

ROUNDTABLE

JOE ALDY, VICKI ARROYO, ALEX LASKEY, MANIK ROY, & LEXI SHULTZ

MODERATED BY
BRYAN WALSH

AMERICA 2021

What Next on Climate?

The effort to address climate change stumbled with the failure to pass cap-and-trade. What should happen now? Five experts discuss the future of U.S. climate and energy policy.

After November 2008, progressives believed that America was, at last, serious about tackling climate change and our dependence on foreign oil. But the years since have been discouraging. Cap-and-trade, the idea that progressives had coalesced around, collapsed. Worse, polling has shown that Americans have become increasingly skeptical about the very idea of climate change. As we head toward another presidential election year, prospects for a breakthrough on climate and energy policy seem remote.

In the wake of these disappointments, what should progressives do next? For this edition of “America 2021,” our roundtable series, we ask: Where will America be in ten years on the climate and energy front? What new problems will we be facing—and what old ones will still be plaguing us? And what policies and ideas do we need to enact in the intervening years to ensure that we’re in a much better place in 2021 than we are in 2011?

For this discussion, we brought together five distinguished experts: Joe Aldy, Vicki Arroyo, Alex Laskey, Manik Roy, and Lexi Shultz. Bryan Walsh, energy and

environment reporter for *Time* magazine, moderated their discussion. Editors Michael Tomasky and Elbert Ventura also participated.

BRYAN WALSH: It's 2021. You're in the Oval Office talking to the president. What are the priorities you're identifying on energy and climate policy? What sort of actions will we be taking at that point?

MANIK ROY: In the next few years, we will not be putting together the optimal climate policy. Instead we'll be doing things in chunks. I'm assuming the EPA's ability to regulate greenhouse gases under the Clean Air Act will survive, and we will do what we can under that law. But I don't think our efforts will be as good as what many of us were trying to do. By 2021, we'll recognize that what we've been doing is not the best approach for either the environment or the economy, and we'll be trying to fix it.

VICKI ARROYO: I think I can paint an optimistic view, especially listening to businesspeople who are really doing great things in terms of promoting efficiency and renewables in electricity, or transportation, with investment in hybrids and plug-ins. Looking at that, we really could be in a different place in 2021.

But I could also imagine, having lived through the last decade or more working on this issue, that we're stuck in an unhelpful pattern. We have a lot of regulatory uncertainty, which makes investment difficult. And there's a boom-and-bust cycle when it comes to things like incentives, so we never really developed a coherent policy. Unfortunately I think that's just as likely a scenario.

JOE ALDY: By 2021, I'm actually optimistic we'll see a price on carbon. This is not because I think people are going to see the light on climate policy, but because at some point in the near future, we're going to have to have a serious conversation about fundamental tax reform and the long-term fiscal outlook. When we start having that serious conversation, we'll recognize we have to raise more revenues. And a price on carbon is one of the biggest revenue raisers that will be on the table, and the vast majority of the revenues from the price on carbon are going to be dedicated to tax cuts and deficit reduction. It's going to be hard for people trying to solve the fiscal situation to walk away from that.

Is the price going to be at a level that really fundamentally drives a lot of innovation and a lot of new technologies? I think it's going to be relatively low, and that's one of the challenges: How do we scale it up to a level that's appropriate

to drive innovation and reduce emissions? That's part of the challenge that the president a decade from now will have to confront.

The other thing is, by a decade from now, if the climate science is right, we're going to see climate change have real, material, adverse effects on peoples' lives in some parts of the world. It will start to become more and more of an issue in our security relationships and our military posture. That will be a greater part of the consideration in 2021.

ALEX LASKEY: I largely agree. There will be a price on carbon by 2021—there has to be, for economic and political reasons. It was Republicans who were initially in favor of cap-and-trade, so I think they will come around. But it's going to happen incrementally. The price will be a low price by 2021, but that's okay.

We need to stop looking only for a grand bargain on energy and climate policy. We don't need to solve every problem all at once. I think this Congress would do well to look at a national energy efficiency standard that mandates specific energy-efficiency goals for electric providers, like conserving the equivalent of 20 percent of all power sold. Half the states have adopted these kinds of policies in the last decade, including states like Texas, Ohio, and Arizona. One advantage is that while there is enormous political disagreement about how to allocate the energy-generation pie—how much goes to solar versus nuclear versus natural gas—there is a broad consensus that no matter where the power comes from we need to waste less of it. And if we can encourage and achieve energy efficiency, it then increases the appetite to raise the price of power over time.

