

The New Climate War: The Fight to Take Back Our Planet

Transcript of the conversation with Michael E. Mann

Live Online Event

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Makena Coffman:

Aloha and welcome to this conversation sponsored by the Hawai'i Book and Music Festival and the Better Tomorrow Speaker Series. This series is a joint venture of UH, the Hawai'i Community Foundation and Kamehameha Schools. Today's program is also in partnership with the State of Hawai'i Climate Change Mitigation and Adaptation Commission. There have been a series of climate-related talks in the lead up to next month's UN Climate Summit, Cop26 in Glasgow, Scotland. I'm Makena Coffman. I'm a professor of urban and regional planning at UH Mānoa, as well as the director for the Institute for Sustainability and Resilience, and I'll be facilitating today's conversation. I'm really pleased to introduce our distinguished guest today, world-renowned climate scientist, Mike Mann, who is calling in from State College Pennsylvania. Mike is a distinguished professor of atmospheric science and the director of the Earth System Science Center at Pennsylvania State University.

He was elected to the National Academies of Science in 2020 and has been a long contributor to our scientific understandings of human-induced climate change within the Intergovernmental Panel on Climate Change process. Mike was the lead author two decades ago on the IPCC Third Assessment Report that first published what has become known as the Hockey Stick Curve, projecting human activities impacts on Earth's temperatures. As a climate scientist, Mike has long been engaged in U.S. policy debates about climate action and has a new book out entitled *The New Climate War*, and you can see it on Mike's bookshelf back there. Just as a reminder to our audience, please be sure to send in your questions and I hope to weave them in our conversation and so you can put them into the Q&A. Mike, thank you so much for being here with me today.

Michael E. Mann:

Yeah, thank you, Makena. It's great to be with you. I often say at these virtual events that I wish I could be there in person, but I really do mean I wish I could be there in person. Of course, Hawai'i is one of my favorite places to be, and I'm sorry I can't be there in person. One of these days, hopefully, we will be able to do that, but it's great to be part of this event virtually here today.

Makena Coffman:

Yeah, really happy you were able to call in. When you are here in person we can meet and get coffee and actually talk in person, which would be wonderful to do again. So I want to start this with just giving our audience a sense of the current climate science. You recently published in the Proceedings of the National Academy, a scientific retrospective, if you will, on what is further known and what is yet to be explained in regards to the seminal work on the Hockey Stick. Can you just briefly explain this for our audience? What were some of your most important takeaways from working on that piece?

Michael E. Mann:

Yeah, so more than two decades ago as you alluded to, we published the first version of the so-called Hockey Stick Curve. It was a reconstruction of how temperatures had varied as far back as we could go, which was 1000 years. What it showed was that the warming of the past century that coincides with the Industrial Revolution is unprecedented as far back as we could go. It's the blade of what looks like a hockey stick. The handle is the relatively flat proceeding 900 years, and then the abrupt warming of the last 100 years is the blade. Unfortunately, in those 20 years, the blade has gotten sharper and longer because the planet has continued to warm up and we haven't seen the action that we really need to see. Of course, we're at a moment right now in the lead up to the Glasgow COP26 Conference, the UN Climate Summit in Glasgow, which may be our last opportunity to agree to reductions in carbon emissions that will keep the planet below a truly dangerous 1 1/2 degree Celsius, roughly three degree Fahrenheit.

So this all comes together, the Hockey Stick has gotten sharper, but we can prevent it from getting ever longer and sharper if we take the action that we need to. Of course, we are now seeing the impacts of climate change play out in real time. They're no longer subtle in the way that they were 20 years ago. We're seeing the impacts in the form of devastating heat waves and droughts and wildfires and floods and coral bleaching, and many of the impacts that you're seeing there in Hawai'i, this has become very real and this is an important moment.

Makena Coffman:

Bringing in terms of these climate change impacts that we're experiencing, and now in the current, these are no longer future events and one of the Intergovernmental Panel on Climate Change Sixth Assessment Report recently came out. One of the really stark statements, I think for people who are climate scientists, this is not stark, but for the general public that it's unequivocal that human influence is warming the atmosphere, the ocean, and the land. To me, the report gives this really strong message, the science of attribution has gotten far better as well as it makes this point that there's still time to act. We can do this. This really also mirrors the argument in your book, *The New Climate War*. Can you talk about the levels of greenhouse gas emissions reductions that need to reach, let's say, the two degrees of warming, but actually the increasingly important 1.5 degrees of warming? Also, in your book you talk about the concept of a carbon budget. Can you explain that for our audience and what does that mean in terms of the levels of greenhouse gas reduction?

Michael E. Mann:

Yeah, I'll provide a little bit of additional perspective because back in, I believe it was 2007 after the IPCC had been awarded, co-awarded the Nobel Peace Prize with Al Gore. There was a big IPCC meeting at the University of Hawai'i Mānoa campus, and I came and a lot of the scientists came-

Makena Coffman:

I should say co-awarded with you included, our audience should know that. Yes.

