TRANSCRIPT: REMAKING MANUFACTURING (2/13/08)

MR. LARRY MISHEL: My name's Larry Mishel. I'm the President of the Economic Policy Institute. Welcome to today's ***Agenda for Shared Prosperity*** forum. As you all know, the economy's been broken. And it's been broken for some time. It's not just that we're headed into rising unemployment. It's the fact that economic growth, whatever there's been over the last seven years, has not reached typical working families. At EPI, we understand that this is not inevitable and that policy can change the direction of the economy and our country.

That's why we draw on a whole range of experts in the *Agenda for Shared Prosperity* initiative to advance policies at the scale of the problem, not just things that sound good, but things that will actually address the issues we face and solve them. Our very first event last year profiled a paper by Jeff Faux, the founding President of EPI. And it identified manufacturing as an essential sector for the economy and identified solutions for the problems of our failing competitiveness.

This included: smarter trade agreements once we take a pause and evaluate what's going on already; working to devalue the dollar relative to the Asian currencies; and support for R&D. But support that also allows us to make

sure that R&D benefits domestic manufacturers. And help from government to make manufacturers more efficient.

Today's event follows up on that paper by focusing on that last element. What can government do for the manufacturing done in this country? The papers presented today focus on how to increase manufacturing competitiveness and demand for manufactured goods, especially by promoting renewable energy. They highlight several ways to ensure that the manufacturing sector will continue to provide good jobs for our country. Now, no one in American government has done more to advance or think about these issues than our next speaker, Senator Sherrod Brown. It's my pleasure to introduce him.

Senator Brown was elected in 2006 in an inspiring race where he spoke truth to power. They shot back. But he prevailed. We're still smiling about that. And we think other people will follow suit of his example in this very next election. And we really could add to the Senator Brown caucus. Now, Senator Brown has actively pursued solutions for working families in Ohio. He authored a book, "The Myths of Free Trade: Why American Trade Policy has Failed". That's got to tell you about his sterling character.

He's said that the so-called free trade agreements without worker protection, these agreements are antithetical to the traditions that built up our middle class. They hurt our international security. They reduce our economic growth. And they inhibit democracy around the world. Senator Brown has taken particular interest in halting the decline of the manufacturing sector, something that's been very problematic for Ohio which has lost a quarter of a million manufacturing jobs since 2000. Today Senator Brown will share with us details of the legislative efforts that he has introduced to buttress the manufacturing sector and protect working families. Please welcome Senator Sherrod Brown.

SENATOR SHERROD BROWN: Larry, thank you. It's a pleasure to be here. And I appreciate those hearty souls that made it today. I know a few people couldn't get here. And one I guess was hurt on the way. He's okay. So, thank you. And I know most of you come from places like me. And so you don't get intimidated by this weather. As I was walking around the room earlier just talking to people, I see in this crowd a bunch of activists about people that want to see manufacturing come back in this country from the trade union movement, from the National Association of

Manufacturers, from AMTAC, from textile groups, from all over. And understand how important it is in this country to build a movement that really does put manufacturing on the national agenda way more than it has been.

As I was walking around the room, and I was talking to Jackie and Lloyd over there in the corner. And as I went up to them, they stood up which some people do and some people don't. And I don't really much care if people stand when I walk in. But I was thinking back about ... I told them the story. I was thinking back about three weeks ago, you know, the Ohio primary's coming up. And I'm what's called a super delegate. I get calls from people that want my support as many of you do. And I'm sitting home with my wife one night on a Saturday night.

It's about 9:00 o'clock and the phone rings. And I'm just sitting there across from her. She's on the sofa. I'm in the chair. And I pick the phone up and said hello. And some young man said, Senator Brown? I said, yes. He said, President Clinton would like to talk to you. And he goes, Sherrod? And I stood up and said, Mr. President? And my wife said, he can't see you. And I said, yeah. But it's just kind of what you do. So it was ... and she's still making fun of me. And so I was ... and she figured out.

She said I take it that's President Clinton not President Bush on the phone when I said Mr. President.

Especially Robin, Ross and Larry, thank you. And Bob and so many of you that have been so important in this movement for workers in movements to rebuild manufacturing. As I thought about today and thought about Susan Helper who I saw on the plane yesterday and came in with from my home town of Cleveland, I was thinking back to something that happened December of '06. I was one of two freshmen put on the Senate Health Education Labor Pension Committee. Senator Kennedy selected Bernie Sanders and me to be on his committee.

And he had a dinner at his home the first ... within a week or so of the announcement of the two new members of the committee. And it was for the ten Democratic Senators on the committee. And Vickie, his wife, was there, and the staff director. And I'm sitting in the dining room at the end of the table. And sitting to my left were Ted Kennedy, Barack Obama, Hillary Clinton and Bernie Sanders. And I said louder than a stage whisper, Bernie, what the hell are we doing here?

And part of what was interesting about that was the next day the Washington Post called and said did you say to Bernie Sanders what in the hell are we doing here? I mean, when I was in the House, nobody ever cared about what I said. But I go back to that question what are we doing here? And I look at this crowd. And you all know what you're doing here. And you all know how important it is when you hear Susan's paper when she presents outlining the challenges and opportunities that exist for manufacturing in our great country today.

And it really is a matter of urgency. Over the last twelve months in my state, I've held a series of roundtables. The way I stay in touch with people with the state really is I invite 20 or 25 people in community after community. And I'll sit there for an hour and a half and ask them questions. Believe it or not, I do little of the talking. I simply ask them questions. We've done about eighty of those in the last year in about fifty-five Ohio counties. And manufacturing comes up at almost every one of these. And particularly the most perhaps of these discussions was in Tiffin, Ohio back in January of this year, just a month or so ago. Or December maybe. I can't remember, but recently.

But Tiffin is a town of about 20,000 people about an hour from Toledo in Northwest Ohio. Like many towns in the 20th century, it just exploded in growth in the early part of the 20th century because of manufacturing. It was an industrial powerhouse. Its success was built on the railroad on budding chains of supply and transportation in the industrial heartland, serving the industrial heartland. The rails connected towns like Tiffin with Toledo and to the ports in Toledo, to Cleveland. Coal transported by train from Appalachia, iron ore transported by boat in the Great Lakes. All of that was the buildup of the industrialization that changed the face of America. And the middle class used its strength and power to change the course of society.

We know that's Ohio history. That's industrial history. That's much of our nation's history. This era is also when progressives began to make strides in labor rights and women's suffrage and antitrust laws and conservation and the social safety net. I wear, as many of you have ... we've talked about with many of you individually. I wear this pen that's a depiction of a canary. I've had it for eight or nine years. It's a picture of a canary in a birdcage. The mineworkers used to take a canary down in the mines.

If the canary died from toxic gas or lack of oxygen, the mineworker knew he had to get out of the mines immediately. He had no union strong enough to protect him or government that cared enough to protect him in those days. It was all up to him. He was on his own. We know how that changed. And that changed because of the progressive movement. It changed because people of good faith and people who were activists in their community in the labor movement, in their churches, in their union, in their religious organizations, in their temples and churches and parishes and neighborhood ethnic groups and all came forward and pushed their government to pass Social Security, pushed their government to pass the creation of the Food and Drug Administration, pushed their government to pass safe drinking water, Clean Air laws, Medicare, Medicaid, civil rights, protection for women, ban on child labor.

All the kinds of things that progressives did coming from the grassroots and forcing the state legislatures and the Congress to do the right thing. That was all part of coming out of our industrialization. In more modern times, at this Tiffin roundtable I was talking about, some of the discussion was around a recent warn notice, the plant closing legislation of a couple of decades ago, given to

workers at American Standard. American Standard is a company you're pretty familiar with. It makes all kinds of plumbing equipment and other things, plumbing facilities and other things.

And the Tiffin plant has been operating since 1890. The last several years, it's been supplying Home Depot and Lowes. Last October, the company was spun off and purchased by Bain Capital. I think you know Bain Capital from Boston. A month later, Bain sold a controlling interest to Sun Capital and the workers were told the plant would close. By that time, there were about 165 workers left. Only four years earlier, there had been 650 workers. Many of the workers are in their fifties. Like so many other workers when this happens, their lives have been up ended.

The union contract was honored as far as it went. For people who already had thirty years, if they were working there thirty plus years, they got their retirement. Many of these were men and women in their fifties. In some cases, a husband and a wife would both work there. They lost all of that. And they lost much of their pension and their health care. Bain Capital, as many of you know, is Mitt Romney's company.

And as you might guess, I've not been all that active in Republican primaries. But part of me wanted Mitt Romney to survive a bit longer. Because I would love for him to have come into Ohio to places like Tiffin to share his vision on how to renew American manufacturing. Because we see again and again how Bain ... and I don't mean to single them out, except that was the subject of that roundtable, of how Bain and other investors have come in, cut pensions, cut health care. They create jobs all right. But it's just jobs in the wrong countries.

And that's their business model. Downsizing is met with short term gains for the venture capitalists. This is one of the key business models that are de-industrializing this country. We see it with Delphi. When bankruptcy means that skilled workers get pink slips or make concessions on pension and health care and CEOs who have been ousted get millions, something is very wrong with that system. The growing disconnect between work and reward. As productivity goes up, wages don't. As executives lay people off, they get bonuses. The disconnect between work and reward is an insidious, dangerous thing for our economy.

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For the past three decades, we've seen a decoupling of wage and productivity growth. Manufacturing is largely responsible, more than any other part of our economy over the last couple of decades, for the quality of life that we enjoy. I don't think there's much debate about that. Our prosperity and our national security, as many of you have talked about, relies on a strong manufacturing base. The manufacturing share of the American economy, as we know too well, has been slipping. In 2005, manufacturing accounted for 12 percent of GDP. That was down from 15 percent just a decade earlier.

And we're aware of the damage that the Bush Administration has done to manufacturing since 2000, mostly because of indifference towards manufacturing. Last week, the President's budget called for ending the manufacturing extension partnership: part of his "leave no manufacturer behind policy." We're not going to let that happen. But that fight happens every single time when they try to cut manufacturing extension. And those of us that care about manufacturing and middle class values fight to keep it. This is within, understand, a budget that has $51 million, in 2009 alone, $51 million in tax cuts for people making over $1 million a year. $51 million in tax cuts for those making over $1 million a year.

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More than 40,000 manufacturing plants ... 40,000 plants ... have been shut down in the U.S. since 2000. More than 3.3 million manufacturing jobs ... you hear this number often ... have been lost, about 1/6th of our manufacturing. As we see with American Standard and Bain Capital, as we see with Delphi, the pressures of globalization makes companies focus on getting rid of costs, not investing for growth. A plant closing in Tiffin is met with applause on Wall Street. You know that story over and over.

So I ask you to imagine what manufacturing ... what this country will look like in twenty years if we can do that. We're at a fork in a road. And what we do with manufacturing and what we do about the middle class, what we do about economic growth, what we do about national security. Every single day we spend without working to renew American manufacturing in some sense means two days by our children and grandchildren paying that debt for our inaction. Our political lives just like our personal lives are made up of choices.

They're choices we have to make on climate change, on trade, on tax policy. Congress will address climate change. And with that, the creation of a market for clean

energy and green jobs. By creating markets for clean energy, not only can we stabilize our nation's energy supply and reduce our emissions of greenhouse gases, we can also bolster manufacturing in the Midwest and other places in our country from wind to solar to biofuels to clean coal type of technology to fuel cells. We have the capacity to become a leader in clean alternative energy manufacturing.

