S. HRG. 112–776

TAX REFORM: IMPACT ON U.S. ENERGY POLICY

HEARING

BEFORE THE

COMMITTEE ON FINANCE
UNITED STATES SENATE

ONE HUNDRED TWELFTH CONGRESS

SECOND SESSION

JUNE 12, 2012

Printed for the use of the Committee on Finance

U.S. GOVERNMENT PRINTING OFFICE

81–312—PDF WASHINGTON : 2012

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
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TAX REFORM: IMPACT ON U.S. ENERGY POLICY

TUESDAY, JUNE 12, 2012

U.S. SENATE,
COMMITTEE ON FINANCE,
Washington, DC.

The hearing was convened, pursuant to notice, at 10:06 a.m., in room SD–215, Dirksen Senate Office Building, Hon. Max Baucus (chairman of the committee) presiding.

Present: Senators Conrad, Bingaman, Kerry, Wyden, Cantwell, Nelson, Menendez, Carper, Hatch, Grassley, Snowe, Crapo, Coburn, Thune, and Burr.

Also present: Democratic Staff: Russ Sullivan, Staff Director; Ryan Abraham, Tax Counsel; Lily Batchelder, Chief Tax Counsel; and Harun Dogo, Fellow. Republican Staff: Chris Campbell, Staff Director; Curt Beaulieu, Tax Counsel; and Mark Prater, Deputy Chief of Staff and Chief Tax Counsel.

OPENING STATEMENT OF HON. MAX BAUCUS, A U.S. SENATOR FROM MONTANA, CHAIRMAN, COMMITTEE ON FINANCE

The CHAIRMAN. The hearing will come to order.

The writer Hunter Thompson once wrote, "Anything worth doing is worth doing right." I could not agree more. Our country is at a pivotal moment in energy policy. It is important that we do it right. There have never been so many worthy energy options. They are worth doing, and they are worth doing right.

Thankfully, we are already making progress diversifying our energy portfolio. We have an opportunity through tax reform to drive that progress further.

When I first ran for Congress, America was reeling from an oil embargo. Gas prices had doubled. At one point in early 1974, 20 percent of American gas stations had no fuel at all. It was clear that we could never again allow America to be so dependent on a single source of energy.

Since then, we have boosted a more diverse, efficient, and productive energy policy. Advances in technology mean more domestic oil and natural gas are available than ever before. We also have more renewable and clean energy sources. But we can do more.

We are still, I think, too reliant on fossil-based energy sources. Ninety-four percent of the energy used in the transportation sector comes from oil. Only 10 percent of our electricity consumption is generated from renewable or clean energy resources.

Our country needs a diverse energy sector like we have in my home State of Montana. So I will just brag a little bit. We are an

energy State. We are one of a dozen States that produces more energy than it consumes.

In eastern Montana, at the edge of the Bakken formation, next to North Dakota—my colleague to my right knows this all too well, because the Bakken is even a greater formation in North Dakota than it is in Montana—our oil and gas fields are going through a renaissance. Technology has unleashed the oil and gas potential and created thousands of jobs.

In central Montana, the wind turbine blades harness the power of the Chinook winds. Wind farms in Montana now power 100,000 homes. Three new wind farms are being built. And in western Montana, biomass powers sawmills and adds electricity to the grid.

Montana also produces 45 million tons of low-sulfur coal each year, and we are leading the way on carbon capture and sequestration.

National energy policy, I think, should replicate a lot of this mix. If we do not develop U.S. energy policy, we will continue to be subject to the whims of foreign dictators and sudden spikes in the price of oil. We will be one hurricane or one regime change away from $6 gasoline. That would be disastrous for our economy.

A $1 increase in the price of gasoline costs Americans $110 billion a year. We are all too aware of that in our State.

The tax code is an important driver of energy policy. Tax incentives provide 85 percent of the energy sector's Federal support. These provisions cover almost every conceivable form of energy—nuclear, oil, gas, coal, wind, solar, and geothermal. Tax provisions also cover a wide variety of energy use, from powering common home appliances to running massive factories.

But these incentives can be improved. Currently, the type and level of tax incentives vary for different technologies. Some incentives are temporary, others permanent. In some cases, there are multiple incentives for the same technology. The result is inefficiency.

Provisions that do not create jobs or improve our energy policy should expire or be repealed. Right now we are providing direct incentives to select technologies and industries. Perhaps we should adopt a more technology-neutral approach and stop playing favorites. That way, we could still help new energy technology develop, but let the market decide which ones stick.

Tax reform is an opportunity for the energy sector to make real progress. It can move us further from foreign oil. It can lead us down the road to diverse, clean, and secure energy resources.

So let us seize the opportunity as we develop domestic energy. Let us also focus on efficiency and try to make the code less complex. Let us use tax reform to ensure our country has a more secure and diverse energy supply. And, as Mr. Thompson wrote, let us find the things worth doing, and let us do them right.

[The prepared statement of Chairman Baucus appears in the appendix.]

The CHAIRMAN. Senator Hatch?

OPENING STATEMENT OF HON. ORRIN G. HATCH, A U.S. SENATOR FROM UTAH

Senator HATCH. Thank you, Mr. Chairman. I want to thank the chairman for once again holding a critical hearing on tax reform. We have had a large number of these hearings, and they have been very helpful, especially as we go into this next year and the remaining part of this year.

It is essential that we continue these discussions in pursuit of reforming a tax code which is complicated, unfair, and difficult to administer. We cannot afford as a Nation a tax code that prevents our full potential for economic growth.

Looking at the witnesses, it is clear that we have a good representation of different viewpoints about the various energy sources addressed throughout the tax code itself. My hope is that this hearing will contribute to our goal of comprehensive tax reform in the near future.

It is important to conduct our examination today with President Reagan's three criteria for tax reform as our guideposts. We will be looking at the fairness of the system; we will be looking at the efficiency of the system, with a particular emphasis on its anti-growth features; and we will be looking at the complexity of the tax code. If we keep these principles in mind, I am optimistic that this committee will be in a position to reform our tax code in a way that is better for families, businesses, and our economy.

I know many of my colleagues on both sides of the aisle hope to achieve a tax reform that lowers rates while broadening the tax base. However, from my perspective, there is another feature that will be essential for any successful tax reform.

Tax reform should be about tax reform, not about deficit reduction. We should be simplifying our tax code and lowering rates to create a more fair system that generates the economic growth necessary to generate jobs and revenue itself. It would be a mistake to call tax increases tax reform and use that increased revenue to achieve deficit reduction rather than pro-growth rate reductions.

Today we are prospectively focusing on what role, if any, energy policy should play in the tax code. Energy policy has been creeping into the tax code at an exponential rate. Yesterday, I heard the chairman compare the tax code to hydra, the 100-headed creature of Greek mythology. Each time you cut off one heard, two more grow back. I believe this analogy is particularly apt with respect to energy tax provisions.

I hope today that we can have an open debate about whether, going forward, there is a role for energy policy in the tax code and, if so, what that role should be. I could keep talking, but there is no tax incentive for producing a lot of hot air yet. So I will just let the witnesses get to it. [Laughter.]

I want to thank you, again, Mr. Chairman. And I look forward to hearing from our panel here today.

The CHAIRMAN. Thank you, Senator.

[The prepared statement of Senator Hatch appears in the appendix.]

The CHAIRMAN. It is now my honor to introduce our panel. I am especially honored to introduce our first witness. Don Nickles, currently chairman and CEO of the Nickles Group, for 24 years rep-

resented the great State of Oklahoma and was a valuable member of this committee. And I just welcome you back, Don. It is great seeing you. I particularly remember your incisive and persistent and perceptive points of view. I deeply appreciate your return.

Next is the Honorable Phil Sharp. Phil is currently the president of Resources for the Future, and for 20 years represented Indiana's 2nd district in the U.S. House of Representatives. As a matter of fact, Phil and I were freshmen in the House, the Watergate class, 1974. I have very fond memories of that, and especially of you, Phil. You were one of the sharpest—no pun intended—members of the group.

Our third witness is Dale Jorgenson. Dr. Jorgenson is the Samuel W. Morris university professor, Department of Economics, at Harvard. As it turns out, Dr. Jorgenson and I are fellow alumni of the same high school in Helena, MT.

I might add, a former chairman of this committee, Bill Roth, is an alumnus from that same high school. There are three of us—Helena High. It is a good school. Two years in a row, we did not make the State championship in football, but we were runners-up 2 years in a row.

Dr. JORGENSON. They had a great basketball team, though.

The CHAIRMAN. Great basketball; back in your era, they won. They won the championships, that is true. Thank you.

Finally, we have Mr. Harold Hamm. Mr. Hamm is chairman and CEO of Continental Resources, a position he has served in since its inception in 1967.

Thank you all for coming very much. You all know our practice, at least we assume you do. Certainly, you do, Don. So speak for about 5 or 6 minutes, everyone, and all your statements will be inserted in the record.

Go ahead, Don. We are glad to have you here. I tell all our witnesses, pull no punches, tell it like it is. Life is short, you cannot take it with you. Go for it.

STATEMENT OF HON. DON NICKLES, CHAIRMAN AND CEO, THE NICKLES GROUP, LLC, WASHINGTON, DC

Mr. NICKLES. Mr. Chairman, thank you. And it is a pleasure for me to be on the panel and join my colleagues on the panel, especially Harold Hamm, who has built just one heck of a company in Oklahoma, Continental Resources, and is doing so much in North Dakota and Montana, but also in Oklahoma. And they have added hundreds and hundreds of jobs and a lot of valuable resources to this country. So it is a pleasure to join him as well.

Mr. Chairman, you mentioned talking about tax reform and doing it right. I remember being in this body and particularly this committee. And in my 24 years in the Senate, I loved this committee, this committee and those who got on it. And it takes a long time to get on the committee. But it is a great committee, and you are doing really great work, and especially if the Senate works.

And so I am a big advocate for regular order and marking up, and that is the tradition of this committee, marking up bills and having lots of amendments and lots of debate. And we did that on countless bills.

I remember that some of the best time in my service in the Senate was when we had tax bills and we considered hundreds and hundreds of amendments in the committee and/or on the floor.

And so I urge you, in the process portion of this, whether you are talking about extenders or whether you are talking about trying to avoid the calamity of the end of this year, beginning of next year, or restructuring the tax code, regular order is the process. And that way, the Senate works, and it makes the Senate such a special place to be.

You also mentioned doing it right, and you talked about energy taxation. I ran for Senate because of windfall profits tax. Absolutely, if Congress had not passed that in 1979, I would not have been here. But it motivated me.

I was a State Senator at the time, but I disagreed with that so strongly. So when I say, do it right, I think we are talking about good tax policy, and good tax policy is good economics, it makes sense.

You do not have to pick winners and losers. Windfall profits tax discouraged domestic production and encouraged imports. How absurd. We finally got rid of it. But it was a terrible idea.

There are some other bad ideas that are out there. The administration talked about, well, let us do away with intangible drilling costs. They had a comment in their statement. They said, "The expensing of IDCs, like other oil and gas preferences the administration proposes to repeal, distorts markets by encouraging more investment in the oil and gas industry than would occur under a neutral system. To the extent expensing encourages overproduction of oil and gas, it is detrimental to long-term energy security and is also inconsistent with the administration's policy of reducing carbon emissions." What a crazy statement.

Good tax policy allows expensing—it is not only of wages. Mostly, intangible drilling costs are wages. The tax code—you should allow any industry to expense their wages that are incurred in the year that they are paid. Not necessarily a credit. This is not a credit. This is not a credit against taxes. It is expensing. So it is expensing of non-recoverable business expenses. You ought to be able to expense that. So I defend that.

They also call 199 a subsidy to big oil. Hogwash. Now, I was on the committee when we created section 199, a lower corporate rate for manufacturers. And some of you may remember, I was a manufacturer before coming to the Senate.

But I argued against it, and I still think it is bad policy. I think you ought to have it uniform. So, when you are reforming the tax code, have it be a uniform corporate tax rate, not a lower rate for manufacturers versus service companies or other companies. It is very confusing, very difficult.

And then in past law we said, well, all manufacturers get it except for oil. Oh, we are not going to give them the full benefit of section 199, which is basically a 3-point reduction in the corporate rate. Big oil only gets a couple of points of it.

But it is bad policy. So I urge you to have a uniform corporate rate. And I might mention too, there are some companies that have both. They are manufacturers, they are financial companies, they

are one and the same. They have both. And so, then they have all this accounting challenge trying to figure out what is what.

Anyway, where you are trying to come up with a more uniform, lower, more competitive rate—and I think everybody, Democrats and Republicans, is talking about that, God bless you, keep it up—a lower rate, a more competitive rate, a competitive international rate, which probably means going to a territorial system, makes good common sense. And to eliminate exemptions and credits along the way, I think, makes sense.

Tax all income once. We have a lot of income that is not taxed. So you can help lower the rate by doing so.

There is also a proposal for eliminating dual capacity. And I would just say, if you want to have U.S.-headquartered oil companies, if you eliminate that, you are going to double-tax their foreign earnings and, as a result of that, the net result is Total, British Petroleum, other foreign companies are going to want all their international deals, and that would just really be a dumb thing for us to do, very short-sighted.

And I could go on, Mr. Chairman. I just think making good tax policy is not good energy policy, it is good tax policy. Good tax policy would apply to all industries, and I would encourage the committee to advance its work.

I encourage the committee to do that, and I encourage you, for as much as can be done this year, to avoid the end-year challenges. And for totally reforming the system, I encourage you along that way. I think is very exciting, and, hopefully, you will be successful.

For it to be successful, this committee has to lead, and I hope and pray that you do.

The CHAIRMAN. Thank you, Don. We would like to have you back.

[The prepared statement of Mr. Nickles appears in the appendix.]

Mr. NICKLES. Thank you. Good to be back.

The CHAIRMAN. You would be a great addition to this committee.

Congressman Sharp?

STATEMENT OF HON. PHILIP SHARP, PRESIDENT, RESOURCES FOR THE FUTURE, WASHINGTON, DC

Mr. SHARP. Thank you very much, Mr. Chairman. I am delighted to be here. And I must quickly say that, as the head of Resources for the Future, it is an independent think tank, a nonpartisan, nonlobbying organization, and the people in it are a lot smarter than I am. And so these are strictly my comments from my experience on a variety of commissions, as well as here in the House of Representatives.

Let me quickly say my plan is just to provide a few contextual things about where we are in public policy on energy, as well as where the markets are. This committee—many of you are way ahead on these issues, and this is probably not particularly relevant, but I think it is very important in the public discussion that we try to get a better perspective on what really goes on with energy policy and with our markets.

Now let me say, obviously, as everyone here knows, energy is absolutely essential to our modern economy and to any economic

growth that we want to have. It also has implications for our national security, and it also has consequences for health, safety, and the environment.

And our practical problem is, there is no policy, there is no set of policies, that will serve all of these goals. So we are always in conflict over it, and it comes right here into this committee and everywhere else. And, frankly, the American people and others should reduce some of their expectations about what can be accomplished and how it can all fit together logically. This is a vast country, this is a vast problem, and we are going to come at it over time in many different ways.

Let me quickly indicate, however, that while there are many things that we have done and tried—and some failed and some worked—it is very important to remember that one of the fundamentals about our energy policy, which is true through Democratic and Republican administrations and Congresses, is that we rely overwhelmingly on private capital to build, produce, and distribute our energy in this country, and nobody that I am aware of wants to stop doing that.

And what that means is, it is a major challenge to what the government can actually efficiently do, because you are always trying to change, incentivize, or restrict behavior by investors or by consumers. And many of the initiatives that are taken do not pay off because they involve millions of decisions by consumers and thousands of decisions by investors under pressures and with other values at stake.

With this limitation in mind, nonetheless, there are many things that do work and do help. But let me quickly give you a piece of the picture that the chairman already outlined, which is: our picture on energy continually changes, and we have a new picture today compared to where we were 10 years ago. And it is very important that we recognize this change, partly to recognize that it is going to continue to change and that policy has to accept and work through those changes.

First, we have a vast array of new technologies that have come into the marketplace in this decade. I do not care whether it is in oil production, gas production, solar, nuclear, or efficiencies in technologies and vehicles, it is amazing. And most of it was not predicted to happen by academics, by industry, or by government when the turn of the century came about. Many of these things were quite well-known, but nobody expected them to take hold the way they did.

Second of all, we have a radical change in our supply of natural gas, and the projected supply of natural gas, again, was unanticipated at the beginning of the decade.

Third, we have a decline, again unpredicted, in oil imports, which is viewed as very positive from a security standpoint, with a projection that it will continue, if we do not mess it up.

Fourth, we have, actually, a decline in our carbon dioxide emissions in this system, with a projected minimum growth over the next decade. This is a positive development. Some of it, of course, is just the consequences of the unfortunate slowdown in the economy, but it also represents, actually, improvements in efficiencies and fuel-switching and other things that have gone on. There is

more to be done, in the view of many people, on this front, but this is progress.

Now, why did this happen? Let us remember the power of price at the outset, because we almost always want to deny it in public conversations in this country. First, we had a very high rise in natural gas prices at the turn of the century, less than a decade ago. It was followed within a few years by a very high rise in oil prices, and, by the way, again, neither academics, the government, nor the industry predicted this—a few individuals probably did, but they ended up writing their books and getting rich after the fact. Whether they actually knew it ahead of time is not clear.

The truth is, that had a powerful impact on the behavior of consumers, investors, and government policy.

Second of all, obviously, the entrepreneurial risks that people are willing to take, like Mr. Hamm and others, have been powerful, whether it is in oil, in the new natural gas supply, in the new nuclear plant that is about to be built in this country, in solar, in a whole bunch of resources. We require that entrepreneurism across the board if we are going to be effective. Nobody in this group, I am sure, would deny the importance of that.

The third reason for this change is because many of these technologies that came in the marketplace for production or for demand reduction were actually the result of decades of research, some of it by the private sector, much of it supported at some level by the public sector, some in the public sector, like our national laboratories. It is very hard to unsort that mix of which is which, but nobody should misunderstand that both are important, and government policy and government expenditure help advance these technologies that now we have sucked into the marketplace.

And the fourth, finally, there of course have been policies at the State and Federal levels that have helped incentivize innovation, and this committee itself has been very active in that, helped both the efficient technologies and promoted adoption in the marketplace.

Many of these policies, I would suggest to you, actually followed on the price increases that drove the incentives for the marketplace, as well as the political incentive for Congress and others to make decisions.

Now, let me suggest to you that, while this picture is, in my view, a very positive development compared to where we were 10 years ago, obviously, it was marred in the past couple of years by that massive blowout in the Gulf of Mexico and marred by the events at Fukushima. These are high-risk operations. We are in a position around the world where we do things big. We are going to be taking big risks, and we have to be smart about how to mitigate those, to the extent we can. I am not one who thinks we can just walk away from all these risks, but I do think we have a serious responsibility, governments and industry, to minimize their impact.

Now, this new natural gas supply is the overwhelming development in our energy picture that was certainly unanticipated, and many people believe, and I certainly believe, this is a powerful economic benefit to this country. But we cannot mistake that there are major challenges in this development that have to be taken seriously, whether they are impacts on air, on methane leakage, on

water—and some in the industry are being extremely responsible about this and, frankly, some are not.

We have many players in this new and dynamic field, and government has to be smart and careful in the way it regulates. But we have to take it seriously, as the National Petroleum Council study of last summer makes very clear—this is very much of an industry, along with other NGOs and others involved in this. It is a Federal advisory committee, as you folks well know—which said, you have to have responsible development, and you have to take these issues seriously for us to be able to capitalize and maintain a good thing.

There are other challenges—excuse me, Mr. Chairman. I will stop with one more challenge, and that is, this is not just changing the natural gas picture. This is changing the picture of all other major energy sources in this country. And, as you make policy, you need to think through what is going to be undermined and what is not by this enormous development.

Sorry, Mr. Chairman.

The CHAIRMAN. No problem. Thanks very much, Congressman.

[The prepared statement of Mr. Sharp appears in the appendix.]

The CHAIRMAN. Dr. Jorgenson, you are next.

STATEMENT OF DR. DALE JORGENSON, SAMUEL W. MORRIS UNIVERSITY PROFESSOR, HARVARD UNIVERSITY, CAMBRIDGE, MA

Dr. JORGENSON. As the chairman stated, I am a professor at Harvard University. I have taught in the Department of Economics there since 1969. I have devoted a good part of my relatively lengthy career as an economist to the topics that we are here to debate today, and it is a very great privilege for me to participate in this panel and to join you in your deliberations.

I would like to discuss three issues. To fix ideas, I am going to associate a number with each one of them. And the first number that I would like you to remember is 1.5 percent of the GDP. What is this? A system of environmental taxes on fossil fuel combustion would generate revenues equal to 1.5 percent of the GDP. This would be mainly a very substantial tax on coal, a much more limited tax on oil, and a minimal tax on natural gas. There would be no taxes on renewable forms of energy like wind or solar. The 1.5 percent of the GDP does not—I want to emphasize—does not include any additional revenues from limiting or eliminating tax expenditures, like the ones that you are going to hear about today.

Let me proceed to the second issue that I would like to discuss. That is the Federal Government budget.

You have been told by dozens of economists inside and outside the government that we will be going over a fiscal cliff at the end of this calendar year. The Bush tax cuts of 2001 and 2003 are finally scheduled to sunset as we welcome in the new year. There is also the threat of sequestration, which was legislated by the Congress in August of last year. And beyond that looms another fight over the debt limit.

Douglas Elmendorf, the highly respected Director of the Congressional Budget Office, has told you that all of this will produce another recession. So the number I would like you to remember here

is 2 percent of the GDP. This is the difference between the Federal revenue of 17 percent of the GDP in 2011, which is the last year for which we have real numbers, and 19 percent, which is a long-term average of Federal revenue of the GDP for the last 30 years. This is the minimum that I think we can expect that revenue will contribute to closing the budget gap that looms ahead of us.

The third issue is comprehensive tax reform. Ranking Member Hatch has reminded us that that is the subject of these hearings. The number there I would like you to remember is 7 trillion. To paraphrase that great U.S. Senator after whom this building is named, a trillion here and a trillion there, and pretty soon you are talking about real money.

So what is the 7 trillion? This is the cumulative impact of a carefully designed system for comprehensive tax reform. Seven trillion is more than sufficient when added to our national wealth of $60 trillion to put our labor force back to work and to resolve our fiscal crisis. In short, it would enable us to achieve a fiscal policy that is sustainable.

Let me summarize. We are not here to debate energy policy alone. We are not here to debate comprehensive tax reform alone. We are not here to debate the Federal Government's budget alone. We are here to see how all three can be fitted together to solve our budget problem, to clean up our environment, and to give a positive thrust to the growth of our long-ailing economy.

Thank you very much.

The CHAIRMAN. Thank you, Doctor. Within time, too.

[The prepared statement of Dr. Jorgenson appears in the appendix.]

The CHAIRMAN. Mr. Hamm?

STATEMENT OF HAROLD HAMM, CHIEF EXECUTIVE OFFICER, CONTINENTAL RESOURCES, INC., OKLAHOMA CITY, OK

Mr. HAMM. Thank you. Thank you, Chairman Baucus, Ranking Member Hatch, and members of the committee. It is an honor and a privilege for me to be here today. I will be speaking on my own behalf, not as a representative of Continental Resources. I am not here on behalf of the Romney campaign, for which I serve as an energy advisor.

It has been 20 years since I was here speaking before this committee. Senator David Boren, at that time, was co-chairing the committee, I believe, and I spoke to him about a couple things that were mostly unknown and totally unconventional at the time. One of them was horizontal drilling, and the other was the aspect of drilling into the source rocks themselves, the shales, that might produce a vast amount of natural gas. We were talking about a temporary trigger, a tax trigger, to advance that theory.

Well, that was not given. We did not get a tax trigger. But over the last 20 years, we have seen those technologies developed, and, thank God, we have come a long way since then.

Continental is a top 10 petroleum liquids producer. We are 75 percent oil with last year's production. We focus on oil.

The Bakken Play, Senator, started in Montana, and that is where we started with Elm Coulee Field, and, of course, the deep

end of the pool is over in Senator Conrad's State, over in North Dakota, and we were one of the original players over there.

I might say that only here in America can a 13th child of a sharecropper turn a 1-man 1-truck operation into one of the Nation's largest oil companies. But having discovered that field at Continental, we have been able to do that.

Today, I am going to talk to you from the perspective of the seasoned petroleum geologist, explorationist, who has been in this business buying oil, from my own account, for about 45 years.

I first started speaking on oil about 2 years ago. At that time, it was being severely disparaged, and people were trying to get market share. So I thought someone needed to stand up for oil, and I started talking about that. It is a very important segment of our energy picture. Nearly all transportation runs on it. There is hardly a jet plane anywhere that burns anything besides oil products.

I am also here to talk about these Federal tax provisions that will allow us to continue the job of the viable American dream of energy independence that we have begun. These are very important for America.

There are 18,000 independent producers today that drill 95 percent of the wells in America. We produce 67 percent of the oil, 86 percent of the natural gas that is produced today. We typically invest all that we make, borrow about 30 percent more, and I am afraid our company falls in that same lot as well.

We are in the exploration and production business, that is what we do; we have no refining operations. And I will not get into the tax consequences. Senator Nickles covered that very well. Section 199 foreign tax credits could then affect us a whole lot. But certainly the IDCs do, and, if we do away with those, we will stop this march to energy independence that we have begun.

These same tax provisions not only allowed us to survive the terrible times, the disastrous years of the 1980s and 1990s that eliminated about 50 percent of the independents within our ranks, but also allowed one other really important thing, and that was to allow us to try and fail and try again, and, certainly, that is what it took with the Bakken.

We drilled about 18 commercial wells up there before breaking the code on producing this mighty oil field that is somewhere over 24 billion barrels. Without that ability, we would not have been able to do that.

And also, let me talk about some other players. You know that Barnett shale field, George Mitchell's quest down there, George worked 16 years breaking the code on the Barnett. This is the largest natural gas field today in Texas. It took 16 years to break the code to get that done. So try and try again, he was able to do it.

I might just talk about a new era that we have entered into in American oil. It is fair to say we are transitioning from an era that was mobile. That oil moved. What we are entering into today is an immobile portion of the oil in America, and this is estimated to be at least a third larger than the mobile portion was that we have been producing in this world for 160 years.

We are now able to do that through one thing, and that is precision horizontal drilling, where we will go down 2 miles, turn right, go 2 miles, and hit that lapel pin with a drill bit. It is that preci-

sion that we have developed. The independents are largely responsible for that development, myself and others. And so we are able to do that precision drilling, and that is what unlocked this new era that we are into. And it is certainly a great era.

We have had tremendous success in these new resource plays across the country. Somebody aptly described the new natural gas supplies that we have unlocked. Some say 100 years' worth—I think it could be even greater than that. It is tremendous. And we have seen the imports go down as new productions come on here in America. They have gone down to about 42 percent right now from 60 percent, a high of 60 percent. We are down to 42 percent now.

And it is estimated—Marshall Adkins, who is a renowned analyst with Raymond James, he has estimated that it will fall to 26 percent by 2015—that is just around the corner—and also will cut our trade deficit by 82 percent by 2020. So it is tremendous where we are headed and what it has done.

Most importantly, we are into a cheaper price regime, that is, a discounted price regime for both oil and gas for the consumer; so, lower cost to the consumers here in America. That $15-a-barrel difference right now between us and bench price—we are talking $2 natural gas here, and we are talking $12 natural gas in China today. So it is a tremendous difference.

But what the impact of this new production to America is, is better national security, drastically reduced deficits and budget deficits, jobs creation, good-paying middle-class jobs. We have seen that in Oklahoma, Texas, North Dakota, Kansas, Montana, wherever oil and gas is. So what we are doing is—it is estimated by API we could add 1.2 million jobs to the 9.3 million jobs that are currently in our industry today by 2030.

And then the American wealth creation, and we are talking wealth creation to our own Federal Government—$18 trillion of value in oil and gas on Federal lands. That is the estimate that is out there. We are not talking about creating other rich Arab sheiks. We are talking about at home. We are talking about 10 million royalty owners right here in the States. North Dakota does not have a deficit; Montana does not have a deficit. These States where this is going on do not have a deficit.

But I think primarily——

The CHAIRMAN. I am going to have to ask you to sum up, if you could, Mr. Hamm.

Mr. HAMM. The big thing is the psychological impact in America, the self-sufficiency in America, of producing what we need right here at home and saving American lives.

So the unintended consequences, if we are not careful, of changing these rules could be devastating. We could stop this energy renaissance. We certainly do not want to do that.

Thank you very much.

The CHAIRMAN. Thank you, gentlemen, very much. I have a couple of questions.

[The prepared statement of Mr. Hamm appears in the appendix.]

The CHAIRMAN. First, as prompted a bit by Congressman Sharp's point, all the new technology is unpredicted—natural gas unpre-

dicted, prices unpredicted—and the basic question is the degree to which tax policies really matter.

The fracking technology was developed. Nuclear technology is being developed. Lots of other energy technologies are being developed, partly because of the entrepreneurial spirit in America. People see how they can make a buck. And the basic question is, how much do these tax incentives really matter, really?

A side question there is, what do other countries do and does it matter, or are we just responding to political pressure, when really a lot of the results are the result of people figuring out how to do a better job?

And I have, actually, a third question, if you could wrap them together. As this committee works to pursue tax reform, the argument is, why don't we have a more technology-neutral credit, technology-neutral deduction, some incentive to help boost energy production, domestic energy production, but in a way so we are not picking winners and losers?

I know it is a complicated question, but if anybody wants to take a crack at it, those are some of the things on my mind.

Dr. Jorgenson?

Dr. JORGENSON. The leading point that I would like to make, Mr. Chairman, is that the opportunities are not so much on reducing the tax expenditures that you just enumerated. That is an important issue, but this committee over the years has worked to limit these tax expenditures.

The things that we are talking about here in terms of expensing development and the percentage depletion and so on, I certainly agree with you, those should be reconsidered.

The big issue, though, is on the side of the utilization of energy, in other words, a use of energy, and that is where energy taxes really have to play a role. We have an opportunity to raise revenues equal to 1.5 percent of our GDP, and those are entirely on the side of using. They have nothing to do with technology or technology-neutrality. That is another range of issues that I think is secondary relative to energy utilization.

The CHAIRMAN. Could you focus some more on—what do you mean by energy utilization?

Dr. JORGENSON. I mean burning fossil fuels, Senator. So I am referring to combustion of coal in the generation of electricity. I am referring to the combustion of oil products, as Mr. Hamm reminded us, in transportation, and the use of natural gas.

The tax for energy would be primarily—you are a Senator from Montana, so you are well-aware of this—on coal. It would be a modest tax on oil and a very modest tax on natural gas.

That would lead to the substitution that is underway right now away from coal, which is the most polluting energy source, toward natural gas in the generation of electricity. That is the great environmental opportunity of our time. It just turns out that it produces a lot of revenue.

The CHAIRMAN. So it is a cousin to a carbon tax.

Dr. JORGENSON. This is not a carbon tax.

The CHAIRMAN. A cousin, I said a cousin.

Dr. JORGENSON. It is a kissing cousin to the carbon tax, let us put it that way. This is a tax on the six criteria environmental pol-

lutants which have been identified for years by the Environmental Protection Agency, going back to the Clean Air Act of 1970 and enhanced by the Clean Air Act amendments of 1990, and so it would focus specifically on the pollution that is associated with these criteria pollutants.

So what are those? Well, there are coarse particulates, smoke. There are fine particulates, also in smoke, but less visible. And the list goes on. You can fill out the rest of the list.

We have to have taxes that limit this pollution. This is conventional pollution. We are not talking about climate change here. We are not talking about saving the planet. We are talking about saving lives, reducing illness.

That is what environmental protection is about, and we have a job that is still undone that turns out to be a potential source of revenue equal to 1.5 percent of the GDP on the side of utilization.

The CHAIRMAN. Congressman Sharp, do you have any thoughts?

Mr. SHARP. Very quickly, to put out one sliver. When you were talking about new technologies, and I talked about them, while entrepreneurs are very important in imaginative work all around this country—very important—the truth is the government has been very important here too.

And the tax credit on research and development, which you, I am sure, are more familiar with than I am, is intended to keep our private sector entities working, to keep our great research institutions like MIT, to keep our national laboratories figuring ahead, because we do not know which ones of these will work.

Now, let us understand this extraordinary work by Mr. Hamm and others was facilitated by the Federal Government. I mean, seismic 3D, which allowed much greater visualization into the ground to advance us, was a major industry achievement, but it had Federal backing to help figure out how you do that, as well as some of these other technologies.

And I think we have to be a little careful about just ripping all this out and thinking that it is all going to be done out there without somebody who will see this through because it was not worth it to anybody. There was no immediate return for a lot of these technologies. The return only happened after several decades.

The second thing I would say is, it is the same with the production of new kinds of energy sources like wind. I doubt we would have anything like the wind industry we have today if the Federal Government had not engaged in research to bring down the costs and upgrade the efficiencies—not to take anything away from private sector activities—or if you had not adopted the 1992 or whenever it was, I think, in the Energy Policy Act, the production tax credit.

Now, the issue is whether that is really still necessary to sustain this.

The CHAIRMAN. My time has expired. It expired some time ago.

Senator Hatch?

Senator HATCH. Thank you. I have really enjoyed this panel. And this particular question is for the entire panel.

A number of tax policy experts believe that the tax system should simply be used to raise the revenue necessary to fund a constitutionally limited Federal Government and not get involved in

social engineering through the code. These experts suggest that the energy policy should not be run through the tax code.

Now, as part of the tax reform exercise of lowering tax rates by broadening the tax base in a revenue-neutral manner, this is one approach to dealing with energy tax provisions.

I would just like to have your thoughts on such an approach with regard to energy tax reform. We will start with you, Don. We are grateful to have you back, and grateful to have all of you here today.

Mr. NICKLES. Senator Hatch, just a couple of comments. One, tax policy does make a difference. In partial response to your question and Senator Baucus's question, if you no longer allowed intangible drilling costs to be expensed, you would shut down the shale revolution, the oil revolution that is happening in the Bakken and in every major play.

I am on the board of a couple of companies. That is a big deal. If you do not allow people to expense, and they have had expensing—the independents have had it, frankly, since, I think, 1913 or something.

Senator HATCH. Like 18 dry holes in Bakken before you hit the——

Mr. NICKLES. Absolutely. Senator Hatch, in response to your question on overall tax policy: absolutely, getting a lower rate, a more competitive rate, competitive internationally, is important. This committee has not done a lot on the international tax front. We have always talked about it, but it is really about time. And I think a greater consensus is building towards a territorial system. It makes sense.

We are becoming a smaller world in international competition, and, frankly, we should not be giving advantages to our international competitors over our U.S.-based companies. We want more U.S.-based companies to be successful internationally.

And then finally, Senator Hatch, kind of in relation to your comment and overall, the tax rates you want to have and, to some extent, to be as efficient and maybe raise as much money as they can without doing harm, when we reduce capital gains and corporate dividends to 15 percent, we actually raise more money for the Federal Government. I am very concerned about the cliff that is coming on cap gains. The rate at January 1st, if the committee does not do something, if Congress does not do something, it is going to go from 15 to 25 percent.

Senator HATCH. Or higher.

Mr. NICKLES. And on corporate dividends, it goes from 15 to 44 percent—15 to 44—the ordinary rate, 39.6, 3.8 on top of that for the President's Obamacare, and then maybe another 1.2 on elimination of PEP and Pease. So you go from 15 to 44.6. That is tripling the rate on corporate dividends for individuals. The corporation has already paid 35 percent.

So this committee really needs to do some work. And from your vantage points and from trying to raise money, if a lower capital gains rate actually raised money—if you would take capital gains from 15 to 25 or corporate rates and triple them, I am afraid the government is not going to raise money. I am afraid you are going

to lose money, and it is going to hurt real estate, and it is going to hurt banks that loan for real estate.

Senator HATCH. You are preaching to the choir here. It was the Hatch-Lieberman bill that brought the rates down to begin with.

Mr. SHARP. Senator?

Senator HATCH. Mr. Sharp?

Mr. SHARP. Just a comment. I was around, but not on the relevant committee, in 1986 when this theory was very popular about just not using the code for any social engineering. I think it is a good one, if we could all subscribe to it. I just do not know any faction in America that really believes it enough to act on it.

I cannot imagine this committee will be able to not be inundated with everybody—we already heard one appeal to why some critical provision is necessary in the code. We are certainly a lot better off economically if we can get this simpler, if we can get the rates down, if we can get rid of some of the tax preferences.

But I think it is a pipe dream of some outsiders who think that, in this complex economy, that any business organization, let alone the U.S. Congress, can follow that philosophy.

Senator HATCH. Professor?

Dr. JORGENSON. Senator, nobody is talking about eliminating things like percentage depletion or the deductibility of exploration and development. What we are talking about is bringing those tax provisions into line with fundamental economics.

That is what the concept of tax expenditures is all about. So we are not talking about getting rid of incentives. We are talking about making them neutral, which is your point, as I understand, Mr. Ranking Member.

Secondly, as I emphasized in my written testimony and in my oral remarks, 19 percent of the GDP as the revenue contribution to the Federal budget seems to me to be a reasonable target. We are below that level now. We are at 17 percent or below.

As I said, 17 percent is the number for the last real data we have. The Congressional Budget Office has projected that for this year, this calendar year, that is, the number is going to be lower.

So we need to have some kind of consensus. I am talking about unanimity. I would like to see everybody subscribe to this around a number like 19 percent as a starting point for our debate.

But I agree with you entirely that we should have a neutral tax code. That is the purpose of comprehensive reform, as I see it.

Senator HATCH. Thank you.

Mr. Hamm, we will make you the last one.

Mr. HAMM. I mentioned unintended consequences in the government's quest to raise more money and equalize things. I just want to caution that this tax could be one that vaporizes if the IDCs are taken away, if we stop the renaissance. And we are still going to raise a lot of money.

There is $4 billion lost if drilling ceases or slows down considerably. We have examined our company and, absolutely, a third less drilling would take place without the IDCs.

Senator HATCH. Thank you all.

The CHAIRMAN. Thank you.

Senator Conrad?

Senator CONRAD. Thank you, Mr. Chairman. Thank you for holding this hearing. Thanks for the excellence of this panel.

I remember very fondly serving with Senator Nickles. We led the Budget Committee together for a number of years. One thing I learned about Senator Nickles is his word is absolutely gold. Even when it was hard to keep his word, he did, which I always admired.

Congressman Sharp, it was always good to serve with you. You were a thoughtful member.

Dr. Jorgenson, a wise man, we are fortunate to have somebody of your quality and character before the committee.

Mr. Hamm, thank you for what you have done for the country. Thank you for what you have done for our State.

I just want to point out what has happened to dependence on foreign energy. Since 2005, we have gone down from 60-percent dependent to 45-percent dependent last year. We believe we will be 42-percent dependent this year.

So we have seen dramatic reduction in our dependence on foreign energy. Still, we are spending $1 billion a day on foreign sources. And it is incredibly important to the economics of the country that we make further progress.

Let us go to the next slide and show what has happened to domestic production. And, again, I thank Mr. Hamm. Thank you for making the investment. Thank you for taking the risk. Thank you for having faith that what you and your people saw as an opportunity was worth pursuing, because you have helped turn around our domestic production in a very dramatic way, and I believe it is entirely in our Nation's interest, in the national security interest, in the national economic interest, and we have to pursue it.

That takes us to the question of incentives. Mr. Hamm, you have focused on intangible drilling costs. Can you just tell us again why, in your view, that is so critical?

You have testified here that if that were taken away, in your company alone, you believe there would be a one-third reduction in drilling. Is that what your people have concluded?

Mr. HAMM. It is. I am not a tax accountant. I am an oil finder. But we do have a lot of tax accountants who work for us, who are on staff, and we have done a study on it, and that has been our consensus that, in our company, it eliminates about 34 or 35 percent of our drilling activity right off the bat.

It takes about 7 years for us to get back to normal, some normal type operations.

Senator CONRAD. If that were taken away.

Mr. HAMM. Yes.

Senator CONRAD. Let me just say that I have served on the Bowles-Simpson Commission, the Group of Six, tried to be part of efforts to get us back on track, because when you are borrowing $0.40 of every $1, that cannot continue much longer, and we have to get a hold of it.

Part of our issue clearly—almost every bipartisan group that has looked at this has said that tax expenditures have to be part of the solution, because they are now $1.2 trillion a year. That is more being spent through the tax code than all of the appropriated accounts.

So I personally believe we are going to have to reduce tax expenditures, broaden the base. I personally believe we should lower rates in conjunction with that to help America be more competitive. We need to lower the corporate rate to be more competitive.

