

Harvard Project on Climate Agreements
Conversations on Climate Change and Energy Policy
Virtual Forum Transcript

Guest: Dan Jørgensen

Date: April 8, 2022

NOTE: This transcription may not be 100% accurate. Please double-check the written transcript with the [video presentation](#).

Rob Stavins:

So good morning everyone, or good afternoon or good evening or good middle of the night, perhaps if you're in Australia or New Zealand. We're going to start in just a moment. I'm going to wait until the numbers stabilize. It looks like some people are still entering, but in less than a minute we're going to get going.

Rob Stavins:

(Silence) Okay. Well, I'm delighted to welcome everyone to this session of Conversations on Climate Change and Energy Policy, a virtual forum from the Harvard Project on Climate Agreements. I'm your host, Rob Stavins, a professor here at the Harvard Kennedy School and Director of the Harvard Environmental Economics Program and our Project on Climate Agreements.

Rob Stavins:

As many of you know, in this series of webinars we're featuring leading authorities on climate change policy, whether from academia, the private sector, NGOs, or government. And today, we're fortunate to have with us someone with solid and important experience in government.

Rob Stavins:

But before I turn to today's guest and introduce him, let me say a few things about logistics, particularly for those of you who are new to this series, we're recording the webinar, as you may have just heard. And a link to the recording, which will be video and audio, will be posted at the website of the Harvard Project on Climate Agreements.

Rob Stavins:

If you wish to pose a question, you should use the Q&A function that is at the bottom of your Zoom screen. We very much encourage questions. And you need not wait until we get to the Q&A in the discussion period. You can put them in at any time whatsoever because I'll likely take the questions in the order in which they arrive.

Rob Stavins:

So don't hesitate to ask questions of our guest, beginning even now. And then we will finish promptly at 10:30 AM at the latest, 10:30 AM Eastern time in the United States. So with that, I'm very pleased to introduce and welcome today's guest, Dan Jørgensen, the Minister of Climate, Energy and Utilities of Denmark.

Rob Stavins:

It's well known that Denmark is, of course, a global leader in efforts to address climate change and is aiming to phase out its oil and gas production and produce all of its electricity from renewables about five years from now. So welcome, Dan. I'm glad you could join us.

Dan Jørgensen:

Thank you so much. It's a pleasure.

Rob Stavins:

So you've played several important roles at COP-26 in Glasgow. One was as co-leader of the consultations in the so-called ambitions track and the Beyond Oil and Gas Alliance. Now, from what I saw, some participants in the talks wanted a statement in the decision, the Glasgow Climate Pact, that came out of the end to endorse a phase-out of coal and the elimination of fossil fuel subsidies.

Rob Stavins:

But the outcome on the final Saturday, of course, was modified to a phase-down of unabated coal and reduce inefficient fossil fuel subsidies. Can you enlighten us about how and why those changes took place?

Dan Jørgensen:

Well, I think probably most of our listeners here, if they are engaged in how to fight climate change, would probably shake their head a little bit thinking about that this is the first time it's even mentioned in a United Nations conclusion that we need to phase out coal, since we have a Paris Agreement that states that we need to keep temperature increase well below 2° and we're actually aiming at 1.5°.

Dan Jørgensen:

And everybody knows that if we are to achieve that, of course, we need to phase out the use of fossil fuels and coal being the worst. So I definitely understand why a lot of people will find that hard to believe. The reason why it's such a controversial matter, of course, is that many countries on this planet still have millions of people living under the poverty line are looking into decades of continuous economic growth.

Dan Jørgensen:

That will also mean that people that are today without electricity, for instance, will be provided with electricity and so forth. And looking at it from their perspective, it's clear that they, of course, feel that they have, just as we in Denmark and in the US, have a real legitimate aim to make their population richer.

Dan Jørgensen:

And it's actually hard to argue against that, "Okay, you cannot have the same standard of living as we have in our countries," for instance. Now, our argument then is, "Okay, we understand this and we want to help you develop, but we need your growth to be a green growth and not a fossil-driven growth."

Dan Jørgensen:

And the formulation that you mentioned became a very clear demonstration of that exact debate and that exact discussion because those lines in the text were then the ones that we were fighting about.

Not finding about, but discussing the last 24 hours of the COP. They weren't the only issues that were discussed, but they were probably the most important ones.

Dan Jørgensen:

So on one hand, I'm disappointed that the text is not stronger than it is on those issues. On the other hand, it is really huge progress that it's now in the text, meaning that the next negotiations, that's the starting point for the next negotiations.

Rob Stavins:

And that's an important way to view the annual negotiations because they're not a sprint, they're really a relay race. And the question is often, do you hand the baton successfully to the host of the next COP?

