. And if you think about it, the nine million tonnes by which we overshot the target in 2022 is roughly equivalent to the emissions of three to four million motor cars, if they were simply taken off the road altogether. Just to give an illustration

of what nine million tonnes actually means. This gap will just keep growing over time. And so we have to adopt policy measures to get on the right path.

Nadine Kreutzer:

What level of emissions are we actually talking about that come from transport? What are all the types that count?

Peter Kasten:

Well, road transport is the main emitter, so that's the private cars and heavy goods vehicles (HGVs). Far more the cars than the HGVs. Rail transport makes up a small share, inland shipping makes up a small share. And transport also includes domestic flights. If you look at the Climate Change Act, they count towards the emissions and the modes of transport included in its accounting. And if we put all that together, it's about 20 per cent of the greenhouse gas emissions in Germany.

Mandy Schossig:

You have already mentioned the Climate Change Act. That actually sets out binding targets for all sectors. What does it say about the transport sector?

Peter Kasten:

Well, it contains a reduction path up to the year 2030. In 2030 we have to be at 85 million tonnes. That's what the original wording said. And the way the regulation works is that if a target is missed, this target shortfall is redistributed to the future years. As a result, the level that now has to be reached in 2030 is just under 84 million tonnes.

If a target is not met one year, then the Federal Government must introduce what is known as an immediate action programme to show how the emissions gap that arises can be closed over the period up to 2030. That is more or less the principle of the Climate Change Act. To check: target missed? If so, then measures for immediate action in the sector must be taken. So far that has not happened on the scale that it really should have done.

Nadine Kreutzer:

So we won't achieve the target in 2030. What is the reason?

Peter Kasten:

For one thing, it's because we didn't make climate policy for transport for a long time. Structurally, we have simply fallen behind in terms of climate action. This powertrain shift that is now under way really needed to have started much sooner.

And the second point is that at national level, we didn't do anything about climate change, establish any instruments, for a long time. We now have CO_2 pricing, which makes a bit of a difference, but otherwise we haven't seen any major instruments encouraging us to drive less and travel in more climate-friendly ways. It is even the case currently that more vehicles are being registered or the fleet is growing, and therefore we are simply not on the path that we need to be on.

Mandy Schossig:

And what are the other reasons? You said we went a very long time without making climate policy for transport. Are there other reasons why progress simply isn't faster in transport?

Peter Kasten:

One reason in the past, and to some extent in the current discussions, is that Germany has a strong automotive industry which exerted a very strong influence on politics so that little was done to press ahead with climate action. Today, the automotive industry has embraced transformation and is supporting it. Even they are now in favour of the transformation. That's the positive aspect that I already mentioned earlier.

So we can see that transformation is envisaged or is already happening. Then there is a second element, which is a transport transition. It makes no sense just to exchange the powertrain. Another key point is that we should promote more use of local public transport, more cycling, and perhaps also avoid making some journeys. That is also part of taking action on climate change. And so far this isn't actually happening at all.

A more socially equitable transport transition

Nadine Kreutzer:

Just now, you mentioned promotion. This kind of a transformation will certainly cost a huge amount of money. And particularly when the population is so heavily affected, of course an ecological transformation of this kind must also incorporate a social dimension. There must be many who fear that all the upcoming changes will leave them by the wayside. Is that a major concern? Is it often discussed?

Peter Kasten:

I would start with the fact that the system now, or the way transport is organised, is not necessarily socially equitable. When you look at it, low-income households are worse affected by the environmental effects of transport. They live on the roads where the levels of pollutants are harmful. The way things are, not all social groups have the same access to mobility. If you look at the lowest 20 per cent of incomes, more than 40 per cent of those households don't have a car. For the highest incomes, the figure is only 13 per cent.

So when we are making policy but the discussion revolves around "higher costs for car drivers", that doesn't affect the lower incomes, or it may cause hardship in some instances but far fewer households will suffer. This discussion about "higher costs for car drivers" is actually more of an issue for the middle income bracket.

Nadine Kreutzer:

It's a luxury problem.

Peter Kasten:

I don't know if it's a luxury problem, but at any rate they have a variety of mobility options. And the third thing is that instruments, meaning taxes and levies, are often configured in such a way that higher incomes benefit more from them than low incomes. And that's why I think we should first acknowledge this baseline situation, that today we don't necessarily have a very socially equitable transport system.