The reason I'm hopeful is all the scary things that Joe pointed to. Last year, some 19 countries set records for high temperatures. Months after the floods in Pakistan, millions are still homeless. The evidence is abundantly clear, and it will become clearer to more people over the next ten years. It's a losing political battle to ignore it, so the people who are continuing to suggest that climate change isn't real will either lose or change their minds.

LEXI SHULTZ: I'm going to split the difference a little bit. I don't think we'll have a price on carbon by 2021, but the pressures to get there will have really ramped up by then, so that hopefully, soon after that, we might actually have a real comprehensive climate policy. Also, hopefully, some of the issues around the deficit will shift away from slashing the funding needed to create jobs, which is really cutting off our nose to spite our face. There is already a big push for incentives for manufacturing and for the types of innovation that we really will

need—on energy efficiency, on renewables, on clean cars—whether we have a price on carbon or not. By 2021, there will be enough pressure that we will see some real investments in those areas.

We're already seeing the costs of climate change around the world. By 2021, the costs of those impacts in the United States will be quite high. With flooding, extreme storms, and lots of natural disasters, there will be an increased call for dollars to help those towns and areas deal with the aftermath and prevent those effects in the first place.

There are also going to be competing water needs. One of the effects of climate change is going to be reduced water supply, so it will be felt in areas that have been growing in population and will probably continue to grow. I do think some regulations will be in place and will start taking effect, and people will see that the world's not crashing down because we're starting to reduce carbon from a few sectors. There are going to be some incentives to create clean technologies, and we will have a robust industry around clean tech, though we will have need for a lot more.

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LASKEY: There needs to be some narrative connecting these natural disasters that are happening due to climate change. You could argue that the White House failed to tell that story. But I would make the argument that we failed as a movement to create a burning platform on this issue.

ROY: On this point about connecting the dots for people, I saw polling recently that the percentage of people in the United States who are alarmed about climate change is at about 14 percent. That's comparable to the "issue publics" on both sides of topics like abortion and gun control. But the difference is that people who care deeply about climate change feel isolated—they don't know that there are tens of millions of Americans who feel the same way they do.

WALSH: Can we weave together a narrative of attribution—rising carbon emissions, climate change, these natural disasters we see? Among scientists that I know, this is one of the most difficult problems that they face. And we've seen in the wake of "Climategate" a loss of faith, at least among conservatives, in climate science. Should this movement keep fighting on the science, or is it just going to continue in this circle?

SHULTZ: Those connections really haven't been made. And that's something we still have to keep doing. One of the reasons Climategate was so bad is that so many people had stopped talking about the science that it left a vacuum, and you can't leave that vacuum again.

ARROYO: We work with a lot of governors, because our center is focused on states' activities. And if you look at the leading governors who have really stepped up on these issues, it's been more bipartisan than we've seen here in Washington. They're closer to the impacts. They're the ones who are having to declare states of emergency with unprecedented frequency. Washington Governor Chris Gregoire talks about climate change and the fact that she's having floods and fires. Same thing with former Governor Schwarzenegger, a Republican. The fire season is now year-round in California, and its coasts are also vulnerable.

But these leaders couple these concerns with a message of opportunity. Maybe some groups stopped talking about the science because it can leave people feeling overwhelmed and helpless. If you look at these skillful politicians, they talk about the fact that you can address this problem while investing in a new energy economy that provides more homegrown sources of power that are safer and can create jobs.

ALDY: When we're considering how we communicate on this issue, we should be able to make the case that even in the context of uncertainty, there are prudent things we can do that reduce the risk. People buy insurance against catastrophic events all the time, like homeowners' insurance and auto insurance. We take those kinds of precautions. And we ought to consider, as a society, what are the appropriate actions to take to reduce these risks associated with climate change? What's the appropriate premium we should be paying?

ROY: When we ask that question, we have in mind this sort of mythical "public." But there is no "public"—there are people and each person has different concerns, interests, and beliefs.