Rob Stavins:

Also, I didn't think personally it was surprising that that text was modified that way, given that the G-20 meeting in Rome in the week before had declined to endorse phase-out of coal or elimination of fossil fuel subsidies. So with the G-20 not willing too, it seemed it was going to be a pretty of sell at the COP.

Dan Jørgensen:

Yeah. And in the negotiations, I mean, when the first draft of the text was published, and I was very happy to see that it was actually in there, the phase-out of coal. But I also felt, okay, it's good that it's in there knowing that it probably won't be at the end of the week because it would be negotiated out.

Dan Jørgensen:

So in that sense, it was a very positive outcome that now we have this, albeit not too strong text on it, but nonetheless it's mentioned there now.

Rob Stavins:

So for those of you who joined late, let me [inaudible 00:08:18] and remind everyone that you can submit questions at any time via the Q&A button at the bottom of your screen. We encourage you to do that. You don't need until we get to the Q&A period, after I ask a few questions of my own now.

Rob Stavins:

And then also, I should mention, because questions have been coming in, that I need for the questions to come in English, not in Danish, because I'm the one who's going to get the questions and then pose them. And my Danish is, I apologize, is just nonexistent. So Dan, let me ask you, what's your overall assessment of COP-26? So not just that element that we were talking about now, but more broadly, what's your overall assessment?

Dan Jørgensen:

Well, I do think that the overall result was a positive one. There was some real progress. But first and foremost, the aim of the COP-26 meeting was to keep 1.5 alive, so to speak. What does that mean? It means that if we hadn't made the decisions that we actually made, then I guess it would be almost impossible for us to keep the promise of staying below 1.5 alive, and it wouldn't be credible at least.

Dan Jørgensen:

Because the way the United Nation process works is that countries submit their pledges on how much they will reduce their emissions. And if we hadn't changed the way that the system works, then that wouldn't have happened again until in five years. But we know that from the pledges we have now, temperature will increase 2.3° approximately.

Dan Jørgensen:

So we would've been far from reaching the target. So what happened now was a very strong commitment to, still working for staying below 1.5, and language wording that proposes that countries should submit new NDCs. And that they should be more ambitious than they are now. So again, I know this might sound extremely bureaucratic.

Dan Jørgensen:

And I really do understand if people are shaking their head and saying, "How can this be a success?" Well, the way the United Nations process works, remember, this is more than 119 countries and everybody's got a veto. Right? So for this to actually happen, for countries to agree that, already next year again we will look at the pledges and countries need to resubmit.

Dan Jørgensen:

And the countries that hasn't submitted yet NDCs, has to do it. That really was a big success. So keeping 1.5 alive, but what's also important is the financing part of it. So the developed countries has actually promised, back in 2009 in Copenhagen, that from 2020 and onwards, the developing countries should receive funding for mitigation efforts of \$100 billion a year.

Dan Jørgensen:

And those monies are not yet allocated, but we did get some very strong commitments that will make it possible for that amount to be reached within a few years. That was progress. Also, the decision to double the financial aid on climate adaptation. So we are not only dealing with mitigation, we're also dealing with adaptation in many places in the world. And that is very, very necessary decision that was made there.

Rob Stavins:

So for those of our viewers who are not into the details of the Paris Agreement and the annual negotiations, let me just explain that when you referred to the five year period, what you were referencing, Dan, is the fact that the Paris Agreement itself says that these nationally determined contributions, the not quite pledges, but statements of what countries intend to do, will be reissued with an eye to making them more stringent every five years.

Rob Stavins:

But what happened, as you said, in Glasgow, was that there was a call for countries to actually render them more ambitious next year at the COP. However, my recollection is that it was within, it must have been no more than an hour after the COP adjourned that our Climate Ambassador from the US, Mr. Kerry said the US would not be increasing the ambition of its NDC, having just done so for this one. And I believe that someone from the European Union delegation made a similar statement, unless I have that wrong.

Dan Jørgensen:

Well, the European Union hasn't decided yet what we will do. But I mean, new legislation in the European Union will be adopted this year. So there will be new measures that we could put into it. I think also it's fair to say that what we're doing with this text is putting primarily pressures on the countries that hasn't yet submitted an NDC or countries that have submitted one, but one that's definitely not on the Paris Agreement track.

Dan Jørgensen:

And if you look at, for instance, some of the biggest emitters in Asia, look at China and India, the paradox says that they have actually decided on measures that are not yet reflected in the NDCs. So if they formally adopted the measures that they are doing in the NDCs, they would be much, much stronger. But then, of course, there are also countries that hasn't yet submitted anything.