And in my estimation, it is possible to combine climate action with social justice. But that is also the challenge, to organise the whole area of climate and taxes and levies.

Options for climate action in transport

Mandy Schossig:

We'll return to that later and see how the burdens of it can be distributed in a fair and socially balanced way. But now once again, I'd like to go back to an earlier point and take a look at the emergency climate action programme (*Klimaschutzsofortprogramm*). This was initiated to apply pressure to the relevant sectors. So as a first question: Is it applying enough pressure? And which measures are necessary? Maybe you can give us an overview of what is happening to improve climate action in the transport sector.

Peter Kasten:

We need to make a distinction here, I think, because different things often get conflated in the debate. There is the immediate action programme under the Climate Change Act (*Sofortprogramm nach dem Klimaschutzgesetz*) stating how that will be addressed. The transport ministry put forward some proposals, although they were very weak: an efficiency programme for trailers and smaller-scale measures for promoting local public transport and cycling. Then it mentioned digital working, which is on the rise now even without instruments, but was simply mentioned. That also contributes to reductions. And the greenhouse gas reduction quota, which is an instrument designed to increase the share of renewable fuels, will be tightened up a little. These things make up the immediate action programme under the Climate Change Act.

Then it was agreed in the coalition agreement that there would also be an emergency climate action programme (*Klimaschutzsofortprogramm*). The interesting thing is that in other sectors, there are lots and lots of concrete proposals for this. In the transport sector, however, the ministries have not yet managed to agree on what they want it to include. The ministries take very different views on how climate action should be tackled in the transport sector, or you might say, how intensively climate action should be tackled in the sector. And there is a position paper.

The only thing it contains as a concrete measure with a sizeable emissions-reducing effect is a directive on the HGV toll. To put zero-emission HGVs in a much better economic position than HGVs with fossil-fuelled combustion engines. That would be a strong measure. But it hasn't been implemented yet, either.

And what kinds of things are being discussed? The debate is about a so-called bonus-malus system – in other words, reforming the motor vehicle tax so that buyers of low-emission and zero-emission vehicles will get a bonus, or the purchase subsidy as before, but importantly, high-emission vehicles will attract a surcharge in the first year of registration. This is supposed to incentivise the purchase of low-emission or emission-free vehicles so that less high-emission vehicles end up in the overall fleet.

The powertrain shift

Nadine Kreutzer:

Another buzzword: the powertrain shift.

Peter Kasten:

The powertrain shift.

Nadine Kreutzer:

Explain to us what that means exactly. It's quite an impressive word.

Peter Kasten:

What is meant by the powertrain shift? I think almost all of us will have heard about it over the last few weeks. It's about electrification and electromobility. So far the vast majority of transport still uses the internal combustion engine. An inefficient engine, in reality. When it burns fossil diesel or petrol, it produces emissions.

But now it's also possible to go electric. In the electricity sector we've already gone over to renewables in a big way. As a result, we're reducing greenhouse gas emissions. And actually, it's not only in Germany or Europe that this development is gaining momentum. China has nailed its flag to the mast as well. There is very strong promotion in this direction in the USA, and in the private car segment it's the powertrain of the future.

Mandy Schossig:

You've already mentioned the phase-out of combustion engines. The EU is also expected to adopt it from 2035 onwards. Yet now we are hearing noises from the transport ministry that e-fuels might still be retained as an option. Can you talk us through that? What are e-fuels exactly? And do we really need them as a powertrain system in future? When it comes to the powertrain shift, you could also say: right, electromobility is one element, and then there are the e-fuels, which are the other.

Peter Kasten:

Maybe I'll start by defining what e-fuels are in the first place. So e-fuels are fuels that are made from hopefully renewable electricity. They can be produced using electrolysis hydrogen. Then you also need to take CO_2 from somewhere, ideally from the air. You pack that into a synthesis reaction, into an industrial process, and the end result is a renewable fuel, be it diesel, petrol or paraffin.

And that can be burned in today's vehicles. Because you've previously taken the CO_2 from the air, and the electricity hopefully comes from renewable sources, you have a potentially emission-free renewable fuel.

But as you'll have gathered from the whole explanation, it's very energy-intensive. It's a very long chain of processes. It takes a lot of energy and the combustion engine is considerably more inefficient as well. It uses more energy to go the same distance as an electric engine, which means that it's less energy-efficient. The energy requirement is very high indeed, and that makes it expensive. That's why the people figuring out the issue of costs as well as everyone in the automobile industry are no longer talking about the use of e-fuels in new cars, because it's simply much too expensive.