It's interesting to look at how the other side has worked this issue. They've created this overlapping series of misrepresentations: "Climate change isn't happening." "It is happening, but it isn't human caused." "It is human caused but it isn't going to be a big deal." "It is going to be a big deal but we can't afford to do anything about it." "Well, we can afford it but we're not going to do it until China does something about it."

They have these overlapping, mutually contradictory stories, each of which activates a different member of the public out there. We have to do the same

thing, but with truth. We should be talking about science, about solutions, about competitiveness with other countries, about the benefits of reducing pollution. I don't think we should stop talking about anything. The other side has shamed us, and we shouldn't be ashamed. We have an accurate story to tell.

WALSH: At the same time, we've heard a lot of this before, in 2009 and 2010, during the effort to get cap-and-trade legislation passed. But despite a fairly positive legislative makeup that we're not likely to see again any time soon, cap-and-trade did not succeed. Without getting into the magic of the filibuster, was cap-and-trade's failure attributable to our politics, or was it indicative of something about that policy that needs to be changed?

ROY: A couple big things happened. One is that we had a terrible economy. It's very tough to pass major environmental legislation in a bad economy. And the other thing is, frankly, it's tough to pass major environmental legislation under a Democratic president, because the moderates of either party tend to run from their president when their president is in office. That tends to be true when Republicans are in office, which is why almost all of our major environmental laws—the Clean Air Act, the Clean Water Act, our hazardous waste laws—were passed under Republican presidents. And it has been true when Democrats are in office, which is why we rarely pass tough environmental legislation under Democratic presidents.

SHULTZ: You said that it was a really favorable political climate. I would argue that maybe wasn't the case. This is an issue that is about party, clearly, but regional politics come into play. We have these very entrenched interests in some regions, like in the Midwest and Appalachia, where coal is dominant, or in the South, where oil is king. It is no secret that the Southern Company, the dominant electric utility in the Southeast, was lobbying delegations in its region hard to oppose any kind of constructive proposal on carbon. This made it extremely difficult to pass any kind of climate policy. It's going to take awhile to get past some of those regional barriers.

LASKEY: I think it was about not having constructed quite the right policy. These things are intertwined, of course, but it was the policy that went off track. We couldn't get something passed because people like Arkansas Senator Blanche Lincoln couldn't vote for the bill that was in front of them. But Arkansas just passed at the state level an energy efficiency resource standard. All the utilities in Arkansas are fully on board with achieving certain

efficiency targets. Is the standard as high as it could have been or will be? No, but they're on board.

While we should be offering a big vision, this is an incremental fight. We need to move the ball down the field, step by step, and there was too little willingness to do that.

WALSH: Joe, you were obviously a player in this arena. What's your feeling on this?

ALDY: I agree that the politics are complicated by regional differences and interests. One of the things we learned in 2009 and 2010 is that there is growing distaste for big, complex federal legislation. If you were at the back of the

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line, as cap-and-trade was, it was going to be harder to get enough people to vote on something that was going to be a tough vote for them. One of the lessons is that a simpler approach to drive new investment in clean energy would be more politically palatable.

ARROYO: Cap-and-trade was an idea that a lot of people really embraced. The left eventually embraced it, the companies said they wanted it, the Republicans said they were the fathers of it. And yet, when you got to the climate vote, people ran away from it. It might be that while theoretically it's the most efficient way to solve the problem, such a piece of legislation ends up being very big and complicated. We had conversations back when I was at Pew with members of Congress who told us: "This is big and complicated. I like simple and sectoral, and something that I can see and get my arms around."

ROY: This illustrates an important issue. We all talked about how complicated this cap-and-trade bill was, and how there's a big aversion to passing big and complicated legislation. But the House just passed a continuing resolution, H.R. 1, that was unbelievably complicated, hundreds and hundreds of pages long. No one could possibly tell you the effect of that bill on the U.S. economy. It was probably one of the most complicated pieces of legislation ever passed by the House, driven by a Republican Party that has an aversion to big complicated government legislation. So it's more the perception of complication than the actual complication that's the problem.

ARROYO: But the allocation scheme in cap-and-trade, you have to admit, was complicated.