Rob Stavins:

Right. And so speaking of that then, what do you anticipate will be the major issues at COP-27 in Sharm el-Sheikh in Egypt this year?

Dan Jørgensen:

Yes. Well, I very much hope that we will manage to keep the momentum on the mitigation track, so the ambition track, on reductions. Because what happened in Glasgow was progress in the sense that we managed to keep 1.5 alive, but to keep something alive is not exactly ambitious enough. We need to also deliver on it.

Dan Jørgensen:

So now we have the framework that makes it possible to deliver on it. And that, I think, must and should be the main purpose of the meeting in Egypt. But just as important is the question of financing, because really, I do understand how some of the growing economies of this planet that are also now amongst the biggest emitters, why they think it's only fair that the richer countries of the planet help them in the transformation.

Dan Jørgensen:

Remember, we have a climate problem because rich countries have been polluting for more than 100 years. Now, some countries are raising their standard of living and then now then starting to pollute more. But I don't really think it would be fair for us to say, "You cannot have the same standard of living as we do."

Dan Jørgensen:

That would not be legitimate in my point of view. And it wouldn't be fair if we didn't also offer help mitigate the problem. So we need to have a clear focus on the financing part. We talk about, in COP terms, the concept of common but differentiated responsibility.

Dan Jørgensen:

So everybody's in this together. It's a responsibility for all of us, but it's differentiated in the sense that some countries have a bigger obligation to do more than others. And I consider my own country one of those countries so that's why we try to lead and try and contribute what more than our size would actually indicate.

Rob Stavins:

And the way the UNFCCC and in particular, the Paris Agreement, addresses some of that is that it's a recognition that even if mitigations were to go to zero tomorrow there is still going to be climate change. And therefore, there's a need to adapt to climate change. And the finance is, to a large degree, to address adaptation in the poorer countries of the world.

Rob Stavins:

But not all climate impacts can be adapted for, the small island states potentially going underwater. And that therefore leads to the third element that is potential, well, it already is in the Paris Agreement. And we have to see what's going to happen with it. And that course, this phrase, loss and damage.

Rob Stavins:

So I'm very interested to hear you're... Maybe you can explain first, to our audience, what's meant by loss and damage, and then give me your perspective. And in particular, what's going to happen at COP-27, because I see that as an issue that's getting increasing attention.

Dan Jørgensen:

Well, I think you actually did almost explain what it is because it deals with the fact that we have countries already now that are really suffering from severe consequences of climate change, flooding, extreme weather phenomena, droughts, all of these things. And we know that this will only increase.

Dan Jørgensen:

Even if we are really successful with our mitigation efforts, even if we stay below 1.5, we know that we'll have more of these terrible consequences around the world. And of course, if we don't manage to stay below 1.5, then probably a lot of tipping points will be reached and irreversible effects will set in, and that it's really, really a serious situation for so many countries.

Dan Jørgensen:

So how do we help these countries? Well, there's the normal way of giving climate aid which is either directed against transforming an energy system, for instance, so mitigation efforts. But then there's also the adaptation part of it. And that's where we decided in Glasgow to double that financing, which is very, very good news because that will help many countries adapt to what they already experience.

Dan Jørgensen:

But then there's the third category, so to speak, which is loss and damage. What do we do to, I hesitate to use the phrase compensate because that's not really what it is, but that-

Rob Stavins:

That's a sensitive word.

Dan Jørgensen:

It is. Yeah. And in lack of a better one, that's the one I'm going to use. But help the countries that are hurt, for instance, by hurricanes that will completely destroy a country. How do they then get help? Obviously, this is quite controversial because it means also that somebody has to pay.

Dan Jørgensen:

Now, my own country, just as the US, by the way, has decided that we do want to contribute and give climate aid. But we are also a little bit, I think most countries are, very conscious on how do we then make this mechanism? So Denmark at least thinks it's a good idea. We need to work in this direction.

Dan Jørgensen:

But how to exactly then orchestrate it, and how to make sure that we don't have a huge bureaucratic monster that doesn't really work. And also something that works fast, because one of the problems with the COP process is that it's so slow. So we meet once a year.

Dan Jørgensen:

Obviously, negotiations takes place all year, but once a year the decisions are made. And if we start a process now that can take four or five years to make, before then actually starts to work, then probably that's too late.

Rob Stavins:

So the Paris Agreement itself really finessed this issue in a very interesting way. And that the agreement itself talks about the importance of loss and damage. And then the accompanying decision, I think it's paragraph 53 in fact, says that loss and damage should not be interpreted as implying legal liability or compensation. And that sort of that balancing has moved along.