Another aspect is that it always sounds as if the technology is already in place and ready to go, and all you need to do is throw subsidies at it or come up with an instrument that gets people using it. That's not the case, either. At the moment, there are just small-scale pilot plants. Even sub-processes don't yet work on a large industrial scale. So there is still a need for considerable investment in development to build the plants at all. We are talking about 2030 before the first relevant quantities could come onto the market.

Nadine Kreutzer:

So e-fuels aren't really the power of the future. But electric cars are. And of course you hear about their batteries and all the additional electricity they will consume. Then there is also this waste management debate. What's your position on that, what's your scientific perspective on it?

Peter Kasten:

From the viewpoint of emissions, of course battery production emits greenhouse gases and the production of battery-electric vehicles emits even more than combustion-engine vehicle production now.

But in fact, this emissions downside during production is evened out very quickly once the vehicle is in use. Depending on the study, we are talking about 30,000 to maybe 80,000 kilometres. And with the increasingly clean energy system in which we will use the vehicles, battery production will also become cleaner in future. Not only that but the use of electric vehicles will be increasingly emission-free, and this advantage over combustion-engine vehicles will become greater and greater. So from the viewpoint of greenhouse gas emissions, the battery-electric vehicles have a clear advantage even today. There may be a short-term challenge regarding resources. That should be manageable in the medium and long term. But the sector could face short-term supply bottlenecks.

Nadine Kreutzer:

Now a quick question, going back to green electricity, because just now you mentioned the batteries and the additional electricity needed to run them. That has to come from somewhere. What are the plans for generating it?

Peter Kasten:

We have a target of 80 per cent of energy from renewables in the electricity system in the year 2030. But I also think this question tends to be overemphasised. The coalition agreement contains a target of 15 million battery-only electric vehicles. Taking that figure and calculating based on very high mileages, it comes to around 45 terawatt hours in 2030. In 2020 we produced a little over 230 terawatt hours of renewable energy in Germany. It always sounds as if the amount needed for electric vehicles is ridiculously high. But in fact it is achievable.

Of course it poses a challenge. It’s going to put additional pressure on the electricity system. We must expand renewable energies even further and even faster. That’s very much more efficient than, for example, using hydrogen or using e-fuel in the transport sector because those would require a very great deal more electricity. Which can be imported, but the fact remains that expanding renewables is definitely a very efficient way of supplying the transport sector with renewable energy.

Mandy Schossig:

Yet another challenge is the infrastructure, especially charging stations for charging electric vehicles. What is the state of play there? We are always hearing that there aren’t enough. What is your assessment of that?

Peter Kasten:

I think there are a few misperceptions about that as well. It’s true, of course, that when a transformation is ongoing, not everything works perfectly right away. But the fact is, we have 80,000 public charging stations in Germany. The most vital element, and this will often be forgotten in the discussion, is charging at home and at the place of work. These will actually be the places where the majority of charging takes place in future.

A public charging infrastructure is needed, and it’s coming, but the industry is dragging its feet. The instrument we have for this is the greenhouse gas reduction quota for renewable fuels. It can also be used to accumulate credits for greenhouse gas reductions achieved via the charging of electric vehicles. That will generate additional revenues for charging station operators in the future. On the economic side, it no longer looks as bad as it did a few years ago. The challenge there is to simplify

and speed up approval processes. The shortage of skilled workers has had an impact there, too. Those are the key reasons why the infrastructure is not being built as quickly as hoped.

But I don't agree that we have fallen a long way behind. All it means is that we have to roll out the infrastructure faster than we are doing today. We must double the roll-out speed in the next few years. Yet I wouldn't say that we are trailing a long way behind.

Nadine Kreutzer:

So how good are the batteries if you want to do long-distance trips? The way we always used to, or still do: just getting in the car and then driving down to Italy or somewhere. How long do these batteries actually last? You often hear: "It won't last long at all and I won't find a charging station along the route". What is your view on that?

Peter Kasten:

As I said, these kinds of challenges arise during any transformation. It's a real challenge when you do something like this for the first time. In time, people will learn how to make long trips as well. What I can say is that the quick-charge infrastructure is currently growing rapidly, certainly more rapidly in Germany than in other European countries. It also depends somewhat on where you are driving to.

