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University of Maine

Ending the Energy Stalemate  
Transcript of remarks by Susan Tierney  
National Commission on Energy Policy

Transcript:

I can't tell you what a pleasure it is to be here today with you. I've really been looking forward to this. As a resident of New England and a colleague of many people here in the audience but also many of your friends and coworkers here in Maine, I've worked with many of you over the years and it's really, really an honor to come to the University of Maine and have a chance to talk. It's in particular a great honor to be a part of this forum. Probably the eighteen years that I spent in public service were among the most enjoyable and fulfilling in my career, and it's really wonderful to come here as part of the honor and tribute to Senator Cohen, Secretary Cohen, especially in something that's such an important issue that I love so much and I know you're going to love it after the end of, after the end of today, right? You probably love it so much that you just love giving at the gas tank, too, I'm sure. I tend to speak really quickly and so sit back, enjoy yourself. There's going to be a lot of slides coming at you. I'll be happy to make these slides available to the forum, if that's appropriate. Just sit back and enjoy the ride. So let's go.

What I'd like to do is look at energy policy from three dimensions. I'm an energy analyst and energy hacker, and have been for years. So I want to share with you some of the issues that are important to think about in their energy scene, domestically and regionally. I want to talk from the perspective of being a commissioner of the National Commission on Energy Policy, tell you a little bit about where the Commission thought that we need to go for a sustainable energy policy, and then I'll put my energy analyst hat right back on for a minute, and talk to you a bit about the new energy policy act, I'll describe the ways in which it addresses some of the energy conundrums that we face. Oh, I'm not sure that was the right plural of conundrum, I don't know. But then I'm going to talk for a little bit about what's missing in the act, and what we really need. The rest of the day, I believe, is going to be focusing on what you are doing here in Maine, and what you're doing on the ground. You guys have a tremendous history of working hard in this field, this area, and you're going to hear more about the promise in Maine.

The starting point, of course, for this series is the forum, and Senator Cohen's, this is Representative Cohen's remarks thirty-plus years ago, talking about the crux of the energy challenge is to deal with energy security, energy economics and environmental issues. That is still the crux of the issue today.

So what is our context for energy? Energy policy is, I did a lower case p here, p, in the word "policy" on purpose. Because energy policy is really made up by actions of millions of people, in this country and internationally. In Washington, it's not just Congress, it's not the president, it's the agencies, it's the courts. In the fifty states, it's myriad players in legislatures, courts, executive branches, regulatory agencies. Of course,

there are large and small consumers; many of those are here in Maine. The actions of those responding to price, responding to opportunities, constraints, they make energy policy. As do consumers and other forces--interest rates, the actions of the Nicaraguan president, OPEC actions, hurricanes. A number of forces are what shape, and have shaped, our energy policy in the US. Another thing that has shaped our energy policy is there are all sorts of ways that people think about energy and what we want our government to do about energy. Over the years there have been many, many paradigms. For example, we've thought of energy investment as a strategic lever of action. After the World War II and the Manhattan Project there was a tremendous effort to harness the use of the atom for commercial and public purposes. The Tennessee Valley Authority and many of the other public agency's large, hydroelectric dams were part of strategic investment for economic growth. But also, we think about energy policy as a lever of social change. Rural electrification in the past half century in the United States was driven in large part by electrification, and that is going on around the world. Energy is also seen as, energy policy is seen as a way to protect people from the forces of control over markets. I mean, we certainly know the control at many periods of time of OPEC's over oil markets. But many other market manipulators and controllers. Starting with the standard oil trusts of the beginning of this century. So there's, we've thought about energy policy as breaking up market power. We also think about energy in terms of its environment impact--energy production, drilling, exploration, transportation, use, combustion of energy. The environmental footprint of energy is pretty much the environmental impact statement that we feel out there every day, whether driving cars, etc. And there are a number of things going on, and have gone on, for decades to deal with and address the fact that there are these external impacts of energy use. In this region we're dealing with that, with the Regional Greenhouse Gas Initiative. A national effort led by this region to control greenhouse gas emissions. And finally, we have thought about energy policy as a way to enable competition, to enable harnessing of market forces so that consumers and producers can meet each other in the marketplace and satisfy their needs as well as they can.

