Pace Environmental Law Review

Volume 30
Issue 1 *Fall 2012*

Article 9

September 2012

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Recommended Citation
Jody Freeman, *Climate and Energy Policy in the Obama Administration*, 30 Pace Envtl. L. Rev. 375 (2012)
Available at: http://digitalcommons.pace.edu/pelr/vol30/iss1/9

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THE EIGHTEENTH ANNUAL LLOYD K. GARRISON LECTURE

Climate and Energy Policy in the Obama Administration

JODY FREEMAN*

I am very pleased to be here and honored because I recognize the importance of this lecture. I know several of the people that have come before me and I am flattered to be included in their company. I am also a big admirer of the Pace program. You have been doing this much longer than many of the other law schools and you are well positioned to continue to be a leader in this domain for the future. I want to especially thank the Dean and also Lin Harmon for all the trouble she has gone through to arrange this and, of course, Ann Powers for being such lovely hosts. Thank you very much for having me.

What I thought I would do is give you a sense of the "state of the play" in energy and climate policy—where we are, how we got here, and then a little bit of discussion about what the future looks like. Let me begin by talking about the current moment.

As you know, I served as Counselor for Energy and Climate Change in the White House for the first part of the Administration when we were moving the climate bill in 2009 and 2010. And as you are also well aware, the Waxman-Markey Bill, otherwise known as the American Clean Energy and Security Act (ACES), got through the House but did not clear the Senate.

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The first point is that the effort to pass comprehensive legislation to cap carbon emissions and make a number of other energy reforms—the effort to accomplish this in a single package—failed. Secondly, in the wake of this failure, the President has called for making progress on climate and energy policy in what he has called "chunks," including, most prominently, by passing a federal "clean energy standard." Yet so far the "chunks" strategy seems also to have come up short. We have not seen a federal clean energy standard, although, as I will mention later, many states have adopted their own renewable energy portfolio standards. Nor has Congress chosen to pass smaller bite-sized pieces of the more comprehensive bill by, for example, adopting a utility sector strategy to control greenhouse gases (GHGs).

Third, and somewhat ironically, the common law as an avenue for redress for harms caused by climate change has become extremely limited, if not entirely foreclosed on, by the Supreme Court decision last year in *American Electric Power v. Connecticut* which held that the Clean Air Act precludes federal common law public nuisance claims. Notably, this was an 8-0 decision in which Justice Ginsburg wrote the opinion for the Court (Justice Sonia Sotomayor recused herself, since she had sat on the Second Circuit panel from which the case was appealed). This decision followed predictably from the Court's decision in *Massachusetts v. EPA*. As the Court explained, by passing legislation comprehensively addressing air pollution regulation, including GHG pollution, Congress had precluded federal common law claims. So, in a way, this is the price of success—a victory on one front forecloses another.

Fourth and finally, the international state of play is undergoing something of a metamorphosis, evolving from the Kyoto style regime of legally binding targets and timetables into a different kind of regime consisting of "pledge and review," meaning that countries will voluntarily make commitments to address GHGs that will be monitored and verified in some manner.

That is essentially where we are. I think of this in terms of three pendulum swings [gesturing to a power point slide]. The first such swing is from the legislative to the executive branch. I think it is fair to say with the failure of a comprehensive climate and energy bill that the power has shifted at least temporarily,

and unless Congress acts, to the Executive Branch of the federal government. And since 2009, the Executive Branch has done quite a bit with the authority that it possesses. I will try to explain how the Administration has taken the reigns of the existing statutes and really tried to make progress on climate and energy goals despite congressional inaction. The second pendulum shift is from federal to state. In environmental law, momentum often goes back and forth from state to federal leadership as you know.

