

TRANSCRIPT

Environmental Insights

Guest: Gernot Wagner

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Gernot Wagner: In many ways, the prices versus quantities instrument choice, the economic questions we often worry about for good reason, frankly, take a real backseat to just the raw politics of it all.

Rob Stavins: Welcome to [Environmental Insights](#), a podcast from the [Harvard Environmental Economics Program](#). I'm your host, Rob Stavins, a professor at the Harvard Kennedy School and director of the Environmental Economics Program and our [Project on Climate Agreements](#). As regular listeners to this podcast surely know, I host well-informed people from academia, government, industry, and NGOs. And my guest today, [Gernot Wagner](#), fits perfectly in this group because he combines tremendous experience in academia, the NGO world, and private industry. Gernot Wagner is Clinical Associate Professor at [New York University](#), having previously spent time at Columbia and Harvard. Also, he's worked as an economist at the [Environmental Defense Fund](#), as a consultant at the [Boston Consulting Group](#) and a journalist at the [Financial Times](#). We'll touch on all of that before we burrow in on Dr. Wagner's chief areas of interest and activity – climate change economics, and climate change policy. Gernot, welcome to [Environmental Insights](#).

Gernot Wagner: Hi, Rob. Thanks for having me.

Rob Stavins: So I'm very interested to hear your impressions about climate change policy and what we can expect during the Biden years going forward. But before we talk about that, let's go back for our listeners to learn about where you've been and how you got to be where you are. And I want to start with, where did you grow up?

Gernot Wagner: Well, my accent is from Austria. That's where I grew up the first 18 years of my life.

Rob Stavins: So that meant primary school and what we at least call high school?

Gernot Wagner: Yes. So I did spend a junior year of high school in Minneapolis, Minnesota. That's where I learned English, I guess. But yes. Then I went back, graduated from high school in Austria.

Rob Stavins: And then you came to Harvard College.

Gernot Wagner: I did. And I believe we met first week, freshman year if memory serves?

Rob Stavins: That's right.

Gernot Wagner: It's 1998. Yes.

Rob Stavins: So. I'll mention here that in your first week or so you came to my class or eventually you came to my class, which then was a class in environmental economics and policy. And now it's called climate change economics and policy, essentially. In any event, you came up to me and you said you were interested in taking the class. You were an undergraduate and you were a freshman. And I said, I don't think this is a good idea. And I tried to dissuade you. You were insistent. You took the course and out of approximately a hundred students, you received the highest grade in the entire class. And I've never forgotten that. And that says something about you. Gernot.

Gernot Wagner: I still remember the first conversation we had. Yes. So good to, maybe you come back when you've taken some economics. But yes, that was a fun first year.

Rob Stavins: And indeed you wound up, your bachelor's degree is it joint between economics and environmental science and public policy?

Gernot Wagner: It is. Yes.

Rob Stavins: So that's a wonderful combination at Harvard College. Now, graduate school, you began at Stanford and then you came to Harvard. Can you tell us about that and what you studied?

Gernot Wagner: So, I was supposed to get my PhD at Stanford. I remember my very first meeting with Larry Goulder there at Stanford. "Thanks professor Golder for getting me here. I just heard literally half an hour before or so, that my wife got into medical school back in Boston. So great to be here, but I think I'm re-applying." That was my very first conversation there. So yes, that's what I did. So, I left Stanford with a master's after a year. Had reapplied and started a PhD in political economy and government back east.

Rob Stavins: And then you received your PhD in Political Economy and Government from Harvard in what year?

Gernot Wagner: Four years later. 2007.

Rob Stavins: Okay. Can you remind me who was on your dissertation committee?

Gernot Wagner: Well, it was you who chaired it.

Rob Stavins: Oh, okay.

Gernot Wagner: Yes, it was you, Bill Hogan, Richard Zeckhauser. So, it was a fun crew. Sorry. The fourth one. Dale Jorgenson of course, who was the fourth.

Rob Stavins: And now that you mentioned that, I recall that you and your wife hosted us at your apartment, your dissertation committee. Because I can picture that group or at least a subset of that group with my wife and I at your apartment for dinner.

Gernot Wagner: I can still picture that too. And it's happened, I remember this. So, it was a week or so after my defense. It was the evening of me running my very first marathon, the Boston Marathon. I could barely walk. So, I stuck my wife with all their work of cooking, prep work. And we were still talking about that. I can tell you.

Rob Stavins: I can imagine. Now tell us about your first job out of school. That was an unusual one. I remember we were quite surprised.