So globally, and domestically, energy policy is geopolitical. Period. I mean, it is who has the resources, who needs them, what are they trying to do with them? And that's clearly the case in international markets. We know that in oil, I mean that's pretty obvious for the last number of decades. We know it more recently in natural gas, as we've had a continental market, but also a global market, with liquefied natural gas moving in and out of ports, with pressure to build such here, facilities for off take of LNG here in Maine. But also there are supplies that are concentrated in certain regions. Those producer regions hold great sway, and influence, in the way that energy policy is shaped. By contrast, those of us that are largely in consumer states have a different role to play often.

Okay, let's go through some pictures very, very quickly. This is a picture of the last twenty years, twenty-five years, of oil prices, and you see this overall downward trend. We saw that trend, and I've blocked off the last few years on purpose, because you saw this trend and it's had certain implications of dropping oil prices. One of the things is rising demand. Those markets signals do work. The left side shows the growing increase in use of oil globally, and the right hand side, the darker pictures show the projections of oil demand going forward. It's a staggering picture from my point of view. And it

shapes, to a large extent, the prices that you are seeing today. The US is the biggest oil user. We're the top picture there. But growing fastest are China and India. They're just roaring in. In the last ten years their oil use has grown by fifty percent, and that kind of growth is expected to occur. That is also one of the reasons why we're seeing oil prices the way they are today. The US gets less oil domestically than we consume. We import 68% of our oil, I think, oh, excuse me, 58%, I exaggerated. Coal and natural gas are largely from domestic sources, although there's really a net interchange, because we buy and sell coal and natural gas on global markets. And all three of these face prices that are shaped by global markets. One of the reasons, obviously, why oil use is growing everywhere is we drive a lot of motor vehicles. The top curve is the rise in the barrels per day of oil consumed by motor vehicles. Those are cars, on the top. Cars and trucks and SUVs. One out of every barrel of oil anywhere in the world is used by motor vehicles in the United States. Again, that's a staggering picture, and to imagine the voracious demand growing from elsewhere around the world, we're going to have challenges to be sure. One of the reasons why we see this pressure on oil in the transportation sector is fuel economy. The miles per gallon of motor vehicles is just pretty stagnant in terms of the government standards, and as a result there is worsening fuel economy in all of the vehicles out there on the roads. The top one is cars, the next picture below it is vans and SUVs. There has been a Katrina affect. I don't know who saw yesterday's USA Today. They reported that last year, what was it? Fifty-eight percent of motor vehicles sold in the United States from foreign and domestic manufacturers were SUVs or trucks. This is, you know, pickup trucks. I'm not talking about commercial vehicles. And forty-two percent were just automobiles. And that's shifted just September to September we've seen a decline in trucks from fifty-eight to fifty-one percent of vehicles. That's a decrease of eighteen percent. And actually that's hitting domestic manufacturers hardest, because that's where most of their vehicle fleets are.

One of the reasons why we're seeing tight oil prices as well is that in the United States where most of our refined oil is refined, we have this increasingly tight situation of spare capacity. This is a picture of the spare capacity available in domestic refineries. You can see we're really tight there over on the right. There has not been a new refinery ordered in the United States in twenty-five years. And so we have used this refining capacity up to the margin and when Katrina and then Rita hit that spare capacity just went away, which contributed to the fly up in prices. This is now the picture of prices, the rest of the story that I showed you a few minutes ago. I showed you the declining curve to 2000, and this is what we've seen since the year 2000 in terms of oil prices, and these are pictures of prices as recently as a few weeks ago in terms of the forward price expectations of the EIA, the Energy Information Agency, which expect continued high oil prices in crude oil markets. And of course we see that in gasoline effects. You know this, you see this at the pump. Since a year ago prices have gone up a dollar. Remember those days? As part of the Clinton administration, I was one of them, where we proposed a five-cent per BTU, per million BTU, I don't remember the basis but there would have been a five-cent gallon increase in oil. It was as though Hiroshima had hit in Washington, to talk about five cents. We've seen a dollar increase in prices in the last year.