But we also need to generate some more revenue to help with the deficit, on top of reforming entitlements, on top of cutting spending in the discretionary accounts, all of which is going to have to be done, and none of which is really popular. But we have to be careful we do not throw the baby out with the bathwater.

And what I hear you saying, Mr. Hamm, is that, as you move toward these reform steps, first of all, do not throw out intangible drilling costs, because that would have unintended consequences.

Mr. HAMM. Yes.

Senator CONRAD. Is that what you are trying to tell us here?

Mr. HAMM. That is correct. Again, I am not a tax accountant, but that is—we have done the study. We have provisions right now that encourage us to invest, and we need to invest heavily in the Bakken.

For instance, up there right now, there is about, we estimate, 900 billion barrels of oil in place in this whole petroleum system.

Senator CONRAD. Nine hundred billion barrels.

Mr. HAMM. Nine hundred billion. We right now can get, we think, about 2 to 3 percent of that, 2.5 maybe, 2.5 percent or something like that. If we could move that needle up to 5 percent, everybody here can do the math, I mean, we are talking about doubling our crude reserves in America. So it is that significant.

So we have a job to do and a very significant one, and we need the ability to do it. This gives us—this encourages us to do it.

Senator CONRAD. Just a last statement, if I could, Mr. Chairman. I have just been up talking with Secretary Salazar about some of the wells being drilled in North Dakota, and I will tell you, it is extremely impressive. It is being carefully done. It is being professionally done. It is being done in an environmentally sensitive way. It is being done with extraordinary technology. And so we thank you for that, as well.

I tell you, I do not think any one of us would go there and not come away impressed with the professionalism of how it is being conducted.

The CHAIRMAN. Thank you, Senator. I agree. In fact, a guy took me out to one of the rigs in Montana. It was the same person who took you and Secretary Salazar up to Riggin, ND.

If you could answer, if I might, in just 1-sentence. What does it take to move that needle up to 5 percent? What is a 1-sentence answer of what it would take to move the needle to 5 percent?

Mr. HAMM. Well, I think it can be done over time. There are a lot of things we have to—we have to figure out the next step of enhanced oil recovery. That is going to play a big factor, whether that is $C0_2$, just normal secondary water flooding, or whatever it is. We have to do that. That is going to move the needle on up.

The CHAIRMAN. Thanks a lot.

Senator Grassley?

Senator GRASSLEY. As we begin to consider what comprehensive tax reform would look like, it is important to discuss goals and ob-

jectives other than revenue collection and what the tax code should accomplish.

We had testimony before our committee in December 2011 on incentives for alternative energy. Ms. Sherlock of CRS notes, "The income tax code has long been used as a policy tool for promoting U.S. energy priorities."

So it makes sense to consider whether or not our tax code of the future should further energy priorities. Those who want to isolate Federal tax incentives for alternative energy and put them on a chopping block need to remember that the oil and gas industries have received massive permanent tax breaks for 100 years.

In contrast, tax incentives for alternative energy have existed only a few decades and have always been temporary. These incentives first appeared in the 1970s in direct response to the oil crisis, and they helped to level the playing field for renewable resources. These incentives reduced the cost of capital investment for those fledgling industries that were not yet able to raise capital.

Any argument made for eliminating renewable energy tax incentives is intellectually dishonest if it does not include a review of all energy tax incentives. Those opposed to incentives for alternative energy often fail to consider that a key reason to support renewable energy resources should be energy independence. The United States spends more than $400 billion each year importing oil.

Now more than ever, the United States needs to ramp up domestic production of traditional energy, including oil, natural gas, coal, and expand alternative fuels and renewable energies, including all of them, and I will not name them because you know them.

America imports almost 50 percent—I think it is a little bit less than 50 percent now—of our oil. The U.S. Treasury pays out an average of $84 billion a year to defend shipping lanes to bring that oil here. These costs are never included in the discussion of cost-effectiveness of tax incentives for oil and gas as compared to alternative energy.

For sure, we need a tax system that is less complicated, fairer, and will make us more competitive in the global economy. However, there is a long history of using the tax code to promote energy policy, starting with intangible drilling costs and percentage depletion provisions that are almost 100 years old.

Experts in favor of these provisions argue that these provisions are not tax expenditures because they just represent ordinary business expenses and are similar to research and development. Yet, the expensing of research and development costs and the intangible drilling costs are exceptions to the rule that such expenses should be capitalized and deducted over years.

It seems a primary benefit of intangible drilling cost provisions is that they provide more cash for additional drilling operations, which results in more jobs. Retaining this provision then would seem to indicate that the tax code should play a role in our energy.

So, to Senator Nickles and to Mr. Hamm, does this conflict with the key objectives of tax reform to lower the rates and broaden the base? Would not lower tax rates also provide more cash for additional exploring and drilling? And also, if the R&D and accelerated depreciation provisions are reviewed in the context of tax reform,

do you agree that intangible drilling costs and percentage depletion provisions should also be reviewed?

Mr. NICKLES. Senator Grassley, you have not changed a bit. [Laughter.]

I remember having this debate for about the last 30 years.

A couple of comments. One, intangible drilling cost is expensing out-of-pocket business expense; that is, wages. You compared it to R&D. R&D is a credit. There is a big difference.

R&D credit is dollar-for-dollar off your income tax, and the other one is a deduction for an out-of-pocket expense—wages. And I mentioned earlier, before you arrived, I think for tax simplicity, you should allow every business to be able to expense certainly its wages.

So I do not compare the two. I am in favor of putting basically everything on the table. It is exciting to think what you all are getting ready to do in very significant tax reform, and you should put everything on the table.

But, if you do not allow industries to expense their out-of-pocket expenses, as Harold Hamm said, you are going to have some real negative consequences. You will not have $2 gas.

So I do not think this committee or Congress wants to do something that is going to have adverse economic impact. This happens to be—the shale gas revolution, as well as the oil revolution, is one of the best things that has happened in this country economically in years. Congress does not want to mess it up.

But I think you ought to look at every credit, because that is—any credit is—by nature, it is Congress saying, we think this is even more valuable than the $1 you spend. You spend $1, and we are going to reduce your taxes by $1.

So I am all in favor of putting a lot of credits and deductions and tax-exempts on the table. You have a lot of tax-exempts that are not taxed. Tax them. Tax everything once. You broaden the scope a bunch by doing so.

Senator GRASSLEY. Mr. Hamm?

Mr. HAMM. I agree. We capitalize all of the tubers, all the hardware out there, we capitalize all of that. We do write off the wages in regard to drilling, and the debt was in that regard. And it is a provision that encourages new exploration.

And we need to look at what is going to happen down the road. Right now we are using 91 million barrels of oil per day. Here in the U.S., we are producing about 10 percent.

If you add to the chart the petroleum liquids, to that chart, we are about 9 million barrels a day. So we are producing about 10 percent of our petroleum needs today, and that is estimated to go up by 2035 30 percent more to 112 million barrels.

If we are going to produce our part of that in the future, we are going to have to have incentives like we have in place to do that.

The CHAIRMAN. Thank you, Senator.

Senator Bingaman?

Senator BINGAMAN. Thank you all for being here. And first, I congratulate Mr. Hamm and all those in the industry who have been so successful at increasing production. I think it is a good thing for our economy. Obviously, it is strengthening our economy.

I have always thought that there are three primary goals that we have as a country with regard to energy. One is, we want to have an ample supply at reasonable cost; second, we want to have diverse sources of energy so that we are not dependent upon any one source; and third, we want to have an energy policy that does the least damage to the environment, does the least damage to the health of the citizenry. And so those are the three goals that we have out there.

Now, on tax expenditures, I know there is a lot of talk about reducing tax expenditures, and strong arguments have been made as to why those that relate to the oil and gas industry, at least intangible drilling costs, ought to be maintained.

I gather Senator Nickles's view is we ought to repeal section 199 for everybody, not just for the oil and gas industry.

Mr. NICKLES. I would think you—when you are doing corporate reform, having a uniform corporate rate, not a lower rate for manufacturers, would make sense. That is what I argued when I was on the committee, and I have not changed my position.

Senator BINGAMAN. One of the things that has complicated our discussion of energy tax expenditures is that we have some that were adopted prior to the Budget Act of 1974, and we have others that have been adopted since the Budget Act. And by and large, those that were adopted prior to the Budget Act which relate to the oil and gas industry are permanent parts of the tax code.

Those that have been adopted since the Budget Act are very limited in time in most cases, and they keep expiring. And those that relate to renewable energy have expired and come back, and we put them in place again and then we let them expire again.

I would just be interested in the panel's view as to whether—whatever we do with these expenditures, would it make good sense—it seems to me it would make good sense to put them all on an equal playing field in terms of their permanence. And, whatever we decide makes sense for the wind energy sector, if the production tax credit or some lesser version of the production tax credit ought to be a part of our tax code, then we ought to put it in place and leave it there for a while, just as the intangible drilling cost provisions that relate to oil and gas production are a permanent part of the tax code.

I do not know. Dr. Jorgenson, did you have a thought on any of that?

Dr. JORGENSON. Well, as I said in response to Chairman Baucus, I think we need to focus on the environmental issues that really count, Senator, and those issues have to do with the utilization of energy. They do not have to do with energy technology.

There is something that has not been mentioned that I think we need to focus on. Senator Baucus, I think, alluded to this, but let us put it front and center.

In December 1998—I am reading from a publication of the Energy Information Administration—the cost of a barrel of oil in Cushing, OK—this is West Texas Intermediate—the spot price FOB was $11.35. In April of this year, which is the last year for which we have data, April of 2012, that number was $103.32, 7 times greater. We have had an energy price crisis. You are all familiar with that. Everybody here has lived through this.

That peaked with the price in June 2008—again, Cushing, OK, West Texas Intermediate—of $133.88.

Now, what is the difference between this experience and our previous experience? These prices have not declined. In 1973, it was followed by a price collapse. In 1979, it was followed by a price collapse. In 1981, it was followed by a price collapse.

This has not happened. Something has changed in the world petroleum markets. These prices are permanently higher. This is the basis for the incentives that are driving the Bakken. You can talk all you like about tax incentives, and I am not against treating these symmetrically with every other form of production. I am talking about oil and natural gas.

But the point is that, once you do treat them symmetrically, you have to reckon with the fact that we have seen a sea change in the world petroleum market. We have prices that are 7 times as high as they were as recently as 1998. That is the most relevant fact about incentives that we are here to discuss.

Senator BINGAMAN. My time has——

Mr. HAMM. Could I respond?

Senator BINGAMAN. Go right ahead. Sure.

The CHAIRMAN. Sure.

Mr. HAMM. Dr. Jorgenson picked the lowest year in history almost. In 1998, if anybody here remembers, that is when our friends from Venezuela were dumping oil into America, trying to put all the stripper producers, particularly, and high-cost producers of America, out of business.

Prices before that had been in the $20 range, twice that. After that, they responded and came back to that after that point. The procedure was changed and the administration was changed in Venezuela. So that is how that happened.

When the Bakken began in early 2000, the price of oil was about $25 a barrel. So, yes, we have seen prices spike at $147 for 1 day and then they came back.

So right now, we are at about an $80 price range, close to that. We are about $15 under the Brent price, which is considered a world price here in the Midwest.

So prices go up and they go down.

The CHAIRMAN. Thank you, Mr. Hamm.

Senator Coburn?

Senator COBURN. Thank you, Mr. Chairman. And thank the individuals testifying.

I am having trouble getting this. Senator Enzi and I are the only two accountants on this committee. And the thing I cannot figure out is what we—the obvious is not being seen.

If you eliminate intangible drilling costs, actually, you decrease revenue to the Federal Government, and here is why. You take away the capital for exploration, and you thereby decrease the amount of revenues and the exploration in this country.

If you had no change in exploration and no change in discoveries, the tax revenue to the Federal Government would be the same over 10 years as it is with intangible drilling costs. There is no difference to what the government takes in. One is a delayed tax versus a fully captured tax at the time of the expensing.

So I do not get what the debate is. What I do not understand is why, when we are sending $400 billion a year out of this country and we have the potential to have a stimulus in this country of $400 billion a year by having the money that we would have sent out spent here, tax-free, not borrowed to create a stimulus, totally tax-free, and energy independence for our country, why would we not do everything we can to do that—still within the parameters that Dr. Jorgenson set out in terms of the clean environment? I do not get it.

We have the opportunity of a lifetime in this country to reinvigorate this country in terms of natural gas and propane and ethane. We are building new cracking plants. Conoco is going to do another one. They are employing 10,000 people in Texas right now to build a big cracking plant. It is going to put us at a major advantage over everybody in the world in terms of raw materials for almost everything that is made in this country, from plastics to chemicals to you name it.

We have an opportunity to expand our dominance in the world as manufacturers on the basis of what has happened in oil and gas exploration. And when we talk so foolishly about short, little bitty things, not looking at the big picture, I have trouble understanding that.

There is no question there will be no increase in revenue to the Federal Government by eliminating intangible drilling costs, no net revenue increase to the Federal Government, because you are going to shut down a third of the exploration.

And by the way, they pay out $100 billion a year. The oil and gas industry is the largest payer to the Federal Government in terms of taxes that there is today. They pay, on average, 9 percent more against earnings than any other industry in the country, and now we are talking about lessening that. But more importantly, we are talking about stealing the one thing that can renew America's dominance in terms of productivity and in terms of manufacturing edge. What has happened in the oil and gas industry is giving us an opportunity to regain our mojo. We must be very careful in how we approach this.

Amortization is something that my colleagues need to learn about, what it means in terms of the accounting rule. Under Generally Accepted Accounting Principles, we amortize expenses. What we have done with intangible drilling costs is said, we are not going to amortize those, we are going to allow those to be written off, just like we did with the 100-percent write-off that we gave in terms of new investments this last year.

And what has come about from that? What has come about from that is a tremendous increase in jobs, but, more importantly, a dynamite opportunity for this country to get back to where it was 20 years ago in terms of leading the world in terms of production, innovation, and efficiency. We should be careful.

I have one question for Dr. Jorgenson. If we had $400 billion in stimulus every year coming into this country that was not borrowed money and not directed by the Federal Government, but was in the market, what would be the net effect to our economy?

Dr. JORGENSON. Senator Coburn, you are going to be very surprised to hear this answer, because I am going to agree with every-

thing you said. This is not a debate about tax expenditures. That is second-order. Let us get the big picture in mind.

We are not talking about big revenue here. These expenditures have been limited for years to the independents. That is what Mr. Hamm discussed with us in his written testimony. So I think we are all on the same page here.

What we are not apparently on the same page about is essentially what the price system is doing for the energy sector. You are an accountant, or were, Senator Coburn, and you know that when you evaluate a project for a client like Mr. Hamm, if you ever had such an outstanding person as your client, I would simply say, if you ignore the price of energy, if you ignore the dynamism of our economy and the energy independence that is going to result from the new structure of oil prices in the world economy, you are fired. You are no longer Mr. Hamm's accountant, if you have done project analysis ignoring energy prices. And that is what we need to absorb.

Our market-based economy is working. It is working toward energy independence, and it is working toward a more effective allocation of energy resources toward the domestic sector, which you have emphasized in your question, Senator Coburn.

Senator COBURN. I would just say that as we—if the chairman would allow me. We have the opportunity to see oil prices go down if we become totally independent of outside resources, which gives us another boost in terms of our productive capacity.

The CHAIRMAN. Thank you, Senator.

Senator Menendez?

Senator MENENDEZ. Thank you, Mr. Chairman. Thank you, gentlemen, for your testimony.

Senator Nickles, as we look at all of these different provisions and think about what is the right tax policy, I look at the big five oil companies and, from my perspective, they are avoiding U.S. taxes by disguising what we would do here in the United States, which is a royalty payment, and instead of having a foreign royalty payment, having those countries charge them a tax and, in doing so, allowing themselves to write off these foreign taxes as a tax credit in the United States, and in turn, in my view, shortchanging the American Treasury and the American taxpayer.

Why should the American taxpayer be in the business of subsidizing foreign oil exploration? Why should we not close this enormous loophole as we have seen the Senate vote, a majority of the Senate vote, to force these giant oil companies to pay what they owe?

Senator NICKLES. Senator Menendez, I could not disagree with you more.

Senator MENENDEZ. I am not surprised, but I still want to hear your rationale.

Senator NICKLES. Well, I do. You are talking about dual capacity. You are talking about the ability to be able to deduct overseas taxes against the tax amount paid.

I think if your proposal was successful, we would not have international oil companies based in the United States. You would give such a tax advantage to Total, BP, Lukoil, other international oil companies that would not be facing this tax penalty. Double tax

would be the result of your proposal, in my opinion, so that they would not want to be headquartered here.

I am speaking for myself, not for anybody I work with, but tax policy has consequences. The windfall profits tax had consequences. This would have tax consequences. You would put us at such a competitive disadvantage internationally that the growth in international exploration would not be done by U.S. companies.

Senator MENENDEZ. But you would not deny that, in essence, what is happening here is that the same company in the United States drilling on Federal lands or water would pay a royalty, and, in essence, they are paying a royalty. The only thing is, they are disguising that royalty as a tax.

Mr. NICKLES. Well, I would not agree with that characterization one iota. Treasury has worked—IRS has worked for years with companies to figure out the complicated—and they are complicated, I will grant you that—I am going to say allocations. You are talking about royalties, you are talking about taxes, you are talking about all kinds of fees—we have all kinds of fees, as well—and trying to come up with a system that works. I think they have done that over years and years and years.

But I think if you are not careful, you could have a lot of unintended consequences.

Senator MENENDEZ. Well, I would be happy to get involved in talking about how we tax all U.S. companies' foreign income. I think that would be great. But what you criticized in your testimony, as I read it, is the administration's attempts to force the big five oil companies to play by the current rules that all other U.S. companies play by.

Now, it seems to me that no matter how wealthy or powerful the company, they should pay their fair share. The reality is that the big five will make $1 trillion in profits over the next decade.

I think the marketplace—I think Mr. Hamm said in his testimony that—I think he rightfully points out that oil subsidies going to the big five oil companies are "not providing the capital that is fueling America's march to energy independence." I agree on that view.

The reality is the marketplace has dictated that they will make more than enough money to continue to pursue their exploration, whether here or abroad. It does not seem to me that they need $24 billion of our collective money as taxpayers when they will make $1 trillion in profits, not proceeds, over the next decade. I do not think they are going to deter their march towards oil exploration if they lose those $24 billion over the next decade.

Mr. NICKLES. One, I do not think it is a subsidy. Two, I think they should be treated fairly. And three, if you tax U.S.-domiciled international companies punitively compared to other international companies, those other international companies will win in the leasing, the bidding.

The competition is fierce all around the world, and you will have less jobs, less jobs in the United States, and the U.S.-headquartered companies will become smaller, and the other non-U.S. companies will become much bigger, and I think that would be a terrible result.

Senator MENENDEZ. It is hard to believe $1 trillion in profit is not enough for a company to pursue their own interests.

One final question. You seem to be, from all the testimony I read, and someone can correct me if I am mistaken on that—the one witness who is willing to defend the fact that the big five oil companies receive the domestic manufacturing tax deduction—I can see how some might consider oil refining to be manufacturing—but other than a hole in the ground, do oil drillers actually manufacture?

Mr. NICKLES. Well, one, I do not defend 199, period. I think Congress—when you are rewriting the tax code, you should have a uniform corporate rate, not a lower rate for manufacturing. Some companies do both. Some are manufacturers, some are service.

But to single out five companies and say, "We are going to have a lower manufacturing rate except for you," I think, is absurd. Congress should not be picking winners or punitively picking losers and saying, "We are going to give a lower rate for everybody but you. You are too big." That is just bad tax policy.

Senator MENENDEZ. Well, I agree. I will close, Mr. Chairman.

Look, other than—sometimes we do want to incentivize an effort. Manufacturing may be one of them. I just do not understand how extracting oil from the ground is manufacturing, because that would make everybody who owns a well with water a water company that should be subject to getting the same deduction.

I do not think it makes the type of tax policy we would like. But I thank you for your answers.

The CHAIRMAN. Thank you, Senator.

Before I turn to Senator Wyden, there is just one observation I would like us all to consider. Section 199 was enacted, as we all know, to replace something called the Foreign Sales Corporation and Extraterritorial Income exclusion, or FSC/ETI. FSC/ETI was in the law to counter the advantage that VAT countries had because the VAT that, say, a European country had was rebated back to the company. They gave them a subsidy for exports. So VAT countries had an export subsidy.

We took our regime, FSC/ETI, to—it was taken to WTO. It was ruled, at WTO, illegal. So we then came up with our 199 manufacturing incentive. It was very crude, but it was a very rough offset to deal with the ability of VAT countries to get a subsidy on exports.

That is the origin of 199, which obviously raised the question of the degree to which we should try to enact something that deals with that VAT advantage.

Senator Wyden?

Senator WYDEN. Thank you, Mr. Chairman. I think it has been a good hearing, Mr. Chairman, and I think we have sort of had a wakeup call for just how tough this is going to be to actually write a bill.

And let me start, if I might. For the last 5 years, I have worked with two very thoughtful conservatives here in the Senate, Senator Gregg and now Senator Coats, and another Democrat, Senator Begich, and we produced an actual tax reform bill.

It is modeled after the 1986 legislation, where you clean out a lot of the clutter, hold down the rates, keep progressivity, and it

has been scored by the Joint Committee on Taxation as essentially generating revenue.

One of the toughest parts of actually sitting down—and Senator Gregg and I spent week after week after week for almost 2 years—was dealing with these issues we are talking about here today, the energy question. And I came to those discussions saying—highlighting a point we have heard this morning: that natural gas is a huge strategic American advantage. People ought to understand that right at the get-go.

And we ought to be talking about renewables, and some renewables that hardly ever get mentioned around here like hydropower and geothermal and other promising renewable sources. And yet, at the same time, we were actually able to write a bipartisan bill.

And two of the principles that we have touched on today I think are going to be key, as Chairman Baucus and Senator Hatch lead us now into tax reform, and one of them is that we cannot have a double standard on tax breaks. We cannot have a double standard on energy breaks. And today the oil and gas production side gets a permanent tax break, while renewable energy gets a temporary tax break, and often those expire. So we are going to have to get rid of the double standard.

The second issue that we have sort of touched on a little bit this morning is the idea that we ought to "get rid of everything." But when you say get rid of everything, it sort of has an asterisk after it, because then we say intangible drilling costs ought to be able to go forward as well.

So let me ask you four, because you have given us thoughtful and valuable testimony: what would a level playing field on the energy side look like so we can advance the cause of energy independence, but also move us away from the double standard and this question of let us get rid of everything, without putting an asterisk by it?

Just go down the row. Level playing field. And, Senator Nickles, you have been at a number of the discussions that took place on tax reform, and you and I have talked particularly about the effort I started with Senator Gregg.

So let us hear your thoughts—level playing field.

Mr. NICKLES. A couple of comments. One, I think you kind of threw in tax breaks, and then you said, well, renewables. There is a difference between deductibility and subsidies. Most of the renewables get subsidies. Wind, you are talking about, what, $0.02 per kilowatt hour multiply.

So there is a difference between a subsidy and a deduction. And I think allowing deductions makes sense. Tax credits do not. Tax credits are basically a deduction off your taxes. So I would make that kind of assessment. One is much more of a subsidy than the other, which is basically normal operating procedure. You could go into greater detail, but there are lots of both throughout the tax code, not just in energy. I am talking about throughout the tax code.

And I would also say, kind of since you are talking about a broader theme, tax all income once. There is a lot of income that is not taxed.

So the tax code allows deductions. Expenses—you have a business and you write off your expenses, but in some cases, you get tax credits. And then in some cases, you do not have to report the income. You are not taxed on some income.

Tax it. So that way, you broaden the base and unify—or the simpler way is to allow deductions, but not the credits.

Senator WYDEN. Congressman Sharp?

Mr. SHARP. Well, first of all, I wish you well in finding the answer to that. I do not pretend to have it, and I know everybody in the country wants a level playing field in every policy area, and we have never seen one. So I am a little skeptical of our capacity to reach that.

Let me say something, though. I think the harder question that you have been dealing with is, what is the purpose of what you are trying to accomplish with the nature of the provision? That is partly what Senator Nickles is getting at.

These provisions are not all equal in the way they operate. And I do not pretend that I know this, but you folks are more sophisticated on it, but let me give you an example of a production tax credit.

I think it was extremely important in this infant industry of wind. I do not have any doubt about that. What I do not know is how important it really is in the future and how much you can justify it at what level, because the goal was to buy down costs, to get an infant industry going, and that has happened.

Now, I cannot tell you, I do not have the information on, have we reached that sort of level? That is a very useful thing for the future of this country and its international competition and our environment and everything else. I do not have any doubt about that.

But I do not think it deserves a permanent, long-term guarantee that every kilowatt hour gets subsidized. In fact, that just means we are subsidizing energy consumption, which, in the long run, is not the smartest policy.

The same applies to the ethanol tax credit. Once you went to a mandate, why would you engage in double policy that subsidizes, as well as mandates? In wind, we have a number of mandates in a number of States, the Renewable Portfolio Standards.

So one of the practical problems you have is, not only do you need to look at these comparative things, but you need to see what other policies at the Federal or State level are in place.

Now, frankly, at the moment, all of these policies are politically under attack by various forces in various States and around here, and so I do not know what the outcome is going to be. So I have only made the answer harder, but I do not honestly believe that the notion of whether it is permanent or impermanent is the answer. Frankly, I think all of these things need a radical and intense review about every 5 years anyway.

Senator WYDEN. Dr. Jorgenson? I know my time is up, and just if you two can give me an answer——

Dr. JORGENSON. With the chair's permission——

Senator WYDEN [continuing]. On the level playing field.

Dr. JORGENSEON. With the chairman's indulgence. Senator Wyden, I would like to commend you and your colleagues for your excellent work on tax reform. I think we all need to keep in mind

that the Tax Reform Act of 1986 was the result of another bipartisan effort.

And I would like to commend to you the consideration of taxes on energy use, which is not part of what you just described.

In order to have a pretty level playing field, we need to recognize the environmental hidden costs associated with the combustion of fossil fuels. Taxes based on energy use are going to favor renewables permanently. They are going to favor natural gas permanently. They are going to provide a fair tax on petroleum permanently. And they are going to recognize the hidden costs associated with coal.

We are talking about 1.5 percent of the GDP for that kind of level playing field.

Senator WYDEN. Mr. Hamm, quickly?

Mr. HAMM. Good question on the double standard. Things have always been double standards, I think.

The CHAIRMAN. Very briefly, Mr. Hamm. I have Senators who want to speak.

Mr. HAMM. We brought a trade case here in DC at the Commerce Department one time when we were being dumped on by Venezuela and some other countries that were dumping oil here below their cost of production. And it was rejected, even though steel, cement, everything else could have gone forward, but not with oil. They ruled against us.

And subsidies, just one short comment. You want to talk about credits and subsidies, I have drilled 17 ground holes in a row and, let me tell you, Webster says that subsidies are a payment. And I must have got to the wrong window, because nobody paid me. [Laughter.]

Senator WYDEN. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Snowe?

Senator SNOWE. Thank you, Mr. Chairman. And thank you for holding this hearing. And I want to welcome our former colleagues, Senator Nickles and Congressman Sharp—with whom I served in the House of Representatives—who have had distinguished careers and contributed much to the issues that we are discussing here today both on energy and on tax policy. And we are very fortunate to have this extraordinary panel with such broad expertise in this critical area, though it is regrettable that we do not have a national energy policy.

In fact, I was thinking, the last time we marked up an energy bill was in 2007 here in the Finance Committee when oil per barrel—the cost of oil per barrel was about $60. And today it averages $86. Last year it was upwards of $95, which is the issue that I want to get to today with respect to tax reform.

And to what degree do you believe that we should have any tax credits for—incentives for energy efficiency and conservation? Because I happen to think that you can maximize, I think, the investments in this country, and certainly on the part of the consumers, if they have the ability and the opportunity to make those investments in weatherizing their home, providing insulation, providing new forms of technology to conserve.

It certainly has proven to be very beneficial. Consumers last year paid the most for energy in the history of our country, $650 billion. And so, while we see the highest levels of oil and natural gas production in 14 years, we are also seeing the highest consumer costs in the history of our country, and I know that is true in Maine.

The *New York Times,* a few months ago, did a front-page story on a couple who had virtually a very low income, $1,200 a month, and yet their home heating bill was $3,600 for the season. And a company came in and volunteered to insulate their house, and they were able to improve the efficiency by 46 percent. It saved more than $1,200 with respect to their energy bill.

The point is, I think that we need to provide some type of tax credits. Or, on the other hand, when you have overall tax reform, which I hope we will, because it is long overdue, how low do the tax rates have to go so that it would benefit consumers to make these investments otherwise if they did not benefit from tax credits?

We have had tax credits for energy efficiency, and, unfortunately, they were reduced to $500. In the stimulus plan, they were up to $1,500 and a 20-percent tax credit of the overall costs, and it was a huge bonanza for many people in Maine, because we have the oldest housing stock in the country. And so people did make those investments because it was precisely that incentive. And I happen to think we should be encouraging that.

But I would like to hear from you. If we do not have these types of tax credits, then how low do the tax rates have to go in overall tax reform to accommodate this?

We could write 80-percent tax credits for companies, for production for oil and gas companies, and yet only 20 percent essentially of any type of tax credits for individuals.

Senator Nickles?

Mr. NICKLES. You do not really want my answer, do you?

Senator SNOWE. No. [Laughter.]

Mr. NICKLES. I am not a big fan of tax credits, but the difference would be, one, you mentioned comparing companies to individuals. One is certainly a subsidy for individuals. You are writing the check for the individual, you are paying 20 percent of the cost. We are not asking the government to pay 20 percent of the cost of drilling a well.

We are allowing individuals to expense the cost of drilling a well. There is a difference. That is not a subsidy, in my opinion.

But the good news is, Senator Snowe, I think help is on the way. I think the lower natural gas prices—the Marcellus field in the northeast is one of the most productive fields in the world. It will grow. It will grow substantially. Natural gas will have a competitive advantage in the United States.

I believe Harold Hamm or somebody, or maybe Congressman Sharp, mentioned the fact that natural gas is selling for the equivalent of about $12 to $20 per barrel or $2 per MCF or $2.50 per MCF compared to Europe, which is like 5 times as much, 6 times as much, 8 times as much.

So we have a competitive advantage for your industries now, natural gas being much, much cheaper. And I know a lot of your homes in the northeast and in Maine are on fuel oil, not natural

gas, but my guess is conversions will be taking place and there will be a significant savings that homeowners will enjoy for decades.

Senator SNOWE. We are very limited in Maine, and it costs about $1 million a mile to run the pipeline. So we have to have incentives in that regard.

There are some areas in which they are making those decisions to do it, but, obviously, it is not pervasive. We are the most dependent State in the country on home heating oil.

Mr. NICKLES. I can remember your many, many efforts for low-income energy assistance over the years and wrestling with you on some of those issues on the Budget Committee and so on, and I compliment you for your effort and for your representation.

I do think, though, the network expansion through the distribution lines is increasing the connections so more and more people can take advantage of this very abundant, plentiful, cheap resource that we have in the United States.

Senator SNOWE. Congressman Sharp?

Mr. SHARP. Well, Senator, I certainly, one, believe it is important in this Nation for us to put an emphasis on efficiency for economic, as well as environmental reasons. And certainly, if we are going to have a tax code—as it is today, it is stacked full of all kinds of incentives—this is a good thing to do.

But I do not think that is the best long-term strategy. One thing is, we need to help Americans understand that there are going to be radical shifts in price and they need to prepare for them as they make home decisions and all kinds of others, and to pretend otherwise undercuts them. And that is not what you have been doing, but I am suggesting that is what often happens.

The second thing is, if we are going to look at these incentives, you know better than I do that there are quite different impacts on different homeowners and different consumers. It depends on where you are. Did I buy my home already upgraded and I have already paid for all these upgrades, or am I the one who gets the taxpayer to pay for my upgrades?

And then we get into the incentives—I think they have all now expired—for purchasing vehicles that are huge, from an individual's point of view. I do not think they can be justified in terms of helping the consumer in that case. I think the only legitimate justification is the effort to try to bring some new technologies into the market or to bring an infant industry into place.

But to be frank about it, I prefer the general approach that Dr. Jorgenson has been recommending, which helps us answer some of these broader questions.

Dr. JORGENSON. Senator, I think we have to recognize that efficiency is an engineering concept, a technical concept. And I think this committee ought to shift its focus to cost-effectiveness; in other words, making the best use of every taxpayer dollar.

Now, addressing the question you raised about efficiency and conservation, the price system works. It produces massive energy conservation. Oil use in this country has plummeted over a period extending over decades. It is now 50 percent of what it was as recently as the 1970s. That is all due to energy prices.

Prices work in the home fuel market, as Congressman Sharp just reminded us.

I am reading from a publication of the Energy Information Administration, which I quoted earlier. I am looking at U.S. Henry Hub natural gas price histories. My geography is not all that great, and it certainly is not very recent. I believe that Henry Hub is in the State of Oklahoma.

That is an area where prices of natural gas were as high as $12.30 per 1,000 cubic feet as recently as 2008 in the midst of the oil price run-up. And as Senator Nickles reminded us, it is now $2.43. That is the figure from May 2012, which is the latest figure.

We have to use the price system. That is the whole idea of using a tax-neutral approach in order to achieve our energy goals, just like our other goals, and the price system is working, Senator.

The CHAIRMAN. Your time has expired.

Senator SNOWE. Thank you.

The CHAIRMAN. We can go back, if you want another round.

Senator SNOWE. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Carper?

Senator CARPER. Thanks, Mr. Chairman.

I just want to say to Senator Nickles, my old compadre—young compadre—and Congressman Sharp, a good friend from the House: it is just great to see both of you.

Dr. Jorgenson, I do not know either you or Mr. Hamm well, but if each of you is half as good as I am hearing from my colleagues, this is a great panel, and we are delighted that you are here today.

I want to just follow up a little bit on what Senator Coburn was saying earlier. I think there is reason to be optimistic about the future of our country for a number of reasons, but one of those is—and he alluded to some—we have become Saudi Arabia. We are and have been for some time the Saudi Arabia of coal. We are now apparently the Saudi Arabia of natural gas.

I understand that we have become a net exporter of oil, and, while we are not the top producer of oil in the world, I think we might be number three or so. But we apparently have more drills going today, more wells producing today, than I think maybe the rest of the world combined, which is pretty amazing.

I chair the subcommittee that deals with nuclear safety, and we have four brand-new nuclear power plants being built in this country for the first time in 25 years, and I am encouraged with the technology and the safety of the technology it provides.

CAFE, we had adopted CAFE legislation, fuel efficiency for vehicles, in 2007. Congressman Sharp, that was something I know you had a whole lot of interest in, and we appreciate your help on that legislation. But we are ramping up fuel efficiency standards for cars, trucks, and vans to I think about 36 miles to a gallon by 2016, and I think by over 50 miles per gallon by about a decade after that.

Our friends from GE, I think, are online for building a new solar energy product out in Colorado that is going to be at grid parity, we are told, by 2016. And we actually have the ability to use natural gas, I think, to not just supplant coal and make emissions of utility plants cleaner and safer, more environmentally friendly, but also to use it to supplant the use of diesel fuel in a lot of our large

vehicles. That is all pretty encouraging stuff, very encouraging stuff.

We have seen across the country windmill farms deployed. They are producing a lot of electricity. Senator Snowe and I have been working on an idea to try to incentivize the building of windmill farms off of the east coast to capture the wind and use a lot of that to supply some of the hybrid vehicles that are being built, and going to be built in the decade to come.

One of our ideas is, rather than just providing a production tax credit, which is what we use to incentivize the building of windmills onshore, what we are suggesting is a different kind of investment tax credit, which would be good for a limited period of time—a limited offer. And it would basically say the first 3,000 megawatts of generating capacity developed off of our coast, or however many windmill farms were developed that would use it—first one, second one, third one—when you get to 3,000 megawatts, that is it, that is when the tax credit goes away.

But the idea is just to get it started, show that we can do this, and we can do it successfully.

I would just ask, if I could, Dr. Jorgenson, would you and Congressman Sharp just respond to that idea? If we just did rely on the production tax credit, we are not going to build any windmill farms off of the U.S. anytime soon.

The investment tax credit is what is needed, and this is a different kind of approach, not a permanent one, but as I said, again, a limited time offer. What do you think?

Dr. Jorgenson or Congressman Sharp?

Dr. JORGENSON. My only question, Senator, is how you are going to pay for this. That is all. I think that we have to recognize the fact that the budgetary climate, like the world oil market, has undergone a major change, and we need to take that into account when we are discussing tax policy, when we are formulating tax policy, and when we are enacting tax policy.

And so I think we need to ask ourselves, is the market doing the job? Is it sufficient to bring forward these resources that you are talking about? And I think the fact is that it is bringing forward enormous resources in oil, in natural gas, and in renewables.

There are many applications of renewables, mainly wind energy, which you and the Senator from Maine have been focusing on, which are cost-effective independently of any sort of tax breaks. And higher oil prices will make them cost-effective for a very, very long period of time.

Senator CARPER. Congressman Sharp?

Mr. SHARP. Senator, I am a great admirer of all your considerable work on these issues. I am not really prepared to comment on what you are asking, because we know that it is a lot higher cost to do offshore than it is to do onshore, and I think there is a serious cost-effectiveness question that I am sure you are looking at as you consider just how far we ought to go.

Of course, you have already taken into account that you assume this is an infant industry that you are only trying to get——

Senator CARPER. Just get them started.

Mr. SHARP. But I am not sure how much we really have to learn about offshore, since so much of it is going on in Europe. What we

see happening in China, what we see happening in Denmark, what we see happening in Great Britain, these can be of benefit to us—they are not always competitive to us—and we can let them subsidize and buy down the cost of technologies, and then we can buy up the technologies earlier.

So I am not as quick to endorse that everything has to be done in America, much as I love this country and believe we ought to be the source of a lot of the technology.

Senator CARPER. With respect to nuclear power, one of the reasons why we are building some new nuclear power plants, as you know, is because we provide some financial assistance and encouragement through the Federal Government.

Let me go back to something that you said, Dr. Jorgenson, if I could. I think you said we have seen a sea change in the price of oil. And here in this country, I think we produce about 2 percent of the world's oil. However, about 2 percent of that is in oil reserves, and we use about 20 percent on a daily basis of the oil that is consumed in the world.

When you look forward, if we look at China coming online, we bought 11 million, 12 million cars last year, with this year expecting to sell maybe 14 million, maybe next year 16 million, in China. I think last year they caught up with us, and they have a whole lot more people, as we know.

What are the implications for that consumption of oil in those countries? What are the implications there for the price of oil across the world?

Dr. JORGENSON. China is not alone, but the point is that China and India and many countries which have finally discovered the key to economic growth are going to be the source of growth of demand for a very, very long time to come. That is what is behind the sea change that has occurred in world petroleum markets.

And we need to respond to that, and we will respond to it. We will respond to it by having more energy efficient vehicles. We will respond to it by using hybrid vehicles when that is appropriate. And we will respond to it, as I said to Senator Snowe, by energy conservation.

That is exactly what the price system is going to do. It is also going to push us very strongly in the direction of domestically produced fuel, natural gas that is available now in large quantities due to the very highly skilled work that has been done by Mr. Hamm and his colleagues in the oil and gas industry.

Senator CARPER. Now, when the U.S. auto industry and others who sell cars, trucks, and vans here look at the ramp-up in fuel efficiency standards in the next 10–15 years, I think they have a concern that since we do not have a very high tax—at least Federal tax; our State tax is really on motor fuels—they are concerned within the auto industry that there is not going to be an incentive for people, and the price of oil will go down, and there is not going to be much of a market incentive for people to buy energy-efficient cars. So we need to keep in place the tax credits that we have to incentivize some of those purchases.

Would your message to the auto companies be, "Chin up?"

Dr. JORGENSON. Well, let me just say, on tax policy—let us just focus on that—my proposal that I described here for an environ-

mental tax system would raise the taxes at the Federal level on motor fuels by about $0.39 per gallon at the pump. We are talking about an incentive to conserve. We are talking about an incentive to use more efficient vehicles. We are talking about achieving those goals, not just writing them into the law.

Senator CARPER. Over what period of time would that be?

Dr. JORGENSON. This is a period of time—well, this is an incentive that is going to be permanent, and we know that that——

Senator CARPER. In terms of a ramp-up, it would be implemented all at once or over a period of months or years?

Dr. JORGENSON. I would certainly put it—we are not talking about big numbers here; $0.39 per gallon, I think that is something that could be introduced in the code tomorrow.