There was a significant state effort to begin addressing climate change in the middle to late 2000s. This was a really generative period for state climate and energy programs. At the time, many people thought that the state programs, which included early reporting programs, state trading schemes, performance standards, and renewable energy requirements, would ultimately largely be replaced by a comprehensive federal regime. Some of the state and regional efforts anticipated a federal cap-and-trade program, and were expressly designed to fold into it. The states went dormant for a couple of years—not entirely, but somewhat—anticipating that the federal government would take action. Now that Congress has not passed legislation, we are seeing the momentum shift back to the states, at least temporarily.

The final pendulum swing is away from a comprehensive approach, like the one in ACES, which included not just an economy-wide cap-and-trade regime to reduce GHGS, but also incentives for carbon capture and sequestration, a renewable energy standard, and a whole host of incentives and programs in the transportation, electricity, and industrial sectors. It also envisioned an important role for agriculture and forestry in providing carbon reduction credits, or "offsets," to be purchased by sources covered by the cap. That all-encompassing economy-wide approach has yielded to a more piecemeal step-by-step approach.

I thought that I would summarize this in a user-friendly way, like magazines do, by telling you what's "out" and what's "in" [gesturing to a slide]. I am sure this is not entirely comprehensive but it gives you a reasonably good overview. Cap-and-trade is clearly out. Taxes you may be surprised to hear—at least I could make an argument about this—could be in. Other things might wind up being in too, like a clean energy standard. Congress is out. People are not expecting much from Congress, cer-

tainly in an election year, and it is difficult to see the pathway for Congress to pass anything as comprehensive as ACES, even after the election. Inaction by Congress means that the Executive branch, the President, is in. I will tell you the story of what the President has done so far with the tools he has, including the Clean Air Act. In the international context, "targets and timetables" are out. As you know, the Kyoto Protocol obligated only the developed economies to cut emissions an average of about 5% in a regime that was legally binding. This has been only marginally successful, in part because it did not bind the developing world to commitments, even though they are a growing share of world emissions, or provide for technology transfer and other key pieces of the puzzle. The Kyoto approach has yielded to a new framework of "commitments" or pledges, which are to be monitored and reviewed.

Coal is out. As I will describe in more detail later, coal is losing ground relative to other energy sources like natural gas for a number of reasons, including both economic and regulatory drivers. As coal-fired power plants are considering whether to refurbish, retrofit, or retire, the balance is tilting toward retirement. The economics of natural gas is a big part of that story and it is a big story indeed. And finally, as you see here, "climate change" is out. Energy, especially "clean energy," is in. The political rhetoric has shifted decisively in that direction. No one, it seems, wants to talk about climate change.

I want to turn now to the Executive Branch tools being deployed in the absence of congressional action. The primary mechanism, as you all know, is the Clean Air Act. In the wake of *Massachusetts v. EPA*, which held that GHGs are a pollutant subject to regulation under the Act, EPA has begun to take steps to set standards. In fact, we began doing this in the Administration even as the climate bill was moving through Congress, partly as a prod to Congress and partly as an insurance policy. The first step following *Massachusetts v. EPA* was to make the finding about whether GHGs endanger public health and welfare and, if the answer was yes, to set GHG standards in the transportation sector (which is responsible for about 30% of U.S. emissions) and then ultimately to address emissions from stationary sources, including coal-fired power plants, refineries, manufacturing, etc.

This set of regulations would come to be known as the "greenhouse gas package."

The Agency has also pursued non-GHG regulation, however, which is just as important. This is something that people sometimes overlook, but when EPA pays attention to its core traditional mission to regulate conventional pollutants (the National Ambient Air Quality Standard (NAAQS) pollutants, like NOx, SOx, and PM)—when EPA is regulating to protect the public health—it is simultaneously necessarily advancing GHG reduction goals because, of course, tighter regulation for conventional pollutants reduces all pollution including CO_2 and other GHGs. Through a variety of rules that are proposed, or about to be proposed, we see a more comprehensive strategy emerging, one that is designed to reduce GHGs across the board. These include the Cross State Air Pollution Rule, which EPA redesigned after the D.C. Circuit struck down its first incarnation during the Bush Administration. This rule deals with interstate transfers of NOx, SOx, and ozone. EPA has also promulgated a toxics rule to control mercury, replacing another rule that had been struck down by the D.C. Circuit in the prior Administration. In regulating toxics and cross-state pollution, EPA is necessarily also making plants more efficient and thus reducing GHGs.