At Oberlin College, about fifteen miles from my home, there is sitting on that campus the largest building on any college campus in America fully powered by solar energy. The builder of that building told me that they had to go to Germany and Japan to buy the solar panels. Because we don't manufacture them in quantities, in the necessary quantities in the U.S. We know the same with wind turbines. Ohio has dozens of wind turbine component manufacturers. Their turbines are not built in this country.

In most cases, in Germany, for instance, unemployment and Clean Energy exceeded a quarter million workers in 2006 and is estimated by 2020 to be a half a million workers. And those in most cases are good, high paid manufacturing high tech jobs. There's no reason that Ohio or Michigan or North Carolina skilled workers can't be building the solar

panels and the fuel cells and the wind turbines that go into production of alternative energy. In fact, we're starting to see that already.

Outside of Toledo ... Toledo's known for decades as the glass city. Because so much of glass for the auto industry and commercial uses for glass were manufactured in Toledo. A company called First Solar produces more thin filmed solar panels than any other facility in the country. Rising international demand has led the company to double the size of staff in the last two years. It happened in Ohio because First Solar's efforts were nurtured by the publicly funded Wright Center at the University of Toledo.

We have a base of manufacturers and expertise in Ohio that if supported can lead the state and the nation. Through strategic investments in alternative energy, obviously we not only create jobs, we can create a new industry in this country that can begin to rival what Germany's doing, what Japan and some other countries are doing. And particularly, many of the states that have suffered the greatest loss of manufacturing jobs now have the greatest potential to supply our growing alternative energy industry.

In a recent study by the Renewable Energy Policy Project, Ohio ranked second, just behind California, in the potential number of jobs created by significant investments in wind technology. More than 100 companies just in my state alone are involved with production of components needed for turbines, wind turbines, solar, bio, fuel cells, all of these parts of alternative energy. However, manufacturers and workers will need an assist transitioning to this new economy. Innovative policies are needed to move forward obviously at a much faster pace.

And we're not doing nearly enough with the federal government and what we should be doing. A great investment agenda would include significant federal investment and federal tax credits for research, for manufacturing extension program, for worker retraining program. And, of course, addressing American manufacturing creates a global outlook. And my contention in this Presidential race is whichever of these three candidates comes up with sort of the big idea, the idea of what are we going to do about manufacturing, alternative energy, infrastructure and building the middle class?

Whichever of these three candidates comes up with that big idea and sells it to the American public is not only going

to win the election, is going to win Ohio and win the election. They're also going to be in a position to take the country in the direction with either a ... call it a moon shot or a Marshall Plan or Manhattan Project. Call it anything you want. But that big idea to move this country forward.

In Susan's paper, she writes about blocking the low road. The low road is using globalization to drive down wages and standards. The low road is what we've seen on trade policy. The simple idea of companies moving overseas to exploit the cheapest labor, to evade any environmental regulations and to undercut any kind of worker safety standards if those countries have them. That's been the low road of unregulated globalization. That race to the bottom is her description of the low road.

It means addressing ... obviously, it means addressing our trade relationship with China. It means redesigning the contents of our trade agreements. For too long, business has protected its interest in trade. Why shouldn't labor protect its interest? Why shouldn't environmentalists protect our interest? Why shouldn't manufacturing, particularly small companies, that they're more victims than drivers of globalization, be able to protect their

interests? We want a middle class that's strong. We want a strong middle class in Mexico, one that will buy our product.

Jeff Faux, who Larry quoted earlier, wrote extensively and taught a lot of us in the early '90s a lot about what NAFTA should look like rather than what it did. That it would have lifted up Mexican living standards, helped to create a real middle class there that could have bought American products. The goal of globalization obviously must be to raise standards, not lower them. That's why you see not just labor activists and environmentalists in the trade debate, but food and product safety activists, faith based groups, small farmers, small manufacturing, all of that.

We have to first of all hit the pause button on trade agreements. The President wants three more under his belt before he leaves. But he's not going to get them. [applause] Right now we have the opportunity to look at NAFTA. It's clear where the American public is on these issues. You can see it in the 2000 elections, not just in Ohio, but in state after state after state. We have to look at our trade relationship with China. We have to fix that.

We learn from our mistakes. We write new trade agreements that enhance growth, that enable manufacturing to thrive, that lift standards, manufacturing and other standards, abroad, making us better able to compete and raising the living standards multi-laterally in all the countries with whom we trade. Trade agreements ultimately that work for the middle class in this country and work to build a middle class in the developing world. Trade that's aligned with national interest and with the common good. Trade that results in more manufacturing jobs in our country and worldwide, not fewer manufacturing jobs.

A few months after I was born in the early 1950s, Ohio native Charlie Wilson famously declared about General Motors, you may recall this, famously declared that what was good for the country was good for GM and vice versa. That's what I call aligning corporate and national interests. Corporations are not altruistic. We don't expect that. And their CEOs are not selfless. Nor do we expect that. Wilson made a statement while testifying before the Senate Armed Services committee which had to pressure him to divest his GM stock before becoming Eisenhower's Secretary of Defense.

When production and sales were principally in this country, our interests were in fact more aligned. Today, it's a much different world. In 1953, we would find it unthinkable for one of the big three to be run by a German. Maybe the Germans now agree, but for different reasons. About a year ago, Intel announced the development of a new microchip in the U.S. Then it announced a month later that it will manufacture it in China, a $2.5 billion investment. But the Chinese government gave them about a billion dollars in subsidies. It's a big problem, especially when you can bet that much of the science, the R&D, was paid for by U.S. taxpayers.

Why is that good for our country: that our R&D is done here and the manufacturing is outsourced? Across the board, we've not done a very good job of aligning corporate interests with our national interests. We've done a very good job of aligning our laws with narrow corporate interests. But we have choices in this. We're at a crossroads and thinking about the challenges and the opportunities of the moment, it's important to remember that America is still the largest consumer market in the world.

We still buy about one-third of China's export. If you have a business and you have a customer that buys one-third of your products, you're going to listen to that customer. We simply have not used that leverage to lift up working standards, to help our own manufacturers, to look out for our own national interests. Whether it's about climate change, whether it's about trade, whether it's about making it easier for workers in Mexico and Columbia and elsewhere to join a union. Whether it's about any one of these issues that affect the environment and effects workers.

That's why we are a wonderfully propitious, wonderfully advantageous time in our history. We're still prosperous enough as a nation. We're still big enough in the world economy that we can, in fact, help to stimulate change in the global economy that works for people in those countries and works for people in our country. On broader tax policy on health care and alternative energy, the defense production base, all of those issues work to our advantage as a nation, as citizens of the world, to lift all boats if you will.

Manufacturing continues to be, as we all know, the engine of U.S. economic growth. In my state, we value manufacturing. There's a valuable work ethic in

manufacturing. There is dignity in manufacturing. I think Ohioans, like people everywhere, people in manufacturing, people not in manufacturing, understand the words of Pope John Paul II. He said we judge any economic system by what it does for and to ordinary people and by how it permits all to participate in it. The economy should serve the people, not the other way around. Thank you for inviting me. I'd love to hear a couple of questions.

MR. LARRY MISHEL: The Senator will have to leave in a minute. We have time I think for one or two questions.

FEMALE SPEAKER: (inaudible) interesting because it's here. Part of the problem ... manufacturing jobs are good in this country not because they're manufacturing per se, but because that was the most highly unionized sector of the economy, one of them. I mean, we have a problem now. GM said it was going to lay-off the rest of its hourly workforce and substitute cheaper laborers. I think part of that has to do with Toyota is here and they're paying their people much less. And so part of your package is going to have to be strengthening the union over here. So that factories like Toyota can be unionized and we're not competing with our own sort of lower wage people.

SENATOR SHERROD BROWN: Absolutely. I certainly mentioned labor throughout the speech. I didn't mention organizing. My daughter is a union organizer. She organizes homecare workers, the lowest paid workers in our country probably. And I think that one of our top two or three domestic priorities is the Employee Free Choice Act. Come a new President in 2009, I think that to raise living standards certainly, I mean manufacturing. But you need the power of a group of people to make sure that we share in the profit.

One of the things most striking to me ... and I'll make this quick. But most striking to me in a trip to Mexico I made after ... on my own expense, I flew to Mexico. Met with some ... flew to Texas, met with some friends and went across the border is we went to a GM plant right across the Rio Grande. And the workers' plant was modern, more modern than most of the auto plants in Ohio. The floors were clean. The workers were working hard. Yet, they clearly ... the difference between a GM plant in Mexico and here was there was no parking lot.

Because the workers weren't making enough to buy the products they make. You could go to industrial plants all over the world. That's largely a process of unionization. Because they weren't sharing in the wealth they created.

And workers have to be able to share in the wealth they've create. And a union is obviously the best way to do that. Thank you.

MS. TERRI JONES: My name is Terri Jones, Manufacturing Skills Standards Council. Would you say a few words about the skilled labor issues? Because in many cases, the existence of highly skilled labor will bring advanced technology industries. And I know that the unions have been very, very active in the Manufacturing Skills Standards Council. So that someone with a skill certificate in Hawaii can pool their capabilities in New Jersey for a job.

SENATOR SHERROD BROWN: Oh, that is so important. That's something I really should have included in the speech. It was probably a bit too long anyway. In these eighty roundtables I've done around the state, I hear repeatedly from manufacturers and others that they can't always find the skilled workers they need. I know the building trades. I've talked to people in the building trades, will tell me, electricians and others, that we're going to have a shortage of operating engineers in the next twenty years, electricians and pipefitters. I met with Ohio's community colleges yesterday with the board and the Presidents of the community colleges. They can grow more if they have the

resources. Because there is huge demand for whether it's health care workers or whether it's manufacturing workers. And they need that two years or four years of community college. That's a major, major part of this. Trade adjustment assistance is a start. It's not nearly enough. We've got to do way better in giving working class kids the chance to go to school, not necessarily four year college, whatever they choose, many of them skilled trades, many of them manufacturing skills, all of that. That needs to be a major part of this commitment of the big idea next year.

MR. LARRY MISHEL: Thank you, very much. I know you have to go to your day job. [applause] Let's have the next panel come up. It's unfortunate, but our friend Louis Uchitelle, who was to moderate this next panel came here and walked on the ice last night and slipped and hurt himself. So our thoughts are with Lou today. We'll bring him back for another panel. But substituting in for Lou is John Irons, EPI's Research and Policy Director.

MR. JOHN IRONS: All right. Thanks, Larry. Well, let me just lead off. I'm going to very quickly get to our two panelists here since they have the most interesting things to say. But let me point you at least to a paper that you have that EPI's releasing today from Rob Scott which points

out some basic data on manufacturing, both nationwide and across states. And let me mention this because I think there's a bit of a misperception out there that manufacturing is yesterday's industry. It's not. It still represents a large fraction of the U.S. economy.

Ten percent of employment is in the manufacturing sector. About twelve percent of GDP is represented by the manufacturing sector. The manufacturing sector pays higher than average wages. And the manufacturing sector represents about 60 percent of all research and development in the country. So when you look at manufacturing, it is still an extremely important sector. And it's not one that we can just ignore.