I put up this picture because this is, you know, kind of where we are. We are stalled on the highway. Of course, this is the migration out of Houston in the anticipation

of Rita. And of course that was a hurricane, there's just, you know, post-Katrina affect. But what we see here, I found this picture as interesting, not only because of those stalled cars in the middle where they ran out of gas, but also because all of those vehicles are SUVs and pickup trucks. Now, I'm not really trying to be moral about SUVs and pickup trucks. That is what the American public has wanted in light of the prices that they have seen at the gas tank. But that's not a sustainable picture, as you can tell.

Home heating oil prices are also a function of those oil markets. It's really scary for New England. Maine is twice as dependent on heating oil as the rest of the nation. Prices are staggeringly increasing in that market as well.

Okay, I talked a few minutes ago about the appetite of Asia, China, etc. This is, on the left, the vehicle population and the increases. That's today, on the left. The carbon dioxide emissions are on the right, and this is twenty-five years from now, a projection of what those are going to look like. That is a scary picture to me, when I think about oil prices and carbon emissions. Most of the gasoline, of course, I mean, excuse me, crude oil, comes from Saudi Arabia. That's the reserves, on the top line, from Saudi Arabia, and it drops off very fast. OPEC controls most of the reserves in international markets. And this is a picture that shows consumers on the left and their growing consumption, producers on the right. Mostly you see, on the right hand side, that yellow bar is OPEC, that's the biggest growing source of supply. And what this is, is this is a seller's market. People are demanding new gasoline and all sorts of other things, and this is a seller's market. We've got price concerns as a result of that.

So we've talked a little bit about oil. Natural gas is a similar picture. I'll go through it quickly. We've had demand pressure in North American markets, declining production, improving economics of liquefied natural gas. Let me just show you a minute or two a picture about that. And similarly, coal. Coal is, for us, a huge resource. We are the Saudi Arabia of coal. As a result, people are looking to more coal, with good economic impacts and troublesome environmental impacts. And so, let's look at these pictures. Coal use worldwide is also a scary picture. I show here China and India. That's the second from the right set of bars. And that's the growth in electricity, demand for coal. Again, coal is a huge driver of greenhouse gas emissions. That is an extraordinary burden that we expect, of course, I'll show you the US's contribution to this so far. This is the trajectory of greenhouse gas emissions from the IPCC, the international group on climate change. And you see, again, the expectation for rising emissions from all countries. This is the cumulative emissions of greenhouse gases by country over the last fifty years. We are the largest producer of emissions by a staggering amount. So by showing you the expected growth in China and India I don't mean to point the finger at them and say, "They're going to do something that we haven't done." It's just a scary challenge.

And the US, of course, is not part of the international regime, this is my, you know, my chance at editorializing here at the moment. We have not signed on to Kyoto, there is resistance to mandatory action to reduce climate change and greenhouse gas emissions from, largely from oil and coal. I'll talk to you a little bit more about that in a moment. This is the US's expected increase in a business as usual environment. This is increase in greenhouse gas emissions. Most of it is from power plants, that's coal, and most of it is from cars, SUVs.

