2009 National Clean Energy Summit event transcript

Repository Citation

http://digitalscholarship.unlv.edu/nces/2009/aug10/10

This Event is brought to you for free and open access by the Conferences/Meetings (USI) at Digital Scholarship@UNLV. It has been accepted for inclusion in National Clean Energy Summit by an authorized administrator of Digital Scholarship@UNLV. For more information, please contact digitalscholarship@unlv.edu.
NATIONAL CLEAN ENERGY SUMMIT 2.0 ROUNDTABLE DISCUSSION

SUBJECT: BUILDING THE CLEAN-ENERGY ECONOMY

PANELISTS: NEAL SMATRESK, ACTING PRESIDENT, UNIVERSITY OF NEVADA, LAS VEGAS; SENATE MAJORITY LEADER HARRY REID (D-NV); FORMER VICE PRESIDENT AL GORE; JOHN PODESTA, PRESIDENT AND CEO, CENTER FOR AMERICAN PROGRESS ACTION FUND; DENISE BODE, CEO, AMERICAN WIND ENERGY ASSOCIATION; LUCIEN BRONICKI, FOUNDER AND CHAIRMAN, ORMAT TECHNOLOGIES; STEPHANIE BURNS, CEO, DOW CORNING; SENATOR MARIA CANTWELL (D-WA); SECRETARY OF ENERGY STEVEN CHU; GENERAL WESLEY CLARK (RET.), CHAIRMAN, GROWTH ENERGY; NEVADA STATE SENATOR STEVEN HORSFORD (D); VAN JONES, WHITE HOUSE COUNCIL ON ENVIRONMENTAL QUALITY; ROSE MCKINNEY JAMES, ENERGY FOUNDATION BOARDS; TERRY O'SULLIVAN, GENERAL PRESIDENT, LABORERS' INTERNATIONAL UNION OF NORTH AMERICA; MARC PORAT, SERIOUS MATERIALS AND PEGASUS INVESTMENTS; STEVE ROELL, CHAIRMAN AND CEO, JOHNSON CONTROLS; KEITH SCHWER, DIRECTOR, UNLV CENTER FOR BUSINESS AND ECONOMIC RESEARCH; SECRETARY OF LABOR HILDA SOLIS; DANNY THOMPSON, EXECUTIVE SECRETARY TREASURER, NEVADA STATE AFL-CIO; LOS ANGELES MAYOR ANTONIO VILLARAIGOSA (D); JOHN WOOLARD, PRESIDENT AND CEO, BRIGHT SOURCE ENERGY; MICHAEL YACKIRA, CEO, NEVADA ENERGY

MODERATOR: FORMER SENATOR TIM WIRTH (D-CO), PRESIDENT, UNITED NATIONS FOUNDATION

COX PAVILION, UNIVERSITY OF NEVADA, LAS VEGAS
10:00 A.M. EDT, MONDAY, AUGUST 10, 2009

Copyright ©2009 by Federal News Service, Inc., Ste. 500, 1000 Vermont Ave, Washington, DC 20005 USA. Federal News Service is a private firm not affiliated with the federal government. No portion of this transcript may be copied, sold or retransmitted without the written authority of Federal News Service, Inc. Copyright is not claimed as to any part of the original work prepared by a United States government officer or employee as a part of that person's official duties. For information on subscribing to the FNS Internet Service at www.fednews.com, please email Carina Nyberg at cnyberg@fednews.com or call 1-202-216-2706.
Mr. Smatresk: (In progress) -- University of Nevada at Las Vegas and our beautiful campus. It is our pleasure to co-host today the National Clean Energy Summit II, with Senator Harry Reid and the Center -- excuse me, and the Center for American Progress Fund.

Something really special is happening here at the University of Nevada—Las Vegas and in Las Vegas. Last year, at the first National Clean Energy Summit, President Clinton and Senator Reid challenged us to become the solar capital of the world, and to look for new technologies that would create a cleaner future. And I'm glad to tell you that here at UNLV we've accepted that challenge, along with our partners from the Desert Research Institute, from Nevada Energy, and other places.

And now we can say that we are moving fast. We've had over $55 million of funding in clean energy, including smart-grid technology, photovoltaics, solar-catalyzed hydrogen, and a host of other projects that we think will make a difference, change our economy, create jobs, and build a cleaner, more sustainable future for Las Vegas, Nevada, and for our country.

We have to, in particular, give Senator, Majority Leader Reid congratulations for leading the fight in Washington to push the U.S. and Nevada to the forefront of the clean-energy revolution. His efforts -- (applause) -- his efforts are putting us on the map, and we are well-positioned to be on the fast track with him.

Nevada is going to make the shift to a clean-energy economy, and UNLV, through our educational programs and research programs, are there to help train the future leaders and the workforce that our state will need. Our faculty will continue to bring their research forward, to create new technologies and new business opportunities.

It's an exciting time for all of us. And today you're going to be treated to an incredible conversation about the clean-energy future that we all seek, about jobs, fuel innovation, and how to protect our environment.

Please join me in welcoming our distinguished roundtable panelists to the stage.

(Applause.) (Music plays.)
MR. PODESTA: We've finally got in our seats.

Good morning, everyone. I'm John Podesta. I'm the president of the Center for American Progress Action Fund.

And, before I get started, I'd like to thank Senator Harry Reid, who is not only the majority leader in the United States Senate, and the leader of the Senate, but a leader on these clean-energy issues.

And I want to thank our host, the University of Nevada at Las Vegas, and all the people who have helped put this on, and have cosponsored this event with us. I appreciate their leadership on this issue, the work they've put into this event to ensure its success.

We organized this summit to discuss policy ideas to speed and ease the transition to a clean-energy economy; and how, in doing so, we can spur private investment, save consumers money, and put Americans back to work in steady jobs that pay a living wage, provide good benefits, and can't be shipped overseas.

This event occurs, I think, at a great time, because this fall the United States Senate plans to begin debate and consideration of clean-energy and global warming pollution reduction policies. The ideas we generate here can inform and enhance this debate. And we're pleased to welcome Senator Maria Cantwell, from Washington, who is a leader in this fight in the United States Senate, along with Senator Reid.

(Applause.)

As the president noted, we have held one meeting here a year ago, and we held a meeting in Washington in February. And I think one of the things we've learned in our past meetings is that clean-energy infrastructure works best when it works together -- electric cars can use electricity created by wind turbines and solar power; a smart grid can efficiently bring renewable electricity from points of generation in deserts and plains to points of consumptions in cities and towns.

Efficiency in renewable electricity standards, and an effective price on carbon pollution can create the incentives for sustained private investment that can jump-start American production of the clean-energy technology and the clean-energy technology industries of the futures.
With support of federal policies, huge shale gas -- that are newly available because of American know-how and technology, can replace old, dirty coal power plants, dramatically reducing global warming pollution; and natural gas can -- (audio break) -- to solve the intermittency problem that comes with renewable energy.

Finally, a Green Bank can provide secure, affordable financing to get new technologies off the ground and into the marketplace. President Obama, I believe, understands this fundamental point: All the elements of a clean-energy economy rely on one another. That's why he's made transforming our economy to a clean-energy base so central to economic recovery. And we're so glad to have so many distinguished members of his administration here with us this morning.

Progressive leaders in Congress have also shown they believe in the centrality of clean energy to the future of the country, and are committed to realizing its potential:

The House recently passed legislation that was the first time that comprehensive clean-energy legislation would -- that would create a market for renewable energy, expand clean-energy manufacturing, improve efficiency to save consumers money, reduce oil use and create jobs for American workers.

In the Senate, Majority Leader Reid is leading the way in helping craft a smart, practical bill that prioritizes a coherent strategy and lays the groundwork for this transformation.

At last year's summit, we focused on how we got renewables to market. And how we build a smart grid that improved the efficiency, security and the reliability that opened up the (potential ?) for the vast amount of renewables that we have available in this country.

Today, we're going to focus on two additional areas. Today, C.A.P. and the Energy Future Coalition are releasing a report called, "Rebuilding America." The report shows that retrofitting 50 million homes and small commercial buildings could create 625,000 sustained jobs in construction and manufacturing, and save consumers up to $64 billion in their energy bills.

To reap these rewards, we need new policies to help the market work, and capture -- (audio break) -- We're also going to propose today policies that would take advantage of the recent
capacity to tap our enormous shale gas reserves. This resource could be a global warming game-changer, because gas could provide relatively cheap, domestic low-carbon energy to provide electricity, and power heavy- trucks, buses and other fleet vehicles.

This, and many other ideas from this gathering, have become -- of the previous gatherings have become law already. We expect the discussion today to be -- (help ?) form and inform the upcoming Senate debate, and I'm confident that this year's summit will reach Washington's leaders and achieve a measurable impact.

In closing, let me say that -- I want to just talk for a minute about how the day will flow for all the people in the audience. After this panel, we're going to take a lunch break. After lunch, we'll hear from my good friend, President Bill Clinton. After President Clinton's speech, we're going to conduct a town-hall forum featuring Vice President Gore, Majority Leader Reid, T. Boone Pickens, and assistant secretary of Energy, Cathy Zoi.

That's a chance for everybody to participate by asking questions. Beginning now, and continuing throughout the day, you can send us a question or comment through a text message, e-mail, or writing on the card included in your registration packet.

To send us a text message, in the "To:" box on your phone, enter: 99503; and then the very first words in the body of the text should be "askncep," no spaces, "askncep." To enter a question on the Web, send an e-mail to "questions@energy" -- excuse me, questions@cleanenergysummit.org," and don't forget to include your name and home town in the body of your e-mail and text message.

With that, let me now turn it over to my good friend, and a great leader, Harry Reid.

(Applause.)

**SEN. REID:** I first want to acknowledge and thank the University of Nevada at Las Vegas, and our new president. We are known for producing great athletes, but we're now going to be known for producing great scientists -- that's so important, and this university is moving into a new sphere in the academic world. And we'll hear more from the president about this at a later time.
A year or so ago, I started taking missionary lessons from the group supporting T. Boone Pickens. I've taken the missionary lessons; I've met with him; and I've been converted. I now belong to "The Pickens Church," okay. We're very thankful to have him here. He's been a good friend and a real visionary. We look forward to hearing from President Clinton this afternoon.

Secretary Chu, it was just a year ago that you and I -- at this same facility, of this first summit, first met. We had a number of nice visits during the day that we spent together, neither of us knowing the great change that would take place in this country with the election; and, certainly, neither you or I expecting that you would be part of this Cabinet of President Obama.

You've done a great job. You're recognized, not only in our country but around the world, as one of America's great scientists, one of the world's great scientists. We're so happy that you're here today.

Labor secretary -- (audio break) -- that great California delegation produced one of its best in making you part of President Obama's Cabinet, and we appreciate your being here.

We, until a couple of hours ago, were expecting Governor Schwarzenegger. I think, as some of you know, the State of California, it seems like on a daily basis, has "a perfect storm" -- prison riots yesterday; and then, of course, we also recognize Eunice Kennedy-Shriver, his mother-in-law, is extremely ill. And he said he felt it would be inappropriate for him to be here today.

I have enjoyed working with him on high-speed rail. California and Nevada signed a partnership working to bring high-speed rail to this part of the country. It's necessary for the environment and the economy.

And finally, the mayor of Los Angeles. That city is bigger than more than 40 states, in population. We're happy to have him here. I so appreciate the friendship we've developed over the years. During my difficult times I have received phone calls from him, and during good times I've received phone calls from him. That's a true sign of friendship.

It was on August 10th, 1776 that word reached London that the Americans had drafted the Declaration of Independence. The revolution that followed set our nation and the world -- but,
especially our nation, on a long journey toward prosperity and global leadership.

Today, August 10th, here in Las Vegas, we're firing the first shots of a new revolution to regain that prosperity and restore that leadership -- a clean-energy revolution that will create millions of jobs across America, and thousands of jobs right here in Nevada. We dedicate this year's summit to creating new, good jobs -- good-paying jobs that can never be outsourced.

I can see new jobs in construction, manufacturing and engineering; new opportunities that will reverberate to countless other industries in our country. It will lower every American's energy bill while we're at it, by promoting rapid investment in energy-efficient buildings and technology. When we harness the power of the sun, wind and water all around us, we'll not only strengthen our environment and strengthen our national security, we'll turn around our economy so it can recover and flourish once again.

But, just as this crisis was not created in a day, recovery will not happen overnight, so, we must begin. If we do not start today to create the jobs of tomorrow, those jobs will surface on other shores. Though we innovate, invest and invent, we already trail competing countries in the global economy -- places that we should be leading.

The year was 1982, the new Congress was organizing, and a frightened, young, newly-elected Congressman from Nevada had been assigned to the Energy and Technology committee. And we went there for organizational activities of that committee.

And a young man came to me and said, "I'm Al Gore from Tennessee, and I have gotten permission from the chairman of the committee, Don Fuqua of Florida, to form a new subcommittee." He said, "All the other people have been running to those established subcommittees, you get on mine and we'll have a good time." And I followed the suggestion, and we had a good time.

We looked at stuff that no one had looked at before. We looked at FEMA. We looked at the future of jobs in America. We looked at transplants which were just beginning. A little girl by the name of Jamie Fisk was brought in, whose liver had failed her, and it was the beginning of a revolution in transplantation of organs to survive, to allow people like little Jamie Fisk to survive.
That was the beginning of a journey through these many years of developing one of the most wonderful friendships that could exist on this earth. I have so much respect for Vice President Gore, and it's hard to convey this to the people here.

But I will say, as I said at an earlier time today, how fortunate we are to have a man that has won a Nobel Peace Prize, an Emmy and an Oscar, my friend Al Gore.