Gernot Wagner: Yes. So, I joined the editorial board of the *Financial Times* on a fellowship. And it was actually, I think it basically decided the date of my dissertation defense because I remember walking into your office saying, I just got a call from London. I got that job and they want me to start in two weeks. So how does that work? So yeah. So, a week after we had our dinner, I started writing for the leader writer team. That's the technical term. And spent about six months or so in London doing that.

Rob Stavins: So, that was 2007. And then how did you happen to go to BCG, the Boston Consulting Group?

Gernot Wagner: So that was, in some sense, a holding pattern if you will. But also, I was already speaking with folks at EDF. Full disclosure, it was Nat Keohane, who was the teaching fellow in environmental economics when I took the class with you in '98. I was his first hire at EDF. He had just joined a couple of years or a year prior. But it took a while to make that happen. I spent 10 months at BCG, Boston Consulting Group, and then in 2008 joined EDF.

Rob Stavins: And I should mention that Nat Keohane has been a previous guest here. And as many of our listeners will know, and as I'm sure, you know Gernot. It was just announced that he will be the next president of C2ES, formerly the Pew Center on Climate Change.

Gernot Wagner: That's correct. Yes. And yeah. So, it's pretty amazing to, I guess, have both you and him teach me almost all I know on environmental economics. And basically, so I've, I guess I'd like to think been following Nat around for a bit after. But I guess, we overlapped at EDF for maybe six or so of my eight years there. With two of his years at the White House, just to be clear.

Rob Stavins: Right. And I should say that one of the things, and one of the joys of being a professor is that when you work with PhD students, the learning is in two directions. Sometimes one teaches students, either through advising or in classes, but one learns a tremendous amount, both in terms of the dissertation

work, but then subsequently, and I have continued to learn from you. And in a moment, I want to get to two of your books. Before we do that though, I want to finish this chronology. So tell us about EDF. You were there for quite a while.

Gernot Wagner: I was there for a bit of over eight years. So yes, I joined as an economist. I left as a lead senior economist in-

Rob Stavins: 2008 to 2016.

Gernot Wagner: 2016. That's right. Yes, of course. Yes. So EDF is in many ways, this unique environmental organization, especially when it comes to environmental economics. So, the first environmental NGO to have hired a PhD in economics. I mean, the '70s long before my time. You of course have worked with them also before my time. And then, so the last 10, 15 years or so, it was this real effort to build this office of the chief economist of what is now called the Office of the Chief Economist, and to bring insights from economics to climate environmental policy.

Rob Stavins: Is that the position that Suzi Kerr now occupies?

Gernot Wagner: Correct. Yes. Another one of your students.

Rob Stavins: Yes. That's right.

Gernot Wagner: Who's now the chief economist. Yes, exactly.

Rob Stavins: So, from EDF, you came to Harvard. So, working with the solar geoengineering research program with Professor David Keith, who actually is also a previous guest on this podcast. Tell us about that work.

Gernot Wagner: I guess it started technically on the origin story, I guess. This is the day the [Paris Climate Agreement](#) was gaveled into existence in December of 2015, I remember. Right around the same time that David Keith was in my living room in Cambridge. We had already been there at the time. And we basically shook hands on starting this solar geoengineering research program which turned into Harvard's solar geoengineering research program. So, solar geoengineering it's yeah, lots of things to lots of different people, but it is essentially an attempt to affect the albedo, the brightness of the planets, of planet earth, through deliberate intervention. Now the research, of course, is important here. Right? So, nobody is doing this right now, chemtrails conspiracy theory notwithstanding. But I certainly believe, David Keith of course believes strongly too, that it is time to do concerted research on this topic. By now I'm happy to say the national academies agree. A month or so ago, a Blue Ribbon panel on this. So yes, in 2016, we set out to start this research program.

Rob Stavins: And you played an important role as the Executive Director of the program.

Gernot Wagner: I was, yes, the founding executive director. I think my CV says right now, founding co-director I guess. And yeah, so it was a couple of years of institution building, fundraising if you will. And then I spent a total of four years at Harvard that time around.

Rob Stavins: And then you moved to New York University.

Gernot Wagner: And now I'm, I guess in some sense, I've been following Siri, my wife. So, I said when I was already in Cambridge. So after residency fellowship in New York, Siri started her first job out of fellowship was at Harvard medical school. So I moved part of my EDF team at the time to the EDF-sponsored office. Living in Cambridge, Harvard Square. So it went back to the roots. And then after a couple of years of that, and still teaching at Columbia. So bike rides to the red line. Red line to South Station, Acela to New York, bike up to Columbia, and everything in reverse. Once a week. I finally decided to cut my New York ties, somewhat and then started my work at Harvard, and yes, then four years later. NYU really wanted my wife, Siri. NYU Medical School. I guess I'm the plus one here. When I joined in a faculty position. But thanks to Siri, we moved back to New York.