The most important policy initiative of the Obama Administration thus far, however, is historic fuel efficiency standards set jointly by EPA and the Department of Transportation, or more specifically the National Highway Traffic Safety Administration (NHTSA). Full disclosure is required here: I led the White House effort, so I am probably going to be somewhat biased when I talk about its beneficial effects. But I think it is fair to say, and many others have said, that this policy is the Administration's most important accomplishment in the energy, climate, and environmental domain. Certainly it is the most aggressive, most ambitious effort to improve fuel efficiency in the history of the United States. The so-called "national auto policy" (also known as "the car deal") combines the first ever federal GHG standards set by EPA with NHTSA's traditional authority to set fuel economy standards. The challenge in creating this policy was to figure out a way for EPA, which is authorized to set emissions standards under the Clean Air Act, and NHTSA, which is

authorized to set Corporate Average Fuel Economy (CAFE) standards under the Energy Conservation laws, to row in the same direction and set a single set of harmonized standards.

Complicating this task was the political imperative of ensuring that the federal standards would garner the support of California, which had gone ahead during the Bush Administration and promulgated their own GHG standards for passenger cars and trucks. California had at the time sought a preemption waiver from EPA, which is required under the Clean Air Act if it wished to set more stringent standards than the federal government. The Bush Administration denied the waiver. Yet, during the 2008 presidential campaign, candidate Obama had said that *his* EPA would reconsider that waiver request. In addition, fourteen other states were poised to adopt California's standards if the waiver were granted. Thus, if implemented, the California standards would govern 40% of the car market.

This would have created a costly and complicated patchwork of regulation. In the states that had *not* adopted California standards, auto manufacturers would have been subject to a federal CAFE standard set by NHTSA (the traditional fuel economy standard expressed in miles per gallon) and new GHG pollution standards set separately by EPA (in grams per mile). At the same time, in the states that had adopted California's standards, there would be even stricter GHG standards. Further complicating matters, the auto industry had launched over a dozen preemption lawsuits challenging California's legal authority to set these GHG standards. The industry argued that California was preempted by the federal CAFE statute, which gives exclusive authority to set fuel economy standards to NHTSA. The Energy Policy Conservation Act says that anything "related" to fuel efficiency is preempted, so industry argued that California's GHG standards amounted to an indirect effort to usurp the exclusive federal power to set fuel economy standards since the only way to reduce GHGs is by improving vehicle fuel efficiency.

So when the President took office, California was expecting to get its waiver of federal preemption with fourteen states poised to adopt its program; industry preemption litigation trying to block this effort was pending in federal appeals courts; EPA, for the first time, was about to exercise its authority to set federal GHG

standards; and NHTSA was under a deadline to promulgate its next five-year round of CAFE standards. In the face of all this, we sought to produce a single national standard that would satisfy the President's environmental commitments, satisfy the two federal agencies and their legal requirements, satisfy California, and ensure the support of the auto industry. And we also had to consider the autoworkers union (the UAW), the states, and the environmental groups. I can tell you that working through all of these legal, regulatory, and political complications was like playing six-dimensional chess blindfolded.

And yet, amazingly, we succeeded. The first round of these standards, which apply to model years 2012-2016, will achieve 35.5 mpg by 2016 putting us on a path of fuel efficiency that we have never experienced—an average of about 5% improvement per year. Based on the template that we established in that first round, the Administration signed everyone up for a second round from 2017-2025, which will ultimately achieve 54.5 mpg, or about double our current fuel efficiency. This is a real achievement. The standards are projected to save four billion barrels of oil between 2017 and 2025, cut carbon emissions two billion metric tons, and save folks at the pump over the lifetime of their vehicles up to $4,400. So this is a win-win-win for the environment, the industry, and for governance.

