

## TRANSCRIPT

### Environmental Insights

Guest: Richard Schmalensee

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Richard Schmalensee: I don't think there is a US energy policy. I think at the federal level, you have this sort of incoherent support for fossil fuels and the rollback of any efficiency standards. I think in some states -- California, Massachusetts, New York, there is a shift toward renewables. Rhode Island wants to have a power system that's a 100% decarbonized by 2030. Impossible, but ambitious. So, really, we do not have an energy policy; we have a bunch of different policies.

Rob Stavins: Welcome to [Environmental Insights](#), a podcast from the [Harvard Environmental Economics Program](#). I'm your host, [Rob Stavins](#), a professor here at the Harvard Kennedy School and director of the [Harvard Environmental Economics Program](#). I'm coming to you today remotely, not from our studio on the Harvard campus, but remotely from my home in Newton, Massachusetts. And my guest is coming to from his home in Boston, Massachusetts. And indeed today we're very fortunate to have with us [Richard Schmalensee](#), the Howard W. Johnson Professor of Management, and Professor of Economics Emeritus at the Massachusetts Institute of Technology, where he was Dean of the [MIT Sloan School of Management](#) for ten years and Director of the [MIT Center for Energy and Environmental Policy Research](#) for 12 years.

Rob Stavins: Dick's research and teaching have been in multiple areas of application of industrial organization, including antitrust, regulatory, energy and environmental policies. He's a fellow of the [Econometric Society](#) and the [American Academy of Arts and Sciences](#), a director of the [National Bureau of Economic Research](#) and Chairman Emeritus of the Board of Directors of [Resources for the Future](#). And I'm very pleased to say that Dick is also an associate scholar of the [Harvard Environmental Economics Program](#). And in recent years he's been my frequent coauthor. In addition to all of that during a leave of absence from MIT, he served as a member of the President's Council of Economic Advisers in the George H. W. Bush administration.

Rob Stavins: Welcome Dick.

Richard Schmalensee: Thank you, and thank you for that extraordinarily kind introduction.

Rob Stavins: Well, I only went through a small part of your CV or else I would have taken up our full 30 minutes of time. Before we talk about your current thinking about energy, environment, and climate change policy, I'd like to go back to how you came to be where you are and where you've been through your career. And when I say go back, I really do mean go way back. I'd like to start with, where did you grow up?

Richard Schmalensee: I grew up in Belleville, Illinois, which is in Southern Illinois, near St. Louis. It's half a commuter town for St. Louis, since you drive west, you don't drive into the rising or setting sun, and half an agricultural center where people get their cars and tractors worked on.

Rob Stavins: So was primary school in the area there for you?

Richard Schmalensee: Oh yeah, primary, high school. Yep.

Rob Stavins: So you graduated from high school there and then you went off to college at MIT, is that right?

Richard Schmalensee: I did. I had no particular idea what I wanted to do. I was pretty sure I wanted to get out of Belleville. I was good at math and good at science and people said, "Oh, you should become an engineer. You should go to MIT. It's a great engineering school." I had no clear idea what that meant. I had an uncle who was an engineer. His work sounded kind of interesting, so I went off to MIT.

Rob Stavins: But then somehow you went from entering thinking about engineering to graduating in economics, politics, and science I see.

Richard Schmalensee: Well, I found out pretty early on, A, I really hated chemistry. I have to say, I don't know why, but I hated chemistry, and I was not fond of lab work. I thought, "Let's see if being an engineer means this is what I do all the time, that doesn't sound like fun." And for reasons I cannot recall at all, I took an economics course to fill a hole in my second semester freshman schedule, and I thought, "This is interesting stuff." It was mainly macro, but I thought, "Oh, this is sort of quantitative, and it's about policy and I'm interested in policy, so maybe this is something I could do." And then I thought about transferring, I did, because it's mostly an engineering science school, but I liked the people I was living with. I liked being in Boston. Wasn't clear where else I could go. And I had discovered economics and it's a great economics department.

Rob Stavins: Now from there, did you directly go on to graduate school at MIT, or were you off somewhere?

Richard Schmalensee: No, I went directly on. This was the Vietnam era and you didn't kind of go off and do something that wasn't protected. I went to graduate school in economics. I didn't have any money. I thought I was going to go to business school, but there were really no scholarships or fellowships available at business schools, but there was pretty generous support in economics. I applied to MIT. I applied to Yale. A senior faculty member at MIT said, "Why do you want to stay here?" Being a smart kid I said, "I'd like to meet the senior faculty." That didn't offend them enough to not admit me, so they did, and it worked out well.