Michael E. Mann:

I was one of hundreds of scientists, absolutely, who contributed to that effort. We were there to collectively, I suppose, celebrate, but it was the pyrrhic victory that we were celebrating because, of

course, little did we know that back in 2007 it would be 14 years later and the message still hadn't been heard to the extent that it needed to be. So now we do need to see a much steeper decline in carbon emissions. If we had acted when we first knew we had a problem decades ago, it would've been relatively easy to gently bring down our carbon emissions. We could very steadily and deliberately move away from fossil fuels towards renewable energy. Now we've got to do this much more quickly. We basically have to accomplish this transition in about 10 years. We have to bring carbon emissions down by 50% within this decade and down to zero by mid-century if we are to have any hope of keeping warming below that dangerous 1 1/2 degrees Celsius.

I'll just say, dangerous climate change has actually arrived, if you're California, the Western United States with the wildfires that they've seen or Australia where I did a sabbatical a couple of years ago during what came to be known as the Black Summer bushfires that blanketed the continent. If you're Puerto Rico, Caribbean Islands that have been decimated by storms, if you are my state of Pennsylvania that was flooded, Philadelphia was drenched by the moisture, the remaining rainfall from this Hurricane Ida that came through just a month or so ago, so dangerous climate change has arrived. It's a matter, at this point, of how bad we're willing to let it get, and we cannot allow the warming to exceed that 1 1/2 Celsius and we're at about 1.2. So that gives you an idea of how little wiggle room there is. We're at 1.2. If we're going to prevent the global thermometer from crossing that 1 1/2 degrees Celsius warming, well, again, we have to see dramatic action over the next decade and next month in Glasgow. We need to see far bolder commitments than we've yet seen from the countries of the world.

Makena Coffman:

Maybe it was in this meeting post-2007, but you've made this transition from hard climate scientist to also being an advocate for policy. Your new book has a lot of the science, but it's mainly about the discourse. Can you explain how you made that transition from scientists to the role of the policy advocate?

Michael E. Mann:

Yeah, thanks. Decades ago when I double majored in applied math in physics at UC Berkeley, I didn't think I was setting myself up for a career at the center of one of the most contentious societal debates that we've ever had, if not the most contentious debate that we've ever had. But it's where my work ultimately led me. When we published *The Hockey Stick Curve* back in 1998 and then elongated version in 1999, whether I realized it at the time or not, I had put myself at the center of the political debate because the Hockey Stick really represented a threat to some of the powerful vested interests, the forces of inaction, I call them in the book or in activists, fossil fuel companies, conservative media outlets and politicians that advocate for them and have collectively done everything they can to block the effort to decarbonize our civilization.

The Hockey Stick was a threat to that very powerful lobby because it told a simple story. It laid bare the profound impact that we're having on this planet. As a result of that, it became the center of attacks by climate change contrarians and climate change deniers, and I found myself at the center of those attacks. So I sometimes say that I didn't come to politics, politics came to me. It's not what I signed up for, but over time, I came to embrace this role, this initially reluctant role that I was playing in the larger conversation about climate change because while it isn't what I envisioned I'd be doing with my life, frankly, I love doing science.

I love solving problems, analyzing data, constructing models. This is the stuff that got me interested in science and in climate science in the first place. But I found myself in a position to influence the conversation about the greatest challenge that we've ever faced as a civilization, and I've come to really embrace that role. So over the last decade-and-a-half perhaps, increasingly, much of what I spend my time doing, I still do the science. It's important to me to continue to contribute to our scientific understanding of the climate crisis and its impacts, but it's also very important to me to try to communicate that to the public and policymakers. It is something that I've come to enjoy doing, and this is an extension of it right here.

Makena Coffman:

Great. I want to lean into what you're talking about in terms of the massive pushback from the fossil fuel industry. One of the major points of your book was there was this long-time deflection campaign by fossil fuel interest groups. One of the strategies was really to put an emphasis on individual action, the importance of eating meat, or eating less meat, I meant to say, eating less meat, flying less, the things that an individual can do to reduce their carbon footprint. Rather than systemic policy-level action and actually, the personal carbon footprint as an idea is an example of this, right?

Michael E. Mann:

Yeah.

Makena Coffman:

Can you talk a little bit about this? How do you see this tension between individual versus systemic policy action playing out in today's climate dialogue?

Michael E. Mann:

Yeah, so no, you're absolutely right. As we were talking about it before, the impacts of climate change have become clear to the person on the street. So the inactivists, the forces of inaction can no longer deny that climate change is happening. They can't credibly deny that anymore. So they've moved on to these other tactics. In many cases, these tactics are even more insidious than outright denial because they're harder to see, they're harder to ferret out. They have a veneer of credibility to them. After all, we should, of course, all do everything that we can to minimize our environmental impact on our carbon footprint. Many of the things that we do to do that make us healthier. They save us money. They make us feel better about ourselves. They set a good example for other people, and so, of course, we should do those things. But what the inactivists have done is they've used that as a wedge.

