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WEBINAR

HOW WILL THE ELECTION IMPACT US ENGAGEMENT ON CLIMATE CHANGE?

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## P R O C E E D I N G S

MS. GROSS: Good afternoon. I'm Samantha Gross. I'm fellow and director in the Brookings Institution's Energy Security and Climate Initiative. And I'm really happy to welcome all the youth to our panel this afternoon talking about how the U.S. election will impact U.S. engagement on climate change. Right now, we're less than three weeks away from one of the most consequential elections, certainly, in my life, probably in your life too. And particularly because of the diametrically opposed views of the two candidates on climate change.

There's so much to talk about and I'm really grateful today to have a very varied and interesting panel today. The wide variety of experiences and expertise. I have two journalists, I have a young activist and then I have three of our own from here at Brookings. So, I'd like to introduce all the panelists and then I'll go straight into Q&A. I'm sure no one came on to hear me talk.

So, first we have Saad Amer, who is an activist and the founder of Plus One Vote; Lisa Friedman, she's a reporter at the New York Times; Nick Hultman, one of our Brookings people. He's a nonresident senior fellow at Brookings, an associate professor and director at the Center for Global Sustainability at the University of Maryland. Adele Morris, another my colleagues at Brookings. She's senior fellow and policy director for the Climate Energy and Economics Project; Barry Rabe, our third Brookings person. He's a nonresident senior fellow and a professor of Public Policy at the University of Michigan. And finally, we have Sammy Roth, who's a staff writer at the LA Times, who covers energy and climate issues. So, I'd like to say thanks to all of you for joining us today. I'm just thrilled at the level of experience and the kinds of points of view that we have with us.

But I want to get right into the issues because we've got a lot to talk about. So, Lisa, I'd like to start with you. President Trump came into office promising a deregulatory agenda and with great skepticism of climate change. What in your opinion, and you and colleagues at the Time have covered this extensively over the Trump Administration, what do you think are his most impactful options to fulfill those deregulatory promises and to reflect his skepticism about climate.

MS. FRIEDMAN: Thanks Samantha. And first of all, thank you so much for having

me a Brookings. It's an honor to be on the panel with everyone here. Yeah, I mean, as you laid out in your opening remarks, the two, Biden and Trump, could not be more different on this issue. And President Trump came in, as you said, very clear about his position. He called climate change a hoax. He's said other words about climate change since, but his actions -- and he has pledged to make deregulation and the development of fossil fuels a major part of his agenda. And he has delivered on it.

I was going through before this panel, a list we have of the hundred or so regulations that he has rolled back on the environment. Then you ask what's the most important, it's hard to choose. But I would say, that if there is no regulation to address climate change either mitigation, or adaptation that he has not worked to roll back. And so, the most significant ones I'd say are the clean power plan, which was President Obama's regulatory action to set national standards and reduce emissions from the power sector; vehicle emissions reductions; and, addressing leaks from the oil and gas sector, methane. Those have all been repealed and replaced, and they will be battled in the courts, but those, I think were some of the most significant climate resolutions that are now gone from the books. (audio skip).

MS. GROSS: Sammy, from your point of view out on the West Coast, how do you feel Trump's master (phonetic) actions?

MR. ROTH: Well, I think something that Lisa mentioned that's especially important in California is this issue vehicle emissions. In addition to rolling back the Federal Vehicle Efficiency Standard, the Trump Administration has tried to revoke this authority that California has had for decades now, to set its own fuel efficiency standard that are stronger than the Federal Government's and that's particularly impactful from a climate standpoint because another dozen states have sort of signed on to California standard. So, that's still working its way through the courts and I think it's really one of the big ones that's hit California.

The other thing I would mention from California and Western perspective is public land issues in particular. And the both of the America's Federally managed public lands are in the West. There's really strong bipartisan support across the Western states, not just the more liberal

ones for policies to protect public lands. And what you've seen from the Trump Administration and from the Bureau of Land Management is this really aggressive effort to sell as many oil and gas leases as possible, which is something that Joe Biden has explicitly said he would stop doing and Federal oil and gas leasing. So, I think those are two areas that have especially resonated here.

MS. GROSS: Yeah, but the vehicle efficiency standards is such an important one. That California waiver has been in place since the beginning of the Clear Air Act in the Nixon Administration. It's not a new thing.

Saad, I'd like to turn to you. You've gone from studying environmental policy to moving on found an organization that's focused on encouraging young Americans to vote. How has the Trump presidency affected Young Americans who care about climate change? Are they discouraged, emboldened, maybe a little of each?

MR. AMER: I think that young people are looking at the system as it is and we are seeing every single crack that there is and what we're told these institutions are supposed to be, right. And in many ways, I think we often try to talk about it as if these are some sort of bugs in the system. But these are features. Our system is designed to give power to certain types of people and to embolden them to continue along that certain pathway. And what that's doing for the climate crisis is really exacerbating what we're seeing across the country and really, as young people looking at this, we're kind of like, what's going on here? Are we supposed to be able to have a president who's able to lie and just tweet this information every couple of hours and throw the world into chaos? Are we supposed to be able to be thrown into a massive, massive pandemic? Are we supposed to have economic recessions every couple of years as a casual thing? That's all I've ever known in my lifetime.

And so, we're seeing these giant cracks in our system and for young people, we're looking at this and saying with this election, hey, either we're going toward giving permission to an authoritarian regime, or we're going toward a pathway that's at least something we're familiar with and can work with, can lobby for more progressive policies on a climate action and can change that dynamic. I think there's an understanding of really what is at stake in this election regarding the

future of climate policy.

MS. GROSS: Yeah, it sounds like you're describing a really galvanized year. Excellent. That's good to hear. Barry, I'd like to turn to you on some of the more technical aspects of what's going on in the Trump Administration right now. You have a new book out that I'm happy to plug a little for you, called Trump, The Administrative Presidency and Federalism in which you explore how the Trump Administration is used executive orders and regulatory changes to rollback many of the policies of the Obama Administration. How might this play out in a second Trump term? Has he deregulated all he can deregulate? What might be some actions that Trump might take if he finds himself reelected? Barry, I think you might be on mute if you're speaking.

MR. RABE: Apologies.

MS. GROSS: No worries.

MR. RABE: I think has been an ongoing challenge in policy because it's now been 30 years since the last reauthorization of the Clean Air Act; 33 years since Clean Water. We've had presidents try to maximize their impact and Donald Trump has taken that to new extremes. Clearly, in a second term though, there would be an opportunity to consolidate and finalize some of the rules and interpretations that Lisa mentioned, that are still pending, emerging in the courts. Possibly moving forward in a court system that would be much, much more receptive to some of these deregulatory steps and sort of shrinking the role. But I also think that what we've seen increasingly, especially agencies like the Environmental Protection Agency.