Senator CARPER. Thanks very much.

Mr. NICKLES. You probably do not want to introduce it, not before November. [Laughter.]

The CHAIRMAN. Let me just ask a question that came to my mind, Dr. Jorgenson. You keep talking about letting pricing determine technologies and development, and I understand that is a big, huge driver. And I agree that oil demand has pushed up commodity prices significantly, whether it is China, India, or other developing countries.

But the question comes down to price volatility. Essentially, I presume you are saying there is not much the tax code can do about price volatility. If prices are going to be volatile, they are going to be volatile.

Look at coal. The demand now is soft with demand for natural gas rising. It is just that the world is so complicated. There are so many different dynamics worldwide, many of them unexpected.

So I presume when you say, let price decide, you are saying, let the price be what it is and let entrepreneurs and developers just do what they can and develop whatever they can given the price signals they have seen.

Dr. JORGENSON. Well, I would like to go back to a point you raised earlier, Senator. You said that we need to have a diverse source of energy supply, and we do in this country. That does not mean it has to be the same diverse supply every year or every decade. Things change, including technology and supply and tax policy. And so we need diversity. That is something that contributes to low volatility.

But this country has, as Mr. Hamm would be the first to tell you, a very competitive industry on the supply side of the fossil fuels. We are a very competitive industry in the supply of renewable energy sources, both solar and wind, and, therefore, you should think, as you just suggested, in terms of relying on these very, very well-structured markets.

But they are not going to do the job by themselves. That is where we come to the hidden costs of energy combustion that I have harped on over and over in this hearing. And so we should not say that free markets are the answer, but nobody here has said that. I have not heard a single voice in support of that on the panel or from the Senators here who are present.

So we need to let markets work, but we have to recognize the fact that the government has a role, and I have tried to spell out what that should be.

The CHAIRMAN. Mr. Hamm, what should the government do with, to use Dr. Jorgenson's term, externalities, that is, those costs, environmental costs, associated with fossil fuel?

Mr. HAMM. Well, certainly, I think the marketplace will let it work, and it has worked. More supply brings down the price of oil. We see that that is coming on.

The CHAIRMAN. But the environmental costs of fossil fuels.

Mr. HAMM. The environmental costs of fossil fuels, as I see it, in our business at least, are minimal. We are drilling up there with eco pads, we are not disturbing much of the land. We are very good stewards of the land. We have small costs of production of these fossil fuels as far as environmental issues go.

The CHAIRMAN. Senator Hatch? Thank you.

Senator HATCH. I want to thank all four of you for being here today. I have been listening very carefully, and I want to compliment you, Mr. Hamm, for having the guts to do what you have done.

I agree with you on the intangible drilling and development cost deduction. It has been a tremendous benefit for the oil industry, at least the independent oil industry in this country, without which I do not think we would be as far along as we are.

The real question that we have is, should we have any of these tax expenditures or deductions in lieu of the fact that we might reduce corporate tax rates low enough so that that would take care of it?

But in your industry, it is a special industry, there is no question about it, and there is a lot of risk involved, a lot of money involved. You can go broke easier in your business than almost any business I know, and I just want to compliment you for what you have been able to accomplish and the guts that you have had to get the things done.

We would like you to weigh in and help us to understand what we really do need to do with regard to tax reform.

Professor, I have enjoyed your remarks very much today.

Dr. JORGENSON. Thank you.

Senator HATCH. And of course, Phil, it is great to see you again, and Don. We appreciate all that you have had to say, both of you. And this has been a very interesting hearing for me.

So with that, thank you.

The CHAIRMAN. Thank you, Senator. I might say, though—and I do not know who first coined this phrase—there is no such thing as a free lunch. But I am thinking of the tremendous gas development in eastern Montana, but also the very significant impacts on the community—schools, waste water treatment, clean water, housing, huge adverse impacts.

Now, there are some very positive impacts, the revenue and so forth, but there are huge adverse impacts to these local communities. Law enforcement just cannot keep up with the boom-and-bust that is developing in, let us say, eastern Montana.

So I do think we all have a role to play together to kind of help each other with respect to those provisions.

Let me ask this. Is there anything else that anybody wants to say, or has anybody said anything so outrageous that it needs a response, from either side of the table?

Dr. JORGENSON. Could I correct an error?

The CHAIRMAN. Sure.

Dr. JORGENSON. The Henry Hub is in Louisiana. I realize everybody else here knew that. I had to read it.

The CHAIRMAN. Everybody knew that. [Laughter.]

Thanks, everybody. This is, obviously, a very complex, extremely important subject. It is not the last time we are going to be dealing with it. So, I would just urge us to keep working together as we solve it.

So thanks very much for taking the time. The hearing is adjourned.

[Whereupon, at 12:07 p.m., the hearing was concluded.]

APPENDIX

ADDITIONAL MATERIAL SUBMITTED FOR THE RECORD

Hearing Statement of Senator Max Baucus (D-Mont.)
Regarding Tax Reform and U.S. Energy Policy
As prepared for delivery

The writer Hunter S. Thompson once wrote, "Anything worth doing is worth doing right."

I couldn't agree more. Our country is at a pivotal moment in energy policy. It's important we do it right. There have never been so many worthy energy options. They're worth doing, and they're worth doing right.

Thankfully, we're already making progress diversifying our energy portfolio. We have an opportunity, through tax reform, to drive that progress even further.

When I first ran for Congress, America was reeling from an oil embargo. Gas prices had doubled. At one point in early 1974, 20 percent of American gas stations had no fuel at all.

It was clear that we could never again allow America to be so dependent on a single source of energy. Since then, we have boosted a more diverse, efficient and productive energy policy.

Advances in technology mean more domestic oil and natural gas are available than ever before. We also have more renewable, clean energy sources. But we can do more.

We are still too reliant on fossil-based energy resources. 94 percent of the energy used in the transportation sector comes from oil. Only ten percent of our electricity consumption is generated from renewable or clean energy resources. Our country needs a diverse energy sector like we have in my home state of Montana.

Montana is an energy state. We are one of a dozen states that produce more energy than they consume.

In Eastern Montana, at the edge of the Bakken formation, our oil and gas fields are going through a renaissance. Technology has unleashed the oil and gas potential and created thousands of jobs.

In Central Montana, wind turbine blades harness the power of the Chinook winds. Wind farms in Montana now power one hundred thousand homes. Three new wind farms are being built.

And in Western Montana, biomass powers sawmills and adds electricity to the grid.

Montana also produces 45 million tons of low-sulfur coal each year, and we're leading the way on carbon capture and sequestration technology.

National energy policy should replicate this mix.

If we don't develop U.S. energy policy, we will continue to be subject to the whims of foreign dictators and sudden spikes in the price of oil. We will be one hurricane or one regime change away from $6 gasoline. That would be disastrous for our economy.

A $1 increase in the price of gasoline costs Americans $110 billion each year. We are all too aware of this in Montana.

Our state is a perfect example of how energy policy choices have real consequences for the economy.

The tax code is an important driver. Tax incentives provide 85 percent of the energy sector's federal support. These provisions cover almost every conceivable form of energy: nuclear; oil; gas; coal; wind; solar; and geothermal. Tax provisions also cover a wide variety of energy use: from powering common home appliances to running massive factories.

But these incentives can be improved. Currently, the type and level of tax incentives varies for different technologies. Some incentives are temporary. Others are permanent. In some cases, there are multiple incentives for the same technology. The result is inefficiency.

Provisions that don't create jobs or improve our energy policy should expire or be repealed.

Right now, we're providing direct incentives to select technologies and industries. Perhaps we should adopt a more technology-neutral approach and stop playing favorites.

That way, we can still help new energy technologies develop, but let the market decide which ones stick.

Tax reform is an opportunity for the energy sector to make real progress. It can move us further from foreign oil. It can lead us down a road to diverse, clean and secure energy resources.

So let us seize this opportunity. Let us use tax reform to ensure our country has a more secure and diverse energy supply. And as Mr. Thompson wrote, let us find the things worth doing, and let us do them right.

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American Energy Independence within a Decade: The Importance of Maintaining Tax Provisions Critical to U.S. Independent Oil and Natural Gas Producers

Harold Hamm
Chairman and Chief Executive Officer
Continental Resources, Inc.

June 12, 2012

My name is Harold Hamm and I'm Founder, Chairman and Chief Executive Officer of Continental Resources. Founded in 1967 and based in Oklahoma City, Continental is a Top 10 petroleum liquids producer in the United States and the largest leaseholder in the nation's premier oil play, the Bakken Play of North Dakota and Montana.

Only in America can the thirteenth child of a sharecropper turn a one-man, one-pump-truck operation into one of the nation's largest oil companies.

And I'm here today to talk to you about the American dream of energy independence and what it will take to get there within the next decade.

There is good reason that when the tax code was reformed in 1986, a bipartisan majority recognized the importance of leaving the tax provisions of the American independent oil and gas industry intact. This decision played a significant role in the technology-driven oil and gas renaissance we are currently experiencing.

Just seven years ago, America was importing 60 percent of its oil. But with technological advances in horizontal drilling over the last 15 years, we now import less than 45 percent of our oil, and we count natural gas reserves in centuries. However, the development of horizontal drilling took trial and error. Without the current capital provisions in place, we would not have been able to fail over and over again, which is what it took to advance the technology needed to produce the Bakken and numerous other resource plays across America. And this technology that allows us to drill two miles down, turn right, go another two miles and hit a target the size of a lapel pin is the technology that has unlocked the resources that make energy independence a reality.

This paradigm shift in American oil and gas exploration brings with it high-paying jobs, increased tax revenues, and economic growth, while lessening our dependence on foreign oil. But it depends on substantial amounts of capital. The tax provisions that let us keep our own money to reinvest in drilling are crucial to keep this energy revival going.

More than 18,000 independent producers drill 95 percent of U.S. oil and natural gas wells and account for 67 percent of U.S. production. The average company size is 11 employees. They typically invest more than 100 percent of their revenue in finding new domestic energy sources and often times raise another 30 to 40 percent in additional capital.

Independent oil and natural gas producers are in the exploration and production segment of the industry, with no marketing operations and very limited refining operations. We have no opinion on the viability of tax provisions for multinational integrated oil and gas companies like Section 199 and Foreign Tax credits. These are not the tax provisions providing the capital that is fueling America's march to energy independence.

In order to achieve American energy independence, we must maintain tax provisions critical to independent oil and gas producers, including Intangible Drilling Costs (IDCs) and Percentage Depletion.

IDCs permit companies to deduct the entire cost of drilling a well during the first year rather than spreading it out over a period of years. This is only available on wells drilled in the United States. It is not available to major integrated oil and gas companies on any wells drilled outside the United States.

IDCs have been available since 1913 and are consistent with how other businesses are allowed to treat similar costs to help manage risk. Examples include R&D for the technology industry and development costs for the coal mining industry. Most importantly, IDCs mean jobs because they provide the capital to drill the next well. The negative economic impact of a repeal would be substantial, placing thousands of jobs at risk—58,000 direct, indirect and induced U.S. jobs this year alone and 165,000 direct, indirect and induced U.S. jobs by 2020.

Percentage Depletion is a 15 percent deduction utilized by independent producers and royalty owners. It's limited to the first 1,000 barrels a day of production. Congress eliminated Percentage Depletion for major integrated companies more than 30 years ago.

Percentage Depletion has been available to independent producers since 1954 as an incentive to stimulate continued investment in a high-risk industry. It provides the capital and outside investment small producers need to drill the more marginal wells, which make up 20 percent of U.S. production.

Eliminating IDCs and Percentage Depletion would result in:

- The loss of thousands of industry jobs, which pay double the national average for manufacturing jobs.
- A 30 percent decrease in drilling activity.
- Increased energy costs for the consumer, resulting in decreased overall GDP.

Good things flow from American oil, and we are blessed with a huge supply that is ready to be tapped. The result would be more high-paying jobs, more tax revenues, and stronger economic growth.

For example, a new rig in North Dakota doesn't just benefit the economy there, it ripples out across the country—creating steel industry jobs in the Midwest, pipe-fitting jobs in the East, and trucking jobs across the United States. Every new barrel of American-produced oil creates benefits that flow across the country.

In addition, America now leads the world in natural gas production. We have over 100 years of reserves, and the low cost of natural gas is bringing manufacturing back to America, creating thousands of jobs.

The benefits of American oil and gas include:

- The oil and gas industry helps support 9.2 million high-paying jobs in the energy sector.
- With the right government policies in place, the oil and gas industry is poised to create an additional 1.4 million jobs by 2030.
- The oil and gas industry keeps dollars, jobs and tax revenues in America and not overseas.
- America's dependence on imported oil fell below 50 percent last year for the first time since 1997.
- Recent estimates have America sitting on oil and natural gas reserves the size of Saudi Arabia's.
- America is endowed with 163 billion barrels of recoverable oil—enough to replace Persian Gulf imports for the next 50 years.
- The oil and gas industry sends $100 million every day to the federal government and millions more to state governments.

There are unintended consequences of tax code changes to an industry that holds the key to job creation, balance of trade and national security. Most concerning is the fact that eliminating tax provisions for independent oil and gas producers would slow down, if not stop, America's march to energy independence.

Sources:

- *American Petroleum Institute, Evaluation of Proposed Tax Changes on the US Oil & Gas Industry 2010*
- *Oklahoma Independent Petroleum Association, 2009 Fall Conference, Elizabeth K. Brown*
- *Independent Petroleum Association of America*
- *2009 Bureau of Labor Statistics Data*
- *2009-2010 Energy Information Administration Data*
- *Standard & Poor's Compustat North American Database*

- **The often-mentioned goal of U.S. energy independence could become reality by the end of the decade, according to analysts with Raymond James. As early as 2020, net U.S. crude imports will "reach essentially zero" thanks to booming oil production in Texas and North Dakota, growth in biofuel output and rapidly falling demand. (Raymond James)**

- **The cumulative impact of new production, reduced consumption, and associated activity may increase real GDP by 2 to 3%, creating from 2.7 million to as high as 3.6 million net new jobs by 2020. Furthermore, the current account deficit could shrink by 2.4% of GDP, a 60% reduction in the current deficit, by 2020. This may also cause the dollar to appreciate in real terms by +1.6 to +5.4% by 2020 (Citi GPS)**

- **These estimates suggest that the energy sector in the next few decades could drive an extraordinary and timely revitalization and reindustrialization of the US economy, creating jobs and bringing prosperity to millions of Americans, just as the national economy struggles to recover from the worst economic downturn since the Great Depression. (Citi GPS)**

Senate Finance Committee Hearing
Tax Reform: Impact on U.S. Energy Policy
Questions for Mr. Hamm
June 12, 2012

Questions from Senator Kerry

1. Do you agree that one of the primary roles of government is to address market failures? If so, then what does that mean in the energy context when we are talking about pollution?

   A: As an independent business man in America, I believe we should allow our market systems to work. The federal government should take a very limited role in markets and only if there are excessive manipulations.

2. Your testimony does not address the external costs to society of fossil fuel production. Do you believe there are external costs from fossil fuel combustion in terms of public health? If so, what is the most economically efficient way to address those costs?

   A: I only speak as an expert in oil and gas production in America, with that being said, this energy is some of the cleanest and most efficiently produced in the world. We should continue to develop our natural resources as proficiently as possible while maintaining the high standards of environmental stewardship.

3. The overwhelming majority of scientists agree that climate change is happening and it is caused by human combustion of fossil fuels. Do you agree with this assessment? If so, how can we direct the market to recognize the external cost to society of greenhouse gas emissions, and if not, on what grounds do you come to that conclusion?

   A: No, I don't believe the scientific evidence of global warming is settled. There are multiple conflicting studies on this subject and policy decisions should be focused on sound science and realistic economic modeling.

Questions from Senator Wyden

1. As you may know, Harvard Professor Gregory Mankiw has suggested a "tax swap" approach that would institute a carbon tax but mitigate its impact by getting rid of or reducing other taxes. I'd like to ask all the witnesses whether they think that a carbon tax could be more acceptable if it was proposed as a replacement for other taxes rather than an additional tax? If so, what would you recommend a carbon tax replace?

A: Our tax policies should be focused on encouraging domestic energy development rather than forcing market reactions.

Questions from Senator Snowe

The economic benefits of increased domestic oil production are significant, from reduced trade deficit to more jobs in our country. In 2005, we imported more than 60 percent of our oil - now it's less than half. Last week's announcement that North Dakota has transitioned from the 9th largest state oil producer in 2006 to the 2nd largest according to latest data available from the Energy Information Administration is a remarkable achievement.

At the same time, as Herb Kelleher, the Co-Founder of the Energy Security Leadership Council and co-founder of Southwest Airlines, has pointed out that even with increased oil production Americans will always be susceptible to global price spikes and will continue to pay the global price of oil.

1. Mr. Hamm, while the increased oil production has been a tremendous boon to North Dakota and other regions that have shale oil, what other policies can we enact that will assist all Americans to share in the boon of increased oil production?

   A: There are several policies Congress should consider to increase all domestic production. First the consolidation and streamlining of regulation, while eliminating redundancy in state and federal oversight would assist the permitting backlog that currently exists on federal lands. Also, the elimination of barriers for infrastructure projects that prevent resources from accessing markets would expand the economic boom caused by increased production. The continuation of our current tax system would also assist in furthering domestic development by encouraging drilling expansion rather than punishing it.

2. One challenge that we have had in the Northeast is the lack of access to inexpensive natural gas and instead we continue to rely on expensive oil to power many of our manufacturing facilities. The price differential has been so extreme that some companies are taking desperate measures to access this fuel. For instance, the Lincoln Paper and Tissue mill is currently modifying the facility to utilize liquefied natural gas that will be trucked from Boston, Massachusetts. This investment is anticipated to result in a 40 percent cost reduction compared to oil, yet this could be further reduced by an additional 50 percent if the natural gas were delivered by a pipeline servicing the region.

With natural gas companies racing to access international markets through export, are there any policies that we can enact to expand domestic natural gas consumption?

A: One of the roadblocks in infrastructure development is the lack of knowledge of the true reserve numbers of domestic resources. We have an antiquated reserve system that discourages development of large scale pipeline infrastructure projects. We should revise our system in order to get a true picture of our future energy production, as well as streamlining the permitting process for pipeline infrastructure projects that would allow our resources to more easily access markets.

Mr. Hamm, last October you noted in a Wall Street Journal Interview that one reason for the renaissance of American energy production was the result of OPEC's erosion of market power. As you stated, "for nearly 50 years in this country nobody looked for oil here and drilling was in steady decline. Even if the domestic industry picked itself up, the Saudis would open the taps and drown us with cheap oil."

However, now with OPEC's share of oil production reduced as you say, "Finally we have an opportunity to go out and explore for oil and drill without fear of price collapse."

1. While I recognize the critical function of tax policies such as the expensing of intangible drilling costs as critical when OPEC is unleashing oil onto the market and driving price down, oil has averaged a price of over $60 per barrel for the last six years. Are these tax policies really necessary as an incentive to explore and develop oil?

   A: Absolutely, as I testified, Intangible drilling costs are simply deductions that all manufacturers in America receive. Oil is a global commodity with cost based on global supply and demand. Increased domestic supply will help moderate cost fluctuations to the American consumer. Our current tax structure incentivizes this domestic production by allowing deductions for these drilling programs that are creating this American energy renaissance.

2. Understanding that you are not a tax accountant but rather a businessman, please tell me how low the tax rate would need to be in order to accept a code that lacked the manifold tax policies we currently have in place to encourage domestic production?

   A: If you eliminated the deduction of intangible drilling cost, you simply discourage the reinvestment of capital back into drilling. Without the ability to try and fail and try again, the current shale revolution would have never occurred. The current code has allowed us to decrease our dependency on foreign oil and produce more domestically, by encouraging domestic producers to continue to search for oil and gas.

This past Sunday Daniel Yergin stated in the New York Times that, "America needs a new political discourse on energy." Through American technological development we have unleashed additional domestic supplies leading to the achievement this past year that the U.S.'s increased oil production was the largest in the world outside of OPEC.

Furthermore, lower natural gas prices in the United States have led a price advantage of more than 4 times the price in Asia and this is leading to a manufacturing revival in areas that have access to this natural gas.

1. At a time when North America is the epicenter to a new energy paradigm I would ask each of you what are the realistic goals that our country can achieve in terms of oil production, consumption of foreign oil, and ultimately lower prices for consumers?

   A: Our country should strive for energy independence by the year 2020. North American energy renaissance is occurring because of the technology of precision horizontal drilling. This innovation has allowed American companies to unlock huge amounts of once immobile reserves. This new renaissance has the ability to change our country by providing jobs, balancing trade deficits, and producing energy security.

STATEMENT OF HON. ORRIN G. HATCH, RANKING MEMBER
U.S. SENATE COMMITTEE ON FINANCE HEARING OF JUNE 12, 2012
TAX REFORM: IMPACT ON U.S. ENERGY POLICY

WASHINGTON – U.S. Senator Orrin Hatch (R-Utah), Ranking Member of the Senate Finance Committee, today delivered the following opening statement at a committee hearing examining the impact of tax reform on U.S. energy policy:

I thank the Chairman for once again holding a critical hearing on tax reform. It is essential that we continue these discussions in pursuit of reforming a tax code, which is complicated, unfair, and difficult to administer. We cannot afford as a nation a tax code that prevents our full potential for economic growth.

Looking at the witnesses, it is clear that we have a good representation of different viewpoints about the various energy sources addressed throughout the tax code. My hope is that this hearing will contribute to our goal of comprehensive tax reform in the near future.

It is important to conduct our examination today with President Reagan's three criteria for tax reform as our guide posts. We will be looking at the fairness of the system. We will be looking at the efficiency of the system, with a particular emphasis on its anti-growth features. And we will be looking at the complexity of the current tax code.

If we keep these principles in mind, I am optimistic that this committee will be in a position to reform our tax code in a way that is better for families, businesses, and our economy.

I know many of my colleagues on both sides of the aisle hope to achieve a tax reform that lowers rates while broadening the tax base. However, from my perspective, there is another feature that will be essential for any successful tax reform. Tax reform should be about tax reform — not about deficit reduction. We should be simplifying our tax code and lowering rates to create a more fair system that generates the economic growth necessary to generate jobs and revenue. It would be a mistake to call tax increases tax reform, and use that increased revenue to achieve deficit reduction rather than pro-growth rate reductions.

Today, we are prospectively focusing on what role, if any, energy policy should play in the tax code. Energy policy has been creeping into the tax code at an exponential rate. Yesterday, I heard the Chairman compare the tax code to the Hydra — the hundred-headed creature of Greek mythology. Each time you cut off one head, two more grow back. I believe this analogy is particularly apt with respect to energy tax provisions.

I hope today we can have an open debate about whether, going forward, there is a role for energy policy in the tax code. And if so, what should that role be?

I could keep talking, but there is no tax incentive for producing a lot of hot air yet, so I'll just let the witnesses get to it. Thank you again Mr. Chairman, and I look forward to hearing from the panel today.

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COMPREHENSIVE TAX REFORM AND U. S. ENERGY POLICY[1]

by

Dale W. Jorgenson
Samuel W. Morris University Professor
Harvard University

1. Introduction and Executive Summary.

The CBO long-term budget outlook released one week ago presents the stark facts of our fiscal situation in its two benchmark scenarios.[2] The Extended Baseline scenario adheres closely to current law. This would allow the Bush tax cuts of 2001 and 2003 to expire and implement other budget changes that would raise revenues to 21 percent of the GDP by 2021 and cut spending. The Extended Alternative Fiscal scenario, an extrapolation of past budgetary policy, would raise revenues to 18 percent of GDP by 2021 and avoid the "fiscal cliff" facing the federal budget under the Extended Baseline. A separate study by CBO projects that the fiscal cliff could produce a new recession.[3]

Major tax changes are clearly in prospect, whether or not the Bush tax cuts are allowed to expire. This has led to consideration of comprehensive tax reform, the subject of this hearing. As an illustration, the Bowles-Simpson National Commission on Fiscal Responsibility and Reform submitted its report, *The Moment of Truth,* on December 1, 2010.[4] Chapter II calls for "comprehensive tax reform" and specifies that this should reduce tax rates, cut the deficit, and eliminate tax expenditures. Federal revenue would reach 21 percent of the GDP, higher than the long-term average of 19 percent of the GDP and well above the level of 17 percent for 2011.

A. Comprehensive Tax Reform. Comprehensive tax reform is overdue. The Tax Reform Act of 1986 is the last major legislation in this critical area of public policy. The

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[1] Prepared as written testimony for the Hearing on "Tax Reform: The Impact on U.S. Energy Policy," Committee on Finance, United States Senate, June 12. 2012.

[2] Congressional Budget Office (2012), *2012 Long-Term Budget Outlook,* Washington, DC, Congressional Budget Office, June. See: http://www.cbo.gov/publication/43288.

[3] Congressional Budget Office (2012), "Economic Effects of Reducing the Fiscal Restraint that Is Scheduled to Occur in 2013," Washington, DC, Congressional Budget Office, May. See: http://www.cbo.gov/publication/43262 See also: Ben S. Bernanke, "Economic Outlook and Policy," Testimony before the Joint Economic Committee, U.S. Congress, June 7, 2012. See: http://www.federalreserve.gov/newsevents/testimony/bernanke20120607a.htm

[4] National Commission on Fiscal Responsibility and Reform (2010), *The Moment of Truth,* Washington, DC, National Commission on Fiscal Responsibility and Reform, December. See: http://www.fiscalcommission.gov/news/moment-truth-report-national-commission-fiscal-responsibility-and-reform.

approach to tax reform recommended by Bowles and Simpson follows the path of the 1986 tax legislation. This would begin by eliminating all tax expenditures or "leveling the playing field". The Commission would use most of the revenue to reduce the deficit and lower tax rates, but part of the revenue would add back necessary tax expenditures. The Commission provides its own very short list and it is worthwhile to note that no tax expenditures on energy are included.

Tax expenditures on energy are among the possible revenue sources needed for comprehensive tax reform. However, an even more promising approach is a system of environmental taxes focused on combustion of fossil fuels. This would raise substantial tax revenue, almost 1.5 percent of the GDP, while producing large environmental benefits. Taxes on fossil fuels, carefully calibrated to their incremental effects on health and the environment, could replace the system of subsidies and tax preferences for energy conservation and renewable energy sources. This would sharply reduce our reliance on nonrenewable sources and clean up the environment, but at a much lower cost to the taxpayer and the economy.

B. Outline of My Testimony. In this testimony I will identify the issues in designing a new energy tax policy for the U.S. The most important of these is the "hidden cost" of energy, arising mainly from the health and other environmental costs of burning fossil fuels. I discuss these costs in Section 2. In Section 3 I outline the role of government policy in dealing with the failure of energy markets to absorb the hidden costs of energy. In Section 4 I describe a system of energy taxes that would remedy this market failure. These taxes would fall most heavily on coal, but would also involve taxes on oil and modest taxes on natural gas. The tax rates reflect empirical data on the health and environmental damages generated by fossil fuel combustion. These data were recently employed by a distinguished panel of environmental economists, engineers and scientists, convened by the National Academies in a Congressionally mandated study.

In Section 4 I discuss the hidden cost of climate change, which would affect the world economy as a whole, as well as the U.S. economy. Energy taxes should be designed to deal with the hidden costs of climate change as well as the health and environmental damages. The costs of climate change are similar to those for the six criterion pollutants identified by the U.S. Environmental Protection Agency, but much smaller in magnitude. In Section 5 I outline a system of environmental taxes that would combine these two sources. By dealing with the market failures identified in Section 3, energy taxes could clean up the environment and slow global warming. The revenue could close the budget gap and reduce tax rates as part of comprehensive tax reform.

Section 6 of my testimony considers policy alternatives to a system of energy taxes. Current energy policy includes substantial tax subsidies for nonrenewable energy. These subsidies are effective in reducing our dependence on fossil fuels, but are not *cost effective*, to use economic jargon. The costs vary dramatically from expensive tax subsidies to biodiesel fuels to relatively inexpensive subsidies to open-loop biomass. A cost-effective policy would minimize the costs of achieving a given environmental

objective. The cost of an incremental reduction in the hidden costs of energy should be the same for all these policy options in order to minimize cost.

C. Conclusions. A system of environmental taxes would be very effective in dealing with the hidden costs of energy. We now have four decades of experience with the energy conservation that results from higher energy prices. In addition, energy taxes would be cost-effective. They would put renewable energy sources not subject to energy taxes onto a level playing field with the nonrenewable sources that will continue to provide a major part of our energy. Moreover, energy taxes would reflect the highly important differences in the hidden costs of energy associated with the combustion of coal, oil, and natural gas. In the stringent budgetary environment we will be facing for some time, we need to make cost-effective use of every one of the taxpayer's hard-earned dollars.

As an environmental economist, I will focus my testimony on saving money for the tax payer or cost effectiveness. I know that the Senate Finance Committee has already had extensive testimony from environmental experts who have attested to the technical efficacy of alternative policy instruments already in widespread use, such as production subsidies for renewable energy sources, energy standards, and mandates. These provide an expensive way of achieving the goals of environmental policy and have no role to play as a source of revenue to finance comprehensive tax reform. I believe that the economic perspective will offer a practical avenue for achieving a sustainable fiscal policy, the paramount economic and political issue facing this Committee and the nation.

2. Hidden Costs of Energy.

Developing and implementing a coherent energy policy for the United States has always been problematical. This arises from the fact that the production and use of energy is characterized by large and well-documented "external effects" or *effects that take place outside energy markets*. These are "hidden" from market participants, as suggested by the title of the recent and comprehensive review by the National Academies, *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use*.[5] Since our economic statistics depend largely on market transactions, these hidden effects are also invisible in our national accounts and other economic reports.

Given the challenges of observing the external effects of energy production and use, it is not surprising that the formulation of a coherent energy policy for the U.S. has proved to be very difficult. The U.S. government does not provide an official set of estimates of the external effects associated with energy, but we have official statistics on the "internal

[5] See National Research Council (2010), *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use,* Washington, DC, National Academies Press. This report was mandated by the Energy Policy Act of 2005 and can be downloaded from the NAP website: http://www.nap.edu/catalog.php?record_id=12794. The report was produced for a National Academies "consensus" study by the Committee on Health, Environmental and Other External Costs and Benefits of Energy Production and Consumption, chaired by Jared L. Cohon, President of Carnegie-Mellon University and a distinguished environmental engineer. The panel included leading environmental economists, engineers, and scientists and the report was reviewed by a number of other scholars in these fields, including the author of this testimony.

effects" reflected in market transactions, such as energy prices and quantities, production and consumption of energy and its distribution by households and industries. Much of this is produced by the Energy Information Administration, a highly respected statistical agency within the U.S. Department of Energy.

A. Information on Hidden Costs. Despite the lack of official statistics, it is important not to exaggerate the difficulties in documenting and using information on the external effects of energy. The U.S. Environmental Protection Agency generates a great deal of information on the external effects of energy as well as many other products that create health and environmental hazards. A recent example is the study, *Benefits and Costs of the Clean Air Act: Second Retrospective Study – 1990 to 2020,* issued in March 2011.[6] This Study is devoted mainly to the external effects of energy relevant to the evaluation of the impact of the Clean Air Act of 1970 and the Clean Air Act Amendments of 1990.

The hidden effects of energy are also an active area for investigation by economists. This work has recently been summarized by Nicholas Muller, Robert Mendelsohn, and William Nordhaus in their paper, "Environmental Accounting for Pollution in the United States Economy".[7] The methodology employed in this important paper is also used by the NRC in *Hidden Costs of Energy* and the EPA in the *Second Retrospective Study*. This information can be used for designing energy policies, including energy taxes, that would enable markets to internalize the external effects of energy production and use. However, current energy policies are far from the economist's ideal, as I will try to demonstrate in this testimony.

3. The Role of Government Policy.

In the absence of external effects the traditional role of government would be to maintain competitive and smoothly functioning energy markets. However, energy production, especially for oil and coal, is carried out around the globe, not just in the United States, and involves a substantial portion of our international trade. This creates important issues for national security. In addition, the production of energy is itself subject to hidden costs, as the on-going controversy over the environmental effects of hydraulic fracturing or "fracking" reminds us. Extraction of coal involves large impacts on the areas where coal deposits are found, as in many of the states represented on the Senate Finance Committee.

A. Depletion Costs. The major source of energy in the U.S. and the world economy is fossil fuel combustion. This gives rise to many of the external costs that I have mentioned, but also raises the issue of depletion of nonrenewable resources. Is this another market failure that should be remedied by government intervention? An

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[6] U.S. Environmental Protection Agency (2011), *Benefits and Costs of the Clean Air Act of 1970: Second Retrospective Study – 1990 to 2020*, March.

[7] Nicholas Z. Muller, Robert Mendelsohn, and William Nordhaus (2011), "Environmental Accounting for Pollution in the United States Economy," *American Economic Review*, Vol. 100, No. 3, August, pp. 1649-1675. The American Economic Review is the leading journal in economics and recently celebrated its 100th year of publication.

alternative view is that the costs of depletion are fully internalized in markets for depletable resources such as coal, natural gas, and petroleum. Oil prices have risen substantially over the past decade, culminating with the petroleum price spike in July 2008. Many economists would support the position that markets have been successful in internalizing future depletion costs. The mechanism is through a rising gap between the price of energy paid by consumers and the costs of production and distribution of energy.

From the economic point of view depletion costs arise from sacrificing the opportunity to hold resources until their prices rise. On this view the costs of depletion are not hidden and do not constitute a market failure. While standard in resource economics, this view is rejected by many environmentalists and some economists. The list of tax expenditures for energy provided by the Joint Committee on Taxation includes numerous measures intended to provide incentives for energy conservation. These are motivated in large part by the view that depletion is not successfully internalized by the price system.

B. New Technologies. A final source of important hidden effects is the spillover effects of new technologies. These include technologies for producing usable energy services from renewable sources such as solar and wind. Information produced by the development and implementation of new technologies is difficult to appropriate. This information "spills over" to businesses and individuals not involved in creating the technologies. This creates a market failure leading to a deficient supply of new knowledge. For example, when a new product to generate solar energy reaches the market, third parties can "reverse engineer" the product and produce a similar one without investing in research and development. This market failure is often used to justify tax expenditures like the Section 45 and Section 48 credits for production from renewable sources of energy.

New technologies are very important to energy production. Rapid improvements in these technologies are the basis for the lengthy downward trend in real energy prices that continued for more than a century prior to the recent surge in energy prices. Obviously, technological innovation is not limited to renewable resources. The energy sector is now undergoing a striking transformation as a consequence of the introduction of hydraulic fracturing for the production of oil and gas and other new technologies, including deep water drilling. As a consequence of new technologies U.S. domestic production of natural gas has risen dramatically, resulting in powerful downward pressures on natural gas prices.

C. Tax Incentives for Energy Production. Long-standing tax incentives have played a role in the development of new technologies for oil and gas production. These include the expensing of exploration and development costs and the excess of percentage over cost depletion permitted under the Internal Revenue Code. However, the marked increase in energy prices over the past decade, especially oil prices, has been a more potent source of incentives for the deployment of new technologies. Domestic crude oil prices in April of this year were more than seven times as high as in December 1998.[8] These price

[8] Energy Information Administration, *Petroleum and Other Liquids, Cushing, OK, WTI Spot Price FOB.* See: http://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=RWTC&f=M

increases alone should motivate a thoughtful re-examination of tax expenditures for fossil fuel production.

Specific tax incentives are provided by the U.S. for renewable energy sources such as solar and wind. The growing market penetration of renewable energy is impressive and the decline in costs associated with improvements in these technologies has been substantial. However, much of this decline is due to equipment production in Europe and Asia, especially China, rather than the United States. The U.S. will continue to benefit from declines in the price of this equipment. The use of tax incentives to reinforce the decline in equipment prices seems redundant and will be increasingly difficult to justify as budgetary pressures for more tax revenue and less govenment spending increase.

Finally, exploration and development of nonrenewable resources creates a depletable asset, but is part of the cost of production, not the cost of depletion. Accordingly, costs of exploration and development should be treated like any other investment and subjected to depreciation, rather than depletion. Expensing these costs under U.S. tax law has the effect of removing this form of investment from the tax system. This is one reason that the expensing of these costs is treated as a tax expenditure by the Joint Committee on Taxation. For example, an oil well should be depreciated over the typical lifetime of a producing facility, perhaps ten years. I conclude that tax expenditures for energy production are ripe for reconsideration.

4. Market Failures and Energy Utilization.

I next consider market failures associated with the utilization of energy. The most important of these are associated with the hidden costs of environmental pollution. The textbook example of these costs is a power plant that emits smoke as a byproduct of production. This smoke is dispersed to the surrounding population and components find their way into people's lungs, resulting in disease and premature death. By imposing a tax on emissions, producers have an incentive to reduce the emissions and the environmental damages that result. Failure to restrict emissions produces an inefficient outcome. As an example, Muller, Mendelsohn, and Nordhaus estimate that environmental damages for coal-fired power plants in the U.S. is more than double the value added by these plants.[9]

The current system of tax incentives is not a cost-effective policy for dealing with environmental externalities. For example, the Joint Committee on Taxation (2012) has estimated that existing energy production tax credits would require amounts varying from $1.13 for open-loop biomass such as agricultural and wood waste to $8.45 for biodiesel fuels to replace a million btu's of heat energy from fossil fuel combustion.[10] By substituting the cheapest of these sources for the most expensive, each million btu would generate $7.32 to reduce the federal deficit or finance a reduction in tax rates. A cost-

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[9] See Muller, Mendelsohn, and Nordhaus (2011), Table 2, p. 1665. "Value added" is the value of all capital and labor inputs used in power production.

[10] Joint Committee on Taxation, *Present Law and Analysis of Energy-Related Tax Expenditures* (JCX-28-12), March 23, 2012, Table 1, page 27. See: www.jct.gov.

effective policy for reduction of fossil fuel use would have the same price for every source.This is a perfect illustration of the consequences of attempting to design energy and environmental tax preferences without using the information employed by the Environmental Protection Agency in its *Second Retrospective Study* and the National Research Council in *Hidden Costs of Energy*.

5. The Role of Energy Taxes.

A cost-effective policy for dealing with the hidden costs of energy requires that all users of fossil fuels, firms and households, bear the incremental cost of the health and environmental damages that result. This can be achieved by levying taxes on emissions that would be equal to the incremental health and environmental damages that result. These taxes would be cost-effective, since every user of energy would face the same taxes for the emissions resulting from all forms of energy. There would be no opportunities for reducing the cost of pollution control by shifting the cost among alternative energy sources.

Environmental taxes would be levied on emissions of EPA's six criterion air pollutants from fossil fuel combustion. These are coarse particulate matter or smoke, fine particulate matter, also from smoke, sulfur dioxide, nitrogen oxides, volatile organic compounds, and ammonia. Muller and Mendelsohn (2009) have designed a system of taxes based on these emissions,using the same data on the hidden costs of energy as in their work with Nordhaus.[11] One of the results of empirical studies of the hidden costs of energy is that pollution is greatest in relationship to heat production for coal, next greatest for petroleum products, and least for natural gas.[12]

A. Cost of Climate Change. Another important environmental externality is cost of climate change. This arises from the release of fossil fuel byproducts, such as carbon dioxide, into the atmosphere. These gases absorb heat radiated by the earth's surface; some of this heat is radiated back to the earth's surface, resulting in global warming. Climate scientists refer to this as the "greenhouse effect" and refer to gases that absorb heat and radiate it back to the earth as "greenhouse gases". Since carbon dioxide is the most important greenhouse gas, emissions of greenhouse gases are often converted to their equivalent amounts of carbon dioxide in terms of radiation.

Nordhaus (2009) has quantified the addtion to energy taxes that would be required to internalize the hidden costs of energy due to global warming.[13] The greenhouse gas content of fossil fuels that gives rise to global warming is highly correlated with emissions of the criterion pollutants. Coal has the highest carbon dioxide content per unit

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[11] Muller, Nicholas, and Robert Mendelsohn (2009), "Efficient Pollution Regulation: Getting the Prices Right," *American Economic Review,* Vol. 99, No. 5, December, pp. 1714-1739.

[12] National Research Council (2010), *Hidden Costs of Energy: Unpriced Consequences of Energy Production and Use,* Washington, DC, National Academies Press, Table 7.3, page 361. See: http://www.nap.edu/catalog.php?record_id=12794.

[13] Nordhaus, William (2009), *A Question of Balance: Weighing the Options on Global Warming Policies,* New Haven, CT, Yale University Press.

of heat production, oil has the next highest content, and natural gas the least. A system of environmental taxes on fossil fuel combustion would generate both health and environmental benefits and also reduce the contribution of this combustion to global climate change. It is important to emphasize that a cost-effective energy policy must include benefits of both types.