We have to have the right set of policies to encourage manufacturing, not just because it's an important sector from an employment perspective, but also because it is vitally important in meeting national and global challenges. And as we'll hear today, that's especially true when it comes to climate change. And that the manufacturing sector is an essential element of really addressing the climate change challenge that we have today.

So let me introduce our two panelists. The first speaker today is Sue Helper. She's the AT&T Professor of Economics at Case Western Reserve University in Cleveland. And I understand that just recently AT&T Professor due to the recent merger. It was Eisen Professor before?

MS. SUE HELPER: SBC.

MR. JOHN IRONS: SBC Professor before. So she reminded me that corporate mergers don't just impact corporations. They also impact endowed chairs as well. She's also Research Associate at the National Bureau of Economic Research in the MIT International and Motor Vehicles Program. Her research focuses on the impact of collaborative relationships between suppliers, customers and management and labor.

George Sterzinger, our second speaker, is the Executive Director of the Renewable Energy Policy Project. He has more than twenty years experience in energy policy and regulation in clean technology commercialization. In the late 1980s, he was Commissioner at the Vermont Department of Public Services. And he also has worked extensively with the Corporation for Solar Technologies and Renewable Resources, in part to establish a solar development zone in

Nevada. He has also worked with Nevada AFL-CIO to advance the use of solar technology in the state. And in recognition of those efforts, last year AFL-CIO named him a friend of Nevada Working Families. So we're pleased to have both George and Sue here today to help about manufacturing policy, energy policy and the nexus between the two.

MS. SUE HELPER: Well, thank you very much for inviting me. I'm pleased to be here. And pleased to follow my Senator. I can't tell you how pleased I am. So I actually want to start off with a story similar to one that Senator Brown told. This is about Sharpe Electronics in Memphis that started off in a plant producing TVs and microwaves. And this is a plant that stayed open long after others closed because ... and this is according to the company history ... rivals were forced out, but they had full cooperation, zero defects from their suppliers and full involvement from their workers.

But in 2002, they moved all their TV production to Mexico and laid off a bunch of workers. What happened? Well, just a few months later, they brought solar panel production to Memphis and today are one of the largest producers of solar panels in the U.S. and stimulated both

by new energy legislation. One of the things that made this transition easier was that the plant is represented by the IBEW and with a lot of ability to learn how to debug products, introduce new products.

So this illustrates I think a lot of the situation of U.S. manufacturing. There are some problems, low wage competition. But we also have opportunities. We have a lot of skilled workers. We have a lot increasing demand for sustainable products. We can bring these things together in a high road production recipe. And by that, I mean workers and suppliers and management, we're going to work together to make innovative products, a sort of win/win/win. And public policy can help.

And so, the bottom line of my talk today is we can save manufacturing in a way that's consistent with our values. And this is a way that creates a bigger economic pie, divides it more fairly and protects the environment. And I think often we're told that, oh, no. We've got to accept lower wages, worse regulation, et cetera. I don't think (a) that would work or (b) its even necessary.

So what I want to do today is just briefly lay out some of the points in the extremely long paper that I wrote. But

just kind of touch a few highlights and then leave some time for questions. So feel free to ask questions. So I want to talk first about some problems and then about some solutions. So, as we all know, manufacturing is really shrinking. It's shrinking dramatically. Should we care? And not surprisingly, my answer is yes.

I think in the popular imagination manufacturing is already the size of agriculture. That's not true. There are 14 million jobs in manufacturing. And it still pays twenty percent more than the economy-wide average.

At first, it can help meet national goals. And second, it can provide a career ladder. I think in the popular imagination manufacturing is already the size of agriculture. That's not true. There are 14 million jobs in manufacturing. And it still pays twenty percent more than the economy-wide average. And so to the extent that manufacturing serves public purposes, I believe it should receive public support. So I'm not talking or we're not proposing sort of handouts or unconditional support for manufacturing. So policy should correct market failures.

As an economist, I guess I'm going to have to say a word about markets. And there's this sort of view of markets as this incredible cure-all and they can do everything. I think markets are a good servant, but a bad master.

Senator Brown talked about the importance of aligning incentives. Markets sometimes do that, but not always. And I think a really great case is the case of energy that George is going to talk about.

But we've been using the atmosphere as a sort of free carbon dump that's been unpriced. Markets fail to align public and private incentives. You can make a lot of profit by continuing to dump a lot of carbon in the air. Public policy needs to step in and change that. So, as George will explain, this is a huge opportunity to really remake the economy. Not just with renewable energy, but also in terms of energy efficiency. And this is not just that manufacturers will use less energy as they produce, but that the goods they make will require less energy when we use them.

A key example here is obviously the auto industry which by itself is about 16 percent of U.S. contribution to greenhouse gas emissions. So this is I think a really hopeful time in that we could change the terms of competition away from wages and towards creativity and energy efficiency. But in order to do that, we actually have to make innovation. This is not going to be business as usual. There's a view, you know, we just divided up the

work and the dumb jobs are done by dumb people who aren't paid very much.

This I'm going to argue throughout the talk is a real mistake. And it's particularly a mistake when we're really changing what it is we're doing. A key example I think of a big success story is the humble refrigerator. Refrigerators in the '70s accounted for several percentage points of household energy use. Due to some standards, standard legislation, a refrigerator today uses one quarter the energy that it used in the 1970s. How did that happen? Well, there were a lot of innovations large and small. So compressors got better. People figured out how to insulate things better.

This is the kind of effort we need on a huge scale. It's not going to happen without manufacturing capability. I have some figures here about shortages of skilled labor that we were just talking about. We also think about particular industries that we're in danger of losing. So the tooling industry is really important. If you're going to make a new product, you've got to figure out how to make the jigs and fixtures that allow you to produce it. Well, this is an industry that's lost a third of its employees between 2001 and 2005.

So, on the demand side, we need sort of things that are national goals that we can provide. We can meet with manufacturing capabilities. So one of them is energy. There's a couple of others, infrastructure, and national defense that are also important. But in order to meet these national goals, we need to do some things on the supply side. So the key supply side policy here is that high wage workers are going to make these cost-effective, sustainable products for consumers and profits for owners. And how does this happen? You know, why is it that we could actually have a 10:1 wage differential with China and still compete? And I'm going to show you some data later that shows that this is actually quite reasonable.

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So skilled workers help plants introduce new products faster, handle more variety and deliver just in time. So we don't need to be making the same thing that China makes. We can add value in a lot of different ways. So in a small town of Galeon, Ohio, there's a company called Glenhill Road Machining Company. This company makes nuts and bolts, nuts and bolts of the economy. But not just any. They will tool you up a nut or bolt that you need for your

special application and deliver it to you in a week. This is a company that's both employee owned and unionized. And they are doing quite well with this strategy of really empowered workers, a lot of computerized equipment. They don't make mistakes.

A second thing. Continuous improvement benefits from direct workers knowledge. I talked to the union shop steward at Metal Steel in Cleveland. He was telling me about a worker's suggestion that was basically going to save them about a million dollars a year. And that is when you put a new process ... they have these coils of steel, you put the new coil into a processing line, a pickling line, you need a clean edge so that the machine can grab it and hang on.

They had had this kind of rule where you cut off eight inches to get where the ... because the ends of these things typically get banged up a little bit. So one guy said, you know, sometimes you don't have to lose eight inches. You can lose two inches. If you find a clean edge and no impurities, no roughed up, no scratches, we should just use that. And so you add up three inches here, three inches there, thirty coils a day, you're talking real money. It also requires the skill of the worker to know is

this a good edge? Is this a bad edge? Which can be kind of hard to describe to say you or me or another worker unskilled in this kind of thing.

And self-management reduces the need for supervisors. So they talk about they'll go days, or even under a previous management, weeks without seeing a supervisor. But yet, the plant runs just fine. So overall, it was a very careful study done of the employee involvement showing that in steel finishing lines like this one at Metal that you can get about five percentage points greater up time with these employee involvement mechanisms. This can save hundreds of thousands a year, millions a year in fact. So it's really quite an excellent policy.

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Okay. Why does it work? It works because things rarely go as planned. I think maybe those of us who don't spend a lot of time in plants think that what a manufacturer and worker does is push a button on a machine, the same button day after day, year after year. That isn't the way manufacturing looks in this country. And it could look even less like this if we continue to improve the skill of

our workers. And so the distributed information flow, understanding of context is valuable.

Just one example. I was in a Denzel plant owned by a Japanese company in Battle Creek. They had just had a great new suggestion involving allowing a supplier to use a standard sized box rather than a special box. Well, this turned out to be quite a big problem. Because at Denzel, they deliver these boxes right to the line. The worker's reaching into this box two inches deeper 2,000 times a day. It's an incredibly painful, difficult thing to do. She said, no. We can't do this. But what was her recourse?

Well, it happened that she had actually worked next to the purchasing manager whose job it was to deal with these things on the production line. Because Denzel has a policy that the managers work on the line once a quarter. Now, that may seem like a dumb thing to do. Why are you having all of these smart people work on the line? Well, it meant that this problem was solved instantly. Because she knew exactly who to talk to. He understood exactly why it was a problem.

So this is great stuff, right? But I think many of us know that these things don't either get adopted or they get

adopted and they fail. So Metal Steel, the USW partnership is back and running with the new owners. It kind of collapsed because the old owners decided they wanted to invest $500 million in a non-union joint venture. So why is this a problem? Why are these things so hard to adopt if they're so great? So there's two reasons.

One is an economics word, complementaries. You need to do a lot of things at once to make this work. So one example if you think about this tool and die, the nut and bolt company, they had to make a number of changes at once. They had to both move to ... they introduce a lot of computers that kept them apprised of what the market demand was. Computers on the shop floor that kept them able to switch over between products very quickly. Without the changed product strategy, it didn't make sense to do the changes on the shop floor, to do the training, et cetera. But without the training, the product strategy wouldn't have worked. It's a very daunting task to do both of these things.

A second issue that Sen. Brown also alluded to is I think there's a temptation to break promises for short-term gain. Long term, you can build cooperation. There may be a chance. I could get a low wage company cheaper. Public

policy I think can help with both of these. So I want to talk today mostly as an example. This is not the only thing that we need to do. But just as an example of the kind of thing that we can do that's actually quite cheap. When I was talking about this with John, he said million? Don't you mean billion?

This is such a cheap policy. But yet, the Bush Administration want ... they've cut it from the historically around $100 million to this year it will be $85. And then the FY09 budget has $4 million to shut it down. This is just dumb. So let me tell you about what they do and then just why it's so dumb. So there is a model that I guess I would urge that they ought to ... they do a little bit of and they could do more of. Full utilization learning lean. This comes from a paper that Howard Weil worked on and Dan Luria and I had a small piece in it.

So the idea, we start with learning lean. Lean production being like the Toyota Production System where you avoid waste and you try to understand the root causes of problems you delivered just in time. That's a key piece. Another key piece though is full utilization. So making sure your plant is busy. And that's important just in general. It's

also important because one of the things that happens when you do lean productions, you get more efficient. If you don't have more business to fill your factory, layoffs can result. Bitterness, et cetera, can follow.