Okay, so, I mentioned that internationally energy is geopolitical, and of course that's true domestically too. There are producer and consumer states in the US just as there are internationally. And that affects the politics and policy making on energy. I'm going to show you quickly, pictures. This picture shows the location of most of the reserves in oil in the US. It's in four states. Remember this picture as I'm going to show you who voted for the energy act, because this is a tremendous, you know, there's an oil issue involved in figuring out how to develop these resources. Most of the refining capacity you probably now know comes from the Gulf Coast. That's that high bar; these are the different geographical regions of the US that have refining capacity. There is zero in the Northeast. Most of the refining capacity is in the Gulf Coast, and we've felt that over the past month. Most of the natural gas is in the Rockies and the Gulf Coast areas as well, so that dark blue area is where the gas reserves are. And those gas reserves are in this portion of the Rockies, but the productivity of natural gas wells is declining. So if you want to drill a well today your expectations for the productivity of those wells are decreasing. That is one of the reasons we're feeling price pinch in natural gas as well. Here's the price pinch, gas prices, natural gas prices are following the same trend as oil prices over the next period. That shows, those little red dots are the off-the-chart current forward prices for natural gas. The picture is from about three months ago. No, no, no. The beginning of September. Excuse me. The beginning of September. And the actual forward prices trading on commercial markets are those dots way up there. It's, again, staggering to think about what our energy bills are going to look like. That's one of the reasons why we see pressure for liquefied natural gas facilities around the US. There are about three-dozen proposed. As you know, we have a handful proposed here in the Northeast, including in Maine, the Canadian provinces and in Massachusetts and Rhode Island. So there's a number that we're facing here, and this is because as natural gas prices have risen, productivity of natural gas wells has declined, reserves are at least constrained in the US. The economics of imported LNG have become more favorable, and that's why we're seeing that kind of pressure.

There are other resources we have here in the US. These are the pictures of the location, the geography of wind resources on the top left, and bio resources on the bottom right. This is a huge abundant potential resource. You're going to hear more about that today. And of course we have a tremendous resource here in New England. This shows the offshore and on-shore wind potential. Very large resource that is available to us if we can figure out how to site wind farms. Coal, as I mentioned, is a huge domestic resource. This is the location or the geography of coal. And one of the ways we've thought about the geography of fuels is by choosing, you know, when one of them faces a crisis, we turn to another one. And what this picture shows you is, by fuel, and by year, which of the power plants in the country were fueled by certain things. You see over in the 1950's that little green sliver was a huge influx of hydroelectric capacity. We haven't see a lot more additions to hydro capacity except in the sixties and a bit in the seventies. In the fifties and seventies, what we loved in this country were coal plants and natural gas steam plants. Those are the blue and the maroon picture. Those are the additions to the fleet of energy, electric generators associated with those fuels. Now, in the seventies through nineties, nuclear was the fuel of the decade or the couple of decades, and we saw a huge introduction of a fleet of a hundred nuclear reactors around the country. But what have we seen in the last decade? We've seen gas. Gas, only gas, only gas. And so what's

happening is that in the fleet of electric power plants around the country, our prices in electricity are going to be tied to the prices in natural gas markets.

That's true in New England. This picture shows, on the left, in the fifties and sixties, we built oil plants and we built hydro plants. More recently, the last twenty years in the last millennia, I guess the way you put it. Last century. We built nuclear and oil plants. But the only thing we've built in New England is gas plants in the past decade. Except demand side management. So of our thirty thousand megawatts of capacity to produce electricity, we have on top of that one thousand five hundred megawatts of demand side management. That is a big deal in terms of our ability. But there's more we can do there. So our electricity production is predominantly gas, nuclear. We are more heavily dependant on gas and nuclear power here in this region than the rest of the country.

Nuclear is a challenge, in some ways. For many, many years people have looked at it as both a boon and a problem. The boon is the fact that it has a stable priced fuel. The price of fuel doesn't fly with gas and oil markets, but of course there are challenges with safe operations and the wastes associated with nuclear power. Plus, this picture shows the end dates of the forty-year licenses to operate nuclear power plants. And if they are not extended we will see this drop off of nuclear power, a non-carbon emitting power source that will need to either be replaced, extended with some source of energy if those are not extended.

I told you that electricity prices are driven by natural gas prices. This shows, on the right hand, this huge fly up in electricity prices. This is all good news, right; this is our really happy news story this morning. And you see that in terms of the shape of the rising electricity prices for all consumer sectors, as well. And this has caused in large part a resurgence of demand for traditional coal plants in the US--traditional Eisenhower-era coal technology to be built in these places. For me, again, with my particular interest in climate change, that is a scary proposition.