B. Climate Change and the Criterion Pollutants. Enthusiasts for measures to limit global warming sometimes advocate a carbon tax in the absence of environmental taxes for EPA's criterion air pollutants. The benefits that accrue from reduction in conventional pollutants are then treated as "ancillary" to the control of emissions of greenhouse gases. However, Muller and Mendelsohn (2009) show that the design of a system of energy taxes should include both costs. This approach is also used by the National Research Council in quantifying the *Hidden Costs of Energy* and by EPA in the *Second Prospective Study*. My conclusion is that both costs should be included in the design of energy taxes.

To illustrate the order of magnitude of energy taxes that would be appropiate for a system like that I have described, I have updated a report that I completed for the Environmental Protection Agency on the role of energy taxes in tax reform.[14] In 2011 the tax on coal would have been $108.07 per short ton of coal, $16.30 per barrel of oil, and $0.55 per thousand cubic feet of natural gas.. This would be 223.47 percent of the coal price to consumers, 11.51 percent of the petroleum price, and 8.05 percent of the price of natural gas. There would be no taxes on renewable sources of energy, such as wind and solar. These prices reflect the incremental health and environmental damages associated with fossil fuel combustion. The total revenue would be 1.5 percent of the GDP in 2011 or 75 percent of the gap between federal revenues of that year of 17 percent of the GDP and the long-term average of 19 percent.

6. Alternatives to Energy Taxes.

In this testimony I have emphasized that energy tax policy has an important role to play in comprehensive tax reform. However, the most important instruments of tax policy are those that relate to the use of energy, rather than energy production. Environmental taxes on energy use are designed to remedy a market failure due to hidden costs arising from environmental pollution. These costs are well-documented and have been carefully studied by the Environmental Protection Agency, the National Research Council, and environmental economists. One alternative to environmental taxes is a cap-and-trade system, like the one used for sulfur dioxide in the United States since the Clean Air Act Amendments of 1990.[15]

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[14] Dale W. Jorgenson, Richard J. Goettle, Daniel E. Gaynor, Peter J. Wilcoxen,, and Daniel T. Slesnick (1995), "Social Cost Energy Pricing, Tax Recycling, and Economic Change," Prepared for the Energy Policy Branch, Office of Policy, Planning, and Analysis, U.S. Environmental Protection Agency, August. This is not an official report by EPA and has not undergone the review process required for such a report. I am indebted to my co-author Richard Goettle for undating this work to provide the incremental damage estimates and the implied tax rates.

[15] A history of the Clean Air Act Amendments and an analysis of their economic impact, see: Chan, Gabriel, Robert Stavins, Robert Stowe, and Richard Sweeney (2012), "The SO2 Allowance Trading System and the

A. Cap-and-Trade. A cap-and-trade system for greenhouse gas emissions is employed in the European Union Emission Trading Scheme. Under this system emissions permits are issued up to a "cap" and market participants are then allowed to trade permits until the cost of emissions is equalized for all participants. A similar system was proposed by Congressmen Henry Waxman and Edward Markey in the American Clean Energy and Security Act of 2009. This was passed by the House of Representatives, but died in the Senate.[16] The integration of a cap-and-trade system with comprehensive tax reform would be highly problematical unless the emissions permits are auctioned to market participants to generate the same revenue as a system of environmental taxes. If the permits were distributed to existing polluters, as in the Clean Air Act Amendments of 1990 and the Waxman-Markey proposal, this revenue would not be available for deficit reduction and lowering tax rates.

B. Energy Standards. A second alternative to energy taxes is a set of energy conservation standards, such as the Corporate Average Fuel Economy (CAFE) standards imposed on automobiles. This approach shares the defect that the Joint Tax Committee has identified in tax expenditures for renewable energy sources. The incremental costs of reducing pollution vary widely among the different programs and different producers within each program. This results in an effective but very expensive approach to pollution reduction. This is the reason that most economists prefer the "market-based" approach of environmental taxes or tradable permits. The same argument applies to tax expenditures for energy conservation. Cost-ineffective regulations and tax expenditures impose an unnecessary burden on the economy. Tax expenditures are also very wasteful of taxpayer dollars, as the Joint Tax Committee's study of energy production incentives has shown.

The connection between energy production and the hidden costs of energy use is very indirect. Targeted and technology-neutral subsidies for energy production are intended to deal with a different market failure, namely, depletion of energy resources and hidden costs of energy production. These costs are also reflected in the environmental regulation of extractive industries that require remediation of production sites and mitigation of other environmental damages. While energy production policies deal with important market failures, they are not a cost-effective approach method for internalizing the hidden costs of energy use. They fail completely to reflect the substantial differences in these hidden costs associated with the different fossil fuels – coal, oil, and natural gas.

Clean Air Act Amendments of 1990: Reflections on Twenty Years of Policy Innovation," Harvard Environmental Economics Program, Cambridge, MA: Harvard Kennedy School, January. See: http://www.hks.harvard.edu/fs/rstavins/Monographs_&_Reports/SO2-Brief.pdf.

[16] An analysis of the Waxman-Markey legislation for the Environmental Protection Agency by myself and my co-authors is available on the EPA Climate Economics website: http://www.epa.gov/climatechange/EPAactivities/economics/legislativeanalyses.html#americanClan

7. Summary and Conclusions.

A. Summary. In summary, my answer to the question that motivated this hearing is that comprehensive tax reform has a very significant role to play in energy policy. A system of environmental taxes could generate as much as 1.5 percent of the GDP in federal revenue, reducing by 75 percent the gap between federal revenues as a proportion of the GDP and the long-term average. This would make a major contribution to averting the fiscal cliff facing tax policy makers at the end of this calendar year. While a cap-and-trade system could be designed to achieve the same environmental objectives, it would be a challenge to avoid diverting most of the proceeds to assure support by the taxpayers most affected by the change in energy policy.

Current tax expenditures for energy are a melange of traditional tax preferences for producers of fossil fuels, combined with trendy but very expensive tax preferences for renewable sources of energy. Tax expenditures to promote energy conservation are at cross purposes with production incentives. These tax programs are not a cost-effective way of using taxpayer dollars to deal with the market failures associated with the hidden costs of energy. These costs have been carefully summarized by the National Research Council in a Congressionally-mandated study, originally authorized by the Energy Policy Act of 2005. Fortunately, this important study has provided the information needed to design a system of energy taxes to address these market failures more directly.

B. The Case for Comprehensive Tax Reform. The case for comprehensive tax reform seems to me to be compelling. Although every major piece of tax legislation involves elements of reform, the last attempt at comprehensive reform was the Tax Reform Act of 1986. The history of this important legislation is well-known to members of this Committee and its implications are well-understood by tax reformers like Bowles and Simpson and their colleagues on the President's National Commission. Any successful program of reform will follow the path of leveling the playing field and reducing the tax rates.[17]

I would like to close with a few remarks on comprehensive tax reform. In 2001 I published a book on this topic with my former Harvard Ph.D. student, Kun-Young Yun.[18] We have recently updated this in a paper available on my Harvard website that will be published later this year.[19] We have designed an approach to comprehensive tax reform that we call Efficient Taxation of Income. This would generate additional economic growth over the coming decades that would be equivalent to a seven trillion dollar ($7,000,000,000,000) increase in our current national wealth of about $60 trillion. This is more than sufficient to restore our labor force to full employment. Combined with a

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[17] Unfortunately, the nation's fiscal situation does not offer us the luxury of a "revenue-neutral" approach to tax reform like the one employed by President Reagan and Senators Bradley and Packwood and their colleagues on the Senate Finance Committee and the House Committee on Ways and Means.

[18] Dale W. Jorgenson and Kun-Young Yun (2001), *Lifting the Burden: Tax Reform, the Cost of Capital, and U.S. Economic Growth*. Cambridge, MA, The MIT Press.

[19] Dale W. Jorgenson and Kun-Young Yun (2012), "Taxation, Efficiency, and Economic Growth, Chapter 10 in Peter B. Dixon and Dale W. Jorgenson eds., *Handbook of Computable General Equilibrium Modeling*, Amsterdam, Elsevier, 2012, forthcoming.

system of environmental taxes and restraints in spending like those proposed by Bowles and Simpson or the restraints that are now part of current law, this comprehensive tax reform would enable us to achieve a sustainable fiscal policy.

Yun and I demonstrated in earlier work that the faulty design of the Tax Reform Act of 1986 reduced the potential benefits in terms of more rapid economic growth by more than half.[20] This has imposed a substantial burden on the U.S. economy that has continued for almost twenty-six years. Our book of 2001 was entitled, *Lifting the Burden,* and I am very pleased that we have arrived at a propitious time to remedy this important oversight. This is our "moment of truth" and it is a great privilege for me to participate in this panel and assist you in your deliberations.

Table 1.–Comparison of Selected Energy Production Tax Credits

	(Column 1) Statutory credit amount	(Column 2) Credit amount in dollars per MMBtu of heat energy	(Column 3) Credit amount in dollars per MMBtu of heat energy of displaced fossil fuel feedstock**
Wind power	2.2 cents per kilowatt-hour	$6.45	$2.25
Geothermal power	2.2 cents per kilowatt-hour	$6.45	$2.25
Open-loop biomass	1.1 cents per kilowatt-hour	$3.22	$1.13
Advanced nuclear power	1.8 cents per kilowatt-hour	$5.28	$1.85
Ethanol*	45 cents per gallon	$5.92	$5.92
Biodiesel*	$1 per gallon	$8.45	$8.45

Notes:
1 kilowatt-hour = 3,412 Btus
1 gallon of ethanol = 76,000 Btus (low heating value)
1 gallon of biodiesel = 118,296 Btus (low heating value)
Displaced fossil fuel feedstock calculation assumes a fossil fuel heat rate thermal conversion factor for wind, geothermal, biomass, and nuclear power of 9,760 Btus per kilowatt-hour.
Btus per kw-hour and thermal heat rate conversion factor taken from Energy Information Agency, *Monthly Energy Review*, Table A6, p. 178 (August 2011)
Btu content of ethanol and biodiesel taken from Energy Information Agency, *Annual Energy Outlook 2007*, Table 12, p. 59 (February 2006)
* Expired December 31, 2011.
** This calculation does not account for the fossil fuels associated with the production of biofuels, nor does it account for all of the energy that is consumed indirectly in the production of electricity. Thus, for example, it does not account for the energy required to make the steel used in the construction of any wind turbines or the fossil fuels used to grow any biofuel crops.

[20] Dale W. Jorgenson and Kun-Young Yun (1990), "Tax Reform and U.S. Economic Growth," *Journal of Political Economy*, Vol. 98, No. 5, October, pp. S151-S193.

Table 2: Energy Taxes

Damages (tax rates) as a percent of consumer prices

	Non-climate			Climate			Combined		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Coal	16.20%	181.68%	464.60%	12.92%	41.79%	89.22%	29.12%	223.47%	553.82%
Petroleum	0.99%	8.51%	11.25%	0.93%	3.01%	6.42%	1.92%	11.51%	17.68%
Natural Gas	0.03%	0.79%	0.82%	2.24%	7.26%	15.50%	2.27%	8.05%	16.32%

Tax revenues in billions of $(2011)

	Non-climate			Climate			Combined		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Coal	$7.88	$88.40	$226.06	$6.29	$20.33	$43.41	$14.17	$108.73	$269.47
Petroleum	$8.40	$72.51	$95.94	$7.93	$25.64	$54.75	$16.33	$98.15	$150.68
Natural Gas	$0.04	$1.22	$1.26	$3.46	$11.19	$23.88	$3.50	$12.40	$25.14
Total	$16.32	$162.12	$323.25	$17.67	$57.16	$122.03	$33.99	$219.28	$445.29

Tax revenues as a percent of GDP

	Non-climate			Climate			Combined		
	Low	Medium	High	Low	Medium	High	Low	Medium	High
Coal	0.052%	0.586%	1.498%	0.042%	0.135%	0.288%	0.094%	0.720%	1.785%
Petroleum	0.056%	0.480%	0.636%	0.053%	0.170%	0.363%	0.108%	0.650%	0.998%
Natural Gas	0.000%	0.008%	0.008%	0.023%	0.074%	0.158%	0.023%	0.082%	0.167%
Total	0.108%	1.074%	2.142%	0.117%	0.379%	0.808%	0.225%	1.453%	2.950%

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Senate Finance Committee Hearing
Tax Reform: Impact on U.S. Energy Policy
Questions for Dr. Jorgenson
June 12, 2012

QUESTIONS FOR THE RECORD:

Questions from Senator Cantwell

(A) FOSSIL FUEL TAX EXPENDITURES: A March 2012, CBO issue brief on the development of fuels and energy technology states, *"unless the government intervenes, the amount of research and development that the private sector undertakes is likely to be inefficiently low from society's perspective because firms cannot easily capture the 'spillover benefits' that result from it. This is particularly true at the early stages of developing a technology. Such research can create fundamental knowledge that can lead to numerous benefits for society as a whole but not necessarily for the firms that funded that research; thus government funding can be beneficial."*

In your testimony, you emphasize the importance of accounting for "hidden costs," and calling for an environmental tax to replace the current system of subsidies and tax preferences. You also note that *"new technologies are very important to energy production. Rapid improvements in these technologies are the basis for the lengthy downward trend in real energy prices that continued for more than a century prior to the recent surge in energy prices."*

If an environmental tax were to be imposed, is the incentive great enough to change behavior and lead the private sector to invest in cleaner technologies? Or would the lack of tax subsidies coupled with an environmental tax stifle R&D?

Furthermore, in your testimony, you note that "*long-standing tax incentives have played a role in the development of new technologies for oil and gas production.*"

- With the high domestic prices of crude oil, are tax expenditures for fossil fuel production necessary?
- Would removing these tax preferences hurt the production capability of that industry?
- Do you think the incentive to invest and develop new technologies is constrained by the existence of tax subsidies for mature technologies such as oil and gas?

Reply from Dale Jorgenson

Environmental taxes are intended to deal with the hidden costs of energy, specifically damages to human health and the environment. These taxes would be imposed on fossil fuels and would not be levied on renewable sources of energy, such as solar and wind. Environmental taxes affect economic behavior through their impact on energy prices. By raising the price of fossil fuels relative to renewable forms of energy, energy taxes would promote substitution away from fossil fuels toward renewable energy. The effectiveness of energy prices in changing behavior is very well documented. Since the regime of higher energy prices began in 1973, the U.S. has reduced the amount of energy used to produce a unit of the GDP by fifty percent.

The tax code provides substantial incentives for research and development that are available to producers of energy. In addition, government programs, mainly administered through the Department of Energy, provide direct support for energy research and development. A final argument against specific incentives for research and development on new energy sources is that the U.S. does not have a monopoly in this area. Much of the decline in prices of wind and solar energy are due to successful development of new technologies outside the United States, for example, in China and Europe. This benefits American consumers without requiring investments in research and development.

In my testimony I argued that traditional tax expenditures for nonrenewable forms of energy should be eliminated. Specifically, percentage depletion should be replaced by cost depletion, and intangible drilling costs should be depreciated rather than expensed. This argument applies to all forms of nonrenewable energy whether prices have increased on decreased. Removing these tax preferences would bring production capability of the industry into line with its economic value. I do not think that investment and development of new technology is much affected by tax subsidies to mature technologies.

(B) WORLD OIL PRICES: My constituents in Washington state are getting hammered right now with record high gasoline prices, well north of $4 a gallon. Just a couple days ago we were within a few cents per gallon of record high prices set in the summer of 2008, when oil prices spiked to almost $150. I'm interested in learning how the increased domestic production of oil advocated by some of the witnesses today might impact oil prices and thus prices faced by my constituents at the pump.

- Do you believe increased domestic oil production will impact world oil prices and thus lower prices at the pump? How much more oil would we have to produce for that to happen?

According to the Oil Company CEOs who testified before the Finance Committee last year, oil companies are price takers.

- Do you agree that is accurate?
- And, if so, does that mean that the tax subsidies currently used by oil companies can't lower oil prices and thus prices at the pump?
- Exxon Mobil's CEO told me at last year's hearing that he thought the true market price of oil should be the cost of producing a marginal barrel, which he estimated to be between $60 and $70 a barrel. Do you agree with that statement? If yes, what is behind the price premiums and volatility we see today?

When I first came to the Senate in 2001, OPEC was manipulating world supply so oil would remain between $22 to $28 a barrel. In 2004, Ali Naimi, the Saudi oil minister, called $30 to $34 a

barrel a, quote, "fair and reasonable price" for oil. In 2005, President George W. Bush said, quote, "With $55 oil, we don't need incentives to oil and gas companies to explore. There are plenty of incentives." But prices continued to rise, famously reaching $147 a barrel in July of 2008, before plunging with the economic collapse to $37 in December 2008. Today they are around $80 a barrel.

- What explains these price increases and volatility since 2001?
- Are oil prices likely to average above $100 for the foreseeable future given the world's seeming willingness to pay that amount?

According to the International Energy Agency, not only will world oil demand grow by 25 percent by 2030, but 93 percent of new demand will come from non-OECD countries—mainly China and India. A top Saudi Arabian energy official expressed last year serious concern that world oil demand could peak in the next decade which explained why they were working to diversify their country's economic base.

- Do you share these concerns about continued growth in world oil demand and its impact on prices?
- Is there any way to lower fuel costs besides finding cost-effective alternatives to oil use such as vehicle efficiency and biofuels?

Reply from Dale Jorgenson

The U.S. is a major producer of oil and oil products, and domestic levels of production are likely to increase. I do not believe that this will have much effect on world oil prices, but could reduce our dependence on foreign producers. I agree that the U.S. is a price taker in the world market for oil. As you indicate, this implies that tax subsidies for energy will not have major effects on oil prices in the U.S. and, specifically, on prices of motor fuels at the pump.

The view that the marginal barrel should sell for $60–$70 seems to me to be reasonable. However, there are obstacles in many countries to producing all the oil that is potentially available at that price. A leading example is Iraq, which is potentially a major producer of oil at prices in this price range. Many petroleum industry experts anticipate that the obstacles that still exist to oil production will be gradually overcome.

An important factor in explaining oil prices above the $60–$70 range is that the rapid growth of oil demand in economies like China and India has exceeded expectations. It seems to me that a consensus is emerging that higher prices, perhaps in the range of $80 per barrel, could be maintained for a considerable period of time. This is consistent with projections by the U.S. Energy Information Administration and the International Energy Agency in Paris that I cited in my testimony.

I am relatively optimistic about the future growth rate of the world economy and continued growth of world oil demand at a lower rate. Given past volatility, it is understandable that major producers of oil products such as Russia and Saudi Arabia are eager to diversify their economies. However, I do not foresee that world demand will peak within the next decade. I do anticipate that there will be a shift toward natural gas in the U.S., given the abundant supplies that are now available as a consequence of the successful implementation of hydraulic fracturing or "fracking."

Oil will continue to be used for transportation, but higher prices will lead to increases in efficiency. Natural gas can be used in some applications to transportation, such as large vehicles like buses

and trucks. The present system of tax subsidies for renewable forms of energy is not cost effective, as I pointed out in my written testimony. This conclusion is based on studies by the Joint Committee on Taxation and the Congressional Budget Committee, agencies of the Congress that I cited in my testimony.

(C) CERTAINTY KEY TO REFORMING ENERGY TAX INCENTIVES. I believe with tens of thousands of jobs and billions of dollars of investment on the line, our first priority should be to extend expiring clean energy tax credits before they expire.

I think it's unfortunate, and harmful to America's short- and long-term interests, that these credits which used to enjoy fairly broad support have become quite partisan. Just a few years ago, the Cantwell-Ensign bill—which extended many key clean energy credits and established the eight-year ITC—passed the Senate by a vote of 93 to 2. And I would note that offsets in that bipartisan bill included reducing oil and gas industry subsidies by about $7 billion in order to partially offset the costs of the clean energy incentives.

Many members of this committee have proposals to reform existing tax credits to make them more effective and accessible. Unfortunately, the experience of the last few years has been a last-minute rush to push through an extenders package, meaning we only have a chance to change an expiration date. I am interested in your thoughts as to how do we provide the longer-term certainty the energy industry needs to really take off.

- How do we ensure that different energy sources and technologies compete on a level playing field?
- How do we eventually get government out of the game of picking winners and losers?
- And how do we pay for all of this; do you think it makes sense to trade the certainty of multiyear extensions for a sunset date for all energy tax subsidies?
- At a hearing last December, our CRS witness testified that subsidies for low-carbon energy resources can make up for the fact that polluting energy resources are underpriced; do you agree with that statement?

Reply from Dale Jorgenson

Renewal of tax credits for clean energy in their present form does not seem to me to be cost effective. As you suggest, this is a good time for careful deliberation about existing tax credits rather than another last-minute extension of existing programs. A system of environmental taxes would promote the substitution of renewable forms of energy, which would not be taxed, for nonrenewable energy sources such as coal, oil, and natural gas. This seems to me to be an attractive energy policy that is more in accord with current budgetary realities.

I agree that polluting energy resources are underpriced, but I do not agree that subsidies for low-carbon energy resources can somehow deal with this market failure. Environmental taxes provide a direct and transparent approach to underpriced resources that would be cost effective and would contribute to dealing with the federal deficit. As I have already suggested, the evidence on cost effectiveness of the existing system of tax credits is very persuasive and strongly suggests that we need to develop another approach.

(D) PRICE ON CARBON. I believe investment in our infrastructure and energy innovation will be vital to assuring our economic competitiveness, our national security, and our environmental sustainability in the years to come. We cannot compromise when it comes to energy and expect to lead the world. A strong energy policy is essential for our continued well-being as a nation.

Approximately $7 trillion in new capital will be invested between now and 2030 in the global renewable energy market. We cannot fall behind our global competitors like China who are seizing this opportunity by investing more heavily and establishing market policies that give them a strategic advantage.

But to stay within our fiscal constraints, we clearly have to make some difficult choices with regard to the allocation of taxpayer investments in transitioning to a cleaner, more affordable, and more diverse energy system. The answer I hear over and over from people from a wide-range of stakeholders is that the key is to keep any policy simple, transparent, certain, and market-based.

- Do you agree with many experts who argue that a predictable price on carbon—designed in a way that minimizes price volatility—is the most economically efficient and technology-neutral way to realize greater energy efficiency and diversity?
- How does a price on carbon compare with current energy tax policy in terms of efficiency and efficacy?

Reply from Dale Jorgenson

A policy to establish a predictable price for carbon is an important component of the system of environmental taxes that I have proposed. However, this would deal with only part of the problem. The rest of the problem is associated with health and environmental damages resulting from fossil fuel combustion. Both must be included in an efficient and technologically neutral energy policy. Environmental taxes have the advantages that you mention—simplicity, transparency, and certainty. They are market-based and, therefore, cost effective.

A market-based approach to energy policy has many advantages, including those you have enumerated. However, adoption of this approach will require a substantial re-thinking of our existing policies. If we postpone these deliberations now, it will become more and more difficult to deal with the entrenched interests that develop around any policy as far-reaching as energy policy. The budget debate and the related debate over comprehensive tax reform seem to me to offer an opportunity to develop an energy policy that achieves the objectives you have emphasized in your questions.

Questions from Senator Tom Carper

Q1—Entire Panel. I'm often asked why we aren't drilling more in this country—because some assume high gas prices at the pump must mean we have slowed or stopped drilling here at home. Many are surprised by my answer. We are drilling more in America—in fact we are drilling more in this country than we have in 8 years, and the United States is now a net oil exporter, not importer. So we are drilling more in America, we are no longer a net oil importer, yet American consumers are still paying more at the pump. Why? Because at the end of the day, we can't drill out of this problem.

Today America consumes 19.5 million barrels of oil every day. And a primary reason that amount is so high is because Americans have very little choice at the pump. We can choose between oil and oil. Basically every American driver's dollars are a foregone conclusion to the oil industry. So what do we need? Choice. Whether the choice is natural gas, electricity from clean energy, or biofuels, forcing oil companies to compete for consumer dollars will drive prices down.

This means we need investments in new fuels and investments in new vehicles and new infrastructure to use these new, American-made alternative fuels. We already have vehicles that can run on biofuels, natural gas, and electricity—we just need to make those vehicles and the fuels for those vehicles more available for the American public. Americans need a choice. Can each of you give me one example of what can be changed in the tax code to give Americans more choices at the pump?

Reply from Dale Jorgenson

I agree that incentives to domestic production of oil and oil products will have a very modest impact on prices at the pump for the reasons that I have discussed in my reply to Senator Cantwell. I would argue that we need choice among alternative forms of energy and that this choice should take into account not only the market costs of different sources of energy, but the hidden costs I outlined in my written testimony. The existing system of tax expenditures for energy does not seem to me to do this in a cost-effective way.

Q2—Congressman Sharp and Mr. Dale Jorgenson. Many of our energy tax incentives that need to be extended every year, or every other year, are heavily focused on renewable energy. For example, the investment tax credit (ITC) that is in place now for wind is crucial for a fledgling offshore wind industry. The ITC expires at the end of this year—well before any offshore wind project can start construction in this country. Without an ITC offshore wind extension, we may not see any offshore wind projects developed in this country for the foreseeable future.

However, our permanent energy tax incentives seem to be more focused on fossil fuel incentives. For example, we have several permanent tax incentives for drilling for oil—at a time when oil companies are seeing record profits and increased global demand for oil production.

Should we prioritize our energy tax incentives to focus on start-up industries—such as offshore wind—that need the greatest investment assistance in the short-term, but will give our country energy security in the long-term?

Should we consider removing some of our permanent tax credits and make some of our renewable tax credits (like what Senator Snowe and I are trying to do for offshore wind) for a longer time?

Reply from Dale Jorgenson

The distinction between permanent and temporary tax incentives reflects budget policy as well as tax policy. It seems to me that reformulation of energy policy to achieve long-term objectives should be approached within a program for comprehensive tax reform. An important step in this direction would be to eliminate tax expenditures for fossil fuels such as percentage rather than cost depletion and expensing rather than depreciation over time of intangible drilling costs. Tax credits for renewable forms of energy need much more careful design. The Joint Committee on Taxation and the Congressional Budget Office have produced persuasive evidence that the existing system is not cost effective.

Senate Finance Committee – Tax Reform: Impact on U.S. Energy Policy
The Honorable Don Nickles, U.S. Senate 1981-2004
Chairman & CEO, The Nickles Group, LLC
June 12, 2012

Chairman Baucus, Ranking Member Hatch, and members of the committee, thank you very much for inviting me to testify today. As a former member of this committee, it is a particular honor and privilege to be here. I love the Senate, and I loved the ten years I spent on this committee.

When I left the Senate seven years ago, Mr. Chairman, I started a company called The Nickles Group. While the opinions I give today are solely my own, I believe it is important to disclose that I and my company proudly represent some of the best energy companies in the world, including ExxonMobil, Anadarko Petroleum, National Oilwell Varco, ITC Holdings, and a coalition of electric industry companies called COMPETE. I am also a member of the corporate boards of Chesapeake Energy, Valero Energy, and the Washington Mutual Investors Mutual Fund.

Mr. Chairman, our nation faces an enormous economic and fiscal crisis that requires the strongest leadership from the President, the Congress, and most specifically this committee. I am very pleased that you are working on tax reform, as it is an essential component to both getting our economy moving again and addressing our massive deficit and debt. I would encourage you to work even harder, and more quickly. I am also pleased with all the work on tax reform occurring in the House under the leadership of Ways and Means Chairman Dave Camp. Congressional committees are all too often ignored these days by congressional leaders and regular order is abandoned. That strategy is proven to fail, and tax reform will almost certainly fail if these two important committees are not allowed to play their appropriate leadership role.

Mr. Chairman, I am also very encouraged with the degree of general agreement that appears to be growing on a bipartisan basis in Congress on the issue of corporate tax reform. Nearly everyone acknowledges that our high corporate

rate and antiquated international tax system make our companies uncompetitive. The debate now is not whether to reduce the corporate rate – but by how much, and that is a great start!

Today I will briefly discuss the convergence of my two favorite policy subjects – energy policy and tax policy. As mentioned previously, I was a member of this committee for ten years, I was a member of the Senate Energy and Natural Resources Committee for twenty-four years, and I have worked in and around the energy industry my entire life. I originally ran for the Senate in large part because I wanted to reverse President Carter's energy policies that were hostile to domestic energy production, picked winners and losers, and stifled competition. I was mostly successful in my efforts, but unfortunately today I see our current President seeking to repeat many of the energy and tax policy mistakes of the Carter era.

This is an exciting time for U.S. energy industry with amazing technology-driven revolutions in shale gas, shale oil, and offshore exploration. I am particularly proud that many Oklahoma energy companies including Chesapeake, Devon, Sandridge, and of course Continental Resources are leading the way. These companies are investing billions of dollars and creating thousands of new jobs.

Mr. Chairman, if you do tax reform correctly, there will never be a need to hold an "energy" tax hearing ever again, because tax reform should seek to treat energy companies and the products they produce just like everybody else. No subsidies, and no penalties. If the tax system you devise encourages investment (as it should), energy companies will benefit just like other companies. If a lower corporate rate and simplified territorial system make U.S. companies more competitive (which it will), energy companies will benefit just like other companies.

Just as the tax code should not subsidize energy, neither should it impose punitive penalties on energy companies as the President's tax proposals seek to do.

The President loves to talk about tax "subsidies" received by oil and gas companies. By doing so, I suppose he hopes to create the impression with voters that our energy companies are receiving checks from the government. In fact, the President has it exactly backwards. U.S. oil and gas companies pay more than $86 million dollars EVERY DAY to the federal government in income taxes, rents, royalties, and lease payments. Last year, the income tax expenses for those companies averaged 40.6 percent, compared to 25.1 percent for other S&P industrial companies. Who is subsidizing whom?

The hostility toward domestic oil and gas companies from this administration has no foundation in tax or economic policy. In Treasury's FY2010 Green Book justifying the President's tax proposals, they had this to say about intangible drilling costs, or IDC's: *"The expensing of IDCs, like other oil and gas preferences the Administration proposes to repeal, distorts markets by encouraging more investment in the oil and gas industry than would occur under a neutral system. To the extent expensing encourages overproduction of oil and gas, it is detrimental to long-term energy security and is also inconsistent with the Administration's policy of reducing carbon emissions and encouraging the use of renewable energy sources through a cap-and-trade program."*

Mr. Chairman, I am not quite sure why this President believes we are in danger of overproducing oil and gas, and I am completely confused about how that would be detrimental to long-term energy security.

Most of the President's energy tax proposals are purely punitive. Oil and gas companies already receive a smaller benefit from the Section 199 manufacturing deduction than other manufacturers, but the President believes even that should be taken away. While I personally believe all corporations should pay the same rate regardless of whether they are a manufacturer, retailer, or service provider – but it makes no sense to take that benefit away from one industry in the absence of comprehensive tax reform.

Other proposals from the President would be specifically harmful to independent oil and gas producers, such as his proposal to lengthen the recovery period intangible drilling costs. IDCs are primarily wages, and they are the research and development costs of energy producers. Other companies can not only deduct, but often get a tax credit for their R&D spending, but the President thinks energy companies should be required to capitalize these costs. That makes no sense whatsoever, Mr. Chairman, and I can tell you that the best way to kill the current shale gas revolution that is creating millions of jobs all over the country would be to enact the President's IDC proposal.

Finally, Mr. Chairman, the President has one particularly onerous proposal that would penalize only U.S.-based oil and gas companies and disadvantage them relative to their foreign competitors. Known as the "dual capacity" provision, this proposal would deny U.S. oil and gas companies a credit for taxes paid to foreign governments, causing them to be taxed twice. This higher tax burden means U.S. companies would be disadvantaged as they compete to win access to oil and gas production projects all over the world. Now why, Mr. Chairman, would we want ExxonMobil, ConocoPhillips, or Chevron to be disadvantaged in their worldwide competition with PetroChina, Lukoil, Total, BP, and Shell?

In summary Mr. Chairman, I encourage you and this committee to continue working as hard as you can on tax reform, because it is so very necessary. And as you work to lower rates, broaden the base, and update our international tax scheme, please endeavor to treat U.S. energy companies and their products the same as everyone else.

Let's eliminate the need for "energy" tax hearings.

Senate Finance Committee – Tax Reform: Impact on U.S. Energy Policy
Additional Information for the Committee Hearing Record from Senator Don Nickles

To provide additional context to my responses to Senator Menendez's questions on the "dual capacity taxpayer" issue, I am submitting two reference documents which I believe will be helpful to the Committee.

The first is a report issued by Cambridge Energy Research Associates and co-authored by Daniel Yergin and David Hobbs, which documents the competitive disadvantage I suggested U.S.- based oil companies would face if dual capacity proposals like those suggested by Senator Menendez or President Obama were enacted. There is also a section in the report where Dr. Yergin traces back to his earlier work the origins of the notion that U.S. oil companies collude with foreign governments to disguise royalties as income taxes and explains why that notion is false and a misunderstanding of the historical record.

The second is a paper co-authored by Brian Jenn, Pamela Olson -- former Assistant Secretary of Tax Policy in the U.S. Treasury Department, and Grant Aldonas -- former U.S. Under Secretary of Commerce for International Trade, which details the development of the current "dual capacity" rules and documents how oil companies pay both royalties and income taxes to foreign governments, just as they do in the U.S. With respect to these foreign income taxes, the paper provides an analysis of the current U.S. Treasury regulations, explaining that the rules explicitly prohibit oil companies from claiming royalties, or "disguised royalties," as income taxes, and how oil companies bear the entire burden of proving that these taxes are indeed legitimate income taxes (and not royalties or other fees) – a burden that is not imposed on any other U.S. taxpayer. Thus, the "dual capacity" regulations are more restrictive than the rules that apply to all other U.S. taxpayers, rather than a "loophole" or special benefit.

The Honorable Don Nickles, U.S. Senate 1981-2004
Chairman & CEO, The Nickles Group, LLC
June 25, 2012

Tax Reform: Impact on U.S. Energy Policy

Testimony of Philip R. Sharp
Prepared for the U.S. Senate Committee on Finance
June 12, 2012

Chairman Baucus, thank you for the opportunity to be here today. For the record, I am president of Resources for the Future (RFF), a 60-year-old research institution based in Washington, DC, that focuses on energy, environmental, and natural resource issues. RFF neither lobbies nor takes institutional positions on specific legislative or regulatory proposals.

I emphasize that my views today are my own, and not those of Resources for the Future. I have included in an appendix, however, some related key studies and forthcoming research from RFF.

My purpose today is simply to provide background on the status of national energy policy and not to advise you on the myriad decisions faced by your committee. Much of what I say will not be new to the members of this committee who for years have been engaged on energy issues.

In the United States, energy production, distribution, and consumption have major implications for our economic prosperity, our national security, and the health and safety of the environment on which our lives depend. Our energy markets are vital to our economic wellbeing; they are vast—some global in scope, creating major national security concerns—and they can create major risks to health and safety.

At the global level, energy markets face major challenges. Population growth and rapid economic growth in major developing economies add significantly to the global demand for more energy, to the scramble for resources, and to the degradation of the environment. These markets periodically face the threat of military or political disruption. And scientists tell us that human activities are at such a scale that we are collectively changing the chemistry of the oceans and atmosphere and indeed the earth's climate system.

U.S. Policymaking

Whenever the Congress undertakes major legislation on energy issues, it is besieged by groups arguing for proposals to advance a variety of goals, many of which conflict with one another. There is always a major clash of ideas, of values, and of economic interests. This is one of the committees where those clashes come home to roost as everyone here is painfully aware.

Invariably, major energy legislation is a collection of provisions—a package of compromises that are not necessarily consistent and not necessarily the most cost-effective means to advance intended goals. Indeed, some are undoubtedly

counterproductive. The results are always unsatisfying to many Americans and lead to the often heard claim that we "lack an energy policy."

In truth, we have a host of energy policies, especially with the adoption of so-called comprehensive energy bills in 2005 and 2007 and the stimulus package of 2009. This committee certainly has played a major role in creating various policies.

I daresay, not since the 1970s has there been as much effort by the government to reshape our energy markets as there has been in this last decade.

It is worth noting, however, that there has remained for decades a core principle or cornerstone of U.S. policy: an overwhelming reliance on private capital to produce and distribute the energy we need. Many citizens participate in this investment through their pension plans and other investment activities.

Most energy policies, such as tax credits, are attempts to change the behavior of consumers and/or investors. The success of a policy at any given time depends upon many other influences facing consumers and investors, including, among the most important factors, the prices of our major fuel sources: coal, oil, and natural gas.

Given the major fiscal crisis this country faces, there is great pressure to rethink current tax and appropriations policies and little room for any new provisions that further cost the treasury. A major question that must always be asked about each provision is whether it generates new activity in the public interest or just picks up the tab for stuff that would have happened anyway.

In some areas, the law restricts actions or mandates the improvement of products or fuels with major effect—such as the renewable fuel standard, as well as CAFE and appliance standards. The continuing question is whether these measures are cost effective, as well as whether they might be better designed for greater effectiveness

At the end of the day, we need to periodically review the wide variety of incentives and mandates to assess whether they are cost-effectively achieving the intended results.

While tax provisions and appropriations certainly can be very important in the development of a new technology or a fuel struggling to gain a foothold in our competitive markets, they remain, on the whole, a small proportion of the annual sums invested in production and infrastructure. In short, when provisions are adopted, they are seldom guaranteed to be successful and often disappoint proponents in their effectiveness because of the vast array of consumer decisions and investor decisions that constitute the market. This is not to say that such provisions are not important.

Our Changing Energy Picture

In the last decade we have witnessed dramatic changes in America's energy picture:

- A raft of new technologies has entered the marketplace in virtually every sector of production, distribution and use.

- Dramatic new supplies of natural gas—shale gas—are being produced.

- Our dependence on foreign oil has seen significant decline as a result of added oil production (primarily tight oil), improved vehicle efficiency, and a major increase in ethanol use. The expectation is for the decline to continue.

- Carbon dioxide emissions are in decline not only as a result of the economic slow-down but also because of heightened efficiency and a change in our fuel mix, especially in the electric sector. The expectation is that our emissions growth ahead will be modest.

These changes were driven by several factors:

- *The significant rise in the price of natural gas at the beginning of decade and of oil a few years later.* As with past price rises, consumers and investors find ways to produce more and use less of the higher-cost fuel, and governments respond with new efforts to advance alternatives to oil and improve efficiency.

  We have witnessed major price swings several times over the last four decades and each time have seen major changes in consumer, investor, and government behavior.

  Invariably, there are arguments over how the government might be able to prevent the big swings up, or even down.

  Given the size of these markets, government policy is very unlikely to prevent such swings; certainly, our experience with oil and natural gas price controls was not a good one.

- *Entrepreneurial risk taking.* Incentivized by high prices and in some cases government policy, some entrepreneurs defied the conventional wisdom about what is possible. This was particularly the case with respect to shale gas development, but it also applies in many other areas of renewable energy and energy-efficiency technologies.

- *Decades of private and public research on a host of technologies*, including solar, wind, fuel efficiency, advanced vehicles, digitization of the electric grid, and advanced nuclear reactor designs to provide but a partial list.

- *A variety of state and federal policies that promoted market adoption of more efficient technologies and practices as well as renewable and alternative fuels.*

It is very important to recognize that many of these developments defy views that were widely held at the beginning of the decade: the dramatic rise in natural gas and oil prices, the development of shale gas, the marketing of hybrid vehicles, the reduction in oil imports, the decline in carbon emissions, the licensing of a nuclear plant, and so on.

During the last 40 years, we have witnessed a number of big developments not anticipated by industry, government, or academia, which is a major caution about grand plans by government or anyone else. And certainly these unanticipated developments are another reason that policies need serious reassessment periodically.

In many respects, these developments of the last decade are very positive. The picture, of course, is also marred by the terrible explosions at the Macondo well in the Gulf of Mexico and at the nuclear plants in Fukushima. These were painful reminders that the scale of our energy operations entails major risks. And with respect to global warming, neither our government nor much of the international community has yet found a strong path forward. But most of the major economies, including China, are actively engaged in some kind of efforts to reduce the projected growth in greenhouse gas emissions.

Challenges of the New Natural Gas Supply

Perhaps the singular most significant development of the last decade is the new natural gas supply. It has the potential to generate major economic benefits for the nation. At the same time, it generates a number of uncertainties and challenges:

- Industry and government must work through a number of issues—water, air, methane leakage—to assure responsible development. See the National Petroleum Study on Responsible Development in the appendix.

  The public discussion has been exceedingly stormy, making it difficult for many citizens to sort out the real risks from imaginary ones. At RFF, we are currently conducting a widespread survey of knowledgeable people inside and outside of industry to ascertain how experts assess the relative risks of various stages of development and production of shale gas.