(Applause.)

**MR. GORE:** Thank you very much, Senator Reid.

Ladies and gentlemen, it's great to be back in Nevada and great to be back in Las Vegas. Senator Reid is leading the United States Senate and the legislative branch of our government and our country toward repowering America. And indeed, everything he said about our close and deep friendship for many years is something that I would second over and over again.

I'm reminded of a story, looking at all the jobs that are already beginning to be planned out and created here in Nevada, a story from Tennessee when over 60 years ago Albert Einstein and one of his colleagues wrote him a letter, saying that it was possible to create an atomic bomb. And the German Reich was close to it, they feared, and we needed to really get busy and save ourselves.

And so President Roosevelt invited in the majority leader and the speaker and the two chairmen of the Appropriations Committees, House and Senate, and laid out these facts, told them how urgent it was, how important it was to keep it completely secret. It was going to take a lot of money, but the nation's survival could well be at stake.

And he went to the majority leader, and the majority leader at that time said, Mr. President, our country is at stake. Of course, we'll put it in there, and we'll hide it, and we'll do this. And the speaker gave the same response. The chairman of the House Appropriations committee gave basically the same response.

And then it came to the chairman of the Senate Appropriations Committee, a man named Senator Kenneth D. McKellar. And he said, Mr. President, the future of all civilization may well ride on this decision. Where in Tennessee are we going to build it?
(Laughter.) And a little place called Black Oak Ridge became Oak Ridge, Tennessee, Oak Ridge National Laboratory.

And when the scientists informed the leaders of our country that we need a renewable energy revolution to save our climate and a national smart grid and efficiency and all the measures that we're talking about here, he didn't say the exact words, but I could see him thinking it. Where in Nevada are we going to build it? (Laughter.) Now I know the answer, at the University of Las Vegas and other places in Nevada. (Applause.)

And indeed, there are lots and lots of good jobs in this effort to repower America.

I have spent the last two years conducting now 32 so-called solution summits, delving very deeply into every aspect of this. And I am more convinced than ever that we have all the tools that we need to solve three or four climate crises. We've only got to solve one. But we can do it and, of course, we must do it.

And President Obama made a down payment on his promise to do just that in the Recovery Act back in February with historic national investments in energy efficiency, alternative energy, a new advanced smart grid, public transportation, high-speed rails and all of the rest. So we are on the move.

The House of Representatives took another historic step with passage of the legislation which not only puts a cap on the pollution that causes global warming but puts in place real incentives for energy efficiency and the development of alternative no-carbon and low-carbon energy sources across our economy to create jobs and improve our national security. And now the Senate is prepared to take up climate and energy legislation this fall in advance of the global treaty talks in Copenhagen in the first 12 days of December.

States like Nevada and my home state of Tennessee and every state, Senator Cantwell's home state, Mayor Villaraigosa's home city -- he's already doing a great deal, Senator Cantwell's been a great leader on this. And we are so fortunate to have Secretary Chu, Secretary Solis as a part of this historic effort, two great leaders. Business leaders, like my friend Boone Pickens, and many others gathered around this table have been very vocal and energetic in moving what is an agenda in the interests of all Americans.
And John Podesta and his Center for American Progress have played an invaluable role. Tim Wirth, my colleague and partner for 33 years now, first in the House then in the Senate, we were on the same committee way back when, and he has remained a tremendous leader in all of this.

We have three crises, of course. Our national security is threatened by our continuing, dangerous vulnerability to the oil reserves that are really centered in the Persian Gulf. The International Energy Agency just put out its first-ever state of the world oil supply just last week and found that the decline in the pumping rate from the 800 largest fields has been going down much more rapidly than had been predicted only a few years ago.

We've heard from people, who know about these things, for several years, that there was no transparency and not full candor in exactly what the status of these oil reserves was. And now we're piercing that veil by looking at exactly what's produced under what economic circumstances. And you put that together with the data that is available, and it's very clear that this roller coaster of oil prices going up and down -- when they go way up, we get energized and say, oh, we're going to take control of our own destiny and we're not going to let them do it to us anymore. And then they come back down again, and we just relax again.

President Obama referred to that pattern as going from shock to trance. We get a moment of alarm and urgency, and then the prices go back down, and we just relax again. Well, I don't think we're going to follow that same pattern or make that same mistake this time around.

So in addition to our national security crisis, we also have an ongoing economic crisis. We all applaud the faint signs that the recession may be over, but we know that, while the credit crisis is easing, the global recession is still rumbling along, and unemployment is still at unacceptable levels. And this recent good news on unemployment may be temporary indeed.

So what we need is a national effort to prime the pump and get our economy going. And just what the doctor ordered is a national program to repower America, to make our buildings more efficient and build a unified national smart grid and catch up with the 21st century and use renewable sources and smart meters and all of the other new resources that are now available to us.
And of course, we face a climate crisis. The fashion has become to call it something else, call it energy, call it whatever, but sooner or later we're going to have to come to grips with the fact that the climate crisis is threatening the future of our civilization. And just because those words sound shrill is no excuse for not saying them. We have to face up to this.

We're putting another 70 million tons of global-warming pollution into the thin shell of atmosphere surrounding our planet, every 24 hours. This is madness. We owe it to ourselves and especially to our children and grandchildren and future generations. Who are we to make a decision to just keep on being so wasteful and destructive in the teeth of the warnings from every single prestigious scientific organization on this planet? Every single national academy of sciences in the world have endorsed the Intergovernmental Panel on Climate Change report saying, we have got to act on this.

And if our kids years from now say, didn't you notice that the entire north polar ice cap was melting? In the summer of 2009, in just a few year's time, didn't you care about that? Didn't you notice these storms? Didn't you notice the 1,000-year droughts, the 500-year floods, all of the rising sea levels, the trees dying all across the American West? What were you all doing, watching "American Idol" or what?

Sooner or later, we're going to have to wake up and really take this on for what it is. This is our generation's mandate, mission and responsibility. And thank goodness that Harry Reid is where he is and that he has brought us all here together to make some more steps in the right direction. And thank goodness that so many business leaders are now getting so deeply involved in this.

I look forward to today's sessions. I know that I've got to confine my remarks to five minutes, but you can tell I feel pretty strongly about this. I think that we have got to solve this, and we've got to get moving.

So Senator Reid, thank you so much for bringing us here. There's hardly anything I wouldn't do for Harry Reid. And I bet you that a vast majority of people in this gathering feel exactly the same way. So thank you very much, Harry.

(Applause.)
SEN. REID: Governor Schwarzenegger was to introduce Tim Wirth, but it's a pleasure for me to introduce Tim Wirth.

Tim and I served in the House together. We came to the Senate together. And Tim, when he came to the Senate, was one of those only a handful of senators who recognized the importance of talking about global warming. It was not done very often. Two of the senators doing it at the time are both in this room -- Wirth and Gore.

Since then, Tim Wirth has always been one of the strongest supporters of a cleaner America and a cleaner planet. He's done a lot since leaving the Senate, more than most former senators for sure. He has never lost his zeal for recognizing a need to change public policy.

Tim helped elect Bill Clinton and Al Gore. He served in the State Department as its first undersecretary of Global Affairs. He was the country's lead negotiator at the Kyoto climate conference.

He has done many great things, one of which is to help bring baseball to Denver. Tim serves now as president, United Nations Foundation. I'm so appreciative that he's going to be our moderator here today.

And Tim, thank you very, very much for being here and being the person you are.

MR. WIRTH: Great, Harry. Thank you very much. And I'm delighted to be here, as all the panelists are. And as before, we thank you, Harry, for bringing us all together and the University of Nevada at Las Vegas.

Well, we have two seemingly separate themes today. One is energy efficiency, the other is renewables, both the most immediate and fastest routes to the new clean-energy economy. These are two issues that can be discussed together, can be done separately, can be made enormously complicated or can be simplified to the point where they really give us each a road map. And we're going to try to do the latter this morning.

We're going to try to break these down in such a way that we hope all of you will walk away with a better sense for not only what you can do, what can be done here in Nevada but also could create a base for the very, very significant task that Senator Reid has in trying to garner the support in the United States
Senate for the kind of diverse and very important urgent legislation on energy jobs, energy security and climate change, the urgent legislation the country needs.

We're going to start today, focusing on the renewable side. And I'm going to ask Secretary Chu to kick us off. I just wanted to warn him that he's going to be first up in the blocks here. These people do not know the order yet, but we are going to split, sort of do the first 45 minutes on renewables and technology, the second 45 minutes on efficiency and the barriers to efficiency and what can be done.

So Steve, you're going to be first up. But before getting to you, I'm going to ask Dr. Keith Schwer, the director of the Center for Business and Economic Research and a member of the UNLV Economics Department, to give us an opening statement.

Keith Schwer specializes -- and all of you from Nevada will be particularly interested in this. He focuses in particular on the business and economic environment of Las Vegas and Nevada and on the whole region. So what he's going to do is take a few minutes to describe the economic development and job-creation potential of clean energy here in Nevada.

Then I'm going to move to Steve Chu and then go to Marc Porat. And I'll give you each sort of a two-person-ahead warning as to when you're on so you can (fit ?) this into the overall narrative.

Steve (sic) Schwer -- Steve (sic.).

MR. SCHWER: Thank you. As a faculty member, I wish to -- (inaudible) -- to UNLV. First, I'd like to begin by noting that the current unemployment rate in Clark County -- Clark County has a population of 2 million people, Las Vegas is its major city -- is 12.3 percent. The national number is 9.4 percent. That is a -- (inaudible) -- for us, a complete change in the economic prosperity and the economic dimension of our community.

And it's sort of appropriate at this time that we should step back and think about where it is we're going and what the future should be for our children and grandchildren.

I want to make three points -- point us to look at the history of Nevada. I think it's informative. Secondly, I'd like us to think about the basic fundamentals of -- (inaudible) -- economic
growth. And then make a few comments about some of the challenges that we face as we look at the energy situation.

First, if you look at the -- (inaudible) -- of Las Vegas -- (inaudible) -- fastest-growing region in the United States through that century. Why is that? Well, it occurred because of an entrepreneurial spirit and some special things happening in sequence, in relatively rapid order.

First, of course, was the coming of the railroad, and that brought people here. The railroad came because of the comparative advantage and the availability of water in the Desert West and the importance of a railroad line from Salt Lake to L.A.

That was followed, of course, by the great Boulder Dam. The last, as many have said, the last great government project that came in ahead of schedule and under budget. That opened up many opportunities, water and electricity. It was very important in World War II, providing material and, again, government development, the air base, other activities.

The third stage was, of course, the development of the Las Vegas Strip. There really were no comparative advantages here. You know, in Kansas, they have a comparative advantage of wonderful land and temperature to grow wheat. We grow orange juice in Florida. We didn't have any comparative advantages, but we found them. And it was the entrepreneurial spirit that resulted in the phenomenal growth to 2 million people here.

We'll tell you, the last 25 years have been ones of great prosperity. The last two years, we're seeing that things are changing.

I want to come to my second point. With all of this change, how do we look at the future? How do we look at how regions grow? There are two factors. One --I'll use some fancy economics terms here, but they're pretty simple -- the growing of the export base, the second is import substitution.

Regional economies are driven by what they sell. Again, Kansas, they produce wheat, they sell wheat. Florida sells orange juice. Texas and Oklahoma, my home state, oil. Nevada, we have been selling recreational services.

We have a very limited economic base in the state of Nevada -- tourism services and mining. We're looking for further
development to iron out what will surely be increased cyclicality going forward in time, based upon our economy structure.

So let's look at what energy addresses in terms of the export base and import substitution. What we know is that Nevada is blessed with renewable energy. What is going to be happening over time is this is going to become our export base. We're going to look like Texas and Oklahoma. We're going to be exporting energy, because we can produce it.

Now, associated with that, there are some issues, issues of storage and distribution. We're going to be doing things differently. But let me suggest to you those are just roadblocks along the way. And if you look at history, particularly at the coming of the railroad, the automobile, electrification, there were always issues that had to be dealt with.

Let me turn to the other side, and that's the import substitution issue. And that is, as we grow energy, we're no longer going to be dependent upon energy production in the dangerous part of the world. We're going to be in control of our own destiny.

But of course, that's going to create problems for us here, because we're going to have to be able to move from one industry structure to another. The simple example was that jobs were destroyed. You know, if you were in the buggy whip production and with the coming of the automobile, you lost a job. But there were a lot of jobs created by Henry Ford and others with the development of the automobile.

The suggestion here is as follows -- we shouldn't be afraid of that. Indeed, we should continue to work, to make those transformations, to drive our economy and to ensure the economic prosperity for our grandchildren. Thank you.

(Applause.)

**Mr. Schwer:** We thank you very much. And that immediately reminds us of the imperative of technology and that we figure out not only how to invent that technology, but how do we get that technology to scale?

And what I'd like to do is to start with Steve Chu and go through a discussion of this issue of the development of technology, how do we get it to scale?
We'll have five or six commenters on that, and I will then ask Maria Cantwell to give us a summary of all of that -- if I can, Maria -- of that first section of 45 minutes.

Then I'd like to go back to Vice President Gore and ask him to be kind of the lever point between the two, comment on what he's heard in the first part and then introduce us to the public policy issues, the second part, how do we deal with energy efficiency and how do we deal with the institutions of our utilities and so on? If that's all right, Mr. Vice President, that would be a good transition.

So I'm going to start with Steve Chu and then go to Marc Porat and follow him with Steve Roell.

Steve.