And this product development marketing to new industries is a very difficult thing for the small companies. We ask our companies in the U.S. to do a whole lot more than say in Japan or Europe where there are supports from either big companies providing technical assistance from connections with community colleges and universities. Our small business owners are expected to be HR directors, R&D directors, marketing directors. This is a tough task. And so things like the MEP (Manufacturing Extension Partnership) in Cleveland actually has done a lot with product development in sort of suggesting to people, oh, you make small motors. You don't have to sell them only to the auto industry. There's lots of industries that could use your small motors.

Another part of this I think is supply chain. This is a big percentage of cost, as I'll talk about, in manufacturing now is purchase parts. It's not direct labor. The typical manufacturing firm maybe buys about half to ... 50 to 60 percent of its costs are purchased

parts. Managing these suppliers, getting ideas from them, is a crucial source of success. It's one of the reasons why Toyota is actually so successful. And although their benefits are less, their wages are the same and actually maybe higher with this new deal.

And one of the keys to their success is learning how to manage suppliers, getting ideas from them through the supply chain. So how does the program help? So there's three things. And I'll talk about each of them. First is that more plants will achieve the productivity of the best plant. The second is firms competing on the basis of fast delivery and new products rather than on sort of low labor cost. And the third thing, very important, is that firms need to understand their costs which they don't. And if all these things happen, U.S. manufacturers can compete in China in most industries.

So this chart I want to spend ... a little bit small. But what this shows is a big dispersion in productivity. This is data collected by Dan Luria at the Michigan Manufacturing Technology Center, one of the manufacturing center programs. All these firms make metal stamping for the auto industry. It seems like a relatively homogeneous part. But if we look, this is a graph of their value added

per worker. So let me spend a little bit talking about what that means. Value added per worker basically tells you how big the pie is. It tells you how much money there is for wages, how much for investment, how much for profit.

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So if we look at the very top piece of that, the peak of that little distribution, you can see that the median firm has about $75,000 in value added per worker. If you're paying your workers say $40,000 to $60,000 a year, if you paid them a decent wage, that doesn't leave a lot for investment and profit. On the other hand, if you look at the firms in that tail, the top ten percent are making more than $100,000 in value added per worker. That's plenty of money to pay a worker well, to invest and to have a profit. More of our firms need to be in that upper tail. And there are proven techniques that do that.

This chart shows kind of how much, how close firms are really being able to compete with China. You probably can't see it. The best firm is if we look at the far right bars in plastics. And it suggests that the black bar says percent of the companies that are within ten percent of the Chinese average. And the shorter bars are the ones that

can compete now. So basically, we're at 100 percent are firms can compete. The most sever challenge comes in metal forming. But even there if you add together, 50 percent of the firms are within ten percent of these costs.

And that's just costs as measured. We don't measure costs very well. What offshoring does is it reduces the costs we can measure and then replaces it with a bunch of costs that are spread out across a lot of different budgets and not well captured. So these are things like management distraction, the list of long supply chains. The difficulty in hand off. So I suggest that a key way to compete is you want to introduce a lot of new products and you want to introduce them quickly. You want to make wide variety, deliver them quickly. You've got a supply chain that stretches miles and miles across the ocean, spending six weeks on boats. You make mistakes. It's a problem.

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One Ohio company in the past it had its manufacturing, its engineering and its design all under one roof. They did a focus group one day and found that people would like the idea of a cup holder in their riding lawnmower. They introduced it. It was the first on the market. And it was

a late change. They could never do that now that they've moved a lot of their production to China. And one of the things that's likely to happen has happened in auto parts -- and it's happened in notebook computers -- is that once the production goes, the design follows. So I think this idea that we can keep the design and we'll send the production abroad is a real problem because of these linkages. And the real payoff to having linkages and contacts and understanding of how interactions occur.

So that's kind of the main thing. So then to come back here is just to say MEP (Manufacturing Extension Partnership) can help in these three ways. There's a variety of other things that we can think about doing that support manufacturing. As I've said, these programs are cheap now. We have a huge amount of capability. Once this capability goes away though, it's going to be very difficult to resurrect it. The MEP (Manufacturing Extension Partnership) you can show pays for itself if you increase tax revenue. These firms are more profitable. They pay more taxes. Their workers pay more taxes. It easily pays back the cost of the program.

And even that we spend billions of dollars, mostly at the state and local level, on smoke stack chasing, just paying

firms to come to my town rather than yours. So this high road production process, we're not talking about huge new boondoggles. We could actually save money compared to the traditional way of doing economic development of kind of bribing firms to come and not try and get them to change their production process.

So key features of this program is that it doesn't disadvantage other stakeholders. We're not asking to transfer money from other groups, from taxpayers to manufacturers, from consumers to manufacturers. We're not calling for reduced regulation. A key thing is that we're going to change both the production and the distribution of the economic pie. A lot of people have said, oh. We just need to educate people. We just need more R&D. And that's good. That's really important. But it's not enough. Paul Prudan has shown that the average wage of the median college age male has increased less than half a percent a year since 1973.

A key thing is that we're going to change both the production and the distribution of the economic pie.

So college is not a panacea. R&D alone is not sufficient. As Senator Brown mentioned, we have the problem of people doing R&D and then they do the production abroad. There is

also often a problem with doing the R&D here and then getting it ramped up into production because of these disconnects and skills and communication channels. A second kind of policy, I mentioned the problem of the temptation to switch to the low road. This high road has many benefits. It benefits not just the firms and the workers, but it benefits consumers. It benefits suppliers.

So it makes sense to reduce the costs of these socially beneficial actions. So we want to design incentives, design markets to actually align these public and private incentives. So key here -- and there's been other EPI and Agenda for Shared Prosperity on most of these -- so training is important. Health care is important. R&D is very important. We also need to block the low road and prevent the undercutting of social responsible firms. It's so tempting to think, oh, I could just go to China.

We can talk more about these. The bottom line here is that I don't think there has to be an equity-efficiency tradeoff. You can actually have a fair economy and a larger economy and a really beautiful pie. And just to conclude this kind of quick tour of manufacturing, I think that we clearly have some problems in manufacturing right now, but with some solutions, both on the demand side and

on the supply side. So by having manufacturing contribute to national goals, we both get these national goals met and we promote high productivity, high wage manufacturing. And then on the supply side, we improve the ability of manufacturers to offer good jobs at good wages. Thanks very much. [applause]

MR. GEORGE STERZINGER: First of all, I'd like to thank EPI and the Agenda for Shared Prosperity for the opportunity to come and address you and talk to you about renewable energy and the potential that that has to rebuild the manufacturing sector. I am Executive Director of the Renewable Energy Policy Project. And so I have a fiduciary responsibility to talk about renewable energy. But I don't mean to exclude energy efficiency in that. They both will play a big role I think as we move forward. But we do concentrate on renewable energy technologies.

A couple of housekeeping items I want to point out, first, the bio. It is true, the AFL/CIO last year did give ... they give awards each year to a bunch of people who are friends of the working families. And I was really touched by it. Because frankly, they use it to raise money for themselves. They sell tables and stuff like that. And nobody in Nevada's going to buy a table for me. So it was

heartfelt. But I'm going to tell you a story about Nevada that's really horrific. And I just want to make sure that you don't think that it was that story that I was involved with that led to the award.

The thing that they really appreciated was that in the course of the sort of unfolding of the energy market in Nevada, we were able to put together a piece of legislation that had a relatively small program to encourage the use of photovoltaic systems on homes and schools and office buildings. And what we did was we put a hook in there that you would qualify for this program, but you had to have a trained installer. And IBEW was able to jump on that training effort. We helped them get a 20 kilowatt photovoltaic system at the Las Vegas IBEW site. And they developed a training program. You could come and take some of the modules down and you test them and put them back up.

So it's been very successful. And I think something on the order of 2,000 people have gone through the training program. The program in the state is over subscribed. The only problems they have is they're worried about over promising to people. People would sign up for the program, make the application and then there wouldn't be a slot for

them. So that what was what I got the recognition for, not the story that you're going to hear.

So what I would like to do is try to arrange this talk around four broad questions. One is what can we expect? What are the range of outcomes as we move into a new era of energy policy? I think for those of you who don't work on it on a day-to-day basis, my impression right now is that we have been frozen for so long on energy policy issues that there's going to be a rapid turnover, almost regardless of the outcome of the election, but certainly if it's a Democratic administration. There's going to be a huge change.

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The image that comes to my mind, I lived on Lake Champlain for awhile. When the lake freezes, what happens is that the water rotates. Kind of like the cold water on the top sinks and the hot water comes up. And there's all sorts of steam and bubbling. And it really feels like that. I mean, it just feels like all of these issues that have been ignored among ... you could go down a list of sort of how

isolated we are in advanced countries. And we're sort of like out in this isolated platform not recognizing the climate change that exists, not doing very much about energy security. Certainly not thinking about how a new energy industry can lead to an economic revitalization.

So I think it's a period of really, really rapid change. Now, I want to give you a sense, first of all, the first question is what are the ranges of outcomes? Is it all good? Or are there things that we really need to be worried about? The second thing that I want to do is sort of give you a sense of where we stand right now. I mean, energy policy, there were major energy policy acts passed in 2005 and 2007. And I sometimes think that there's somebody with a really highly developed sense of ironic humor who develops titles for these acts. Because they often times, you know, there will be some very glorified description of the act. And it has really not much to do with what's going on inside the building.

Then I want to talk to you about what a renewable industry would look like. That's one of the things that we've done over the last three years is really try to figure out, you know, assuming some kind of national effort, what a renewable energy industry could look like. You know, what

happens inside it? What are the benefits of it? What are the problems with it and that sort of stuff? And then finally, you know, talk about what the critical elements are in developing that.

Because renewable energy is two words, renewable and energy. Energy is not a mark. It's more like a battlefield. People fight. The technologies fight. There are all kinds of estimates and studies and regulatory battles and everything else that goes on. But none of this is going to happen automatically. I can guarantee you that. So to the extent that this potential exists and you try to capture it, you really have to be prepared to work to do that.

I think the other thing is that capturing this potential changes the politics of renewable energy completely. You know, you can see that through the comments of Senator Brown and through the actions of a lot of governors. What I like to tell people is that five years ago when I started this renewable energy, if you talked about the kind of aesthetic image that came to people was that it was like John Denver living in the mountain with a photovoltaic module on top of his house.

And increasingly, the image is one of manufacturing. I mean, it really is one where people see it not as kind of the application so much, as in, oh, man. You know, there's a whole lot of parts here and a whole lot of potential. And we're going to do something about this. There's much more the case on the state than it is at the federal level.

So let's go back, first thing, two stories to kind of set the continuum of what you can expect. The first story goes back to Nevada. Around 2000, 2001, the state passed, largely in response to the meltdown in the western power markets because of deregulation, but for other reasons as well, the State of Nevada passed a renewable portfolio standard.

Portfolio standard basically just says that a fixed percent or a named percent of the retail electric sales have to be form renewable resources. And not only did they pass that law, but they also passed what's called a set aside or a specific percent that was dedicated to solar - Five percent. It was fifteen percent, total. Five percent of the fifteen percent had to be from solar power. The reason that they did that, anyone that's been to Nevada, it's very bright there. There's a lot of sun. There's a lot of land that nobody's using.

When I worked with the Corporation for Solar Technology, what we were interested in trying to do was to figure out what you could do with the nuclear test site facility in Nevada. That's 14,000 square miles. And if you cut out the parts where they keep the aliens and where they drop the bombs, there's a whole lot of land that's left for photovoltaic or solar development.