Rob Stavins:

It's obviously, countries like the United States and China that are accountable for the largest shares of the stock of accumulated greenhouse gases were particularly concerned, I think, about so-called legal liability. But it seemed like it's just not going to be possible to simply finesse this issue away. That's why I picture something significant in the discussions going forward.

Dan Jørgensen:

No, I totally agree with you. This is one of the main demands, especially from the countries that are hit the hardest right now, of course, small island states, for instance. And I actually do think that one of the beautiful things about the COP process is that here countries that are not big in size can have a lot of power, because this is not hard power, this is soft power.

Dan Jørgensen:

This is, a speech in the plenary can change the minds of negotiators and can shape the public opinion, that then puts pressure on decision makers in capitals all over the world. So I do think that the small island states, for instance, as I mentioned earlier, has been very successful and I applaud them for being so in arguing their case.

Rob Stavins:

Yeah. I'd like to turn for a moment from talking about the COP to something which is on the minds of a lot of people right now. And that is the situation in Europe, because of the invasion of Ukraine by Russia. There's urging now from you many quarters for European countries and others, the US, to cut and eventually eliminate oil and gas imports for that matter coal, but mainly oil and gas imports from Russia.

Rob Stavins:

I read this morning that the Greek government has announced that they're going to reduce their use of gas and thereby increase their use of coal for electricity generation, which would be the necessary result. And Germany, if I have my numbers right, in terms of mainly oil and gas purchases and mainly gas in their case, are sending 200 million dollars per day to Russia in exchange. So what is this current situation portend for the European Union achieving it's very ambitious climate goals, which we all applaud, but can it be done with this?

Dan Jørgensen:

Yes. Well, I definitely think that one of the few positive things that might come out of a terrible situation is that we will now be forced to speed up the green transformation away from fossils in Europe. Now, if I look at the challenges that we have in Denmark, and we are a country with a lot of renewables on a good day where the wind is flowing.

Dan Jørgensen:

We get so much wind from our offshore wind farms, that we have more than 100% of our electricity that's green, so we can actually export green electricity. But even in our country, with probably the most ambitious production target of CO2 emissions in the world, even in our country, we will be put under pressure if either we decide in the EU to stop import of gas or Putin decides to stop export of gas.

Dan Jørgensen:

One of those decisions can be made, and it's actually probably pretty realistic, unfortunately, that that will happen. So I'm thinking when it's such a big problem for Denmark, because we have emergency plans for that, companies will have to stop production.

Dan Jørgensen:

In worst case scenario, people will freeze in their homes because they haven't got alternatives. That's in Denmark. So imagine Poland or Romania or Germany. It really is a huge, huge challenge and problem. And my point is that it has opened the eyes also, I think, for decision makers all over Europe to ramp up the replacement of fossils, so that's gas, that's oil, that's coal, with renewables.

Dan Jørgensen:

And we do have a lot of potential for that in Europe. And we're negotiating right now some very important legislation, a new directive on energy efficiency and a new directive on renewable energy that will at least, in my opinion, hopefully, that will help us get to this other side of this dependency of gas from Russia.

Rob Stavins:

So speaking of those two directives, I want to turn for a moment to specific approaches to emissions reductions in different parts of the world, and not necessarily in Denmark. Many economists would say that in large complex economies, that carbon pricing, either carbon taxes or carbon trading, would be a necessary element of government policy to achieve really serious reductions in CO2 emissions. What is your reaction to that, Dan?

Dan Jørgensen:

Yes. I totally agree with it. And page one on any books on economy, you'll find that argument. Now, then why is it that no country on the planet has a real broad CO2 tax that covers all sectors of society with one price, which would be the most rational? The answer to that question is that it's extremely complex, and you risk carbon leakage.

Dan Jørgensen:

So you risk that the production will just move to other countries and then pollute in those countries. That's especially a problem when you are a European country and you're part of the internal market, because we cannot make adjustment taxation, which could be a solution to this problem.

Dan Jørgensen:

So we're not allowed to then tax imports, for instance. But on a European level, the way we've dealt with this is that we have a trading system, a carbon trading system, which is not a tax, but it has the same defactual effect. Because what that does is there will be allocated credits for how much you can pollute.

Dan Jørgensen:

It's a cap-and-trade system, so there's a cap for that. And that cap goes down gradually. So we will then reduce our emissions that way. And you can then auction these credits. So if you actually make your transformation faster than you have to, then you can sell your credits and you can use the revenue for that to finance your transformation.

Dan Jørgensen:

So in a way, I actually do think that's a better system than taxation. Having said that, on a national level, we are actually now looking at introducing a carbon tax that will work alongside the European credit system, because we need to reduce our emissions by 70% in 2030 compared to 1990. That's just a huge, huge challenge.