**SEC. CHU:** Well, thank you, Senator Wirth.

The United States has an incredible opportunity. We have to have a second industrial revolution. The first industrial revolution gave us power that could relieve us of human labor and animal labor. But it came with a cost, and we only realized in the last couple of decades what that cost was. Well, there were many costs, but certainly the carbon dioxide cost.

So in the next industrial revolution, we're going to have to develop technologies that will enable us to get the energy we need to grow and prosper -- (inaudible) -- developing world to grow and prosper, but with greatly reduced, essentially reducing and eliminating the carbon dioxide.

If you look at what the United States has, it has unarguably the greatest research and development centers in the world in our universities, our national labs and in the private sector. And so once we get this great innovation machine geared and going, we would be invincible. But the only trouble is let's get it going.

So in that respect, I just came back from China three weeks ago. And China has realized, number one, the price of oil a couple of decades from today will be considerably higher. And they're now importing 60 percent of their oil. Number two, we will be living in a carbon-constrained world. From the premier of China on down, they said, this climate change is very, very serious. If we do business as usual, the effects would be devastating to
China, devastating to the world. Therefore, we have an opportunity to lead in the industrial revolution.

And they are gearing up. These are becoming almost protected industries. They're trying to catch up with Vestas and GE and wind turbines. They are going heavily into solar. They are leading the world now in the highest voltage transmission, both AC and DC.

And you might be suspicious and say, oh, this is for export, it's business as usual. No. Actually, much of this is for internal consumption. And they have decided that we have to go there, but why not be the leader?

Now, quite frankly, the United States is still ahead of China. And why don't we be the leader? So if we move in this direction, we can be the leader and seize the opportunity. If we don't and just try to say, no, we're not really sure this is all happening, maybe the price of oil will go back to $30 a barrel, maybe the climate isn't really changing, this is just wishful thinking, and it's just throwing away this great opportunity.

So in terms of renewables, whether it be wind, solar, geothermal, enhanced geothermal, many, many opportunities, we can really take the leadership role in this. It's a remarkable thing, but you have to send first a long-term signal to the people in the United States, to industry, that says, yes, we're going to have a cap on our carbon, and we're going to ratchet it down. Yes, we're going to promote all of those, if you don't mind my venturing a little bit into efficiency, because that is going to be the lowest-hanging fruit for the next couple of decades.

As we build up the renewables, as we have to build up a modern transmission and distribution system, the United States has incredible resources in wind, solar and agricultural resources. The agricultural resources, that plus the electrification of a personal-vehicle fleet, I think, has incredible promise to just offload our total dependence on importing oil. The opportunity is enormous.

In Department of Energy laboratories, in the first six months of the establishment of these laboratories, they taught and reprogrammed yeast and bacteria, if you feed them simple sugar, to turn those sugars not into alcohol, which I personally prefer to drink, but into gasoline and diesel-like fuel. The yields are
low, but hopefully in the next five years they can up the yield so it would be comparable to yeast turning into ethanol. Okay.

I would be personally very disappointed if 10 years from now this hasn't approached real scale. It will take five years to get it going, pilot it, see if it works. And maybe T. Boone Pickens' (gas ?) will make the transition. But I think using agricultural waste and crops grown specifically for energy, there will be no competition between food and fuel.

The United States, since 1982, we put 75 million acres out of production; 36 million acres went into a conservation reserve, but the rest, we're essentially saying to farmers, look, we're producing too much. That's a lot of acreage. And so if we can grow grasses and very rapidly growing trees that have far less energy inputs, there is an incredible opportunity here. That's something the United States has been blessed with so much. And we still have the land, we still have the sun and the water.

With climate change as business as usual, much of our agricultural machinery is at risk. So here's a golden opportunity. The costs of inaction is horrendous, both for our economic prosperity and what climate change can do.

So there are two choices, you know. We grow prosperous, we do the right thing, our children and grandchildren will like us. Or we can pretend things aren't happening and wish that we were back in 1950. So this is an incredible opportunity.

Thank you, Senator.

MR. WIRTH: Great. Thank you very much, Mr. Secretary.

(Applause.)

With that as an overview, I'm going to move to two entrepreneurs, who have been working in the energy-efficiency area, but have been doing so with the development of some brand new and some continuing technologies, and ask the two of them to focus on the issue of, we may have these technologies, they're out there, how do we get them to scale? It's a good idea to have a lot of good ideas; that's just fine. We have an enormous country and an enormous set of problems -- scale, scale, scale.

Mark Porat, the first; and Steve Roell is the second from Johnson Controls.
Both of you -- Mark is a remarkable entrepreneur from Silicon Valley who has chaired and begun all kinds of new ventures thinking about issues of energy. Mark, if you could get us going.

And then Steve is the head of Johnson Controls, one of the most -- an oldest and most established companies in this whole space.

So if the two of us can help us to think about how do we take the new technologies that will be developed at UNLV and elsewhere and get them into the marketplace and to scale.

**MR. PORAT:** Senator Wirth, thank you very much.

It's an honor to be here in the presence of really personal heroes of mine -- Vice President Gore, a personal hero, an inspiration everything you've been doing for seven years and intensely; and Secretary Chu, I think you've got the best job on the planet -- probably the hardest one -- and if you do it right, we're in good shape and if you don't, we're not. (Laughter.) And of course, Senator Reid, it's your courage and steadfastness in the face of this onslaught that's coming in from the radio world and the world is just unbelievable. And good luck in the fall. We're rooting for you.

Silicon Valley -- that's where I actually do hail from; although I spend a lot of time in Washington, D.C. Silicon Valley is a culture that is kind of too naive to not know what we can't do. And seven years ago I decided to start a company that's now Serious Materials and was just honored by the White House -- but why; how come -- a little tiny company?

To set the stage, as you like to do, I think we all know that about 39 percent of all the energy of America is consumed in operating buildings just like this -- well-known number: heating, cooling, lighting, things of that sort.

And on top of that, an additional 12 percent of total U.S. energy is energy embodied in materials that go into buildings. So half the pie -- half of this thing is a big elephant called the built environment -- buildings.

And it's almost no matter what we do on the supply side -- whether it's fossil fuels or nuclear or renewables -- all of which should be looked at. And we have to deal with the built environment -- almost no matter what we do on the demand side,
the efficiency side, we have to look at the built environment because that's half the equation.

In your state, Tim -- Colorado -- we have a national treasure in Henry Levins (sp) who's been telling us for 30 years that a megawatts -- you know, that a watt saved is just as good as a watt produced. And now we have reports from McKenzie, which everyone here ought to read, if you haven't picked it up you should; and another one from CAPAF -- John Podesta's organization -- a report written by Bracken Hendricks that basically says this is the low-hanging fruit. Secretary Chu, I think, calls it fruit that's actually on the ground it's so low hanging.

You've known this for years, because when you were director of Lawrence Berkeley, that was the theme -- great building science department.

And incidentally, for those of you in the audience thinking about what you're doing academically, building science is the core of what we need to do to learn to -- (inaudible) -- the built environment. So let me go back into the build environment again and Serious Materials.

Why did we -- (inaudible) -- the White House? Why did President Obama -- (inaudible) -- the White House? Half of that 39 percent of U.S. energy that is used to power building -- (inaudible) -- to operate buildings, flies out the window. Heating and cooling -- and it's either coming in on a hot day like today; or it's -- (inaudible) -- a cold day like, you know, later on the winter.

And those windows haven't changed in a long time, but the interesting thing to a Silicon Valley -- (inaudible) -- like myself is the built environment to have the -- (inaudible) -- industry, the things in your pockets and the things you drive have evolved. Maybe not the things you drive, but certainly the telecommunications and the computers. The built environment has stayed quite static.

So we attacked it with brand new windows that are now operating at -- (inaudible) -- than any other window in the world. (Inaudible) -- windows that are almost the same as a, basically, -- (inaudible) -- 10 times more efficient. And everything was that -- (inaudible) -- for my company, then the United States energy would go down by about 10 percent. That's about as much as all the renewables put together -- an enormous amount -- (inaudible) -- on the renewable side or on the fossil side or on
the nuclear side. We just save it. It makes a lot of sense. Americans love to save.

A couple more companies I created -- a couple of stories real quick -- (inaudible) -- that cement -- (inaudible) -- CO2 as all the passenger automobiles in this world -- the planet. There are 700 million passenger automobiles, they emit about 4 tons each; cement 2.8 -- (inaudible) -- cement, bricks, blocks, things like that that emit any CO2 are -- (inaudible) -- percent less.

ZETA -- the housing company that basically is making houses in a factory at net-zero energy. These things can all be done and they can all be done beautifully.

So why the White House? Because we took over a factory in Chicago -- Serious Materials did -- that collapsed last Christmas. And you should've seen the faces of the people on television who lost their jobs, who were scared who were angry. And the president said, you have every right to be angry. This is terrible! They didn't get any pay, any severance, no health benefits, nothing.

We said, you know, we're going to buy that thing, take it out of bankruptcy, retool it, bring in SeriousWindows, make windows that are five times more efficient, bring them into the weatherization assistance program in the Department of Energy. And it's a four for one win -- everybody wins. And we did just that and we happened to do it the day after the stimulus bill was passed and the day after that we got a call from the White House.

This administration understands the connection between its jobs, energy and climate change. And boy, we are so blessed to have this administration at the helm at this time! (Applause.)

I'd like to leave you with what I've sort of learned in the last seven years and manifested in the form of a vision, a mission, a set of entrepreneurial opportunities and a set of policy requirements. And it all gets wrapped up in something quite simple.

Going forward, I would submit -- I appeal to you -- going forward all buildings that are built in the future can and should be built to operate at near net-zero energy if not net-zero altogether. That's number one. (Applause.)
That statement would not have been possible three years ago; five years ago, because we didn't have the building science, we didn't have materials. We didn't have designing examples you're about to hear from my colleague to my left. We didn't' have a lot of stuff; now we do. Build them at net zero.

And going back in time -- in other words, to the existing built environment -- that thing that's consuming 39 percent of all U.S. energy: transform that thing, just like it says in this report -- Mr. Podesta's report. Transform it as rapidly impossible. Take the energy out of it; take half of the energy out. Twenty percent's too easy; 30 percent's doable. Take half the energy out. Nineteen percent of U.S. energy is sitting in buildings that we don't need.

Now, current course in speed, we are doing deep energy retrofits in America. We did 10,000 of them last year -- that's pretty good. One of them was my house, by the way. That's pretty good.

That means we're on a 10,000-year trajectory to transform the 120 million buildings in this country. And Senator Reid, is that outside your election cycle? (Laughter.)

So now, the Obama administration said 1 million -- and we're having trouble funding the 1 million.

SEN. REID: Not Senator Byrd's, though.

MR. PORAT: Oh, I see. (Laughter.) That seems to be the case.

So the Obama administration's looking at a million, which is very hard to finance and fund. We don't actually have the money for the million. But let's say it's a million. That's 110-year cycle. This report, other reports, we are appealing to make that be a 20-year transformation at 6 million buildings a year. Almost completely jives in with the numbers that John Podesta highlighted in the beginning.

It's doable. It's doable, because it's doable. We've got the people. We've got the secretary of Labor here who's, you know, going to stand behind us in training; we've got the building science; we've got the materials; we've got the design examples; we've got the economics. All it takes is "yes, we can."

Thank you. (Applause.)

MR. WIRTH: Thank you very much, Mark.
Let me just set a couple of rules here. We're all going to be here until the last house gets redone if we don't collapse this down and each take -- sort of think about the three-to-five-minute scale if you would.

Steve, you're up next from Johnson Controls. And then I'm going to move to Rose McKinney-James on some of the policy issues that you all have raised.

MR. ROELL: Well, thank you very much. It's a pleasure to be here today.

My lens into this topic really comes from the commercial building market, and specifically, primarily through energy efficiency. But let me try to translate that to the question you raised about technology and renewables.

You know, when we talk to our customers, their primary focus isn't around technology as much as it is about solutions. And whether -- how we bundle technology, what kind of economic value we bring to those customers is really what they're looking for. So our discussions are very much an economic discussion.

For example, when we're talking to a school board, the school board wants to understand the payback and the math and how it impacts their budget. They have less interest in terms of what kind of technology we bring.

Now, having said that, it's important for us to recognize that technology's moving so quickly that it presents tremendous opportunities for us in the context of what it can do for buildings.

We just completed the construction of a facility -- and I'm told that within seven to 10 years, 80 percent of the 70 renewable projects or new technologies we introduced will be obsoleted by new technology. It's moving that quickly.

But if I look at it from the standpoint of barriers and what's going to take place to make this scalable, clearly, our ability to find ways to appeal to the financial net present value, the return characteristics that our customers are looking for, that's what we're going to have to meet -- whether that's a campus, college campus; whether that's a school district; whether that's a municipality.
And one of the ways we can do that is to marry energy efficiency and renewables together. Today, we probably quote 25 to 30 percent of our work with a renewable context. And the way we -- the reason we do that is when you marry the two together, you suddenly have an economic package which has a reasonable payback and is attracting those investors.

The scalable issue is something that we could talk about in many ways. But clearly, the things we're going to have to talk about deal with everything from the work force and the technical resources that have been acquired to engineer these projects and bring them to the customers; the financing that's going to be available and how it will spur investment and attract private and public monies.

And then finally, it's just the information we're going to have to go through. We have a lot of education to do with consumers, be it commercial, industrial or residential, to help them understand exactly what the opportunity might be -- baseline information on existing buildings. There's a tremendous effort that's going to be required upfront to help us scale. And that's going to be the challenge for us.

Thank you. (Applause.)

**MR. WIRTH:** Thank you very much, Steve.

I'd like to now move to Rose McKinney-James who's been involved in the policy world related to this for some time. And then go to John Woolard for Bright Science.