Five of the six New England states are among the top eight high-priced energy states. You'll be happy to know Maine is number thirty-five. Maine has below average prices. That's probably a surprise. Think of how much worse it could be in those other states. But in part that's a function of your resource mix here, your renewable resource mix, your cogeneration resource mix, and a number of energy efficiency actions you have done.

So let me just continue very quickly to say, okay, we're spending more on energy, it's a scary thought. The era of cheap energy is over. That's obviously one of the messages. I think, I have a quote in here, that your senator Cohen said that when he was in the House of Representatives in 1973. But one of the things that I think is that there are no silver bullets. There's not a single thing we can ride into the sunset on to solve all these problems. We really have to think about everything when we're thinking about energy security, climate change risks, energy efficiency, and economics of keeping and enabling growth to occur.

The New England situation is very much like what I described a minute ago. Energy efficiency programs. How to accelerate them; increase their penetration into all sectors in New England. Natural gas, our region depends upon natural gas tremendously. How are we going to get it? We need it for electricity. The electricity, the only thing we've had is natural gas, and we have not had a new power plant ordered in the last five

years. There are tremendous uncertainties overhanging investment in power generation in New England. It's chilling investment. And in oil, this dependence that we have on home heating oil again is a troubling situation given our inability to really influence oil markets and their prices.

So, okay, for a moment, let me tell you, I'll put on my National Commission on Energy hat for a moment, and describe this is the world that presented itself to the National Commission on Energy Policy three years ago when the Hewlett Foundation assembled sixteen people from around the country--people from academia, from government, from industry, some energy hackers and, you know, wannabes like me. So we, we were charged with joining together for three years to see what we could do to break the stalemate. At that time there was no Energy Policy Act. We were asked to figure out what we could do to reach consensus. Again, oil producers, car manufacturers, electric company heads. All sorts of constituencies, environmentalists, etc. We were to focus on the national scene, what to do for a sustainable energy policy, and they asked us to find common ground. Which is hard to find at times in legislatures. So we had a long-term focus: what could we do for energy security? Energy independence? Energy. . . clean energy, economical energy? And we were asked to deal with this stalemate question, the fact that for a decade there had not been resolution on the national scene on energy policy. There are myths as a result of those geopolitics of energy. People either hate nuclear or love it, or they hate demand side management or they love it. But people start moving into the corners of the room on energy issues, and those are as much, again, by fuel and by geography as they are by partisanship. So we were asked to look at that to see what we could do.

We said that, after spending three years on this, we said, and you're having what, the twenty-minute version? After three years we said there are two central energy challenges. One of them is the dependence of our economy on oil, and by that I mean the dependence of a transportation sector with all of the implications that spill over indirectly into the economy, associated with a fuel, not so much that we are buying from elsewhere, but that we buy from dangerous parts of the world. So that oil security and the economic insecurity it flows from was viewed as one of the core issues. The other one was dealing with climate change, global warming, the greenhouse gas emissions from combustion, delivery, use of oil. Especially in the power sector and especially in transportation. So I've shown you the picture of that. Those were the ones that we thought were most important. We also thought that we've got to deal with this fact that there is this huge disconnect that exists all the time between the fact that we take for granted energy, it's going to be there when you plug it in, it's going to be there when you drive up to the gas tank, but we don't think about all of the consequences I just showed you. The fact that there are all these systems and things that we really can't shape, and so people don't see the connections. We wanted to see if we could address that.

So we said, we can't deal with the nation's energy issues unless we deal with oil in transportation and carbon in transportation and power. We said the oil stakes are enormous; I've already showed you this picture in terms of increasing oil use. We said the global warming stakes are enormous; I showed you the trajectory of greenhouse gas emissions. We've got to turn the tide on that.

So here's our proposal. On climate change, our central proposal would be that the United States needs to do something here. We need to do something that affects

investment, affects, makes markets enabled through making the price of carbon viewed in prices of energy, which it is not today. We wanted to balance economic and environmental progress. So we said, let's do this. Let's put a mandatory cap on the amount of greenhouse gas emissions that come from anywhere in the economy. There'll be a certain amount of tons that can be emitted each year. There'll be a program to allocate the allowances to various parties and allow them to trade, buy and sell allowances for the right to emit. We felt this would drive technological change. It would affect investment decisions, etc.