ROY: Definitely. But the EPA now has to come up with command-and-control power-plant standards as mandated by the Supreme Court in *Massachusetts v. EPA*. I bet they will be subcategorizing by fuel, by boiler type, by turbine type—that's going to be an incredibly complicated standard. People don't really understand how byzantine the EPA rulemaking process is. Also what people don't focus on is that the EPA process does not give us incentives for new technology and innovation. You go into a factory today, and they're using the same pollution-control technology the EPA based their standards on 20, 30 years ago.

ALDY: Manik, I don't think we're ever going to see a final power-plant rule from the EPA on greenhouse-gas emissions, so we're not going to have to worry about how ugly and complex they are. At the end of the day, either because of some deal among Democrats and Republicans, or because the Democrats aren't going to keep fighting to protect EPA authority, the rule will be modified or delayed or changed, one way or another. I just don't think the politics are sustainable to maintain EPA authority.

To me, the open question is: Do the Administration and Senate Democrats actually reach a deal where they yield on EPA authority, but do so because they either move forward with the President's clean energy standard or secure something else in the clean energy space?

SHULTZ: I have to disagree. I think when it comes to the EPA, fundamentally, it's air, it's water. And as long as it's about those things, which come down to public health, it would be such a political nightmare for this President and even for Senate Democrats if the regulations were to go away, because the public overwhelmingly supports having the EPA clean up our air and water from all pollution—including carbon pollution. I think we're going to end up with EPA power-plant regulations because of that.

ALDY: I guess we just disagree. I just don't think the American people will fight for that.

LASKEY: I don't think it has to happen, and I'm hopeful that the environmental movement will get its act together to solidify a narrative here that the greenhouse-gas connection to health and economic viability is a real one. If

we can do that, then in a second term, not only can we continue the authority of the EPA, the agency can actually start to regulate. I would hate to see us hand over that authority, particularly when even the Supreme Court said it's legitimate.

One of the things that's missing from this question of cap-and-trade, cap-and-dividend, or a carbon tax is that even if we are able to get these things passed, they are likely not sufficient to drive the innovation that we need. An MIT economist, Hunt Alcott, who did an evaluation of one of our programs, looked at demand elasticity, and essentially identified that the 3 percent reduction in consumption that my firm, OPOWER, is getting across households through better information is equivalent to the impact of raising the price by 16 to 30 percent. [OPOWER sends out regular individualized energy reports that help customers understand important aspects of their in-home energy consumption. The reports tell people how they're doing compared to their neighbors—whether they're efficiency leaders or energy hogs.] All to say, electricity demand is terribly insensitive to price, relatively speaking, and there are many other ways to motivate people. There needs to be more done to encourage innovation in this space, other than just price changes. And that can be accomplished through policy, primarily at the state level, and a commitment to government research and development.

WALSH: Certainly the President seems to have seized on R&D as part of his “Win the Future” idea. We talked about narrative, and some of the problems we had there. Is that innovation narrative something that could work better?

ARROYO: It's a more upbeat narrative than just talking climate change. But it's really semantics, because you still have to put a policy in place that helps to promote innovation. So you can say it's great to innovate, but where's the government policy? Right now, the government is broke, so it's not really spending a lot on new incentives. And we seem unable to deal with the politics of setting tough requirements, whether legislative or regulatory.

WALSH: If you saw a vast increase for R&D on energy, something that really made energy research akin to the health and medical research at the National Institutes of Health (NIH), would that be effective?

ROY: I don't think so, because I believe very strongly in the market. R&D actually has a problem that's very similar to the problem with command-and-control, which is that in both cases you have government employees, whether they're

in Congress or an agency, deciding, “This is the right technology.” Sometimes they’ll guess right, sometimes they’ll guess wrong. Or maybe today’s right decision is tomorrow’s wrong decision. And one thing the government’s not very good at is identifying and liquidating its mistakes. The private market has a natural way of doing that.

LASKEY: That said though, R&D and innovation, especially in this arena, even if they’re not directly government funded, are the result of government signals through regulation.

ARROYO: Or tax code.

