



S04E05: How Can Green Finance Drive the Clean Transition?

HOST

Richard Westcott (University of Cambridge)

GUEST SPEAKERS

Dimitri Zenghelis (Bennett Institute for Public Policy at the University of Cambridge), Ulrich Hege (IAST) and Mathias Reynaert (IAST)

Richard Westcott 00:01

Hello and welcome to Crossing Channels. I'm Richard Westcott. How can green finance drive the clean transition? That's the subject of the latest in our podcast collaboration between Cambridge University's Bennett Institute for Public Policy and the Institute for Advanced Study in Toulouse. As ever, we're going to use the interdisciplinary strengths of both institutions to explore a complex issue-how green finance can drive the transition to a sustainable future, what barriers and opportunities exist in aligning financial systems with climate goals? Finally, what strategies are needed to make the clean transition both inclusive and effective in addressing the pressing challenges of climate change?

Richard Westcott 00:56

To explore these issues today, we have Dimitri Zenghelis from the Bennett Institute for Public Policy. So Dimitri, start us off. What does your research focus on?

Dimitri Zenghelis 01:05

Thanks, Richard. So what I focus on at the Bennett Institute for Public Policy at the University of Cambridge is to try and have an understanding of what the clean transition means for productivity and growth. And what we're finding is that, in fact, whereas the conventional framing of this problem is one where you have to commit large funds which could have gone to something else, to decarbonizing the economy, what we actually find is this generates a huge amount of innovation, efficiency and productivity, such that it is, in fact, best thought of as a growth story. In fact, it's not only a growth story, it's probably the only viable growth story that's available.

Richard Westcott 01:46

Joining us from the IAST, we have Ulrich Hege and Mathias Reynaert. Ulrich, remind us of your main research interests.

Ulrich Hege 01:56

Thank you, Richard. I'm an economist specialized in corporate finance, which is really how financial markets and institutions interact with companies and their investment decisions. I'm looking at two questions: first, how are they received by financial markets? How are financial markets reacting to them, and by that, giving stimulation to companies to actually innovate, a reward for that. And second, I'm also looking at, are these climate related innovations actually serving the purpose? For example, can we see that they are actually translating into emission reductions?

Richard Westcott 02:32

And Matthias? What's the central focus of your research?

Mathias Reynaert 02:35

So in my research, I take an empirical perspective, and I study how environmental regulations impact markets with a specific focus on how their strategic responses to the implementation of this regulation.

Richard Westcott 02:48

The global economy is transforming as green finance and regulation takes centre stage in the fight against climate change. By contrast, of course, what have we just seen day one? Donald Trump telling companies to drill, baby, drill. So let's begin with the big picture by defining what we mean by clean transition. Dimitri, what is the clean transition and its role in tackling climate change?

Dimitri Zenghelis 03:12

The clean transition is effectively the need to repurpose our economy, in particular the way we use and generate energy. But it's broader than that as well. It has implications for land use. It has implications for buildings. It has implications for industry. But the bulk of this is about

shifting away from fossil fuels, the burning of which, or even the industrial use of which, tends to generate dangerous greenhouse gasses, which warm up the atmosphere and cause significant climate risks, increasing climate risks into something that is based much more on the use of electricity and electricity with energy generated by renewable energy. That's what we're seeing. The big question is, can we afford to do this? But what we're finding, and to some extent, what we're not surprised by, but what seems to be happening even faster than we expected is that this transition generates a huge amount of innovation, significant efficiency benefits, and therefore generates an increase in productivity. So that it's becoming increasingly apparent that rather than it being a question of, do we go for green or growth, the clean transition appears to be perhaps one of the most promising growth stories and possibly the only viable growth story that's available. So the question of how we finance that transition therefore becomes centre stage?

Richard Westcott 04:42

So my assumption is, as an outsider, a lot of this is driven by government policies around the world. So why is it, then, if it's so good for growth and productivity, why is it this kind of backlash going on against this green energy?

Dimitri Zenghelis 04:54

Part of the answer relates to the fossil fuel industry and drill baby drill. Now the fossil fuel industry has a lot to lose from this clean transition. Oil in particular, is fungible and storable. So the fossil fuel industry does not want you to think that the clean transition is viable, because the price of oil today is a function of the price of oil in the future, and the price of oil in the future is a function of there being strong demand for fossil fuels. So there's no merit to them in talking up the clean transition, they will quite happily align with some environmentalists who will tell you that, you know, you can't kill fossil fuels. Fossil fuels are resilient. We'll be using them well into the current, coming century, and that therefore we need to consider other measures, which, of course, people won't consider such as degrowth and cutting back consumption. In fact, it turns out that fossil fuels are probably likely to peak sometime towards the end of this decade. They may even be peaking in China already. They've peaked in the US, in the UK, in Europe and in other key markets already. Because fossil fuels are simply not a very good way of generating energy, and we have far superior technological alternatives, but that requires upfront investment, and it's that upfront investment, as well as the disruption associated with transitioning your economy that generates the opposition.