But we had certain features of this that we thought were important. One of them was, there are a lot of people who say if the United States adopts a mandatory program, we can't afford it. We can't afford to lose the business that will go other ways to China and India if we impose this cost element in our energy situation. We're already, you know, behind the scene in terms of cost competitiveness. So what we said was, we want to predict the economic impact of a cap-and-trade program. And by doing that we would say, whenever the price of buying an allowance to emit carbon hits a certain price in the marketplace, people can go buy more allowances from a bank. There will be more allowances produced. Therefore, it is a soft cap. Many environmentalists don't like that. And this was appealing to the economic concerns in Congress about what to do about this. But we said, the price at which you could go buy extra allowances will rise each year. Again, causing, sending a signal to the marketplace, if you don't want to have to buy allowances at those increasing prices, then go invest in technology. Beat those prices with a cheaper solution.

So there's environmental progress. We said if the US does this, then we have a leg to stand on when we go to international meetings to ask India and China to join in the international regime. And again, we thought this was a technology push. This is the trajectory of emissions that were associated with the US emissions under our program. This kind of stemmed the tide of growth. The Department of Energy's Energy Information Administration was asked by Senator Bingaman to estimate the cost impact of our proposal. It was estimated at 0.1 percent of GDP over the period as compared to business as usual.

The second piece, quickly, of our program, the National Commission's program, was what to do about oil use in the vehicle sector. We said, of course, we want to see price signals out there. There's no doubt that there will be price signals seen, we're seeing that right now. But that's not enough. We have to do something else, and our, after tremendous discussion, you know, wrangling, we said fuel economy standards in the United States must be increased so that the fleet of vehicles that are presented to American consumers by domestic and international manufacturers are more efficient. That's what your choices are in the marketplace. And we would provide incentives for changing manufacturing in the US to enable those kinds of changes to occur. We also said biomass, as a blend for petroleum, is needed in the long term. You're going to hear more about that today.

So the new Energy Policy Act, where does it take us? This was passed this summer after thirteen years of wrangling, lots of debate. It's 1,725 pages long. It's fifteen billion, in terms of its cost impact to the US budget. It was adopted, obviously, by a majority of the states, but not from the consumer states to a large degree. What I think of it is as an economic stimulus package. It creates a number of incentives for investment



in energy of all variety of sorts. And it does it in a couple of ways, which I will describe. For example, there are tax code changes. If you own natural gas lines, if you own electric transmission lines, if you own drilling machines, if you own refineries or want to do any of those things, there are improvements in the tax provision for depreciation, amortization expensing, to make it cheaper for you to do business and investment. So those are, you know, a nice carrot out there to increase supply.

Additionally there are tax credits for investment if you do these various things. Invest in nuclear, advanced nuclear technology. If you take care of coal pollution control systems on traditional coal generators, or advanced coal power plants, there are tax credits for you. If you are a consumer of energy, there are tax credits for you, as well. If you want to buy a hybrid, if you want to buy more hybrids, University of Maine, there is a thirty-four hundred tax dollar, tax credit for you. There are tax credits for solar, photovoltaic systems, heating, cooling system improvements, for businesses and homes. Additionally, I'll just summarize this very, very quickly to say that one of the things again that the energy bill did was make it less risky for investors to invest in certain things; tremendously less risky for investing in nuclear plants and advanced coal plants.

Another thing the Energy Policy Act does is remove the difficulties of entering into energy fields. For example, there will be an inventory of the outer continental shelf resources, the off shore waters of the US, to see what's out there for reserves. That will improve the information base; reduce the cost associated with drilling and exploration. Additionally, if you are drilling and take product from those fields off shore there are lower royalty fields. Again, carrots for investment. Additionally, if you want to build an LNG facility, a governor can no longer veto it. That was the case before the passage of the Energy Policy Act, and that is no longer the case. And additionally there will be corridors designated for transmission lines, etc. So this is a build 'em. This is a build 'em bill.