They've used that individual action as a way to get us arguing with each other about our individual carbon footprints because it plays into another tactic. It's deflection, deflecting attention away from the needed systemic solutions, policies towards individual action, but it also plays to their tactic of division. It gets us fighting with each other over whether we're vegans or not, whether we fly or not, whether we've chosen to have children or not, carbon shaming, finger pointing, a divisive behavior that divides the community. So it no longer speaks with a single commanding voice demanding action. This tactic has its roots. Decades ago, for example, in what has come to be known as the Crying Indian ad, Native American who was

featured in this ad that I remember when I was growing up, it played in the early 1970s, and it was this tearful Native American.

It turns out the actor who played the Indian wasn't even a Native American. He was an Italian American, and that was the least of the subterfuge that was behind that commercial because while it felt empowering, it was telling us that we needed to clean up the bottle and can litter that had been strewn in our countryside. It played upon the power of our Indigenous people on this idea that we were committing an offense against the Native Americans, the Indigenous people, by destroying this home, this land. It put forward this idea that we just all needed to be better stewards of the environment and pick up these bottles and cans. What we didn't realize at the time was that it was actually a PR campaign that had been secretly hatched by the beverage industry, by Coca-Cola and Anheuser-Busch. They didn't want bottle bills passing in the various states. This was a regulatory solution to put a deposit on bottles and cans so we'd return them.

They would be processed, recycled, it would solve the problem, but it would hurt their bottom line. It would hurt their profits because they would be responsible for processing those return bottles and cans. So instead, they chose to spend millions of dollars in this massive deflection campaign to convince us that we didn't need systemic solutions, we didn't need bottle bills, and it was successful. There's no national bottle bill. There are only, I think, 13 states now that have bottle bills. So they were successful in that deflection campaign. As a result, we have one of our other global environmental crises, the global plastic pollution crisis, we can thank in part to the success of industry with that deflection campaign. So they took that playbook, and they've been running with it when it comes to climate change.

As you alluded to, the very notion of a carbon footprint, an individual carbon footprint was popularized by none other than British Petroleum back in the early 2000s because British Petroleum wanted us so focused on our own individual carbon footprint that we failed to notice theirs. 100 companies, fossil fuel companies are responsible for 70% of the carbon pollution. So yes, let's do everything we can as individuals to be better stewards of our environment, but let's not let them off the hook by pretending that individual action alone is going to solve the problem, because you and I can't put a price on carbon. We can't impose subsidies on renewable energy. We can't block new fossil fuel infrastructure. These are all things that we need our politicians to do, and we need them representing us rather than being rubber stamps for polluters.

Makena Coffman:

Pushing on that a little bit, The Green New Deal is something people hear a lot about. It's a set of buzzwords, and it's spearheaded by very charismatic new leaders like Alexandria Ocasio-Cortez. I'm wondering if you can share some of your thoughts about The Green New Deal, what it actually is or might be, what do you think about it?

Michael E. Mann:

So yeah, I'm a big fan of AOC. She's done so much to popularize and raise awareness about the need to address the climate crisis. In the book, what I argue is there's some versions of The Green New Deal that in my view have become too narrow. For example, there's been a movement away from the idea of carbon pricing. I think carbon pricing is a very important tool, and we're going to need all of the tools in the toolbox if we're really going to address this problem. I don't think we can take carbon pricing, for

example, off the table, but among some progressives, there is this notion that carbon pricing would somehow hurt the poor. It would hurt frontline communities, but that's not the way it's played out in countries that have successfully implemented it like Australia until the conservative government came in and got rid of it.

It had been reducing carbon emissions, and it was actually leading to increased income for low-income, low-earning families and individuals because the revenue that was raised from this emissions trading scheme it was called, was returned preferentially to low-income earners in frontline communities. So there are ways to do carbon pricing so that it ends up being implemented in a progressive fashion. It doesn't hurt the frontline communities, the low-income earners most impacted and most vulnerable to the impacts of climate change. So it's really important that carbon pricing be done in a way that respects issues of social justice and climate justice, and it can be.

We shouldn't throw it out because some have come to believe that it's inconsistent with climate justice. If done properly, it is and it's one of the tools that we need to use. So there are some aspects of The Green New Deal that I think have too narrow a view of what instruments we need to use in addressing the climate crisis. But the other point that I made in the book was that something that appears to be associated with a very expansive social agenda is unlike ... and this was more than a year ago when I wrote the book, it was actually the August before the last presidential election when the book went to press.

At the time, it seemed likely to me that we would see a Democratic president, which came to fruition, but that we would have a closely divided Congress and not enough of a Democratic majority to pass expansive climate legislation. That's what we're seeing now, in fact, we're seeing with this Reconciliation Bill that we don't even have 50 Democrats right now to pass an expansive bill that would address a whole bunch of things including climate. So in the end, we may have to be a little bit more strategic in how we advance climate policy right now with the hope and expectation that maybe two, four, six years down the road there will be a mandate for a more expansive program. But we have to take what we can get now because there just isn't any time to lose if we're going to address the crisis.