Unfortunately, you sometimes need different charging cards or different apps in other countries. But the charging itself should work. As I said, when you're doing it for the first or the second time, finding the right app can also be a challenge. Uploading a credit card or PayPal somewhere. But those are all problems that will resolve themselves in the next few years.

What ranges do vehicles have now? That is a very interesting question. When I started at the Oeko-Institut twelve years ago, a range of 250 kilometres was considered the absolute upper limit and we would never achieve more than that. Among today's vehicles, there are some that have ranges of up to 450 kilometres. But a normal, realistic range is about 300 kilometres. So we are far beyond what we were talking about ten years ago.

Another thing is that the battery technology is developing incredibly quickly and we are seeing developments that we thought would never happen. And simply because so much development and so much money is pouring into this technology, we are going to see even further advances. I think this issue of range is not the problem. We are trapped in a mindset that a vehicle has to be able to cover vast distances. Vacation trips, really long road trips, you only do them two or three times a year. They are the exception. The ranges of the batteries are sufficient for everyday life, with no trouble.

The role of company cars in the transport transition

Mandy Schossig:

Yes, and it is interesting to note that a large proportion of registered cars are company cars – in other words, cars that are really only used for short journeys. How high is that percentage? Is that not also a possible lever?

Peter Kasten:

Well, the percentage of company cars on the road is not high, but what is high is the percentage of new registrations. Around 20 or 25 per cent of new registrations are company cars. They stay with

the given person for one, two or three years and then pass into the privately owned fleet. That's why the percentage of company cars is not all that huge.

The thing is that both battery-electric and plug-in hybrid vehicles are heavily subsidised via the taxation of company cars. You have to declare a certain proportion of the purchase price as taxable income to account for private use of the car. That's one per cent of the list price for combustion-engine vehicles, only 0.25 per cent for battery-only electric vehicles and half of one per cent for plug-in hybrids.

The problem is that plug-in hybrids, which are used in the company car segment, are often driven as combustion-only vehicles and the emission advantages they can deliver are simply not used. Despite that, they attract tax incentives. For that reason, many plug-in hybrids are coming into the overall fleet via the company car market. Yet they aren't actually being driven as plug-in hybrids but as combustion-only vehicles.

The reduction in emissions they are designed to achieve is not being achieved. That was poor design of company car taxation policy. It should be changed.

Mandy Schossig:

But just quickly, to double-check: when you say that these actually make up a sizeable share of new registrations, my understanding was that after two or three years, when they leave the company car sector, they are then available for the secondary car market. So in a way, that does make it easier for us as private individuals to buy used electric vehicles.

Peter Kasten:

Yes, absolutely. The company car segment influences which vehicles are part of the overall fleet, because 20 to 25 per cent are first registered as company cars. And if it includes registrations of very large, high-emission vehicles, those will end up in our fleet as well.

Fleet target values and the CO_2 price as levers for the powertrain shift

Nadine Kreutzer:

What might speed up the changeover from combustion engines to electric vehicles? Regulations of some kind? What would be the best way to make it happen?

Peter Kasten:

Well, earlier in the discussion we already touched on fleet targets coupled with the phase-out of combustion engines. That is the most crucial driver on the supply side, on the car manufacturers' side, and it's also the driver of why we already see electric vehicles on the market today, and in the fleet. So the fleet targets are really, really crucial. And as I also said earlier, we are well on the way at the EU level, perhaps a little belatedly, but we are well on the way. It could be speeded up, but the powertrain shift is coming, and that is very essentially driven by the fleet targets.

Mandy Schossig:

Can you just briefly explain that again? Fleet targets, what does that mean?

Peter Kasten:

Fleet targets have to do with the car manufacturers – in other words, those who are marketing or selling vehicles. When they manufacture new vehicles, they are obliged to reduce the average emissions of their fleet over time. Until recently, that was mainly about raising the efficiency of combustion-engine vehicles.

But beyond a certain degree of reduction that they still have to achieve, the further development of combustion-engine vehicles no longer makes sense. It's very costly. And that's why the entire car industry has gone over to electrification, because that's simply the way to achieve these targets, especially if you have to be down to zero emissions by 2035.

And if car manufacturers don't achieve these targets, they will have to pay fines. It's more advantageous for them to meet the targets than to incur the fines. That's the main driver for this powertrain shift.

On the demand side, meaning on the vehicle buyers' side, so far we have almost no incentives at all. Well, we have the CO_2 price, which helps a little. But the question is, how much thought do vehicle buyers give to the likely trend in the CO_2 price? Maybe they do a very rough estimate, if they're even aware that a CO_2 price exists.