It's an interesting sort of lesson I think from that by itself is at the end of that process, we had a bid from a large power developer to put solar power in at 5.2 cents a kilo hour. And because of deregulation and because everybody thought that electricity was going to be too cheap to meter, they turned it down. We couldn't get a contract. 5.2 cents is less than the cost of natural gas and one of the most efficient electric generators right now. But it's coming back.

So let's go back to my story. That was sort of a little bit of an aside. So the state has a solar set aside which is worth about 100 megawatts. To those who are not familiar with the intricacies here, the total use in the state is around 7,000 megawatts. The installed capacity in the United States is around a million megawatts. New York

State, 20,000 megawatts. California, 50,000 megawatts. So it's a number. It's not a huge number. But it, you know, it's a big number. So they have 100 megawatt set aside in the State of Nevada.

They awarded, for reasons that I've never been completely clear on, they awarded that contract for about 70 megawatts of that to a technology called concentrated solar power. That's basically if you're familiar, they have about 400 megawatts of that in Barstow, California. It's a series of big mirrors. The mirrors concentrate the sun on a vacuum tube that has a fluid in it. The fluid heats up. It goes into a little generator. It converts into steam and powers the generator.

They awarded that contract to a company called Solar Genics which was a start-up company at its barest, four people. As they got contracts, they moved up. The state gives what's called a power purchase agreement which is a long-term contract to buy the electricity. We estimate that the state provided a subsidy in that contract of about $250 million. In addition, they gave the standard package of tax rebates and so on. When they got that contract, Solar Genics ... and also, during that time, they had to provide testimony. Because one of the things that the AFL-CIO

insisted on when talking about the portfolio was the economic developments benefits, the jobs and so on, had to be identified.

So the company came and under prefiled testimony, which is under oath, testified that there would be at least 700 local construction jobs. So, okay. So they got the contract. They sold the contract. They sold the company to Acciona which is a very, very large Spanish company. Acciona proceeded to buy every piece of capital equipment from outside the country with the exception of the metal fabricated stands that hold the mirrors up which were made in Arizona. They gave the general contracting work to a Texas non-union firm that proceeded to hire zero local laborers.

There were all sorts of battles. People were arrested taking photos of the license plates at the site. What happened though next is the chilling part I think. The AFL-CIO, which had been a champion of this portfolio standard and the solar portion of that, at their annual meeting had a resolution which went point by point by point down the list of problems with this. It’s expensive. There are no local jobs. All the equipment comes from overseas. So therefore, they support what’s called

pulverized super critical boiler coal plant that the utility was supporting.

So the potential ... if you think you're just going to raise prices and walk away, you know, with respect to renewable energy. You're not. I mean, the potential for backlash is enormous. Now, I can't verify this. I haven't seen this in black and white. But what I've been told is that Acciona has now sued the general contractor for shoddy workmanship on the project. So, you know, there may be another chapter in this story. Because literally, they have people who didn't know what they were doing when they put this project up.

So the next story is from Michigan. Michigan has funded a group called Next Energy. Dan Luria works with them. They are going gangbusters trying to identify wind turbine component manufacturers and bring them into the state. I was at a conference that Next Energy sponsored. And one of the people on the panel that I was on was the GE wind person. And he and a bunch of other people commented during the course of this conference, they had a kind of wonderful sort of image or very simple statement that captured the potential.

They got up and said from the point of view of General Electric, the wind turbine industry right now is roughly where the automobile industry was in 1920. And what that means is that there is an enormous avenue for improvement in almost every aspect of these technologies that's available to be made if you're able to do it. If you're a supply company manufacturer and you can make the kind of technology innovation, there's an enormous field ahead of you to move into that industry and to capture portions of that market.

At lunch, the Mayor of Grand Rapids ... they named mostly engineers -- and if there are any engineers in here, I apologize if this, you know, engineers are kind of direct people -- at lunch, the Mayor of Grand Rapids got up and was talking about how the city had bought some renewable energy and they loved it. And he said, "I'm going to make the whole city of Grand Rapids totally use renewable energy." Now, there are technical reasons why you can't do that. It's intermittent. The elevators stop when the wind stops blowing or whatever.

And it's the kind of thing that engineers, that's meat and potatoes for engineers. They would love to start, oh no. You can't. Well, instead, they gave him a standing

ovation. And I think it's because of that earlier comment. I mean, these people see this eighty year cycle of improvements as their future. And so they're willing to sort of overlook the minor technical discrepancies. So I think that kind of sets the markets. And I think I'm going to end on this idea of what it would mean to work on renewable energy. Because I think it really has a kind of fundamental connection that's incredibly important to the environmental side, to the renewable energy side, that's underappreciated right now.

So moving along, the next question I wanted to talk about is where do we stand right now? What kind of progress can we see? What's happening on the federal energy policy? So that you get some idea of where we need to go. Again, I think as Sue said a bunch of times, I think it's really important to recognize that security, climate stabilization and to a certain extent economic revitalization, but certainly security and climate stabilization are public values. They're not private values.

A private company makes BTUs, kilowatt hours. The ability to make that without CO2 emissions or the ability to make liquid fuels that don't depend on imports, those are public values. They're not ... I think that this may be imprecise

from an academic economist's perspective. But I really see moving ahead into the next century as recognizing that an energy policy that does address this kind of security and climate stabilization is a massive public works program. Because you're trying to align a lot of private industry to provide the kind of kilowatt hours and BTUs that you need, but also do it in a way that meets the kind of climate stabilization and energy security goals.

But I really see moving ahead into the next century as recognizing that an energy policy that does address this kind of security and climate stabilization is a massive public works program.

It may not be precise. But I really think that that's a very, very important sort of thing to think about. And I think the question becomes what is the way to align that? How can we do that? What are the best ways to do that? So very, very briefly, quickly. Security, I think, you know, what we're moving forward on security is basically biofuels. Ethanol, dry mill, corn based ethanol, cellulosic ethanol, biofuels of one type or another.

How are we doing? Well, the 2007, I think it's titled Energy Security Independence Act, raises the national commitment to 36 billion gallons a year from 7.5 billion gallons a year. And the current levels of production from

corn are about six billion gallons a year. That's a good thing I think. People will probably disagree with that. Ethanol, biofuels, is getting a bit of a bad rap. I think unjustified. But I think 36 billion to 60 billion is a significant contribution. We use about 200 billion gallons a year. So you get an idea of the percentage.

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The interesting thing about it though is that it's in the legislation, but there's no real serious way to get there. I mean, as a goal, there's no serious sort of research and development, technology commercialization, you know, a real program that's mapped out to do it. And that's I think one of the hallmarks of the current sort of climate in Washington and the administration, this administration in particular, you want something? A freedom car? No problem. We're going to give you freedom. There's no money to do it. But we'll give you a freedom car.

You want 36 billion? Fine. Thirty-six billion. But again, there's no serious support for precisely how you're going to get that. There are like six projects that are funded. If you look at those projects, even if they do

everything that they say, they're still way off in terms of the cost target.

CO2. Climate stabilization. We're only barely beginning to do that seriously. And I think that we really need to have a discussion about what climate stabilization looks like. Three things that I will say. I think capping CO2 is critically important. 154 coal plants, 99,000 megawatts, one-third of the installed capacity of all the coal plants in the United States right now came out of nowhere over three years. Some of them have fallen back. But they all were rushing. You know, coal costs about $2 a million as a fuel. Natural gas is eight. People were rushing. You have to expect that energy project developers will follow the money. If you don't, you're naive.

So these projects have come up out of nowhere. There are three of them in the State of Nevada. They're popping up everywhere, Iowa, Kansas. There's a lot of concern about, "Do we need a cap?" Those new plants cannot be allowed to ride free. A cap does a couple of things. It places enormous incentives on the existing coal generators to meet that cap to lower their emissions. And it slams the brakes on new projects. Because it has to be folded into the economics of it.

I think a cap is also really important. EDF (Environmental Defense Fund) and all the pro-cap people aside, a cap is not everything. It will not do everything. It will not provide the kind of direct incentives to a very innovative photovoltaic manufacturer in Palo Alto. It is a mistake that I have seen repeatedly in the interpretation of some of the Clear Air amendments of 1990. You place a cap on SOX (sic) and nitrous oxide.

If you have a wind project in North Carolina, you don't get any benefit from that. You don't get a direct benefit from that, because the allowances are allocated to the firms. And your project does not emit anything. But you don't have anything that you can sell. Because if you got an allowance, that would raise the cap. So it's very important I think you need a cap. And I think you need a strong set of incentives for commercial deployment.

Moving somewhat quickly through the last two points, what is a renewable industry look like? I would encourage people to go to REPP.org where you can see one state report after another. What we have done is we've taken the major technologies apart and identified them by their industrial classification. And we look at a hypothetical federal

program that stabilizes CO2 emissions. Our calculations are that 18,500 megawatts of renewables will reduce CO2 emissions to the point where basically, the U.S. electric sector's responsibility for their global emissions of CO2 will be stabilized. 18,500 megawatts. You run that for ten years. You look at what happens. And as the Senator said, you light up places that you don't expect. You see benefits that normally ... before, big wind development. That's West Texas and North Dakota. But increasingly people say, "Oh, that's great for Cuyahoga County." And in fact, Cuyahoga County is moving right now trying to develop offshore wind and the manufacturing of the components that go with that. There's a supply chain related to every major renewable energy technology. We can tell you where every one of those 70,000 firms in the United States are. We can give you all the identification related to that.

And I think it really does begin to, people say they get an appetite. You can't have a policy reform without an appetite for the reforms. So we have to try and build the appetite with this. You know, a very quick note. Despite the fact that Cuyahoga County has about 150 organizations and it has a big project going forward trying to do offshore wind, there is not a single piece of federal energy legislation supporting that. All the major energy

bills, to the extent they do anything at all, provide supports for projects and not for the supply chain. This is a major, major oversight that needs to be address going forward.

Despite the fact that Cuyahoga County has about 150 organizations and it has a big project going forward trying to do offshore wind, there is not a single piece of federal energy legislation supporting that… This is a major, major oversight that needs to be address going forward.

Very quickly. Renewables are a unique energy resource because they're not discovered. They're developed in a lab, in a university. They're put into prototype form by national labs or some other organization. They're commercialized which is a very important word by developers. In other words, they make that leap from the lab into commercial practice. And then they're deployed. The great advantage of the renewable energy, the final products and the supply chain, is that the cycle of technology innovation is enormously rapid.

That I think should be one of the bases for the U.S. developing the renewable domestic industry and competing in the world. Think about the 1920 automobile image. I mean, who's going to make those changes will really determine who has a competitive position in that market. Right now, the

U.S. energy policy as it stands, one of the most broken parts, is the commercialization aspect. There was in a 2005 bill one sort of section that talked about commercializing important innovative technologies basically through loan guarantees. There has not been a single loan guarantee. DOE (Department of Energy) after 2 ½ years has only recently put out reg related to this loan guarantee program. So that part is completely broken.

Right now, the U.S. energy policy as it stands, one of the most broken parts, is the commercialization aspect.