Makena Coffman:

Can you explain for our audience what you see as the glimmers of hope on climate action within the Reconciliation Bill and the Infrastructure Bills? Now that you said you didn't know the outcome of the election when you wrote this book, now that the Biden Administration's been in for not quite a year, what do you think has been accomplished and could potentially be accomplished?

Michael E. Mann:

Yeah. So remarkably things have played out in the way that I envisioned they would where we have a president who supports aggressive action on climate. I believed that to be true of Biden. At the time. A lot of folks were skeptical, but then he came in and he really did put forward the boldest set of executive actions we've ever seen any incoming president put forward on climate, a more aggressive agenda on climate, for example, than Barack Obama. So I think he surprised a lot of the critics and the Biden Administration has also engaged the international community, which is really important. The United States by demonstrating leadership is bringing other intransigent actors to the table. China is back at the negotiating table now. We've seen bold commitments from the EU, from the UK.

So there's a lot of progress being made simply because the United States is now in a position of leadership and diplomatic engagement with other countries to bring them along as well. That's of monumental importance, but there's only so much you can do through executive action alone. If we are to make good on the commitment that the Biden Administration has made to bring our carbon emissions in the United States down by 50% within the decade, that's their commitment, and it's consistent with the action that we need to see globally to avert catastrophic warming. If they're to make good on that, they're going to need that to be backed up legislatively. We're going to need climate legislation that codifies those commitments. One thing that I do like, the bipartisan Infrastructure Bill doesn't do a whole lot on climate. Most of the real climate action is in this reconciliation package that is still in limbo right now as we seek to get some clarity from the two holdouts, the two Democratic holdouts, Manchin of West Virginia and Sinema of Arizona. But it has one of the things that's really important, and there are incentives for electric vehicles, the help us decarbonize the transportation sector, but the electricity, the power generation sector is critical. There's something known as a clean energy standard or sometimes called a clean energy portfolio standard that's in the current version of that package, which would require utilities to provide up to 80% of their energy from renewables by the end of this decade 100% by 2035. It's an alternative vehicle to carbon pricing.

It's another way of trying to incentivize the energy producers to move in the direction that we need to see them move. So it's a market mechanism, and it seems to have more support right now than some of the other market mechanisms like say, carbon pricing. As I said before, we've got to take what we can get. So I am hopeful that those climate provisions in the reconciliation package stay there because there's going to be pressure by probably by one of those red state Democrats to try to strip down some of those climate measures, particularly the clean energy standard. It needs to stay, because without that, it's very difficult to see how the United States keeps its commitment. If we don't keep our commitment, then we suddenly lose the diplomatic impact that we've had recently.

Makena Coffman:

Hawai'i actually is one among the 30 states that have a renewable portfolio standard, very similar to a clean energy standard. Ours mandates 100% of net electricity sales be from renewable energy by 2045. So it would be very interesting to see a national standard that supersedes many of the state efforts.

Michael E. Mann:

Yeah. No, and you're absolutely right. Part of why there's reason for optimism is even in the absence of national standards, we've seen a lot of leadership states like Hawai'i, the West Coast states, the New England and Mid-Atlantic states have formed this consortium, RGGI, which Pennsylvania is now part of. So roughly 30% of our country, 30% of our population is in a state that does have some sort of climate policy right now. But of course, we need 100% of the population to be in a country, the United States, that has meaningful climate policy.

Makena Coffman:

I want to loop back around to carbon pricing. So you've advocated for carbon pricing. You talk a lot about it in your book as one of the criticisms of The Green New Deal. One of my favorite points in your book, so I should say carbon pricing is a research area of mine as well, so I want to dwell on this a little bit. But

one of my favorite points you make is that they're somehow formed this rather strange, far left and far right coalition against carbon pricing, right?

Michael E. Mann:

Right.

Makena Coffman:

Motivated for different reasons, but with the same outcome, can you talk a little bit about how you think some of these motivations and potentially misconceptions formed? What are the hurdles to overcoming them if we are to use this tool in the toolbox?

Michael E. Mann:

I do talk about it in the book, I've said before that one of the ... it's borrowing from a line from one of my favorite movies, *The Usual Suspects*, "The greatest trick that the devil ever pulled was convincing environmental progressives to be against carbon pricing," because it really has been an intentional effort activists by those on the right to actually divide environmental progressives on climate action by convincing at least some subset of them that carbon pricing is not consistent with environmental justice and climate justice. There's been an intentional campaign, and I document that in the book, you can see where conservative institutions and petro states like Russia that have meddled in international politics, the Yellow Vest protest in France, there was a protest against carbon pricing, a carbon tax, was fundamentally instigated by trolls online, which appeared to be connected to Russia. Russia's done similar things in Canada and Australia.

One thing that you have to understand in terms of the global politics here is that Russia sees its greatest asset as the fossil fuels that it currently has beneath its ground and that it hopes to monetize. So under Putin, Russia has played an adversarial role trying to prevent meaningful climate action at the global scale and indeed, interfering with individual countries in their efforts to impose carbon pricing like Canada, like Australia, like the United States, and even in individual states like Washington that were considering it. So what they've done is try to convince progressives that it's inconsistent, as I said before, with social justice and climate justice, and that doesn't have to be true. Where it's been implemented, like I said before in Canada, in Australia, it's actually been implemented in a progressive way, and so that's really important. I think there's also this notion among some that carbon pricing, it's a market mechanism and it buys into neoliberal economics, it buys into market economics.