There's a marginalization on the technical expertise of staff. These are agencies that have a lot of expertise and historically have played a large role in rulemaking interpreting science. We know a lot of those folks have taken retirement and left. And in a second term, you could really begin to see evisceration of our ability to use and apply science in constructive ways, in climate and most areas of the environment.

MS. GROSS: That's a frightening future to think about. Nate, I want to turn to you. You have been particularly involved in the Americus pledge effort, which has come forward in as way of putting forward American action despite the fact that the Trump Administration has pulled

away from the Paris Agreement. And I'm curious to hear what could government do if Trump is reelected? Do we absolutely need a different president to make progress, or are there things that we can continue to do at the state and local level should Trump be reelected with respect to the climate?

MR. HULTMAN: Thanks Samantha and the short answer is yes, to both of those questions. We do need ultimately to have an on in strategy that includes the Executive and Legislative branches at the national level. But at the same time, progress can be made in other ways. So, let's make no mistake, as the past speakers have noted, the past four years have seen a major erosion of leadership in the national end, at the national level from the Executive, and as somebody who was involved in some of the previous domestic regulatory agenda that Barry's been writing about, and our international strategy, as part of the Obama White House, I can say the loss of these policies has been a significant setback. On the other hand, it's critically important to see the full picture of climate action across our economy and our whole Federal system. It's just one example, coal retirements actually accelerated in the past four years as the ground has been shifting rapidly owing to sub-national actions, precipitous clean energy, cost decreases, and shifting public opinion.

The coalitions and sub-national actors now represent 65 percent of the U.S. population and nearly 70 percent of U.S. GDP. If they were a country, they would constitute the world's second-largest economy. Those actors have been undertaking a wide variety of policies that drive forward emissions, reductions in their own jurisdictions and work that you've mention that I've been involved in over the past four years with the Americas Pledge Initiative and other coalitions like we are still in, U.S. Climate Alliance and others have demonstrated that surprising impact that these actors have had in delivering on the overall U.S. emissions trajectory. So, to your question, under a Trump reelection, we would likely see an acceleration of this kind of sub-national action and depending on the election outcomes across the country, particularly, the down-ballot a number of additional new leaders could be expanding on these actions as well.

Exactly, how those with manifest and their degree (audio skip) in pursuit remain

critical super interesting questions that these leaders would have to tackle immediately after the election.

MS. GROSS: Thanks so much, Nate. Adele, I'd like to follow-up with you on another really important 2016 Trump priority and that was his focus on (inaudible) Light Communities (phonetic) and I'm bringing back coal, talking about beautiful, clean coal in fact. However, that hasn't really played out as his Administration has gone on. Can you talk a little bit about the status of how coal reliant communities are doing? Was bringing back coal ever realistic and what could an Administration potentially do to help some of the people in this communities? I'd like to bring in a little bit of an environmental justice component. It's not their fault that those communities are relying on a fuel that is going out of style, let's say.

MS. MORRIS: Yeah, thanks Samantha. And just real quickly back to what Lisa was talking about on our brookings.edu website, we have a deregulation tracker. It's tracking deregulation in the Trump era and if you want to go in there and see what's been happening both in the environmental regulatory sphere, but in other regulatory areas as well. You can check that out.

Yeah, so President Trump, as a candidate in 2016, made a lot of promises to the people of coal country. He says, get ready. We're going to put you back to work. The problem was he was pointing to the challenges to coal as a result of the clean power plan that Lisa mentioned and other regulatory actions. Well, that was a fiction. We know from very careful econometric analysis on that 90 plus percent of the decline in coal production and consumption in the United States was driven by persistently low natural gas prices. And those are very close substitutes in the primary market for coal, which is the power sector. So, coal was eroding in terms of market share for the power sector for years before that. And now, in this recession, the demand for electricity has shrunk even further, and we're just -- the coal plants that still exist are not running as much and they become even less economic. So, we're seeing an acceleration of the decline in coal consumption and that's without climate policy of any kind. Maybe the long and anticipation of policy someday and that goes into your long-life capital decisions, but we're not seeing a decline in coal as a result of policy right now. Maybe to a minor degree state and local policies, but it's mostly economics. And

you can't repeal supply and demand just because you're president.

So, I think what we're looking at going forward if we do address our climate goals and impose some kind of constraint on greenhouse gas emissions, that's going to amplify the reduction of coal use in the United States very sharply, very rapidly. So, my work, there's a paper we had out last year called the Risk of Fiscal Collapse in Coal or Light Communities looks at the risk associated with relying on coal, both in the current economic conditions, but also going forward in a carbon constrained world. These communities really need to prepare for what's going to be an intense transition. And I think policymakers who are adopting climate policy can work those considerations into the legislation. Help protect the health and pension benefits of the workers. Help make sure those mines are reclaimed to a reasonable ecological standard. Make sure that folks have opportunities to retain further industries or retire early if that's not feasible.

So, I think there are a number of good policy ideas that could be folded into climate policy that would help any disproportionate burdens and people who are already suffering.

MS. GROSS: Thanks. Before I shift gears into talking about the policies of Vice President Biden, I forgot to say something at the beginning and that's for those of you in the audience if you'd like to ask a question, to put it in the queue. There's two ways you can do that. One, is you can email [events@brookings.edu](mailto:events@brookings.edu), or you can tweet to the hashtag #policy2020 and we'll get those emails agglomerated and we'll answer as many of those questions as we can.

But let's try now to talking about the policies of the potential President Biden. It's been an interesting time. Clearly, he's very -- has come from a very different place than President Trump. However, there's been some squabbling on the left about how far to go with climate around things like the Green New Deal. So, let's talk a bit about where Vice President Biden has found himself with respect to climate. And Lisa, again, I'd like to go to you because you've been involved with so much coverage here. How has Biden's climate policies evolved as he's moved from being a primary candidate to being the Democratic nominee?

MS. FRIEDMAN: Well, I'll just preface this by saying that the Biden people were on this, they would say this has not evolved at all. He's always been -- but it is clear that every other

person that you talk to who has been a champion on climate change, including others who ran on a climate platform have said that Mr. Biden has evolved. And the specific -- I'll get to some of the ways that he has -- his actual plan has gotten much bigger, a bigger price tag, much more ambitious, a much more ambitious timeline. He's planning to spend \$2 trillion over four years. He's aiming to eliminate emissions from the power sector by 2035, really big deal. Reach net zero emission before 2015, but I'm glad that Adele spoke so much about natural gas because that is really the heart of where tensions still remain on the left around President Biden and his commitment to address in climate change.