Rob Stavins: Who were your faculty advisors, your dissertation committee?

Richard Schmalensee: My dissertation committee ... I was going to write a dissertation on production inventory behavior, and all I needed was for the Bureau of Labor Statistics or the Census, I forget which one, to let me have confidential access to three digit data because two digit data made no sense; it's too broad. I wasted six months in correspondence with them. And they said, "No." I wondered the hell depressed and saw a card saying we'd like somebody to study advertising, signed by Frank Fisher, Mory Adelman, and Evsey Domar. They became my committee. Frank was my main advisor and I worked on advertising.

Rob Stavins: That's a powerful committee. What was your dissertation? What was it on?

Richard Schmalensee: Well, it was a sort of in the MIT style. It was basically a collection of papers. It ended up coming out as a book, but it was a collection of papers. I looked at cigarette advertising. I looked at aggregate advertising, spending and consumption. I had some theoretical models. I think the main thrust of the thesis was that you can't treat advertising in any model as something that kind of is exogenous, that comes from the sky. It's something that firms decide. So you need to have some model of firm decision to put next to a model of what advertising does. That's not one of the great insights of the age, but made a decent book.

Rob Stavins: What was your first job then out of graduate school?

Richard Schmalensee: Well, it was not a great year, I must say. I ended up at the University of California, San Diego. I had an offer from Wisconsin. I said, "Gee, I don't know if I want to go to a big school in the Midwest." I had an interview at Princeton and the guy who had interviewed me there visited UC San Diego that year. After about three or four months, nice guy said, "What do you remember about that interview?" I said, "I thought it was fine." He said, "Well, I went back to Princeton and said anybody but Schmalensee." So this confirmed my interviewing skills. But he became a friend, a good colleague.

I had seven good years at San Diego. One of which I spent on leave in a fellowship in Europe.

Rob Stavins: Did you go directly to MIT at that point?

Richard Schmalensee: I did. I did.

Rob Stavins: To the Sloan School of Management?

Richard Schmalensee: I went to the Sloan School. It was funny. UC San Diego at that point, the economics department had, oh, I'd have to do a head count, but maybe eight people, maybe 10 people. It was a very small department, a close department. I was getting work done after an adjustment period. We were enjoying living there. Restaurants were opening, which there weren't many of at the start. And everybody said, "Well, you got an offer from MIT. Congratulations. When are

you moving?" And it was actually a hard decision, but I wanted to see if I could play in the big leagues, as I said, and so we took it.

Rob Stavins: And given the topic at least if your dissertation, certainly a business school would seem to be a very appropriate home at that point.

Richard Schmalensee: Well, they hired me as far as I can tell to replace Paul MacAvoy, who was a student of regulation. I had done some work on regulation, but not that much. I wasn't Paul MacAvoy, but you never know what you're getting when you hire somebody.

Rob Stavins: But then studying regulation is indeed the direction that you wound up going.

Richard Schmalensee: I ended up going in that direction, yeah, yeah. I hadn't done much. Well, Paul had been a mentor. He had left before I went to graduate school, but he advised my undergraduate thesis. In many ways I modeled my style of work after his. So he was an important influence. Although again, nobody's a clone of anybody else.

Rob Stavins: Right, right. There's so much we can talk about, but before we get into your research and also your comments on the current state of energy, environmental, and climate change policy, I'd be very interested in, and I think our listeners would be interested to hear something about your experiences at CEA, at the Council of Economic Advisers. What did you like about it and what did you find not so enjoyable?

Richard Schmalensee: Well, I had, I must say a great experience. I had been a summer intern in the summer of 1967 and had quite enjoyed it. I liked the intensity of the place. And so when I got a chance to join as a member, I thought it was a great opportunity. I have to say, I'm sort of a dilettante, so I enjoyed being engaged in a wide variety of issues. I enjoyed occasionally actually making a difference. And the work on the [Clean Air Act Amendments of 1990](#) was intense and rewarding.

What did I not like? Well, any administration, like any organization as it turns out, is composed of human beings, and some of them are easier to get along with than others. Mostly I thought we had a great staff. The chairman and the two of us members were pretty congenial. I can only recall one screaming match I had. That's not bad for two pretty intense years. This was before email, which meant when I left the office, I was gone. My family actually saw a lot of me I thought. I would leave home at 7:30 in the morning; get home at 7:30 at night. But other than that, and of course the weekends when we wrote the report, I was in the office all the time.