Rose.

**MS. JAMES:** Thank you very much, Senator.

I think that throughout this discussion we've been focused on an important component, which is the policy side of the equation.

I'm a former utility regulator at the state level. I know we are familiar with some of the activities that have been undertaken at the federal level from a regulatory standpoint. And I think there's an urgency around the need to rethink how we communicate with our policymakers at the state and local level to try to create a framework that will advance the discussions that we are undertaking and we have to start at the ground level.
I'm here today representing the Energy Foundation. Many of you are familiar with the work that the foundation has undertaken over the last decade-and-a-half by identifying and funding advocacy organizations around the country to be active in discussions within the bounds of public utility commissions and state legislature so that we have a policy framework that makes sense.

It begins with information and proper communication and leadership. And I think we have identified a range of opportunities in the United States; in a variety of states right here in my own state of Nevada. I think we have been -- (inaudible) -- urgency around connection around what we see at the federal level -- Senator Reid's federal energy policy; and ensuring that what we have seen at the state level is just the opportunity to provide a ceiling and not the floor for insuring that we have the right regulatory framework.

I think, Vice President Gore, this morning you said we need to look at a flip. I'm looking forward to that flip, because the traditional approach is no longer sufficient to get us where we need to go.

MR. WIRTH: Great. Rose, thank you very much. (Applause.)

And I think we're going to, I think, find ourselves coming back to this issue of what's the policy and what are the major changes that have to be done to facilitate what so many of you were doing and what has to be done across the country.

John Woolard from BrightSource is going to be our next commenter. And Stephanie Burns, I'd like to ask you to follow up, as Stephanie is president and CEO of Dow Corning.

John.

MR. WOOLARD: Thank you, Senator.

And I think that one thing I'd like to come back to is the issue and the challenge of scale, because I think sometimes people talk about scale, but not a lot of times so we have an appreciate of the size of the challenge and some of the numbers we've got to deal with here.

But first, I'd like to also point out that a lot of the gentlemen at the end of the table here have really inspired a whole generation of people to follow on some of what you've done
Senator Wirth back in the '80s; and Vice President Gore, you were very inspirational to me and a lot of my colleagues in graduate school. In fact, some of our funding came through some of your efforts. So I think that now you're seeing a new generation of people that a lot of people think of global warming as something new. It's actually been focused on by a select few for a long time -- many decades now. And I appreciate everything that you guys have done to help make things happen -- make all this possible.

I've been focused since 1992 on the energy -- the nexus between energy and the environment. And so I started to think that carbon mattered and came home. I remember telling my father and he said, well, Paul Harvey says it's not a problem so -- (laughter) -- it shouldn't be an issue. But it turned out that Paul Harvey was probably wrong.

I've been looking at data in graduate school and looked at energy as the single biggest lever we could pull and went into energy efficiency for about a decade. But now we're building -- now I've transitioned out of that. We sold a company, Silicon Energy, in 2003 and now have been focused on the supply side and really trying to get a grip on the scale issue.

When you look at scale and what we've got to do, what we've got to build, we've got to build about 2,000 gig watts of power plants between now and 2050 -- assuming we can double energy efficiency and still put photable tags on almost -- on half the rooftops -- (inaudible) -- in the country.

So we've got to run the table on photable tags, we've got to double energy efficiency -- (inaudible) -- would make the problem more solvable. But 50 gigawatts is a very -- (inaudible) -- energy terms is equivalent of roughly a nuclear power plant.

And so if you start to look at 2,000 gigawatts by 2050, 50 gigawatt a year, that's a nuclear power plant every week. We didn't build one last week; we didn't' build one the week before. Last year in the United States we built about eight gigawatts of renewables, so about 20 percent of what we would have needed to do to maintain -- (inaudible).

If you look at this issue of scale -- (inaudible) -- and I'm -- my company, as well as many of -- (inaudible) -- are doing our best to build -- (inaudible) -- power plants that are carbon free. But I'm here to tell you from the front lines, it's not an easy thing. It's really something that has a lot of complexity –
- (inaudible). Senator Reid has done a very good job -- and his staff -- of listening and understanding what some of these challenges are, but until we solve the transmission and the permitting and some of these issues that are what I call pin-up stimulus right now, it's going to be very difficult to move forward at the scale that we need to move forward in.

And let me just give one example as a way to close: We've got a plant facility for PG&E in Southern California Edison at a site called Ivanpah Dry Lake that would drive thousands of jobs -- primarily from Clark County, Nevada. It has actually through the DOE we're participating through the loan guarantee program and have been selected to -- we're finalizing some of the terms, but I think that's actually going to come through. And once that's done, we're really waiting for -- it's pent-up stimulus, because these jobs are waiting and they can't get done until the California Energy Commission, BLM and others all come together and clear the decks on what was originally a year process that's now -- we're now two-and-a-half years into a one-year process.

That's not what we need. We need to look at -- and I would encourage all of the leadership here to do what they can to transition from visionary leadership to sort of what I might call roll-up-your-sleeves leaderships looking at how to get groups like BLM -- some of the boring stuff -- but how to really get some of this permitting done and get some of these plants moving, because every plant for myself or some our competitive companies who are all doing their best to move forward as well, if it's not built in 2010 or 2011, it's not just that one plant. It's the 15 plants behind it that all move out of year. So your whole plan -- that big wedge -- is delayed and moves out a year.

So I think that we do have -- there's a lot of hope in that every Monday morning we start our meetings with our management team. And we're looking at where the technology is it's doing great. The pilot's performing, once again, another week performing above its specifications, financing's coming together. All of the issues are coming together with the exception of some of the challengers you deal with on permitting and some of this basic, boring roll-up-your-sleeves issues around transmission and permitting.

So I think that's a key area. If we could focus on it, that would be very useful.

**MR. WIRTH:** Thank you, John.
Our last two speakers remind us that we -- (applause) -- thank you very much.

The two of you remind us once again that we have to get -- in order to get to scale, we have to get the policy right.

Dr. Stephanie Burns is chairman, president and CEO of Dow Corning, has been working all over the world, and looks at these problems of scale and public policy all the time.

Your thoughts, Stephanie, will then be followed by Lucian Bernanke, who is the father of geothermal.

Stephanie.

MS. BURNS: Thank you very much.

Yes, I'm Stephanie Burns, with Dow Corning, and we have the privilege of being the largest producer of high purity silicon-based materials for photovoltaic applications. We will have installed by the end of our current investment cycle over $5 billion of poly silicon, mainly in Michigan and in Mr. Gore's state of Tennessee.

That's the good news. And that will represent nine gigawatts of power when it's converted to solar panels.

But we're just on the front end of this value chain. Our materials go offshore. Most of our materials go offshore and they are manufactured into cells, into modules and then either re-imported back to the U.S. or more likely used in countries like Germany, Japan, China for their growing photovoltaic industry, for their solar industry.

Those materials should be made in the United States. We -- (applause) -- we need to find ways to attract this investment back to the U.S. We're using these panels in the U.S., they should be made in the United States. There's policy issues, which have already been touched on which I fully support and agree with. There's R&D investment opportunities to encourage this industry to be more efficient and to compete with traditional sources of electricity and then there is a tremendous amount of job training opportunity in this industry.

We're doing our part to support this through community colleges where -- especially in the state of Michigan, where we have high unemployment, where we can put people back to work through job
training programs, and these are excellent, excellent workers that we can get back into high tech jobs.

And then the last thing is the government needs to lead by example. I think we've all said this before. Buildings is one of the largest consumers of our energy. Government should have energy efficient buildings everywhere. And we should support this, we should drive for it.

And the fifth point that we're hearing a lot from our customers in this value chain is that they need access to financing. They are ready to invest but they are not getting the access to financing for those investments in the U.S. So there's not only the policy and some of the regulatory hurdles to get these investments in the ground, but it's also access to the dollars, which should be made readily available to these people for investing in renewable energy.

**MR. WIRTH:** Stephanie, thank you very much and that's a very helpful addition -- (applause) -- very helpful addition to the package of issues that our government is going to have to work on and Harry Reid is going to have to solve.

Lucien Bronicki is chairman of Ormat Technologies right up the road in Reno. I've had the pleasure of visiting their major geothermal facility there.

Lucien, over to you, and then I'm going to move to Wes Clark on another specific technology, and thinking, in particular about various liquid fuels.

Lucien. You can use the microphone.

**MR. BRONICKI:** Thank you, Senator.

First, a correction. I'm not the father of geothermal energy, which started 110 years ago, which means that I would have to compete now with the oldest soldier in the U.K., who still -- in World War I. But anyway, geothermal -- and this may be another question to ask why it takes so long -- but geothermal has many advantages of being 24 hours a day supply, independent from weather, a huge energy available.

So these are the big advantages. Another advantage is that it's an industry which is very intensive in labor, and by labor it's really all the way. Everything which has to do with underground, with the resources itself, it's a lot of science. Some of it we
got from the oil and gas industry, but there is much more science still to do. There is -- if we want to scale up, and there is science in -- or there is employment in exploration, in drilling, in consumption (ph), in operation and maintenance.

These are typically jobs that you cannot offshore them, and -- actually this is little bit going back. All the effort for the last 200 years was to reduce the amount -- to increase the efficiency by having less people involved in certain jobs. Here we are going to -- it's one of the industries that actually are bringing people in, not that they have to do very hard work, but a lot of employment per kilowatt-hour produced.

By the way, these skills and expertise are also a possibility to leverage U.S. export of services and equipment to the world, like in many other industries. And this is -- in many respects, this industry, especially when you look at the big potential which is in EGS (sic), there is a lot of science, a lot of IP to develop, a lot of people to train.

Just a small example. We just recently completed the second phase, which brought the power plant to 50 megawatts in Kenya in which the drilling company was from the U.S. The many consultants were from the U.S. It's true that we trained the workforce locally, which is another little advantage so that they are -- there is no expat running this 50 megawatt plant in Kenya.

And I think these characteristics of being science and labor intensive really characterizes a lot of renewable energies, or energy saving which can be used also as a leverage for export. The other things that we are working on is recovered energy generation. It's not exactly combined heat and power. It's just taking the waste heat stream, which can be used for -- still for electricity production. It's not the lowest temperature.

But there are still megawatts of power which can be used and we really commercialized the plant to do just that, because some of the problem of CHP (sic) is that, yes, you have need for heat and power, but they're not always at the same place and not always same time. And by using the heat which is anyway wasted you still contribute to energy efficiency. And if I may come back to end with what you -- the senator told us, which at the beginning why didn't this happen before. If this is so economical, and I can just give you an example of a cement plant in Germany and cement is exothermal reaction, which produces CO2
even if you don't want. I mean, it's not only absorbing heat, it's producing CO2 in addition.

Twenty years ago, the electricity was more expensive than 10 years ago. Nobody wanted to touch it because the plant managers say I'm in the business of producing cement, I'm not in the business of producing electricity. I have enough problems with my job. So leave me alone." Ten years later, which was 10 years ago, people said, "Mr. Cement Production Manager, please reduce the CO2 footprint." And just with 1.5 megawatts he was able to reduce it by 3 percent, so he brought the plant when electricity was already 50 percent of what it was before. It's still running.

So some of the -- and regulation and others have been speaking about the renewable -- (inaudible) -- standard which is really a signal for the private sector to go into a new market and it was then was standard number for -- in California, and then again California was one of the leading states where renewable for --

**MR. WIRTH:** Lucien --

**MR. BRONICKI:** Yeah.

**MR. WIRTH:** -- I'm going to move on to Wes Clark here. Okay?

(Cross talk.)

**MR. BRONICKI:** Right.

**MR. WIRTH:** So we're going to move to three other fuels.

Thank you, Lucien.

We're going to move to three other sources of energy -- (applause) --

I'm going to ask Wes Clark who is the CEO of Growth Energy, committed to the promise of agriculture and growing America's economy as our next commentator, and then I'm going to be followed by Denise Bode, and then Boone Pickens. Denise on wind and Boone on natural gas.

**MR. CLARK:** Well, thanks, Tim, and thanks for the opportunity to be here with this great group and done so much in the energy business.
You know, the United States is importing about 12 million barrels of petroleum every day, and we're burning in our automobiles about 140 billion gallons a year of gasoline. So when you think about the technologies and the wonderful promise of this, you also ask what can we do now. Right now.

And I listened to what Secretary Chu had to say about the fourth-generation biofuels and he's exactly right. We've got a tremendous potential in American agriculture. But we can do it with first and second-generation biofuels right now.

If you could do something that would save a million barrels a day of imported oil, generate 136,000 permanent jobs, a half million construction jobs, and reduce several hundred million tons of carbon in the atmosphere, and all that within three years, would you do it? And the answer is I think you would. You'd take Hugo Chavez right out of the imported oil business into the United States.

How to do it. Five-part policy requirement. Number one, let's lift the blend wall from E10 and let Americans put E15 in their gasoline. Number two, let's build the kind of infrastructure that we need to be able to distribute alternative fuels, liquid fuels, around the country. Number three, let's have our vehicle manufacturers put flexible fuel vehicles in the showrooms today. It costs about $140 per vehicle to make them flex fuel.

Number four, let's have some transparency in the liquid fuel market. Use that liquid fuel that we're buying in our pumps. Where is it coming from? How much carbon intensity does it have?

And, number five, let's adopt for the United States of America a low carbon fuel standard. If we do that, three years from now, we'll save a million barrels a day of imported gasoline or oil and we'll have 136,000 permanent jobs and we'll be well on the way to scaling renewable just like you asked us to consider.

Thank you. (Applause.)