LASKEY: And tax code. Our business wouldn’t exist absent regulation in the states that demand energy efficiency from utilities. As a consequence of that regulation, this year we are going to be saving a third as much energy as the solar industry is supplying to the grid. And we’re just a small part of the solution. You look at the states where there are renewable portfolio standards [which require utilities to provide a certain minimum amount of energy from renewable sources] or energy efficiency standards, and there is private industry in those states, there’s plenty of venture-capital money, there’s plenty of investment dollars by companies like Honeywell and GE on top of small companies.

SHULTZ: There’s been a fair amount of R&D money spent already. I do think that standards are part of what’s really needed to diversify our energy sources, supply competition, and drive the market for renewables.

WALSH: Of course, that’s still picking winners to some degree as well. Looking beyond climate and carbon policy, every renewable energy subsidy is to some degree trying to pick a winner. Is this avoidable? And is the renewable energy technology we have now sufficient to meet the kinds of goals we need? Do we need technological leaps? In which case, do we need some basic R&D, or is it a matter of making the market hospitable to those forms of energy and letting the businesses that exist now make that happen?

ROY: I think we do need some technological leaps. But as Vicki was saying, we need a combination of investment and incentives. Government-funded R&D alone won’t do it. We need to create policy that makes it absolutely compelling for the private market to jump in as well.

SHULTZ: I don't disagree—down the line we're going to need technological breakthroughs—but we haven't even come close to taking advantage of the technologies we have right now. We can go much bigger, 25 percent renewable by 2025, and 20 percent by 2021, and that's probably not all we could do. We need to encourage electric utilities to provide long-term contracts for renewables like they have been offering fossil fuels for years. Some of this is, frankly, taking the thumb off the scale for oil and gas and coal. In a way, we've been picking winners for decades. It's really more about leveling the playing field and allowing the marketplace to work.

ALDY: We've got two fundamental problems here. The first is that we have insufficient incentive for people to create new knowledge and undertake R&D in

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the private sector, and that's why there is a very clear role for the government to step in. The second major problem is that a lot of the energy consumed in the United States today doesn't bear the full cost that it's imposing on American citizens and people around the world. If we were to take the monetized damages from climate change

and apply them to coal, we would double the price of coal. That's a sign of how large the implicit subsidy is—they've been able to effectively dump CO₂ into the atmosphere for more than a century without taking on that cost.

The question for policy is: Can we design it in a way that avoids this problem of picking technology winners? Bryan, you were talking about the examples of medical and health research through the NIH. A better model for how we think about energy R&D is ARPA-E [Advanced Research Projects Agency-Energy, a new government agency set up to promote and fund R&D in energy technologies], which would focus on big technological breakthroughs for the long term, but have a rigorous, merit-based evaluation that allows us to find the most promising ideas. It would really allow people who are trying to think long term to be creative and to seek out the high-risk but high-reward technologies. If you do that, and if you have a policy approach on deployment that is technology-neutral, then you can avoid this problem of the government deciding who's going to win the game.

LASKEY: There's another thing on the R&D side that is secondary to these issues. Foreign-born students are a big part of R&D and have historically been

a big part of our country's well-earned reputation as a center of innovation. We are making it harder for them to come and stay, and many are going back home. This has implications for our economy in the long run. What makes the United States a center for innovation is that we have both great centers of education and policies in place that allow for entrepreneurship and innovation. But there's also the network effect of having people come from all over the world to be a part of that. As soon as we eliminate that possibility, centers of innovation are dispersed and they work far less well. And it makes no sense to educate engineers here, but have immigration and workforce policies that compel them to build businesses and create jobs overseas.

MICHAEL TOMASKY: I'd like to reverse-engineer our conceit. Instead of America 2021, think back to 2001 or 1991 or 1981. What's the biggest mistake we made? When you lie awake at night, what idea do you think you should have accepted then that you didn't accept, or what deal should you have taken? I have a friend who worked in campaign finance for many years who once said, "We spent the 1970s rejecting things because they weren't good enough, and if we'd accepted all these things we'd have pretty strong campaign finance today." Have you thought such thoughts on anything?

ARROYO: I think about the disconnect between the U.S. international posture and the dialogue here at home going back to Kyoto and even before. In the run-up to the Kyoto Protocol in 1997, there were heated discussions about including major developing countries in any agreement to cut emissions. The Byrd-Hagel resolution [which stated that the United States not be a signatory to any protocol that did not mandate emissions reductions from developing countries and that could harm the economy] passed the Senate, and the Clinton Administration didn't fight that vote.