Rob Stavins: So, let's turn now to substance. And I want to do that first, by way of two of your books of others that I'm familiar with. In your 2011 book, [*"But will the Planet Notice: How Smart Economics Can Save the World?"*](#), my recollection, which may be faulty, my recollection is that one of the messages in the book was that well-intentioned individual voluntary behavior would not be a very effective means of addressing climate change. Can you elaborate on that for us?

Gernot Wagner: Great recollection because yes, that's right. In many ways is, I guess, it's Econ 101 or in some sense, it's my attempt of translating some of the core messages. The book is, into English, German-accented English, but English, nonetheless. And frankly, one of these lessons in fact, of course is, right? That individual action, however well intended, doesn't do it all, right? So, think I remember my book bio, or it's something along the lines of, the author so-and-so, he doesn't eat meat, doesn't drive and knows full well the futility of his present little choice.

Rob Stavins: Would you say that those kinds of personal choices for others as well, are futile? What's the, briefly, what's the basic reasoning behind that?

Gernot Wagner: It takes policy. Right? That's really it. All right? So, incentives work. Right? So, if there's one thing they have in economics, the law of compensated demand, in fact, is a law for a good reason. Right? Price up, quantity demanded down, works every single time, or at least at a couple of exceptions, we know of CO2 isn't one of them. And actually, I remember when the book came out, I wrote a *New York Times* op-ed. I was an economist at EDF at the time. The title was, [*"Going Green but Getting Nowhere."*](#)

Rob Stavins: I remember that.

Gernot Wagner: So, it was this fairly, it's been viral, I guess, 10 years ago. And it was the statement, you recycle, you do all the right things. Right? Good job. But no, you are not saving the planet with these choices, with these individual choices. Which just to be clear. Right? It doesn't mean you shouldn't be doing that. Right? It doesn't mean you shouldn't act morally. Right? I'm still vegetarian. I still don't have a driver's license. I've never driven in my life. Right now that's... For lots of other reasons, too, of course. Right? Don't need a car and never needed one. Live in a city. But there is a lot more of course, to environmental climate policy, the real change that we all know is necessary, then relying on individual action.

Rob Stavins: Now that takes us to the other book of yours, much more recent that I wanted to raise with you, which is your 2015 book with the late great Harvard professor, Martin Weitzman, [*"Climate Shock: The Economic Consequences of a Hotter Planet."*](#) Gernot, I suspect that we could spend our entire time today talking about Martin's contributions to economics, as in fact you and I are doing together in a forthcoming book chapter and a forthcoming article. Instead, I wonder if you'd be willing to take just a few minutes to share a highlight, one highlight of your many wonderful memories of Marty Weitzman, whether it's a personal one or it's one in terms of substance on climate change or economics.

Gernot Wagner: I guess, maybe the best one might be to go back to September 17th, 1998, freshman year once again. That's the same week I met you. I think it was a Tuesday or so that we met, or a Wednesday and your office hours. And I went to meet Marty on a Thursday that week. Now this is a very personal now, but there's a couple of other reasons I remember that day. I met my wife that day, my now wife for first time in the same room together. And that was when Kofi Annan gave a talk at Harvard that day. So, of course our now 10-year-old is called Annan. So yeah, quite a bit happened that week or that day, especially then. But I remember almost missing the Kofi Annan lecture because I spent what turned into an entire hour with Marty in his office. Right? So, as you know same situation. Right? 18-year-old freshmen. Right? Knocks on Harvard prof's door and asks what it takes to become an environmental economist.

Gernot Wagner: And I remember Marty sitting me down and first of all, taking me seriously. Right? Which frankly, much like you did. You did try to dissuade me from taking your class, but then I ended up taking it later that year. But Marty sat me down and guided me through, maybe in an attempt at dissuading me frankly, of wanting to become an environmental economist or academic. Guiding me through what it takes. And what that meant was this famous paper, 1974, [*"Prices vs. Quantities."*](#) Right? Instrument choice. Should you be taxing CO2 or other pollutants, or should you be capping them? Limiting the quantity, emissions trading cap-and-trade system. And he found this ingenious very simple equation. Right? As you know, well, of course. But it took a while to get there. And what he explained to me right then and there and in his office. Right? With his number two pencil, a yellow legal pad, he guided me through the

derivation. Of course, most of that went over my head. All of it went over my head.