Nadine Kreutzer:

Perhaps you can give us another quick explanation of what CO_2 pricing means?

Peter Kasten:

Since 2020 we've had a CO_2 price in the heat sector, the building sector, and especially the transport sector. The system there is that for every tonne of CO_2 or every gram of CO_2 that's emitted, a CO_2 price must be paid. Not directly by the people driving the cars, but by the suppliers and distributors of fuels. That is the petroleum companies, but of course they pass the costs on to the customers.

We have an entry pathway for that, which is established and is slowly rising until the year 2026. And then, after 2026, there will be free market price formation. That means depending on how far off from the pathway we are or how many certificates still remain, the price will be higher or lower. It's more likely to be a high price. But that's in the far-off future. Right now, it's different from the electricity sector and the industrial sector, for example, where there are entire departments thinking about how a CO_2 price might develop or what it may mean for investment decisions.

Private individuals don't do that kind of calculation. If they even know that this CO_2 price will rise, they do a rough estimate and think to themselves: "Yes, that might affect my costs in the future". And then they make a decision based on gut feeling anyway. Very few people do a proper cost calculation.

And that's why measures that work by making running costs lower or more expensive for certain options are not so powerful in the transport sector. You must focus on the vehicle purchasing decision instead. And there, as I mentioned earlier, this bonus-malus system is a very important approach. Because when they are purchasing a vehicle, buyers notice that a low-emission or emission-free vehicle is much cheaper than a high-emission vehicle. For these approaches, applying levies to the purchase of vehicles is quite essential in the transport sector.

Taxes and levies for the transport transition

Mandy Schossig:

I think that has brought us nicely to the topic of taxes and levies. Maybe you can give us an overview, to begin with. You've talked about this bonus-malus system already. We've mentioned the company car allowance. What other climate levies are there in the transport sector?

Peter Kasten:

We've actually covered almost all of them now. So there's the CO_2 price under the Fuel Emissions Trading Act, there's the motor vehicle tax which has had very little steering effect so far. I mentioned that earlier as a crucial point that could be addressed by a reform whereby higher CO_2 emissions would mean having to pay a higher price in the first year.

Indirectly, there is a third instrument, and that's the greenhouse gas quota. I've mentioned this a few times already. That includes a quota for the petroleum industry – they have to increase the share of renewable energies in their mix. And that costs money. Indirectly they pass that on to their customers, of course. That means there's a third pricing element in the sector. Those are the key levers that we have. This aspect comes up once again, as I suggested just now, in relation to company car taxation and motor vehicle tax and vehicle purchase. But if I buy an electric-only vehicle, it costs me less. If I buy a combustion-engine vehicle, it costs me more.

Those are the pricing instruments that we currently have in the transport sector.

Nadine Kreutzer:

So what happens to all the revenues they generate?

Peter Kasten:

The revenues from fuel emissions trading, that is from the CO_2 price, flow into the Climate and Transformation Fund of the Federal Ministry for Economic Affairs and Climate Action (BMWK). That can be used to finance support measures. That's the way it's done. But of course there is discussion on the CO_2 price about whether the revenues that are collected should be redistributed in order to make the system socially equitable. It would be very beneficial to pay it back as a fixed-sum per-capita "climate payment", because that would also result in social compensation. Then even households with low incomes would benefit, and those with higher incomes would bear more of the burden. That would be one possibility for handling the revenues from the CO_2 price. As for the GHG quota, that is used to finance renewable fuels, and the motor vehicle tax goes into the general federal budget.

Nadine Kreutzer:

You really know your stuff. Let's get on to the petroleum tax, because I won't have to pay that in future, will I, if I'm charging my e-car with electricity? What about the electricity, will there be a separate levy for that?

Peter Kasten:

Well, for the electricity there's the electricity tax, and that's lower than the petroleum tax. Last weekend someone proposed lowering the petroleum tax for e-fuels or lowering the motor vehicle tax for vehicles that only run on e-fuels.

In my opinion, that's just a sign of how expensive these e-fuels are. It's more of an admission that they're very expensive rather than a useful measure. For electricity, as I said, there is the electricity tax. The CO_2 price is likewise paid indirectly via the electricity market. The electricity producers pay the CO_2 price, but certainly the electricity tax is lower than the petroleum tax, and that poses another

challenge, because the state's revenues for the federal budget will decline drastically once we have large numbers of electric vehicles in the fleet.