But I really enjoyed the sense of being close to decision making, not being political, but being close enough and having enough connections that on things I cared about and knew something about. I was, in the words of Hamilton, "in the

room” when it happened fairly often. It didn't always go my way, but I had the feeling I was making a difference.

Rob Stavins: Do you remember how you first got pulled into work on the Clean Air Act Amendments in 1990? Who was it that pulled you in, or how did you hear about it?

Richard Schmalensee: There were sort of two layers. I heard about the Acid Rain Program pretty early on because that was like economics. The EDF folks were in evidence and Boyden Gray was an advocate. I don't remember the first meetings I was in, but I was in meetings on the subject.

What really pulled me in was when the administration wrote its bill and said it sent it up to Congress and it went to the Senate initially, and the President threatened a veto if the final bill was more than 10% more expensive than what he had sent up. Now, this is 1990 and we're talking about costs in, I think 2005, and this is sort of science fiction, but somebody had to make the determination, and that was me, assisted by the economists ... that's close to being an accountant ... assisted by Howard Gruenspecht, whom I expect you know, and people in EPA and people in the Department of Energy. Howard would referee these fights, and several of us somewhat more senior would step in, but we were costing this bill. That was fairly intense.

I was in the room in the Senate negotiating sessions, which covered as it happened, the whole bill, a fair amount of which I didn't know anything about. But many memorable moments. George Mitchell was running that show. George Mitchell was extraordinarily impressive I have to say on a number of dimensions. I'll give you one great moment that's a classic congressional moment. On some issue, how many cities had to be in attainment or out of attainment or something we had said, I don't know, "11," and the other side had said, "nine," and Senator Breaux from Louisiana said, "Let's see. You say 11. They say nine. Is there a number in between?" Deal done.

Richard Schmalensee: That's the experience of a lifetime.

Rob Stavins: That was a very, very, very special time. You said something at the beginning, which ought not be taken for granted. You mentioned that it was an administration bill sent to the Congress coming from a Republican White House to a Democratic Congress. So both in regards of an administration, writing the legislation and in regards to environmental legislation coming from a Republican administration, that's not something that our younger listeners would certainly anticipate.

Richard Schmalensee: No. I mean, those were the days, right?

Rob Stavins: Yeah.

Richard Schmalensee: That's what led to the 77 amendments. It was clear that there were things that needed to be fixed in the Clean Air Act. It was also clear that there was a lot of pressure to do something about acid rain, whether the pressure was justified or not. George Bush had a home in Maine. George Mitchell was from Maine. There was pressure from the Canadians. And in walks EDF basically with a lot of help from you, with this market based solution. And Republicans lit up at that. We can deal with this and be innovative and not be crazy.

The danger as perceived by the administration and I think properly, and the reason they had that cost test was if you go to the Hill as in a Republican administration with an environmental bill, what you expect to hear from the Democrats is, "This isn't adequate. It doesn't go far enough. We need to be stricter," blah, blah, blah. And all of a sudden you swing for the fences. So the notion was let's focus on cost, focus on doing stuff, focus on costs and clean things up. I mean, this is what should have happened with the Affordable Care Act, right? I mean, everybody says, "Well that was a good start, but there are 27 things that need to be fixed in that bill." Well, they can't do it. They can't sit down and negotiate a fix, which is really sad.

Rob Stavins: Yeah. You look at the difference on the vote. You're very familiar with this. The difference on the voting for the Clean Air Act Amendments of 1990, which was something like 96% of Democrats, 87 or 90% of Republicans in favor compared with the Waxman-Markey legislation in the Obama years, the climate legislation. And that was again about 95% of Democrats, and I think it was something like four or five members of the House who were Republicans voted for it. A tremendous difference.

Richard Schmalensee: Well, I have to share two experiences with you in that regard. First is in my role as auditor, I was asked to address the Senate Republican Caucus. So I was called in. I've been in town for about a year. I'm not a Washington native, but I stand up in front of him and Dole asks me, "You're in charge of verifying this, the cost of this bill, does it exceed the President's limit?" And knowing how shaky all of our estimates, plus or minus are, I said, "It does not, sir. This bill is within the President's limit." And I looked them all in the eye and left.

About a year and a half ago, I was in Washington for an RFF board meeting and I ran into Bob Dole. Bob Dole, sitting in a wheelchair at the World War II Memorial. We had a wonderful short conversation reminiscing about the days when you could actually have negotiations and work across the aisle. He said, "Yeah, we sure could use that." He did remember that meeting.