We hear very often President Trump accusing Vice President Biden of wanting to ban fracking. He's been very clear that he does not intend to ban fracking. He intends to eliminate new permits for fracking on Federal lands and waters, but that is something that progressives really do want to see and while, for many years the fight over fracking was primarily around dangerous to water quality, these days, the efforts to end fracking is explicitly tied to an effort to phase out and eventually eliminate natural gas. There is debate in this space, but a number of energy experts say, if we want to reach this goal of eliminating net zero -- of reaching net zero emissions before 2050, we can't be building new fossil-fuel development of any type. And so, we have Vice President Biden who has been using phrases that we've heard over and over during the Obama years that natural gas is an important bridge fuel. There are folks on the left to say we've passed the bridge and that is a fight that we're going to see play out if there is a Biden Administration over what role natural gas will continue to play and whether he will push to really eliminate fossil fuels, or work more on the effort to boost renewables.

MS. GROSS: And I'll just add a moderator's note, that banning fracking in the United States really would bring oil and gas production not to a complete screeching halt, but close. So, much of the growth in the production that we see happening in the U.S. today is reliant on the hydraulic fracturing technology.

Sammy, turning to you, have these changes in Biden policy, the fact that his -- they might it hasn't, but his policy has gotten more ambitious, but he also is still in line with some

(inaudible) fossil field production. Is this satisfying to West Coast voters and is it meeting the specific needs of that part of the world?

MR. ROTH: Well, I mean, a little hard for me to speak on behalf of West Coast voters. I don't know that I've seen really good polling that's specific to the California and the West on the specifics of Biden's plan. I haven't heard too much consternation about it. I think in general, like in a lot of the rest of the country, you've had the Sunrise Movement come around to Biden and I think you're seeing something similar in California. But a couple of things that stand out in his plan from a Western perspective. Lisa mentioned the really ambitious goal of the fully decarbonized electricity sector by 2035.

What's really striking about that, that's 10 years ahead of California current target, which is 2045 decarbonized electric sector and when the California legislature passed that two years ago, it was technically the second state to adopt 100 percent clean energy policy after Hawaii. They were called -- it was a really big deal and it set off this wave of states over the next year doing that and it was seen as wow 100 percent clean energy in law, that's crazy. And now, Joe Biden is saying do it 10 years sooner. So, I think that just reflects how quickly this debate in this conversation is evolving.

I think I'm natural gas, a lot of the same debates that are playing out nationally over Biden and fracking are being seen in California, but sort of in a more advanced stage. I mean, in the power sector, California has already pretty much gotten rid of coal. Natural gas is our largest electricity source now. And so, now the place that conversation is, is how quickly can we shut down these gas plants as well and replace them with something cleaner. And that's creating a lot of debate.

California had rolling blackouts two months ago. They were they were brief. It's not exactly the case that it was caused by renewal energy or climate policy, but certainly, gas plants having shut down, if there had been more gas plants online it probably would have been easier to keep the lights on then. So, that's a debate that's very real here. It's happening with gas used in buildings. There's debate over you no gas stoves and gas heating. It's become very real here, very

quickly in a way that I think is going to become even more so for the rest of the country.

MS. GROSS: And I think in all this debate over whether or not he's in line with the Green New Deal, or whether he's ambitious enough that 2035 clean electricity role, the pure ambition behind that sometimes gets lost in the discussion. I'm really glad you brought that up.

Saad, you're our representative of the younger voter here, sorry to put all that on you, but Joe Biden wasn't the first choice for many younger voters. He's 77-years old. He occasionally throws out some expressions that are -- sound pretty antiquated to the younger ear. But are young voters coming together behind Biden? Are they -- have they decided that he may not be perfect, but we don't want that to be the ending of the good? Is his (inaudible) in the turn off, or are young voters coming round?

MR. AMER: You know, Samantha, I still honestly, I still don't know what malarkey is exactly. I don't think any of us young people still understand what exactly it was the effort there. But I think that -- I was actually talking to Senator Ed Markey a few weeks ago and that was another race where we saw, age being a really big factor in how people were framing these discussions. Obviously, Senator Ed Markey was running against Congressman Joe Kennedy, who was like basically half his age. And no shade to Senator Ed Markey, but I think looking at that, it's not about the age of the candidates, it's about the age of the ideas, right. And what we've seen with Biden, is him coming forward on his opinion of a lot of these climate policies, right. And while I think a lot of younger people would like someone who is more progressive and more ambitious, I think even like the way we often frame these conversations is around price tag. Like, what is the price tag of Joe Biden's climate policy and it's \$2 trillion, right? And we saw this really play out on the debates of 10 trillion and like, a couple billion and how we're looking at that as if to say that on the other side, the price tag was zero, right. And that just simply isn't the case, right. We know the climate crisis will cost trillions and trillions of dollars. It's already costing so much money across the U.S., even I'm doing this live stream right here from my home on Long Island, Hurricane Sandy devastated this area, and we're still paying off the billions of dollars that were a result of that storm.

I lost electricity here for days a couple of weeks ago from another storm. My brother

is sending me pictures of orange skies in California and can't leave his house because he can't breathe because of the air quality. Right and so we're seeing these costs of the climate crisis mounts up, and people are still suggesting that the alternative to a \$2 trillion climate policy cause nothing.

And so, I think the way we're framing those discussions in general is wrong. And I think that Joe Biden has come forward, has agreed to spend a lot more money on this price. Has shown a willingness to be more forward in how progressive his policies are. As shown, he can negotiate with AOC, the Sunrise Movement, all these other young activists out and about are protesting. And so, I think there's a lot more faith in that and in a \$2 trillion plan, call it the Green New Deal or not. It doesn't matter. The Green New Deal is just a framework. Nobody cares what title you give it. And so, I think that it's really important that we understand the difference between what is being proposed on both of these sides because \$2 trillion and just a complete lack of understanding and silence on what any sort of policies. I'm still waiting for years later of what exactly is the plan on climate from the other side.

MS. GROSS: Your point about the cost of doing nothing definitely not being zero is extremely well-taken and I can't resist. Definitely not a bunch of malarkey. That's brilliant.

Barry, this kind of leads naturally to a question I had teed up for you. And that is, so we think about the things that president -- or, that a President Biden would want to do. And certain of them are easy. They're the kinds of things like we're join in, in Paris. He can just do that. But a lot of other actions are going to be really hard, where should he start? And the \$2 trillion plan, how does one even begin to think about implementing a \$2 trillion plan? Where do you begin?