Dan Jørgensen:

And even though we have a lot of renewables and we are doing more of that, even though we are also leaders on energy efficiency and we are doing more of that carbon CCS, all of these technologies, even all of those things will not be enough. We need clear price signals in the market. It needs to be more expensive to produce in a way where you're dependent on fossil fuels and less expensive to do the opposite.

Dan Jørgensen:

And for it to really be rational you need a tax that's broad in the sense that it covers, not only as we've had since the 1990s fossil fuels and coal and all of that, but also the agriculture sector, for instance. How do you even make a system where you calculate how much a farm emits of greenhouse gases?

Dan Jørgensen:

And how do you then put a price on that, and how do you connect that to the price you have on fuels for a car or fuels used in industry? These are the things that we are grappling with right now. And we will actually be putting forward a proposal to the Danish Parliament in a few weeks and then start the negotiations. Not an easy task, but a necessary task.

Rob Stavins:

Right. Look, I'm an economist. So you're warming my heart with everything you just said. Right now in the world, there are 60 carbon pricing mechanisms in place at various levels of jurisdiction. Some are multinational like in the EU, of course, some national, some subnational, and about half our carbon taxes, the most ambitious ones in the Scandinavian countries. And then also a lot of cap-and-trade systems.

Rob Stavins:

And of course, China is moving forward this year with this tradeable performance standard which is similar to cap-and-trade. But the EU ETS is out in front, it's the most ambitious program in the world with the largest scope. And the allowance prices are now quite high. I think they were 89 Euros per ton yesterday, which is very impressive.

Rob Stavins:

But there's concern in Europe about the effect of that on competitiveness. You used the word leakage, not very long ago today, and therefore the European Union is planning to start the accounting in 2023 and the implementation in 2025 of a carbon border adjustment mechanism, the CBAM. I would love to hear your comments on the CBAM.

Dan Jørgensen:

Yes. Well, it makes sense, if you think about it. I mean, if we tax the production of steel and cement, for instance, very energy intensive productions, what's to stop consumers just buying the cement and steel from China where they don't have those environmental demands? And that is why we need an adjustment taxation that makes sure that that doesn't happen.

Dan Jørgensen:

Now, ideally speaking, we would have that on all products, but this is also complex. Plus we believe in free trades, so we don't really want to distort a global market unless we have to. In this case it makes sense, but there are some dangers in it. And the European Union doesn't exactly have a proud record vis-à-vis protectionism.

Dan Jørgensen:

I mean, it's become much better. And I don't consider the European Union to be, at least, not as protectionist as it has been. There're some things still on agriculture subsidies, but generally speaking, we are for free trade and therefore we all always need to be careful when we do something that will limit free trade.

Dan Jørgensen:

But in this sense, it is absolutely essential. Otherwise, what will happen is we'll just move production to parts of the world where they have a competitive advantage because they don't reduce their emissions. But-

Rob Stavins:

Right. And it will also be dangerous.

Dan Jørgensen:

... it'll be also-

Rob Stavins:

Go ahead. I'm sorry.

Dan Jørgensen:

Yeah. No. Yeah. It has to be compatible with WGO, of course.

Rob Stavins:

Yeah.

Dan Jørgensen:

A very important point also with the ETS is that we are now expanding the scope, so that it also covers buildings and transport sector. Now, that is the most rational way of making sure that we get the reductions that we need. So I definitely support it.

Dan Jørgensen:

Obviously, we need to be careful that we then don't make a system where the price then goes down, because the ETS is now extremely ambitious and it really does work, but it hasn't been like that always. In the start, the price was so small that it had actually a counterproductive effect.

Rob Stavins:

Yeah. I mean, there is a way in which the EU ETS could have been economy-wide instead of hitting 50% of emissions. And that would've been if it been fully upstream on the carbon content of the three fossil fuels at the point at which they enter the economy at the mine mouth wellhead or point of import. And that those would be the compliance entities. And it is my understanding from people, I was working at the time with European Commission when the EU ETS was being designed.

Rob Stavins:

And my understanding why that recommendation of mine was impossible and feasible was politically that it was felt that if it was done upstream, since it would look like a tax to everyone downstream, which is true, that therefore would require unanimity in the council as a fiscal instrument, not simply a majority. And that was out of the question giving the central and Eastern European countries, in particular Poland.

Dan Jørgensen:

That is probably true. But if you think about it, I have to say, I often criticize things we decide in the EU. So I have to say though, it is actually pretty incredible that we have this well-functioning system with 27 countries-

Rob Stavins:

Oh, yeah. Yeah. I agree.