And that means we have to think about how to reconcile transport infrastructure and revenue shortfalls. Here we are onto a discussion which, in my view, should begin very soon: about a mileage-based car toll. Meaning that we will be charged a car toll for driving on the roads – not based on a toll sticker or a flat rate, as is often discussed – but really calculated so that every kilometre driven carries a cost.

That would be a usage-based way of financing the infrastructure.

A mileage-based car toll

Mandy Schossig:

The car toll. Can you maybe explain that a tad more precisely? How will it be designed to make sure that it compensates for such revenue shortfalls?

Peter Kasten:

Well how exactly it will be designed, how it will operate technically, that would still have to be discussed. Of course data protection must be considered, and how the data is recorded in the first place, how it is measured, will all have to be considered.

But that's why I'm saying we must start having this discussion soon. If we really end up with a large fleet of electric vehicles, we will see quite a sudden loss of relevant revenues from the federal budget. This is not an easy discussion in relation to the car toll, but right now it is not unjustified, either. So the car toll makes us look at the economic harm caused by noise, by the space given over to cars, and so on. It puts prices on such things, and so far they have been priced indirectly via the petroleum tax. But the petroleum tax is declining and consequently we need a different instrument that puts a price on these things again. Because otherwise in future we would simply go on travelling much, much more by car. Which means we would need yet more land, more motorways, more roads, more wind turbines, more solar cells.

All that will keep increasing if we don't tackle the transport transition, that is if we only focus on achieving a shift but we don't focus on simply reducing the use of cars.

Nadine Kreutzer:

It sounds as if everything might get more expensive.

Peter Kasten:

I don't see it that way. Electric car driving as such, I mean the vehicle costs a little more to purchase but in terms of running costs, they are considerably cheaper than combustion engines for vehicles. As a result, taking all the costs into account, battery-electric vehicles work out cheaper by the mid-2020s at the latest. Very much cheaper even, after a certain time. And that's why we need new instruments to offset this very low-cost car driving as well as very low-cost HGV driving. Because otherwise we will just see very high mileages on the road and all the consequences arising from that.

Pressing ahead with the mobility transition

Nadine Kreutzer:

There are other ways of getting around than just by car. What should be happening with these other forms? What are they?

Peter Kasten:

Well, there is local public transport, cycling and walking, if we are talking about individual transport. A key point is that infrastructures need to be adapted, railway capacities need to be made available, public transport offerings need to be expanded. So that we have better connections, more buses, more rail services.

That is the challenge for the changeover. So that transport infrastructures in cities are also transformed. Because right now, things are very car centred. More space needs to be created for pedestrian and bicycle traffic. And simply to make it safer, more enjoyable, to get around on foot.

All these are the kinds of measures that lead to greater use of other forms of transport. And then such things as a CO_2 price or a car toll take effect very well. They gain acceptance when there are alternative options.

Without these changes to road infrastructure and local public transport services, it will probably cause a lot of frustration. Because then it's really true that costs are going up, on the one hand, but I don't have an alternative option, on the other. That means, both must go hand in hand, and that's one of the typical sayings you always hear in the transport sector: "push and pull". In other words, putting pressure on one side and giving support on the other. It's a buzzword in the transport sector and it can really be applied to anything. Not only must more options be created but the other one must also be made less attractive. That's a sort of function in the transport sector that is often referred to as a solution.

Nadine Kreutzer:

Shouldn't all the standing around be made less attractive, too? Because so many cars are really just standing around most of the time.

Peter Kasten:

You're right about that. Vehicles stand still for 23 hours a day on average and are only being driven for an hour. Aren't we crazy, giving public space to vehicles just so that they can stand around the whole time. When you think about all the things we have to pay for in public space: you pay very little for parking. And that's also a way of financing local public transport, expansion and transformation of infrastructure, with comprehensive parking space management and higher parking fees. If these revenues are subsequently used to expand local public transport, we will also gain acceptance for the fact that less space is available for parking or that parking is getting more expensive, motoring in general is getting more expensive. If at the same time this money is spent on improving the other options and making them more attractive.

Mandy Schossig:

And why is it that local public transport isn't being expanded as quickly as it really needs to be? Because it has now been talked about for quite a long time and somehow it's not really moving forward. Why is that?