MR. RABE: And Samantha, this is where it gets really hard. Expectations will be sky high for what a President Biden should do. Heal the nation; deal with criminal justice; turn around the economy; deal with the pandemic; protect public health, especially if the Affordable Care Act faces further challenges. And that's just the beginning. And also deal with the climate crisis. So, the pressures will be extraordinary. And then as a president, as you note, Paris, rejoining Paris is easy. Thinking about that piece is pretty straightforward, but then where do you go? And there's

no one obvious path. If one wants to revisit the executive or administrative route that is there, but there are potholes in that path that have been left by the Trump Administration. And particularly thinking about almost any administrative action that a President Biden might take would almost immediately be challenged by 20 or more Republican attorneys general. Just attorneys general, just as we've seen in the last two presidencies.

We would go into a court loaded with more than 200 new Trump appointees and possibly fundamental changes in how environmental law and administrative law cases are dealt with. So, the administrative route, in my view, is loaded with challenges. Then there's the legislative route. And I think a big question really hangs over this. However, this is designed and clearly, Biden has done something we almost never see from a successful presidential nominee. And that is to reach out to the people he just -- the candidates he just defeated and try to expand that coalition and make adjustments in his policy. But with it, as that coalition expands, how do you ultimately go into a legislative framework and get anything done, given the track record that I was talking about earlier. And we've seen Democratic presidents and Democratic congresses, first term Clinton, first term Obama, where it seemed like a slam dunk that climate or environmental legislation was going to pass, and it didn't. That path is also going to be really, really challenging regardless of what exactly goes into that policy package.

MS. GROSS: Nate, this brings me to a question that I've wanted to ask you, and that is about U.S. credibility, as we think about rejoining the Paris agreement. I fear that a lot of the folks in the international community are going to sit back and say, yeah, I've seen this movie before. We know how this ends. How does a potential Biden presidency, how does he signal that we're serious about this and how do we again, become a useful fire on the international stage? And we all understand that we can't go climate alone. It's -- we're all in this together.

MR. HULTMAN: Yeah. Great question and you're absolutely right. Just like I think Barry's comment about all the other pressing issues. This is yet another one where there's a kind of credibility gap and some new work that needs to be done. So, my view on this is that credibility is rooted in domestic action. And that means that we have to get back to what we're doing at home

and make sure that mindful of the challenges that Barry, I think, Barry eloquently laid out a deal with it. To me, that there's sort of four elements of what we need to do. It's first abroad plan that recognizes opportunities across all sectors and all gases. Making very clear that we're kind of -- we are pursuing on multiple fronts that would likely include a rapid phase down of a fossil generation, as we were talking about recently. Second, you build on the tremendous momentum from these laboratories of democracy; the States and cities and business action that we've have talked about that frankly have driven forward climate action in a lot of ways, not every single way, but again, states have some tremendous opportunities in electricity sector policy and they've used them (audio skip). And so, things that we build on create a comprehensive policy that pulls all these actors in and creates a new regulatory approach potentially as Barry said with new legislation, mindful of the challenges, but that's a sort of second dimension.

Looking beyond policies that simply focus on energy or sort of emissions particularly, but I would say not necessarily, but like the Green New Deal concept. Something that is all of an economy that includes investment in sustainable infrastructure; that includes what we talked about before which was some dimension of transitions or even just transitions answering our broader moment that we're called in at this at this time to think through.

And then, finally then reinvigorating, or if I should say in parallel, it's not a sequence, right. This is all in parallel. As we're doing that, we also invigorate our international leadership. We are -- we have been, and we can continue to be, a leader in terms of bilateral engagements with a lot of other key countries, as well as an international leader in the space. We all know that that's been a role. The U.S. has really taken on very vigorously. For the most part for the last 70 plus years, with some occasional hiatus. And we can recapture that and try to think through what we can do to support higher global ambition. And in my view that those things are fundamentally linked without doing any of the kind of groundwork that that sort of is involved in building a domestic plan. International credibility will be low. And so, we really do have to focus on linking them together.

MS. GROSS: Thanks so much. Adele, I want to turn to you, and this is actually came back into something that Saad said. And that is the idea that the cost of doing nothing is not

zero. And you've done some significant work with financial regulators and with central banks assessing climate risk and how climate risks could play out in the financial system. Could you tell us a little bit about that work and that sort of under-appreciated area of climate risk?

MS. MORRIS: Yeah. Thanks. Thanks for asking. So, there's been a dialog internationally amongst central banks about -- and other financial market regulators about what their role in the climate challenge should be. And the U.S. so far really kind of has only tippy toed into that a little bit. But the Commodity Futures Trading Commission and I -- this is a shout-out to, in particular, Commissioner Rostin Behnam commissioned a subcommittee of its Market Risk Advisory Committee to focus on climate related market risks. And I was privileged to be part of that team, and we prepared a report that was recently released. It's on the CFTC website.

And it really describes what it is that central banks other financial market regulators ought to be doing to do their part in the climate challenge. Now, to start with, this is not a substitute for action by Congress to reduce greenhouse gas emissions and to undertake other measures to ameliorate the damages of chromatic disruption. That is first and foremost, I think, the job of Congress and the Executive Branch. So, we're here we're talking about the independent agencies. But the first recommendation of our group was just to put a price on carbon and take action, such that market forces shift the economy, shift investment, shift logical development in a way that reduces emissions cost-effectively.

So, that's the number one recommendation to the Congress and the Executive Branch. The rest of the recommendations focused on these other institutions. And they do have special powers. And the first is to really recognize that there are profound risks associated with both the damages from a disruptive climate, from the litigation against companies who have been exposed themselves through various actions in not mitigating emissions or misleading investors. We don't know where our tort system's going to go with that, but I think these litigation wrists are non-trivial. And then the risks, as I alluded to earlier, of the transition to a low carbon future. And so, high emitting companies, high emitting industries, those that rely on those industries in their supply chain are all going to be exposed potentially to some very serious shifts in the demand for their

products and goods and services.