- How fast this major new resource will develop is not altogether clear, nor is what kind of price volatility to expect, given the limited experience with developing and marketing this resource. Already we see shrinkage in shale gas production as the excess supply has driven down gas prices and drillers have focused on more lucrative tight oil and gas wells with associated liquids.

- The new gas supply is creating major adjustments in the planning and investment for virtually all other major fuel sources.

  The near term impact of lower natural gas supplies has been to change the way electric utilities are using their current generating capacity—using more gas and less coal. In the longer run, the supply picture is changing the calculations used by utility companies and state regulators to assess new facilities and the various tradeoffs among coal, nuclear, renewables, and natural gas.

- With respect to greenhouse gases, there is some dispute over how much methane leakage occurs in the course of current development activities and to what extent this can mitigated.

  The larger question is of its impact in replacing other fuels in our energy mix. To the extent, for example, that it replaces coal in our electric generation, it is clearly beneficial with regard to carbon dioxide emissions. To the extent it replaces nuclear or renewable sources, it is likely to increase, rather than decrease, the carbon intensity of our energy mix. It also has the potential to work well with renewables, helping solve the intermittency problem of wind and solar.

The Possibility of Significant Tax Reform

If this committee and the Congress (in the next session I presume) want to attempt a major overhaul of the tax code of the magnitude as great or greater than last achieved in 1986, the challenges are major, as you know better than most of us. How to address the critical need to get America's fiscal house in order? How to reshape the code to better support economic growth in a highly competitive world? How to address the conflicting views over what is fair?

Many reformers advocate simplification, elimination of most of the deductions or tax preferences, and rate reductions. On paper this may add up, but in practice it is obviously considerably more difficult.

To achieve significant reform that focuses on economic progress and efficiency, the committee may want to consider some version of a carbon tax with revenues dedicated to cutting other taxes that impede economic growth.

I need to repeat that RFF does not take a position on this or other issues, and I am not here to say that this is the only choice we have for addressing greenhouse gas emissions. But it is a choice that many economists believe is the most cost-effective way for the United States to address the carbon problem.

A carbon tax has several features that make it attractive from an economic perspective and, from the committee's point of view, maybe an avenue to enable the transformation of the tax code. Of course, the devil and the angels are in the details.

- It is a policy that fits well with market economics.
- It could generate revenue that, if recycled into the economy by cutting so called "distortionary taxes," has the potential for contributing to economic growth rather than being a depressant.
- It has many design options that make it possible to address a variety of the concerns expressed about carbon policy, such as the impact on trade-sensitive industries.
- It could begin modestly and rise over time, permitting adjustment.
- It could reduce the need for more extensive subsidies and regulations to address the climate problem.

However, I think it is obvious that a carbon tax proposal is not ready for prime time. Indeed, there is a clear need for greater analysis, more consideration of design options, and extensive vetting with various sectors of the economy.

At RFF, our scholars have spent a great deal of time assessing the costs and effectiveness, design options, as well as the regional impacts of major climate and energy policy proposals and actions at the state and federal levels, as well as those of foreign governments, including various cap-and-trade systems, alternative paths under the Clean Air Act, and clean energy standards. We are now doing the same type of analysis of carbon tax proposals.

Our folks stand ready to discuss this work with policymakers of all points of view.

Thank you again for the opportunity to speak today.

Appendix: Further Reading

America's Climate Choices | The National Research Council | The National Academies Press | 2011
http://www.nap.edu/catalog.php?record_id=12781

Direct Federal Financial Interventions and Subsidies in Energy in Fiscal Year 2010 | Energy Information Administration | July 2011

Energy Tax Policy: Historical Perspectives on and Current Status of Energy Tax Expenditures | Molly F. Sherlock |Congressional Research Service | May 2011

Energy Tax Policy: Issues in the 112th Congress | Molly F. Sherlock and Margot L. Crandall-Hollick| Congressional Research Service | March 2012

Estimates of Federal Tax Expenditures for Fiscal Year 2011-2015 | Joint Committee on Taxation | January 2012 |
https://www.jct.gov/publications.html?func=startdown&id=4386

Prudent Development: Realizing the Potential of North America | The National Petroleum Council | September 2011| http://www.npc.org/NARD-ExecSummVol.pdf

Reforming US Energy Policy to Better Address Market Failures| Ian Parry and Dirk Heine |International Monetary Fund | Unpublished Manuscript

The Variability of Potential Revenue from a Tax on Carbon | Karen Palmer, Anthony Paul and Matt Woerman| Resources for the Future | May 2012
http://www.rff.org/RFF/Documents/RFF-IB-12-03.pdf

Toward a New National Energy Policy: Assessing the Options | Alan Krupnick, Ian Parry, Margaret Walls, Tony Knowles, and Kristin Hayes | Resources for the Future, National Energy Policy Institute | September 2010
http://www.rff.org/Documents/RFF-Rpt-NEPI%20Tech%20Manual_Final.pdf

Senate Finance Committee Hearing
Tax Reform: Impact on U.S. Energy Policy
Questions for Dr. Sharp
June 12, 2012

Questions from Chairman Baucus

Our energy policy uses many number of different tools – there are tax breaks, direct grants and, in some sectors like biofuels, mandates. I would like to explore this policy mix and understand how it all fits together.

Congressman Sharp, can you please discuss:

1. How do energy tax incentives interact with mandates, such as state Renewable Electricity Standards (RES) and the national Renewable Fuels Standard (RFS)?
2. What is the proper balance between mandates and tax incentives?
3. Isn't it true that with mandates in place, tax incentives become less important, if not unnecessary?
4. Which are better energy policy -- mandates or for tax incentives?

Response from Phil Sharp:

When mandates guarantee a market for investors—as do RES and RFS—one may question the necessity for a public subsidy. Indeed a subsidy at that point may be beneficial from the perspective of some consumers but, in the long run, it tends not to send the appropriate market signals to consumers or even producers.

When a mandate (such as Fuel Economy Standards) requires action by investors or producers, but does not guarantee a market, there may be a justification for tax incentives or penalties to help encourage consumer behavior that makes the mandate more workable.

Questions from Senator Kerry

1. Do you agree that one of the primary roles of government is to address market failures? If so, then what does that mean in the energy context when we are talking about pollution?

Response from Phil Sharp:

When energy production and use imposes costs on society that are not reflected in prices, it is generally viewed as a market failure and therefore certainly justifies government intervention, either through taxation or regulation.

2. One of the primary reasons cited in Congress for not adopting the Kyoto Protocol was because it did not require action from major emerging economies, like China. However, you note in your testimony that most of the major economies, including China, are now actively engaged in efforts to reduce the projected growth in greenhouse gas emissions. Can you please elaborate on what activities they are engaged in and how you think that should affect how Congress thinks about international cooperation on climate change?

Response from Phil Sharp:

Without judging the effectiveness of Chinese policy, it is very clear that they are engaged in a number of government actions to bring about greater energy efficiency and reduce carbon intensity. They are expected to launch a number of city- and province-level pilot trading programs in the coming years to restrict carbon emissions growth and they have been seriously considering a carbon tax.

Questions from Senator Wyden

1. As you may know, Harvard Professor Gregory Mankiw has suggested a "tax swap" approach that would institute a carbon tax but mitigate its impact by getting rid of or reducing other taxes. I'd like to ask all the witnesses whether they think that a carbon tax could be more acceptable if it was proposed as a replacement for other taxes rather than an additional tax? If so, what would you recommend a carbon tax replace?

Response from Phil Sharp:

Members of Congress are more knowledgeable about what would be acceptable to the American people. However, in terms of benefits to the general economy, one strong theory is that cutting distortionary taxes with revenue from a carbon tax would be the most likely way to ensure economic growth. This is currently a question that RFF experts are examining. According to *Considering a Carbon Tax: Frequently Asked Questions* recently developed at RFF:

"A carbon tax could lead to overall economic growth, if the tax revenues are used in a way that promotes economic growth, such as cutting other taxes or reducing the deficit. Reducing personal and corporate income taxes would promote growth because these taxes distort employment, savings, and investment. The $125 billion in annual revenues from a $25/ton carbon tax could allow federal personal income tax reductions of about 15 percent or corporate income tax reductions of about 70 percent, if all carbon tax revenues were used to replace current tax revenues. Alternatively, the federal deficit could be reduced by approximately $1.25 trillion over 10 years—about the same reduction that the 2011 Joint Select Committee on Deficit Reduction would have had to agree on to avoid mandatory spending cuts. Other ways that the revenue could be used to promote growth include funding essential infrastructure, basic research, or investments in human capital. Any of these uses—funding tax cuts, deficit reduction, or productive government spending—could promote growth."

2. As discussed during the hearing, one role that energy tax policy has historically played is to help promote the development and deployment of new technologies. Although there is currently a Federal mandate for renewable fuels, development of next generation technologies based on cellulose rather than feed grains has not occurred as rapidly as originally expected when Congress expanded the renewable fuel standard in 2007. In the interim, continued reliance on feed-grain based biofuels has likely added to the price of those commodities and contributed to higher feed and food prices. Would you support the extension of existing tax incentives for the development of next-generation biofuels technologies such as the cellulosic biofuels producer tax credit under Sec. 40(b) or accelerated depreciation for cellulosic biofuels plant property under Sec. 168?

Response from Phil Sharp:

Neither I nor any RFF researchers have examined this issue in significant enough detail to fully answer this question. However, economic efficiency is usually served by not picking winners—in this case particular transportation fuels. It would be better to design policies that internalize externalities and let the "chips" and incentives fall where they may.

Question from Senator Snowe

One critical area of our energy tax policy is with respect to energy efficiency. Nationally, 15 percent of our existing housing stock was constructed prior to World War II, and most of these

homes utilized inefficient insulation and windows. In Maine, this figure is 30 percent, which can increases energy bills by as much as 50 percent.

Earlier this year a front page New York Times article told the struggle of the Hartfords, an elderly couple in Dixfield, Maine, and a heating oil dealer who was left to grapple with fuel assistance completely gone leaving neighbors left to fend a cold night themselves with bills for the season approaching $3,600 and their monthly income equaling $1200.

While the story generated thousands in donations for heating assistance from across the country, it also compelled an energy efficiency company from Wilton, Maine, Upright Frameworks, to voluntarily conduct a complete energy retrofit of their home, which resulted in a 46 percent energy improvement of their home and an annual reduction in energy costs of more than $1600.

Yet, right now, while oil companies are able to claim tax deductions for exploration of oil, if Upright Frameworks had not donated their work, there would not have been one single tax policy that would have assisted the Hartfords to invest in energy efficiency.

1. I have introduced legislation, "The Cut Energy Bills at Home Act," which would provide a technology-neutral 30 percent tax credit for the purchase and installation of energy efficiency measures that reduce the consumption of energy by more than 20 percent. Do you believe that we should be promoting these types of energy efficiency policies?

Response from Phil Sharp:

Energy efficiency should be thought of as a major source of future energy for the country and not treated as a secondary proposition. My personal belief is that policies should encourage consumers and investors to adopt the technology that benefits both them and the country. In the case you cite, had the couple known they could get such a large benefit in fuel cost savings, they might have had the incentive to finance the retrofit themselves. Researchers at RFF and elsewhere are working on understanding the barriers to this type of behavior.

This past Sunday Daniel Yergin stated in the New York Times that, "America needs a new political discourse on energy." Through American technological development we have unleashed additional domestic supplies leading to the achievement this past year that the U.S.'s increased oil production was the largest in the world outside of OPEC.

Furthermore, lower natural gas prices in the United States have led a price advantage of more than 4 times the price in Asia and this is leading to a manufacturing revival in areas that have access to this natural gas.

2. At a time when North America is the epicenter to a new energy paradigm I would ask each of you what are the realistic goals that our country can achieve in terms of oil production, consumption of foreign oil, and ultimately lower prices for consumers?

Response from Phil Sharp:

While there are major efforts to project what our energy picture will look like in the next 20 years, I do not think it is possible to set clear-cut, accurate goals for our energy sectors. If we've learned anything in the past 40 years, we discovered that we were wrong about prices, wrong about upcoming technologies, and wrong about new availability of fuels. It is important to adopt policies to keep options open for this country in the future. It is also important to adopt policies that recognize the damages to the environment and human health—the externalities—associated with various fuel cycles and to structure policies that ensure that fuel providers and users will take these damages into account in prices.

As I noted in my written testimony submitted to this committee:

"During the last 40 years, we have witnessed a number of big developments not anticipated by industry, government, or academia, which is a major caution about grand plans by government or anyone else. And certainly these unanticipated developments are another reason that policies need serious reassessment periodically."

COMMUNICATIONS

June 25, 2012

The Honorable Max Baucus, Chair
The Honorable Orrin G. Hatch, Ranking Member
Committee on Finance
219 Dirksen Senate Office Building
Washington D.C. 20510

Dear Chairman Baucus and Ranking Member Hatch:

On behalf of ABM Energy, a leading provider of integrated facility solutions that also provides energy efficiency home and commercial retrofits across the country, I thank you for the opportunity to express support for residential and commercial energy efficiency tax credits.

Please consider this letter a statement to the record for the Senate Finance Committee Hearing on **"Tax Reform: Impact on U.S. Energy Policy" on June 12, 2012.**

We respectfully request that the Committee act quickly to renew and extend the Tax Code Section 25C that provides a 10% tax credit for the purchase of certain energy efficient materials up to $500. Since its passage in 2005, this tax credit has been a significant incentive for homeowners to choose energy efficient products over less-expensive and less-efficient alternatives. It has proven to be an important tool to promote energy efficiency by helping owners afford higher efficiency windows, doors, HVAC systems, hot water heaters, roofing and insulation. It has also served to create and preserve American jobs in the remodeling and retrofit industry.

The 25C tax credit could be improved. Between December 31, 2008 and January 1, 2011 the tax credit was expanded to 30% of the purchase of the energy efficiency products up to $1500. This supported a growth in demand for those products in a challenging economic environment for those in the building industry. A return to those levels would further support American jobs in the residential building sector.

ABM also asks the committee to extend and modify the "Energy Efficient Commercial Buildings Deduction" (Section 179D). In addition to extending this provision, we recommending making adjustments to the legislation to specifically encouraging existing commercial building retrofits. In particular, ABM urges the committee to consider the baseline of an existing building as the baseline for a performance calculation rather that the current code for new construction of that building. It is more appropriate and effective to calculate energy performance improvements of the actual buildings and reward those real energy savings. To advance the country's energy security, significant energy-efficiency improvements to older buildings is important.

In addition to restoring, extending, and expanding the 25C and 179D tax provisions, ABM Energy expresses support for a new tax credit proposal, recently introduced in the Senate. The bi-partisan "Cut Energy Bills at Home Act" (S.1914) would create the 25E tax credit -- the first residential performance-based tax credit given to homeowners who make energy efficiency improvements. As a performance-based incentive, this tax credit would address concerns outlined in the April GAO report and reward energy saving levels rather than specific products, thus aligning taxpayer dollars directly with public policy objectives, creating significant energy savings and job creation. A performance-based residential tax credit would lay the foundation help create a sustainable market for energy efficiency and an incentive for sound, efficient construction by trained contractors.

We appreciate the opportunity to express our support of these three important tax provisions. Should you have any questions about our position or company, please do not hesitate to contact me or our Washington Representative Kara Saul Rinaldi at kara@anndyl.com or 202.276.1773 directly.

Sincerely,

Michael Rogers
Vice President
ABM Energy

152 Technology Drive | **Irvine**, CA 92618
802-862-3250 (Office)
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Title of Hearing: **"Tax Reform: Impact on U.S. Energy Policy" on June 12, 2012.**

Comments for the Record, June 12, 2012 Hearing on Tax Reform: Impact on U.S. Energy Policy

Steven Nadel
Executive Director
American Council for an Energy-Efficient Economy
529 14th Street NW, Suite 600
Washington, D.C. 20045

I am writing to provide the comments of the American Council for an Energy-Efficient Economy (ACEEE) for the record of the hearing on Tax Reform: Impact on U.S. Energy Policy. ACEEE is a nonprofit research organization formed in 1980 that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments, and behaviors. We now employ more than 40 researchers and publish dozens of studies each year. Additional information on our organization can be found at http://aceee.org. ACEEE has conducted substantial research on energy efficiency tax incentives and also on how broader tax policy affects investments in energy efficiency.

The tax code has a substantial impact on whether businesses and consumers make cost-effective energy efficiency investments. In these comments I briefly address small "tweaks" to the tax code addressing such issues as depreciation and tax incentives as well as much larger reforms, such as changing the corporate income tax to be based on income, not profits, and consideration of Pigovian taxes to reduce externalities and provide revenue to allow reductions in marginal tax rates. Each of these topics is discussed in the paragraphs below.

Depreciation

There are two significant problems with how the current tax code treats depreciation of energy efficiency investments. First, in the case of investments in the commercial sector, most investments are depreciated over the life of the building (set at 39 years), even if the equipment (e.g., an air conditioner) has a far shorter life. This discourages investments in new equipment as owners are reluctant to write-off undepreciated assets, making them more likely to repair rather than replace old, inefficient equipment. Depreciation periods need to be set based on reasonable estimates of the average useful life of equipment. Options include specifying improved depreciation periods in the tax code or delegating these determinations to the IRS, as was policy in the past. We recommend the latter since this allows adjustments to be determined administratively rather than having to go through a legislative process.

Second, depreciation rates can vary for the same equipment, depending on who owns the equipment. This can stifle investment by owners who have long depreciation periods. For example, depreciation periods for combined heat and power (CHP) systems (systems that generate heat and power together, permitting much higher overall efficiencies than if power and

steam generation are separate) can vary from 5-39 years. We recommend selection of a single rational depreciation period for all owners such as 15 years.

These issues and other depreciation issues are discussed in more detail in a recent ACEEE working paper on depreciation available at http://aceee.org/white-paper/depreciation-impacts-on-tax-policy .

Tax Incentives

Given current budget deficits, we assume that funds for energy-related tax incentives will be very limited. First, credits should target only technologies or processes that provide a societal good in the energy sector, such as reducing energy use and saving money or encouraging new energy sources that will be important in the long term. We recommend that these limited available funds be targeted at instances where technology or practice is not widespread, but with medium-term support (e.g., five years), markets can be transformed so that these technologies or practices become much more widely used even after tax incentives end.

Recent examples of such tax credits include the energy efficiency appliance tax credit (Section 45M) and the new homes tax credit (Section 45L). In the case of appliances, incentives have targeted very high efficiency appliances, substantially raising market share. Many of the products incentivized under the original 2005 legislation now represent the majority of product sales. Eligibility levels have been tightened several times so that incentives are only available for the very most efficient products on the market, with incentives phased out for lower efficiency levels that no longer need support. Likewise, the new homes tax credit has targeted very high levels of performance, raising qualifying homes from less than 1% of new construction to more than 10%. We recommend extending this credit, which expired at the end of 2011, but also adding a new, higher efficiency tier. When the market share of the original tier grows some more, incentives can be phased out, leaving only incentives for the new, higher tier. Additional information on the success of these and other energy efficiency tax incentives can be found in an ACEEE white paper available at http://aceee.org/white-paper/energy-efficiency-tax-incentives.

Based on this experience, we recommend that future incentives:

- Target energy-saving equipment and practices with substantial energy savings and target energy sources that can produce substantial energy in the long term (we want "mountains" not "molehills");
- Target efficiency levels and new energy sources that currently have a very small market share to keep costs down and minimize the number of "free riders" (purchasers who would have bought equipment anyway, even without incentives);
- Pay substantial incentives to motivate significant sales; and
- Be in place for a medium period of time (e.g., five years) so manufacturers and other market players know incentives will be available for long enough that it is worth making investments. Short-term incentives do not provide such assurance. After this medium period of time, incentives should either be phased out or eligibility levels increased, starting a new market transformation process.

In addition, for measures that are expensive and for which quick market transformation is not possible, such as comprehensive home and building energy efficiency retrofits, Congress should consider repayable incentives after the initial five-year incentive ends. Under such a scheme, a tax credit could be made when investments are made, but then the taxpayer would gradually repay the investment in subsequent-year taxes. For example, if a business receives an initial tax credit of $100,000 on a CHP system the year the system was placed into service, they might repay the federal credit at the rate of $20,000 per year over the next five years. The initial credit encourages the original investment, and the subsequent repayments channel the value of some of the energy bill savings back to the federal government, so that the long-term cost to the federal government is very low – just defaults plus interest costs. Essentially this would be a zero-interest loan.

This idea has already begun to circulate in Congress. In 2011, Senator Shaheen from New Hampshire circulated a draft bill that would provide a repayable tax incentive for CHP systems. Under the proposal, an incentive would be given to electric utilities that finance CHP systems. The amount of the incentive would then be repaid to the Treasury through an annual installment payment paid by the customer who owns the CHP system equal to the amount of the subsidy divided by an installment period, specified in years. In this case, the installment period is 3 years (e.g., the customer repays the subsidy over 3 years) but payments don't begin until the third year after the subsidy is paid (i.e., the customer repays nothing for the first two years, then repays 1/3 of the subsidy each year for the next three years). However, this particular proposal is complicated by the fact that the electric utility receives the tax incentive, but a business that hosted the CHP system would make the repayment, resulting in some tricky legal issues. These issues would be much more limited if the same firm received the credit and then made the repayments.

Consider Taxing Income, Not Profits

Under the current tax code, individuals are taxed on income but corporations are taxed on profits (the difference between income and expenses). This results in substantial gamesmanship on ways to incur paper expenses in order to minimize paper profits. Also, regarding energy efficiency, the fact that energy expenses are deductible essentially means that the federal government is sharing a portion of energy costs (around 25% given the average corporate tax rate), reducing the incentive for businesses to reduce energy use. Likewise, energy efficiency savings are taxed, also reducing investment incentives. The corporate tax could be dramatically simplified by taxing income instead of profits. Since profits are much smaller than income (e.g., the national average profit is about 9% of income[1]), tax rates could be much lower. In order to keep from "pancaking" taxes, taxes incorporated in the costs of goods purchased could be deducted, so firms would only pay taxes on their value added. We roughly estimate that with these changes a corporate tax of about 3.25% of income would

[1] Average corporate net income of U.S. firms appears to be about 9.2% (derived from data in Markle and Shackelford, 2011, "Cross-Country Comparisons fo Corporate Income Taxes," Working Paper 16839, Cambridge, MA: National Bureau of Economic Research. http://www.nber.org/papers/w16839.)

produce about the same revenue as the current system. Further details are provided in an ACEEE working paper available at http://aceee.org/white-paper/business-tax-working-paper. At this point we are not advocating for adoption but do suggest that this idea be explored further.

Pigovian Taxes

Two witnesses at the hearing, Dr. Dale Jorgenson and the Honorable Philip Sharp, discussed this possibility. Many observers have proposed reducing marginal tax rates by eliminating or reducing a variety of tax expenditures. While this sounds great in theory, reducing tax expenditures is very difficult in practice and users of these incentives will fight hard to defend them. To the extent additional revenue is needed in order to reduce marginal tax rates to desired levels, Pigovian taxes should be considered. An ACEEE working paper on this subject can be found at http://aceee.org/white-paper/should-us-consider-modest-emissions-fee.

Concluding Thought

Tax reform is a monumental challenge but one that we hope Congress takes up in a pragmatic and bipartisan fashion. We would be happy to discuss these issues further, either in a hearing or in discussions with staff.

STATEMENT FOR THE RECORD

OF

THE AMERICAN INSTITUTE OF ARCHITECTS

FOR THE HEARING ON

"TAX REFORM: IMPACT ON U.S. ENERGY POLICY"

BEFORE

THE U.S. SENATE
COMMITTEE ON FINANCE

JUNE 12, 2012

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The American Institute of Architects (AIA) appreciates the opportunity to submit this statement for the record and commends the Committee's work on the critical issue of energy tax policy.

Given the critical economic, security, and environmental considerations surrounding the energy sector, the issue of energy tax policy is an important consideration as items related to extensions and tax reform are discussed. Although there are numerous tax policies that impact energy policy and the built environment, our statement focuses on an energy efficiency and conservation tax provision, the Energy Efficient Commercial Building Deduction, which is contained in section 179D of the Internal Revenue Code. Although not an expiring provision this year (it is set to expire in 2013), the AIA highlights the 179D deduction as an example of one provision in the energy tax family that has had a demonstrable effect on energy efficiency investment, domestic manufacturing, and design and construction industry jobs.

The 179D deduction has leveraged billions of dollars in private capital, resulted in the energy-efficient construction or renovation of thousands of buildings, and created or preserved hundreds of thousands of jobs in the process. It is one of the best indicators of the positive impact extensions of energy incentives can have on the economy.

In recognition of the benefits of the section 179D deduction, there have been reform proposals offered in recent months aimed at further enhancing the important tax benefit. The AIA supports reform of the 179D deduction that makes it simpler and more accessible. As these discussions progress, the AIA also strongly urges Congress to consider enhancements to 179D that would provide an effective and efficient way to encourage investments in energy efficiency, stimulating construction activity and jobs during this fragile time in the nation's economy.

The AIA represents over 75,000 architects and emerging professionals nationwide and around the world. As a leader in the design and construction industry, the AIA supports incentivizing energy efficiency in a myriad of ways, but particularly through provisions like 179D, that have proven to be quite successful in the field.

The AIA strongly supported this provision when it was enacted as part of the Energy Policy Act of 2005. The AIA also helped form a partnership with other concerned stakeholders and through this partnership, developed implementation recommendations for building owners to obtain this tax deduction. In 2008, the AIA helped pass legislation to extend the life of the deduction so that it covers property placed in service by December 31, 2013. That same year, at the AIA's urging, the IRS issued guidance on how the deduction could be allocated to the designer.

The AIA was pleased with the initial clarification that this IRS guidance provided, and many agencies on the federal, state and local levels followed suit by issuing policies on the allocation of this deduction.

Background on Section 179D, the Energy Efficient Commercial Building Deduction

The Energy Efficient Commercial Building Deduction was created by the Energy Policy Act of 2005 (Pub. L. No. 109-58), in recognition of the fact that a substantial portion of U.S. energy consumption is attributable to commercial buildings and to provide a tax incentive to help offset

the costs associated with enhancing their energy efficiency. Section 179D provides a deduction for certain energy-efficient commercial building property expenditures.

Eligible expenditures are for property which is: (1) installed on or in any building that is within the scope of Standard 90.1-2001 of the American Society of Heating, Refrigerating, and Air Conditioning Engineers and the Illuminating Engineering Society of North America ("ASHRAE/IESNA"); (2) installed as part of the (i) interior lighting systems, (ii) heating, cooling, ventilation, and hot water systems, or (iii) building envelope; and (3) certified as being installed as part of a plan designed to reduce total annual energy and power costs by 50 percent or more. The deduction is effective for property placed in service prior to January 1, 2014.

The maximum deduction is $1.80 per square foot. In the case that a building does not meet the 50 percent energy savings requirement, a partial deduction of $0.60 per square foot is allowed for each separate building system that comprises energy-efficient property and that is certified as meeting required savings targets. To encourage the public sector to utilize these same energy efficient enhancements, the 179D deduction also provides a federal, state, or local government owner of a commercial building an election to allocate the tax deduction to the primary person responsible for designing the energy efficient enhancements installed in the building.

Building owners who take advantage of 179D not only enjoy a deduction for qualifying levels of efficiency but also enjoy significantly lower energy costs down the road, the benefits of leading edge design and construction which enhances the building's long term market value, and the benefits of a cleaner environment overall. Owners have utilized the deduction for both new construction projects and retrofits of existing buildings.

Although a public entity cannot take advantage of the tax proceeds from the 179D deduction allocation, it will also receive other benefits in the form of energy savings and market value, often totaling more than the deduction proceeds received by the designer.

The average 179D project (typically $0.60/ sq. ft. for lighting upgrades) saves an agency an average of 20 percent on their energy expenses. However, even in cases where there are minimal upgrades that qualify for 179D, agencies have saved relatively large amounts.

For example, when a middle school set out to retrofit its lighting system, an architect worked to find 12 percent energy savings just on that single lighting system. The system then qualified for the 179D partial lighting deduction. In return, the school saved $15,000 on its energy bill in that year alone. It saved even more the next year, and will continue to save each year. Over 10 years, that totals to over $150,000, for a single school. School districts that take advantage of 179D for five, 10, or 20 schools can save millions of dollars over 10 years, at no additional cost to them, because they can utilize the 179D deduction to finance the additional energy savings.

This example illustrates the impact of just 12 percent energy savings in a single school. There are hundreds of other examples of the deduction providing even greater benefits to school districts, army bases, civic structures, and other publicly owned buildings across the nation.

Proposals to Improve the 179D Deduction

There have been reform proposals offered in recent months aimed at further enhancing this important tax benefit. AIA supports commonsense efforts that make 179D more usable, effective and simpler. As these discussions progress, the AIA, in particular, strongly urges Congress to consider three key improvements to 179D: (1) ensuring the ability of pass-through entities to capture the full value of an allocated deduction in the case of a public owner of a building; (2) enhancing the value of the 179D deduction; and (3) allowing non-profit owners of buildings, similar to public owners of buildings, to allocate the deduction.

Allocating the Section 179D Deduction to a Pass-Thru Entity
The section 179D deduction provides a federal, state, or local government owner of a commercial building an election to allocate the tax deduction to the primary person responsible for designing the energy efficient enhancements. In December 2010, the IRS released a memo that effectively prevents design firms organized as partnerships or S corporations from fully realizing the benefit of a section 179D allocated deduction.

This problem is not merely theoretical – almost 80 percent of architectural firms have fewer than 10 employees and a significant number of these small businesses are organized as partnerships and S corporations. Moreover, it is often these small and mid-size firms that work on state and local government projects such as schools.

By way of background, an allocated section 179D deduction is a tax deduction that does not reflect an economic cost to the recipient taxpayer, because similar to a tax credit, the deduction provides an incentive. The technical tax rules nonetheless treat an allocated deduction as reflecting an economic cost to the taxpayer and accordingly reduce partnership and S corporation taxable income *and* the partners'/shareholders' basis in the partnership/S corporation (*i.e.*, "outside basis") by the amount of the allocated deduction. The reduced outside basis may force partners and S corporation shareholders to recognize taxable gain on the distribution of economic earnings that were excluded from tax by the allocated section 179D deduction at the partnership and S corporation level. The IRS memo states that, in the absence of explicit statutory authority allowing for basis adjustments to preserve the benefit of the deduction at the partner or shareholder level, the technical tax rules govern. The result will be that, in the case of many partnerships and S corporations, the benefit of the section 179D deduction will be lost or significantly diminished. This will harm not only these firms, but also the school districts and other public entities who own the buildings.

In order for partnerships and S corporations to obtain the intended benefits, it is necessary for partners and S corporation shareholders to obtain a basis in their partnerships and S corporations that is not reduced by an allocated 179D deduction. This issue could be addressed by a simple modification to expressly require Treasury to issue regulations that properly determine partnership or S corporation outside basis in the case where the 179D deduction is allocated. Such a clarification would provide certainty and address a widespread concern among many small businesses that design energy efficient buildings.

Enhancing the Section 179D Deduction

The impact of the section 179D deduction has become muted over time. The maximum deduction of $1.80 per square foot has not been increased since the deduction was put in place in 2005 and, as a result, has not kept pace with inflation. Moreover, as the economy and financial markets continue their fragile recovery, the amount of capital available for building design, construction, and renovation continues to be limited. A recent AIA survey of architecture firms shows that nearly two-thirds report that a lack of financing has slowed or stopped construction projects that would create jobs. Owners are also less likely to invest the upfront capital costs associated with energy efficient systems, which often are somewhat more expensive to design, build, and install than their less efficient counterparts.

In 2010, a coalition of more than 80 organizations and companies called on Congress to increase the 179D deduction from the current maximum allowable amount of $1.80 per square foot to $3.00 per square foot. In the case of individual subsystems, the maximum allowable deduction should be increased from $0.60 per square foot to $1.00 per square foot. Bipartisan legislation was introduced in both chambers in the 111th Congress to enhance the deduction in this way.

Enhancing the 179D deduction would provide an important source of additional capital to stimulate building design, construction, and renovation, driving the creation of well-paying jobs. Studies have shown that every $1 million invested in design and construction yields 28.5 full-time jobs. Moreover, an enhanced section 179D deduction would further incentivize energy efficiency, improve the nation's commercial building stock, and increase energy independence.

Allocating the Section 179D Deduction in the Case of a Non-Profit Owner of a Building

The 179D deduction allocation provision, which allows a federal, state, or local government owner of a building to allocate the deduction to the designer, has been used to great effect by design professionals to encourage their public sector clients to meet the energy targets of the deduction and then have the client assign them the tax deduction. The result has been more energy efficient public buildings, lower energy costs for the building owners, and tax relief for design professionals.

In many cases, non-profit entities, such as hospitals, universities, private schools, charities, and foundations, conduct functions similar to state and local governments. Currently, non-profit entities own thousands of properties across the country. Although retrofits to these properties could result in significant energy savings, the non-profit entities do not pay taxes and, consequently, cannot benefit from the section 179D deduction.

The section 179D allocation provision should be expanded to provide non-profit owners of buildings, similarly to public owners of buildings, with the ability to elect to allocate the deduction to the primary designer of the building. Such a provision would assist non-profits in financing energy efficiency upgrades and would reduce their energy costs in the longer-term.

Conclusion

The AIA appreciates the opportunity to submit this statement for the record. As Congress considers energy tax policy issues, it is important to recognize the impact the 179D deduction has had in leveraging private capital and increasing energy-efficient construction and renovation.

Modest improvements to the section 179D deduction would increase the effectiveness and efficiency of this important tax policy. The AIA and its members are ready to serve as a resource to Congress and the Committee on these and other issues.

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Statement
Of the
AMERICAN PUBLIC POWER ASSOCIATION
Submitted to the
SENATE FINANCE COMMITTEE
For the hearing on
"Tax Reform: Impact on U.S. Energy Policy"

Submitted June 26, 2012

The American Public Power Association (APPA) appreciates the opportunity to submit this statement in relation to the Senate Finance Committee's June 12, 2012, hearing on "Tax Reform: Impact on U.S. Energy Policy." While a number of issues relating to tax reform will have a direct effect on our members, and so on U.S. energy policy, this statement will focus on Clean Renewable Energy Bonds (CREBs), "New" Clean Renewable Energy Bonds (New CREBs) and tax-exempt financing through municipal bonds.

APPA is the national service organization representing the interests of over 2,000 municipal and other state- and locally-owned, not-for-profit electric utilities throughout the United States (all but Hawaii). Collectively, public power utilities deliver electricity to one of every seven electricity consumers (approximately 46 million people), serving some of the nation's largest cities. However, the vast majority of APPA's members serve communities with populations of 10,000 people or less.

Overall, public power systems' primary purpose is to provide reliable, efficient service to local customers at the lowest possible cost, consistent with good environmental stewardship. Public power systems are locally created governmental institutions that address a basic community need: they operate on a not-for-profit basis to provide an essential public service, reliably and efficiently, at a reasonable price.

Tax-Exempt Financing

The majority of APPA members finance electric infrastructure through the issuance of debt to the domestic capital markets, and the single most important financing tool for public power providers is municipal bond debt. Federal tax exemption for interest paid on such debt permits municipal issuers to sell public purpose debt at lower interest rates when compared to debt the interest of which is subject to federal income tax. In fact, most of the overall infrastructure in the United States is financed through the issuance of tax-exempt bonds.

It is a long-standing principle that the federal government should not tax interest on municipal bonds. This reflects the basic "federalism" principle that one level of government should not tax another. This

principle applies–with some exceptions–to almost all forms of government financing. So, just as state and local governments do not assess property taxes on federal property within their jurisdictions and do not tax interest on Treasury bills, notes or bonds, so the federal government does not tax municipal bond interest.

This principle was at the core of the 1895 Supreme Court decision that, as a constitutional matter, the federal government could not impose such a tax.[1] The Revenue Act of 1913 codified this exemption, restated in Section 103(a) of the Internal Revenue Code of 1954 and reaffirmed in the Tax Reform Act of 1986. While the latter greatly reduced private activities that may be financed with tax-exempt bond proceeds, it did not fundamentally alter the exemption for bond financing of public activities as is being considered.

Even after the Supreme Court found that the federal government could regulate municipal bonds in 1988[2]—a decision taken as opening the door to begin taxing bond interest—Congress has continued to honor the principle that the federal government should not tax state and local bonds.

Of late, however, there has been a disturbing willingness among some policymakers to consider abandoning this principle.[3] As an obvious result, confirmed by recent analysis, such a change could increase the cost of state and local borrowing, in turn leading to an immediate reduction in investments in infrastructure. For example, the Congressional Budget Office notes in its 2011 report on deficit reduction options that replacing tax-exempt financing with a direct federal subsidy could "raise borrowing costs for issues of tax-preferred debt and thereby deter some investment that might have national benefits or place greater burdens on already strained state and local budgets."[4] Likewise, in a report to investors last month, Citi concluded that replacing tax-exempt financing with a tax credit bond would increase state and local borrowing costs, with a "large number of factors (leading to) the borrowing costs for tax credit bonds to be higher than the comparable borrowing costs on corporate bonds."[5]

This is bad economic policy at two levels: it would result in fewer jobs for those who would build, repair, and improve this infrastructure, and it would hurt businesses that rely on this infrastructure to be productive.

It is also an unnecessary step. While some rationalize the decision to propose a tax on state and local bonds with the argument that "everything must be on the table," major tax reform proposals retain the tax exemption for such bonds.[6]

As a result, APPA believes that tax-exempt financing should be preserved and enhanced—not further limited. This includes reversing the limits put on tax-exempt bonds in the Tax Reform Act of 1986. Tax-exempt financing is critical for maintaining infrastructure, updating electric utility services, providing

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[1] Pollock v Farmers' Loan & Trust Company, 157 US 429 (1895).
[2] South Carolina v. Baker 485 US 505 (1988).
[3] National Commission on Fiscal Responsibility and Reform, "The Moment of Truth" (Draft Report) 31 Dec. 2010 (proposing the taxation of interest on new issues); Bipartisan Tax Fairness and Simplification Act of 2011, S. 727, § 111, 112th Cong., 1st Sess. (2011) (proposing the conversion of the exclusion of interest into a capped tax credit); U.S. Dept. of Treasury, General Explanations of the Administration's Fiscal Year 2013 Revenue Proposals, 73, (Feb. 2012) (limiting the value of the exclusion of bond interest to 28 percent).
[4] Congressional Budget Office, "Reducing the Deficit: Spending and Revenue Options" 163-164 (Mar. 2011).
[5] Citi, "US Muncipal Strategy Notes: Addressing Myths on Tax Credit Bonds" 7 (May 24, 2012).
[6] Bipartisan Policy Center, "Restoring America's Future: Reviving the Economy, Cutting Spending and Debt, and Creating a Simple, Pro-Growth Tax System" 128 (Dec. 28, 2010).

electricity at reasonable costs for ratepayers, and creating jobs. In sum, APPA opposes any efforts through tax reform, or other legislation, to undermine or limit this important financing tool.

Clean Renewable Energy Bonds

The CREB program was included as part of the tax title of the Energy Policy Act of 2005. The original program was expanded and extended twice in 2006 and 2008. A new version of the CREB program, New CREBs, was created in 2008 and expanded in 2009 to provide bond volume of $2.4 billion to be divided equally between public power providers, electric cooperatives, and governmental bodies (including Indian tribal governments). In 2010, Congress modified New CREBs to allow issuers the option of receiving a direct payment from Treasury in lieu of providing bond holders a tax credit.

The $800 million in New CREB volume allocated to public power providers was oversubscribed in the application process for New CREBs in 2009 even though some utilities chose not to apply because of the uncertainty of the allocation amount they would receive and the costs and complications of applying for the bonds. This demand was fueled in part because of the direct payment option.

With the deadline for issuing the vast majority of the bonding authority allocated by the IRS in 2009 not coming until October of this year, we do not think the full benefit of these bonds has been seen. However, these bonds already have provided an important tool for encouraging the investment in new and innovative clean technologies for power generation.

Given the challenges facing any renewable project, however, we think it was particularly prescient for Congress to have provided a mechanism for recycling bond authority back into clean renewable projects when allocated bond authority cannot be used. Permitting obstacles, market concerns, and technological hurdles all mean that some of the bond authority allocated in 2009 will not be used within the three years required under the law. Because Congress provided that such allocations would revert back to Treasury to be re-allocated for other New CREB financed projects, these secondary and tertiary issues will not stand in the way of Congress' primary goal in creating and expanding on the CREBs program: encouraging investment in and development of clean renewable energy.