Additionally there are advanced technology grants from the department of energy that are available for nuclear, for advanced coal, for renewables, for biomass, a number of technologies. But one of the problems is that they are subject to the year-by-year congressional decision-making. This is the Department of Energy's budget that has occurred over the last twenty-five years. This is the r and d budget on the energy fuels. You can see that the energy r and d budgets have been squeezed tremendously. So the promise of the Energy Policy Act on all those innovative r and d programs are subject to the realities that this is an authorization act that has been set up, and yearly there will be appropriations, or there will be fights, about whether or not there are going to be energy expenditures, or some other wonderful worthy programs. So this is where the rubber will hit the road on many of these things. But the tax credits are there for the taking, if you qualify.

So a couple of the other things. Gasoline blend will have to have more biomass, and ethanol, as part of, over the next few years. Federal agencies who are huge users of energy, part of their power will have to be from renewables, and the Department of Energy has to improve the standards by which appliance manufacturers manufacture their air conditioners, washers and dryers, etc, so that they get onto the marketplace and they're more efficient. Finally, there is a huge title in the act that deals with the electricity industry. It is of intense interest to people in this industry. It enables a number of things about investment of transmission and other things, as well. I've talked to you about the

consumer incentives. From a state's point of view there is higher authorization levels for the LIHEAP Program for low-income weatherization and payment of bills. Those again are subject to authorizations, which are troublesome.

So finally, does it get us to where we want to go? This act is very much the act that President Bush wanted, and this picture shows you the states that voted a majority in favor of it. There are bill elements for producers and consumers, but there's really not enough in it, from my point of view, for a region like ours. Too much of its funding basis is fragile. What is not in it, is a mandatory climate change program, and that is a big disappointment. The Senate did heroic actions to try to get us there, and the best that they could do was passing this Sense of the Senate Resolution. And in simple form it says, we have to do something in the United States. So a majority of the Senate says we need a mandatory climate change control program of some form in the United States. The interesting vote on that is as follows. This is a coal map, so you might guess that these were senators that voted for this climate change resolution, but so did these senators. And I think this is a really important and a wonderful movement that we can see. That for a variety of reasons in all of the states of the country there's at least pressure to deal with this, for investment certainly among reasons.

And finally, in it is nothing to improve fuel economy standards, as I described that was the other plank of the National Commission's recommendations. There is nothing in the bill that does that. And my little editorial comment is, if fuel economy standards were improved from where they are today, twenty-five miles per gallon is the average fleet standard for anybody who wants to sell vehicles. If that were improved by ten to thirty-five miles per gallon, we would get 2.3 million barrels of oil found in the vehicles themselves, found in the domestic resource base. Remember we use eight million barrels a day. By this period which I think is, I don't remember when the projection was here, but so it's several years in the future, by then we're expected to have nine and a half, so this really takes us a long way to meeting growth and demand in the motor vehicles sector. And ANWAR, by contrast, is 1 to 1.3 million barrels of oil per day. This is where I would love to see us going.

So I've told you, you know, what's not in it, etc, just as a last final reminder. Remember the good old days, and here's some ridiculous parts, how sweet it was when gas was only \$2.70 a gallon? President Kennedy mentioned this as the sweet old days, or sweet current days, when you find something in the \$2.70 range, and when this Energy Policy Act passed in July was seen as the new energy answer for the next decade. Of course, then we've seen prices fly up since then. We've seen prices of barrels of oil hit above sixty dollars. We've seen the Senate say, now, after this they want to adopt a mandatory program, and we've seen the House say, well, we're not ready yet. And finally, let's heed the lessons of history. Mr. Cohen reminded us "we can no longer afford to ignore the reality that we have fixed resource boundaries, and that radical changes in our oil-based economy can not be denied any longer. The era of cheap, abundant oil is over. The sooner we accept this fact, the sooner we get on with a task of developing alternative energy sources," and that's what you're going to hear about this afternoon, and the rest of today. Thank you.