Richard Westcott 06:19

Okay, let's move on to financing then. Ulrich, can you define really what we mean by green finance, and how does that fit into this transition?

Ulrich Hege 06:25

I think it makes sense to talk about two different notions of green finance. On one hand, you have the top down view. How can we mobilize the financial resources needed to actually accelerate the green transition to net zero? And there are many estimates how much would be needed, say, to come close to a goal like net zero 2050, but I think a reasonable estimate, it would be 5 trillion a year, so two and a half times more. But to put it also in perspective, that's like 5% of world GDP. So that's a big number, but the world is also spending like 25 trillion a year investment. So it's something that's not completely out of proportion. If the bill is there. The second notion of green finance is really the bottom up or grassroots movement among investors that has emerged over many years. Investors are concerned about the environment and the climate change, and at some point they're saying, hey, this transition is not happening on its own. The governments are not doing it, so we are basically pitching in. And we are basically reallocating our funds where they are needed, away from companies. They're brown companies. We are basically making their financing more expensive and towards companies that are greening up faster, making their cost of capital lower and and going there to these companies. And I think that has some impact. It is a movement that has emerged over many years, over the last 30 years, has and grown, in particular in the year, say, 2018-2021 in the COVID period. And we can see that it's an impact, for example, in really making financing for the expansion of coal extraction, coal power plants more expensive, even for oil and gas. And they are in a retreat, also because of this grassroots movement in finance.

Richard Westcott 08:16

And out of interest: is this grassroots movement driven by big investors, such as pension funds? Or is it small investors—individuals—choosing to do this? Or both?

Ulrich Hege 08:28

I think it first started from individuals, and then a lot of institutions, in particular institutions that have a lot of individuals behind them—like pension funds, and so picked it up and also said we have environmental and other, so called ESG, environmental social governance goals in mind. So extra financial or non financial goals in our investment policies. So it's really both.

Richard Westcott 08:58

Matthias, let's, let's look at Sectors now and the automotive industry an area you know lots about. It's close to my heart because I used to be a transport correspondent at the BBC, and one of the big stories I covered was the VW emissions scandal. I'm sure everyone remembers that. And in all honesty, what I saw during that time was the vehicle industry talking a good game on going green, and yet really dragging its heels together. Green especially in Europe, which surprised me. It was California that really brought this to light. So let's look at perhaps the role of regulation and influencing the speed and scale of the clean transition in the automotive industry. I mean, do you think those regulations are effective or robust enough, and is that clean transition happening?

Mathias Reynaert 09:38

There's a lot of empirical evidence that regulation and fiscal policies such as subsidies and tax exemptions are very effective. We see that when there is more stringent regulation or larger price corrections by governments, we do see that innovation picks up. We do see that technology adoption by firms picks up, and we do see that consumers buy greener alternatives, and so it works, but it's very important to recognize that what is happening is that we are correcting markets. And so this regulation is basically asking firms to deviate from their profit optimizing strategies, because it would be profit optimizing for these firms to basically keep selling polluting products that they've already invested in and that they're making comfortable profits on. And so you're asking these firms, with a regulation to deviate from their profit optimizing strategy. And so that means that regulation needs to be enforced, and that's where things in Europe have also been, been, been going wrong, as I showed in my research, that the emission standard had a large effect on paper, but it remained limited to an effect on paper to a large extent. Because what happened was that car makers basically found a way to game emission standards, and that was like the crucial aspect of the Volkswagen scandal, but it also played a large role in Europe. And so firms were, to a large extent, responding to the regulation by just getting more CO2 efficient on paper, but not implementing these CO2 efficiencies on the road. And so we need to keep in mind that we have these types of regulations that force firms to go towards greener alternatives, that we also need enforcement, and so that is a necessary condition to basically correct the market.

Richard Westcott 11:33

Does it start with upfront government money? I remember going to Norway, they had special lanes that you could go in with an electric car. You could use the bus lane. They had charges everywhere, including in the Arctic Circle. They had subsidies for buying an electric car, and it was the first country to go I think more than half electric in new sales. Elsewhere in the UK, for example, there's less infrastructure to charge your car, and that's government money, isn't it? Car makers aren't going to put that in.