In sum, we believe that the potential for CREBs has not yet been tapped and that the program should be enhanced, as proposed in such legislation as H.R. 6117 and S. 3855, the Clean Renewable Energy Investment Act of 2010, proposed in the 111th Congress. Among other provisions, this legislation would have repealed the national bond volume cap for four years.

In conclusion, thank you again for this opportunity to discuss the effect of federal tax reform on U.S. energy policy.

Statement of the Business Council for Sustainable Energy

Senate Committee on Finance

Hearing on Tax Reform: Impact on Energy Policy

June 12, 2012

The Business Council for Sustainable Energy urges Congress to continue its long-standing support for a broad array of clean energy tax incentives to spur investment, create jobs and diversify our nation's energy portfolio to power the U.S. economy. While Members of Congress have expressed an interest in comprehensive tax reform, the Council believes that until tax reform is enacted that includes a place for clean energy provisions, Congress should continue the federal commitment to clean energy tax incentives by extending expiring, and expired measures.

The Business Council for Sustainable Energy (BCSE) is a coalition of companies and trade associations from the energy efficiency, natural gas and renewable energy sectors, and also includes independent electric power producers, investor-owned utilities, public power and commercial end-users. Founded in 1992, the Council advocates for policies that expand the use of commercially-available clean energy technologies, products and services. The coalition's diverse business membership is united around the revitalization of the economy and the creation of a secure and reliable energy future for America.

BCSE underscores the critical role that clean energy tax incentives play in helping the United States achieve vital economic and energy security objectives. Tax incentives are an important part of our energy policy and have been as effective as any state or federal energy policy mechanism in helping to ensure an adequate, reliable, safe, clean supply of energy resources. Tax incentives can be effective, efficient tools to encourage private sector investment, reduce costs for consumers and industry, spur technological innovation and enhance the viability and deployment of a variety of clean energy options.

Smart federal policy has assisted the natural gas, renewable energy and energy efficiency sectors in adding hundreds of thousands of jobs to the U.S. economy. By way of example, the shale gas revolution that is providing so many benefits across the United States was supported, in part, by federal tax incentives.

Continued support for clean energy incentives is in the best interest of American taxpayers and supports a well-reasoned national energy strategy that improves our economic conditions at home and strengthens America's competitiveness in the global marketplace.

The Council and its members have been gathering input from experts on how clean energy can fit into comprehensive tax reform and the Council is willing to engage in discussions about how to structure comprehensive tax reform, if and when Congress moves legislation in this or a future Congress.

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However, until comprehensive tax reform is enacted, the Council strongly urges Congress to extend expiring and expired clean energy tax incentives.

We look forward to constructively working with you as you consider spending and tax policy proposals this fall.

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Comments for the Record
United States Senate
Committee on Finance
Tax Reform: Impact on U.S. Energy Policy
June 12, 2012, 10:00 AM

By Michael G. Bindner
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Chairmen Baucus and Ranking Member Hatch, thank you for the opportunity to submit comments for the record on these issues.

There are three aspects to consider regarding whether energy policy should be conducted through the tax code: energy taxes as transportation user fees; energy taxes as environmental sin taxes and energy tax policies as a subsidy for business. How to design provisions for a sustainable energy policy and tax reform will be discussed for each of these areas and we will address certain oversight questions on whether current tax provisions have been implemented efficiently and effectively.

Energy Taxes as Transportation User Fees

The most familiar energy tax is the excise tax on gasoline. It essentially functions as an automatic toll, but without the requirement for toll booths. As such, it has the advantage of charging greater tolls on less fuel efficient cars and lower tolls on more efficient cars, all without requiring purchase of a EZ Pass or counting axles.

It is a highly efficient tax in this regard, although its effectiveness is limited because it has not kept pace with inflation. This could be corrected by shifting it from a uniform excise to a uniform percentage tax – however because the price of fuel varies by location, there may be constitutional problems with doing so. The only other option to increase this tax in order to overcome the nation's infrastructure deficit – which is appropriately funded with this tax – is to have the courage to increase it.

In this time of high unemployment, such an increase would be a balm to economic growth, as it would put people back to work. Given the competitive nature of gas prices, there is some question as to whether such an increase would produce a penny for penny increase in gasoline prices. If the tax elasticity is more inelastic than elastic, the tax will be absorbed in the purchase price and be a levy on producers. If it is more elastic, it will be a levy on users and will impact congestion (and thus decrease air pollution and overall conservation). For many citizens, either prospect is a win-win, given concerns over both climate change and energy industry profits. The only real question is one of the political courage to do what is necessary for American jobs and infrastructure –and that seems to be a very open question.

Energy taxes are currently levied through the private sector, rather than through toll booth employees, which from the taxpayer point of view is a savings as it externalizes the pension and benefit requirements associated with hiring such workers.

In the event that gasoline cars were replaced with electric cars, given either improvements in battery charging technology or in providing continuous supply through overhead wires, much in the same way that electric trains and busses receive power, any excise per kilowatt for the maintenance of roads could be collected in the same way – or the road system could be made part of a consortium with energy providers, car makers and road construction and maintenance contractors – effectively taking the government out of the loop except when eminent domain issues arise (assuming you believe such a tool should be used for private development, we at the Center believe that it should not be).

The electric option provides an alternative means to using natural gas, besides creating a gas fuelling infrastructure, with natural gas power plants providing a more efficient conduit than millions of internal combustion engines. The electric option allows for the quick implementation of more futuristic fuels, like hydrogen, wind and even Helium3 fusion. Indeed, if private road companies become dominant under such a model, a very real demand for accelerated fusion research could arise, bypassing the current dependence on governmental funding.

In the event of comprehensive tax reform, the excise for fuel would be either a component of or an addition to any broad based Value Added or VAT-like Net Business Receipts Tax. The excise should not disappear into such a general tax, as doing so would have the effect of forcing all businesses to fund transportation on an equal percentage, regardless of their use of such infrastructure. Of course, like a VAT, any gasoline excise would be accounted for using the credit receipt method, so that cascading taxes would not occur, as they do now with this excise functioning as hidden levy.

Energy Taxes as Environmental Sin Taxes

Carbon Taxes, Cap and Trade and even the Gasoline Excise are effectively taxes on pollution or perceived pollution and as such, carry the flavor of sin taxes. As such, they put the government in the position of discouraging vice while at the same time trying to benefit from it. Our comments above as to whether the tax elasticity of the gasoline excise has an impact on congestion and pollution is applicable to this issue, although tax inelasticity will mute the effect of discouraging "sinful" behavior and instead force producers to internalize what would otherwise be considered externalities – provided of course that the proceeds from these taxes are used to ameliorate problems of both pollution (chest congestion) by paying for health care and traffic congestion in building more roads and making more public transit available – while funding energy research to ease the carbon footprint of modern civilization.

Oddly enough, this approach was once considered the conservative alternative to other more intrusive measures proposed by liberals, like imposing pollution controls on cars and factories or simply closing down source polluters. When those options are taken off the table, however, or are considered impractical, then the concept of environmental sin taxes becomes liberal and no action at all becomes the conservative position.

These use of environmental sin taxes is by nature much more efficient economically than pollution controls and probably also more efficient than allowing producers and consumers to benefit from externalities like pollution, congestion and asthma. As with transportation funding, such taxes are only effective if they actually provide adequate funding for amelioration or otherwise change consumer behavior. If the politics of the day prevent taxes from actually accomplishing these objectives, then their effectiveness is diminished.

The short term political win of keeping taxes too low can only work for so long. Reality has a way of intruding, either because infrastructure crumbles, congestion becomes too high, children become ill with asthma (for full disclosure purposes, I suffered from this after moving down-wind as a child from an Ohio Edison coal plant) and sea levels rise – destroying vacation homes and the homes of those who support them – and if Edgar Cayce is to be believed – the states that are the heart of the Republican base.

The role of energy taxes as sin taxes are preserved in comprehensive tax reform only if they are preserved in addition to value added and net business receipts taxes. If there is no separate tax or higher rate for these activities, there is no sin tax effect and the "sin" is effectively forgiven with any amelioration programs funded by the whole of society rather than energy users.

Oddly enough, because the Center does not mention carbon taxes or cap and trade in our standard proposal, liberal commentators on Daily Kos criticize its lack and assume we don't believe in them at all. This is far from the case, as our proposals say nothing about replacing such taxes with our proposed VAT and NBRT. Our proposal is to replace low and mid rate income taxes, corporate income taxes and non-OASI payroll taxes with these revenues. We simply don't touch the question of any other excise. This shows how much the fortunes of energy taxes have changed since Vice President Gore suggested their inclusion in President Clinton's tax proposals.

Energy Tax Policies as a Subsidy for Business

There are quite a few ways in which energy tax policy subsidizes business. The most basic way is the assessment of adequate energy taxes, or taxes generally, to pay for government procurement of infrastructure and research. If tax reform does not include adequate revenue, the businesses which fulfill these contracts will be forced to either reduce staff or go out of business. Government spending stimulates the economy when more money is spent because taxes are raised and dedicated (or even earmarked) for these uses. Eliminating specific energy taxes in tax reform forces this work into competition with other government needs.

Let me be clear that the Center does not propose such a move. Our approach actually favors more, not less, identification of revenues with expenditures, reducing their fungibility, with the expectation that taxes increase when needs are greater and decrease when they are met, either through building in advance of need or finding an alternative private means of providing government services.

The more relevant case to Committee's question is the existence of research and exploration subsidies as they exist inside of more general levies, such as the Corporate Income Tax. To the extent to which tax reform eliminates this tax and replaces it with reforms such as the Net Business Receipts Tax (which taxes both labor and profit), such subsidies are problematic, but not impossible to preserve.

This is one of the virtues of a separate Net Business Receipts Tax, rather than replacing the Corporate Income Tax with a VAT or a Fair Tax – which by their nature have no offsetting tax expenditures. The challenge arises, however, when the existence of such subsidies carry with them the very justified impression that less well connected industries must pay higher taxes in order to preserve these tax subsidies. Worse is the perception, which would arise with their use in a business receipts tax, that such subsidies effectively result in lower wages across the economy. Such a perception, which has some basis in reality, would be certain death for any subsidy.

One must look deeper into the nature of these activities to determine whether a subsidy is justified, or even possible. If subsidized activities are purchased from another firm, the nature of both a VAT and an NBRT alleviate the need for any subsidy at all, because the VAT paid implicit in the fees for research and exploration would simply be passed through to the next level on the supply chain and would be considered outside expenditures for NBRT calculation and therefore not taxable. If research and exploration is conducted in house, then the labor component of these activities would be taxed under both the VAT and the NBRT, as they are currently taxed under personal income and payroll taxes now.

The only real issue is whether the profits or losses from these activities receive special tax treatment. Because profit and loss are not separately calculated under such taxes, which are essentially consumption taxes, the answer must be no. The ability to socialize losses and privatize profits through the NBRT would cease to exist with the tax it is replacing.

If society continues to value such subsidies, they would have to come as an offset to a carbon tax or cap and trade regime, if at all, as the excise tax for energy is essentially a retail sales tax and the industrial model under which the energy industry operates insulates the gasoline excise from the application of any research and exploration credits. If the energy companies were to change their model to end independent sales and distribution networks and treat all such franchisees as employees (with the attendant risk of unionization), then the subject subsidies could be preserved – provided that the related energy tax is increased so that the subsidy could actually operate – favoring those who participate in research and development and penalizing those who do not.

In other words, if big oil wants to keep this subsidy when there are no corporate income tax, it must buy up all its franchisees and allow the government to double the gasoline tax with a deduction at payment for research and exploration.

Without taxes, there can be no subsidy.

The last subsidy issue involves the use of a Value Added Tax as an oil import fee. If the VAT replaces some percentage of current employee and investor income taxes, domestically produced energy products become more competitive on the world market, provided that the VAT is border adjustable, which it would be. For example, if Alaska crude is shipped to Japan for refining and use or western low-sulfur coal is shipped to China, it would be cheaper than the same product shipped under today's tax system.

The NBRT would not be border adjustable because it is designed to pay for entitlement costs which benefit employees and their families directly, so that it is appropriate for the foreign beneficiaries of their labor to fund these costs. Additionally, the ultimate goal of enacting the NBRT is to include tax expenditures to encourage employers to fund activities now provided by the government – from subsidies for children to retiree health care to education to support for adult literacy. Allowing this tax to be zero-rated at the border removes the incentive to use these subsidies, keeping government services in business and requiring higher taxation to support the governmental infrastructure to arrange these services – like the Committee on Ways and Means.

Thank you again for the opportunity to present our comments. We are always available to discuss them further with members, staff and the general public. If you wish an electronic version for distribution or incorporation into the record, you can find it on our web page at http://fiscalequity.blogspot.com or can request one via electronic mail at fiscalequity@verizon.net.

June 25, 2012

The Honorable Max Baucus, Chair
The Honorable Orrin G. Hatch, Ranking Member
Committee on Finance
219 Dirksen Senate Office Building
Washington D.C. 20510

Dear Chairman Baucus and Ranking Member Hatch:

On behalf of Efficiency First, a trade association representing America's Home Performance workforce, I thank you for the opportunity to express support for the restoration and extension of the residential energy efficiency (25C) tax credit. Please consider this letter a statement to the record for the Senate Finance Committee Hearing on "Tax Reform: Impact on U.S. Energy Policy" on June 12, 2012. As large and small businesses that make up the home performance industry – including contractors, building product manufacturers and related organizations – we recognize that energy efficiency tax incentives are critical to increasing the efficiency of our nation's homes, reducing energy bills, and putting our contractors back to work and ask that they be given consideration in a tax reform scenario.

We urge you to extend the Tax Code Section 25C that provides a 10% tax credit for the purchase of certain energy efficient materials up to $500. Since its passage in 2005, this tax credit has been a significant incentive for homeowners to choose energy efficient products over less-expensive and less-efficient alternatives. It has proven to be an important tool to promote energy efficiency by helping owners afford higher efficiency windows, doors, HVAC systems, hot water heaters, roofing and insulation. It has also served to create and preserve American jobs in the remodeling and retrofit industry.

The 25C tax credit could be improved. Between December 31, 2008 and January 1, 2011 the tax credit was expanded to 30% of the purchase of the energy efficiency products up to $1500. This supported a growth in demand for those product in a challenging economic environment for those in the building industry. A return to those levels would further support American jobs in the residential building sector.

In addition to restoring, extending, and expanding the 25C tax provision, Efficiency First expresses support for a new tax credit proposal, recently introduced in the Senate. The bi-partisan "Cut Energy Bills at Home Act" (S.1914) would create the 25E tax credit -- the first residential performance-based tax credit given to homeowners who make energy efficiency improvements. As a performance-based incentive, 25E would reward energy saving levels rather than specific products, thus aligning taxpayer dollars directly with public policy objectives, creating significant energy savings and job creation. The 25E tax credit would lay the foundation not only for short

term gains, but would also help create a market for energy efficiency and an incentive for sound, efficient construction by trained contractors.

Few tax credits under consideration provide tax relief to the average American homeowner. Both 25C and 25E would reduce America's energy use, create jobs, protect our nation's security, and put money back into the pocket of the American taxpayer.

We appreciate the opportunity to express our support of these two important tax provisions. Should you have any questions about our position or organization, please do not hesitate to contact me or our Washington Representative Kara Saul Rinaldi at kara@anndyl.com or 202.276.1773 directly.

Sincerely,

Jay Murdoch
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Title of Hearing: "Tax Reform: Impact on U.S. Energy Policy" on June 12, 2012

Fiscal Fitness

How Taxes at Home Help Determine Competitiveness Abroad

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ABOUT THE AUTHORS

DAVID HOBBS, Chief Energy Strategist, is an expert in energy industry structure and strategies. He previously managed IHS CERA's energy research activities. Mr. Hobbs is a principal author of the major IHS CERA studies *Fueling North America's Energy Future: The Unconventional Natural Gas Revolution and the Carbon Agenda,* a comprehensive examination of the impact of the changed natural gas supply outlook on energy markets, power generation technology choices, and the challenges of procuring a low-carbon future; *In Search of Reasonable Certainty: Oil and Gas Reserves Disclosures* and *Modernizing Oil and Gas Disclosures*, comprehensive analyses of the problem of assessing oil and gas reserves and resulting proposed solutions; *"Recession Shock": The Impact of the Economic and Financial Crisis on the Oil Market*, a major IHS CERA assessment of the world economic crisis; and the IHS CERA Multiclient Study *Harnessing the Storm: Investment Challenges and the Future of the Oil Value Chain*. He was a project advisor to the IHS CERA Multiclient Study *Crossing the Divide: The Future of Clean Energy*. Mr. Hobbs is IHS CERA's representative on the management board of the Global Energy Executive MBA program run jointly between the Haskayne School of Business and IHS CERA. He is also a member of the Scientific Advisory Board of the Fondazione Eni Enrico Mattei. Prior to joining IHS CERA Mr. Hobbs had two decades of experience in the international exploration and production business. He has directed projects in Asia, South America, North America, and the North Sea. He has led major international investment and asset commercialization operations. Based in Cambridge, Massachusetts, Mr. Hobbs holds a degree from Imperial College.

DANIEL YERGIN, Chairman and Cofounder of IHS Cambridge Energy Research Associates (IHS CERA) and Executive Vice President of IHS, is a highly respected authority on energy, international politics, and economics. Dr. Yergin is a Pulitzer Prize winner and recipient of the United States Energy Award for "lifelong achievements in energy and the promotion of international understanding." Dr. Yergin received the Pulitzer Prize for his work *The Prize: The Epic Quest for Oil, Money and Power,* which became a number one best seller and was made into an eight-hour PBS/BBC series seen by 20 million people in the United States. The book has been translated into 17 languages and has just been released in a new updated edition. Of Dr. Yergin's subsequent book, *Commanding Heights: The Battle for the World Economy,* the *Wall Street Journal* said, "No one could ask for a better account of the world's political and economic destiny since World War II." It has been translated into 13 languages. Dr. Yergin is writing a new book on the challenges of energy, geopolitics, and technology. Dr. Yergin plays a leadership role in the global energy industry. He chaired the US Department of Energy's Task Force on Strategic Energy Research and Development. He is a member of the Board of the United States Energy Association and a member of the US National Petroleum Council. He is Vice Chair of its current study on natural gas resources. He is a Trustee of the Brookings Institution, on the Board of the New America Foundation, a Director of the US-Russia Business Council, and on the Advisory Board of Energy Initiative at the Massachusetts Institute of Technology and the Advisory Board of the Peterson Institute for International Economics. He is also a Member of the Singapore International Advisory Panel on Energy. Dr. Yergin holds a BA from Yale University and a PhD from Cambridge University, where he was a Marshall Scholar.

We welcome your feedback regarding this IHS CERA report. Please feel free to e-mail us at info@ihscera.com and reference the title of this report in your message.

For clients with access to **IHSCERA.com,** the following features related to this report may be available online: downloadable data (excel file format); downloadable, full-color graphics; author biographies; and the Adobe PDF version of the complete report.

FISCAL FITNESS: HOW TAXES AT HOME HELP DETERMINE COMPETITIVENESS ABROAD

KEY IMPLICATIONS

Dramatic changes in the structure and geography of the global upstream oil and gas industry have radically altered the competitive environment. But what does competition mean in the oil and gas business? In the upstream it is focused primarily at one point—on securing mineral rights and acreage. The difference between "winning" and "losing" in this competition will have a profound effect on the future position and even viability of companies.

This report explores the ways in which the competitive environment has changed with the widespread emergence of national oil companies (NOCs) in their home countries in the 1970s and the acceleration of competition from INOCs (NOCs operating outside their home territories) in the mid-1990s. Greater accessibility of technology and operating capabilities, access to capital, drivers that go beyond financial returns, and degrees of political support have all contributed to increased competition. The report focuses on an additional key variable that has heretofore received little attention—the ways in which the costs of repatriating profits from international ventures may determine the ability of investor-owned companies (IOCs) to make successful bids for resources. We collaborated in this part of the analysis with Deloitte, the leading professional services firm providing audit, tax, and other advisory services, and recognized experts in oil and gas industry taxation, to unravel the complexities of the interactions between resource-holding host country tax regimes and a representative set of home country regimes.

While the growth of NOCS and INOCs has been at the expense of IOCs as a class, the US-based IOCs have been affected to a greater extent than those from Europe, Canada, Eurasia, and Asia.

- Two factors appear to be most responsible for this difference in competitive performance: the interaction between the fiscal arrangements in the home countries of IOCs and the host countries in which they operate, and home country policy objectives.
- The fiscal factors may account for variances, sometimes by as much as 100 percent, in the amount that a company can afford to bid for mineral rights.
- Draft proposals to change the rules for taxing their repatriated foreign profits will place US companies at an economic disadvantage to all but India among the analyzed peer group, making their assets potentially more valuable to non–US-based companies.

This report provides a framework for understanding the fiscal dimension of the new competitive equation in the world oil and gas industry.

—August 2010

CERA

FISCAL FITNESS: HOW TAXES AT HOME HELP DETERMINE COMPETITIVENESS ABROAD

by David Hobbs and Daniel Yergin

COMPETITION FOR MINERAL RIGHTS

Over the past few decades, dramatic changes in the structure and geography of the upstream global oil and gas industry have had a radical impact on the competitive environment. But what does competition mean in the oil and gas business? In the upstream, it is focused primarily at one point—on the competition for mineral rights and acreage.

This competition arises when governments offer mineral rights to investors or when companies that have already secured those rights sell them or are themselves sold. The outcome of this race defines who will be producing what in the years ahead, who will prosper and grow, and who will stagnate and contract. It is at this point of acquisition of mineral rights that the consequences of the overall changes in structure, geography, and competitiveness become most critical.

A number of driving forces shape the outcome, including geopolitics, access to capital, and capabilities. Yet an important aspect of upstream competition that has received little attention to date and may have far greater significance than previously recognized is the fiscal regime in the *home* country and its interaction with that of the *host* country.* The data-driven analysis of this IHS CERA Private Report focuses on the fiscal factor in upstream competition. This factor includes the impact of home tax regimes in the United States, Canada, Europe, and Asia on the competitive position of companies domiciled in those jurisdictions. We worked with Deloitte, the leading professional services firm providing audit, tax, and other advisory services, and recognized experts in oil and gas industry taxation to perform the analysis.

Our conclusion is that in the global competition for access to new resources, the fiscal system of the home country (and its interaction with the host country) should also be considered a significant factor in the comparative outcome. In determining competitive position and outcomes, *home* counts as well as *host*.

THE CHANGING COMPETITIVE LANDSCAPE

One of the fundamental changes is the shift in the balance between countries and companies, which is evident in three forms. The first was characterized by host governments' taking greater control of their resources—culminating in the wholesale nationalization of resources by some governments in the 1970s. The second is in the distribution of rents. In the 1950s the principle of a 50/50 split was enshrined in the agreements between governments and companies. Over the years, the balance has shifted further in favor of governments, whereby in some cases more than 85 percent accrues to the host government where the prospectivity

*Traditionally the term *host* refers to the country in which oil and gas operations are conducted and *home* refers to the country of origin of the companies (i.e., where they are legally incorporated) as they operate in host countries.

and cost structure are able to support that amount. The third is in the emergence of a large number of new participants in the industry in the form of state-owned or national oil companies (NOCs) in the producing countries, many of which have acquired access to the skills and capabilities associated in the past with the traditional majors.

The shifts in the competitive framework are also increasingly evident in the greater number and variety of participants in the upstream industry outside their home territories. Consolidation has occurred among the traditional investor-owned companies (IOCs), particularly among the majors whose former role was memorialized in the term "Seven Sisters," although that number was never correct. Their role outside their home countries has shrunk both in absolute terms and as a relative share of global production. However, the shrinkage among the traditional majors has been more than offset by the emergence of new participants. In the past two decades, the number of companies (excluding NOCs that do not operate outside their home territories) with production of more than 1 million barrels of oil equivalent per day has doubled from 8 to 16. The proliferation of new participants adds further force in changing the competitive playing field.

In this report, we distinguish between the US-based IOCs and the non–US-based IOCs—companies from Canada, Europe, Eurasia, and Asia. Several of the latter group (most notably Total, Eni, BP, and Repsol) began life as NOCs. This group operated outside their home countries and would have been described as INOCs (international NOCs). They became IOCs when they were privatized by their government owners.

Some of the state-owned participants that are internationalizing their operations, such as Petronas from Malaysia and the Chinese majors, are also described as INOCs. Petrobras from Brazil and Statoil from Norway (the respective state owns a majority of the voting shares in each) also fall under the INOC rubric despite implementing strategies that are hard to distinguish from the IOCs that they seem to more closely resemble and with which they compete. The INOCs may be wholly or partly owned by their home governments, but they are actively acquiring mineral rights and establishing production around the world. Some are driven by commercial factors; some are also driven by various mixtures of factors and broader national objectives, including security of supply and the development and deployment of skills and capabilities that are transferable to and from their home countries.

Appendix A describes how three different peer groups of companies (US-based IOCs, non–US-based IOCs, and INOCs) have performed over nearly four decades. The analysis shows the rapid growth of INOCs accelerating significantly in the 1990s. This outperformance may be driven by a combination of factors, of which two stand out particularly in relation to the performance of the INOCs relative to both groups of IOCs.

- In some cases, whether because they are latecomers or because they are not bound by the same financial constraints as IOCs, INOCs have been willing to bid aggressively for opportunities and win against traditional companies. They may also have different commercial metrics in valuing their investments—based either on the cost and availability of capital or the returns that they feel obliged to earn.

- In some cases their state ownership can be an advantage, particularly when government-to-government agreements are involved. INOCs may have economic advantages derived from their home countries, which may include the ability of the country to bundle development projects (e.g., railways, ports) with investments in oil and gas in a given host country.

THE FISCAL REGIME AT HOME

While these latter aspects have been commented upon, until now most analyses have failed to address the fiscal regime in the *home* country and its interaction with the fiscal regime of the *host* country. Nor has the difference in the relative performance of US-based and non–US-based IOCs been satisfactorily examined.

To date, there does not appear to be a widely recognized, systematic approach for comparing the aggregate fiscal loads imposed

- on the "export" of dividends from host countries—withholding taxes, which vary depending on the arrangements between the host country and the home country to which these dividends are being remitted
- on the "import" of dividends to the home country—governed by a variety of regimes generally depending on the tax laws of the home country and whether the home government recognizes the validity of taxes already paid in the host country

This report assesses that impact and provides a more complete picture of the drivers of global competition for access. We worked with Deloitte, one of the world's leading professional services firm providing audit, tax, financial advisory, and risk management services, and recognized experts in oil and gas taxation. Deloitte helped analyze the complexities of different tax regimes as we

- constructed an extensive data-based analysis of several host country fiscal systems and how they consolidate back to a range of home countries when the profits are repatriated
- correlated the results with the relative performance of the three different groups of companies in securing mineral rights, described in Appendix A

DETERIORATING COMPETITIVE POSITION OF THE UNITED STATES

A variety of reasons may account for differences in success at winning the access race among different types of companies. These include their project execution skills, the cost and availability of capital, differences in market outlooks and technical assumptions in valuing assets, and the degree of political support (or restraint) from home governments. Some host governments may simply have a preference for one nationality of investor over another.

We address these reasons in Appendix C. However, our main focus in this report is the way in which various home countries tilt the fiscal playing field for their companies.

Three significant conclusions emerge from our analysis:

- The first is that, under existing rules, US-based companies have been relatively less successful in securing new opportunities compared not only to INOCs but also to non–US-based IOCs (those based in Europe, Eurasia, Asia, and Canada).
- The second is that the United States currently takes a larger share of the net present value (NPV) of repatriated profits than most other countries among the analyzed peer group.
- The third is that potential new rules to restrict credits for foreign taxes already paid to a host government, currently under discussion in the United States, would make the United States the least competitive among the analyzed peer group, excepting India. This is the case whether measured by the reduction in the internal rate of return (IRR) or by the drop in the NPV of the investment.

In practice, companies in all industries (including oil and gas) seek to arrange their affairs in such a way as to pay only the amounts of tax required by the relevant legislation. Our analysis looked at individual, bilateral examples—i.e., one host country field investment consolidating back to one home country. Large companies typically hold a diverse portfolio of assets in a variety of host countries. For example, in the case of the United States and France, the result would be a blending of high-tax and low-tax jurisdictions which would reduce the amount of extra tax payable on dividends from low-tax jurisdictions.

However, new proposals for taxing non-US oil and gas activities are intended to limit this scope to mitigate additional US taxes on repatriated post-tax profits and thus are more likely expose US companies to the full extent of competitive disadvantage identified in this report.

While a competitive advantage of 1 percent in the annualized rate of return between the United States and its main competitors may not sound large, this represents a change in the economic value of an oil or gas field of between 20 and 30 percent when compounded over the typical life of an asset (15 to 20 years). In some cases, the advantage can be as much as 100 percent.

The conclusion is that in the competition for access to new resources, the fiscal system of the home country may be an important factor in the outcome. In other words, *home* counts as well as *host*.

DEFINING THE COMPETITIVE PLAYING FIELD

In the upstream oil and gas business, there is a paramount point of competition between companies. Acquisition of mineral rights, or "access to opportunity" in the vernacular of the industry, is where oil and gas companies compete against each other. These rights are acquired directly from resource-holding host governments or through acquisition from (or of) companies that have already acquired such rights from a resource-holding host government.

No other company can operate on the license acquired—the successful bidder (or consortium) has an effective monopoly on that piece of acreage during its term. The outcome of this competition is visible in the acreage controlled, the number of exploration wells drilled, the number of new discoveries, and ultimately the reserves and production that result from these endeavors.

This competition between companies is distinct from companies being "competitive" with each other (i.e., comparing favorably on objective benchmarks of performance). In the long term, a company incurring unit costs that are higher than those of its peers will often deliver lower returns and be less competitive in attracting investment capital. Similarly, a company that has lower exploration success rates than its peers will likely grow less quickly or be tempted to buy expensive reserves, to the long-term detriment of its financial returns.

After the intense competition of acquisition, the perspective changes. Companies with neighboring lease holdings or holdings in the vicinity have a shared interest in cooperating to minimize costs through sharing of logistics and services. In fact, many host governments look favorably on such synergy and encourage it because it boosts efficiency and profits, and thus the government take, returned by the investment. This stands in contrast to other links in the oil value chain where companies continuously compete, as demonstrated in downstream product markets.

FOUR DECADES OF A DECLINING INTERNATIONAL ROLE FOR US-BASED COMPANIES

Appendix A describes the relative performance of US-based and non–US-based companies. The once-dominant position of the US-based integrated oil companies may have helped them in earlier decades when they were competing with a limited group of non-US companies. The support of the US government was evident. For example, concerns about energy security were a factor in relation to concessions in the Middle East (securing and maintaining the Saudi Arabian concessions and forging a path into the Iranian concession alongside the precursor to BP—Anglo Iranian Oil) (see the box "Tax Confusion: 'Accounting Fiction' versus 'Accounting Reality'").*

But times change. The greater assertiveness of resource-holding host governments during the 1970s and 1980s resulted in a tightening of fiscal terms and partial or even complete nationalization of activities in their home countries. With the largest share of international activities, the US companies had the most to lose. Sanctions, both unilateral and multilateral, have excluded US companies from certain countries (such as Sudan, Iran, North Korea, and, until recently, Libya and Iraq). By contrast, the European and Asian IOCs have been more successful than their US peers in rebuilding their international portfolios and production levels after the effects of the emergence of the NOCs. This has been driven partly by their ability to grow their presence in North America—particularly, in recent times, the deepwater Gulf of Mexico (GOM).

What stands out is that all IOCs, whether US based or not, have been exposed to the same competitive pressure both from NOCs asserting themselves more in their home territories and from INOCs. And yet the ability of the US-based IOCs to secure access to

*See Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power,* Free Press, 2009.

Tax Confusion: "Accounting Fiction" versus "Accounting Reality"

It sometimes happens that historical events are reinterpreted to meet present-day objectives. That appears to be the situation of the recent report from the Environmental Law Institute (ELI) that purports to demonstrate that "subsidies" to fossil fuels far exceed those to renewable energy. The ELI cites the foreign tax credit as the largest of all the subsidies.*

The approach the ELI takes is to assert that the taxes paid to foreign resource-holding countries are really royalties—in its words, "royalties-disguised-as-taxes." It never explains the basis for this assertion. It does say, "The US government allowed oil companies to claim these payments as a foreign income tax credit" and declares that this "was an accounting fiction."

It cites as its source Daniel Yergin, *The Prize: the Epic Quest for Oil, Money, and Power*. The ELI's critique of the foreign tax credit seems to depend on a misreading of the relevant pages in *The Prize*—pages that were based upon archival research and that do not, in fact, support the ELI thesis. Rather, they show that the purported "accounting fiction" is actually an "accounting reality."

The original American partners in Aramco had obtained the Saudi concession in the 1930s. The agreement included a royalty. Oil was discovered in 1938, but production was minimized during World War II out of fear that Nazi Germany might conquer Saudi Arabia and obtain that oil for its war machine. (Neighboring Kuwait, where oil was also discovered in 1938, actually plugged its wells to keep them out of Nazi hands.) The buildup of commercial production in Saudi Arabia began after World War II.

As production mounted substantially, the Saudis sought a much higher share of the income being generated by the growing flow of oil. Saudi Arabia retained its own counsel, who identified US legislation dating back to 1918 that permitted an American company to deduct from its US taxes what it paid in foreign taxes. As stated in *The Prize*, "The objective was to avoid penalizing American companies doing business abroad." At the same time, Saudi Arabia began to push for the application of an income tax on profits derived from its oil.

The American companies were reluctant to change the contract, which had prohibited an income tax. They were, however, pressured very hard by relevant authorities in the US government to do so. The US government was concerned about the security of Saudi Arabia and the stability of the overall relationship. There was grave concern about Soviet ambitions in the Persian Gulf; the first Cold War crisis, in 1946, had broken out over Soviet efforts to annex northern Iran. With the outbreak of the Korean War in 1950, the Cold War had turned hot. That deepened the interest of the US government in avoiding any uncertainty about security and access to oil, and thus the pressure ratcheted up on the companies to agree to a 50/50 split with Saudi Arabia on the profits arising from oil sales.

In December 1950 a new agreement was signed that did institute an income tax. Subsequently, the US Internal Revenue Service confirmed that these were indeed legitimate taxes and thus qualified for the tax credit. *The Prize* goes on to observe: "In 1957, the staff of the Joint Congressional Committee on Internal Revenue Taxation added its approval, based upon the various tax laws, their legislative history, judicial decisions, and IRS rulings with respect to 'other similarly situated taxpayers.'" The conclusion of *The Prize*—ironically cited as the source by ELI—is that "the Aramco ruling was consistent" with overall tax policy.

Estimating U.S. Government Subsidies to Energy Sources: 2002–2008, Environmental Law Institute, September 2009.

Tax Confusion: "Accounting Fiction" versus "Accounting Reality" (continued)

In 1974 George McGhee testified to Congress. He had been the US Assistant Secretary of State for Near Eastern Affairs at the time of the institution of the income tax and had taken the lead in the US government in promoting that settlement. He reaffirmed that the use of the tax credit was appropriate and that the approach had been adopted in consultation with the Treasury Department and the Congress. The ownership of the concession, he explained, "was a valuable asset for our country" and "the threat was the loss of the concession." In other words, had the United States not adopted the customary double taxation approach, the concession might well have passed into the hands of another country, with potential serious economic and security consequences.

The ELI also argues that the difference between the tax rate on oil and gas production and lower rates applied to other sectors proves that the taxes on oil are not taxes. It is not at all clear why this is proof. To use that difference as evidence seems to show unfamiliarity with the fiscal practice and tax regimes in countries for which oil earnings constitute 60 or 80 percent of gross domestic product. Typically, such countries arrange their fiscal affairs so that oil income provides a similarly high share of the national budget, and correspondingly, they choose to reduce tax rates for other sectors.

On the fundamental point, the ELI simply asserts, without offering any explanation, that a royalty and a tax are the same thing—or that a tax is automatically really a royalty. It is unclear why this premise should be taken as a given when it runs counter to a century and half of actual fiscal history. A royalty is a rental fee; it refers to the patrimony of a sovereign state or, in the United States, the landowner. It is a payment for access to the resources. Taxation is a payment of a share of the profits arising from activity. This principle of royalty was embodied in the contract that Colonel Edwin Drake signed on December 30, 1857, almost two years before he succeeded in drilling the first oil well in Titusville, Pennsylvania, in 1859.

The former Acting Secretary General of OPEC clearly differentiates between royalty and tax when he says, "As for the distinction between royalties (a type of 'rent' paid to landowner by the investor in a particular territory, regardless of whether the investor makes any profit) and taxes (paid to the host government on profits only): in the early 1950s, when profit-sharing agreements were signed between oil-producing countries and the major oil companies, the 50 percent paid to host governments included both taxes and royalties."

Rather than "accounting fiction," it is "tax confusion" that results from misconstruing the historical context of the renegotiation of the Saudi oil concessions, misreading sources, and denying the widely accepted reality of the difference between a royalty and a tax.

opportunities outside their home country has lagged behind the international success of the non–US-based IOCs. In Appendix C, we weigh some possible reasons for this difference in performance.

Why should all of this matter for home governments, since oil (and increasingly natural gas) is a fungible commodity, and it ought not to matter who produces it? The main reasons provided during research interviews for this report were that home countries believe that it is worth winning the competition for access because the success of their oil companies brings benefits, including stable supply and greater confidence in energy security; direct (and indirect) employment by successful oil companies; promotion of home country services and equipment supply (e.g., steelwork, compressors, pumps etc.); securing research and development investment at home; the status of major oil companies as diplomatic flag bearers; and, not least, the repatriated dividends and taxes thereon that home countries expect to receive.

But these potential benefits will only be realized if companies win the access race. How do they hope to achieve this?

ACCESS TO OPPORTUNITY: HOW HOST COUNTRIES AWARD MINERAL RIGHTS

Host countries select the companies to which they grant mineral rights directly through licensing rounds, both formal and less formal, based on a combination of factors. The mechanisms and benchmarks for awarding mineral rights vary widely across countries. Host countries use some mixture of the following: signature bonuses; the amount of exploration work committed; bidding the government share of profits, service fees and production targets; as well as judgments about a bidder's technical expertise. Companies have an opportunity to bid against each other under a well defined set of rules. However, in recent years, we have seen more use of an ad hoc process that appears to be driven as much by other considerations as by the pure economics of competitive bids.

A host government benefits by maximizing a complex equation involving levels of upstream activity (and, in the long run, the revenues from production), the information it gathers about its oil and gas resources, the share of the rents it retains, and the wider impact on its economy (in terms of employment and fiscal balances). The equation may be complex, but the objective that host governments are trying to achieve is usually quite simple—to extract the most value (as perceived by the resource holder) from the award of rights.

There is no universal format for the mineral rights that governments award, but the terms under which access is granted typically fall into three categories:

- royalty and tax
- production-sharing agreements (PSAs)
- technical service agreements (TSAs)

For our purposes in this report, the key difference is that a royalty and tax regime involves the granting of mineral rights directly to an investing company from the government, whereas in PSAs and TSAs the state typically grants the mineral rights to the state's NOC or other state entity, which, in turn, contracts with the investing company (the contractor).*

In the case of royalty and tax, it is relatively clear which payment to the government is royalty and which is tax. It is not uncommon for these to be paid to different government entities (the "Department of Energy" or equivalent for royalties and the "Treasury" or equivalent for taxes). In the case of PSAs and TSAs it is common for the NOC (or a ministry of the host government as a contracting entity) to pass over to the contractor a share of the production (equal to the costs incurred plus an agreed share of the profit) and to withhold and pay the taxes due from the contractor to the government.

HOW COMPANIES SELL MINERAL RIGHTS

In contrast to the way in which governments may try to evaluate the quality of the bidders' plans and the value that they might deliver, companies buying and selling assets that have already been awarded by the host governments consider only two factors—the amount of money that they offer and the likelihood that they can afford to pay that sum on the due date. This is analogous to a licensing regime that relies only on signature bonuses with all else fixed.**

The winner in this race for access is normally the company that can offer the highest price for a given mineral concession. This may cover exploration acreage, the rights to develop a discovery that has not yet been brought to production, or even the rights to redevelop a field that has already been producing for many years.

In determining how much they are prepared to pay, oil industry participants calculate the project economics based on the fiscal terms of the host country in which they are investing. They normally also assess the costs of repatriating the anticipated profits from investment to their home country. However, there does not seem to be a recognized methodology for comparing these additional costs among jurisdictions (both host and home). Our aim is therefore to provide a more systematic approach to comparing how these "host versus home" interactions may influence the competitive playing field (see the box "A Systematic Approach to Comparing the Interactions of Home and Host Fiscal Regimes").

