Policy 360 Transcript - Episode 96 - Billy Pizer/Climate Change

Judith Kelley: When I was a little girl growing up in what is arguably a social democratic

country, Denmark, I remember wondering whether in the future we would have to have plastic statues of animals in our yard because we wouldn't have any wild animals anymore. So I was a child and this is what I wondered about. And then ironically later I moved to the United States where people actually do have plastic animals in their yards, usually of the deer variety, which is actually the last animal I want to see in my yard because he thinks my vegetable bed is lunch. But what we now have young people around the world really asking questions about the future, much bigger than the ones I was asking at that time. And we have the situation of what's referred to now as climate change, used to

be called global warming.

Judith Kelley: And it's really a topic that's been gathering in the news lately. So I'm here at

Policy 360, I am Judith Kelley, Dean of the Sanford School of Public Policy at Duke University. And since we have Billy Pizer here at the Sanford School who studies climate change, I thought this would be a good time to sit down and hear Billy's thoughts on these matters. So welcome to Policy 360 Billy.

Billy Pizer: Thank you. Very happy to be here.

Judith Kelley: So I want to start by, can you just help us understand what the problem actually

is? I think a lot of people understand that the planet is heating up and they understand what the consequences of that are. They also may understand that it's about gases that go into the atmosphere, but it's not obvious that people

really understand what's going on with these gasses, whether they're permanent, what happens to them, etc. Can you just explain a little bit more

about what the actual problem is?

Billy Pizer: Sure. So climate change or global warming as it used to be called, is a

phenomena that's linked to increased concentrations in the atmosphere of gases as you suggested. There are a couple of gases in the atmosphere that are responsible for keeping the earth the cozy temperature that it is, and not being a cold, desolate wasteland. And those gasses, actually the principle one is water, but it's also these gases that exist in smaller amounts like carbon dioxide and nitrous oxide and methane and things like that. And these gasses in the atmosphere for eons, since the beginning of time I guess, have been what keeps the heat after the solar radiation, after it hits the surface of the planet, from

simply bouncing back out into space.

Billy Pizer: It kind of traps it and it's like having a little blanket over the earth. The problem

is that since we've begun burning fossil fuels, like in the late 1800's, that kind of powered the industrial revolution, we've been increasing the amount of carbon dioxide in the atmosphere. Carbon dioxide, it's not really a traditional pollutant like acid rain or particulates and dust and things like that that you can see. It's a

fundamental consequence of when you burn a carbon-based fuel, you are going to get carbon dioxide.

Judith Kelley: Right.

Billy Pizer: The problem is is that this carbon dioxide, the amount that we burned has really

changed the composition of the atmosphere. We're on target to having doubled the amount of carbon dioxide in the atmosphere. Probably in the next decade or so I think is when we'll have crossed that line. And that increased amount of carbon dioxide is causing climate change, which loosely speaking is an average warming of the planet, but what it's really associated with is change in weather patterns. So more hot days, fewer cold days, which is a plus, more storms, sea level rise. There's all these different sorts of things that are going to happen. The other thing I should just add that's really important is that unlike a lot of

other pollution that when you stop polluting it goes away.

Judith Kelley: Right, I was going to ask about that.

Billy Pizer: Yeah, exactly. So carbon dioxide takes a really long time to get out of the

atmosphere. Eventually it gets absorbed by the oceans, which actually causes a separate acidification problem in the oceans. But the best science predicts that a ton of carbon dioxide admitted today is basically going to have its warming

effect within about 10 or 20 years.

Judith Kelley: Right.

Billy Pizer: And that warming effect is actually going to persist constantly probably for over

a thousand years just because of the delay in terms of getting it out of the atmosphere and the lag in terms of how the warming takes place. So the problem is is that if we decide we have a problem and we don't like it in 50 years, for the most part, we're stuck with it. There are some things we could do, which we can come back to, but there are pretty dramatic. We really have to

decide now how we're going to change behavior.

Judith Kelley: It also sounds like you're saying that there's a lag so that even if we are trying to

assess our current state, we're actually miss assessing it.

Billy Pizer: That's right. There are multiple lags built in. I mean one lag is the fact that yes,

when you admit the carbon dioxide, it takes a while for that equilibrium warming to take place. As I said, a couple of decades, probably. Another lag that's really important is that even if we decided to get rid of fossil fuels, it's not like we can suddenly replace all the energy infrastructure around the world. It would take decades to do that. So there's a lag built in how long it'll take to

change actual behavior.