If you believe that market economics and capitalism are the villain, then carbon pricing therefore, is unacceptable because it buys into that framing. But the point I make in the book is that we can have a conversation about ultimately whether we need to move towards some other system, towards a global economy that isn't built on monetizing and extracting resources. Because there are finite resources on the planet, eventually we come into conflict with basic planetary boundaries, so we have to have that larger conversation. We probably do need to move away from an extraction, resource-driven global economy with perpetual growth, but we have to solve the climate crisis now. We've got to bring carbon emissions down by 50% within the decade. We're not going to remake the global politics within that time frame, so we need to use the tools that are available to us now, and that's my argument.

Carbon pricing is an important tool. The renewable portfolio standard is a good tool as well. Subsidies for renewable energy are good tools. These are demand side measures mostly. They're also supply side measures, like we should be blocking new fossil fuel infrastructure. No less conservative an institution than the International Energy Agency, which has by no means been enthusiastic about renewable energy, they've generally been very bullish on fossil fuel energy. But even they came out with a statement just months ago saying that if we are to hold planetary temperatures below dangerous levels, there can be no new fossil fuel extraction. So that's an important part of it as well. Global activism, as I described in the book, has played a really important role. The pipeline protests, grassroots opposition, the youth climate movement, all of these things have made a real difference. So that's all really important, but let's also recognize that we have to make use of market mechanisms at the same time.

Makena Coffman:

Thanks for that. I want to touch on something you just said in terms of this confluence between climate policy and social policy. The environmental movement has, with the rest of the country for a number of reasons, been leaning into the social justice movement beyond, I think, the environmental justice movement with which it's been deeply tied for many decades. So what are your thoughts on this, and is this the right approach on climate policy in the near long term? Then in what ways might this be beneficial, and are there any pitfalls to be mindful of?

Michael E. Mann:

Yeah, there're always pitfalls. Anytime you're dealing with politics, and when you're up against the best funded, most powerful faux in the history of civilization, which is the fossil fuel industry, there are always pitfalls because they are going to use every tool in their toolbox. As I describe every tactic that they can, division, deflection, even doom mongering as I describe in the book. If they can convince us it's too late to do anything, that potentially leads us down a path of disengagement. So we have to look out for that as well. Trolls trying to convince us that it's too late and leading some climate advocates into despair and disengagement and putting them on the sidelines when they need to be on the front lines advocating for change. So all of these tactics, all these divisive tactics, again, they're insidious and they're expertly deployed by the forces of inaction. We have to look out for them, we have to realize when they're trying to divide us. Here, we do need to be receptive to different points of view.

Protests, grassroots movements have played a really important role here as I said before. I actually think that the Biden Administration sidelining the Keystone XL pipeline and trying to prevent, of course, the conservative courts have opposed them, and that's a problem. But the Biden Administration has tried to prevent new pipeline construction on public lands. Part of that comes from the fact that there were a whole lot of environmental activists that played a really important role in the election and were part of the reason that Joe Biden became president. I think the Biden Administration recognizes that, respects the fact that there is this activism. The Green New Deal, AOC, that whole wing of the party has played a really important role here. We should respect that and embrace that. At the same time, we have to also recognize that there are places where we're going to need to meet in the middle with moderates, and carbon pricing may be one of them. There are some compromises that are likely going to have to be made in the real world if we're going to get legislation through the Congress.

So I think we have to respect the contributions of environmental progressives, and at the same time try to reach out. We're not going to win over most of the Republican Party right now because they've been

weaponized for Donald Trump and a right-wing agenda that is just fundamentally inconsistent with any progress on issues like climate. But there are moderates who actually feel alienated by what the Republican Party has become. We're going to need to bring them on board, in my view, if we're going to see meaningful climate legislation, not just this reconciliation package, but other legislation that will build on it because we will need to build on it if we're going to meet our commitments. So yeah, we have to be a big tent here. The climate movement has to be a big tent and we have to be receptive to moderates as well as progressives and find common ground and at the same time, not allow the forces of inaction to weaponize divisions within the movement and create wedges that once again, serve a divide and conquer tactic on their part to defeat climate action.

Makena Coffman:

Great. Thank you. We're getting some good questions coming in, and one of them is actually a clarifying question. This is a good one for our audience, "Can you define for our audience what we mean by carbon pricing?"

Michael E. Mann:

Yeah, so carbon pricing can actually be done in a few different ways. There is cap and trade where there's a certain number of permits for polluters. Each company, each corporation gets a certain number of permits, how much carbon they can produce. The number of permits are designed to keep carbon emissions below certain targets, and they can be bought and sold. So it's a market mechanism, and it is putting a price on carbon, but it's doing it in a particular way that is, and it's at the point of production. Whereas say carbon tax is on end use. Carbon tax, gasoline, wherever CO2 fossil fuels are burned and CO2 is produced, there's a cost that's imposed on that, and that is charged to the producer. They can try to pass along to consumers, and so it can potentially raise prices. Again, that's where we need to be sure that in the end, it doesn't end up being a net tax, that it doesn't become regressive. A pure gasoline tax could easily become a regressive tax. It could fall inordinately among the poor and the working class.