Notably, all of this happened via voluntary agreement, not as part of a legally binding settlement and without the imprimatur of a court. The auto industry filed "letters of commitment" with the regulatory agencies (the EPA and the Department of Transportation) in which they promised not to challenge the new standards if they ultimately looked substantially like what was initially proposed by the agencies in a "notice of intent."

This advance pledge not to litigate was remarkable given the history of litigation over CAFE standards. The industry did this because the trade for them was worth it—federal uniformity and one-stop compliance in exchange for their assent. And they felt comfortable after extensive discussions with the agencies, which reassured them that they would be able to comply. The new standards provide considerable compliance flexibility by allowing the companies to earn and trade credits both within and between fleets. They also ramp up stringency over time, at a reasonable

pace, allowing the industry time to adjust. And perhaps most importantly, they gave the industry certainty, clarity, and predictability by replacing a patchwork of regulation, which was a far less appealing scenario. I am now more certain than ever, after this experience, that industry is actually less concerned about stringency most of the time and much more concerned about clarity and predictability so they can plan their investments going forward. What the Administration was able to give them was clarity about the regulatory trajectory first to 2016 and then out to 2025, so they could focus on building the cars of what we all hope will be a cleaner energy future.

At the same time California promised in *its* letter of commitment not to implement its own program, even if EPA granted the waiver. As the President had promised, EPA did reconsider the waiver, decided that the legal foundation for denying it was wrong, and reversed that denial. California said, "[t]hank you very much, we appreciate the legal entitlement to regulate but we agree to stand down and accept compliance with the new federal program as compliance with our program." Finally, as part of this package the auto industry also agreed, although somewhat reluctantly, to drop all of its preemption litigation—over a dozen suits were stayed and then ultimately dropped.

It is especially interesting that these letters of commitment are not, strictly speaking, legal documents. They are instead very detailed tit-for-tat agreements that say: if you do what you promised to do, we will do as we promised, one step at a time, one after the other. This is essentially a "trust but verify" regime. This is a rather creative mechanism for memorializing the agreement. The uniqueness of this was driven home recently when I went to the D.C. Circuit to see the oral argument in the GHG litigation, in which these standards, along with EPA's endangerment finding and other GHG related rules, are being challenged by a coalition of industry groups.[1] There, in the ceremonial courtroom, was a sea of lawyers sitting at the counsel table on the industry side. On the other side was, of course, the government, along with the

1. Subsequent to this lecture, the four challenged rules, known collectively as the "greenhouse gas package," were upheld by the D.C. Circuit. *See* Coal for Responsible Regulation, Inc. v. EPA, 09-1322, 2012 WL 2381955 (D.C. Cir. June 26, 2012).

state and environmental intervenors, plus one lone guy who represented the auto industry. If you have any sense of the thirty-plus years of conflict over fuel efficiency between the auto industry and the environmentalists and states, to see counsel for the auto industry standing on the side of the government and saying EPA got this right was a remarkable experience.

Of course, a necessary result of setting the first binding standard for GHGs under the Clean Air Act is that it automatically triggers permit requirements in other programs under the Act. So issuing this GHG standard for mobile sources tilted the first domino in what was a self-executing series of dominos that led inexorably to regulation of stationary sources as well. Under the Prevention of Significant Deterioration (PSD) program, new or modified stationary sources must obtain permits and apply best available control technology to all "regulated" pollutants, now including GHGs. This creates an enormous management challenge for EPA and the state permitting agencies, since the statute requires sources that emit as few as 250 or 100 tons per year of a regulated pollutant to meet these standards. The low thresholds applied to GHGs would result in many thousands and perhaps millions of new permit applicants compared to the few hundred of sources that must get permits now. Faced with this, EPA has sought to raise the thresholds temporarily administratively, phasing in the program and requiring permits initially for only the very largest emitters. The rule EPA adopted to implement this approach, known as the "tailoring rule," is, as a result, at least temporarily a deregulatory measure. But the question is whether EPA has the legal authority to adjust these statutory thresholds on their rationale, which is that there is an "administrative necessity." This rule too is part of the litigation I mentioned, in which a coalition of industry is challenging the EPA's package or GHG related rules.