Rob Stavins: Yeah, it's a new world. Let's turn to your research in economics before we turn to energy and environmental policy. I want to ask you a question that I suppose is like asking you to identify your favorite child. What is the one publication that you are most proud of? And of course, present company of coauthors excluded. What's the one publication you're most proud of from a very long CV?

Richard Schmalensee: I guess I go back to a paper I did oh, in the early 80s, using the federal reserve line of business data, and I'll go quickly because this is completely orthogonal to anything we will talk about. It was the question of, well, if you look at differences between profitability of lines of business, are they driven by industry effects, firm effects, or market share effects? I figured out a way to partition the variance. It was one of these papers where I had no idea what I was going to find and I figured whatever I find will be interesting. I had a research assistant in Washington, sent him down to Washington to work with the data since they weren't allowed out of the room. And we came back that it was very heavily firm effects, relatively little market share effect.

Rob Stavins: Well actually, it's good to hear about that Dick, because it really demonstrates the remarkable scope of your research within economics, which takes me to think about what you've been focused on in very recent years, not exclusively, but you've been focused a lot on energy and environmental policy. Let's start with energy policy before we talk about climate change policy per se. What's your assessment of the current of US energy policy?

Richard Schmalensee: Oh, I don't think there is a US energy policy. I think at the federal level, you have this sort of incoherent support for fossil fuels and the rollback of any efficiency standards. I think in some states – California, Massachusetts, New York – there is a shift toward renewables. Rhode Island wants to have a power system that's a 100% decarbonized by 2030. Impossible, but ambitious. So, really, we do not have an energy policy; we have a bunch of different policies.

Rob Stavins: Now speaking of that, some work that you've been doing, my first recollection was with regards to Europe but more recently with regards to the US, was taking note or at least examining the potential challenges to going to very high levels of dispatch from renewables in the grid.

Richard Schmalensee: Yeah. I'm having a lot of fun. There's a project launched under the [MIT Energy Initiative](#) called the Future of Storage. It's concerned with the role energy storage might play in a decarbonized electric power system. But to address that question you need ask what would a decarbonized electric power system look like? I'm with others doing some theory. We've got people who can do modeling, doing modeling. We're talking to engineers of various stripes about various storage technologies. I find it very interesting. It's not stuff I've done before. I have a postdoc and I am trying to figure out, well, suppose you had two different storage technologies, what's the dispatcher rule? Can you make sense of it? Is it like base load and peakers? But not really because marginal costs don't differ much. So it's very interesting.

And then you step back and you say, "Okay, given the current regulatory systems, and of course we have multiple systems in this country, what would you need to do to drive toward a heavily decarbonized system efficiently? You need storage to play a role. What kind of role? What kind of limits? Who should own it? What about customer premises storage?" You end up coming to the

conclusion that the key thing is to get prices right at retail, but to get that done there are a number of hurdles to be cleared.

I have gotten heavily engaged in this topic, right? I mean, I'm 76 years old and to find some research that really excites me is a privilege. So I'm having a good time.

Rob Stavins: That's fantastic. Turning to climate change policy. Here the administration seems to have policies, it has its positions and it's taking actions. What's your assessment of that?

Richard Schmalensee: Well, it's a disaster. That's not a hard call. I mean, walking away from Paris, walking away from any sense that it's important that we deal with our emissions and indeed walking away from the potential federal role in helping states and localities adapt to change. I mean, adaptation, I think is inherently local, but there are best practices and sharing that can happen and consciousness raising if nothing else, but this administration and a number of Republican governors out there have walked away from it. They've said, "Well, there's no problem here. No need to adapt. Florida doesn't have to worry about rising sea levels. That's not going to happen."

I think walking away from Paris I'm told, and you know better than I, I'm told that knowledgeable people from the US Government still do show up at negotiating sessions and try to contribute, even though obviously it's contra US policy, but they're there as observers and they participate, which is, I guess, the deep state that Trump talks about, but thank heaven for that. I think another four years of this would do sufficient damage to international efforts, and just the sense of US credibility, that it might be hard to recover from. I think we can recover from these four years. I think it won't be terribly easy. A lot of momentum has been lost. A lot of bridges have been charred if not burned, but I think it's possible. But another four years, no, no, no, please.