Much-needed reform of Road Traffic Regulations

Peter Kasten:

On the one hand, it's down to financing of course. It's expensive, it has to be said. Expanding the provision and converting the infrastructure all costs money. That's where the Federal Government could do more. But I also made the point that it's possible to generate money from things like parking space management and city congestion charges as well.

And on the other hand, a very crucial "adjustment screw" is the Road Traffic Act and the Road Traffic Regulations. The latter was also earmarked for reform in the coalition agreement. One of the key provisions is that roads should safeguard traffic flow. This is often interpreted as the flow of car traffic. There is an urgent necessity to broaden this so that other aspects like environmental protection, climate action, safety and noise reduction are given more weight in the Road Traffic Act and the Road Traffic Regulations.

Then municipalities will also have the freedom to plan differently. Currently, converting the transport infrastructure is a major undertaking. Lots of justifications have to be written, just because the law states that the flow of traffic is so central.

And if that part of the law is amended, it will also speed up approval processes or just processes in general, if there's no need to justify why parking space management is being introduced or why a street has a 30 km/h speed limit. Administrations can waste many hours just on writing a justification. If that were to become the standard, if that were to become easier, such processes could happen more quickly than they do today.

Nadine Kreutzer:

What exactly would have to be changed in the Road Traffic Regulations to make everyone happy?

Peter Kasten:

Well the key aspect is what I referred to just now with the environment, climate action and road safety. That provides the framework. But it also stipulates things such as: "what is the standard speed in cities?" It could specify a standard speed of 30 km/h so that cities have to justify why they want to introduce 50 km/h on certain roads. That would be one measure, for example.

And the municipalities support this, by the way. There are over 600 municipalities that have formed an initiative and want to have this freedom. The Road Traffic Regulations and Road Traffic Act regulate the maximum costs of parking space management and the fines. Germany's fines are among the lowest in comparison to other European countries. But municipalities do not have the option of going above this maximum tariff when people park in no-parking areas. And they have to justify parking space management.

These are all things that can be simplified in specific ways. The main thing is to give the municipalities the freedom to decide for themselves what they think is best for them.

At the moment, that is very heavily constrained by federal legislation. The municipalities are always having to work against it, always arguing against it, and sometimes even lose cases in court.

In Berlin we're having the discussion about Friedrichstrasse. If this were regulated differently in the Road Traffic Act and the Road Traffic Regulations, such things would be very much easier to implement and would end up in court far less often. Or else municipalities don't even dare to do certain things because they know that they will then face an arduous court case and don't know whether they will win or lose. That is why this road traffic legislation is so incredibly central to the transport transition.

Outlook and conclusion

Mandy Schossig:

Yes, and you did already mention this principle of “push and pull”, that they have to go hand in hand. I keep wondering how we coordinate the timing of that. We want people to use their cars less and local public transport more, but the latter still needs to be expanded. How do we pull it all together?

Peter Kasten:

Well, it is a challenge. One part of it, I think, is that measures like parking space management or parking fees have to be phased in. You can’t say from one day to the next: “We’re introducing that now but we haven’t yet put the alternative options in place.” So the process must be coordinated. The problem is, the longer we wait, the less time remains to get it done. The earlier you start such a process, the longer the period of time for expanding local public transport and simultaneously introducing other instruments which perhaps make the motor car somewhat less attractive in the cities.

Mandy Schossig:

So do we just have to get started?

Peter Kasten:

Absolutely.

Nadine Kreutzer:

And to what extent can the Federal Government wield its influence? What measures are there, in terms of infrastructure?

Peter Kasten:

When we were talking about the municipalities, I referred to the Road Traffic Act and the Road Traffic Regulations. But the Federal Government is responsible for the infrastructure, the motorways and the long-distance routes in the catchment area. These things are in the hands of central government. And for that area, there is the Federal Transport Infrastructure Plan, which is currently being discussed a great deal. Whenever there are efforts to fast-track planning and disputes arise, then under the Plan maintaining the transport infrastructure is the central priority, or else motorway building or expansion.

But the old Federal Transport Infrastructure Plan was underpinned by scenarios from the year 2014. It contains assessments of what we call “crunch points”, places where traffic jams could occur or rail capacity won’t be sufficient in future. But it dates from the spring of 2014. Back then, we hadn’t started talking about the Climate Change Act or climate action in general. That is the basis on which infrastructure decisions are being taken. A new assessment report was recently published for the new Federal Transport Infrastructure Plan. Yet there, too, past trends are simply projected forward. These trends are not in accordance with a world of climate action.