REPATRIATION OF PROFITS

The terms under which companies are able to repatriate their profits to their home bases, and indeed share them with their stockholders in the form of dividends and returns of capital, influence the competitive playing field.

*For a detailed description of the difference between these formats, see the IHS CERA Special Report *In Search of Reasonable Certainty: Oil and Gas Reserves Disclosure.*

**Companies sometimes trade assets or enter into partnerships instead of relying on a cash consideration alone. However, the value of the consideration is still the determining factor in deciding whether to complete a transaction.

A Systematic Approach to Comparing the Interactions of Home and Host Fiscal Regimes

IHS CERA's approach is to calculate the economics of example field developments in a number of host countries—in this report, we chose nine host countries that presented a wide range of fiscal regimes and development environments—without imposing any of the charges associated with repatriation of profits. We calculated the value (based on the discounted post-tax cash flows) and the IRR of each project.

Next, we calculated the costs of repatriating the returns through dividends equal to the profits earned. This comprised a combination of withholding taxes in the host country and additional taxes, if any, imposed by the home country. For the United States, which has one of the most complex systems for calculating additional taxes on dividends, we considered two regimes. In the first one the facts and circumstances define the amount of foreign taxes that are creditable against the taxes that would otherwise be paid on the worldwide profits of a US-based company. The second allows the "safe harbor" of crediting taxes only at the rate of corporate profits taxes that apply to companies generally in the host country (as opposed to the often higher rates imposed on oil and gas production activities). This latter case is more representative of the draft proposals being considered by US legislators.

We deducted the additional taxes and charges from the project economics and calculated the reduction in value and IRR. To compare this peer group of home countries, we calculated the value for each host country for the full set of home countries and reported the percentage variance in the value in each home country versus the average in all home countries. In other words, those countries with lower-than-average costs of repatriation have a positive variance, and those countries with a higher than average costs of repatriation have a negative variance.

We repeated the calculation for IRR but reported the difference in percentage points of return from the average rather than as a percentage of the average IRR. In other words, if the average IRR of the example fields when repatriated to the home country was 14 percent and the specific home country IRR was 15 percent, this would be reported as a positive variance of 1 percent.

These calculations do not incorporate the effects of consolidation of multiple foreign jurisdictions (where higher tax regimes may be partially or wholly offset against lower tax regimes) and therefore do not necessarily represent the actual tax positions of investors but provide a useful framework for comparing the interactions between host country and home country fiscal regimes.

Differences in the ways in which companies' home governments support and tax them can affect the competitive position of oil and gas companies in the competition for access to opportunities. When examining the competitive playing field in the past, the question has typically been framed in terms of whether a particular host country is competitive with other resource owners in its ability to attract investment. Indeed, IHS CERA's own analyses have historically focused on the competition between resource holders to attract investment regardless of the home country from which an investor might originate.

However, the analysis in this report reverses the lens and examines the competition between companies for access to investment opportunities. Under these circumstances, the fiscal treatment by the home country may become a significant component of the equation.

When an oil and gas company undertakes exploration and production (E&P) activities outside its home country, it either will incorporate a subsidiary in the host country where the asset is located or may hold the investment through a branch in the host country. Regardless of the legal structure that it employs, however, it will, sooner or later, normally seek to repatriate its profits back to the home country.

The amount to repatriate will depend on how the revenues from each barrel of oil (or cubic foot of natural gas) are shared. These are divided between recovering the company's incurred costs, its profit, the host government's taxes and royalties, and the home government's share of repatriated profits. To evaluate this last component properly, we built a matrix of the financial results of field developments in a variety of host countries and examined the costs of repatriating the profits to a number of different home countries. The repatriation of profits creates a complex set of interactions, and this part of the analysis was performed in collaboration with Deloitte, the leading professional services firm, providing audit, tax, and other advisory services, and recognized experts in oil and gas industry taxation. The methodology of the analysis is described in Appendix B.

RESULTS OF JOINT DELOITTE AND IHS CERA ANALYSIS

The IHS QUE$TOR and AS$ET models were used to evaluate field economics in the host country and combined with the expertise of Deloitte to calculate the costs of repatriating profits to the home country. This allowed comparisons of the "costs" of originating from different countries, presented below.

In the increasingly competitive pursuit of new investment opportunities, the ability to offer the best terms to the host government or current owners of assets may be a key differentiator. There are only so many dollars of rent in each barrel of oil (or cubic foot of natural gas). Each dollar that a home government seeks to secure in taxation of repatriated profits is a dollar less that the company can offer to the resource holder. The more that the home governments subtract from the equation, the less competitive companies from that country will be when bidding for mineral rights.

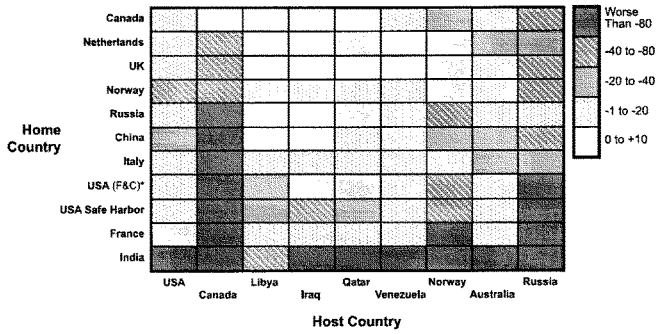
The "heat map" in Figure 1 presents an analysis of how home country taxation of repatriated profits may tilt the playing field toward players from some countries and away from others under certain circumstances.

The results show that new-entrant US-based companies or those without diverse portfolios on average suffer a competitive disadvantage compared to companies from several of the countries in the analyzed peer group. This is the result of a combination of the taxes imposed on the "export" of profits by host governments and income taxes on the "import" of profits by home governments.

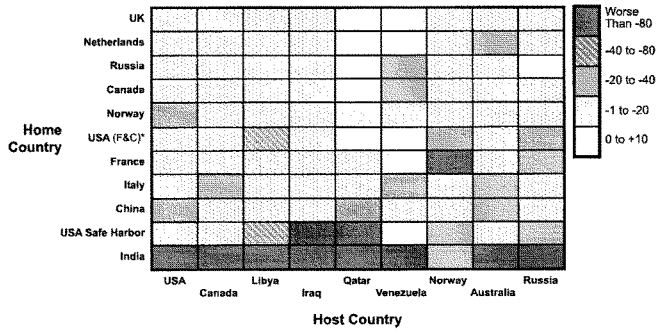
The analysis did not factor in the likelihood that companies (in all industries including oil and gas) might seek to arrange their affairs in such a way as to pay only the amounts of tax required by the relevant legislation. We looked at individual, bilateral examples without the benefits of being able to consolidate multiple geographies—blending high-tax and low-tax jurisdictions. The two cases for the United States as a home country indicate how new

Figure 1

Change in NPV10 from Mean Level
(percentage change)



Change in IRR from Mean Level
(percentage points of return)



Source: IHS CERA.
*Based on Facts and Circumstances.
00711-7

legislative proposals for taxing the non-US oil and gas activities of US-based companies might alter the competitive playing field. These are intended to limit the scope to mitigate additional US taxes on repatriated post-tax profits: the "safe harbor" example demonstrates the effect of limiting tax credits to the rate of general corporate profits taxes rather than the actual tax rates supported by "facts and circumstances."

The United States currently takes a larger share of the NPV of repatriated profits than most other countries among the analyzed peer group—only France and India fared worse. Under the "safe harbor" treatment, US-based companies become the least competitive among the analyzed peer group, excepting India.

While a competitive disadvantage of 1 percent in the annualized rate of return between the United States and its nearest competitors may not sound like much, compounded over a typical asset life of 15 to 20 years, this represents a change in the NPV of an oil or gas field of between 20 and 30 percent—enough to make the difference between winning and losing a bid for a new investment opportunity.

CONCLUSIONS

In the upstream oil and gas business, technical and operational capabilities are becoming increasingly accessible; successful strategies are more notable for their similarities than their differences; and access to capital is driven by the returns on investments, over and above other considerations. However, two differentiating factors stand out and may help explain the relative performance of US-based and non–US-based IOCs:

- the policy objectives of their home countries
- the way in which the repatriation of their profits is taxed

The geopolitical landscape is continuously shifting, and today's competitive disadvantage may be turned into tomorrow's advantage as the political needs of host countries change. But as long as different home governments apply different approaches to the repatriation of the profits of their oil companies, the competitive playing field will be skewed toward companies that are able to offer the highest price to resource-holding host governments or the current owners of upstream assets.

The acquisition of mineral rights is the paramount point of competition between oil and gas companies irrespective of their origin. Win it, and a company will have the "fuel" in its portfolio to deliver superior growth and returns. Lose it, and performance (and in the long term, survival) become an uphill struggle. Therefore, when viewing and navigating the competitive playing field, it matters not only where you go, but also where you come from.

APPENDIX A: COMPARING PERFORMANCE—THREE LENSES ON ACTIVITY

IOCs are primarily owned by institutional investors and seek to achieve the maximum possible financial returns for their owners through a combination of growth and return on investment. These investors rely upon such returns to meet the insurance, savings, pension, and retirement obligations for which they are responsible. IOCs carry no broader mission on behalf of any other stakeholder but are often guided by meeting the needs of a broader group of stakeholders as part of their "license to operate" in the host countries where they invest, as well as in their home countries.

For the purposes of our analysis, we divide the IOCs between US-based and non–US-based companies, as it is between these groups that we see the greatest differences in performance.

INOCs cover a range of companies with a spectrum of different missions. Their diversity is illustrated by such companies as Gazprom, Petrobras, Petronas, Kuwait Petroleum, Statoil, ONGC, and PetroChina. They have become a growing and indeed significant force in international oil and gas operations as they expand beyond their home territories. They may not be wholly owned by the state (see the box "Data Sources and Assumptions").

Data Sources and Assumptions

The data sources that were used to quantify the changes seen over the past four decades were

- new-field wildcat participation data—IHS IRIS21 E&P database
- 2008 rightholding and production information—IHS PEPS Company Statistics
- 1972 to 1998 rightholding and production information—Company Acreage and Activity Statistics (CAAS) reports published by Petroconsultants (now an IHS company)
- merger and acquisition data sourced from IHS Herold

We examined the performance of three peer groups, as listed in Table A-1.

It is a measure of the dynamic nature of the oil and gas industry that some of these companies did not exist in 1972—the earliest date for which comprehensive, reliable data became accessible. Similarly there are many companies that existed during the analyzed time span but were acquired or were merged into one of the 22 peer group members selected. The activities of those companies acquired or merged are included from the date of the transaction.

Table A-2 lists the most significant acquired companies, and their activity has therefore been included in the appropriate time slices throughout the duration of their existence. In grouping companies during historical periods, companies have been assigned to the group in which they would have belonged at the time. Thus YPF, the state company of Argentina that was subsequently privatized and then later acquired by Repsol, an Eastern Hemisphere IOC, is treated as a state-controlled company throughout the time of its independent existence.

Although a number of today's non–US-based IOCs were wholly or majority state owned in 1972, we have not switched companies between peer groups during the study period and so they have been treated as IOCs throughout.

Other simplifying assumptions have been made to provide a representative data set.

Table A-1

Three Peer Groups

IOC—US Based	IOC—Non-US Based	INOCs
Exxon Mobil	Royal Dutch Shell	Petrobras (Brazil)
Chevron	BP	Petronas (Malaysia)
ConocoPhillips	Total	CNPC (China)
Occidental Petroleum	Eni	Statoil (Norway)
Marathon Oil	OAO LUKOIL	KPC (Kuwait)
Hess	Repsol	JOGMEC (Japan)
	BHP Billiton	ONGC (India)
	Idemitsu Kosan	
	Mitsui	

Source: IHS CERA.

Table A-2

Significant Acquired Companies

Acquired Entity	Surviving Entity	Year of Transaction
Amoco Corp.	BP	1999
Ampol	Mobil Corp.	1996
Atlantic Richfield Co.	BP	2000
BHP Petroleum	BHP Billiton	2001
Britoil	BP	1905
British-Borneo Oil & Gas	Eni (Agip)	2000
Burlington Resources	ConocoPhillips	2006
Canadian Hunter	Burlington Resources	2001
Clyde Petroleum	Gulf Canada Resources	1905
Conoco	ConocoPhillips	2002
Elf Aquitaine	TotalFinaElf	2000
Enterprise Oil	Royal Dutch Shell	2002
Getty Oil	Texaco	1905
Globex Energy	Marathon	2002
Gulf Canada Resources	Conoco	2001
Gulf Oil	Chevron	1905
Hardy Oil & Gas	British-Borneo Oil & Gas	1998
LASMO	Eni (Agip)	2001
Maxus	YPF	1995
Mobil	ExxonMobil	1999
Norsk Hydro	Statoil	2007
Petrofina	TotalFina	1999
Santa Fe International	Kuwait Petroleum	1905
Sohio	BP	1905
Texaco Inc	Chevron	2001
Triton Energy	Amerada Hess	2001
Unocal	Chevron	2005
Vintage Petroleum	Occidental	2006
YPF	Repsol	1999

Source: IHS CERA, IHS Herold.

When comparing performance among these three different classes of companies (or among individual companies), most analyses examine a range of operational and financial benchmarks, including reserves replacement ratios and returns on capital employed or on shareholder equity. Perhaps the most relevant of these is the total shareholder return (a combination of share price appreciation, returns of capital, and payment of dividends).

However, in understanding the outcome of the competition that we have described so far in this report, these measures are not particularly relevant; it does not matter whether the winner has overbid. Companies that never win the race for access to opportunity will find it hard to avoid shrinking.

For this reason, we have chosen to examine three measures of the success that companies have achieved in winning the competition for access to opportunities—production, licensed acreage, and exploration wells operated. Production levels are an objective measure of performance, although a lagging indicator because of the long lead times—sometimes a decade or more—between acquisition of mineral rights and first production. The licensed acreage holdings and the number of exploration wells drilled provide a more immediate indication of recent competitive success.

As we demonstrate below, the US-based IOCs, predominantly the US majors, were by far the largest international players in production volume, acreage, and exploration activity terms at the start of the 1970s, but they seem to have fared less well than the non–US-based IOCs in the wake of the emergence of the NOCs taking control of their home territories.

Production Volumes

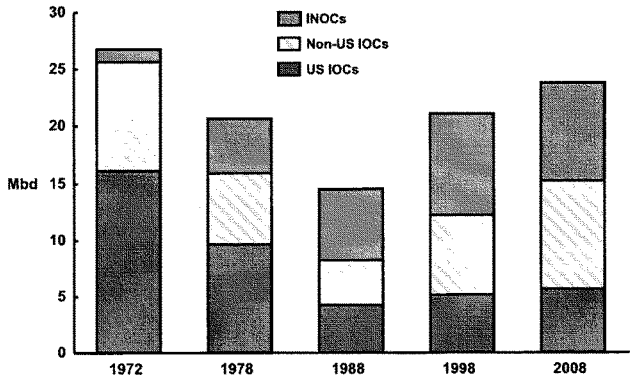
In 1972 the selected peer groups of companies produced 26.8 million barrels per day (mbd) outside North America (some two thirds of global liquids production) (see Figure A-1). The three comparator groups are therefore likely representative of the traditional companies active in the global upstream business. By 2008 this group had suffered a slight decrease in production to 23.7 mbd, while global production had nearly doubled (with NOCs making up the majority of this increase). However, the overall result is the combination of a two-thirds decline in the oil production of the US-based IOCs and the matching increase in the total production of the INOCs.*

What are the chief factors that would account for this relative performance? The early 1970s saw the start of the production boom in the North Sea, building from a negligible base for all European production. This particularly favored European-based companies in the analyzed peer groups (BP, Shell, Eni, and Statoil among them). US-based IOCs also participated in this opportunity, but not to the same extent.

To get a clearer picture of what was going on competitively, we eliminated the "home" advantage that companies may have enjoyed during the period studied (for example, the Eni reserved area of the Po Valley in Italy, Britoil [subsequently part of BP] and Statoil's roles as holders of the state interest, etc.). This further refinement of the data allowed us to

*Natural gas production had not become a significant driver of the performance of IOCs at the start of the study period (with one or two significant exceptions, including Gazprom's predecessor entity and the Shell/Esso partnership in northwest Europe). We therefore chose to examine production performance through the lens of oil production.

Figure A-1
Production Outside North America
(including home country)



Source: IHS CERA.
00604-11

consider the performance of companies on a level playing field, without the distortion of production from their home countries, as shown in Figure A-2.

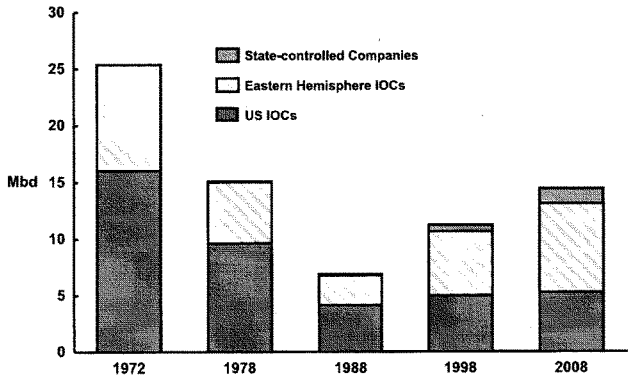
From a position of owning more production outside North America than their peers, the US-based IOCs' share of international production had declined in 2008 to approximately one third of its 1972 level. US-based companies were more exposed to concessions in OPEC member countries. This, coupled with the BP acquisitions of Amoco and Atlantic Richfield, exacerbated the trend: from a position of dominance, US-based IOCs appear to have been losing the race for access during the past three decades.

In 1972 some of the INOCs in the peer group did not yet exist (Statoil, Petronas, and Kuwait Petroleum's international subsidiary, KUFPEC). Meanwhile Brazil and India were very minor producers, and the move to deep water had not yet begun. In percentage terms, INOCs' growth has been the highest of the three groups. But even in 2008, their share of production outside their home countries remained small in global terms.

Rightholding: Acreage

What makes the trends particularly clear is the net acreage holding of the comparator groups. The US decline began early in the period, but the INOCs did not really appear on the scene until the mid-1990s. Net acreage (including home country holdings) is not a precise parameter because some countries provide very large license blocks and others

Figure A-2
Production Outside North America
(excluding home country)



Source: IHS CERA.
00604-7

small blocks with a requirement to relinquish undrilled acreage after only a short period. However, Figure A-3 is relatively unambiguous.*

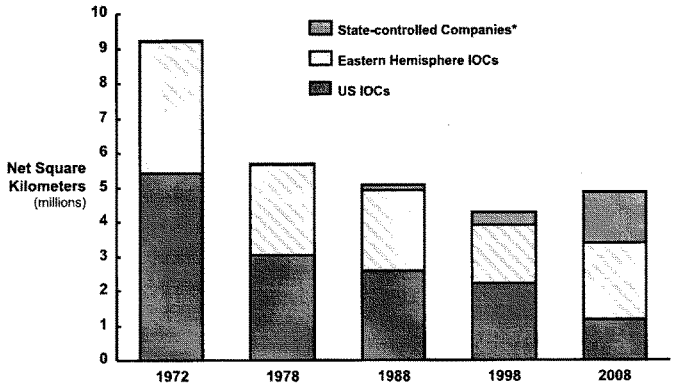
We can see clear evidence of the expanding role of the INOCs beyond the limits of their home territories. This commenced in the mid-1990s but has really taken off in the past decade.

The difference in performance between the US-based and non–US-based IOCs may be partly explained by the acquisitions of Amoco and Atlantic Richfield by BP and by aggressive high grading of acreage, but other forces appear to be in play. The mergers between the US majors and between the European majors appear to have followed different paths. For example, the aggregate of the individual holdings of Chevron, Texaco, and Unocal were twice as large as the holdings of the merged entity. Similarly the combination of Exxon and Mobil led to a one-third decline in the holdings of the merged entity compared to the sum of the two individually. This was also the case with the merger of Phillips and Conoco. The only member of the US-based IOCs to increase its aggregate international holdings over the period 1998 to 2008 was Occidental (which bid aggressively in the Libyan licensing rounds).

By contrast, Total maintained the aggregate holdings of itself, Elf Aquitaine, and Fina. Another European IOC, Eni, similarly maintained the aggregate holdings of the companies it acquired. The Canadian and US independents expanded into a number of international

*We exclude North American activity from this analysis of acreage holdings because it is qualitatively different from the non–North American industry. The growth of the deepwater Gulf of Mexico and Alaska may alter the specific figures, but the overall picture remains the same.

Figure A-3
Acreage Held Outside North America



Source: IHS CERA.
*Excludes domestic territory.
00604-9

settings, but several have retrenched back to their home countries (in part because of the attractive investment opportunities in unconventional natural gas and oil).

Exploration Drilling

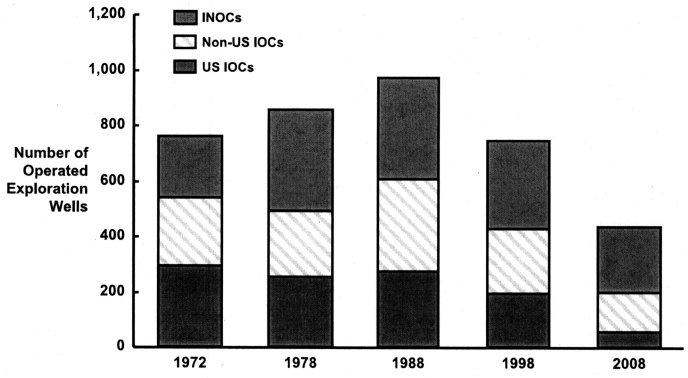
Drilling of exploration wells is a good indication of the prospectivity of the acreage that companies have acquired in competing for access. Many licenses are held by consortia of companies, which complicates analysis. So we have simplified this by identifying the operators of exploration wells (see Figure A-4). We have again excluded North American activity from this analysis to avoid swamping the underlying trends with the much higher activity levels (albeit smaller prospect sizes) that characterize the North American industry.

Exploration drilling has declined substantially since 1988 among all three peer groups. The US-based IOCs never regained the peak of activity seen in 1972. Nevertheless, the decline in drilling activity has not been universal. By the end of 2008 the INOCs (listed in Table A1 previously) were drilling a similar number of exploration wells as in their 1972 total (though their activities now span a vastly increased geographic range). The non–US-based IOCs drilled 40 percent fewer exploration wells in 2008 than in 1972, and US-based IOC activity decreased almost 80 percent (from 295 wells to 64) over the same period.

The accelerating decline to 2008 suggests a more systemic shift resulting from greater investment discipline and technology advances. The mergers at the turn of the century resulted in exploration budgets that were less than the combination of the premerger entities as companies high graded their combined portfolios. Evidence for this high grading is provided by the 50 percent improvement in exploration success rates when comparing the

Figure A-4

Exploration Wells Drilled Outside North America



Source: IHS CERA.
*Excludes domestic territory.
00604-12

latter half of the 1980s with recent results to 2008. In other words, only two-thirds as many wells had to be drilled to make the same number of discoveries. This in turn suggests that innovation and technology reduced exploration risk in some locations substantially over these two decades.

APPENDIX B—TAX MODELING METHODOLOGY AND ASSUMPTIONS

As we have already described, when examining the competitive playing field analysts normally focus on the host country fiscal regime. The question is typically framed as to whether a particular host country is competitive with other resource owners in its ability to attract investment. However, our analysis in this report reverses the lens and examines the competition between companies for access to investment opportunities.

Creating an Integrated Model of Host and Home Country Fiscal Interaction

First, a set of example large-scale oil and gas field development models were created using the proprietary IHS QUE$TOR cost estimation and concept selection model. These were distributed among host countries, as shown in Table B1.

The cash flows were evaluated using the IHS AS$ET model, which provided post-tax field development cash flows. Deloitte then calculated the flow of profits that could be distributed as dividends. These post-tax profits were "repatriated" in the year in which they were earned to the consolidated position of a notional oil company. We have named this notional company "For Example Oil and Gas" (FEOG). To explore the effects of consolidation with home country activities (where these are relevant), FEOG is assumed already to own a portfolio of producing assets in its home country that contribute fully taxed net cash flow.

In the reference case, FEOG was assumed to be a US-based company (under both the current understanding of US tax legislation and assuming that only "Safe Harbor" rates of foreign taxation could be credited against foreign earnings). We then modeled FEOG to originate in each of the following:

- Canada
- China
- France*
- Italy
- India
- Netherlands
- Norway
- Russian Federation
- United Kingdom

We were then able to build up a matrix of the ways in which individual fields would be taxed in their host countries, and then, to consolidate them back to their home countries.

*Based on the assumption of agreement with the French government to tax worldwide operations as a single entity.

Table B-1

Project Cost Summary

Country	Field/Project	Field Area (square kilometers)	Water Depth (meters)	Cost Summary: Size	Capital Expenditures ($MM)	Unit OPEX ($/BOE)	Lifecycle Cost ($/BOE)
United States	Deepwater GOM Oil		2,900	450 million barrels	6,140	10.8	24.8
Canada	Oil Sands (In-Situ/Onsite Upgrader)			1.9 billion barrels	10,180	13.1	18.4
Australia	Deepwater Gas	1,980	1,320	20 Tcf	9,290	3.8	7.3
Libya	Onshore Oil	180		550 million barrels	1,940	3.0	6.4
Qatar	Offshore Gas and Liquids	83	35	1.8 billion barrels/5.4 Tcf	5,420	2.2	4.7
Iraq	Onshore Oil Field Redevelopment	560		28 billion barrels	27,160	1.6	2.4
Venezuela	Onshore Oil	46		300 million barrels	840	2.4	5.6
Russia	East Siberian Oil			3.2 billion barrels	14,910	8.0	12.9
Norway	Offshore Gas		1,270	3.6 Tcf	6,520	11.0	29

Notes: GOM = Gulf of Mexico; Tcf = trillion cubic feet.
Source: IHS CERA.

This analysis permitted the creation of a "heat map" which shows the combinations of countries that are most advantaged or disadvantaged. The actual tax position of a company will depend on the facts and circumstances of the company's particular structure, tax status, and a number of other factors.

In most cases the interaction between the host country and the home country tax systems arises when profits are repatriated to the home country by way of a dividend. This dividend is a distribution of profits that have already been taxed in the host country. If they were simply taxed again as profits in the home country, then they would have been taxed twice. In essence, the penalty for repatriation of profits would provide a barrier to the provision of equity risk capital to any host country from elsewhere. The availability of risk capital would thus depend on the depth and liquidity of the host country's own equity markets. International capital would compete only by allowing for the cost of this extra layer of taxation in the economic calculations, and the host country would lose out to that extent. Double taxation provides a powerful barrier to international trade and investment, and it is for this reason that double taxation agreements (DTA) are so common between major trading partners.

Double Taxation Treaties

There is a general recognition that the country in which an activity is conducted has the primary right to tax the income from that activity. The country of the investor has a choice of systems available to prevent double taxation of such income. Most countries today use some form of a territorial system, which exempts all or most of the foreign income from home country taxation. Others, like the United States, subject the worldwide income of their resident companies to US taxation but allow an offset against the US tax due of the foreign income taxes already paid on that income. Both methods help to mitigate or eliminate double taxation. In some cases a combination of these methods is used.

The breadth of options ranges from an exemption from tax on repatriated dividends (subject to antiavoidance provisions) to a credit system (sometimes further defined in a DTA). Where a credit is available the gross dividend is typically taxed at the standard corporate income tax rate in the home country, with a credit given for tax on the profits applied by the host country (underlying tax) and withholding tax on the dividend from the host country.

The home country tax system may place restrictions on the level of credit available and how that credit can be used. These restrictions can often be complex and lead to additional taxation on overseas profits in the home country. These include

- restricting the level of credit to a maximum of the tax applied to the dividend in the home country; i.e., so that any excess credits can't be used for other purposes
- measures to prevent the "mixing" of dividends so that tax credits from high-tax subsidiaries are not blended with those from low-tax subsidiaries
- measures to control how excess credits can be pooled and used in future periods

Even where profits are not repatriated to the home country, there are examples where they may be deemed to have been repatriated and taxed as if a dividend had in fact been paid. Additional complexity arises where a company operates through a branch rather than a subsidiary (a legally resident personality of a company in a foreign host country rather than a separately incorporated company resident in the host country but owned by the home company). The outcome may be designed to be economically equivalent, but the technical specifics may be very different.

A company will normally be subject to the tax laws of its country of residence (its home country), but it will also be necessary to consider the double taxation treaty that may be in place between the home country and the host country. It is common for a home country to have signed a bilateral DTA with a host country that may govern their respective taxation rights, since a DTA may override the local laws on particular transactions.

Different Taxation of Upstream and Downstream Activities

Upstream E&P activities are usually subject to specific rules that may apply either additional taxes, specific rules on the deductions of expenses, and/or increased rates of corporate income tax. Upstream activities are sometimes ring-fenced for tax purposes so that profits and losses of E&P activities cannot be mixed with the profits and losses of other activities.

Typically, downstream oil and gas activities are subject to the same corporate income tax rules and rates that apply to other businesses. But additional complexity arises in relation to taxation of downstream activities. Taxable profits need to be allocated between countries in which products are refined, traded, and sold to customers. In addition to being subject to corporate income taxes in the numerous countries where such downstream profits may arise, a number of other indirect taxes such as excise/fuel duty can arise (typically levied on the end customer).

The focus of this report is upstream oil and gas activities and their taxation, since this sector suffers higher rates of taxation than the others.

Withholding Taxes

In addition to the taxes on the profits of upstream activity, many host countries impose further withholding tax on dividends and/or interest payments back to parent companies in their home countries. Where parent companies distribute profits to their shareholders and financiers, the home jurisdiction may also impose withholding taxes on those payments.

However, it is common for withholding tax rates on dividends and interest to be reduced (sometimes to zero percent) under DTAs. For example, in Europe dividends and interest are also typically reduced to zero between countries in the European Economic Area (EEA) under the EC Parent-Subsidiary Directive.

APPENDIX C—SOME POSSIBLE REASONS FOR DIFFERENTIATED PERFORMANCE

Why have IOCs generally been losing out in the race to secure investment opportunities? It is partly the result of host governments' becoming more assertive in retaining a greater share of production for themselves through the recasting of mineral rights (or taking all of the production in the case of outright nationalization.)

An additional factor arises when both **resource-rich governments,** in their capacity as *home* governments rather than *hosts,* and **importing country governments** appear to provide greater levels of support (politically and financially) for their state-owned companies when they venture overseas. This is in part to overcome the "advantages of incumbency" that they perceive the traditional IOCs to enjoy.

Such support arises in a number of ways but has the effect of increasing the share of the economic rents that the host governments can retain. In the case of importing countries, this support may allow the investor to leave a larger share of the rent to the resource-holding host government (and thus reduce its upstream returns). But the overall return for the investor is kept whole by its home government through other considerations, including guaranteed profitability of its home country downstream operations or through the availability of finance on terms that boost the equity return of the investor.

In the past decade, collateral investments by INOCs (and occasionally IOCs) appear increasingly to accompany proposals to acquire and exploit mineral rights in third-party host countries. This may take the form of accompanying investments in host country refineries, railroads, power stations, and the like in jurisdictions including Venezuela, Nigeria, Angola, and Libya. But when it suits host governments to make these types of investments a criterion for access, they normally distort the competitive playing field in favor of the INOCs.

A barrel of oil or a cubic foot of natural gas may seem to have a different value to an investor depending on which company owns the rights to develop it because of differences in

- motivations and strategic objectives of companies
- capabilities to execute projects
- levels of political support (or restraint)
- access to capital—both in the amount of capital and the terms on which it is available
- oil and gas price expectations and the technical evaluation of the asset
- costs of repatriating profits to a company's home country—both the withholdings on "export" and taxes on "import" of dividends

Each of these dimensions contributes to differences in the competitive outcome, as we discuss below.

Different Drivers for Different Companies

IOCs are driven by the need to deliver long-term growth and above all to achieve financial returns that do not fall below the threshold levels that their shareholders are prepared to accept (measured by whichever metric is most appropriate for the commercial business environment of the day.) IOCs can be competitive, on the one hand, through their greater focus on returns and therefore on the efficiency of operations. On the other hand, new competitors find it easier to compete for access if they are driven not only by the returns that they earn but also by such factors as achieving critical mass, security of supply, geopolitical relationships, and development of new capabilities, among other considerations.

It is possible to argue that IOCs (both US- and non–US-based) and the INOCs respond to different drivers; however, it is hard to divine any significant difference between the objectives and drivers of Canadian, European, Eurasian, and Asian IOCs on the one hand and US IOCs on the other. There may be some differences in the strategies that they deploy to meet those objectives, but these differences are neither significant nor proprietary; even if a company temporarily achieves greater success with a differentiated strategy, it is soon followed by others.

Diversity of Projects and Capabilities

There is no typical upstream oil and gas project. They come in all shapes and sizes. The skills companies need for success are almost equally wide ranging—including geotechnical, engineering, project management, operational, financial, trading, environmental, health and safety, and others. It is therefore small surprise that oil and gas companies display a corresponding variety in their size, scope, and ownership. Some are better—or perhaps just more experienced—at certain disciplines and types of project and some at others.

There are many projects even today where technology, know-how, and the ability to manage large, expensive, and complex activities provide the basis for competitive advantage. The Canadian oil sands and liquefied natural gas are obvious examples, especially when an integrated full-cycle development is the chosen approach. Deepwater production is another example—and recent events in the GOM have underscored the stakes involved in all such efforts.

Even so, there is not much that is proprietary to individual oil companies. Technology and capabilities have become increasingly accessible through the growing role in innovation that oilfield service companies have assumed in the past two decades. For the most part, the industry's restructuring since the early 1980s has included the transfer of people and their skills from oil companies to the service sector. A range of tasks that the former used to do in-house on a proprietary basis are now provided on contract to all parties by the latter.

Therefore, most oil companies can, or believe they can, find a way to carry out most projects more or less effectively. Even if they do possess a differentiating capability, to demonstrate it they must secure investment opportunities on which to deploy them. The evidence suggests that there is no significant difference between the capabilities of US-based and non–US-based IOCs, and that furthermore some INOCs have developed world-class capabilities in the theatres in which they are active (e.g., Petrobras and Statoil, among others.)

Politicization of Access

The host government controls whether and to what degree competition for access is determined by noneconomic criteria. If a producer country is constrained in its access to international aid or investment capital, technology transfer, or direct inward investment (e.g., for infrastructure development), it may use access to its hydrocarbon resources as a lever to relax such constraints. In such cases, INOCs are the advantaged competitors because they are more likely to be able to marshal the resources of their home governments to support their bid on this dimension. These constraints may arise from policy actions by other governments (multilateral or unilateral international sanctions) or from reservations by the international private sector (and/or some of its stakeholders) about the general business environment in the country.

There may be some differentiation between the foreign policies of the United States and other governments. For example, US companies were barred from investment by statute from Libya and Iran during a period in which European, Canadian, and Asian companies continued to operate. More recently, the tightening of UN sanctions on Iran and the lifting of sanctions on Libya have leveled the playing field between the two groups of IOCs. Regardless of how such restrictions are justified and implemented, it is clear that the greater rigor with which US companies have been restricted from operating in certain countries has contributed to these companies' relative performance there in securing mineral rights compared to their non-US peers.

Concessionary Terms for Provision of Investment Capital

The terms under which oil and gas companies can access capital may be a significant differentiator of their ability to compete. In previous eras, German and Japanese companies were explicitly granted concessionary terms of finance (in the form of low-cost, nonrecourse loans that were repayable only if the venture had a successful outcome).

More recently, low-cost finance is available to some INOCS from local banks and investment funds as these institutions align themselves with their home governments' aims. It may prove to be a cyclical phenomenon—just as support of German and Japanese investors in the 1960s and 1970s could not be sustained indefinitely—that INOCs are able to enjoy easier access to finance in terms of both quantity and terms. However, the sustainability of this source of funding will likely depend on how their current vintage of investments performs.

Oil and Gas Price Expectations and Asset Evaluations

Some home countries are more exposed to the consequences of interruption to their energy supplies. Consumers in those countries will be prepared to pay a premium to ensure adequate supplies. This effect contributes to the premium that attaches to a barrel of oil that heads east from the Gulf rather than west. But this premium does not seem sufficiently large to skew the playing field by significantly altering the value of acreage and reserves.

It may be that oil companies simply hold a different view of the market for a period of time. At various times during the past four decades, IOCs as well as INOCs have espoused oil price expectations that were significantly different from the market consensus at that time.

This can be a short-term driver of success (measured only in terms of winning bids for acreage, assets, or corporate targets rather than the returns earned therefrom), but eventually reality bites.

The same is true of the evaluation of the reserves potential or prospectivity of an asset. Greater optimism in technical analyses will certainly help companies make winning bids in competitive situations. These evaluations are based on forward-looking estimates—before there is any benefit of hindsight. It is based on each participant's best estimates for all the many petro-technical, engineering, economic, and fiscal parameters involved. When acquiring an asset from a company, this is the end of the story. But when acquiring from a host government, there may be a second act.

All one can know for certain is that things will work out differently than anticipated. In some cases the various upside and downside surprises offset each other, so the overall outcome is much as anticipated, and the winning company's offer to its host proves to be more or less right (albeit for the wrong reasons). However, from time to time the outcome becomes significantly skewed one way or the other.

If with the benefit of hindsight a company has overbid for a concession, it has little option but to live with the consequences. No doubt, it will try to negotiate whatever easements or relief that it can but will be wary of the damage that may cause to its reputation with host governments (not just the host in question, but others that may well be watching) for living up to its commitments. On the other hand, if the government—either host or home, or even both—decide the company has ended up with too good a deal, history suggests that the government may attempt to rewrite the result (even where compensation may be won, it rarely covers the full economic loss borne by the company.) A host government is likely to couch this process as an invitation to the company to renegotiate, and such offers can be difficult to refuse.

The degree of support that home governments are prepared (or are able) to provide to their companies may alter the risk premium that such bidders feel obliged to include in their bids for assets—both in the award of new licenses and in corporate transactions.

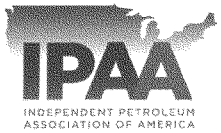
Repatriation of Profits

As described in the main body of the report, the charges imposed on

- the "export" of dividends from host countries—withholding taxes, which vary depending on the arrangements between the host country and the home country to which these dividends are being remitted
- the "import" of dividends to the home country—a variety of regimes generally depending on the tax laws of the home country and whether it recognizes the validity of taxes already paid in the host country

reduce the cash flows that a company receives from its investments in a foreign host country. Different arrangements, sometimes embedded in tax treaties and sometimes in national legislation, alter the amount that companies can bid for mineral rights.

This difference in treatment appears to be an important differentiator in performance between companies from different home countries in the competition for access to resources. It seems likely that, if enacted, current proposed amendments to US tax legislation will reduce the competitiveness of US companies abroad. ■



Statement for the Record for the United States Senate Committee on Finance

Hearing on "Tax Reform: Impact on U.S. Energy Policy"

June 12, 2012

Lee Fuller
Vice President of Government Relations
Independent Petroleum Association of America
Submitted on June 25, 2012

This testimony is submitted to the record for the Senate Finance Committee hearing examining tax reform and the impact on the United States' energy policy on behalf of the Independent Petroleum Association of America (IPAA).

IPAA represents thousands of independent oil and natural gas explorers and producers, as well as the service and supply industries that support their efforts, which will be significantly affected by changes to the tax code. Independent producers develop 95 percent of American oil and natural gas wells, produce 54 percent of American oil and produce 85 percent of American natural gas. The average independent has been in business for 26 years and employs 12 full-time and three part-time employees. In total, America's onshore independent oil and natural gas producers supported 2.1 million direct jobs in the United States in 2010.

Political rhetoric describes tax provisions related to oil and natural gas production as "loopholes" or "subsidies." Two key issues that affect independent producers relate to drilling costs and percentage depletion. These are neither loopholes nor subsidies. They are mechanisms – like depreciation – that provide for capital recovery; they are normal business deductions. Independent producers historically have reinvested as much as 150 percent of their American cash flow back into new American projects. Changes that limit this capital will affect the millions of jobs associated with just America's independent onshore investments.

Adopting the Obama Administration proposal to change the depreciation of drilling costs would reduce independents' capital expenditure budgets by about 25 percent. The ability to deduct expenses for those costs that have no salvage value is not unique to oil and natural gas producers; there are comparable provisions elsewhere in the tax code. Research and experimental expenditures as well as expenditures by farmers for fertilizer are two examples of comparable provisions. Moreover, the ability to deduct the costs associated with drilling a well also applies to geothermal wells. Despite these facts, the Obama Administration has only proposed repealing the intangible drilling cost provision for the oil and natural gas industry.