I would summarize by saying that moving forward, these markets are huge. The policy's going to rotate. One of the things that needs to be done, that needs to be introduced, into the debate over energy legislation is the idea that the supply chain deserves the same kind of support that the deployment of projects deserves. So, again, you don't create a situation like Nevada where you are raising people's bills and you're buying everything from Germany and watching all the manufacturing go overseas.

..the supply chain deserves the same kind of support that the deployment of projects deserves. So, again, you don't create a situation like Nevada where you are raising people's bills and you're buying everything from Germany and watching all the manufacturing go overseas.

And I think there's a series of steps in energy policy that apply to projects and to component manufacturers. There needs to be support for deployment. So, for example, a new manufacturer in Cuyahoga County that wanted to move into offshore turbine gearboxes, when they look to step up that line of manufacturing would have some kind of a loan guarantee or an incentive to do that just like the projects.

There also needs to be the earlier steps, the research and development, the harnessing of the intellectual power at the labs and university to identify problems and to solve those problems. And then there needs to be a process to support the commercialization, the integration of those improvements into the industry. So that the domestic industries can go through blade design, gearbox design, electronic controls, thin film. You know, you can go down the list for a very long time. All of those things have enormous potential. Energy policy is silent on them. Absolutely silent on them.

So that is the missing piece. And again, there is no guarantee in this. This is an enormous potential. You know, it carries across ... I mean, if you go to the

states, you'll see the Governor of Massachusetts, Pennsylvania, Ohio, Iowa, Indiana, Michigan. Those states can smell this. They understand the potential. The states will compete. I think the proper federal role is to lift the potential for all the states by looking at the supply chain as vigorously as we look at the deployment of projects.

I think if do, the potential for the development of this industry is spectacular. And the development of the industry will bring thousands upon thousands upon thousands of workers who see renewable energy as their future just like the engineers at Michigan. They're even willing to overlook a technical gotcha in order to support the industry. Thank you, very much. [applause]

MR. LARRY MISHEL: All right. I think we want to open this up for questions. I've got a couple of questions. We'll take a couple from the audience first. Please introduce yourself and where you're from.

MR. BOB BARR: I'm Bob Barr. I'm the Director of the Industrial Union Council for the AFL-CIO. And I'm also a coordinator of the energy taskforce. And first, I just want to thank both our panelists for their contribution today. It puts

some things in context about manufacturing. I'd like to just make a couple of comments in relation to what we've heard. I think Sherrod laid out part of the big picture her that there's a number of things that we have to do in this country around having a competitive manufacturing base. And it ranges from how we actually do trade policy to encourage our business to stay here and to not take advantage of cheap labor and bad working conditions in other countries.

As well as some domestic policies that Sue also alluded to too in terms of health care and other things that need to be done to level the competitive playing field. So I think we lay that context on it. One of our frustrations has really been the inability to articulate industrial policy in this country, to even have a conversation about a manufacturing strategy in the United States. And one of the things that the energy debate has done and the discussion of energy independence from the side of looking at oil to looking at the carbon emissions of greenhouse gases have allowed us to actually think very broadly in terms of what does this nation do in terms of meeting a great need for our country and for the world?

And how do we do it in such a way that we actually put in place an environmental economic development policy, one that's effective. And I think you're both absolutely correct on the point of view that the lack of linkage between R&D efforts that go on and in the end the production of product in the United States. And it's a faulty ... it is an absolute flaw in our thinking. But as we talk about energy policy and the investments we're going to make, the production tax credits that are put in place, the renewables are up for next year in 2008 for production tax credits.

There's money that will be invested by the federal government if we go to a cap and trade system or whatever's coming out of this. The resources are going to be invested. And how we make sure that they're invested domestically is something we've demanded in the law. And actually have gotten a sympathetic ear towards that. This is very different. And it is a chance to think of industrial policy in a very large way. Using energy policy as a way of thinking about it. I think there's more to that too. It's not just industrial policy around energy that's going to get us there. I think there's other pieces of manufacturing policy as well.

Sue, you alluded to a couple of parts of that. Infrastructure is one. It crosses over with energy. But it's not a stand-alone about what the nation does is infrastructure. And I think there's other pieces too of what are critical technologies beyond renewable energy for the future of the country ranging from composite materials to other forms of technology that really are part of the manufacturing base in a 21st century world. And again, they raise investment questions. They raise R&D linkage questions to all of that.

So I guess I'd ask have you thought about some of the other linkages beyond the renewable energy portfolio? But I think this is, as you're using your term, a wedge, a slice, of a way to think about a future for manufacturing. And I think this goes all the way from what Sherrod said to sort of the big picture to talking about energy as a strategy within that, around manufacturing, to talking about the very practical applications of how you make firms in an industry competitive through the manufacturing extension program?

MR. LARRY MISHEL: Do you want to respond?

MS. SUE HELLER: Sure. I'll try. Energy is only one example of a kind of national goal that manufacturing can help with. And I think infrastructure in some sense may even have possibility for more jobs. I mean, EPI had this really great proposal for how to spend $40 billion of stimulus that would have created I think about 70,000 manufacturing jobs and even more construction jobs on doing things that we need to do already.

I mean, I think one thing is to think about how the infrastructure changes in light of energy crisis: that we probably need fewer highways and more trains and things like that. And similarly, I think, you know, the military stuff is important that there are a (inaudible) paper about how there's a lot of critical defense inputs that we don't make in this country. And it's buried in the supply chain, maybe third or fourth tier suppliers, that makes up that we don't make in this country.

And I think hopefully given a different energy policy, we won't need to have quite so many foreign adventures. So our military budget might look different. But I think it's still important to create these capabilities. The critical technology stuff is something I struggle with a lot. And we have more thoughts on this. I think there are some

things that are seen sort of more primary. I mentioned the tool and die industry is in some sense kind of like your seed corn. It allows you to make machines to make machines and other goods. And it's the fact that it's in trouble is quite problematic. Because it means that even industries of the future will have some difficulties getting here.

Articulating kind of beyond that, okay. What about materials? You can think about materials in the same way. And, yeah, there's probably some level at which those were more strategic than the pet rock industry or something. But I guess I'm not sure that I have a way, and I guess you even have argued whether the auto industry's important because it organizes other industries. And so pretty soon, I guess the danger I see is that you end up with every industry being critical.

What's important, and I'm enough of an economist to say, you know, I don't think that every manufacturing firm should be saved. There's plenty of really bad ... you know, I went to this company where we had these minimum wage workers putting labels on bottles, you know, by hand. I don't know that that's a critical technology that we need to promote. I'd much rather see training for those workers

to be doing, you know, automate that process and train them to weatherize houses or something.

So I think I do agree with you we need a better process for articulating what are our national needs? How do we use those criteria? And then what forms of support are available?

MR. GEORGE STERZINGER: Let me just say real quickly, I don't think you can stress too much the fact that in the energy sector, the renewable energy sector, the commercialization function is broken. I mean, we've just simply forgotten how to do it. And I think that's a matter of legislation. You know, what is the broad policy? Is it loan guarantees? Is it the buy down? What is it? There's also a question of, you know, watching and beating out the Department of Energy. Because they've had two and a half years from the 2005 build. And there's not been a single project, a single innovative technology, that has received the support. Two and a half years.

So I think, I mean, Mark and I talked about this a lot. I mean, as sort of unexpected as it might be ... and I think at least the broad outlines of how the USDA works with farmers to identify problems, find solutions and move the

solution into the field is not a bad model, you know, for energy. But it's going to take a legislative change. As odd as it seems, if you get into the battle of people on the inside, you talk about commercialization and the first thing people talk about is synfuels from the Carter Administration. I mean, a couple of bad guys with health club memberships and country clubs that shouldn't have been given to them and we're still suffering.

In the meantime, you have companies like First Solar that Senator Brown talked about. Well, First Solar benefitted from fifteen years of research and development funding from the Department of Energy. After they perfected that technology, they opened a 100 megawatt a year facility in Malaysia and a 100 megawatt facility in Germany. How do you fix that? I tend to pay attention. I think be prepared to offer that advantage of the cycles of technology innovation. I think that's a tremendous competitive advantage for the ... I mean, the labs do good work.

I mean, if you look at nanotechnology PV, you'd probably come up with a thousand hits right now. There are people doing almost unimaginable things. And where is that going to go? I mean, is it going to go to Germany which offers

tremendous support for that? Or will it go to Toledo, Ohio? If there's nothing there to help do that, if there's no will to make that happen, then it's going to go to Germany and then onto Malaysia or China or whatever. So I don't know if that's exactly your point. But I think the linkages right now in the renewables are broken and they need to be fixed.

MR. JOHN IRONS: Let me ask one question that picks up on a couple of points here. Both the Senator and now just you George mentioned the case of Germany. And the way that I see a lot of the renewable energy industry is you have a choice to either build herE or buy abroad. But I wonder if you could actually go a step further. If we have a renewable energy industry or a strong manufacturing industry more broadly, what are the prospects for exports? As China, as other countries start to green themselves, is this something that we can take advantage of? And how do we do that?

MR. GEORGE STERZINGER: I don't think there's any question. It depends on what the policies in those countries are. But the worldwide market for the reduction of pollution and for the provision of affordable electric services to the two billion people that don't have those services is

tremendous. But, you know, what we have had is a policy of trying to sell very expensive technologies to these countries that we're not willing to use ourselves. Which is not exactly a great basis for doing this.

Even in terms of the domestic market, we need to develop these manufacturing industries in the United States, because otherwise, you run into these supply bottlenecks in the United States. Even over the last three years, the price of wind has doubled and the price of photovoltaics have gone up by thirty or forty percent. That's not supposed to happen. That's not the plan. But you can point to these bottlenecks to do that.

You need to concentrate and drive those costs down and not put in place policies that actually raise the prices. And on the PV side, on the wind side, you know, the breakthroughs if you get to these certain price points are absolutely tremendous in the potential for export is very large.

MR. JOHN IRONS: Sue, do you have any thoughts about that?

MS. SUE HELLER: Nope.

MR. LARRY MISHEL: Maybe in the back here. Or up front.

MR. LOUIS SOYERS: Hi, my name is Louis Soyers. I'm with the Center for American Progress. And I just have two questions. One is about skills. So for an average worker in renewable energy production, they're producing cells, what would be the skill level be? The second question is a little bit different. It's about blocking low road policies. And I think it's intention but I'm not sure. One of the things that happens when the MEP (Manufacturing Extension Partnership) program works really, really well is that the management practice tends to leverage supply chains more which distributes production more.

So it doesn't lead to like vertical integration in production. It leads to distributing that production more broadly, sometimes within the U.S., sometimes not within the U.S. Which raises challenges for unions organizing a workplace. And also, how do you compete? Boeing manufacturers in nineteen countries, 800 suppliers that compete against Air Bus. And I'm just wondering like how ... there's a tension in there somewhere, where in practice the tendency is to leverage supply chains more, because it becomes easier to do that.

MS. SUE HELPER: I guess on the skill level in renewables, there's a whole variety of jobs. Some of it is extremely skilled machinery with very high tolerances. And I guess one of my arguments is almost any job can be made to be quite skilled. I mean, take putting the labels on the bottles. It doesn't need to be done by hand. You could automate it. And then you'd train the workers to run the machines to do it. So I don't think ... we tend to have this sort of technological determinist view that there are these skilled jobs and these others that are unskilled.