Judith Kelley: Right. So people have been trying to comment this from the perspective that we

should solve this globally because these gases don't respect borders, etc. So

what's that effort look like?

Billy Pizer: Right. So you pointed to another phenomena which is kind of implicit in the

description I gave, which is that this is really a global problem. We could reduce, the United States could reduce its emissions to zero, its carbon pollution to zero

and because of the emissions in China, the problem would basically go

unchanged. So what's happened is people have recognized this and starting in the late eighties early nineties, global governments came together to try to come up with a solution. And there've been three major agreements over the

past 20 years or so.

Billy Pizer: One was the Rio Treaty or the Framework Convention in 1992. That was really

kind of setting the stage for everything else, defining it as a problem, saying we shouldn't do any harmful interference, but it didn't have any sort of specific requirements for any countries or anything like that. People realize that. And so the next agreement was in 1997 the Kyoto Protocol and this kind of went to the other extreme, it dictated very specific limits for the developed countries and if you didn't meet those limits, you were in violation of the treaty. This I think failed for a couple of reasons. One was that most countries, most key countries in the world in terms of emissions like the U.S. And China don't like international

agreements that tell them what to do.

Judith Kelley: Right.

Billy Pizer: The other big problem is that there's not really an enforcement mechanism

internationally. So when countries decide they're not going to pay attention to it, there's nothing you can really do. So that kind of fell apart. And then the third agreement, which is the one we're under right now, is the Paris Agreement, which was signed in 2015. And that agreement is based on a much simpler notion that countries simply write down what they're going to do, a pledge. They report on that pledge and then they pledge again. And there isn't really any compliance issue if you don't meet your pledge, but you are required to

submit one and you are required to report on it.

Judith Kelley: So the problem is essentially a problem of the commons. The classic Eleanor

Alstrom argument that we have this common resource and people don't have any individual incentive to take care of it. Is that the right way of thinking about

it?

Billy Pizer: I mean it's kind of, yes. That is one way to think about. I mean that is a problem

though that there's a tragedy of the commons that every country would prefer

the other countries to do more than them.

Judith Kelley: Right.

Billy Pizer: And so it's hard to get to a common appreciation, but it's much more

complicated than that. I mean the United States for example, is not even doing what would be in its own self interest to do so. It's a problem that because of its time lag and it's, sometimes I refer to as a lack of palpability, that you can't really feel it. It's just that the weather is changing, there's more hot days, stuff like that. Because of that, I think it's harder to motivate politically to take action, even domestically, forget the global commons problem. And then you have this time lag that makes it even more complicated. So I think, oh and as if you need

more problems.

Judith Kelley: I do, I welcome them.

Billy Pizer: It's not evenly distributed. Right?

Judith Kelley: Right.

Billy Pizer: I mean the countries that are going to bear the biggest costs are the poor, more

temperate, more equatorial countries, tropical countries, and the temperate countries like the United States or Russia for example, at least for small amounts

of warming, probably see some benefits.

Judith Kelley: Right. So if the situation you're describing is really true that we're not even

doing what we ought to be doing, we being the United States, if we were just looking out for our own interests. Then is it ultimately about us putting pressure on politicians and if that's the case, is it ultimately about us being more aware of the magnitude of the problem or what would you say is the most important? If Billy Pizer could pull a trigger on something, on some behavior, what would it

be?

Billy Pizer: Well, I mean you asked a couple of interrelated questions. At some level, yes,

we need to elect people into office who take the problem seriously and want to figure out a solution. So that is definitely underlying everything. I think we have to recognize that there are a lot of different interests and a lot of different views about climate change. I am pretty concerned about it. I've spent the last 25 years working on it. I think it's an important issue. There are people out there who are even more passionate and concerned about it than I am. And there are people that are less concerned. They're like, "Hey, let it get a little bit warmer."

And in a democratic political system, you have to find a compromise.

Billy Pizer: And so when you ask what's the solution, do we need to make more people

aware of it? I'm not sure that's the fastest solution or the most practical one at this point. I think most people are aware of it. They just have different ideas about what might make sense. So my view, and I'm not sure it's the right one, but my view is that the way to move forward is actually to figure out ways to bring people together, which might not be as aggressive as some people would

want, but it's a lot more than what we're doing right now.

Judith Kelley: And what do you mean by, what would that look like? Bringing people together?