Mathias Reynaert 11:58

No absolutely. And I think it's important. And I want to refer back to something that Dimitri pointed out earlier. There's, there's, there's vested interest here. And you have, you have basically an industry that is profitable and that is basically all present in the economy. There's gas stations, there are car models with diesel and gasoline engines. There are brands that make profits on these. And so when we think about what are the main roadblocks to a transition in the automotive sector, I think one of them is really vested interests. So it would not have been Volkswagen that would have started innovating making electric vehicles, because there would be cannibalization of their own, of their own profits. And so in a certain extent, it's not a surprise that Tesla was a complete outsider, making, making these, these, these products. And the second roadblock, I think, is really a coordination issue, and that makes it very difficult. It's you basically have a whole industry. Consumers are used to driving gasoline engines. They are used to going to gasoline stations. These gasoline stations are prevalent everywhere. But also,

if you look upstream in the in the supply chain, all of these suppliers are making components for combustion engines. We don't have the supply chain in place yet for massive EV production, etc. So there's also a large coordination issue that you that you need to get all noses in the same in the same direction. I think it's, it's interesting that you already pointed out the Norway example. I think I have, I have three examples of where it worked. The first one is Tesla. And what is specific about Tesla is that they did a lot themselves across the supply chain. They had their own high speed charging network. They had a lot of the components made in house. And so basically, they avoided the coordination issue by doing as much in house as possible. That didn't topple the whole industry that was just one brand that decided to do that. So then we had Norway. And what Norway did, as you pointed out, was investing a lot of government money by making EVs tax exempt and also making as much as of the public space available to to electric vehicles, these lanes and all of these other. Provisions, and so that was a massive coordination issue in Norway that basically said where we're going to have this transition, and puts all noses in the same direction. And the third example where we saw this, or are seeing this, is China, where China has for the last decade subsidized enormous amounts of money to battery development, and at the same point, had large coordinated plans of moving their industry from a combustion oriented industry to an electrified industry. And so government money seems, in the successful examples that we have so far, a crucial, crucial element of the transition.

Richard Westcott 14:56

Dimitri, let's look at another sector now the public sector, can it afford to fund a clean transition?

Dimitri Zenghelis 15:01

Well, the primary role of the public sector is not to fund the clean transition. The funding is going to come from private investors. The role of the public sector is to enable the private sector to make risk adjusted profits in the expectation that there will be a core market in these sectors. I mean, let's not forget, we're talking here about energy, we're talking here about transport, we're talking about buildings. These are some of the most heavily policy driven and policy regulated sectors in our entire you know, in our economies. And for good reason, and so if the policy framework doesn't signal to the private insect sector that the risks are skewed more towards locking into inefficient, expensive fossil fuel infrastructure, which may be met with future hostile policy and may be out competed by new technologies, rather than towards the clean transition, then we know which way the private sector is going to invest. What we're finding, of course, is that the clean transition does generate substantial returns in and of itself, and therefore is something that the public sector, through broad, ranged policies, can help signal to the private sector that there's money to be made. Of course, the public sector will have to invest in some core infrastructure. You've talked about recharging stations for electric vehicles, a key part of the infrastructural rollout of electricity grids is going to rely on some public sector support skills training of the workforce. Again, that's going to require some direct public money, but by far the bulk of this is going to come from the private sector. Of course,

China is an exemplar in this. It took a strategic decision to push solar PV and electric vehicles and batteries at a time when they were still very expensive and uncompetitive. The costs have come down massively through learning by doing in these sectors, but also through scaling up of massive production lines. You've seen these Giga factories in southern China, these solar PV plants. The costs have come down now, such that all of these technologies are more than competitive against conventional fossil fuel technologies. And China is cornering the market in these fast, possibly some of the fastest growing markets in the world. You know, they've left the US and the European standing, they took that strategic decision that I think is the primary role of policy in the public sector.

Richard Westcott 17:47

Looking ahead each of you, what's one financial mechanism or policy or innovation that you believe could have a really significant impact in driving this clean transition say, over the next decade? So let's, let's start with you, Ulrich.