**MR. WIRTH:** Wes, thank you very much.

Wes and I have often talked about the fact that everybody looks at the machines that use the fuel and almost never look at the fuel themselves, and we have to have a much better understanding of what's in that fuel that we burn, what are the relationships of that fuel with disease and health-care problems in the United
States. There's a whole arena there to be looked at and that in turn leads you right down the clean fuels road.

So it's a very, very important set of issues that General Clark brings to us.

Denise Bode is the head of the American Wind Energy Association, a very distinguished career in dealing with energy, was Ms. Energy, head of the Oklahoma Energy Authority, came back to Washington, worked on -- most recently in the natural gas area, and now runs the Wind Energy Association.

We're going to ask -- I put these deliberately together to have the American Wind Energy Association and then Boone Pickens in the natural gas world because many of us think that there is a very, very important linkage between the two as we look down the line.

Denise.

**MS. BODE:** Thank you so much, Senator Wirth, and I very much --

**MR. WIRTH:** Speak right into your deal.

**MS. BODE:** I think -- there it's on now.

Thank you very much, Senator Wirth, and I really appreciate Senator Reid's leadership in putting this together and couldn't agree with you more.

I think there is a natural partnership and have actually put money where our mouth is in terms of working very closely with Boone and with the team in having wind and natural gas be those natural partners. But I'm here to talk about wind part of the plan and wind is up to scale, ready to rock and roll, ready to provide electric generation right now.

Last year we added 8,500 megawatts, almost paired with natural gas in all new generation added in the United States. In terms of manufacturing jobs, it takes those facilities here in the United States to really make it more affordable. We added 55 new manufacturing facilities, 35,000 new jobs last year in the -- in the United States and we are ready to do more.

It also is a strong carbon policy. You know, in the European Union, they avoided 7 percent of the carbon from electric generation because they had a renewable electric standard in
place because they had a hard target. They deployed the technology and put renewables in place.

And in the U.S. last year we avoided 2 percent of the carbon that could have been emitted from electric generation even at 3 percent renewables in the whole sector. So we can be the leader. We are the leader. We became number one in the world last year in new wind generation added. With China right on our heels and with the economy in bad shape, they may beat us out this year, but not for lack of trying, because our guys are out there working hard to deploy those new wind farms, to build the factories, even under very difficult economic times.

I have to thank Leader Reid because of all the work done in the Recovery Package, because that is -- that has kept us alive, and we do have new projects being deployed although not at the rate that it was before.

But I have to tell you that the long-term commitment that Secretary Chu talked about, which is in 39 countries, which tells basically your regulated utilities that a portion of your generation will come from renewable electricity is what has deployed that renewable technology around the world, and the United States must do that as a national policy. And if they do it right away that long-term commitment will build factories, it will deploy technology, it will avoid carbon and will do it quickly, not 10 years from now but quickly.

But it will only do that if the standard that's put in place is strong. The jobs will be there depending on how strong the standard is, and in 2011, right now coming in onto the Senate floor, the bill is at 3 percent, which means that we are competing with efficiency for that 3 percent. So 1-and-a-half (percent). And we're partners -- we're natural partners with efficiency.

So we've got 3 percent standard, 1-and-a-half percent is all that the renewables can hope to achieve by 2011, and we're already at 3 percent. So we're under water. And in the House bill, the same sort of thing. We are at 6 -- they came out at 6 percent, but in reality renewables again competing with efficiency, so we're really only at 3-and-a-half (percent) to 4 percent, so we have to have a strong policy signal that comes out of this legislation. And that will change things and it will change things immediately if we can get a strong standard and get those jobs in place.
I have to also commend Senator Reid for his leadership in transmission legislation. That transmission legislation is critically important as well and that will help get the -- have a robust grid will help us -- enable us to have that electricity transmitted to marketplaces all around the country. That interstate highway will change everything.

So I wanted to thank you again for the opportunity and to encourage those policy barriers to be removed. (Applause.)

MR. WIRTH: Denise, thank you very much.

Wes Clark and Denise Bode both remind us of very specific policy changes that will make an enormous amount of difference in terms of the need -- meeting the need to move to a low carbon economy and develop new jobs, but it cannot be done without the right policy mix.

Nobody has been as far out front, I think, publicly -- in talking of the need for change than Boone Pickens who comes to us from the natural gas community and a variety of other ventures. But importantly to keep in line with what John Podesta noted in his opening comments, we have discovered in the United States through the technological capacity the natural gas industry -- (inaudible) -- an enormous reserve of natural gas that we now have more reserve of natural gas than we do of coal. There is more reserve there is more natural gas generating capacity than there is (coal ?) generating capacity.

And the advantage of natural gas is many times over in terms of -- (inaudible) -- but also a natural gas power plant doesn't do -- (inaudible) -- you have to ramp up this enormous machine and then put it down again. Effectively you can turn a natural gas machine off and on. That kind of generation can then become an extraordinarily important supplement to the kinds of changes that Denise is talking about. There are times when the wind doesn't blow and the sun doesn't shine.

The key advocate for all of this is Boone Pickens.

Boone, we ask you to give us your sense of where that future is. I'm then going to follow and as Maria to summarize -- Senator Cantwell, what you've heard this morning in terms of barriers in technology, and then move to Vice President Gore to give us the transition back into energy efficiency and some sort of the basic policy changes there.
So Boone Pickens.

**MR. PICKENS:** Thank you, Senator. Let me go back to kind of the first. I'm a little bit of an oddball in this group, as you know, and I worked hard -- well, I worked hard all my life. But anyway on this subject, I've worked on it. And being a Republican, I always of course went to the Republicans because it was easier to get in and talk -- or I thought it was.

And then one day I didn't get anywhere, and it went on for years. I didn't like for 40 years that we had no energy plan in America -- none, zero. But the reason we didn't have -- two reasons -- one, we didn't have the leadership to speak up and say we've got to get off of the foreign oil and we're importing more and more all the time. That was never said. I was the only one saying it, and nobody listened to me.

And then I decided I was going to do something. I had to do something because my time was running out. I'm 81 years old. I fully understood the problem, and I felt like I had a solution for the problem and that was get on our own resources was the way to do it. And so I thought, you know, I met Senator Reid one time and I thought he's a nice guy, he'll listen to me. And I went to him in June of last year, and we had a 15-minute meeting that went an hour and 15 minutes. And when we got through, we got up and he said, Boone, he said I think you're on the right track. I encourage you to pursue what you want to do. I told him I was going to spend $60 million to tell the story. That's back when I was rich, Senator. (Scattered laughter.)

A lot of things have happened since then. But I spent the 60 (million dollars) before I went downhill a little bit.

But anyway I got my money's worth, and a great part of it was because of you, and you encouraged me to do it and so I did. And I told and I got out and explained pretty well what the problem was in a very simple way, and that was we were dependent and it was a very grave security problem for America.

And along the way, Vice President Gore and I talked, and he asked me, you know, how do you feel about climate. And I said it's not the most important thing for me, but I do believe we are having global warming. And not many geologists will say that, but I did believe it. And Al and I decided to work together on the problem, but security was number one for me. We have got to get off the dependency of foreign oil.
Then -- so you looked to our resources, what resources do we have? We talked about wind and solar here today. The grid has to be updated, and we've got to get this started and not just talk about it. Well, this is the first time and I -- you know, this is a great feeling for me because this is the first time that I've ever sat down -- I know it's our third meeting. I'm not getting too old to remember that we've had three meetings now. But we've had many, many telephone calls and everything else.

But for the first time, this country is seriously looking at what we're going to do about, one, global warming but also the dependency on foreign oil and do we have resources that can solve the problem, and we do have those resources. Let me just go right at it now to get to a point as far as scale's concerned and all.

But you said, you know, that we were importing 12 million barrels -- you did, I think, Wes, said 12 million. At times, it's been 13 million. It's a little under 12, but demand changes along the way. Nonetheless, the overall trend is up. But 4-and-a-half million barrels come to us out of that that are -- I think is very questionable as to, you know, are they friends or do they dislike us. And a great part of it comes from people that really do not like us.

And when we're importing 25 percent -- excuse me, we're using 25 percent of all the oil every day in the world -- 25 percent with 4 percent of the population -- there's going to be a point where some of that oil is going to -- either the price is going to be so high that we can't, it'll choke us or it's going to be cut off, one or the other. Some way, somehow it's going to have a very sad ending to it.

But when you look at, just focus with me for a second the 18-wheelers that what we call Type A trucks in America, 6-and-a-half million of them, if those were over to natural gas -- and I'm with Al on battery for light duty and all -- but a battery won't move a 18-wheel. So go to the resource we have and just see what it does for us if we as those diesels are retired that they were required to go to natural gas. The Southern California model that the South Coast Air Quality Management District did just buy new natural gas and not diesel, and that is in H.R. 1835 and Senator Reid's bill, 1408. It's there and it can happen.

Let's say it did happen and we got all 6-and-a-half million of those vehicles on our natural gas. That would cut the 4-and-a-
half million barrels we get from OPEC in half. It'd be a little better than that. It'd be 2.7 million barrels is what it amounts to. That is real. That can be accomplished, and it could be accomplished in a matter of, I think, less than 10 years. Thank you.

(Appplause.)

**SEN. WIRTH:** Great, Boon. Thank you very much, and much to be discussed on the natural gas side as well that have other implications in all of this. But that leads us to Senator Cantwell who has worked on technology issues in the United States Senate and the relationship of those issues to the public policy that's necessary.

Maria, do you want to give us a sense of summary and your reactions to all of this, and then we'll move to Al Gore and right into the final part of the program related to energy efficiency and some of the institutional mechanisms that have to be built in order for us to realize the opportunity. Maria?

**SEN. CANTWELL:** Well, Tim, it's already been a delightful discussion this morning. And when you have an oil man from Texas say that you need to get off of oil, I don't think you need any bigger mission statement than that. And so we thank you, T., for your leadership. (Applause.)

If America doesn't understand that, I don't know how you can say it any plainer. And you know what? We delight in your accent, too. It adds a little pizzazz. And you know, it's great to be here in Nevada with Senator Reid because, you know, he is a boxer, and part of this challenge -- well, I could say aside, you know, dealing with 100 senators and their egos, every once in a while you've got to knock some sense into us, and he does that quite well.

But when you're a boxer, you have to look for opportunity, and that's what this discussion has been about this morning. It's been about opportunity. Having relatives here in Nevada that moved here 50 years ago -- I used to come here as a kid, and the strip was just, you know, basically what you saw downtown. But it's become a $40 billion entertainment industry. And who would've thought at that time 50 years ago that's what Nevada and Las Vegas would've become.

And I think what people are describing around the table here is the opportunity of the future and how are we going to get there.
It is energy and this opportunity a $1 trillion -- I'm sorry, a $6 trillion market. It is if you will the mother of all markets. And so the United States, what we've heard around the table this morning starting with the vice president and the opportunity that's there for that market and the vision that it takes to get there and Secretary Chu's important point of putting a price on carbon as a way to do what Mark and Steve want to do is use that technology innovation that's there to make this job creation a reality.

In fact, what I heard agreement on, Tim, was that we agree to the challenge that the technology is there, that scalability is an issue, but that clear rules of the road will help us reach that scalability, whether that's from Rose or John in talking about or any of those Denise or Wes Clark who talked about the specific areas.

But the job creation opportunity for our country I heard from Professor Shear who stated quite eloquently this morning, this is -- you know, in fact if we could change an axiom in politics, I would change the axiom from, you know, there's a thing about who wins the presidential election -- you know, as Ohio goes, so goes the nation. Well, then the axiom for energy ought to be as Nevada goes, so goes the nation -- (applause) -- because this is about putting Nevadans to work in a new opportunity. And the opportunity is so big as Professor Schwer said that you not only can produce enough energy for here and here in the United States that some of that opportunity can be actually making the United States a leader in energy technology and maybe even exporting that to other countries who are also so fuel dependent.

So it was heartening to hear that there was so much agreement this morning in the kinds of activities that really will bring job creation and make this a reality. And so 50 years from now, some other group is going to be sitting here talking about, well, they really did have it figured out there in Las Vegas whatever summit it is, whatever it is -- 2 or 3T, I don't know which one it is -- but they have it figured out, and that we are well on the path to a sustainable energy future that actually has lifted our economy to new heights.

(Applause.)

SEN. WIRTH: Nice job, Maria. Thank you very much. I'm going to ask Vice President Gore if he can help us to pivot from thinking about technology and those barriers to now thinking about the broader institutional arrangements that are going to be
particularly important as we move into thinking about energy efficiency.

Following the vice president, I'd like to ask Van Jones to give us the perspective of what are the kind of innovative things that are going on, and then move to the Mayor to give us his sense of what happens to the larger than 40 other states polity in Southern California. Mr. Vice President.

MR. GORE: Well, as I understand it, I'm supposed to briefly summarize what we've just heard and then gracefully pivot to the next subject. Thank you very much, Tim. (Laughter.)

SEN. WIRTH: Your grace has always been impressive -- pivoting.

MR. GORE: Thank you so much. We covered a lot of subjects in that panel. I'll try to do this briefly. We have to decide what our goal is, first of all, what do we want, and I've argued for quite some time that the economic crisis, the security crisis and the climate crisis are all intertwined, and the common thread running through them is our absurd and dangerous overdependence on carbon-based fuels.

And if you grab hold of that thread and pull on it, all three of these crises will unravel and we'll hold in our hands the answer to all three of them, and that is to make a transition to a low carbon economy and put people to work doing it. Now that means that we need to look very closely at how we make our energy, where it comes from, what sources, what countries, what forms, how it's processed, et cetera.

That's number one.