And I think that there's the potential to make any job skilled and any worker who, you know, they're standing by their machine all day, if you can harness their thoughts and their suggestions and train them to make fuss and notice these things, any job can be much more skilled. And many of these jobs I think already are. Because they are things like machining, stamping, et cetera. On this second thing about the MEP (Manufacturing Extension Partnership) and the outsourcing, this is ... supply chain is actually my kind of core area of interest is how I got started in all of this.

So I think I guess I'm not sure about this link between MEP (Manufacturing Extension Partnership) leading to our

outsourcing. In some cases, what happens is in fact that work gets brought back in because there's more production capacity in the factory. And so there's workers. There's idle machines. There's space. And so work gets brought back in.

The general point about the impact of outsourcing on union organizing. So, I agree. In fact, that's one of management's motivation often is to get around an organized factory. And you go and find some suppliers. On the other hand, it matters how those suppliers are organized. And so one of the things that I think is very important, both from point of view of this high road stuff and from the point of view of unions is the relationship between the suppliers and customers.

So typically, we've had this situation where General Motors will want to have many suppliers per part. They want to have them bid against each other. They want to be able to switch over very quickly. And even when you have a "long term contract", well, somebody else comes along with a lower price, that long term contract is not so valid anymore.

In contrast, you can still have outsourcing. But if you have relationships where the supplier is actually doing a bunch of its own design, where there's an integrated problems solving effort, where there's a just in time delivery system, now there's some bargaining power. That supplier isn't interchangeable. And so you can get those workers at that plant. You can start to say, hey. We need to get a piece of this production. So I actually know of several examples of companies that have raised wages. Not necessarily through union organizing job. But they found that they needed some reduced turnover and to increase skill. And they've done it through wage increases as a result of kind of lean production sorts of activities. So it's a different way of organizing and different challenges. But I think it's not impossible.

MR. JOHN IRONS: In the back here.

MS. CAROLYN EBERT: This is Carolyn Ebert with IAS Group. Both of you mentioned how green energy is a great area of opportunity to revitalize manufacturing. And I was wondering, my question for Susan Helper is would you consider a cap and trade or carbon taxes part of your high road strategy? And then George Sterzinger, you mentioned cap and trade, but you didn't say anything about carbon

taxes, so I was wondering what your take on that is as well.

MS. SUE HELPER: I think we'll have an interesting discussion about that. I think those are very important. I personally would favor a carbon tax. Because I think it's easier. There's a lot less machinery, a lot less opportunity for speculation. Failing that, the auctioning ... I guess the new name for this is a cap in auction. I think a lot of these policies need to be, these permits need to be auctioned. Because there's a lot you can do with the money.

You can sort of think about this kind of two visions of the energy future. So, one, we have expensive energy and it just impoverishes ordinary people. And the production of the alternative energy's all done abroad. The positive view is we take the money from this carbon tax. We capture it for public purpose. And we use some of it to rebate other taxes. Say cut the payroll tax. The relative price of energy rises and encourages conservation, encourages investment in new technology. But people overall don't have to be poor. So that's one piece of what you can do with the carbon tax revenues.

The other piece is you do the kinds of stuff that direct support for commercialization. So there's actually a really great proposal around the tooling tax credit for hybrid vehicles. Because one of the things when you raise CAFÉ (Corporate Average Fuel Economy standards), you know, you disadvantage America and unionized producers. What do you do about that? Well, one thing you can do is have a tax credit available to anybody who produces in the U.S. And that kind of removes some of the costs of adjustment. And the money for those things needs to come I think from auctions of these permits.

MR. GEORGE STERZINGER: See, I completely disagree with that. I think that a carbon tax or an auction is quite similar, but there are important differences. In a very broad sense, I think if you ... first of all, none of the things that you need to do that I talked about, the development of these technologies, the commercialization require a broad base, regressive tax on energy. The actual amount spent are not that great. If you pass, if the Democrats come in and in the name of climate stabilization and energy security, put a tax on energy. There will be a revolt in this country that will make Jimmy Carter look mild.

I mean, families are hurting. People don't use energy. They use the services that energy supply. And those are, first of all, mostly necessity. And secondly, very, very expensive, you know, in terms of ... the carbon auction, the sort of unique thing about a carbon auction is that it will have a very, very disparate geographic impact. So in Ohio, the impact on Ohio, will be ten to fifteen times what the impact is on Washington State. And there is no justifiable reason for that. For people that want to change the taxes to make the taxes better, pass the good tax things first. And then we'll talk about where we got the money for the other things.

One of the reasons I put the Nevada story in there is that if you think you're just going to raise prices and walk away from this, I think you're wrong. I really honestly think that at this time in particular going for a carbon tax or a carbon auction is a very, very bad mistake. There's kind of two broad themes as you move forward. One is technology and the other is morality. And if you look at the morality side, you hear these things like we're addicted to oil. Your car's too big. Your house is too big. You know, you drive too far. You should move closer to your job.

That is potentially extremely destructive. And it's not just poor people. First of all, I've worked with low income advocates for twenty years. And fuel assistance has never matched the burden placed on people. But it's also just average working families. There are average working families that drive sixty miles to work. And there are average working families that take the bus. You can't equalize that. You can pretend that you will. It's just going to blow up on you.

And I think the auction, again, how do you explain to someone in Cincinnati that using electricity to run an air conditioner, to make toast, whatever, that they should have a burden ten times what somebody in Washington State has is very, very difficult. The other thing about it is that energy is a huge market, 200 billion gallons of liquid fuels, 3.5 trillion kilowatt hours, 5.8 billion tons of CO2 emissions. You put a dollar on fuel, $200 billion tax. You put two cents on electricity to raise the price, $70 billion. You know, it goes on and on.

So one of the points that I tried to make is the incentive to move the technologies directly paying the incentives is a lot cheaper than raising the price of $200 billion on 3.5 trillion kilowatt hours. And the impact is much, much

better. You get people all of a sudden thinking about this as a technology program, as their future, rather than something that's going to bust the budget at a time when they cannot afford it.

MR. JOHN IRONS: Let me just say we can and have debated this issue for hours.

MR. GEORGE STERZINGER: And weeks and months.

MR. LARRY MISHEL: And weeks and months as well. We'll take another question. Over here.

MR. CELIA MORANIS: Celia Moranis with Employment and Training Reporter. And I have two questions for Professor Helper. First of all, regarding the skill shortage. I mean, there are a number of economists that are beginning to doubt whether there really is one. And Jared Bernstein, for example, comes to mind. And I'm wondering if you could address those doubts first of all. And second of all, when you talk about making a bigger pie rather than sharing instead of making something efficient and smaller and having to compete. That's a very easy to sell idea. Why is it so much harder to sell like the green industry that is sort of the theme that I'm hearing here?

And I would like to note, for example, that there are all these water bottles on the table that even an environmentalists are having. And that's terribly anti-environmental. But that doesn't mean that we're bad people. But it's a harder sell.

MR. GEORGE STERZINGER: Well, I'm not an environmentalist. So you can rest assured on that. But I agree with you on the bottled water.

MS. SUE HELPER: On the skilled shortage stuff, there's a lot of assumptions that go into how much manufacturing we're going to have? How much are people going to retire? I guess I think the kind of economy that I would like to see us have ... well, let me say this. I mean, the kind of economy I'd like to see us have I think there's huge skill shortages. And part of it is how do you measure skill shortages? Ultimately, supply more or less equals demand. How do you see the shortage? And part of the problem is that, as I mentioned this issue of complementary, things that need to change at once.

If you're an employer and you're thinking about moving to skilled production where you want your workers to not

require any supervision and to participate in quality circles and be able to do statistics, if those workers don't exist, then you're not going to design a production process that requires it. And if there's no production process that requires it, people don't have the incentive to change it. So I think that this is another reason for why public policy needs to take a lead.

And there's interaction though with the energy stuff. So one of the big shortages of things that the auto companies, at least in Ohio, are worried about is maintenance technicians. If energy becomes expensive, then how many people deeply understand where energy gets used on the planet and can make fixes. Maybe something doesn't need to be run at quite as high a power as it's always been run. That kind of deep skill that allows you to debug stuff, make a minor improvement becomes even more important.

MR. JOHN IRONS: Let's take three more questions. Back here and then we'll come to Joan.

MR. ALAN TONELSON: Hi, I'm Alan Tonelson. I'm with the U.S. Business and Industry Council here in Washington. And we represent 1,500 small and medium size manufacturers, lots of them. And that between that arc between Milwaukee and

let's say I guess Buffalo, including Ohio. And I'd like to offer the view that for all the genuinely exciting ideas that have been presented in both papers, this vision will not come to light unless it gets a lot less trade policy light. I think that from what I've heard, both presentations are too trade policy light.

I think that adopting not only a tougher trade policy, which is a grossly overused word, but a much smarter trade policy, a more agile trade policy that recognizes the full scope of the competitive challenges presented, not only by low income countries, but by high income countries. That recognizes that when we're talking about capital intensive industries and about technology intensive industries, that frankly labor rights issues take a backseat to the enormous and rapidly changing range of subsidies that are offered by both high and low income countries precisely to lure manufacturing to their nations and keep it there.

I think that the paper or I should say the two presentations tend to understate the very rapidly evolving challenge presented by countries like China where productivity is rising extremely rapidly and where the types of technologies in which this country has traditionally held advantage are being transferred

wholesale, not by manufacturing extension programs or by government programs of that nature, but by the manufacturing practitioners themselves, by multinational companies who are eager to transfer their best practice, whether process or I suppose product related technologies as soon as they are perfected here.

So that productivity itself has become a mobile factor of manufacturing production and manufacturing technology development also. And so again, I would really loudly applaud both of you for the very good ideas that have been presented here. But I would urge you to take more seriously the idea that trade policy is going to make or break the success of these programs and that a lot more thought has to be given to the types of trade policy measures that are necessary to keep not only the manufacturing but the R&D here. That's the main point.

MR. JOHN IRONS: I'll let our panelists answer. But let me address part of that. The *Agenda for Shared Prosperity* has done some prior work on trade policy. So it's a part of the reason why you don't see that emphasized as much here today is because we have done some work on that in the past. But do you want to address this?

MR. GEORGE STERZINGER: Very quickly. I mean, I don't disagree with anything that he said. I mean, I think the point is it's like two halves. I mean, you have to have something here that competes. And I do think that this cycle of technology innovation, feeding that stuff in, the distance between 1920 and 2008 is a critical part as well. The non-tariff barriers are sort of beyond my intellectual calling at this time. So I agree. But, I mean, I think you do have to have a positive aggressive domestic program.

MS. SUE HELPER: So I'm fully with you on the low wage countries. I think labor and environmental rights are crucial. Workers everywhere should get a percentage of their productivity and they should share in the gains. The issue of subsidies to lure manufacturing, I worry about getting into some kind of a bidding war for manufacturers. And to me, yeah. And just sort of participating in that. And I guess to me, generally Honda has this model of sort of build where you sell. And I think that policies that kind of include that is great.