ALDY: It did go 95-0. That was a tough fight, as someone who was in the Administration at the time.

ARROYO: But they didn't try. They gave it a pass, thinking that it was never going to matter, and it mattered hugely as it was for years the stated position of the U.S. chamber that ratifies treaties. And it's been the story of our lives in many ways since.

ROY: Here's an obscure one. Under George Herbert Walker Bush, Bill Reilly, the administrator of the EPA, did an exercise called "Unfinished Business." What

it did was look across the range of programs at EPA and see if we were spending enough on them. It's actually a very thoughtful report, but most Democrats and environmental groups attacked it because it said we were overinvesting in Superfund, the government's cleanup program for hazardous waste sites, and underinvesting in climate change. This isn't an attack on Superfund, but I wish we had taken the opportunity presented to us by a Republican Administration to deal with this issue. I think it's unfortunate that the environmental movement, unconsciously sometimes, becomes overly partisan, and doesn't accept the efforts to lead by some very sincere Republicans.

ALDY: Michael, you mentioned 1981, 1991, and 2001. There is a common theme across all three of those years: We had very high oil prices in 1981, in 1991 we had just fought a war after Iraq had invaded Kuwait, and in 2001 we had 9/11, after which people started to associate the potential risk of financing terrorism with our oil consumption. We've had all these opportunities to have a serious debate about the tough choices we have to make when it comes to energy, and we haven't succeeded in doing that with the public.

We could even look more recently: Oil went up to \$147 per barrel and we didn't fully take advantage of that in 2008. We had a massive oil spill last year that seems to have already moved off of everybody's radar. When it comes to nuclear we may have an opportunity in the context of Japan to talk about it. But it would be nice if we could actually have a very serious conversation about the opportunities but also the compromises we have to make as a nation when it comes to energy. We can't have it all and have it on the cheap, which is too often what comes out of the political dialogue.

SHULTZ: You know what I wish we had done differently on climate change? I wish those campaign finance people had cut those deals in Congress!

WALSH: A progressive journal might not be the best place to ask this, but what happened to the Republican Party? Manik very astutely pointed out that most of our major environmental legislation has come with a Republican in charge. It seems that the party has almost completely decided to turn its back on climate science.

ROY: The dynamic has been that a Republican president runs into trouble on something. With Nixon it was on the Vietnam War, so Nixon decided to lead on the environment. Reagan was actually in trouble on the environment. Remember Anne Gorsuch, Reagan's first EPA administrator, and James Watt,

Reagan's first secretary of the interior? They were openly hostile to environmental protection. Moderate Republicans and George H.W. Bush then tried to distance themselves from Reagan's anti-environmental reputation, and as a result we got some very tough reauthorizations of our hazardous waste management and cleanup laws, and a toxic chemical right-to-know law, all enacted under Reagan, and a tough reauthorization of the Clean Air Act under the first George Bush.

Under the second George Bush, before 9/11, you were actually seeing his poll numbers go down, and we were winning climate votes on the floor of both houses. We had John McCain, Bush's primary opponent, and Joe Lieberman, who had been the Democratic vice presidential candidate, saying they're going to do a cap-and-trade bill, right on the eve of 9/11. Then 9/11 came along and Bush managed to make himself more or less invincible until the day after the 2004 election when things started going sour for him again.

It wasn't necessarily that presidents said, "I love the environment." It's that having them there and creating the impression, sometimes deserved, sometimes not, that they were anti-environment gave an imperative and space to politicians like Rhode Island's John Chafee, Vermont's Robert Stafford, and McCain—who really was a tremendous leader on climate change.

WALSH: Of course, they were all moderate Republicans. Do you still find them out there?

ROY: They're in the closet but they're still there. It's interesting to look at Representative Fred Upton. Before he decided to run for chairman of the House Energy and Commerce Committee, he was actually a very thoughtful moderate. But now the Republican members are more worried about their primaries than they are their general elections.

ELBERT VENTURA: Now that you've brought it back to the current political moment, I'm curious to hear your thoughts on the President's proposal for a clean energy standard (CES), which calls for 80 percent of the nation's electricity to come from clean energy sources—renewables like wind and solar, but also other sources like nuclear, natural gas, and "clean coal"—by 2035.