In addition to these Clean Air Act mechanisms for addressing GHGs, the Administration has used other federal levers to make progress on climate change and advance its clean energy goals. For example, the Department of Energy has intensified its effort to set appliance standards, which will result in billions of dollars in cost savings and reduced environmental impacts once they are all implemented. This process, which is governed by a longstand-

ing consent decree, was proceeding very slowly in the Bush Administration, but the Obama Administration picked up the pace because of the significant potential for both environmental benefits and cost savings.

At the same time, the Department of the Interior has accelerated siting renewable energy projects on federal lands, both onshore and offshore. The onshore process was improved through another collaborative exercise that brought nine federal agencies together to streamline a complicated approval process. These agencies either have jurisdiction over the relevant federal lands, or possess regulatory authority over siting. As a result of the many players, the permit process can be lengthy, costly, and redundant. So we hammered out a memorandum of understanding among the agencies to accelerate and simplify permitting for renewables without sacrificing environmental standards, simply by designating a lead agency and requiring consolidated, integrated reviews. This is a quiet kind of accomplishment that few people notice, but it could make a big difference. And it was motivated by the idea that if Congress will not pass legislation, we will at least get our federal house in order using the authorities and jurisdictional powers we have and, in this case, accelerate clean energy development on federal lands.

In addition, the Department of Energy has made significant investments in renewable energy technology, from advanced batteries, to "smart grid" systems, to promising biofuels that are at such an early stage of development that they cannot always attract private capital. A significant portion of this funding came from the American Reinvestment and Recovery Act, which made the biggest investment in the energy sector in U.S. history. Depending on how you count, sixty to ninety billion dollars of the Recovery Act went into supporting clean energy and energy efficiency.

Then there is the Federal Energy Regulatory Commission (FERC), which, although not an executive branch agency, has taken steps in line with Administration priorities to modify transmission policy and make it friendlier to renewable energy. For example, FERC has proposed a rule to help integrate renewable energy into the grid and promote transmission planning that would consider not just reliability issues and economic concerns,

but other public policy matters like climate change and environmental impacts.

This list of agency initiatives is not complete, but it gives you a sense of the kinds of things you can do under existing statutes with the executive power the government already possesses and by enlisting independent agencies. To see the entire picture though, it is important to also consider state and regional efforts. I want to save sufficient time for questions so I will not go through them in great detail but I just want to list a number of initiatives that are currently underway: the regional GHG initiative (RGGI), which is the first regional cap-and-trade system in the United States; California's Global Warming Solutions Act under which the state Air Resources board has established both a state-wide cap-and-trade system and a low carbon fuel standard; and renewable portfolios standards which have been adopted by over thirty states. There are a variety of other state level measures too, at some stage of development.

Not all of these efforts have been successful, however. For example the Midwest Greenhouse Gas Accord, which was so promising in the middle part of the 2000s, has now been informally suspended. New Jersey pulled out of RGGI. So the states are in a state of flux at the moment. The real question is, assuming the existing state and federal programs are reasonably successful, how much progress could you make in an admittedly piecemeal approach to GHG reductions? This assumes using the executive power pro-actively, combined with state and regional efforts that might be reenergized in the absence of leadership by the Congress. How much does it add up to? When I was in the Administration we discussed this and tried to make these projections. Conveniently, the World Resource Institute did the very same exercise and published their results. They describe three scenarios. The first scenario is the least ambitious and predicts limited success with the measures I described, resulting in 5% reduction in GHGs by 2030. The middle scenario, which is somewhat more ambitious and assumes greater implementation and compliance, predicts 18% reduction of GHGs by 2030. The most ambitious scenario, which assumes full implementation and compliance, predicts 27% GHG reduction by 2030.