Gernot Wagner: But then he taught me what re-search meant. Right? You search and you search and you search again. And how his first attempt was rejected. It was focused on planned economy. How to run the Soviet economy. Important question at the time. But his first submission met a rejection. And one of his anonymous reviewers, referees told him, "Well, why wouldn't you consider this emerging set of problems, environmental problems where the same questions arise? Your paper might have a bit more of an impact if you did that." Well, a few decades later, we know that it had an enormous impact. And that's exactly what Marty did. He rewrote the paper in a sense to aim it at the emerging pollution problems. And this prices versus quantities idea is still to this day one of the main questions in environmental economics.

Rob Stavins: I think that paper actually remains the most frequently cited article in environmental economics by most of the measures that one can come up with. It's a truly astounding paper from 1974. But I want to bring you up to the present. I'm going to fast forward from your freshman year at Harvard to this year of 2021, and talk about climate change policy with you Gernot. I mean, on January 20th, as you know, as our listeners know, President Biden launched the process of rejoining the Paris Climate Agreement, and on February 19th, the United States again became a party to the agreement. I frequently said that that was the easy part. The hard part now is coming up with a credible set of policies to achieve the administration's announced nationally determined contribution or NDC, which is of course, a 50 to 52 percent reduction of emissions below the 2005 level by the year 2030. Is that feasible? Can it be done by this administration or subsequent ones?

Gernot Wagner: Great question. I wish I knew the definitive answer. And when I say right, is it feasible? So, to be clear, would it be technically feasible? Of course, yes. We know that. We've known that for a while.

Rob Stavins: So, let's take them in order. Technically. Yes?

Gernot Wagner: Yes.

Rob Stavins: Next, I want to know about economically and third, I want to know about politically.

Gernot Wagner: That's of course, exactly the right sequence. Economically? Yes. Now, but is it going to be free? No, of course not. It costs some money. Is it worth it? Yes, absolutely. Especially of course, given that there is an enormous cost of inaction, of not acting. The social cost of carbon is in fact an important tool concept to calculate the cost of inaction here, over the matter of the benefits of actions. So, yes. Would any of those pass a standard benefit/cost test? Yes. So yes. Economics to the economics. Now, of course the real question of course, is

politics. I'd like to think I can make a cogent argument for why it will happen. And this administration is uniquely positioned to make it happen, and the approach it is taking seems to be on the right path, or of course the exact inverse. Right?

Gernot Wagner: The exact opposite. It doesn't seem like much is happening legislatively, much beyond amazing proposals, if you will, on the one hand. But frankly, even there, of course. Right? So, there are certain things on a wish list of any climate environmental economist that have not made it on the administration's agenda. But frankly, even there, and as much as we both like Marty Weitzman's insights in all of this, I think in many ways, the sort of prices versus quantities, instrument choice, the economic questions we often worry about for good reason, frankly take a real backseat to just the raw politics of it all.

Rob Stavins: Well, certainly carbon pricing is not an approach, either a carbon tax or cap and trade is not an approach that the Biden Administration is favoring. At this point.

Gernot Wagner: Correct.

Rob Stavins: They're putting most of their eggs in the basket of the Infrastructure Bill. And the one part of that in addition to lots of subsidies for a wide variety of things from electric vehicle charging stations to lots else. But one part of looks like a more conventional policy, a regulatory policy as opposed to subsidies, is the [Clean Electricity Standard](#), the CES. And even there, there's a political issue, which is not just the one of Democrats in favor, Republicans opposed in the Senate, but rather even in the House of Representatives is the fact that so-called progressive Democrats want a CES that is essentially a renewable electricity standard that is excluding nuclear, excluding carbon capture and storage, excluding possibly some other things. Whereas, the Biden White House people who seem to be more pragmatic want to include all of that. What's your view of that?

Gernot Wagner: Now we get down to the politics. I guess maybe let me say two things. And the first one might be a bit surprising to you as having taught me most of this. But I would say this distinction between carbon pricing that economists would say is the right way to go a carbon tax, cap-and-trade. And renewable portfolio standards, clean electricity standard and so on. In many ways is a bit artificial or linguistic if you will. Oh, of course politics. So, 30 states, as you know, plus the District of Columbia have renewable portfolio standards, some fairly weak ones that includes natural gas let's say as part of the mix, even without carbon capture and storage. And so, there's differences of course. That said, there are several that have real binding targets. Right? New Mexico 100 percent by 2045. New York State 100 percent renewable energy standards, renewable portfolio standard. Now it's a standard. That's in the name. Sure. But, well, there is a tradable permit aspect to it to too. So, it's a cap-and-trade system. Right? It's an emissions market. Now it's close to one. Now it's not-

Rob Stavins: It's a tradeable performance standard. Like the system that's being launched in China.