Billy Pizer: Well, I mean there are a lot of different policies that we could talk about,

whether it's a carbon tax or emissions trading or traditional regulations. I mean those are all kinds of things I study. I love that stuff. I think the question is more when I talk about coming together, it probably means more about the ambition and the stringency. So going back to the Paris Agreement that we were talking about a minute ago, there are stakeholders out there and perhaps a majority of the people concerned about the problem that have a goal of limiting warming to two degrees or maybe even one and a half degrees Celsius since the beginning of industrialization. The goals and the pledges that are in the Paris Agreement are nowhere near what you would need to get to two degrees. We are not near meeting the goals in the Paris Agreement.

Judith Kelley: Right.

Billy Pizer: So I think there's a lot of space to improve our ambition even if it's not getting

us all the way to zero carbon neutrality by 2050, which was one of the goals that

came up in New York yesterday.

Judith Kelley: So I was spending a week in the mountains this summer, same time you were in

the mountains of the summer.

Billy Pizer: As was I, yes.

Judith Kelley: And it was a pretty hot week. And the owner of the house I was renting came up

for various reasons to check on the property and he made a comment about global warming and basically saying he thought people were were too hyped up about it and it wasn't really a problem and we shouldn't be spending so much money and effort thinking about it. And so I tried to make an argument that I would like your opinion on, which was that not only is it in our interest to do some of these things, I was not actually capable of making that argument on a

scientific level.

Judith Kelley: But I was making an argument that just from an environmental healthiness and

a business perspective, there are technologies that it's worth for us to invest in, to be on the cutting edge of these technologies in such a way that we are, that we're taking a business perspective where we are on the cutting edge of wind tower and alternative ways of generating energy because they are the future. Not just for purposes of decreasing the temperature, but because we want cleaner air and we want a planet that looks healthier and so investing in these technologies is just good business. Is there a good business argument to be

made or was I just off track?

Billy Pizer: Well there's kind of two related points I think in what you were saying. One is is

there's a lot of evidence that people are much more supportive of an argument

for clean energy than they are for climate change. And that clean energy resonates more as a kind of...

Judith Kelley: Because people can see dirt.

Billy Pizer: They can see dirt and the idea that you want cleaner air and everything else,

whether or not it's specifically tied to climate change, clean is better than dirty.

Judith Kelley: Right. That's exactly what I was saying.

Billy Pizer: That's exactly. But I guess I wouldn't be a good economist if I didn't suggest that

getting something like cleaner energy or cleaner air, cleaner water or less climate change is probably more expensive than the dirty alternative. You are getting something and we generally think that there's no free lunch or not that many of them or they get eaten quickly. And so to get those things will cost resources. So it's hard to strictly make a business case for all those things unless you think there is a policy coming along or other pressure coming along on

businesses other than just profits.

Judith Kelley: Right.

Billy Pizer: That's going to motivate people to invest in those technologies. And then yes, if

you think the world is going that way, getting ahead of it is certainly good for

anyone.

Judith Kelley: But we certainly want to have appliances, etc., that more efficient and that has

got to at the end of the day be cheaper if we're spending less.

Billy Pizer: Oh yeah, no, there's a, I mean, energy efficiency is always, and technological

improvement is always a good thing.

Judith Kelley: Right.

Billy Pizer: Those trends and that pressure are not going to get us very far. I mean though

they're great. I don't want to poo poo them, but I think the, we need a lot more than that. And even in that arena, we generally regulate because there are a lot of reasons why people believe that investment in energy efficiency is actually not, does not occur at the right rate. I mean, a classic example is the landlord tenant problem, that landlords are not going to invest in energy efficient appliances for their apartments because they don't think they can get the money back from the renters who won't necessarily know that they're renting an apartment with super low cost or they may not pay the energy bill. So they don't even recognize this. So those sorts of market failures lead to even an energy efficiency. There's not enough of it. You need government policies.

Judith Kelley: Right. All right, so the whole issue of the climate has become much more

contentious in the last, since you and I were born, but you won't specify exactly

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how long is, but over the last decades it's become very much more contentious and it's become politicized. Why do you think it's taken that direction?

Billy Pizer: That's a great question. I always, so I've worked in the government as you know,

for roughly four years, about half of that was under a Republican

administration, half that was under a Democratic administration. I've always found people in both parties to be concerned about the environment. I was always reminded that it was Richard Nixon who passed the Clean Air and Clean

Water Acts in the late sixties, early seventies.

Richard Nixon: Each of us all across this great land has a stake in maintaining and improving

environmental quality. Clean air and clean water. The wise use of our land. The protection of wildlife and natural beauty. Parks for all to enjoy. These are part of the birthright of every American. To guarantee that birthright, we must act and

act decisively. It is literally now or never.