So that's how you bring the revenue in. But that revenue, for example, can be returned to taxpayers, and it can be returned to them on a progressive basis so low-income families and earners get more of that revenue. So there are different mechanisms for putting a price on carbon, but in the end, what you're trying to do is to take into account that there's damage that's done when we burn fossil fuels. We need to incorporate that damage as a price signal so that renewable energy that isn't doing that same damage at least has a level playing field. Because if there's a level playing field, if it costs no more to get your electricity from wind and solar than it does from oil and gas and coal, then I think people are going to make the right decision. They're going to choose the clean energy sources, but they shouldn't have to pay extra for that. Right now, you do, and we choose to. We pay extra. We have an energy plan that our energy comes entirely from wind generated here in the state of Pennsylvania.

We've got a plug-in hybrid, so we charge up that car on wind. So the more we electrify and the more we can electrify the transportation sector and decarbonize electricity generation, then we're decreasing our carbon emissions and the power that we use in the car that we drive. So a carbon price is a market signal. It's a way of basically putting a price on pollution that's damaging the planet and making sure that that price signal is incorporated in the cost benefit analysis that we do as consumers. Because given a level playing field, renewable energy is already out competing fossil fuel energy right now. The only reason fossil fuel energy is still in the game is because we have politicians who are providing subsidies for the

fossil fuel industry, which is exactly the opposite of what we need to do. They're putting their thumb on the wrong side of the scale. We need to get rid of those subsidies. We need then to level the playing field. Carbon pricing is one way to do that because people will make the right decision if it's put to them fairly.

Makena Coffman:

Thanks for that, Mike. I want to go back to this idea of doomism. You talk about making this big tent at the same time as you've been very critical of communicators who you think are really sending a message of alarm and doomism. Some prominent examples that I think people in our audience would be familiar with are the deep adaptation concepts or the bestselling book Uninhabitable Earth-

Michael E. Mann:

Right.

Makena Coffman:

... which focused on extreme scenarios, right?

Michael E. Mann:

Right.

Makena Coffman:

For the purposes of sounding the alarm, but you say that you think it has the opposite effect. Can you elaborate on that?

Michael E. Mann:

I think it can. So we have to walk carefully this line between urgency and urgency, as I like to say. The urgency, it is dire. We do have to act now, but the urgency, we can still act. It's not too late. Some of these narratives frankly portray an unsolvable problem. They describe climate change. Deep adaptation has as its premise runaway met the idea that there are methane feedbacks in the Arctic. Most of these doomist narratives can actually be traced back to bad science. This is why I criticize them from a scientific standpoint. Just as I criticize climate change deniers for being anti-scientific and for rejecting science in service of an agenda of climate inaction, I also take to task those who misrepresent the science in favor of an agenda of doomism, again, an agenda of inaction. The idea that it's too late to do anything.

There's one individual Guy McPherson, who has said that runaway warming has begun. We can't do anything about it. We'll all be extinct within 10 years because of runaway methane releases from the Arctic. There isn't any evidence for that. Methane is rising along with CO₂. We can actually look at where it's coming from by looking at the isotopes of carbon and the methane that's building up in the atmosphere. We know it's coming primarily from livestock and agriculture and natural gas extraction, fracking in particular, fugitive methane emissions when we drill for natural gas. So that's where it's coming from. So it's not coming from a runaway feedback that we can't stop.

The methane rise in the atmosphere is coming from fossil fuel extraction, and it's something we can do something about. What you see at the base of all of these doomist narratives is this wrongful, erroneous argument that there's evidence for runaway methane warming feedback that's unstoppable that'll lead to

runaway warming, and there's nothing we can do about it. To the extent that that misrepresentation of the science is used to portray, again, in service of a narrative of futility, and that's wrong on the science and it's unhelpful at the same time because it leads to disengagement. Now, we have to distinguish between doomism and alarm. There's reason for alarm, we should be alarmed by what we're seeing.

Makena Coffman:

Right.

Michael E. Mann:

Alarm alone isn't doomism. Doomism is it's so bad that it's really too late to do anything about it. Deep adaptation is this idea, this is one of the things that fossil fuel interests have tried to do, have tried to convince us that adaptation is the only way we can deal with climate change, because it takes the pressure off of mitigation, reducing our carbon emissions that, "Oh, we just have to adapt to these changes." It's another way of deflecting attention away from the systemic changes that need to take place. We do need to adapt to those changes that are already baked in, no question about it. But this idea that we should build future adaptation into a scenario of future warming that is preventable ends up deflecting attention from the needed action, from the needed mitigation.