Gernot Wagner: The devil is in the detail, as is so often. But up to a first approximation, we can calculate the shadow price – the price of what it costs to implement a system like this. And some of our colleagues have done that and I'm thinking of a Michael Greenstone paper that analyzes the renewable portfolio standards. You have to come up with a cost of somewhere between 60 and 300 dollars per ton of CO2 equivalent. Right? Which basically...like you said, it's close. It's not a cap-and-trade system for emissions. It just isn't, but it establishes a carbon price. Right? It does. Right? So, when you line up these different policies by their relative strengths, and of course that price per ton of CO2 is precisely the proxy you would want. Right. Coverage of course matters a lot, but then under what is covered, it's that price that matters.

Gernot Wagner: So, what I often like to talk about in, especially my columns, so the Exxon's supported 50 dollars per ton of CO2 carbon tax. Right? Supported in exchange for regulatory preemption, getting rid of any and all regulations for stationary sources. That's a carbon price. Sure. It's at the low end, as you would expect, 50 bucks. Renewable portfolio standards, RPS, or what the Biden Administration proposes or what progressives in the House want. Well, same thing. Now, presumably. Right? The progressives in the House wants something that has a higher price equivalent. The Biden Administration might be slightly less ambitious on that front. All of it is still much more ambitious than the quote unquote simple 50 dollar per ton of CO2 carbon tax.

Rob Stavins: Although we should be fair that the 50 dollars a ton is in fact, what is the interim estimate from the current administration for the so-called social cost of carbon, meaning what are the marginal damages or marginal benefits of action. I think it's likely, and I think you would agree, and I think you've written about this, that the eventual result of this task force that's set up for the next year will probably be, they'll probably lower the discount rate to 2 percent from 3 percent. They'll come up with 100 dollars or even more than that per ton, that's likely.

Rob Stavins: But I want to turn to something else with you. Because we're going to run out of time and you're a young guy and I'm not. So, I want to get the benefits of your insights on something that I wonder about. And that is something that's just really striking, mainly in the year 2019, and then on hiatus perhaps during the pandemic, but I think we'll see come back, is this remarkable set of youth movements of climate activism, both in Europe and the United States. And if you could just say briefly, what's your reaction to those youth movements?

Gernot Wagner: Well, first somewhat controversial reaction if you will, is thank you, Donald Trump. And so, this in many ways, is the pendulum swinging hard back in the other direction. It's amazing to see, of course. I'm not that young, it turns out.

Rob Stavins: Well, it's all relative.

Gernot Wagner: But yeah, it's all relative, I guess. I think I've been married for longer now by now than the first 18 years of my life. So yes, I have 19 years of marriage and so okay. Fair. But yes, oh, great. Of course. All right. So, there too, not to get back to that our carbon pricing conversation necessarily. But right? Well, first of all, that's Greta Thurnberg, if anyone understands that it's about policy, not individual action. So that's point one and it's important.

Gernot Wagner: And now we are back to – what should this movement push for? And frankly, now we are back to the raw politics of it all. It's very, very difficult to see. The one simple law that will just solve it all. That basically doesn't exist. It exists in theory, maybe. Not in practice. And frankly, what is happening now, and what we do see is amazing action in the right direction, on a whole lot of different dimensions. Right? So not too long ago, a hedge fund holding 0.02 percent of stock in ExxonMobil convinced a majority of shareholders to vote for activists to join the board of Exxon. Amazing. So those pro climate votes, if you will, on the board of Exxon going to change everything, of course not among a dozen board members. Right? It won't change it all. That said, that change was significant. As economists, we know that money talks. Sixty-five million dollars plus went into this fight, the proxy fight on who to vote for. Right?

Rob Stavins: It is indeed a substantial moment. I mean, it's early, before we able to say whether or not this presages others such changes. We've seen action also in Chevron and Shell in Europe, but it's early to say. That's a topic that's going to have to be alas for another day. So, I'm just going to have to say, we're going to have to end with that. And thank you very much, Gernot, for taking time to join us today.

Gernot Wagner: Thank you.

Rob Stavins: Thanks again to our guest. [Gernot Wagner](#). He's Clinical Associate Professor at [New York University](#) and former staff economist at the [Environmental Defense Fund](#).

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