The problem is that if you are on a path to 85% GHG reduction by 2050—which is projected to be necessary to avoid a greater than two degree Celsius temperature rise—in order to get on that pathway, by 2030 you need to be somewhere between 51% and 64% below 2005 levels. And the most ambitious, most aggressive, most hopeful scenario in the WRI analysis, (which frankly just has to be unrealistic given what we know about implementation and enforcement) produces only a 27% reduction.

So the happy story I began to tell you about the federal government using the power it possesses, and the states re-engaging as the pendulum swings their way, is not necessarily as happy a story as we need to have. For the most positive projections to be a reality requires a lot to go right: the states have to deliver on their promises; the states have to not run out of money before they deliver on their promises; the regional efforts that are not yet up and running need to get up and running; once up and running they need to be operational and successful; the federal government must maintain the path it is on and these initiatives must be stable across administrations as they change, which is a big expectation; there can be no major legal problems (which is fanciful since every major rule the EPA promulgates in this domain tends to be challenged); and we have to expect that we will continue to come out of the recession in a way that will not undermine any of these programs. This is a lot to expect given the history of litigation and the slow implementation of environmental standards and rules.

The second-to-last thing I wanted to talk about are the legal challenges we face. I have described to you the litigation in the D.C. Circuit challenging EPA's implementation of the Clean Air Act. There are already legal challenges to the state initiatives, and more will come, under the dormant commerce clause. And we are also seeing trade related challenges to state clean energy programs as violating World Trade Organization (WTO) law. If the states promote renewable energy in a way that either reaches extraterritorially into other states by seeking to regulate their energy production, or in a way that tries to hoard renewable energy for their own state, or in a way that discriminates in interstate commerce, they will be struck down as violating the dormant commerce clause. In addition, the so-called "green trade

war" between China and the United States has led to allegations that state efforts to promote clean energy are illegal subsidies under WTO law. States have to worry then not just about domestic constitutional challenges, but also to charges that they are unlawfully subsidizing clean energy in violation of U.S. trade agreements. These are very substantial legal challenges. At a minimum they can cause a lot of delay, and delay as you know, is the enemy of GHG regulation and the prospects for mitigating the worst impacts of climate change.

Finally, I think the most important question right now is: what does an integrated energy and climate policy look like? It is very hard to put together an energy policy that promotes what everyone calls energy independence, is good for national security, and also goes in the right direction to address climate change. One can fairly easily come up with an energy policy that is good for national security and energy independence and that ignores climate change, but it becomes much more challenging to produce an integrated plan. And this puts environmentalists in a very uncomfortable situation where they have to make difficult tradeoffs. For example, the environmental community has traditionally opposed nuclear power, but nuclear power of course takes on a very different valence when we consider it in light of our goals to produce low carbon energy. After all, nuclear energy happens to be a zero carbon source even if, because it relies on uranium, it is not renewable.

So one has to begin working out how one feels about issues that environmentalists long thought were settled. We knew who was on the right side and we knew who was on the wrong side and now that is all up for grabs. This is also true of natural gas. Natural gas is seen as an essential bridge fuel with lower carbon intensity than coal and far fewer air pollution impacts. We are currently facing an unprecedented supply of natural gas located in tight shale rock, which we now can reach through horizontal drilling and hydraulic fracturing.