ARROYO: The moniker of "clean energy standard," as opposed to renewable energy standard, allows for nuclear and coal with capture and sequestration (CCS), or "clean coal." Nuclear just became a lot harder, given what's happening in Japan, and should have been hard anyway in some respects, with regard

to its waste-disposal issues. Having said that, nuclear provides 20 percent of U.S. electricity, and we've got to figure out what to do with the ones that we have, and whether or not the Japan disaster gets worse will have implications for whether that number can grow over time.

Natural gas has its own issues, obviously. Hydraulic fracking, the process increasingly used to extract it, is contaminating drinking water, and it's starting to scare people. The best thing that the industry can do is get its own house in order, step up, be more transparent, and ask for some sensible regulation, because otherwise we might really lose the ability to use natural gas as an important transition fuel for a low-carbon future.

In a way, we've been picking winners for decades by subsidizing oil, gas, and coal. It's really more about leveling the playing field.

SHULTZ: I would say one of the key factors in a CES is: Does it actually increase the use of renewable energy? Or is it a way to more or less codify what we have now?

In terms of nuclear power, industry needs to get its house in order too, even to stay where we are at 20 percent of our energy mix. As for natural gas, in addition to some of the drinking water issues, there are upstream water issues.

I agree it's absolutely critical as a transition energy source. I guess the question is: Does it really need the government incentives? At some level, natural gas is doing pretty well and will probably continue to do pretty well in the near future, so it probably doesn't need the incentives it would get in a CES.

ROY: Our early analysis is that Obama's target is actually pretty ambitious, and that you can't hit that target without pretty significant change from business as usual. Going back to what we were saying about narrative, Senator Richard Lugar had this really interesting statement the week before the State of the Union, in which he said of President Obama's call for emissions reductions of 17 percent below 2005 levels by 2020, "It is hard to imagine a goal that is less inspiring or less tangible." Lugar was saying that we need to think about framing the issue in positive ways, not negative ways—like promoting doubling our use of clean energy in 25 years, not just saying we need to cut back on our emissions. I think maybe that works with people.

Such an approach embraces in a very serious way some Republican priorities. Nuclear power is in every Republican candidate's DNA. Now, we'll see if this tragedy in Japan has affected that, but it's a genuine olive branch

by the Administration to support nuclear. Done properly, it can have real emission benefits.

ALDY: There are two things that a CES does that change the dynamic. One, we're talking about a policy that can be technology-neutral. Whoever can compete, whether it's coal with CCS or renewable, go at it. That plays to some who don't like government picking winners with our very complicated tax code or various state policies. As a corollary to that, one thing that's important is I don't think long term—and by long term I mean more than two or three years in the future—we're going to be able to provide tax credits for renewables like we do now. I just think fiscally it's going to be very tough. That's why they've had a lot of interest in something on the demand side to serve as a replacement for what we do now on the supply side through tax credits.

The other thing that's important about it is allowing natural gas to be a factor. Two of the biggest players in gas in America right now are Exxon Mobil and Chevron. They were clearly opposed to cap-and-trade legislation. By bringing in gas, you're bringing in companies that are traditionally associated with Republicans. If they actually see that this is a potential opportunity to bring more of their gas to market, they may find this to be an appealing alternative, and it helps to change the political dynamic going forward.

There's a way you could have a responsible regulatory framework that allows us to develop these resources. I would hope we wouldn't make it so burdensome that we lose this opportunity. When we look at the risks associated with burning coal, whether it's premature mortality or climate impacts or how we dispose of the coal ash, shale gas has a much better environmental impact. I'd like us to keep in mind the big picture when we think through how to develop these resources, because in the next decade, we're not going to make the breakthroughs that can dramatically ramp up renewables. And even if we weren't worried about safety on nuclear, we're just not going to build many new plants in the next decade. When we start thinking about what we can really do to change our energy mix, gas looks like the only one where you have a lot of opportunity with the domestic resources, and, for that matter, the existing generating capacity. I'm more bullish on what this policy could do in terms of eliciting support and then driving demand for gas.