And I guess I don't want us to get into an idea that there's a sort of fixed lump of high wage jobs that we want to capture all of them for the U.S. And then we'll export those high wage things to other countries or our neighbor,

whatever. So I think there are some challenges around that. But I agree it's very, very important. (inaudible)

MS. SUE HELPER: (Referring to Powerpoint presentation) This is data collected by me and Dan Luria. What it shows -- actually, it's part of an MEP (Manufacturing Extension Partnership) program -- this incredible thing called the performance benchmarking service, where he sends out detailed questionnaires to firms to ask them about their costs. Before I actually answer your question or comment, just to say another piece of this is we know so little about our economy and our manufacturing economy and even just outsourcing. What does it look like? What kinds of jobs are going? And do relationships matter in terms of does it nationally make sense if engineers ... keep engineering here or to keep high wage work here?

And so to just sort of trying to understand even what's happening to our economy is very difficult because we lack basic data. So this is a survey that Dan has done that we need more of. Okay. So where does it show ... or where does it come from I guess? Or so these questionnaires from firms basically what he did is he got a sense of what a firm's costs are. So if we take say the metal forming, an example, that would be a stamper or somebody that would

basically take a thin piece of metal and you bring a big press down and you bang on it and make different shapes like a car door or a metal cup holder or chair or something like that.

And then what he did was a series of extensive interviews. And so in the paper, it talks about some assumptions. One of the real key ones is he assumes that the low wage country has about half the productivity of a U.S. firm. And this is actually probably a high estimate of productivity. I've spent actually a lot of time in Mexico looking at wiring harness production, for example. And there are many more supervisors, much more turnover.

In contrast to that, I've actually seen large multinational companies that have spreadsheets where they explicitly assume that productivity will be the same in the foreign country. So that if you want to figure out the labor cost savings of moving your plant to Mexico, all you need to do is take the hour's work in the U.S. times the gap in wages. That's your savings. And then they destroy all the data.

I'm serious about this. I have had students whose job has been to offshore stuff. Oh, great. Your paper for my class should be to see if that was a good idea. Oh, no.

we can't do it. There's no data. In any case, to kind of continue what Dan did. So he made these basically a lot of interviews about what kinds of assumptions. So assuming half a layer of productivity, the other assumptions are in the paper. I think slightly lower capital costs because of subsidies. Some increased delivery costs, et cetera. And that's sort of the basis for these assumptions.

And so I think these numbers are quite close. But I should also say that the study was done before the recent fall in the dollar. And it also doesn't include any of these costs of sort of handing things off. The connections between production and engineering that I mentioned. So in some sense, the picture is actually even more favorable than this. So I think ultimately it's a hopeful message that it doesn't take a lot if we act now to save a whole lot of these plans and to expand them. [inaudible question]

MS. SUE HELPER: Don't need a big one to make a chance. Take 40 percent. Then all these firms now become competitive. You know, to the extent they still exist. And I'm serious about that. Because one of the problems now is that so much as moved that you sort of if we think auto production. GM exports a lot of cars, finished cars from Mexico. And so now they want the seat production to be near that. And

now they're moving like the stampings that go into the seat rails there.

So even if this conglomeration economy stuff has worked in our favor. But we're at kind of a tipping point where it could start to work against us. Because you want stuff close together. And to the extent you're now starting to build clusters in other countries, it becomes harder to give that stuff back.

MR. JOE YUDKEN: Joe Yudken, High Road Strategies, an industrial and economic policy consultancy. Actually, Alan's point just kind of threw me a little bit. I think that he's right that we do have to think about and pay more attention to the trade policy dimension of it. But I don't want to focus on that. Because, as you said, that's part of leveling the playing field that needs to happen concurrently with what I think is in fact under developed until I think fairly recently. And your papers kind of move us in the right direction and start talking about how do we make our industries more competitive?

And I think that ties into what is being suggested here that some form of national needs-driven policy, building especially around the energy issue, could be an important

driver in moving us in that direction. Because we know a lot about what needs to be invested in, the technologies. Many of them already exist. We know the parameters of this problem a lot. But I think there's a big, big hump there about how we move from here to there. So that our industries and our companies actually make those kinds of investments and we have that kind of economic development in not just renewable though, in a lot of the other sectors that need to be moved down a path of greater energy efficiency for example.

But that said, and I think your papers are very good in that respect, I also was left with the feeling of how far we've fallen. You talk about MEP (Manufacturing Extension Partnership) and the importance. And I totally agree that ramping up MEP (Manufacturing Extension Partnership) has got to be a very important part of it. But, you know, during the 1980s, the fear that the semiconductor industry and the fears of Japan and losing their capacity, we're able to push for legislation and policy that ended up with Semitech, in part justified as a defense industrial for the defense purpose as a national needs driven policy.

But at the same time recognizing that it's an industrial capacity and we didn't want to lose in order for the sake

of both economic as well as national security. But aside from that, we also had the Department of Energy industries of the future, Office of Industrial Technologies for years which was bipartisanly supported, but has been greatly ramped down under this current administration. In fact, we're partnerships between a bunch of energy intensive industries, their CEOs and their trade associations and the U.S. government. Labor was not sufficiently involved in that. But as it should be, I think if anything like that in the future.

But to give you an example, we need to be thinking beyond MEP (Manufacturing Extension Partnership), but other kinds of policies at a national level, including creating much more of a national goal in ramping that up. And I agree that cap and trade is not sufficient to get us there. That's a driver. But we used to be able to bring in cross agency panels to look at whole range of alternative technologies. We did that with computers and so on. And it seems that we could be doing a lot more on the federal level to ramp this up besides MEP (Manufacturing Extension Partnership). And I wanted to get your thoughts on other things we could be doing.

MR. GEORGE STERZINGER: I don't want to be too conspiratorial in this answer. But I think that part of the Department of Energy, energy efficiency and renewable energy program, people concentrated on keeping their heads down for the last six years, seven years. And again, in terms of what you can do, this maybe like a personal bias. But I do think that if you look at the steps in the energy industry, that commercialization step, at a time when a technology is taken from the lab and basically moved into what's called a commercial practice under market like conditions.

That step's gone. That's missing. That's completely missing. I don't know if it's energy efficiency or renewable biomass technologies, photovoltaics and what have you. That's not there. I think the very eloquent proof of that is that the one part of the 2005 Energy Act, which called for some kind of support for this has never been implemented. And it's inexcusable. So I think you really need a major change at the top. The thing has to revolve. I think that in addition to the kind of finished technologies, it does need to go and be extended to the supply chain industries.

You know, so that if you look at something like this, the Cuyahoga Renewable Energy Task Force, I mean, they've

cobbled together money from local foundations. The project's run by the county prosecutor. The chief staff person, three-quarters of the time is prosecuting murderers. And one quarter of the time is working on this project. If that's not a sign of change, I don't know what is. But there is not a single federal support for that effort. I mean, the offshore wind technology is an enormous potential.

250,000 megawatts in the Great Lakes alone. There's no program in the Department of Energy now to even commercialize even if we bought it from Vestis or somebody in Spain. There's no program to sort of put the first kind of projects in. And there's certainly nothing to work on what are the gear boxes? What are the special conditions, quality standards, that gear boxes have to meet? Can Cleveland Gear participate in that? What would be required for them of an investment? You know, somebody did mention one of the things that's happened in the United States is this on again off again. Tax off, on, off, on. It's insane. I mean, it's completely insane.

If you look at production tax credit, investment tax credit, you get to my point. You know, that is a perfect justification for that is that those technologies avoid

carbon. Rather than raise the price, provide an alternative, investment tax credit. But do it permanently. You cannot do anything if it's on again, off again, on again, off again. So that's a problem. The lack of commercialization is a problem. The invisibility of the potential of the supply chain industries in federal policy is a problem. You've got to change all of this it seems to me.

MR. LARRY MISHEL: Sue.

MS. SUE HELPER: I agree that I think there needs to be some discussion about industry's innovation, et cetera. Partly I guess I sort of made the decision to focus less on the kind of innovation and more on the production end. Having said that, I guess I think there are some principles that I would lay out. And I think that this principle of kind of looking for a market failure is very important. You know, where is it that a dollar of public money is going to yield more than a dollar of public funds? And that can be kind of hard.

So I think kind of having a national discussion, of the kind that Bob was talking about, I think is really important about what these ... where those problems are

likely to be. And to make sure that we don't end up with say something like synfuels where we spend billions and billions of dollars on something that was a promise, I think is not a promise. And so how do we separate the synfuels as the bad and the Semitech as the good? And make sure we get more Semitech.

So I agree it's a conversation that needs to start. And the capability to have that conversation also is lacking. We don't have the kind of data, sort of industry specific data, that we need. We don't have the knowledge in government or the kind of independent experts, people who don't have axes to grind to have these kinds of discussions.

MR. GEORGE STERZINGER: One other just quick point. There are cultures associated in all these places. And I think in Washington, D.C., especially with the administration and Dick Cheney breathing down the necks of everybody, there's an extremely cautious atmosphere. We need to be able to tolerate failure. Things people say about Palo Alto and those places, you know, you go bust. So what? You have another great idea. You're still having coffee with the founders of Google or whatever. And that doesn't exist.

It's like the statisticians always talk about two types of error. You know, the type one, type two. You do something that's wrong and you don't do something that's right. Well, we're like concentrating so much on one side of that thing that you really need sort of to loosen up and be able to take some chances and tolerate failure. Without taking people out and throwing them off the bridge or something.

MR. JOHN IRONS: Let's take one more question.

MALE SPEAKER: Today, the top marginal tax rate for C corporations is 34 percent. The average that American corporations pay is 17.5. Some pay zero. Some pay the thirty-four. Whether we pay thirty-four or zero, it really comes down to frankly how much lobbying effort you've done on Capitol Hill. Is there any thought to simply saying, "Hey. The most socially environmentally responsible companies are certified as green paying zero and the opposite paying the 34 in structuring, or C corporation tax in that way?"

MR. GEORGE STERZINGER: I haven't given it much thought. One thing that comes to mind is these are companies ... I mean, take Cleveland Gear. They're going to make gears if they can for wind turbines. They're going to make gears for

something else. So it's a thicket you get in that and sort of straighten that stuff out. So I think the sort of momentum of the production tax credit, the investment tax credit, the loan guarantees, the kind of leveraging mechanisms that are there, are more than adequate if they're actually applied.

MS. SUE HELPER: I'd say on the one hand, I guess, thinking the tax is an important lever. On the other hand, to the extent you make these things too complicated, then you actually increase it and return to lobbying and to tax lawyers, et cetera, than actually doing production. So I'd be a little leery. Sherrod Brown has a bill called the Patriots Corporation Act which has basically coming to a bunch of good things. I'm actually not sure there was an environmental screen in there. But there are things like it's neutral with respect to unions. It has a lot of its production in the U.S., et cetera. Then they may pay a lower tax rate. They may get preference in procurement.

So I think those are things to think about with the caveat that we don't want things to get too complex. On one hand, one of the George's points and I think one of my points also is that the tax system and prices are important levels. They're not the only ones. To develop these

capabilities, you need these complex investments and several things changing at once. And so kind of direct investments and direct technical assistance is also important. So it's not just tax credits, but also direct assistance can help with these things.

MALE SPEAKER: (inaudible) are a lot more simplistic. There are simple ways to do this.

MR. JOHN IRONS: Okay. I think we're going to wrap it up there. Let me first before we leave at least mention Mark Levinson who's instrumental in putting together these initial papers. [applause] So I want to thank our panelists for their presentations and their work and their research. And thank you for coming and braving the weather. Try not to slip on your way out. [applause]

(END OF TRANSCRIPT)