And so, so those companies need to be preparing now. The question is, what does this mean for the financial sector and banks and investment companies, and so on? Like, what should they be doing? And I think this is where we really get into this question of trying to anticipate and prepare and mitigate systemic risks. Risks, not just to one institution, but to the banking sector as a whole, perhaps in a particular region. Like, let me just give you one example to just elucidate. These fires in California have burned four million acres, more than that, actually this year. This more than doubles the previous record of burned acreage in the state of California. And so, what is happening? People are losing homes, but the banks are saying, and insurers are saying, well, we don't want to invest in these fire prone areas. This is getting worse every year. Why don't I get or want to write a mortgage on a home in these areas, or a commercial property? Why am I going to want to sell insurance to folks in these very risky areas? And okay, well, if you can't get a mortgage, then nobody can buy your house. And that's going to have profound effects on property values. And then all the banks that hold the debt associated with those properties are going to then see a retreat and in the capital on their balance sheets.

And so maybe California will step in and insure these people, or make sure that there's some way that they can get mortgages. But this is really a very extended chain of impacts through the economy, through the financial sector. And that's just one example of one climatic damage. Like, we've got toxic algae in Florida and decimating the tourism industry there on top of all the pandemic outcomes. We've got chemical fires in Louisiana because of the Hurricane Laura dumping chlorine gas on nearby neighborhoods. Like you name it, there's dozens of these really kind of alarming outcomes that we're already experiencing and are likely to get more of overtime. And believe me, they do have profound financial market implications.

MS. GROSS: Again, I'm going to say this again. The cost of doing nothing is not zero. So, many questions coming out of that answer. Thanks to Adele. I think I might start by going to Sammy, just with a real specific question, are we starting to see some of those financial impacts with respect to real estate and insurance? Is that starting to play out in California yet?

MR. ROTH: Yeah, I think it definitely is. I haven't written about this personally, but we've done coverage at the LA Times, but yes, there are communities in the wild land, urban interface as it's referred to in parts of Northern California and parts of the Sierra, and north of the Bay area as well, where insurers are saying, yeah, we don't want to insure people in these communities anymore. And, in fact, the California Insurance Commissioner has stepped in with this sort of temporary stop telling insurers they can't pull out of these communities, at least temporarily, but his power to do that is not unlimited. They're going to have to work out some other solution. It's a real serious problem.

MS. GROSS: Thanks. I think I might also follow up on the carbon pricing question that Adele brought up. I know that's Adele's bread and butter, and it may bring you back on that in a minute, but I think I might go with Barry in then Nate to talk a little bit about we've seen policies on the Democratic side, move a little bit away from carbon pricing. Perhaps with the idea that it's not quite fast enough to get to where we need to go. And I'd like to hear your opinions on that, and also your opinions on the potential for a carbon pricing policy to foment a little bit more by partisanship around this issue. Market-based approaches are typically more popular on the Republican side. So, let's start with Barry and then go to Nate about the potential for carbon pricing in the next Administration. And could it be bipartisan?

MR. RABE: Sure. Thanks, Samantha. So, two pieces here, one of which you raised is the idea that this would be an all made by Democrats piece of legislation, or do you try to reach across the aisle and build that proverbial larger coalition that Joe Biden has certainly been focused on in many respects over the course of his very long career.

There's also this big question. Do you really try to establish the United States as a global leader on climate change, but take the carbon price entirely out when that's been a lynchpin of so much thinking and so many other systems around the world? Would you really try to put together an omnibus bill? There's one other piece here that I think also is important to begin to think about it.

And it goes back to my point earlier about constitutionality. And here I'm a mindful

that we are going to have to be thinking about any bill, could it pass constitutional muster?

Remember we're 10 years into the Affordable Care Act here. And the only reason that bill survived is that Chief Justice Roberts found taxation and spending powers in the provision of that bill protecting it.

Governments can tax; governments can spend; courts really don't go there. When we get into the design of lots of regulatory standards and provisions and other things, even if they come through statute, unless they are very clearly and cleanly defined and within constitutional boundaries, your point about the acceleration aspects of this, whereas, a carbon price in theory could be implemented pretty quickly, especially if it's a tax, many regulatory provisions could take a good many years and are likely to face much more of a challenge. So, there's a mixture of considerations to weigh and think, but you're quite right. The carbon price sort of never disappears from our conversation. And yet it does appear increasingly on the Democratic side to have been marginalized or at least pushed over to the corner for now.

And then with it, one last point we're seeing in so many places where a carbon price is being developed around the world, not just to create that price for markets, but to think of transitional funding for all the kinds of linked and connected sorts of purposes, much as we see in the Northeastern States that run the regional greenhouse gas initiative. If we are going to have a spending centric strategy, trillions of dollars a year without a dedicated source, what is the political will to sustain that unless it's in some way linked to a carbon price? And I think that's an even harder question to begin to answer.

MS. GROSS: Nate on to you.

MR. HULTMAN: Yeah. So, I know Adele is going to have some thoughts about this, I suspect. So, let me see if I could step carefully here. So, I think Barry, you laid it out really well in terms of sort of some of the considerations. I would say, look I'm not going to speak for anybody or any candidate here. But I think there is widespread agreement across the community that a carbon price is a very efficient and, in that sense,, helpful way to deliver an all of economy U.S. climate policy, but it's theoretical and it's very hard to sometimes align all the actors to get it

done. So, I think again, we have broad agreement on the way that it works, broad agreement that it would be a good policy. The question is not only is there a carbon price, but what is the price? Is it high enough? Because honestly you have to talk about both of those things. And there's a lot of people that love a carbon price at \$10 a ton, and it's not going to do the trick. You have to have a carbon price that's significant and rising if you want to do it right. And if you want to get to the goals that we've sort of set for ourselves in the global sort of scientifically informed conversation.

So, ultimately, those are critical questions. And we also know, again, I'm mindful of all of Barry's very important admonitions here about like how complicated and difficult it can be to do it piecemeal. But we also know that some of those piecemeal approaches can be effective, right. We have tested them energy efficiency standards; we have state policies on portfolio standards; we have technology deployment policies; we have production and investment tax credits. I know that economically speaking, they're not perfect, but they do the trick. And so, the question is how do you cobble together a set of policies that is doable in the near term, recognizing the challenges that Barry raised? Like, I'm not trying to say this is going to be easy, but then also delivers the goods in terms of the quantity of reductions that we know we need to do. And so, ultimately, I think that if the -- look, I think that there's great openness. If the Republicans want to actually create some ideas around this, go for it, let's hear it. And we'll see what happens, right, but right now, there hasn't been much coming in any official capacity from the Republican side. So, I think there's -- let's hear the bipartisan comments from the full spectrum and then we can maybe put some of those in the hopper and see what comes out.

MS. GROSS: Adele, I can't let a conversation on carbon pricing end without bringing you back in. Do you have any closing comments on the topic you want to bring to us?