Dan Jørgensen:

... that is economically rational, that works, that cuts emissions, even in times of crisis where normally many countries will probably say, "Okay, well, we want to save the climate, but we need to get through this crisis first." Right? In times of crisis like that, it's extremely important that we have these systems. And what I like especially about it is that it's a win-win. I mean, it is the cheapest, most efficient way of making a transformation.

Rob Stavins:

Yeah. And one of the nice things that relates to what you said about a cap-and-trade mechanism, like the EU ETS, unlike a carbon tax, is that when countries are in the downturn of a business cycle, when they're moving into recession, the tax still stays as it is and punishes industry even though their production is very low.

Rob Stavins:

Whereas with the cap-and-trade system, it automatically loosens up because of the fact that production is low, there are fewer emissions. So question are beginning to come in now, we have quite a few.

Rob Stavins:

And the first question I'm going to turn to is one that we haven't touched on, and that's why I want to turn to it. And that's carbon capture and sequestration, or carbon capture and storage and utilization. And the question is whether the enthusiasm for it is justified as a promising approach, or is it a false hope?

Dan Jørgensen:

It's a totally necessary technology. I mean, I don't think there's any chance of us staying below 1.5° if we don't use this technology. I mean, the IPCC states very clearly that we will need negative emissions in order for us to become carbon neutral in 2050 and in order for us to stay below 1.5.

Dan Jørgensen:

So this means that, first and foremost, obviously, what we need to do is use as many renewables instead of fossils, that goes without saying. But I mean, as long as we are not 100% free of fossils, there will be emissions and we need to then do something about those emissions. So that's the reason why it's necessary on the short-term.

Dan Jørgensen:

But on the longer term, we will need to also create negative emissions by combining CCS with, for instance, biogas production or burning of a biological material, for instance, in waste, things like that. So in that sense, we'll then actually take CO2 out of the atmosphere and put it into the ground. That is essential.

Dan Jørgensen:

I also think the at direct air capture will be a part of the solution in the future. We're not there yet, technology-wise. It's much too expensive and difficult process, but if technology develops there, like I think it probably will because of the huge amounts of money being allocated in research these years, then that can be a very big part of solution also.

Dan Jørgensen:

I mean, CO₂ in the atmosphere is a strange thing because on one hand, 400 and something particles out of one million particles is a lot. And that's what's creating the problems. On the other hand, it's very small and it's also very little, because how do you then capture them? And that's the difficult part, of course.

Rob Stavins:

Now, you mentioned direct carbon removal from the atmosphere as a supplement to mitigation and as a supplement to carbon capture and storage. There's one other group of technologies that sometimes are quite controversial. It's another type of geoengineering, namely solar radiation management, sometimes using high altitude aircraft to inject particles into the upper atmosphere. Do you either have a policy position or a personal opinion on that?

Dan Jørgensen:

I do think that, I am aware that you could call carbon storage geoengineering, but I would say that's actually a pretty simple technique where we are taking the CO₂ out of the atmosphere that we don't want there, that's creating the problem. And I don't see big dangers in that. But many of the other geoengineering suggestions that's out there are, in my opinion, quite dangerous because we don't know the effects.

Dan Jørgensen:

I mean, when we start to mingle with nature in that way, we need to be really careful. On the other hand, I do acknowledge that we might end up in a situation that's so terrible that we will need to use more or less all tools that we have. Hopefully, we won't get there. And if you look at it, the latest IPCC report that was published last week, was actually a quite positive read.

Dan Jørgensen:

Normally IPCC reports are quite depressing, but this one was positive because what does it say? It says, we do actually have the tools. And renewable energy now competes with coal and nuclear power and price. Just to show you one example, the IEA has estimated that there's potential for offshore wind in the world to cover the electricity demand of the planet 18 times. So it's not impossible, we can do it also without those types of solutions.

Rob Stavins:

So you mentioned nuclear power. And in fact, a question has come in on that with, I guess, the focus on the EU and this question comes from a European participant. And the question is, I'll just boil it down, is the 1.5°C aspirational target part of the Paris Agreement, is that achievable without nuclear power being part of the energy mix?

Rob Stavins:

And the question here recognizes or says that including nuclear power is quite controversial in Europe. And we've seen what happens whereas Germany made this announced decision at the time of Fukushima to phase out of nuclear power. That's one of the reasons for greater reliance, of course, on Russian gas. So what's your thinking about nuclear power?

Dan Jørgensen:

Very, very complex question. Lot of dilemmas. On one hand, I wouldn't dream of suggesting nuclear power in my own country Denmark, because we have alternatives. But I also acknowledge that some countries are less fortunate and for them it might be difficult to solve the challenges with securing energy for their citizens if they don't have nuclear power.