Rob Stavins: I mean the initial concern certainly with the announcement by the President a few years ago of the intention to drop out of the Paris Agreement this coming November be finalized, was that it would have a negative effect on the large emerging economies in China, India, Brazil, Korea, South Africa, Mexico, Indonesia. There weren't worries that it would negatively affect the Europeans. If anything it might make them more aggressive. But the good news, at least in this four year period, is that other than Brazil, which is because of their own domestic political changes, that it has not caused, at least as far as we can tell, those large emerging economies either to step back from their Paris positions or to seek to change them. But eight years would be different.

Richard Schmalensee: They might well have been able to be more ambitious if we had been in a leadership position instead of a nay-saying position. I mean, it's true, China seems to be moving. You can read its actions one way or another, depending on how you like. India has not. They're still burning a lot of coal. And there's Indonesia. **There's a lot of room for more aggressive action in the developing**



world, which is crucial as you know. I mean, we can do whatever we want to do, but it's got to be the developing world has to be changed. I think the US sitting on its hands or saying, "No," yeah, maybe they'll go ahead anyway, but they're not going to go ahead as fast and as aggressively and as comfortably.

Rob Stavins: Yeah, I agree with all that. I mean, the comparison is one that we can't make because it's within an unobservable hypothetical. What would they be doing if this administration had not come into power? But I think you're also right that if it goes for another eight years, then the momentum may really leave the focus on the Paris Agreement, even on the United Nations framework convention on climate change could easily dissipate.

Richard Schmalensee: I have to say there was something very, very strange about Trump's withdrawal statement, right, because he said, "It's not a good deal for the US." Well, it was a voluntary commitment. What do you mean, not a good deal? The US said, "We will do X." Well, what does withdrawal mean? That we won't do X. That we shouldn't have said we'll do X. It was as if it was forced on us, and of course it hadn't been.

Rob Stavins: Yeah. Even if it were a bad deal in the sense that he meant I think, which is that the Obama administration had negotiated or had submitted in a voluntary sense a bad deal for the US, which I don't think it was at all, but if that had been the case, then what the President could have done of course, was to have changed the nationally determined contribution rather than dropping out of the Paris Agreement.

Richard Schmalensee: Precisely.

Rob Stavins: Now at the same time as the US has been moving in that direction away from more action, the Europeans are becoming more aggressive. There seems to be generally in the world over the past four years, certainly a lot more attention to climate change and for sure, a lot more climate activism on the ground in particular from these youth movements. I mean, most prominently is Greta Thunberg, but the students at Harvard, the students I'm sure at MIT are extremely engaged. This is now an era of climate activism among youth. You mentioned earlier the Vietnam period. I suspect that it's not terribly different than that. What's your reaction to these youth movements that are taking place?

Richard Schmalensee: Well, I love the enthusiasm. I love the spirit of the Green New Deal, if not the letter of the Green New Deal, but I think it's not yet strategic. Students at MIT and elsewhere are very big on divesting fossil fuel companies from university endowments. So what? It's a symbolic action; it will have no effect and they'll fly home for Christmas. And then on the other hand, the Green New Deal, you couldn't get a majority of Democratic votes for that, let alone pass it in Congress. So I think it is time for that enthusiasm to get channeled.

Now, in the case of Vietnam, I think it was sort of okay to say, "Look, get the hell out." And, "LBJ, how many kids did you kill today?" And just push for withdrawal because there was no subtle design here, but this is not that kind of problem. It's not, well, if we divest we'll solve it. No, if we divest it won't do anything. Well, if we do the Green New Deal, we'll solve it. Well, maybe, but we're not going to do the Green New Deal.

I think it's time for that activism to get focused. But I really am of the, look, let's figure out what we can do. Push very hard to do it. Not go for gestures, not go for Medicare for all, but focus on things that can be done and elect people who will do them. I love the enthusiasm, but young people don't vote.

Rob Stavins: You're a pragmatist.

Richard Schmalensee: Sad, but true.

Rob Stavins: Yeah. Actually I certainly applaud it. That's how we get things done, and that's why I teach what I teach in a school of public policy. Sometimes they use perhaps the unfortunate metaphor of, we take people with warm hearts and beat that out of them, and instead give them the mind instead to go forward and to get something done because that's what it's about.

Richard Schmalensee: Was it Shaw that said, "If you're not a socialist when you're 20, you have no heart, and if you're still a socialist when you're 30, you have no head"?

Rob Stavins: Yeah, that's exactly right. Exactly.

Well listen, thank you very much Dick, for taking time to join us today. Our guest today has been [Richard Schmalensee](#). He is the Howard W. Johnson Professor of Management and Professor of Economics Emeritus at MIT and formerly the Dean of the [MIT Sloan School of Management](#).

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