MS. MORRIS: Yeah, sure. Look, I understand that the progressive left is a little queasy about pricing carbon in part because they don't necessarily trust the environmental outcomes of relying on market forces and the profit motive and all of that. But I would say, look, you're not going to get where you want to go with spending alone, right. Because maybe you're spending 2 trillion in Federal dollars, but what about the many other trillions of dollars spent in the

private economy? How are those being allocated? And don't you want to allocate those in a way that really encourages the substitution away from more emitting activities that seems like it should be a no brainer. Like, why would you not embrace those incentives along with your other policies?

And I would just say that I do think, okay, it's great to have an emissions target, whether it's for the power sector or the economy, but by itself, that's not a policy. How are you going to get there? What are the exact mechanisms? And I think carbon pricing in a carbon tax in particular have been held to a different standard because it's specific and we have legislation and we can analyze it, right. But what's your other policy and you put that on the table and we analyze it and you understand the distributional outcomes; the effect on jobs; the effect on the macro economy; on trade, whatever it is people are worried about, then you're talking, okay, now, we've got two specific things that we're really comparing with each other.

And then I think it's the playing field that looks very different at that point. So, I'm not opposed to ambitious targets, but if you don't say how you're going to meet them, you haven't even really begun to articulate your solution to the challenge in my view.

MS. GROSS: Yeah, that's such a good point. I heard during the Democratic Primary Debates, various targets put out there and it's like, "Oh, Candidate X has a stronger policy to Candidate Y. And it's like, it's all vaporware until you have policy behind it.

But Saad, I want to turn to you for a minute on all this because we've gotten a little wonky in a good way that's necessary. But I want to hear a little from you about how do we bridge this gap with voters and with young people about, okay, we have all these goals and we need to meet them in order to have a planet that we'd all like to live on. But on the other hand, they're hard. How do we bridge this gap between these incredible expectations that voters are going to have should Biden get elected and the actual reality of legislation? How do we keep that group involved, engaged, positive, and helping to move the ball forward?

MR. AMER: Yeah, I actually don't think that it's hard is the truth. We have every bit of technological feasibility to accomplish most of these reductions and carbon emissions, right. And I think what we see is a lot of these really ambitious plans coming out there in the United States

across all those Democratic platforms and even globally in different countries. But what we consistently are missing is what Adele was just getting at, is what's specific about this that you're actually going to do and implement, right. Carbon pricing, carbon tax, it's specific. It's something that you're actually going to do. But when we have the IPCC coming out where I'm actually an expert reviewer saying, we essentially need to reduce our emissions in half by 2030, that's a seven and a half percent reduction every single year. And so, I think if we want people to continue to engage in this, and if we want our candidates to actually do something, what we're looking for them is, okay, so in that first year, how are you going to reach that seven and a half percent reduction?

It's not by continuing to do -- to continue fracking. It's not by drilling the Arctic. And if you're going to do that, you're already locking in more carbon emissions. So, what specifically are you actually going to do to reduce those emissions? And I think young people across the board are looking at this and just wondering like, "Dude, like, what are we doing? Can we handle four more years of this?" And the reality is we can't because that's seven and a half percent number will go to 10, 12 just increase that percentage. That's just becomes technologically infeasible. We can't actually move our systems that quickly from what we've seen. And so, unless we start taking dramatic action, we're going to continue to see these environmental crises loom over us. And I'm just dumbfounded by how we're not seeing any sort of real policy proposals coming out of what specifically, we're going to do the first hundred days to specifically address climate. What we're going to do across those 10 years.

Like, it's nice to have a target for 2035 or 2050 or whatever, but what specifically are you going to do? And then looking at the other side, what I don't like about the framing of these conversations is because there is a 2035 number, there's that actual real point you can criticize, but there's nothing on the other side. So, they just avoid that criticism in this conversation entirely. And we have to be clear that there is no climate policy on from Donald Trump.

There is nothing we have seen literally nothing. And so, we can't continue to just give a pass and lack that criticism and then go on in, and in, and in on Biden when he has come much more progressive as we've already said, but there is really nothing on the other side. And I

think that when we're looking at that, it's becoming more and more clear and even looking at that last debate, very clear the difference between Joe and Donald in their climate policies.

MS. GROSS: Yeah, no, I would even argue that the Trump Administration has climate policy. It's just backwards.

MR. AMER: True.

MS. GROSS: But let's turn -- I really can't have this discussion without talking about the A number one issue of the day, apart from the election. And that's the coronavirus. We have seen this global pandemic bring disruption throughout society globally. It has been a long time since we've had any single issue that has brought the world this kind of disruption. However, when this all got started, I got a lot of questions from reporters of being like, is this a positive energy demand has gone down the skies are bluer. Is this a good thing? And I've consistently made the argument that killing the economy is not the way to deal with climate change, but green stimulus really could be a way of both helping to solve the climate problem, creating jobs. But the question is, is there any appetite for this? And Lisa, I think we'll come back to you. We haven't heard from you in a bit. I would love to hear your thoughts about, is there any appetite for this under either Administration, frankly, it hasn't gotten a ton of attention from the Trump Administration. It's gotten some nonspecific attention from the Biden Administration. What are we seeing in terms of appetite for trying to make the most of this horrible crisis?

MS. FRIEDMAN: I say that from our reporting, this question that you're asking ties directly into the question of how would a Biden climate plan get done? We talked about how under the Obama administration, some might quibble with my history here, but right, first, they had to deal with the recovery. And I know there was a big chunk of renewable energy money in the recovery package. But first they dealt with the recovery, then they dealt with healthcare. By the time they got around climate change, the political will to get climate over the finish line for multiple interweaving, complex reasons that we won't get into here wasn't there. And so, one thing as I've talked to folks in the Biden camp and surrogates is sort of a lessons learned about 2009, 2010. And you're coming into, if there is a Biden administration, what would be coming into a different, but similar economic

moment of incredible economic need. And I think what we're seeing is the difference in the thinking in the Biden camp is that you're not siloing out climate change into a different policy but weaving it into economic relief from COVID and an infrastructure package.

The question of what appetite there will be for that. I think that goes back perhaps to Barry's delineation of -- I think we have a real choose your own adventure scenario depending on what the makeup of the Senate is. If you have a Democratic Senate, there is more likelihood that Republicans there will be Republicans who will come along, I think on an infrastructure or a stimulus package that includes some of the money that Mr. Biden has been talking about for clean energy.