Then how do we transmit it or deliver it, how do we distribute it and price it and then how do we use it. And I'm going to save the how do we use it as my pivot to the next topic for the panel which is efficiency per se. Now on where it comes from, we have just had this huge new geological discovery of gas in shale, just drill down and get it. It still generates a lot of CO2 but much less than oil and much less than coal. And it's here.

So for some uses, I endorse Boone's idea on the 18-wheeler. It'll be a long time before we get the battery efficiency necessary to run 18-wheelers, and they keep their engines running practically 24 hours a day. But for that and other reasons, maybe some of the coal-fired generating plants also -- and you'll be hearing a little bit more about that later today.
But the renewable sources are right at the cusp of being able to take on the load of electricity, and electricity has been growing in popularity because it's so versatile, because it's so easy to distribute and so forth. And wind, as we said earlier, is ready now. For each of the last two years, the United States has added more new energy generating capacity from wind than any other source of energy. Coal has been going down partly because people are kind of waking up to what the problems with it are. But also wind has been coming on strong because it's competitive.

Concentrating solar thermal and photovoltaics are both players. And if we make a commitment to go to scale, then we will see the cost reductions that have already been taking place speed up dramatically. You know there's an old saying in business. I hadn't been in business very long just eight or nine years now. But there's a saying that, you know, if we had some ham, we could have some ham and eggs if we had some eggs. (Scattered laughter.) And if we had a national commitment to renewable energy, we would have the available cost-effective technologies right now if we had a national commitment to renewable energy. It's ready to go.

We have invented in the United States of America most of the key technologies in renewable energy. And yet wind today, you look at the 10 largest wind manufacturers in the world, only one of them is in the United States. General Electric bought that capacity. It's doing a great job. If you look at the largest solar manufacturers in the world, how many of the 10 are in the United States? Maybe one -- maybe one or two. Sharp's got a big facility in Memphis, but, you know, the license plate says Japan.

And even though we've invented these things, I've just been spending a lot of time on energy storage. We talked about it a little bit at breakfast. Probably the best utility scale battery in the world is a sodium sulfur battery made by NGK in Japan, and it was invented by Ford Motor Company for an early version at putting out an electric car. And then there it goes.

So another advantage of making a commitment here in the United States to be the world's leader in this effort would be to have those companies located in Nevada and Tennessee, all over the United States and to create the jobs here.

Now on the delivery and where electricity's concerned, the transmission and distribution, we still have an old way of
thinking about electricity, and it's dominated by the central station generating plants coal-fired, gas-fired, hydro and nuclear, always connected in real time to the users.

And that led to an idea that it was a natural monopoly. You don't want to duplicate all these distribution lines and so forth. You want to ensure revenue, and you want to regulate the investment and all of that. And that led to the co-evolution of the fossil fuel fired generating plants and the regulatory model that protects the revenue of the utilities. And they're not bad people, for goodness sake. But it's a legacy system, and that old way of thinking has now been made obsolete by a wave of new technologies, new investments. The grid is so creaky and balkanized and obsolete, it is ridiculous.

Secretary Chu was talking about China. Next year, they will link their southern, northern and central regions and they have a national plan to have a 800-kilovolt unified national smart grid all over China, and they plan to be the world's leader in that infrastructure by 2020.

Well, you know, we invited that, too, in the United States, and the first power plant was turned on April 4, 1882 by Thomas Edison in lower Manhattan. And by the end of the 20th century, the National Academy of Engineering did a survey of the entire century. And what was the greatest engineering achievement? They looked at the Internet and they looked at the highway system and everything else. They said the number one engineering achievement of the 20th century was the electricity, transmission and distribution grid.

But sometimes your strength can become your weakness. And the old way that we got to thinking about this will no longer suffice. We heard about combined heat and power earlier just to give two quick examples here. Large industrial users that make a lot of heat during the processing of whatever they're making, particularly if they're making a lot of steam, they can recapture that heat and generate electricity on site, a lot of it. And they can use the heat for other productive purposes as well.

But in many jurisdictions they are prevented from doing that. It is effectively against the law in many parts of the United States to be a vision in the use of this energy. It's absurd. Now the utilities themselves, the average coal-fired generating plant, 65 percent of the energy in the coal is just wasted, vented into the atmosphere, they're just not interested in the
heat. And this old regulatory model does not compensate them in the same way for doing job number one which we defined as selling electricity.

And we want them to sell electricity, but we don't want them to waste 65 percent of what they've got in hand while they -- (inaudible) -- it's just ridiculous.

And then another -- so 35 percent of the -- (inaudible) -- that comes out of the generating plant and then another 10 percent of that is lost in these transmission and distribution lines because they're so old and they get congested and the power goes up and down. And estimates last year was that our economy -- (inaudible) -- $200 billion lost just from -- (inaudible) -- outages -- (inaudible).

But if you're making sensitive high tech equipment which is so important in the economy now, then you get a little brief outage, that is a problem. Two-thirds of it was lost to -- not to industry, but to business and they didn't even count the homeowners in it.

And the Galvin Electricity Initiative estimated that we lost $1 trillion last year in productivity gains that we could have made if we had the kind of modern electricity grid and generating system that we need. The head of Intel, the former head of Intel, Craig Barrett, announced a few years ago he would not build another plant in the state of California until that company could be guaranteed reliable high quality electricity.

So we've got to decide to get it from clean sources and stimulate renewables. And Stephanie's right, the mandate to get a certain percentage from renewables is the one thing that has worked.

But the other thing that will work and the thing that's in common to every policy that was discussed here this morning so far was we need a price on carbon because carbon is invisible, tasteless and odorless and we're dumping it into the atmosphere as if it's an open sewer and because we can't see it, it falls prey to the old saying out of sight, out of mind. If we get a price on carbon, then all of a sudden the advantages of natural gas over coal become crystal clear.

The advantages of electric vehicles over the internal combustion engine becomes crystal clear. The sense and -- insul -- changing the lights and the windows and putting in insulation and putting
a roofing system in and using the ground source geothermal heat pump system that are extremely efficient. Every new building in the country ought to have that. You just go down several tens of meters and it's a constant 59 degrees. Well you're already half of the way there for your heating load in the winter and for your cooling load in the summer.

But because it's new, we don't do it. And there are all these obstacles, the information's not available, there are not these one stop service providers, the culture hasn't built up, the utility model interferes with it, making a lot of these things unnecessarily difficult to do. And we've got to change every bit of this. And we can and we can make it sensible and create jobs and reduce our dependence on the overseas oil and all the rest in the process.

Now finally on the efficiency side. We have a lot of technologies and old ways of thinking in the way we use energy that is -- it's free money if we just wake up and open our eyes and grab hold of it. We can track and monitor and control the use of electrons the same way the computer industry has done with bits of information and with thermal units of energy as well. We've got the computer power to do it now, and it's cheap.

And change out the windows, get the ones that are much more efficient. Why do you want to let in the -- 102 degrees it's predicted out there today.

Somebody's in an air conditioned house, why do you want to let so much of that heat come straight through the glass and put that load on your air conditioning when you can save money with a minimal investment to swap out the windows for one that's much more efficient?

What about the light bulbs? That's a long story, but now these new LEDs are getting to the point that next year you'll be able to put them in a regular socket, a lot of them are already available now, very big savings.

Simple things like duct work, you know it's behind the walls and it's in the attic and basement so nobody looks at it. But when they look they find like 30 percent wasted just coming out these leaks all over the place. Now we have had a -- okay, also appliances. You know, you have the refrigerator and the washer and the dryer and the TV and all of that, it takes more electricity just to run electrical appliances in American homes
that are turned off than the entire energy use of the nation of Japan, that's how much we use. It's ridiculous. It's ridiculous.

Now you correct me if I'm wrong on that, Dr. Chu but it's close if it's not on the money. (Laughter.) But we have gotten to the point where this wastefulness and inefficiency is just ingrained and it has become a way of life. Now the good news is that when we make these changes that people who do it will make money, they'll save on their energy bills, we'll create jobs swapping out the windows and light bulbs and all the rest. But to come back and close with a theme that Tim has said in different words, we need to not only change the lights and the windows, we need to change the law and the policies because they govern the incentives that drive our choices. (Applause.)

**MR. WIRTH:** Great. Thank you Mr. Vice President. We're moving to the last section and I'm going to ask Secretary Solis to play the role that Senator Cantwell did, if you could listen to all of this and be our clean up summarizer at the end of the morning, that would be great.

That moves us now to how do we, quote, "grab that free money" as the vice president said we could. Laced through this are a number of work force issues. And I'd like to ask Van Jones now at the Council of Environmental Quality in the White House with a long history of innovation at the community green level to get us going in this discussion and then move to the mayor and then to -- Michael we're going to ask you to come on next from the utility world and answer the question is yours an old way of thinking.

So Van, you're up next.

**MR. JONES:** That's good. Well first of all, it's good to be here. I want to honor my friend and hero Vice President Gore. It was a brilliant summation, graceful, et cetera.

I also want to honor Senator Reid who has been such a huge and steadfast champion on this. You haven't gotten the credit so I'll put it on the table that not only is Las Vegas going to be a leader in generating energy, but there's also going to be a $5.7 million smart grid demonstration project so we could use that energy better and smarter here. Congratulations on that. It's a big deal for the whole country. (Applause.)
Senator Wirth and Senator Cantwell, I thank you also for your leadership and effectiveness on these very, very important issues.

I also want to thank John Podesta. He siced -- this is a very tough set of problems. He siced two of the best mind in the country on it and Brack (sp) and Hendricks. And then Benjamin Goldste, this report I think is very challenging and visionary in pushing us to think even bigger and bolder. I thank you for that.

I also thank Secretary Chu for making energy efficiency cool again by your -- and we get a chance to quote you on that fruit on the ground thing four or five times a day. So thank you for saying it's fruit on the ground. And also I'm looking forward to hearing the comments of Secretary Solis, the champion which I think people may sometimes forget of the first ever federal legislation ever to codify the concept of green jobs, the Green Jobs Act. And she not only was able to get that through Congress, she also was able to get the first president ever to sign into law a green jobs act, George W. Bush. So I give you credit for that, being able to be a leader in bipartisanship and bringing us forward together. (Applause.)

There's genius around this table, there's also genius around this room. And I want to acknowledge that there are so many people here who are listening who could easily come up here and talk and teach us a great deal. And I think that you are here, many of you, you wake up in the morning, this issue is the first thing on your mind. Many of you have taken chances to start companies, you've written books, you've been grassroots champions for the change that we need.

And I think that you're seeking not just a healing for our economy or healing for our planet, but also a healing for our politics. And I want to acknowledge that many of us are here because we're seeking something deeper. This is the common ground agenda, it should be the common ground agenda. We should be able to come together as a country on this, finally. (Applause.)

And the reason for that is it's -- the values that underlie this clean energy conversation which we don't speak too directly enough are the common ground values of America. Clean air is better than dirty air for the health of our children. That's common ground, that's why we need clean energy. We have been blessed in this country with so many resources, conserving them,
saving them, treating them with wisdom and respect is better than wasting them. That's why energy efficiency is so important.

And if we have the opportunity to fight both poverty and pollution by putting people to work in these new industries, we would be wise as a country to do that. That is common ground, that is common ground and that is why this administration is so committed to energy efficiency. We think that this is the most fiscally conservative thing that we can do with the federal dollars.

Why do I say that? I say that because the money that we invest in energy efficiency, these are humble, hard working dollars. They work double time, triple time, quadruple time. If you take a work -- someone who right now needs work, someone who's sitting on the bench but has skills or has a desire to get skills and you give that person the opportunity to stand up and become an energy efficiency specialist and walk across the street, you put a dollar in that person's hand, that dollar just cut unemployment.

But when she walks across the street and gets to blow in that clean, non-toxic insulation -- (inaudible) -- doors and she begins to do the work of improving and upgrading our homes, that same dollar that cut unemployment is going to cut someone's energy bill. And it gets better. That same dollar is also going to cut pollution because somewhere there's often a coal-fired power plant that's working overtime because our homes are so leaky and waste so much energy. But if we can cut that energy bill by 30 percent. we can cut that pollution by 30 percent. And that cuts not only greenhouse gas emissions but that cuts asthma.

So that same dollar that cut unemployment and cut an energy bill and cut greenhouse gas is also going to cut asthma and help us take asthma inhalers out of somebody's pocket. That's the kind of double and triple benefit that we're talking about. (Applause.) That's common ground.

It's important that we recognize that for all of the battleground politics that's going on, this is the one that should be a safe harbor for us, we should be able to stand together rather than asking questions that -- (inaudible) -- like or giving answers that conservatives like. We're asking questions about how we move beyond poverty and pollution and create more economic opportunities -- (inaudible) -- part of our economy.
But the answers are answers that conservatives -- (inaudible) -- because we're not talking about expanding welfare, we're talking about expanding work. We're not talking about expanding investments, we're talking about expanding enterprise -- (inaudible). We're not talking about redistributing existing wealth, we're talking about reinventing an existing -- (inaudible) -- by unleashing innovation and entrepreneurship. This should be common ground.

We should be able to stand together and be one country on this and that is why this administration has been so committed. That's why we have $5 billion on the table, up from $200 million last year in 2008, $5 billion on the table this year to cut energy bills for low income people by unleashing a tidal wave of energy efficiency workers in our economy.

That's why GSA has literally billions of dollars to retrofit our government buildings. That is why HUD has billions of dollars in our recovery package to cut energy costs for public housing. That is why you see with our recovery through retrofit program which the vice president asked us to start. Twelve, 13 different federal departments and agencies standing together for the first time, coming up with new ways forward. I mean Treasury, I mean Commerce, I mean the Small Business Administration because we know that this is as Secretary Chu has said so many times, the fruit on the ground. There is so much work that needs to be done in this country to retrofit America, to cut these energy bills. And there are so many people who need work.