Deep adaptation takes that to an extreme. It says it's too late to stop it. Basically, we should all just live off the grid, move up north, enjoy life while we still can, because there's nothing we can do to prevent a catastrophic collapse of our climate and civilization. It's just wrong on the science, and it's wrong on the messaging, and so I do call it out. At the same time, it is really important to recognize that a lot of the people that we know, friends, family members, people who've fallen for that doomism, they're victims, they're not villains, they're victims of this framing. To the extent that they've come to believe it's too late, we need to help them to understand that it isn't. We need to get them off the sidelines and back on the front lines.

Makena Coffman:

Yeah, no, that's a really important message. I recently had somebody email me about, "Why do you spend your time working on greenhouse gas mitigation? This is a total waste of time." It's a person who I usually like to listen to their emails, and it was, "Total waste of time. Spend your time doing something else." Once we went back and forth a little bit, it was clear that he had signed on to the deep adaptation readings, so very interesting-

Michael E. Mann:

It's pernicious. It really is pernicious, and I think it's done more damage to climate action than much of the outright denialism. You know why? Because the people who are targeted are the people who would otherwise be most likely to be on the front lines, but you lead them down this path of disengagement. The fossil fuel industry and the inactivists have already very successfully fuel martialed the political right for their cause. How tragic if they would also be successful in martialing at least a significant fraction of the political left for their cause as well.

Makena Coffman:

This next question coming in from the audience, you used the word front lines, and we hear that a lot, the front lines of climate change, but also very more recently, the front lines of the pandemic. Right?

Michael E. Mann:

Right.

Makena Coffman:

It's a concept we hear a lot. "Why do you choose to engage the war analogy, per se?" Is this question. I'm thinking of the war on drugs, which didn't actually turn out to be a particularly useful framing, so what makes this a war in your mind, or at least the war analogy a strong one?

Michael E. Mann:

I didn't come up with that analogy, but I've embraced it here. I try to make very clear in the book that, look, this isn't a war of our choosing. But you do have to recognize when you're in a war with bad actors who have malevolent intentions. Woe to the country or the constituency that is under attack and refuses to recognize it. So we have to recognize that there has been this bad faith effort by the fossil fuel industry and those advocating for them, and tens of billions of dollars spent in a massive disinformation campaign aimed at preventing climate action. It's what the tobacco industry did to prevent any action on tobacco. It's what we actually saw the Trump Administration try to do with the pandemic because they saw social distancing as a threat to their reelection prospects. So COVID denial became part of the ideology of Trumpism. We saw that anti-science weaponized and people died.

Hundreds of thousands of Americans, it's fair to say, unnecessarily died because of that bad faith assault on basic public health policies that would have saved those lives. So we may not like the idea of war, but it isn't a war of our choosing, but we are under assault by bad actors. We have to recognize that. The easiest way to lose a war, as I say in the book, is to refuse to recognize that you're in one in the first place. So we have to recognize that there are bad actors there, but we also have to recognize that there are positive narratives here that are really important too. We can build a better future for us, our children and grandchildren. We can create a world where there's opportunity and there are jobs and we preserve the environment at the same time. So while there are negative narratives out there that at times are important to understand, there are positive narratives there as well.

That's where, again, I try to contrast the doomism that is widespread among some with the cautious optimism that is actually justified. If you understand what the science has to say and you understand where we are in this moment right now with the youth climate movement that's reawakened global activism on this issue where we have a monumental opportunity in Glasgow just next month for the countries of the world to come together and to make the commitments that will keep warming below dangerous levels, it can be done. There are no technological obstacles here. The only obstacles are political will. So yes, again, there are negative narratives that are relevant to the bad faith assault that we have faced, but it's equally important to talk about hope and opportunity as well, positive narratives that can help guide us in the right direction.

Makena Coffman:

Thanks for that. There are so many good questions coming in. We only have-

Michael E. Mann:

I'll try to be more rapid in my responses.

Makena Coffman:

In our last 10 minutes or so.

Michael E. Mann:

Yeah.

Makena Coffman:

So a similar framing question and also arising from the youth climate movement you just mentioned, could you share some of your thoughts about the framing and the policy value of a climate emergency declaration? Is it useful? How is it useful? For context, our state legislature by resolution declared a climate emergency last session.

Michael E. Mann:

Yeah, I think a climate emergency is appropriate framing. It is an emergency. How can you have watched what played out this summer here in the United States and around the entire Northern Hemisphere this summer, or what happened down in the Southern Hemisphere when I was there on sabbatical? We are in an emergency. We're seeing damaging, dangerous, unprecedented climate change impacts now. So I do advise against crossing that line and our language from urgency, an emergency is urgency. It's the ultimate urgency. We just can't cross that line into lack of agency, doomism, despair, hopelessness, because again, urgency without agency does not provide a path forward.

Makena Coffman:

Thanks. I want to, in our last few minutes, dive into Hawai'i-specific issues and then jump up to the global and talk a little bit about COP26. So we talked about how Hawai'i has an ambitious renewal portfolio standard, and also in the pushback to the Trump Administration saying that it would pull out of the Paris Agreement, Hawai'i was among the states that joined the U.S. Climate Alliance, and had the we are still in Paris movement, which resulted in legislation in 2018 to become carbon net negative, the language as soon as practicable and no later than 2045.