If there's not, then you are left doing things really administratively, and you're really constrained at that point. The top -- the 2035 target eliminating emissions from the power sector by 2035, the how of how that gets done by most accounts is a clean energy standard. Can Congress pass that? I think that's the big question. I don't have a good answer, but I think if there is a Democratic Senate, there is a greater likelihood. I've heard a lot of conservatives who are in the climate space, talk about bipartisan moves that they have seen that make them encouraged that there will be support. On the other hand, that support is probably contingent upon a clean energy standard that includes space for nuclear or CCS for gas, which are things that would be very -- would be cause of concern on the left. So, in that scenario is a Biden Administration led by a president who, as Barry said, has been working across these coalitions and can bring them together. That's going to be the question. Would the Senate have to go for nuclear options, like budget reconciliation is a whole is a whole other ball of wax, but I, might have lost thread of your original questions. I'm very sorry, but there's just --

MS. GROSS: There's just so many interesting things to talk about. I want to follow up on that and I think to go Nate, and then Barry, this time trying to keep it all fair. I'm looking for potential points of bipartisanship and perhaps COVID can bring some you're (inaudible), Lisa mentioned the clean energy standard. Are there places where we could get things done by using technologies like carbon capture and storage that still allow the use of fossil fuels? Could we use some COVID relief funds in order to sweeten things up a little and focus this as economic growth

and job creation? Are there ways where we could find some coalitions that we might not be seeing yet in order to get things done? So, Nate, let's start with you. Do you have any creative thoughts there?

MR. HULTMAN: Yeah, I'm not sure how creative, but basically, I think there are two ways to think about this. There was two ways that I think about it. One is the broad kind of all of economy thinking that Samantha, you had sort of laid out because I do think within a stimulus concept, the idea that we are really faced with, right, or the challenge that we are really faced with right now, is that we have four linked crises. We have a climate crisis, we have a COVID crisis. We have an economic crisis and we have a racial justice and equity crisis, right. Those are four things that are linked together. They're not all the same things. You don't solve all of them in the same way for all four, but they also share some elements.

And I think that there are ways to think about how a kind of jobs economy, clean energy growth and an infrastructure investment strategy, which we know we need to do anyway. In a lot of cases first, for our infrastructure could be something that does attract attention from not only a kind of spectrum across sort of political lines, like sort of bipartisan, but also a spectrum of different kinds of levels of government and different kinds of organizations and different sectors that could see themselves being part of that kind of an overall effort, right.

So, there's that kind of thinking, which I think can be constructive and it can provide a locus for different kinds of actors to actually see some benefit from engaging. And then the other dimension is actually sort of splitting it out and starting like, what are the kind of more, kind of narrowly focused topical areas where you could imagine getting together a smaller coalition of actors that would agree that this would be a good thing. So, like tax credits for HVAC installers, right. HSC disposal, consumer energy efficiency initiatives, right. I've got this list here, workforce training. Here's a good one. Thinking about methane leak reduction, right. So, if gas companies, right, can sort of get on board with that. And that that's something that many states have gotten on board with.

So, there's like specific things that in and of themselves aren't big enough, like a giant stimulus, but could be part of a stimulus if you package them all together to create these kinds

of areas where there's enough coalition support that you could imagine building a broader consensus for doing something bigger. So, I think that's kind of how I would look at it, but I'm not -- I suspect, as you said, Samantha, what are the creative approaches? I suspect there's a lot more creativity that can be brought to bear from people like Saad in this kind of a conversation.

MS. GROSS: Yeah. That's a whole lot of silver buckshot, but on the other hand, that's what we need, right. I think we've all established there's no silver bullet. Barry, do you want to come in?

MR. RABE: Sure. More buckshot. I want to pick up on the strand of Nate's comment and one word that he used for the first time this word came up, methane. We spent a little time talking in policy circles about methane, even though it's responsible for about one quarter of the estimated warming that is already occurred. It is routinely referred to as the low hanging fruit, whether we're talking about oil and gas sector, landfill, agriculture, livestock, and there are any number of ways to think about constructive strategies. In many cases involving short-term bursts of spending that could pay large dividends. I thought it very instructive that at least in a few states like, North Dakota, they began to use some of their recovery funding for dealing with orphan well issues.

When you talk about that issue or dealing with coal bed methane questions, you're potentially pumping lots of money into red states. And as much as they don't like a regulatory focus, red states are happy to take Federal money, especially if it might be employing oil, gas, and coal workers. I think this also fits into some of the work that Adele has been doing on just transition. How we even think about it and pay it and deal with those transitions. I do think one other thing that's really different about this period than anything that I have seen before is the absolute terror in states that are dependent on the oil and gas sector. Well beyond coal, that this could be the last period. This could be the last set of opportunities to begin to transition.

And I think some overtures to those states, particularly with the money to do kind of win-win cleanup programs are particularly quite significant. Similarly, when we begin to talk about ranching practices and it often strikes me when I visit states like Oklahoma, or North Dakota, you will see cattle alongside wind turbines alongside pump jacks.

Those are big, big targets within red states. And at least a couple of those as I see, not the wind turbines, but the oil and gas areas and the livestock produce lots and lots of methane and some real opportunities for gains and advances. In fact, I think Nate, the only thing I would say that I would disagree with that this is an area where I think many states have been very, very slow to act.

One, they haven't had money and they have not wanted to take on protected interests in either the ag or oil and gas sector. I think this is ready-made. And really when we look at the other non-carbon greenhouse gas assimilate to HFCs, this is a transition that is ready to be made. A number of states are beginning to think about this. There are enormous opportunities for how we deal with refrigeration and the like, and obviously that's an executive action that the Obama Administration attempted through the Clean Air Act. It was reversed in lower court, a decision written by then Judge Cavanagh, but it's ready-made for a funding and new approach through statute. So, I think the non-carbon greenhouse gases are tailor made for this.

MS. GROSS: Yeah. I'll jump in with a little plug for that. I completely agree with you Barry. And part of that is when we -- clearly, we need to tackle the carbon challenge, but because it's so central to every part of the modern economy, it's the most difficult part. And in order to get the seven and a half percent increases that Saad has reminded us that we need to get in, the IPCC has told us that we need to get, we have to pick the low hanging fruit while we continue to work on the CO2 and nothing emissions. Even a lot of the large oil and gas companies are actually behind greater regulation and methane emissions because they understand they have a public face; they need to be somewhat responsible and they don't want to be the public face of increasing emissions of this very potent greenhouse gas. And so, it's just that the methane is so, so important.