This is our opportunity as a country, and it comes along very rarely, to take the people who most need work and connect them to the work that most needs to be done to fight pollution and poverty at the same time and be one country. Let's be one country. Thank you very much,

(Appplause.

)}

**MR. WIRTH:** In the quest to be one country, probably we watch California more than anything else and Mr. Mayor, the job that you all, you and your colleagues have done in California to develop a vibrant coastline and extraordinary economy and do it with less and less energy is just remarkable. So it's over to you and then we're going to move to the Nevada trio here and to bring this right back down to the effects that all of this is going to have in Senator Reid's backyard. Mr. Mayor.
MAYOR VILLARAIGOSA: Well thank you Senator Wirth and let me thank Senator Reid as well for the invitation to be here. I, like most of you, don't say no to a request from the Senator Majority Leader and I don't not in small part because of the tremendous leadership he's provided on so many issues including this issue of energy. And of course John Podesta who I believe that his institute is one of the most forward thinking policy institutes that understands the importance of implementation not just theory but practice as well and I want to thank you for putting this together.

Van, how do you follow that -- (laughter) -- except with a couple of things, and let me set the stage for a moment. I represent the second largest city in the United States of America, the city that has the ignominious distinction of being the city with the dirtiest air 20 years in a row, a city with the worst traffic, the quintessential city of sprawl. This is not a city of smart growth, a city that is focused on clean energy in the past.

And yet with my good friend and mentor Vice President Al Gore -- at my inauguration four years ago we talked about making L.A. the cleanest, greenest big city in the United States of America. We signed on as now more than 950 mayors have signed on to Kyoto. We met the Kyoto standards on October 2008 reducing greenhouse gas emissions by 7 percent of 1990 levels, what -- four years ahead of schedule.

At that time -- (applause) -- we had the dirtiest public utility in the United States of America less then 4 percent renewable. Even before AB 32 at the time the city or the state rather was going to move to 20 percent renewables by 2017, our goal was 20 percent by 2010. We started at less than 4 percent, we're at 13.9 percent with the opening of the largest wind farm in the United States of America this August. We are moving fast and hard.

But what I think is important about what Senator Reid and John Podesta and Tim Worth have done here is they brought together the necessary stakeholders to make all of this happen. We didn't do this alone, it wasn't just the government. We've worked with T. Boone Picketts. In fact, of the 16,000 dirty diesel trucks at our port, we have the most far reaching effort to clean up a port in the United States of America. 5,000 of them have already been retrofitted to either natural gas, clean diesel or electric trucks for small dredge runs.
We, in addition, have worked with academia. We have put together with UCLA SC Cal Tech and JPL a consortium for a clean tech corridor and a clean tech manufacturing center 22 acres that will create 1,000 jobs in the next 18 months. We're focused on leveraging everything we do in the city to create the technology and the technology transfer that will create the jobs that you spoke about, Van. In fact what we're excited about is what you just talked about in terms of the opportunities for people who otherwise wouldn't have those jobs.

We created an infrastructure academy in South L.A. Fifteen-hundred kids are involved in an effort, starting in high school to college -- one-year college -- where they will be able to retrofit solar, work for the Department of Water and Power, or the Southern California Gas Company. We're focused on creating those jobs, creating technology. We have a TAP initiative, which is a core technology advancement project where we've developed an electric drayage truck -- 50 jobs right now but hoping to move that much beyond.

So we're using -- what we're doing in the city of Los Angeles to leverage academe technology transfer, as I said, and job creation, because at the end of the day when you look at the Pew study just a few weeks ago, as important as climate change is in America's mind right now with the economy where it is, people are thinking about jobs.

And so we've got to create the opportunity that comes with addressing climate change and global warming, creating the green jobs of the future, training, developing the technology, setting -- siting, rather, the manufacturing centers. I just read the Harvard Business Review article that talks about all of the stuff that we've developed are now being manufactured in China, in Japan, in Korea. We need to develop that capacity here. So we believe our clean tech manufacturing center will give us an opportunity to do that, and I'm just thankful that you brought this together.

And I do want to say one last thing. Think about cities when you think about the opportunities. Eighty-nine percent of the GNP is generated in cities and metropolitan areas here in the United States; 82 percent of the population and 84 percent of the unemployment. So the nexus here -- and the vast majority of greenhouse gases that are generated in the United States of America are generated in cities like New York, L.A., Chicago, Houston.
So, creating that nexus between cities, jobs, the technology development and transfer that we talked about I think is the key to the future, and I want to thank you all for putting this together.

(Applause.)

**MR. WIRTH:** Thank you very much, Mr. Mayor.

Michael Yackira is the president and CEO of Nevada Energy, and we're going to ask you, Michael, if a utility can be a vehicle for the kind of change that we've been talking about today, or is it just an example of, quote, the "old way" of thinking?

After you have a chance to discuss that, we're going to move to Danny Thompson, who is the president of the Nevada AFL-CIO, and the Steve Horsford, the Senate majority leader in the state of Nevada. How well is the utility doing and how well is Nevada doing in making the transition that has to be made that we've been talking about today?

So, Michael, you're starting this discussion right in our backyard.

**MR. YACKIRA:** Thank you, Senator Wirth, and it's an honor to be part of this distinguished panel. I commend Senator Reid for once again being the catalyst for this important event. NV Energy is the electricity producer for about 95 percent of our state, about 2.4 million people in our state, and of course we provide the electricity for the strip and elsewhere, about 40 million tourists per year.

Our company has been embarking on a three-part energy supply strategy for several years, the first of which is energy efficiency; the second is development of renewable energy; and the third is building traditional power plants as cleanly as possible, and building transmission lines to move that power around the state.

It's no mistake that energy efficiency is the first of the three-part strategy, and as we plan for the future, we see a key component to being able to execute a new paradigm in the utility industry is smart grid technology. And I've been in this industry for 20 years now and I believe that smart grid technology is the game changer for our industry. We're seeking a $138 million grant under the American Recovery and Reinvestment
Act toward an approximate $300 million investment in smart grid technology.

Smart grid technology, as we see it, will convert the whole state -- virtually the whole state -- to this new form of capturing information about how people utilize their electricity. And when it's implemented, the new technology will be enabling our customers statewide to take an active role in managing their energy use. It will feature home displays that will combine two-way advanced metering for programmable thermostats and the like, managed through secure websites. It will allow our customers to get current information on energy consumption, pricing and billing.

We've talked a lot about plug-in hybrids. It would enable our customers to know when it's best to utilize and charge those plug-in hybrids when they become available. For NV Energy, the smart grid is the better way of assuring that energy resources are used as wisely as we can in our state while reducing our carbon emissions.

And now we talk about jobs. In our state we estimate that in the order of about 200 jobs would be created from the development of smart grids throughout our state. And that's not just ongoing jobs. That's changing out meters; that's building the infrastructure. And this would be a combination of NV Energy employees as well as customers -- excuse me, contractors and vendors. And we're working currently with seven different manufacturers and system integrators and market researchers to determine how best to implement the strategy once we execute.

We believe it's a great way to utilize the stimulus money to create jobs, to reduce carbon footprint and to improve the use of energy throughout our state. I hope we'll be the catalyst for other changes throughout the United States in this regard.

We've talked before -- and I had the honor of talking to this group last year about the movement we've made in renewable energy, and that continues in our state. We have about 500 megawatts in our state.

About 9 percent of our energy comes from renewable right now, and that's growing as a result of legislation that was passed just this last session through a bill that Senator Horsford sponsored to increase our portfolio standard to 25 percent by 2025.
One more thing: Tomorrow, those of you who attend the UNLV event will hear that, among other things, NV Energy is supporting and investing in state universities to develop renewable energy engineering curriculums, both at UNLV and UNR because there is pent-up demand to learn more about this and to demonstrate that through education and bring it into fruition into the jobs market.

I think this is a very exciting time to be in the energy industry and I can't think of a better place to be in the forefront than in our great state. Thank you very much.

(Applause.)

**MR. WIRTH:** Michael, thank you very much.

Danny, before we get to you I think Vice President Gore had a question for Michael Yuckira at the Nevada Energy.

**MR. GORE:** Yes, thank you very much. Excellent presentation. What I was trying to say a minute ago is that the wasted energy in the utilities sector, just the waste, is equivalent to the entire energy use of the nation of Japan. It takes the full output of a thousand-megawatt coal-fired plant just to keep running the TVs and appliances that are turned in the off mode.

But, given the enormous magnitude of this waste in the utility sector -- I'm not, you know, aiming this at you, but you're an expert on this and you've got some coal-fired generating plants -- is it mainly the regulatory problems that prevent the capture of that waste heat? Sixty-five percent just goes up into the sky. And what could we do, other than rewriting the Federal Power Act of 1935 changing the utility regulation -- what is that prevents the installation of more combined heat and power units to capture that wasted energy?

**MR. YACKIRA:** Vice President Gore, we in Nevada are in the forefront of some of these new technologies. We're working with Lucien's company, Ormat Technology, to build a waste-heat recovery station at a gas pipeline compressor station. Where the waste heat had been going up into the air, now we're capturing it, and through their technology are going to be making electricity into that.

**MR. GORE:** Yeah, but what about your main business? What about the coal-fired generating plants, 65 percent of the energy?
MR. YACKIRA: Well, we don't have many coal-fire stations in our state. About 70-plus percent of our electricity is being made through natural gas. And what we have done over the past three and a half years is invest in more than doubling the amount of natural gas-fired generation that utilizes the technology that is considered best in class today for traditional natural gas generation, and that is combined cycle plants, where, instead of letting the waste heat go into the air, we're capturing that waste heat from the equivalent of large jet engines and renewing that energy through gathering of steam and creating another cycle of electricity. That produces vastly more efficient ways of producing electricity.

I don't disagree with you that there needs to be more work on combined heat and power plants. There are a couple of them in our city. There's one at the Aladdin. There's one that's being built at the City Center, the largest privately-funded project in the United States that MGM is going to be completing by the end of this year. And there is a lot more that needs to be done.

MR. GORE: But, to persist, when Harry and I were doing the investigation -- (audio break) -- we'd keep after a question until it was answered. (Laughter.)

Most of our electricity comes from coal-fired generating plants, and that may be a smaller percentage of your entire system, but you've got them, and you don't have combined heat and power on them. And I don't mean to say this in an accusatory way. I'm sincerely trying to learn from you. The answer from others is that utilities face a set of regulatory requirements and incentives that make it less profitable for them to capture the waste heat and turn it into electricity and use it for heating or other uses.

You all -- as I understand your answer, you're familiar with the technology and have used it in some other places, but not on your coal-fired generating plants. And most efficiency experts say this is the 800-pound gorilla in the room: efficiency. I saw a cartoon in one of the energy publicans of a gorilla on a psychiatrist's couch, and he was saying, there I am, right there in the middle of the room. Nobody acknowledges me. (Laughter.)

But I'm trying to figure out, is it the set of utility laws and regulations that prevent you from doing that?

MR. YACKIRA: Mr. Vice President, I'm not a psychologist so I am not familiar with the -- (audio break) -- of capturing that
waste heat and recovering it and putting it through another cycle. That I'm not aware of. It certainly -- I don't believe it has anything to do with a regulatory paradigm because what we have found over the past several years is the regulator wants to see us become more efficient by utilizing methods to capture waste heat from natural gas plants, and they've been very supportive of that. I am not familiar --

MR. GORE: Okay.

MR. YACKIRA: -- with the technology that would do that cost effectively. It's not to say that it can't be done, but would do it cost effectively relative to other forms of generation or even renewable energy. But you've given me a homework assignment, Vice President.

MR. WIRTH: We will leave the record open for your full answer. (Laughter.)

Danny, I'm going to ask you to defer again for a just a minute, if I may. Secretary Solis, who we've asked to summarize this, unfortunately has coming at her an airplane that she has to be on. So what I'm going to do, Madame Secretary, if I might, is to move to you right now for your comments and summary, come back to the two Nevadans, and then, Terry (sp), if you could be the summarizer of this session, in addition to making your comments, that would be great. You've been doing this for a long time and you'll pick that up very nicely.

SEC. SOLIS: Thank you, Senator, and thank you, Senator Reid and Wirth. And obviously it's good to see my colleague Secretary Chu here, and our mayor from Los Angeles, a good friend, and also Al Gore and John Podesta, for bringing us together again. This is the second year that I've participated.

I briefly just want to say how important it is to underscore the importance of our economy, and the fact that we have too many people that are unemployed. And really the now for me is to make sure that we can change that preconceived notion that green jobs are not for everyone or that people don't even know that they exist. We still have a lot of education to do out in the communities that I've traveled.

And I've been to at least 29 different large cities in three other countries -- a very small number. However, there is a consensus: People are looking to us for leadership. People are looking for the United States to pick up the torch there and to
begin again to be a leader in energy efficiency, renewable energy, but also to make the case that everybody is involved in that recovery of our economy here.

And I think that there is a place at the table for everyone. Everyone here as a stakeholder should know that the Obama administration is really looking to cast a net far and wide to make sure that the stimulus monies that are going to be made available and that have been really reach all the farthest parts of our country, whether it's in rural America, inner cities, suburbia, or places where they're still not Internet savvy. We still have a lot of gaps in our country and we need to fill those gaps.

And one of the priorities is by getting out $500 million right away so that we can train people, we can get institutions like this university, community colleges, apprenticeship programs, vocational schools, even adult schools involved in this robust effort to bring people involved into the new renewable energy 21st century revolution. That's what I call it. It's a green revolution. It's one that can encompass everyone, regardless of your educational attainment level, literacy level and skill level.