Billy Pizer: And so yeah, when I think about it, there's definitely a shift and you kind of ask

yourself why. And I guess the answer to me is just the general trend towards polarization in this country. I think most people want, as you suggested, a cleaner environment, but they just don't trust the other party to do it the way that needs to be done. And that's why when we come to the language and the social movement around climate change right now, I worry that it may make the kinds of reaching across the aisles that I always think are necessary, harder to

do. I'm not sure, but it really worries me.

Judith Kelley: So let's talk a little bit about that because we've seen this movement of young

people in the last year just build momentum around the world.

Speaker 4: What do we want?

Speaker 5: Climate justice.

Speaker 4: When do we want it?

Speaker 5: Now.

Speaker 4: What do we want?

Speaker 4: Nothing else matters if we have no earth to live on.

Judith Kelley: Culminating one might even say with the speech by Greta Thunberg, just this

week before the United Nations in which she used very harsh words.

Greta Thunberg: This is all wrong. I shouldn't be up here. I should be back in school on the other

side of the ocean. Yet you all come to us young people for hope. How dare you. You have stolen my dreams and my childhood with your empty words, yet I'm

one of the lucky ones. People are suffering, people are dying. Entire ecosystems are collapsing.

Judith Kelley: And I think that her personality and the traits that come with being who she is

has made her state the facts but also do so in a very blunt manner. And young people have taken to the streets. And I wonder is it only democratic young kids who are taking to the streets or are kids in schools going, my friends are going out and my parents might be on the opposite side, but I am getting involved with this movement because I'm a kid and my friends are also going out there. And how should we think about that? Because young people don't have a voice. And to me it's heartening to see young people get so engaged to stand up for something that they have a legitimate reason to be worried about and to let

their voice be heard. And your view is different.

Billy Pizer: Yeah, I mean well...

Judith Kelley: But we all have kids, right? We all have kids.

Billy Pizer: I'm sympathetic. Right.

Judith Kelley: You've got three kids yourself.

Billy Pizer: I'm completely sympathetic. But I guess I worry about what resonates with me

and extrapolating to what resonates with a country of 350 million people. And I

know I am not typical.

Judith Kelley: Right.

Billy Pizer: I'm teaching at a policy school. It's a very privileged and I very feel very

fortunate. And people who do work on this, actually one of our own PhD students last year, Emily Petra, she had done work looking at how framing climate change around the issue of your children and that sort of discussion did change the way people behaved and made them more likely to write to their state representative or to take action in the streets or whatever. So we know that sort of stuff does motivate people. I just don't know whether that is the winning combination. I mean it works for me, it works for you, right? But are we the people that need to be moved in order to get real action? And by real action, I mean national regulatory policy that will really change the direction of

the economy.

Judith Kelley: Right. So if we compare with another issue, and I may be off base here, but if

you think about the acceptance that has increased in the United States of gay and lesbian rights over the last several decades, even president Obama has said,

well at the end of the day I changed my views on this because my kids

introduced me to other kids whose parents I met and I realized these couples are just legitimate good people that I could relate to on a human level. And kids

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have that ability to change their parents' minds. But perhaps some things. What do you think?

Billy Pizer: Yeah, I mean I agree. I guess a couple of things to note, one is that I think the

issue that you mentioned, again, it's a much more palpable thing. I mean there are people in front of you who are asking for these rights or you can see the consequences of the discrimination. I think climate change is a little bit harder to see. I do think the future I don't worry about in the sense that I'm confident that this generation is going to eventually be in a majority and probably will

change the laws that need to be changed.

Judith Kelley: Right.

Billy Pizer: But the question is how long you have to wait for that to happen or how easy it

will be for today's children to convince their parents to change their behavior. So there are differences and I also don't know if we can really wait long enough. I guess those would be my two answers. But I think you're right. I mean I think it

can happen. It's just kind of trying to project the future. It's hard.

Judith Kelley: Sure. All right, let's talk a little bit more about just local, North Carolina.

Billy Pizer: Sure.

Judith Kelley: How are we doing?

Billy Pizer: So a couple of interesting developments. I mean the, the governor has put

forward a energy plan just a few weeks ago I think, where he kind of lays out how North Carolina is going to try to meet, name at least the obligations that the United States had under the Paris Agreement. And there are a lot of things in that plan. It's a very long plan. The big ticket items in that plan require legislation or they require action by the state utility commission and even that I

think may require legislation.