Ulrich Hege 18:04

Yes, I think, the most important thing is that innovation that has really contributed, very importantly, right? It's perhaps the one big success story, and private markets will do that. But they need a reliability like they need, that the policies are basically predictable. And therefore the long term, you only invest in innovation, you have this predictability. So if you see what just happened in United States when 2022 like the Biden administration, ruled that Inflation Reduction Act, which was a very big and perhaps the biggest Green Innovation incentive ever, and that attracted lot of capital only two years later, in by the stroke of a pen in two weeks after the Trump administration took over, seen it tossed out, that's the exact opposite. What what needs to happen, right? We need this predictability to provide like incentives for private investment. I think that is the first thing we are getting to the point where green technologies are getting cost competitive or even cheaper. But there's one snack which is still there. A lot of them actually require a lot of upfront financing, and then they have very. Low operating cost. That's true for photovoltaic panels, for windmills and all these kind of things, for home insulation, insulation, for heat pumps. And there we have a problem of financial friction so that a lot of these technologies will not be adopted fast enough in poorer countries because of financial frictions. Financial frictions just means that the people that need to invest cannot raise the financing, because those who have the financing, banks, funds, will not provide them to them because they don't have collateral, they don't have guaranteed income. There's too much political uncertainty. And that's where really also financial innovation, which you ask about, can step in, but we need more of this, basically, like public development banks and other like public institutions stepping in, in a way that that is not too costly for the taxpayer in the developed countries, in Europe, in the UK and elsewhere, but just providing smart guarantees and building up the financial infrastructure, we can actually have a big impact, and that also can help a little bit heal this old wound about a North house conflict about who is paying for the green transition.

Richard Westcott 20:32

Matthias?

Mathias Reynaert 20:33

Given what we're seeing in The US political environment, is how stable the implementation of environmental policy in Europe will be, as Ulrich pointed out, we are establishing a whole bunch of instruments in Europe, such as the expanded ETs and the Green Deal, etc. But you can feel that there's also part of the political spectrum that that is looking for political gains of protesting against those, those those regulations. And so that has been part of the success of the of the Trump movement in the US, I think. And I'm curious to see how robust the regulation is that we have established now is politically in the near future. I think that's very important. The second thing that I have my eyes on is India and China. Economic growth there, and the extent to which that goes in tandem with the deployment of renewables is really important. And the energy sector in China and India should have our prime attention.

Richard Westcott 21:39

Finally, Dimitri will leave the last word to you,

Dimitri Zenghelis 21:43

Haha, always dangerous. There isn't a single policy mechanism or innovation that's going to drive this, and that's really important. The whole is greater than the sum of the parts. It's really about the credibility. It says, just as Ulrich said, it's about the predictability and the credibility of the policy regime, such that it is convincing to investors that this is a sector behind which the government is going to provide the support necessary for the private sector to make profits, and that's got to be a medium to long term commitment. So you know, flipping and flopping and sending mixed signals is clearly going to deter investment. It's going to push up the cost of capital by raising the risk premium associated with these new sectors. So a clear, credible policy stance, and that means a mix of policies. Some of it will be pricing, some of it will be standards and regulations. Some of it will be R&D support. Some of it will be deployment support. Some of it will be outright bans. You know, whether it's gas boilers or electric vehicles, by combustion engine vehicles by certain years. But the point is, it's got to be broad based. It's got to be clear, and it's got to be credible. The transition of the electricity sector and the electric and the car vehicle sector, the pace of this has been extraordinary. And if you think about it, it's happened on the back of really quite minimal policy effort. There has been policy effort key players, whether it's in Denmark in Germany, in the UK, in California, there has been public money. There's been taxpayer money put into developing these new technologies, of course, China perhaps foremost amongst those countries that have pushed these sectors. But that money has delivered extraordinary returns. A third of our emissions come from cars and from electricity. And you know that third is already in the bag, if you like. It's not going to be long before we see similar increases in innovation, in efficiency and productivity, in the so called hard-to-abate sectors, haulage industry, agriculture and food and even aviation. I think it looks untenable now, just as it looked untenable 10 years ago to talk about a transition in

electricity and vehicles. But I think in 5, 10, 15 years time, provided the policy stance and policy framework is clear and credible, we are in a position to see extraordinary and very productive growth, enhancing gains in the process of delivering the clean transition that we all need, but it does require an early push, and it does require upfront investment, and that, of course, is where the political will needs to come in and the leadership as well.

Richard Westcott 24:28

Fantastic. Well, that's an optimistic note to end on, and a message for governments as well. So I just want to thank **Dimitri Zenghelis** from the Bennett Institute for Public Policy, **Ulrich Hege** and **Mathias Reynaert** from the Institute for Advanced Study in Toulouse for their really interesting research and insights. Now let us know what you think of this latest episode of Season Four of Crossing Channels. If you enjoyed it, leave us a review. It helps us to shape future episodes and helps people to find us. So we do appreciate it and do please listen to other Crossing Channels episodes. Recently, we've looked at everything from how algorithms and data impact our lives to whether we're suffering from more mental health problems or we're just more aware of them. Next month is an essential listen where we'll be talking about industrial policy and innovation.