That is the big problem. That we are doing infrastructure planning in a world that is not actually in accordance with climate action. And if we build our infrastructure according to that, naturally we’ll also get the traffic that we build for. With all the more difficulty, we must then use other instruments to counteract it in order to arrive at a different transportation system. That’s the inherent problem with this system of the Federal Transport Infrastructure Plan. It hasn’t been resolved so far.

Nadine Kreutzer:

OK, Peter, shall we now get back to the original question? Will transport make the transition? As an expert, what is your assessment of that?

Peter Kasten:

We will make the powertrain shift. The question is whether we will make the transport transition. And that very crucially depends upon national measures, what action we take at a national level. For the last 20 to 25 years we haven't tackled this problem. Within the present government there also appear to be major difficulties in implementing concepts and ideas. That's why right now I'm slightly pessimistic in this respect and perhaps hoping for a different coalition or a different government in a few years' time, and that perhaps it will then see the need to do more towards the transport transition than the present government.

Mandy Schossig:

OK, and if the coalition consisted of you – in other words if you were Chancellor – then what would you do to improve climate action in the transport sector? I mean what would you tackle immediately?

Peter Kasten:

Well, I would immediately tackle the motor vehicle tax and this penalty for high-emission vehicles because that's a simple way of accelerating the powertrain shift and gives the right level of certainty about it. We said we'd do it and we're doing it. Then things like the electric charging infrastructure can be rolled out accordingly.

The Road Traffic Regulations are the second point that is crucial to the transport transition. Those, I think, would be my two relevant points. And I would make preparations for the car toll. That doesn't mean that it has to be implemented immediately. But in any event, we should start discussing how to get something like that up and running. Because I think it will be a long process to gain the population's acceptance for a system that requires the recording of large amounts of travel data belonging to private individuals. How will that work, how will data security work? It's a long process, but this instrument is incredibly important for the future. So far, I believe, very few people in politics have this on their agenda.

One more point: social compensation is really important. It is vital to establish a payout mechanism in the first place that enables money to be paid out to all citizens, so that when the CO_2 price is high, the facility exists to distribute money back to citizens in a targeted way.

That is a crucial point that we don't have today. The coalition agreement also mentions it in those terms. It is being tackled but it should happen with more urgency because it's a key prerequisite before we can become socially balanced in the transport sector.

Nadine Kreutzer:

Now, you have given us plenty to go on already, but if someone wanted to keep an eye on this field in the long term, are there any reference sources where you can say, that one always has quite a good overview?

Peter Kasten:

Oh, I think the Oeko-Institut website … moreover, we have what I think is a fascinating study of fiscal framework conditions, where people can take a look at the whole subject. What are the various ideas for levies and taxes? It's a fantastic overview document, I think. A really, really good study.

Nadine Kreutzer:

And we can find it on the Oeko-Institut website.

Peter Kasten:

You can find it on the Oeko-Institut website.

Mandy Schossig:

And today there's a tip from me as well. Currently there's a really great TV series in the ARD media library called: "Wir können auch anders" (We can do things differently). It's a German documentary series which presents loads of good ideas and solutions for making progress on climate action in different sectors. On the mobility sector, for example, but also energy and building and housing. With Bjarne Mädel, Anke Engelke and lots of other great people, it's great fun. We'll give you links to the study Peter recommended, and a few other things we mentioned in passing, in the Shownotes. Many thanks for being here today, Peter.

Peter Kasten:

Thanks very much, I enjoyed it.

Nadine Kreutzer:

Many thanks from me as well, Peter, it's been very, very interesting and informative. And in the next episode, we will be venturing into a legal topic.

Mandy Schossig:

That's right, because since January of this year, Germany has had the Act on Corporate Due Diligence Obligations in Supply Chains. I thought that would trip me up, but it can also be called the Supply Chain Act for short. It aims to oblige companies to comply with human rights and with sustainability aspects. But for such a law to be truly effective, it would have to be applied outside of Germany as well. And that is why it is now the subject of intensive discussions and negotiations at EU level. We'll take a closer look at that next time.

Nadine Kreutzer:

If you have any questions about it beforehand, you're always welcome to write to us at podcast@oeko.de. Other than that, of course we're delighted at every good rating we receive and hope you're eager to tune in again next time, when we look forward to more discussion with the experts from the Oeko-Institut. See you soon!

Mandy Schossig:

All the best! Goodbye!