Michael E. Mann:

I happen to know your junior senator, Brian Schatz, and he's just wonderful. He has been so good on this issue.

Makena Coffman:

Yes.

Michael E. Mann:

Hawai'i is well represented here.

Makena Coffman:

Definitely. He's been a very important leader on climate issues, that's great. For our audience, just because I know this idea of carbon net negative is a little wonky, what the idea is that you would annually absorb or sequester more carbon than you emit and carbon, including all greenhouse gases. So we have these ambitious targets on the books and in some ways, we have some clear roadmaps for the RPS and the electricity sector. Then there's a lot of ways where I think the roadmap isn't clear at all. Right? What advice do you have for Hawai'i states in general that really want to make good on climate action and have been waiting for federal leadership and trying to do their own thing at the same time? What do you say to us?

Michael E. Mann:

Well, yeah. Again, so your two senators, it's important to continue lobbying for federal climate action. There's no question about it. But in the meantime, until we have that, there is so much that we can do at the state level, and Hawai'i has provided a great example along with California. During some of the darker times when the Trump Administration withdrew from the Paris Accord, when we had a president who was literally a climate change denier, dismissed it as a Chinese hoax, we had politicians in California, my friend Jerry Brown and now Gavin Newsom, who took leadership positions and Hawai'i and other states that took leadership. Because of that, because of what states were doing, because of what municipalities were doing, and in fact, some of our larger companies that made real commitments to the ... we are still in Paris.

We are still in movement when the Trump Administration threatened to pull out of Paris. Because of what was happening at all of those levels, the local level, at the state level, consortia of states like the West Coast states in the New England and Mid-Atlantic states, we pretty much met our Paris obligations. So that's the good news. We met our commitments that were made by Barack Obama back during the latter part of that administration. That's the good news. The bad news is Paris doesn't get us anywhere close to what we need. The Paris commitments alone would lead us to three, four degrees Celsius warming down the road potentially, so we need much more. We need to go well beyond Paris. That's really what Glasgow is about in these commitments going into Glasgow by various countries to basically bring carbon emissions down by roughly 50%. Well, I should say there's a lot of talk about bringing carbon emissions to net zero by 2050, and as you say, negative beyond, because eventually, we actually have to bring CO2 levels back down if we're going to cool the planet.

There's reason to believe that even if we keep the planet elevated at this temperature for centuries, we may lose very large parts of the Greenland ice sheet, the West Antarctic ice sheet, enough to flood large parts of the coast of Hawai'i and other coastal locations and low-lying island nations around the world. So we may need to go net negative ultimately, but the first step is to begin bringing them down. We've got to come down this slope. We're at the peak right now, and there's some evidence that if you look at carbon emissions over the past few years and have to iron out the effects of COVID-19, there was a big dip, but then that came back. But if you stand back and look at the larger trend, we're at that peak starting to come down. The problem is, we've got to be down half the way to zero by 2030.

A lot of the commitments we're hearing right now from countries like Australia, for example, from Russia, for example, they're happy to talk about 2050 or 2060 and being carbon-neutral by then, and that's all fine. But we've got to bring carbon emissions down by 50% by 2030, and that means action now. It

means we can't kick the can down the road. Too many policymakers are trying to do that by focusing on this distant commitment and not focusing on what needs to be done for these near term reductions. There is what's known as an implementation gap, which is, for example, if you look at the United States and the UK and the EU, all have commitments to bring carbon emissions down basically by 50% within the decade, which is great, but the action on the ground doesn't support that. We're still seeing pipeline construction here in the United States. We're still seeing it in the UK.

The IEA, as we said before, even the conservative International Energy Agency has said there could be no new infrastructure, fossil fuel infrastructure if we're to keep carbon levels below those dangerous levels. So there is this implementation gap. There's a lot more work that needs to be done, and it comes back to grassroots pressure. It really does make a difference. The youth climate protests, the climate justice movement, all of these things have brought tremendous pressure to bear, which has certainly brought along the Biden Administration. But we can't let up on that pressure. We still have two intransigent Democrats who are in a position to block meaningful climate action. We have to use every means at our disposal to make it politically impossible for them to do that.

Makena Coffman:

I think that is the note we want to end on. We are at time, and that was the perfect finish. For our audience, really tune into the COP negotiations, get involved in climate activism. There are so many things that we can individually and collectively push for moving forward. I really want to thank you, Mike, for this conversation. I've enjoyed it. Thanks for being here.

Michael E. Mann:

Mahalo. It's been my pleasure.

Makena Coffman:

Mahalo. Nice. Also in closing, I just wanted to thank the Better Tomorrow Series staff, the Hawaii Book and Music Festival for putting together this event. A special thanks to Robert Perkinson and Roger Jellinek for spearheading this and to all of the audience for tuning in, much appreciated. Thanks for all of your great questions and comments coming in. Aloha.