And that's something that I think the president really wants to make clear, that everybody participate in this process. And it isn't just an 18-month recovery-funded effort. It's going to be one that's going to take us into two or three decades. So when you make an investment -- when a company makes an investment of a million or 2 (million dollars) or $3 million, or a billion dollars, whatever it is, we're looking at the changing attitudes of people for many years to come.

And it sends a very strong message, I think, to other partners, global partners who also have to know that we want to work with them. This is a good way of also, I think, spreading good will, so to speak, to let those third-world countries that we've left behind also share in our innovation and technology. That's something that I feel very fiercely about, that we have to do that in order to bring our presence about globally.

We can't just compete here in our own country but we also have to compete with other countries. And by doing that we begin by first making sure that everybody's boat is lifted, that we can compete here, that those jobs that pay well, that can pay anywhere from 10 to 20 percent more, will start here, and let's export our technology.
And that's really the basis for what I think the Department of Labor is engaged in, and we're working very closely with memorandums of understanding, with HUD, with Energy, with Education and Transportation, to make sure that we have standards set for these employment opportunities that will be available. And they exist right now, whether it's retooling and IBEW worker or someone who is a laborer or someone who is already engaged as an ironworker, developing wind power, solar power; it is there.

So we are ready to go. It really depends upon the willpower of this public, of the partnerships that are here, and hopefully engaging our young people, because our young people, I think, are really the ones that are going to help us fuel the next generation of new jobs that are going to be out there.

So, thank you very much. I apologize for having to leave so quickly.

(Applause.)

MR. WIRTH: All right. Secretary Solis, thank you very much for your good comments, and thank you for being with us this morning and reminding us again of the complexity of many of the workforce issues -- which, Danny, maybe you could reflect upon from the perspective of Nevada and the Nevada AFL-CIO. Thank you very much both for your patience and for being here.

MR. THOMPSON: Thank you, Senator Wirth. And I'd like to thank everyone on the panel for coming back to Las Vegas for this summit and, Vice President Al Gore, for all you've done on this issue, but specifically Senator Reid for his leadership because this is not an easy issue to tackle. And, you know, Senator, we appreciate everything you've done for Nevada specifically, and we want to keep you doing it in the future. (Applause.)

You know, our legislature meets once every two years, and it's a unique time when everybody comes together to try to solve problems. And we talked about jobs and we talked about renewable energies. And at the time -- in February of this year -- I represent all of the unions in the state of Nevada. There are 18 building trades unions within the AFL-CIO.

In February of this year I was at a meeting and we were trying to establish what we were going to say about these bills at the legislature. It was reported to me that unemployment in the Reno area, which is all of Northern Nevada, in those 18 building
trades unions, was running 30 to 35 percent. By the end of the session, by May, in Reno -- which is basically the rest of the state -- unemployment was 50 percent and rising -- 50 percent.

In Southern Nevada, unemployment in those same groups of people is running in the high 20s, and once the City Center, the largest privately funded job in the world, is completed -- the bridge over the dam, the airport -- there aren't any big jobs. We used to build a house -- we used to complete a house here every 20 seconds. We went from that to -- I went to the American Architect's Association four weeks ago to speak, and they were pushing pencil-ready jobs -- we've heard shovel-ready jobs -- they were pushing pencil-ready jobs because they are all out of work.

And if you understand that for a large project of any size, it takes a year to two years for those people to do the work in order to put people on the ground in those shovel-ready positions. And so it's not just from an energy perspective that I'm speaking today, although, I am. But it's critical that we do everything we can to create jobs, not just in Nevada but anywhere.

And I, you know, thinking back to the past three sessions, four sessions ago when we worked on a portfolio standard for Nevada, I think that, you know, that was some eight years ago. Today, we have the largest photovoltaic array that's installed at Nellis Air Force Base. We have concentrated solar that's out in the desert in El Dorado Valley, gigantic plants.

But that was done because we set a standard. And the state set a standard for the utilities. And the utilities have been very active in making that happen, and it happened.

And I would say that, as far as the policy standpoint, that without a portfolio standard, both for renewables and efficiencies on all federal projects, federal public works are going to be the jobs of the future because, today, the private sector is in the toilet.

We need to set a portfolio standard for all those jobs, both for efficiencies and for renewables. And so specifically in Nevada, when you look at that -- and I think Dr. Burns hit the nail right on the head that the opportunity for jobs is not just in the construction and operations but the manufacturing piece represents 70 to 75 percent of the jobs are the opportunity in these types of projects. And it doesn't matter if it's
concentrated solar where you're buying parabolic mirrors from Germany or you're getting your photovoltaic panels from China.

We need to do more to ensure that those jobs come to America and specifically Nevada.

(Applause.)

We have the Nevada test site that was, for years, the largest employer in the state of Nevada. Some 37,000 people worked at that facility in its heyday, and the Cold War, when we were doing all the testing, 1400 square miles of prime real estate sitting out in the negative desert that is just sitting there with billions of dollars of infrastructure. And if you know one thing about renewables, one thing that it needs is a big chunk of land. Well, there's a big chunk of land sitting out there in the desert. And if you look at the solar map, it's right in the middle of it because 86 percent of the state is owned by the federal government, virtually every city is land locked in this state. And we need to make better use of that facility.

And I know that, with Senator Reid at the helm, we're going to make that happen. And I know that, with people like all of you around this table, I think we can make these portfolio standards happen on a federal way.

Thank you very much.

(Applause.)

SEN. WIRTH: Steve, thank you very much. Before we get to our summarizer, Steve Horsford, who is the Senate majority leader here in Nevada, Steve, how are we doing in terms of reaching the goals that he's talking about and what are the steps that ought to be taken?

SEN. HORSFORD: Well, thank you, Senator Wirth. Thank you to the organizers of the event, particularly, Senator Reid for your phenomenal leadership on behalf of the great state of Nevada.

Nevada truly is at the center for renewable energy development in the West, if not, throughout the entire United States. And like many other states that consume large amounts of electricity from fossil fuel plants, we also have the opportunity to be a leader in conserving energy through energy efficiency measures that can help create the types of jobs that Danny talked about, many of them in the short term.
That's why my colleagues and I, during this last legislative session, worked so hard to lay the foundation for this new energy economy that we are all talking about here today. But it's important to both get the policy right as well as to implement the policy that we set. So I'd like to talk just about two things very quickly.

First is we leveraged the resources from Federal Recovery Act to really help to provide training opportunities and a career ladder for people who want to move into this new economy and to really jumpstart the creation of renewable energy and energy efficiency standards.

And this starts with weatherization and energy efficiency, but it allows those individuals, as they're trained, to then go into retrofitting of public buildings and schools that are needed as well as to work in the development of all of these new, exciting projects that everyone's talked about here today.

Drawing upon the resources of our communities colleges, the trade unions, contractor groups, among others, I believe that this will be done and I'm very excited those opportunities. We also worked to establish the right infrastructure here in Nevada to make renewable energy and energy efficiency more of a priority than it has been in the past.

The legislation focused on a distributed generation mandate which will be phased in. We've asked our Public Utilities Commission to analyze decoupling and then to implement it as it makes sense to our consumers and the utility. And one area that we achieved unanimous support was on the creation of a renewable energy and energy efficiency authority headed by a state energy commissioner.

Now, all of this is going to begin to position Nevada to continue to be the nation's leader.

And, really, what I'd like to say in conclusion is Nevada is open and ready for business, and we're excited about all of the information that's been shared here today, and we know that, with the continued leadership of Senator Reid, among others, that this will come to pass and the jobs and the opportunities that we've all talked about will become a reality.

(Applause.)
SEN. WIRTH: Leader Horsford, we thank you very much. Our final commenter, Terry O'Sullivan has been very present -- or very patient in all of this. He probably has a larger constituency than anybody around the table, too, with 500,000 members.

Terry, thank you very much, and you're our closing man.

MR. O'SULLIVAN: Thank you, Senator. If I had any sense, I'd be like Bugs Bunny and say, "That's all, folks," but I have a few things that I do want to talk about.

I -- first, I feel Boone's pain. He said that, as a Republican, he had trouble getting into Republican office. Being a Democrat and being a labor leader, it's damn near impossible for me to get into a Republican's office in Washington.

I want to thank Senator Reid not only for the invitation but for his dedicated service to our country and for all that he has done over the decades that he's been in the Senate fighting for the rights of working men and women.

Senator Reid, thank you for all that you do and that you've done.

(Applause.)

I'm going to follow up -- and it's a hard act to follow up on Dan Jones and talk about energy efficiency and, in particular, residential weatherization, an initiative that we have and something that we're all committed around this table and throughout this country.

Danny talked about the construction industry. Just to add a few more statistics, there's 1.6 million construction workers out of work in the United States of America. The unemployment rate is 17.4 percent. Six months ago, it was over 22 percent. And with the president's vision in the economic stimulus bill, it has put people back to work not only the construction industry but in the manufacturing industry as well.

And we talk about the president's vision of green jobs being good jobs. That's what I'm going to briefly talk about. I've talked about Dan many times about this and worked with him -- who is a real leader when it comes to this -- is that as we talk about the changing economy and greening our environment, I look at it this way.
You know, if it's not greening the environment, then it's not a
good, green job. And if it's not putting green in workers'
pockets, then it's not a good, green job.

(Applause.)

And I think that, as Danny and others talked about policy, I
think that we need to be careful that our commitment to the
environment, our commitment to the economy, our commitment to
this country and to this initiative has to be tempered with good
policies that lead to green jobs being good jobs.

Secretary Chu, under his leadership and the president's vision
and the $5 billion that has been allocated for the
Weatherization Assistance Program, trying to weatherize a
million homes, low-income housing units, over the course of the
next 12 to 18 months. As a backdrop, on the 30 years that
program has been operating, we do about 140,000 -- we weatherize
about 140,000 houses per year.

There's 38 million homes that are eligible even those we don't
have the funding yet -- that would be eligible for this
Weatherization Assistance Program. And as you've heard, there's
over 100 million houses in this country that need to be
weatherized. And if we're going to do that in the next 10 to 20
years, we're going to have to think a little differently going
forward than we might have in the past. We're going to have to
build the kind of capacities that will allow us to weatherize 5
million, 10 million homes per year.

Right now, we don't have the contractor base nor the work force.
And what we need to do through the Department of Labor and the
Department of Energy, there is training monies there that we
need to put people back to work again. You know, in our union of
building trades, we build America. That's what we say.

And we want to continue to build America, and we want to work
with environmental organizations like the Blue-Green Alliance
and the Sierra Club and all the community action programs that
are out there. And we want to put work -- construction workers
back to work. We want to put minorities and their communities
back to work who have an inordinate percentage of unemployment.

And we can use this -- the $5 billion -- we view it as a test
because we're going to need a lot more money from the private
sector. We're going to need hundreds of billions of dollars from
the private sector to accomplish what we want to accomplish on the residential weatherization front.

It'll create hundreds of thousands of good jobs, but they'll only be good jobs if we have policies that we put forth where, in fact, there's responsible contractor policies, that there's living wage provisions, that workers doing this work are going to get benefits, and that they're going to end up have a career. This isn't going to be a fly-by-night job. This is something that somebody can enter into -- residential weatherization -- and they can end up retiring and live a middle-class way of life.

And that's what I think we need to do when we talk about green jobs being good jobs is set good, sound policy at the national level and at the local level where we have the kind of responsible contractor policies, where we go out and where we recruit residential construction contractors who don't have a job today who would be interested in doing residential weatherization.

The workers that are out there that are looking for a job, this is a golden opportunity for us to clean our environment, to put people back to work again, and to make sure that the president's vision of green jobs being good jobs is truly a vision and a reality. And I know that, by all of us work together, we can make sure that that happens.

This is the start. It certainly isn't the end. This is a jobs bill. It's a bill to help clean our environment, to help with the green economy. And I commend Senator Reid and all of you for all that you do along these lines.

And I know that, as we leave here, I hope that the discussion goes way beyond just Las Vegas, that we connect the dots, that we put people to work again, and that we clean up our environment and we put people to work in useful jobs, in jobs that they can live with dignity and respect.

(Applause.)

SEN. WIRTH: Terry, thank you. Thank you very much for that ringing close.

I think, Mr. Majority Leader, if we were summarizing all of this, we'd put together something of a volume that had an introduction by Senator Cantwell. We had the opening chapter by
Van Jones getting everybody really excited and into the book. Moving then into a chapter on flipping how the utility structure has to change its way, a chapter on finance which threads all the way everything we've talked about.

We'd ask the general to come back with a specific set of formulation on liquid fuels and the changes that have to be made. Denise would come and give us a quick window on not only wind but solar and how those can be put together with Boone Pickens' next chapter on natural gas.

Al Gore would have a very clear summary of the needs and regulatory modernization. And Danny would start us out on portfolio standards and how extremely important they are. Finally, Terry would give us a very clear window on the work -- (inaudible). This would all be closed by another of Al Gore's brilliant summaries as the one that he gave us today halfway through.

Finally, we take the volume and give it to Boone Pickens and let him sell it to the country. (Laughter.)

Over to you, Mr. Majority Leader.

(Applause.)

**SEN. REID:** Tim, thank you very much. You've done an outstanding job moderating this wonderful panel we had. I was so concerned when I looked around and saw so many people around the table thinking how is it going to work? It's worked very, very well.

I'm so proud of you, and each of the participants here has helped formulate -- (inaudible) -- vision of what America is going to be tomorrow. See you this afternoon.

END.