Dan Jørgensen:

I do acknowledge that. What I will not accept though is that some people call it a green investment, to invest in nuclear. That's one of the discussions we have right now, whether or not investments in natural gas and nuclear can be defined as green investments in the taxonomy of the European Union.

Dan Jørgensen:

I think it shouldn't be because even though from a CO2 standpoint and looking only at climate effects, it is true that the process itself of making nuclear energy does not emit CO2, but it does then create a lot of other problems.

Dan Jørgensen:

There's the whole security issue. Of course, what if something goes wrong, so we have to live with that. But also the waste problem. And really, I don't consider it sustainable to leave toxic waste for radioactive waste for future generations. So yeah, a very big question full of dilemmas.

Dan Jørgensen:

I do know people that has been a member of the green NGOs and green movements for decades, that's demonstrated against nuclear power that are now proponents of nuclear power. Because they say, "Well, okay, it's bad. But the alternative, climate change is worse." And I do acknowledge that in some countries probably it will have to be a part of the solution.

Rob Stavins:

And yourself working at a high political level, I'm sure you're in many situations on a daily basis where you don't choose the best, you may choose the least bad of whatever the options are. So one of our participants has raised an important issue, namely, that we keep talking about carbon dioxide, but it's not the only greenhouse gas.

Dan Jørgensen:

True.

Rob Stavins:

I'll mention one other one that's very important and interesting namely methane. So methane, as you know, has a radiative forcing per unit much greater than CO2, but it only lasts in the atmosphere for about nine years. CO2 as a half-life of 100 years. So CO2 is deservedly receiving the main attention, but should we be giving more attention to methane? Over the short-term it's extremely important.

Dan Jørgensen:

Definitely. I mean, this is something that's very high under agenda in Denmark because we are an agriculture country. So our agri-sector is really responsible for a lot of our emissions. And that's also why

I actually tend to not speak so much about CO2, but try to say greenhouse gases because we need to address them in a holistic way. And that's also why when we talk about pricing of carbon, really, we need to talk about pricing of greenhouse gas emissions.

Dan Jørgensen:

And that's also, of course, what then makes it complex. But this is absolutely necessary. And I think that probably if we look at all other sectors of our societies it's not that the difficult to see what we should do. So energy, well, of course, there're challenges, but we do know that energy efficiency, we have a lot of technologies that can help us with that and that will help.

Dan Jørgensen:

We do know that renewable energy is both available and cheap and all of that. We do know that we need to change our transport systems, all of that. But on agriculture, if we still want to keep eating steaks and drinking milk, we don't really have the solutions for that yet. We've set a target in Denmark to reduce our emissions also from our agriculture sector.

Dan Jørgensen:

And we are now, there's some things you can do, so you can take out peatlands, for instance, of production and then flood them so that they will become a carbon sink instead of the opposite. We have technologies that you can use with regards to how you feed the animals, how you collect the manure and all of those things. But real tough cuts in emissions, unless you just want to reduce your production, are difficult to come by.

Dan Jørgensen:

So we are also investing a lot of money in research and have set some very high targets. So our experience in Denmark is also that when you set high targets, ambitious targets, sometimes so ambitious that you don't really know how to achieve them, that then drives the development. Obviously, there's also a danger in doing that because you risk carbon leakage, which is to say that the companies or the production just moves to other countries.

Rob Stavins:

So not to be repetitious, but a questioner has phrased in very nice precise terms, and specifically to Denmark, a reminder of the question I raised earlier about the war in Ukraine. And the question is, how has the war in Ukraine changed Denmark's policies around the green transition? And how is it working with other EU partners, for example Germany, to decrease reliance on Russian oil and gas in the short, medium, and long-term?

Dan Jørgensen:

Well, we are in a process of getting rid of fossils altogether in our heating systems, for instance, but all over society. And this is not easy, obviously. So we have set a roadmap on how to achieve our 70% reduction in 2030, but because of the present situation, we will have to do it faster than thought we would. That's probably not necessarily always the most rational thing to do from an economic standpoint, but it's good for the climate to do it faster, but it's also necessary for security reasons now.

Dan Jørgensen:

And we've also changed our perspective so that this is not only about making green transformation in Denmark. We actually even have an ambition to help other countries to make their transformation, because we have potentials in the North Sea for offshore wind that will make it possible for us to contribute to the European energy market with much more green renewable energy.

Dan Jørgensen:

And actually one of the biggest projects that we have and that has been decided and that's been working on now is an artificial island in the North Sea. So, 80 kilometers out in the sea, instead of having one offshore farm that's then connected to the shore of one country we have an artificial island with hundreds and hundreds of wind turbines around it. So equals maybe 10 offshore wind farms. And that island is then connected to several countries.