I'm curious, we're getting towards the end of our time, but I kind of like to go back to a really brief discussion of subnational action. I want to kind of end on a positive note and I feel like that the states have really been laboratories of innovation. And so, there's a couple of you who are in good positions to talk about this and talk about things that might continue to matter what happens in the election. So, I think I might start with Sammy and then come to Nate who I know who's been

really involved in the subnational work. Sammy, you're based in California and they have really just led the nation in their push to reduce greenhouse gas emissions. And they're a very large economy on the world stage. Are Californians on board? Do Californians feel like the policies in place are doable, obtainable, and not going to harm California's economic growth? How are Californians very ambitious policies playing out politically there? And is there anything we can take from that as we think about national policy?

MR. ROTH: Yeah. I think one of the things that California has shown is that as you have policies that succeed and do the things that they're intended to do without creating the economic devastation that was once predicted people really do get on board. The big example in California, we've been talking about clean energy standards. California first came out close to 20 years ago and said, we're going to do 33 percent renewables by a certain year. And then they said, we're going to do 50 percent by a certain year. And now, they're saying we're going to do 100 percent zero carbon by 2045. But the reality is California's grid and I think the number for last year was already something like 60, I think 63 percent of the electric generation was carbon free already when you do solar, wind, nuclear, hydro and pretty much everyone's on board with that policy at this point.

Not everyone. You hear some concerns about it, but you look at the legislature, even among the Republicans, there's no serious debate about whether or not we should be pursuing that policy anymore. It's all about, what are the impacts? How do you mitigate them? How do you keep costs down? There was a Republican leader of the assembly in California several years ago, named Chad Mayes who recently left the Republican Party and became an independent. And I heard him talking at a hearing this week and he said, "Look, when I first came into the legislature, I don't know that I would have said that I believe in climate change. And now, I think it's ridiculous to talk about belief in climate change when we see so clearly that it's happening. And when we have these policies that are working to address it.

I think when you get past things that are already done and are working, you still have these difficult debates to get through. The announcement by Governor Newsome a couple of

weeks ago that he wants to set this goal of no more sales of gasoline powered vehicles in California starting 2035. That was met with a lot of concern and frustration from some parts of the state, but it also -- it hasn't been done yet. I would certainly think based on the experience with other policies that five, seven years from now if we do start to see a really big uptick in EV sales and people embracing this as the auto companies roll out these models that probably won't seem nearly so controversial 10 years from now as it does now. So, I think California does show that that you can build support for this stuff, but it just -- it takes a little time and you've got to show that it works first.

MS. GROSS: Nate, do you want to follow up on -- California's been in this position for a long time. It could kind of goes back to the Clean Air Act waivers that they've had. They've always been a leader on environmental policy, but are states willing and able to follow? Do states have the political gumption to be able to go some of these ways? And what can they do on their own?

MR. HULTMAN: Well, I think -- so, I think the answer is just unequivocally yes on both of those. This -- I think Sammy kind of made a great point on this, which is that yes, we all know California's often out ahead, right. And so, there's often a, a kind of tendency to be like, okay, well, that's California, that's different. Tell me about the rest of the country, right. And I think that's a fair question, but I think that the evidence is that sort of strategy is actually then playing out, right. So, if we -- I'm going to tie back both to Sammy's and Barry's excellent comment from a few minutes ago.

So, on electricity, right. So, in fact, it was, as Sammy mentioned Hawaii, it was the first a hundred percent clean electricity, but shortly followed by California. Now, 13 States, Puerto Rico, and 165 cities have a hundred percent clean electricity commitments. One third of Americans now live in a jurisdiction that will be powered by 100 percent clean electricity under those current commitments, right. So, it's not -- it starts with sort of the leaders, but then others, as Sammy correctly said, often the kind of once that sort of door is opened and now, we are in a world, I think Adele kind of touched on this earlier, that the market for energy is that the cost -- Samantha you know this too, like the costs for different energy technologies have shifted so radically in the last

seven years where the renewables, gas in and of itself is an issue I'm going to leave off to the side for the moment, but the renewables costs have dropped precipitously. And that creates all these other options for states to look to do that.

So, we've seen this kind of expansion that's also happened in across a lot of other kinds of areas that states have some control of. EVs, for example, now there's 12 States that have committed to putting 3.3 -- this is my statistic from my -- our reports, 3.3 million light duty vehicles on roads by 2024. I suspect that number by the way, will go up. Public bus fleets, one-third of us public transit fleets have committed to electrifying buses, right.

So, again, this is something in the city jurisdiction zone. It's not a hundred percent, this ties back to Barry's points. It's not quite there yet from this sort of subnational, but the options are there. And Barry's point about the non-CO2s, the methane, a good point for multi-party collaboration (audio skip) is and sort of aberration on the methane stuff.

There's now, seven states and 27 gas companies that agreed to methane gas leak reduction. And that's just sort of the tip of the iceberg with respect to that thing stuff. And that as Barry mentioned, and then HFCs, the refrigerants, 16 States have passed regulations or legislations that would phase on HFCs. Again, not a hundred -- we're not there yet, but it's laying, it's kind of what we're seeing is this kind of expansion of activity from the leaders to now, the kind of middle tier joining in with this. And the question is over the next say, five years with a combination of additional state and city action. And possibly as we talked about at the top of the hour, additional Federal re-engagement from a potentially Congress and Executive branch, depending on how the elections play out that might actually be able to kind of add in those pieces that Barry was kind of noting we're missing.

MS. GROSS: Great. Thanks so much for that. That somewhat optimistic wrap for us. I just want to add a few words here at the end. Something that we've heard today and something that I heard some of the candidates as -- in the run up to the election talk about is, we're realizing now that climate is an issue for everybody. It's not an issue of saving the earth for our grandchildren who might choose to live on the coast. This is about all of us now. We're all seeing

impacts and some of our speakers today have talked about those impacts. And so, it's really helpful. It's a shame that we've reached this point where we're all actually feeling the impacts of climate change, but we do need to understand that this isn't (inaudible). It's about the future, but it's also about all of us right now. And so, I'll just conclude with a plug to get out there and vote.

I probably don't have to convince people who are tuned into this seminar to go out and vote, but go vote, make your voice heard. Make sure the people you know get out there and vote. That's the best way that ordinary folks have to make their views known. So, I'm going to wrap on that civic duty note.

I want to say a huge thank you to all of our panelists who got an incredible amount of information out in a short amount of time. And I want to thank all of you for tuning into this webinar. And I hope you'll join us at future Brookings events and maybe someday at Brookings in the future when we get to do that again. Thanks everybody.

MS. FRIEDMAN: Thanks everybody. It was really nice seeing you.

MR. HULTMAN: Yeah, good to see you, Adele.

MS. FRIEDMAN: Yeah, likewise, Nate. I miss our life in person.

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