The question is how should one feel about this? If one simply opposes both fracking and nuclear energy, what energy sources are we left with? Wind, solar, and geothermal energy are a tiny percentage of our energy mix at the moment, and hydropower, at least in this country, is largely tapped out. On the transportation

side, the energy supply is almost 100% oil; and biofuels, despite the federal production mandate embodied in EPA's renewable fuels standard, are in their infancy. Energy demand is going to be more than 53% greater by 2030 globally and is projected to double by 2050. I want you to think about that. We are 85% dependent on fossil fuels. Even if you dramatically incentivize renewable energy, even if you make tremendous strides promoting wind and solar, including figuring out storage strategies, and build a transmission to deliver them from remote locations to the load centers, even if you invest in energy efficiency (the first best thing to do) and aggressively promote biofuels production, in the face of global energy demand, you cannot close the gap anytime soon.

So we are dependent on fossil fuels for the foreseeable future and the question is how might we develop an energy strategy that deals with that reality and at the same time transitions us into a cleaner future with a more sustainable trajectory over time? That is very challenging. The EPA regulations that I described to you, including the GHG-specific regulations and the traditional EPA standards for conventional air pollution, are helping to drive coal retirement faster than people anticipated. Some people say 20% of the coal fleet will retire by 2020, others say up to 30%. This is a very important dynamic. Indeed, it *is* a GHG strategy. It may be a little opaque, but the combination of what EPA is doing under the Clean Air Act and the underlying fundamentals (the economics) is driving a switch to gas from coal. From a climate change perspective that is a positive development. One cannot be against everything. One has to be for something and, in the current context, this shift should be seen as good news.

The question is always what's next? From the bridge fuel now where do you go? Of course the most essential ingredient of a sensible policy is a price on carbon because without such a price we cannot make renewables and other cleaner energy sources more competitive; they cannot compete unless we actually put a price on the negative climate related externalities, now being consumed for free, of fossil energy. In the absence of a tax or a cap or some other mechanism for pricing carbon, we are doing these other things I described, but one cannot escape the need, ultimately, to price the thing that we treat as free, but which is

not—the production of CO_2, methane, and other global warming gases.

I think the story I am trying to tell you is a story of accomplishing something and making progress with the tools you have but ultimately confronting the need to do something much more significant. The question before us is what does that policy look like? What are the tools we are going to need whether we pass them through Congress, through the states and regions or use executive power to try to accomplish them? Ultimately, what legal and physical infrastructure can we build to make that happen? Right now we do not have the regulatory tools and incentives we need to produce a clean energy economy. We do not, for example, have an adequate system to regulate fracking to ensure that it is done safely and responsibly. We are in the middle of a transition regarding our regulatory approach to offshore drilling, and we are at a moment when the Arctic is beginning to be opened up and we do not yet have the data or information we need to know with reasonable confidence that we can drill there safely and in an environmentally protective manner. Likewise, we do not yet have a liability regime for carbon capture and sequestration (CCS). Even if we could produce CCS at scale in an economic way, which is an open question, we do not have a legal regime that addresses liability as we do for the nuclear industry, for example.

My point is: we do not have the legal regime we need. The Clean Air Act, although a marvelous tool, and although I think the EPA is being quite reasonable with it, is essentially limited. It cannot do everything necessary on GHG regulation, and certainly not cost-effectively, in its current form. Right now, the best approach to regulating GHGs under the Clean Air Act is to use the New Source Performance Standard program, through which EPA sets best available technology standards on an industrial category basis. Yet this program is limited because it addresses only new and modified sources and only very indirectly requires states to submit plans for existing sources. And there appears to be no authority for EPA to use a cap-and-trade program, which, believe me, they would like to do, to reduce the costs of GHG reductions.

So I am telling you a story of imperfection in the existing tools. At some point we have to build a new legal infrastructure

to go with what we hope will be a new physical and technological infrastructure for a cleaner energy age. That is the picture and the challenge I want to leave you with. I suppose my account might strike you as a little depressing, in the sense that some of us thought we would be further along by now; some of us thought that the consensus and political will on climate change had gelled. Yet my story is still somewhat hopeful I think, about our ability to make at least some progress, by taking advantage of the drivers that we still have, if we know how to use them well.

Thank you.