Billy Pizer: Because basically to get to get businesses in North Carolina and utility North

Carolina to be able to make the decisions that would reduce the environmental footprint, particularly the carbon footprint of our electric power system, they have to be able to consider the environmental consequences. And if the law doesn't force them to or allow them to, I don't know they can just do it on their

own accord.

Billy Pizer: Another interesting development, just recently Duke Energy announced that it

wanted to be zero carbon, I think by 2050. But again, I don't know how they will justify the higher cost of making that transition if they don't have some legal basis to do that. Now they have just announced they're going to try to extend all

the nuclear power plants. We have like 11 nuclear power plants.

Judith Kelley: Right.

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Billy Pizer: I think that's a really important thing. It's very hard to imagine how you solve

climate change if at the same time you're trying to get rid of nuclear power, which is 20% of generation in the United States. So I think there's a plan, I think the governor is pretty serious about it, but I think the big pieces of it are going

to require legislation.

Judith Kelley: So as we point to with nuclear power, this whole situation is so complex. There

really is no, there really are no easy answers. And even people who are pro

environment might want to shut down nuclear power plants.

Billy Pizer: Sure.

Judith Kelley: But then that feeds into a different cycle of harm. So in your view, you've talked

about bringing people together. How do you think that gets done?

Billy Pizer: Well, you have to move towards a political environment where people want to

work together and they're not afraid to work together and they view working

together as a good thing.

Judith Kelley: Oh great, so to solve the climate crisis, all we have to do is solve our entire

political system.

Billy Pizer: Yeah. I mean I do think environment is easier in some ways than some of the

other problems that we face for exactly the reasons that you are articulating. It does give me hope that we may be able to work on something there because people do care about the environment and where they disagree is exactly how worried they are about the extreme consequences of climate change. But I think everybody agrees that more storms are bad, more droughts are bad, more wildfires are bad. Sea level is bad. I mean we have a lot of of economic interests in avoiding those things. And I think the scientific evidence is pretty clear that

climate change means more of all that stuff.

Billy Pizer: So you would think that reasonable people, even if they disagree on the exact

details, we'll be able to come together on some sort of compromise to reduce those risks. So I'm optimistic that we can do it, but we do have to have brave people who are willing to partner, I think to do it. I worry about the solution that simply requires a social movement to become dominant. But maybe that is the right, I mean I don't know. I'm willing to say I'm 50. I may be past the point of knowing exactly what will work in this society. So maybe the social movement is the right approach, but from my own experience I worry about that. And I worry that if we don't try to figure out ways to work across the aisle that we won't get

a solution as fast.

Judith Kelley: So in your view, what is the single most important thing an individual can do?

Billy Pizer: I think there are really two things that I encourage people...

Judith Kelley: No, no. One.

Billy Pizer: To do. What?

Judith Kelley: Just one.

Billy Pizer: Just one.

Judith Kelley: What is the single most important?

Billy Pizer: No. I think there have to be two.

Judith Kelley: Okay.

Billy Pizer: I think there have to be two. One is, I do think it is important to take decisions in

your own life that reduce emissions and show people it can be done. Whether it's biking to work like we do or whether it's putting solar panels on your house or insulation or making decisions about where you live so you aren't commuting as long even if you do drive. I think living a socially conscious lifestyle helps people understand the seriousness of the problem and and figure out ways they

themselves can do things and become more personally engaged.

Billy Pizer: I think the other thing is you have to figure out steps that are going to make

national policy more likely. And you have to evaluate things through that lens. So if you think the right way to move national policy is a climate strike and have Greta speaking of the UN, then you need to push for that. If you think the right way to get national action is to work across the aisle, you need to be talking with people who are different from you and don't necessarily share your views

on climate change about how you can reach a compromise.

Judith Kelley: So our colleague Steve Sexton has been doing some great work on solar panel

and energy generation in that way. And one of the things he's trying to figure out is how do we make best use of that technology? We could put it on our roofs and there's some places where that's a good idea, but some places where that might not be the best idea, but there may be other ways of getting, shall we say, sort of more bang for our buck. So how do we think about the level at

which we approach these kinds of solutions? The individual level...

Billy Pizer: Yeah, I think it's...

Judith Kelley: Versus the collective.