SHULTZ: Just one point on that. When you talk to the renewable industry, they want a renewable electricity standard that's going to increase their role and supply a market, but the single thing that they need is tax incentives or some other financing mechanism to supply the needed upfront capital. And even with a

renewable electricity standard, if they don't have tax incentives, it's really hard for them to continue to make it.

LASKEY: We've got to find other ways of creating demand, because the subsidies for renewables aren't going to exist. If we can go far enough along on the cost curve, they may not need it.

SHULTZ: I don't want to be snarky or anything, but I'm fascinated that we can continue oil subsidies, which have been so much more costly.

ROY: There's no disagreement in this room.

LASKEY: They shouldn't exist for either.

ALDY: The problem is that if we got rid of all our oil, coal, and gas subsidies that we appropriate every year, it wouldn't pay for a one-year extension of the wind-production tax credit. We actually spend more dollars out of the federal budget now on renewable energy than we do on fossil fuels.

LASKEY: On the CES, for a moment, it's a renewable portfolio standard repackaged with a more positive spin, and gas is allowed in. I'd like to think that it will pass, though I'm not optimistic that it will.

ROY: Yeah, I don't think it would pass in this Congress.

LASKEY: The thing is we are still picking winners by not considering demand-side solutions to the problem and only considering supply-side solutions. We're only considering electricity supply, and we're considering a CES, which does not include energy efficiency as a core resource. It's like trying to solve the budget problem by only looking at cutting spending or only looking at raising taxes. We need an energy policy that addresses both supply and demand.

WALSH: To get back to the 2021 line very briefly: Are you optimistic that in 2021 we'll be in a better place in energy and climate policy than we are now?

ROY: Yes, but we won't be anywhere near where we need to be.

ALDY: I am actually optimistic that things can be better. There's clearly enough appetite in the general public, and on both sides of the political aisle, to make prog-

ress. The question we have to grapple with is: How can we actually find a way to unify interests enough to make it happen? To the extent that we failed to do so in legislation, or in the federal government, I'm actually optimistic that a lot of the states will continue to move forward. It's fascinating that we were just talking about a CES, and we're talking about support for renewables—and there are 30 states out there that have renewable standards. Blue states, red states: We see that there is clearly an appetite for trying to move forward on clean energy. If Washington's not going to lead, a lot of the states will continue to push in that direction.

ARROYO: On that point, since I spend most of my time working with the states, California is ramping up its renewable standard to 33 percent by 2020. But the big caveat is, even in this atmosphere in which there isn't a federal alternative, there are pending proposals that would pre-empt state activity, and I do worry that we might get a moderate federal clean energy standard that might pre-empt states from going further. Typically, the federal standards are floors that the states can go beyond. But if you look at some of the legislation that's pending right now, it really will undercut some of the state leadership.

By 2021, I'm actually optimistic we'll see a price on carbon. We have to bring in more revenue, and it's one of the biggest revenue raisers on the table.

LASKEY: There is no question that there has to be progress, and if the federal government doesn't lead, it will come from the states. It will happen from the states up, and hopefully also happen from the federal government down. There's too much momentum. I mentioned Arkansas earlier, where there's now an energy efficiency standard. Some of the biggest standards exist in red states, so it's only a matter of time before Republicans come on board with this. The Cameron government in Great Britain is conservative, and it is embracing energy innovation as a way to spur the economy. The government in China is not exactly progressive either, and it is beginning to see the economic benefits of investing heavily in clean energy.

We do have to create a burning platform here. This can't be about energy independence and security alone, and it can't be about public health alone, and it can't be about the economy alone. These are all symptoms of a fundamental problem. It was Al Gore who said, "The Earth has a fever." There's a real fundamental problem, and we have to make those 14 percent feel empowered and connected, and grow that 14 percent to 25 percent.

SHULTZ: Am I optimistic about 2021? I would say I am optimistic because I don't think I could function if I weren't. There will be a couple of political swings by 2021, from conservative to progressive and beyond, and hopefully that will make a difference. I am hopeful that the swing will make it so that some of our forecasts here about Republicans being in the right place, or at least less in the wrong place, will actually come about. They'll recognize that it's much better for them to be creating jobs and be optimistic about America, rather than running away from everything, whether it's innovation, solutions, jobs, or science. **D**

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