Dan Jørgensen:

So we are negotiating with Germany and Netherlands and Belgium on them being a part of this project. So that one island alone will be able to create 10 gigawatts of electricity, which is about the same as 10 million homes use every year. And since we are pretty a small country, it goes without saying, that gives us the possibility of exporting our green energy.

Dan Jørgensen:

But just one more point to that, it also helps us in another way, because when we have green renewable electricity in abundance, what can we do? Well, we can use electrolysis to transform it into hydrogen and then transform the hydrogen into liquid fuels that can be used on airplanes, on ships. And that helps us then also reduce emissions in the parts of our transport system where we cannot electrify directly today. So it solves a lot of problems for us.

Rob Stavins:

So a final question for you, please. Something that was striking in 2019 and then somewhat on hiatus during COVID, coming back a bit now, are these grassroots youth movements of climate activism, which have become widespread and intensive. And I'm not just referring to Greta Thunberg, but more broadly, obviously she's been the face of the movement globally, but broader than that.

Rob Stavins:

I don't know about you, but I had to make my way in and out of the negotiations in Glasgow through the group that were just outside. And I'm interested in your reactions to the grassroots movements, and with the following question. It's possible, at least, that this is an age phenomenon, and as these people get older, they become more conservative and they won't be as exercised.

Rob Stavins:

It's also possible that it's a cohort phenomenon, and as they get older, they will remain just as ambitious. But instead of being outside of the COP, they'll be inside the COP. They'll be eventually in your office as your successors, what's your view of the role of the grassroots movements and the future that they imply?

Dan Jørgensen:

First of all, I think it's just fantastic. I mean, I got into politics when I was a young man because of this issue, but that was in the late 1990s. And to be honest, not a lot of people were interested in climate and environment issues. And most people didn't really know what it was. So the greenhouse effect, what is that?

Dan Jørgensen:

And definitely it wasn't something that was high on the political agenda. So for me, to now see how it's on the top of the agenda. So in a country like Denmark, for instance, for the first time ever our last parliament election, when voters were asked, "What was the most important issue for you?"

Dan Jørgensen:

Most people answered, or a majority answered climate change. So that's fantastic. And this also shows that it's not only the young part of our population. I mean, clearly they are extremely active and I also have demonstrators on the steps of my ministry and I love them for being there, but it's also their grandparents.

Dan Jørgensen:

It's also their parents. It really is a change of hearts, I think. And it's not only in Denmark, it's across the planet, I think. Now, one thing is though, to play the devil's advocate, one thing is to have strong opinions and say that something is important for you. Different matter is then changing your own behavior, and also making it what's most important for you when you put your vote at the ballots.

Dan Jørgensen:

And we're probably not quite there yet, because what very often happens is we see that, yes, if you ask people, "Do you think we should do something about the emissions from our food systems?," everybody will say yes. But at the same time, is it really reflected in their kind assumption behavior? Not so much. It's going in the right direction. People leading less meat and more greens, vegetables, and so forth.

Dan Jørgensen:

But that's not a one-to-one connection between what people say they want, probably also what they feel they want and then the actual behavior. But then, again, that's also why we elect politicians to solve the problems for us, right? So it's up to the government, I think, very often to make big collective solutions for these problems. And I'm not arguing against individuals also doing their bit, I think that's important and necessary.

Dan Jørgensen:

But things that are maybe not that colorful, interesting to speak about, for instance, district heating. I mean, that's not a very sexy topic for a discussion, but it's one of the most important things that you can do to fight climate change. So we need to find these balances. But first and foremost, I'd say that it's just a very positive thing and I'm incredibly happy that we have this interest.

Rob Stavins:

I mean, when I'm asked by young people, but also by others, what is an individual, what's the best thing they can do regarding climate change? My answer is always, vote.

Dan Jørgensen:

Yes. I agree.

Rob Stavins:

That's all.

Dan Jørgensen:

No, no. I agree. Totally. Yes.

Rob Stavins:

So thank you very much, Minister Dan Jørgensen, and for taking time to join us today.

Dan Jørgensen:

Sure. Pleasure is mine. Thank you so much.

Rob Stavins:

So our guest today has been, Dan Jørgensen, the Minister for Climate, Energy and Utilities of Denmark. I hope you'll join us again for the next episode of Conversations from the Harvard Project on Climate Agreements, which we will announce shortly. Remember, you need to register separately for each of the webinars via Zoom. Finally, I'm your host, Rob Stavins. Thanks for joining us.