Billy Pizer: Yeah, it's a great question. I mean Steve's work is really, I think it's helped put a

point on the idea that if we're really serious about renewables, large scale renewables, it needs to be done at a commercial scale. It's not economical. I have solar panels on my roof, but it's not the most economical way for us to have solar panels. I do think he has also done work that shows that when one

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house gets solar panels, houses around it get solar panels. And I think what's interesting is that even if it's not the most economical way to deploy renewable energy, it may be a very good way to get people engaged on the issue.

Billy Pizer: And if the big question that we're talking about is how do we get to the point

where a majority, a much more than majority are really willing to take action and push politicians to do something affirmative, how do we get there? Part of it may be engaging people on things like solar energy and I think this could be an

important step.

Judith Kelley: So last, last question here. We've talked about the inherent problem of climate

change, which is its effect, its direct effect on the planet, but can you talk a little

bit about how it's interconnected to other issues such as immigration or... $\label{eq:connected}$

Billy Pizer: Oh yeah.

Judith Kelley: Things that...

Billy Pizer: Well, it's interesting about 10 or 15 years, I guess it was 10 years ago, there was

a, people suddenly realized that the defense experts were very concerned about climate change. There is a lot of evidence that first of all, climate change causes

more conflict. People are just hot and mad, I guess, but it also creates

displacement and refugees and migration that create conflicts and stress on the the global security system. So there's been a lot of interest in the national security world about climate change and how it could be a destabilizing force around the world. So people who are worried about security think a lot about

climate change.

Billy Pizer: I mean just imagine that all these parts of the world where you have a billion or

more people living suddenly are not inhabitable or they're less pleasant or they're not able to economically develop in the way they otherwise would. That's going to create a lot of tension and stress. Immigration as a separate policy from national security is obviously another area where you can see a

pretty direct consequence. Food...

Judith Kelley: Right.

Billy Pizer: Is another area where you worry about food security. When there are rapid

changes and people don't have time to adjust their crops. I mean ultimately I think we can find places to grow crops and we can develop resistant crop seeds that will survive in different environments. But that takes time and it takes

adaptation and we have to be ready for that.

Judith Kelley: So I said that was my last question, so I should stick to that.

Billy Pizer: You can keep going.

Judith Kelley: But I kind of want to try to end on a more optimistic note. So what's most, what

in your view is the most promising thing when you think about this situation?

Billy Pizer: I don't know if I could describe it exactly as promising. I mean, it's a real

problem. We face so many problems right now in the world.

Judith Kelley: Right.

Billy Pizer: At the same time, the history of humans has been innovation and adaptation to

changes and new circumstances and invention and things like that. So part of me is pretty optimistic that even though the world will be different, it may be unfamiliar to us and maybe we may not like it as much, but humans are very adaptive. I don't think climate change is existential in the sense of people becoming extinct. But we are going to have to figure out new ways of doing things and I'm sure we'll figure out some ways that are better that we wouldn't

have thought of.

Billy Pizer: So part of me is optimistic that we will figure out a solution to this. I mean, I am

optimistic that we'll find a solution to this, but I don't want to minimize the seriousness of the problem in suggesting that. But I do think we can find solutions and I do think we will figure out a way through this. I mentioned earlier, I alluded to earlier, the idea of geoengineering. I think it's not something I am eager to try, but I do think if we got to that point, it would be another way

that we could learn to adapt and manage the environmental problems.

Judith Kelley: Geoengineering being a technology for sucking stuff out of the?

Billy Pizer: Well, there's different ways. I mean one way is to suck CO2 out of the

atmosphere. I think the way that I think is more likely is to inject particles into the atmosphere in ways that reflect sunlight and manage the amount of solar radiation that's coming into the planet. Again, not something I recommend, but I just kind of highlight that people are innovative and they, and I think we can figure out solutions. I don't want to leave people horribly depressed about this. I think people should be motivated to take action and try to solve the problem and I think that there are a lot of things we can all do to try to solve the

problem.

Judith Kelley: But the most important thing is that we try to do it together.

Billy Pizer: I think the most important thing is that we try to do it together.

Judith Kelley: As with anything in the Sanford School.

Billy Pizer: As with anything.

Judith Kelley: And the planet. Thanks for joining me. Billy Pizer is the Senior Associate Dean in

the Sanford School of Public Policy, and also the Susan B. King professor of

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public policy at Duke University. We'll have a link to this conversation on our website policy360.org. And I hope you'll also look at the ways and means podcast that we have there. And there's an entire series on climate change. So take a look at that. Thanks for joining me. We'll be back soon with another episode of Policy 360. I'm Judith Kelley.