A second tax provision targeted by the Administration is the availability for oil and natural gas producers and royalty owners to take percentage depletion deduction for mineral assets. All mineral resources are allowed a deduction for percentage depletion. However, the oil and natural gas percentage depletion has been targeted for repeal. Unlike the widespread use of percentage depletion across mineral extraction industries, applicability to the oil and natural gas industry is severely limited under current tax law. First, the provision for oil and natural gas is limited to independent producers and royalty owners. Second, only the first 1000 barrels per day of an independent's or a royalty owner's production is eligible for the percentage depletion deduction. Third, the deduction is limited both to the net income of the property and to 65 percent of the taxpayer's net taxable income.

Consequently, oil and natural gas percentage depletion is a small business and mineral owner tax issue. Many royalty owners are farmers, ranchers or retirees who rely on their royalties for

essential supplement income. Most small business independent producers are operators of America's marginal wells – wells that produce about twenty percent of US oil and about twelve percent of US natural gas. Percentage depletion can be essential to keep these wells operating.

In addition to preserving longstanding capital recovery deductions in the tax code for independent oil and natural gas producers – intangible drilling costs and percentage depletion – IPAA would encourage Congress to undertake a comprehensive tax reform package, dealing with the taxation of foreign earnings, the taxation of domestic business income and individual income tax rates together in one tax package. Eliminating business deductions and tax credits to pay for a lowering of only the corporate tax rate would be disastrous for America's small businesses, including many independent oil and natural gas producers. Approximately two--thirds of IPAA's members are not organized as C-Corporations. As such, these businesses would see no benefit to only lowering the corporate tax rate. In fact, if deductions are eliminated to pay for a reduction in the corporate tax rate, then these small businesses would realize a tax increase.

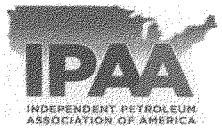
There are other less well-known oil and natural gas production tax issues also targeted by the Administration that provide a safety net for America's marginal wells, encourage investment with small business producers, and support enhanced oil recovery. Without these provisions, nearly twenty percent of American oil and natural gas production could be jeopardized.

Finally, the Obama Administration's budget proposal, as well as certain Congressional proposals, would deny those American oil and natural gas companies doing business overseas the ability to use foreign tax credits for income taxes paid on the foreign earned income in other countries. The ability to claim foreign tax credits for taxes paid to foreign governments is applicable to any American company doing business overseas, not just American oil and natural gas companies. Eliminating the ability of only American oil and natural gas companies to claim foreign tax credits is punitive and unsound tax policy. IPAA would encourage Congress to undertake comprehensive tax reform and address the taxation of foreign earnings for all U.S.-based companies and not just change the rules for the oil and natural gas sector.

All of these provisions need to be well understood and thoughtfully addressed in a broad tax reform debate. They should not be revised in a highly charged, rapidly thrown together legislative compromise in the lame duck session of Congress.

Clearly, the concept of tax reform poses the potential for broad changes to tax policy. But, in such a deliberation, Congress should consider the long term implications of each change to tax policy. When Congress does, in fact, undertake tax reform, IPAA would encourage that any tax proposal be comprehensive and allow for an appropriate transition period.

Enclosures



Comparison of Deductible Tax Provisions

Federal tax policy allowing for expenditures to be deducted in the year they are incurred applies to a variety of industrial activities. Several of these provisions are presented in the following table – drilling costs associated with oil and natural gas production, drilling costs for geothermal wells, research and experimental expenditures and expenditures by farmers for fertilizer.

These provisions bear a common theme – *there is no salvage value for the costs that were paid.* That is, while the larger enterprise may have a capital value – the oil or natural gas well, the geothermal well, the products ultimately developed by the research, the farm – these costs are not part of those tangible assets.

Tax Provision	Section 263(c) – Intangible Drilling Costs for Oil and Natural Gas Wells	Section 263(c) – Intangible Drilling Costs for Geothermal Wells	Section 174 – Research and Experimental Expenditures	Section 180 – Expenditures By Farmers For Fertilizer
Basic Provision	A drilling and development costs deduction has been allowed as an ordinary and necessary business expense for those costs where there is no remaining equipment to value (salvage value) when an oil or natural gas well is completed.	Provides for the same deductibility of drilling costs for geothermal wells as for oil and natural gas wells.	A taxpayer may treat research or experimental expenditures which are paid or incurred by him during the taxable year in connection with his trade or business as expenses which are not chargeable to capital account. The expenditures so treated shall be allowed as a deduction. (Tax Credit allowed for incremental R&E over historic baseline.)	A taxpayer engaged in the business of farming may elect to treat as expenses which are not chargeable to capital account expenditures (otherwise chargeable to capital account) which are paid or incurred by him during the taxable year for the purchase or acquisition of fertilizer, lime, ground limestone, marl, or other materials to enrich, neutralize, or condition land used in farming, or for the application of such materials to such land.
Presence in Tax Code	Drilling and development costs treated as a deduction since 1913; codified in 1954	Added to tax code in 1978	Codified in 1954	Codified in 1954
Limitations	Independent producers may deduct 100 percent of drilling costs; integrated companies must capitalize 30 percent of drilling costs over 60 months	No limitations based on structure of organization	No limitations based on structure of organization	No limitations based on structure of organization

Comparison of Percentage Depletion Tax Provisions

Federal tax policy allowing for percentage depletion applies to mineral assets[1], including oil and natural gas. Percentage depletion of mineral assets allows the taxpayer to deduct a fixed percent of its income to reflect its production of a depleting asset.

Federal tax law has always recognized the validity of a deduction for depleting mineral assets. Initially, the only deduction was based on the cost of the project. In 1918, Congress recognized the strategic importance of petroleum and it sought to increase petroleum development. It also recognized that cost depletion alone might not be sufficient to enable mineral producers to replace exhausted reserves and could result in abandoning mineral assets before they were fully produced. Consequently, it created a depletion option based on the value of the assets. It recognized that value depletion could exceed cost depletion because it is impossible to fully value mineral assets based on the initial development costs. The initial value depletion approach was too cumbersome and in 1926 Congress created percentage depletion for oil and natural gas because it is straightforward to calculate and audit. Subsequently, Congress applied percentage depletion to other minerals. Similarly, percentage depletion applies to royalty owners of the mineral assets where it is particularly useful because of the challenges to royalty owners to acquire accurate and current cost depletion information.

Both cost depletion and percentage depletion must be calculated and the higher value used as a deduction.

Tax Provision	Section 613 – Percentage Depletion for Oil and Natural Gas Wells	Section 613 – Percentage Depletion for Coal	Section 613 – Percentage Depletion for Sulfur	Section 613 – Percentage Depletion
Basic Provision	Deduction of 15 percent of gross income, excluding rents and royalties paid	Deduction of 23 percent of income, excluding rents and royalties paid	Deduction of 10 percent of income, excluding rents and royalties paid	Deductions of various percentages of income, excluding rents and royalties paid, for other minerals listed in footnote
Presence in Tax Code	Added to the tax code in 1926	Added to the tax code in 1932	Added to the tax code in 1932	Added to the tax code from 1932 to 1954
Limitations	Applies only to US production Available only to independent producers and royalty owners Limited to the first 1000 barrel/day of oil (6000 mcf/day of natural gas) Limited to net income of the producing property, computed without allowance for depletion and without the deduction under the manufacturers tax deduction Limited to 65 percent of the taxpayers net income Applies to both regular and alternative minimum tax	Limited to50 percent net income of the producing property, computed without allowance for depletion and without the deduction under the manufacturers tax deduction	Limited to50 percent net income of the producing property, computed without allowance for depletion and without the deduction under the manufacturers tax deduction	Limited to50 percent net income of the producing property, computed without allowance for depletion and without the deduction under the manufacturers tax deduction Limited for some minerals to US production

[1] Sulfur, uranium, asbestos, brucite, coal, lignite, perlite, sodium chloride, wollastonite, gravel, peat, pumice, sand, scoria, shale, stone, clay, metal mines, rock asphalt, vermiculite and all other minerals (including, but not limited to, aplite, barite, borax, calcium carbonates, diatomaceous earth, dolomite, feldspar, fullers earth, garnet, gilsonite, granite, limestone, magnesite, magnesium carbonates, marble, mollusk shells (including clam shells and oyster shells), phosphate rock, potash, quartzite, slate, soapstone, stone (used or sold for use by the mine owner or operator as dimension stone or ornamental stone), thenardite, tripoli, trona, bauxite, flake graphite, fluorspar, lepidolite, mica, spodumene, and talc (including pyrophyllite)). If from deposits in the United States-- oil and natural gas, geothermal energy, gold, silver, copper, iron ore, anorthosite, clay, laterite, and nephelite syenite (to the extent that alumina and aluminum compounds are extracted therefrom), bauxite, celestite, chromite, corundum, fluorspar, graphite, ilmenite, kyanite, mica, olivine, quartz crystals (radio grade), rutile, block steatite talc, and zircon, and ores of the following metals: antimony, beryllium, bismuth, cadmium, cobalt, columbium, lead, lithium, manganese, mercury, molybdenum, nickel, platinum and platinum group metals, tantalum, thorium, tin, titanium, tungsten, vanadium, and zinc.

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Statement of Large Public Power Council

United States Senate
Committee on Finance
Hearing on
"Tax Reform: Impact on U.S. Energy Policy"
June 12, 2012

The Large Public Power Council (LPPC) is pleased to submit its statement for the record to the Senate Finance Committee hearing on "Tax Reform: Impact on U.S. Energy Policy."

The Large Public Power Council is an organization representing 26 of the largest locally owned and operated not-for-profit electric systems in the nation. LPPC members are located in 12 states and Puerto Rico and provide electric service to most of the 45 million people served by public power, and own and operate more than 86,000 megawatts of generation capacity and over 35,000 circuit miles of high voltage transmission lines.

As your committee examines the implications of tax reform on energy policy, we urge you to consider the impact changes to the exclusion for interest on state and local bonds would have on public power customers – especially low income households that would be impacted most by increased electric rates. For nearly a century, tax-exempt financing has allowed governmental entities to invest in essential infrastructure in a cost-effective manner, including roads and schools for cities and counties, and generation and transmission facilities for public power systems.

Proposals that would restrict, means-test or eliminate the longstanding federal income tax exemption for interest from municipal bonds will increase the cost of providing governmental services, including electric service in regions with public power, with the burden ultimately shouldered by taxpayers in already hard-pressed communities throughout the country. Furthermore, proposals to substitute the tax credit bond or subsidized taxable bond mechanisms for tax-exempt financing, rather than complement it, are also problematic because, as we discuss in detail below, past experience with programs such as Clean Energy Renewable Bonds and Build America Bonds has demonstrated that not all state and local entities can utilize this tool efficiently, that tax credit bonds have significant inefficiencies, and that the financial markets have not yet developed to fully deal with these new instruments.

In addition, LPPC and its members support the continuation of the following energy-related programs: (1) the Clean Renewable Energy Bond (CREB) program, which was enacted as part of the Energy Policy Act of 2005, and was extended twice and for which additional allocations of bond authority were made but which is currently without any available allocation; (2) the Treasury renewable grant program ("1603 grants"), with an amendment to permit public power to participate; and (3) Build America Bonds (BABs).

Tax-Exempt Financing

Since the first federal tax laws were enacted, state and local governments (which by definition own and operate public power systems) have had the ability to utilize federally tax-exempt financing. Governmental entities have limited means to raise funds for their communities' capital needs. They cannot sell stock and so are permitted to raise capital by issuing federally tax-exempt bonds, which carry lower interest rates that are fully passed through to reduce the cost of governmental services such as the building of roads, schools, and public safety infrastructure. Public power systems use tax-exempt bonds to finance their electric generation,

transmission, and distribution assets, as well as related facilities. Given the capital-intensive nature and long-lived assets of an electric utility, tax-exempt debt is essential to operating a viable public power system.

Public power systems borrow on a long-term basis to finance their long-lived assets. The only sensible means of funding an electric generation or transmission project that can cost hundreds of millions or even billions of dollars and that has a 40 or 50 year life is to borrow all or much of the cost of the project and spread the cost over its useful life. The cost is then shared by all the customers that will benefit from the project.

State and local governments, and ultimately their citizens, average an estimated two percentage point savings by using tax-exempt debt to finance investment in public infrastructure. Over the past few decades, tax-exempt finance has generated trillions of dollars of investment in vital public infrastructure and has saved state and local governments hundreds of billions of dollars in interest costs.

Overview and Regulation of the Tax-Exempt Bond Market

The tax-exempt bonds market currently is a $3.7 trillion market, and consists of over 50,000 issuers. According to Moody's and Fitch Ratings, the historical default rate in the entire municipal sector is substantially below the corporate default rate at less than 1/3 of 1%. [In fact, since 1970 over two-thirds of this small percentage of defaults has been related to debt issued by special entities for healthcare and housing projects, and very few from public power systems, cities, counties.

There is a longstanding and comprehensive federal legislative and regulatory system in place to regulate the tax-exempt bond market. Federal tax laws significantly limit the purposes for which tax-exempt bonds may be issued and the investment of tax-exempt bond proceeds. These rules are particularly restrictive for public power systems. For example, in the case of public power bond issuances, regardless of the size of the borrowing, no more than $15 million (or 10% of the total, if less than $15 million) of the proceeds can benefit entities that are determined to constitute private use. Furthermore, the IRS "private use rules" effectively prevent issuers from using tax-exempt bonds to build larger facilities than are required to meet the needs of their communities or to issue bonds with longer terms than needed. In combination, these rules ensure that tax-exempt bonds are used for legitimate governmental purposes.

The SEC and Municipal Securities Rulemaking Board regulate the manner in which state and local governments may sell their bonds and provide rules on the types of disclosure required in connection with the sale of municipal bonds, as well as ongoing annual and material event disclosure. Both the IRS and SEC have active enforcement programs for state and local bonds to help ensure that the applicable rules are satisfied.

Implications of Elimination or Replacement of State and Local Interest Exclusion

Some claim that tax-exempt bonds are an inefficient method of reducing the borrowing costs of State and local governments and suggest that tax credit bonds or other forms of subsidy are a better alternative. These claims ignore the fact that, despite numerous efforts at creating workable tax credit bond programs, there is no viable replacement to the $3.7 trillion tax-exempt bond market. The tax credit bond programs created in recent years as alternatives to tax-exempt bonds have had little acceptance among investors, and the prices that investors have been willing to pay have resulted in tax credit bonds having their own inefficiencies. Given the lack of substantial investor interest in tax credit bonds, it is simply not credible to expect that tens of billions of dollars in tax credit bonds could be issued each year without creating inefficiencies that exceed the purported inefficiencies of tax-exempt bonds and that result in tax credit bonds being a costlier funding source than tax-exempt bonds.

The most effective alternative to tax-exempt bonds—Build America Bonds—was not a tax credit bond. It was a direct cash payment by the federal government to the issuers of these bonds, rather than a tax credit to investors. It was, in contrast to the tax credit bond programs, a highly successful program. However, its success was largely the result of the program providing a level of subsidy that exceeded that provided by tax-exempt bonds. Further, while Build America Bonds are an excellent complement to tax-exempt bonds, they are not an alternative since the taxable bond market is simply not equipped to deal with the tens of thousands of State and local governments of all shapes and sizes that routinely participate in the municipal bond market, with the result that many local governments would be shut out of the bond market and forced to pay higher interest rates.

Implications of Limitation on Deducibility of Tax-Exempt Interest

President Obama's budget proposal released on February 13, 2012 included a provision that would impose tax on interest on municipal bonds owned by certain high-income earners. Late last year, the President's Jobs Act and Deficit Reduction Plan included similar provisions to offset spending and reduce federal deficits. Similarly, Chairman Baucus in his opening statement for this hearing suggested that all investors in tax-exempt bonds could receive a "uniform subsidy," regardless of differing marginal tax rates.

LPPC has strong concerns with these proposals. It is critical to understand that any tax on investors in tax-exempt bonds (or other reduction in investor benefits from tax-exempt bonds) is, in reality, a tax on the issuers of those bonds. This is because Investors in municipal bonds will demand higher yields to make up for the lost benefit and uncertain tax treatment. Moreover, the Administration's proposal would be retroactive to already-issued bonds—an unprecedented and unfair effective date for a proposal applicable to municipal bonds.

Industry analysts have projected that enactment of the Administration's proposal to cap deductibility of municipal bond interest at 28% could increase interest rates .4 to .75%, depending on a number of variables. The increase would be primarily caused by the higher rates demanded by investors to offset their tax increase and to reflect added uncertainty about future tax treatment. Over the last 10 years, public power has averaged approximately $20

billion in new bond issuances each year, with an average term 20 years. Based on these figures, an increase in rates between .4 and .75% would translate into an additional $1.6 - $3 billion in borrowing costs paid by public power customers over the life of a single years issuance of bonds. Since this increase would be perpetually added to annual bond issuances going forward as public power continues to invest in infrastructure, the cumulative impact after 10 years could be $15-$30 billion of additional annual debt service payments. While this impact is clearly significant to public power customers, it is important to note that this is only a fraction of the overall market and the impact to all other state and local governments would be substantially larger.

Clean Renewable Energy Bonds

Congress has recognized that renewable energy projects are generally more costly than electricity generated from fossil fuels and that this additional cost makes renewable energy more expensive to ratepayers. In an attempt to encourage the development of renewable resources for electricity, the Internal Revenue Code has provided a production tax credit for renewable energy projects with no corresponding provision to assist public power systems and cooperatives in building renewable generation. Congress sought to provide public power and cooperatives with an incentive that is relatively comparable to the production tax credit. As part of the Energy Policy Act of 2005 (the "Energy Policy Act"), Congress provided for the issuance of clean renewable energy bonds which were intended to provide qualifying borrowers with low-rate loans to finance their renewable energy projects.

The CREBs program was included as part of the tax title of the Energy Policy Act of 2005, which was signed into law in August of 2005. The original program, which provided for an allocation of $800 million in CREB funding, was extended twice and was modified in the Emergency Economic Stabilization Act of 2008 to make it more workable for public power and more attractive to investors. The Emergency Economic Stabilization Act and the American Recovery and Reinvestment Act of 2009 provided for an additional $2.4 billion in CREB funding split equally between public power providers, rural electric cooperatives, and other governmental bodies.

That amount has been fully allocated to issuers; there is currently no allocation for CREBs even though the need for the program, that is, the fact that renewable resources for electricity continue to be more expensive to develop, continues. Therefore, LPPC urges the extension of this program through an additional, preferably uncapped, even if temporarily, allocation, for the reasons described below.

LPPC is very appreciative of the incremental improvements to the program that have improved the marketability of the CREBs; however, there remain restrictions on CREBs that substantially reduce its effectiveness. Most significantly, the CREBs program has a volume cap ($800 million for public power providers) that ensures that only a small fraction of the qualifying projects of public power systems benefit from CREBs. In contrast, there are no volume limitations on the projects that are eligible for the production tax credit or the Section 1603 grant program.

Introduction of a cap to the program creates both financial and planning challenges. From a financial standpoint, the cap has restricted the ability for utilities to finance an entire project with CREBs. In fact, the volume cap is set at such a restrictive level that 2 or 3 large-scale projects or utilities could use the entire cap. To date, the CREBs volume cap provided by the Congress has been dramatically oversubscribed by public power, even with many systems requesting only a small fraction of their renewable project requirements and many systems not bothering to apply at all. The fact is that an allocation of CREBs authority that is not large enough to finance an entire project does not compare financially to a privately owned PPA structure. Both publicly available data and LPPC's survey of its members plans bear this out: public power systems have almost always used PPA structures because, despite the inefficiencies and other problems, these structures are the lowest cost method of financing renewable energy projects.

The recently-enacted changes to the CREBs program to provide direct payments to CREBs issuers similar to the Build America Bonds program (in lieu of tax credits to the investors) is a very beneficial change. With this change, the marketability challenges have been alleviated and the restrictive cap is the primary issue reducing the effectiveness of the program.

Tax credits and grants for electric generation

Congress has enacted several tax credits for different types of electric generation facilities. First, as indicated above, the Internal Revenue Code provides a 1.5 cents per kilowatt production tax credit (indexed for inflation) for qualifying renewable energy facilities and a 1.8 cents per kilowatt production tax credit (indexed for inflation) for qualifying advanced nuclear facilities. As part of the American Recovery and Reinvestment Act of 2009 (ARRA), Congress recognized that tax credit programs can have significant limitations, particularly during difficult economic periods. Under new the Section 1603 of ARRA, Congress provided owners of renewable energy projects with the ability to obtain a 30 percent grant from the Department of Energy in lieu of a tax credit. As both the Treasury and Energy Departments have testified, this program has been enormously successful.

Unfortunately, this grant program was made inapplicable to public power systems. In fact, with the guidance related to so-called "blocker corporations," public power is the only type of entity that cannot make use of the grant program. The combination of the success of the Section 1603 grant program and, before that, the production tax credit, and the limitations of the CREBs program have resulted in public power systems overwhelmingly turning to structures in which a private entity owns the renewable energy project and sells the electricity to the public power system under a power purchase agreement ("PPA"). There are many difficulties with these PPA structures. As much as 1/3 of the federal subsidy dollars are retained by the private intermediary and, as a result, are not used for the renewable project receiving the grant. Thus, for every dollar of federal assistance provided, only 70 cents is used for that renewable energy facility. The remainder of the grant is not certain to be reinvested in renewable projects in the United States. The inefficiency of the PPA structure would be eliminated if public power and cooperatives had direct access to the Section 1603 grant program and US taxpayer dollars and

jobs would stay within the United States. We urge that the 1603 grant program be extended and modified to permit the participation of public power and cooperatives.

Build America Bonds (BABs)

BABs are a new borrowing tool for State and local governments, including public power entities, enacted as part of ARRA. These bonds are conventional taxable bonds issued by State and local governments. The Treasury Department makes direct payments to issuers to subsidize a portion of their borrowing costs in an amount equal to 35% of the coupon interest on the bonds. ARRA authorized the issuance of BABs in 2009 and 2010 without volume limitations. Currently, there is no authority to issue new BABs.

The BABs program was very successful and expanded the market for State and local governmental debt. During 2009-10, BABs represented over 25% of the total dollar supply of State and local governmental debt. The program taps into a broader market of investors without regard to tax liability, for instance, pension funds. It also has relieved supply pressures in the tax-exempt bond market and has helped to reduce interest rates in that market. Making BABs permanent could promote market certainty and greater liquidity.

A number of LPPC members utilized BABs during 2009 and 2010 to finance essential new electricity generation and transmission infrastructure, creating much-needed quality jobs at the same time. We found the option to issue BABs a welcome addition to the limited options available for State and local governmental entities to finance large projects with long useful lives. We urge that the program be made permanent, or at the very least, extended.

Conclusion

The tax-exempt bonds market is a $3.7 trillion market with an extremely low default rate that is critical to keeping energy prices affordable for public power customers. Without it, public power systems will be faced with higher borrowing costs that are ultimately passed through in electric rates which will disproportionately impact low-income customers.

We urge the Committee to preserve current law treatment of tax-exempt financing and to consider proposals such as tax credit bonds and subsidized taxable bond mechanisms as opportunities to complement, not substitute, its nearly century long place in our federal tax law.

As the Finance Committee continues its work on issues related to tax reform, LPPC reiterates its firmly held position that proposals that restrict, means-test or eliminate the longstanding federal income tax exemption for interest from municipal bonds will increase the cost of providing governmental services, with the burden ultimately shouldered by taxpayers in already hard-pressed communities throughout the country.

LPPC also strongly believes that the electric industry needs to be provided with the appropriate tools to finance new electricity infrastructure and increase the use of clean and renewable resources to generate electricity. By doing this, Congress can help to ensure that U.S.

consumers have access to reasonably, priced, reliable electricity while at the same time creating and sustaining quality jobs here in the U.S. Therefore, for the reasons discussed above, we urge the extension of the following provisions: (1) the Clean Renewable Energy Bond (CREB) program, with an uncapped allocation; (2) the Treasury renewable grant program ("1603 grants"), with an amendment to permit public power to participate; and (3) Build America Bonds (BABs).

Statement for the Record
Of
National Association of Royalty Owners (NARO)

Before the United States Senate
Committee on Finance

Hearing time: Tuesday June 12, 2012 10:00 AM
215 Dirksen Senate Office Building

Full Committee Hearing:
To receive testimony on Tax Reform:
Impact on U.S. Energy Policy

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While NARO shares several policy concerns with the rest of the energy community, this testimony seeks to focus the Committee's attention more acutely on *percentage* depletion for royalty owners, which is the only tax deduction many NARO members take on their mineral royalty income. As will be discussed, many of the royalty owners which NARO represents do not have the wealth, time, and resources that larger energy and mineral companies do. As a result, they have a more limited ability, compared to the rest of the energy community, to organize and inform legislators of their concerns.

1. Who does NARO represent?

We are the National Association of Royalty Owners (NARO) and represent the concerns of an estimated 8.5 million American private owners of oil and gas mineral and royalty interests. We live and vote in all 50 states, even though our producing minerals may be in Arkansas, New Mexico, North Dakota, Oklahoma, Pennsylvania, Texas, and Utah, Wyoming or any of the 33 producing states. NARO has been educating and advocating for mineral/royalty owners since our original incorporation 32 years ago in 1980.

The average NARO member is over 60 years old, widowed, and receives less than $500 in monthly royalties as a supplement to their social security retirement income.

The majority (something over 70%) of the minerals in the U.S. are owned by individuals and leased to companies for development. Thanks to the efforts of one of our members, we recently took a snap shot of one "marginal" oil well (producing less than 15 barrels of oil per day) in Grady County Oklahoma. This one little well has over 300 individuals in 46 states receiving royalty payments from its production.

We estimate the number of royalty owners in each state to be:

AK 13,600	AL 33,150	AR 255,000	AZ 144,500	CA 510,000
CO 654,500	CT 17,000	DC 17,000	DE 2,550	FL 161,500
GA 85,000	HI 8,330	IA 33,150	ID 35,700	IL 76,500
IN 27,200	KS 147,900	KY 11,050	LA 125,800	MA 30,600
MD 35,700	ME 5,525	MI 44,200	MN 47,600	MO 110,500
MS 39,100	MT 47,600	NC 67,150	ND 24,650	NE 19,550
NH 13,600	NJ 47,600	NM 161,500	NV 44,200	NY 127,500
OH 30,600	OK 1,691,500	OR 51,000	PA 119,000	RI 5,525
SC 22,100	SD 5,525	TN 59,500	TX 2,975,000	UT 39,100
VA 85,000	VT 2,550	WA 39,100	WI 39,100	WV 19,550
WY 30,600		Total nationwide: 8,440,755.		

Remember, these are estimated numbers of *royalty* owners. The total number of *mineral* owners is much greater, as vast areas are unproductive or have not yet been explored and developed.

2. A look back at the rationale for *percentage* depletion in U.S. history

In 1913, the 16th amendment to the constitution made the Federal income tax a permanent fixture of American life. That same year, mineral/royalty owners, in accordance with the newly minted tax code, began to account for the depreciation of their mineral properties which resulted from the depletion of limited mineral reserves. Congress enacted this tax deduction so that mineral/royalty owners could deduct a "reasonable allowance for depletion of ores and all other natural deposits..." which results from extraction. What follows is an explanation of the conception of *percentage* depletion, and illustrates the continued need for the *percentage* depletion allowance for mineral/royalty owners today.

What is depletion? Put simply, in the context of taxation, it represents the depleting value of a limited reservoir of a non-renewable resource such as Natural Gas, Copper, Oil, etc. Tax liability in America has often been dependent on the value of the property being taxed. As the object of taxation changes in value, the tax liability changes accordingly. This is commonly accepted by federal and state governments with regard to all manner of property, whether brick and mortar, automobile value, etc. As an automobile depreciates, the tax rate is lowered in subsequent years. As the minerals are extracted from a given property, the reserves are depleted, and the value of that mineral interest depreciates, as should the tax liability.

Percentage depletion replaced *discovery value* depletion, which had been adopted in 1918 as an incentive to find new oil supplies that were needed in World War I. Under *discovery value* depletion, tax on minerals such as oil and natural gas were assessed at the time the minerals were discovered, but that proved to be an inefficient and unsavory policy for mineral owners, producers, and governmental tax authorities alike. Among *Discovery value* depletion's shortcomings; it resulted in lengthy, not to mention expensive, quarrels between taxpayers and tax administrators over the predicted quantity and value of the minerals, and the subsequent amount of depreciation that would occur from the depletion of reserves.

Even if the quantity and composition of minerals in the ground can be known with relative certainty, the markets for energy sources like natural gas and oil are volatile. This has been abundantly demonstrated with the dramatic price fluctuations of oil and natural gas in recent years. These turbulent markets make it difficult to predict the overall value of mineral reserves, especially beyond one year.

Beyond unpredictable markets, there were additional problems with *discovery* depletion. Even today, the science of interpreting seismic data and the drilling of exploration wells remain something of an art, albeit to a lesser extent than in previous decades. The accuracy of pre-extraction predictions on the quality and quantity of minerals can prove disappointing. However, the inability to know with certainty the total future value of oil or gas from a given mineral interest, and the quantity which is likely to be producible, results from more than just the imperfections of geological data analysis. The 'producible' quantity underground is unpredictable due to unknowable, yet inevitable changes in technology. The recent advances in horizontal drilling, and the impact it has had on hydraulic fracturing technology are a great example.

In the last decade, horizontal drilling innovations have allowed us to more cheaply use hydraulic fracturing in layers of shale rock where natural gas was previously unreachable due to the cost of recovery. Due to these technological improvements, hydraulic fracturing in shale has grown at an almost stunning pace. This has resulted in the Energy Information Administration (EIA) to estimate that by 2035 49% of domestic produced natural gas will be shale gas. These innovations have freed up so much previously unrecoverable gas that the U.S. is now sitting on an estimated 100 years supply of clean burning natural gas at current consumption levels. The U.S. is currently in serious contemplation about ways to ensure that our energy policies are environmentally responsible for our children's future. The rapid leap forward in shale drilling technology, and the resulting massively increased quantities of clean burning, locally abundant natural gas, are game changers for U.S. energy policy.

Because of the impossibility, both for taxpayer and tax administrator, of predicting the nature and timeline of technological advances, and the difficulty for both parties of defending variables like quantity of reserves, quality of reserves, and projected market value, congress eventually abandoned the practice of determining the *discovery value* of minerals for purposes of the depletion allowance. In 1926, congress simplified the process by allowing mineral/royalty owners the option to claim *percentage* depletion.

"To figure percentage depletion, you multiply a certain percentage, specified for each mineral, by your gross income from the property during the tax year." This simplified procedure has proved essential to encourage the production of dozens of different minerals, both energy related and not. The percentage of income from a producing mineral property which one can claim as a deduction to account for depletion is currently 15% for oil and natural gas, and higher for certain other minerals. For example, the current rate for sulfur, uranium, asbestos, lead ore, zinc ore, nickel ore, and mica is currently 22%. These flat percentages save on compliance costs for both tax payer and administrators, because it prevents the potentially lengthy battle with each individual mineral owner over the value of depletion for their particular property.

3. Effects of the proposed eliminations on royalty owners

Under current policy, if the mineral owner feels that the depletion percentage specified by statute is unfair for their property's particular mineral profile, then they can still alternatively file for *cost* depletion. Large mineral interest owners such as energy companies are more likely to file for the *cost* depletion deduction. The reason for this is that they have already incurred the cost of a complex analysis of their mineral holdings as part of the process of exploration.

Larger mineral interest owning entities have incentive to be reluctant to share information with smaller or individual mineral owners from whom they may need to lease or re-lease mineral rights. They consider this information proprietary and necessary to compete in the marketplace. When compelled by statute to share information, they still have an incentive to under represent the value of the minerals to these smaller mineral owners because they want to pay them the smallest royalty that can be negotiated.

If small 'mom and pop' mineral owners have to rely exclusively on the energy companies to which they lease their minerals in order to obtain the estimated value of their minerals, then a common result would be an undervaluing of the minerals, resulting in an undervaluing of the cost of the depletion of their minerals. *Percentage* depletion acts as a hedge that protects these smaller royalty owners from the potential double disadvantage of receiving an undervalued royalty from an energy company and then having that loss compounded by a subsequent undervaluing of the cost of depletion

As previously mentioned, the average NARO member's royalty income is five hundred dollars per month, with many getting considerably less. While collectively the minerals they own are of vast value, the minerals owned by a single individual are often relatively small in amount. A geological & reservoir assessment can be very costly for these small royalty owners. Geologists and engineers bill on an hourly basis, plus expenses, and it is hard to estimate the time an adequate assessment can take. Royalty owners cannot afford to see their income eaten up by the cost of independent geological & reservoir assessments, attorney's fees, and accounting fees that can quickly accrue in the pursuit of claiming *cost* depletion.

Also, as previously mentioned, the average NARO member is over 60 years old, and widowed. Some are apprehensive about the process of negotiating leases with energy companies. *Percentage* depletion is one tool that encourages these mineral owners to more strongly consider leasing their minerals for development.

While *percentage* depletion is of primary concern for NARO members, we realize secondarily that ALL of the proposed tax law changes that affect oil and gas industry decisions to drill -- such as no longer being able to expense intangible drilling costs – affect owners of undeveloped minerals, by rendering their properties valueless. We additionally realize that elimination of credits for marginal wells and tertiary recovery would result in the plugging of thousands of older wells and a subsequent loss of vital supplemental income for countless retirees.

Several of our royalty owner accountants have looked at how the elimination of the *depletion* allowance will impact our elderly, low-income, royalty owners. We have found that in many instances, the elderly folks with incomes less than 50,000 dollars annually will now have their Social Security benefits become taxable because of the elimination of the depletion allowance.

This will lay an undue burden on these folks, to not only pay additional tax because of eliminating the depletion allowance, but they will be forced to pay additional tax on currently non-taxable Social Security benefits.

We do not believe that congress's intent is to put these additional tax burdens on our elderly royalty owners, many of whom already struggle to pay their current property tax, ad valorem tax, severance tax, state income tax, local tax, non-resident income tax, and federal income tax on their producing minerals. Regardless of intent, removal of the percentage depletion allowance WILL have that effect on many!

Royalty owners are teachers, farmers, ranchers, homemakers, accountants, firemen, plumbers, retirees, dentists, small business owners, factory workers, engineers, pet groomers, widows, roofers, lawyers, policemen, florists, carpenters, bricklayers, and members of Congress; we are ordinary citizens, not multi-national corporations. We consider our mineral estates as assets to be managed and protected with responsible stewardship. For the majority of us, our minerals are part of a family legacy acquired through the hard work and sacrifices of our forbearers. Royalty income pays to educate our children, care for aging parents, and supplement salaried and Social Security income. We spend our money in our communities, give to our local charities and save for the future. Our financial benefits come solely from the mineral interests we own – deep under American soil. When those resources have been exhausted, the royalty income ends.

4. America's energy policy as a whole:

Energy Secretary Chu has testified that there are several challenges to the "...ability of the United States to meet the growing demand for reliable electricity."He said that "...we will need breakthroughs and better technologies to meet our long-term goals." Though the dominate theme of his testimony was how investment can eventually improve alternative technologies, he did acknowledge, albeit sometimes indirectly, that we are not yet ready to abandon the energy sources that have become the workhorses of our economy. He expanded on the current limitations of these technologies during his discussion of DOE funded research groups called "Energy Innovation hubs."

He called for an additional EIH to be created to "...dramatically improve batteries and energy storage." The call for such dramatic improvements is a vicarious admission of the gap between, on the one hand, our current level of technological attainment and our current infrastructure, and on the other hand, the level of technology and infrastructure thought to be necessary to substantially replace fossil fuels.

Secretary Chu expressed hope that "Breakthroughs in digital network controls, transmission, distribution, and energy storage will make the power grid more efficient...."Those dramatic increases in efficiency and storage technology would be necessary in order to more heavily rely on energy sources like wind and solar without intermittently suffering significant energy shortages.

There is no doubt that these technologies will either improve eventually, or else other superior technologies not yet conceived will take their place. The problems are: First, on what timescale will these advances be made; second, what will be the specific quantitative and qualitative nature

of these advances? Central planners and prognosticators throughout history have struggled to grasp at, and have often fumbled with, predicting the answers to questions like these.

Let us once again return to the example of hydraulic fracturing technology. Few, if any, could have predicted the pace of the current energy renaissance that has occurred in the last few years in regards to the recovery of clean burning natural gas. It has resulted from rapid strides in drilling technology. According to Secretary Chu:

> "Due to research sponsored by DOE from 1978 to 1990 [which studied] methane, coal bed, and shale gas, that research was finally picked up by the oil and gas industries. In 1990, Schlumberger started investing in shale gas research. That has effectively doubled the gas reserves of the United States."

It has been 32 years since DOE first researched shale gas, and 20 since Schlumberger began such research. Drilling for natural gas in shale has only become economically feasible within the last few years. The decades it took for shale hydraulic fracturing technologies to become economical should forewarn us not to be surprised at the untold decades to come before today's alternative energy sources might become viable.

In formulating our energy policies and budget, we would be wise to heed the old idiom: don't put the cart before the horse. We must have viable alternatives BEFORE we consider abandoning the energy workhorses of our economic security. Putting the "green" 'cart' before the energy 'horse' is precisely what our energy policy would do if we simply fund research for, as of yet, unreliable energy sources, and simultaneously pull the rug out from under our conventional domestic energy industry (i.e. removing virtually every incentive they have to produce).

Facing the facts as they are, not as some may wish them to be

Throughout the winter season (2009-2010), wind turbines in Britain produced only 20% of their capacity due to lower than average wind resulting from a colder than average weather pattern. They currently rely on wind for only 5% of their total power, but have been planning to rely on it to meet a quarter of their power demand within the next ten years, due in part to pressure from the E. U. If they had been reliant on wind for 25% of their demand during the 2009-2010 winter, then the wind generation deficit wouldn't just be an eyebrow raising note of caution, it would be an outright crisis, with dramatic, real, and painful human costs.

Let's examine, frankly and forthrightly, the energy situation as it exists. Alternative energy sources (i.e. not petroleum, nuclear, natural gas, or coal) accounted for 9.1% of total U.S. energy consumption in 2011 (the most recent year reported by EIA). Let's temporarily remove hydroelectric from the discussion, since the U.S. is not building more hydroelectric dams. Let's remove geothermal as well, since most available sources are already being exploited. Biomass is limited due to the limited acreage upon which to grow the fuels, and also because of concerns about the impact of large scale biomass crop production on global food prices as subsidized demand for the fuels makes them compete with food crops. We are essentially left with wind power and solar power as the only alternative "green" energy sources that are substantially expandable.

Wind and solar/photovoltaic energy combined account for less than 1% of our total energy consumption. Fossil fuels currently provide 83% of our energy consumption. Even if you remove the technological limitations and reliability issues from the equation (i.e. the wind intermittently not blowing or the sun not shining) you're still left with a sobering fact: to replace fossil fuels, our wind and solar/PV generating capacity would have to be 137 times what it is today. There is no crystal ball that can tell us what will happen next year, let alone decades or centuries from now.

5. The Need for Energy Independence

The American public, our national security interests, and our economy have long demanded, and still demand three results from the energy policy of our elected officials: an abundant, affordable, and uninterrupted energy supply. The more secure our energy supply is, the safer we feel, and in fact, the safer we are. Certain policy analyses recently expressed by administration officials leave some room to question whether those three things are fully understood by our leaders.

Americans are going to purchase fuel for their vehicles somewhere, whether that supply is domestic or from abroad. Administration officials, including Secretary Chu and President Obama, have repeatedly talked about the need to break our addiction to foreign oil. An obvious step would be to maximize our domestic oil production.

Of course the domestically produced supply, while growing, does not seem as sizable when compared to the total world supply, but history is full of examples of supply chains, especially foreign supply chains, being suddenly and unpredictably interrupted for extended periods of time. To think that similar interruptions could not occur again in the future would be naïve. In order to safeguard our ability to provide reliable and affordable energy, we must maximize our ability to produce energy domestically.

There seems to be a decent level of bipartisan agreement that we need to break our addiction on foreign oil, though there are disagreements on the most prudent way to do that. Other than maximizing our domestic oil production, and in light of the technological immaturity and expense of wind and solar, natural gas currently seems like the only viable alternative, and for several reasons.

The EPA has stated that "natural gas is the cleanest alternative transportation fuel commercially available today." The group *NGV America* says that the U.S. presently has around 1100 natural gas vehicle fueling stations, with about 50% open to the public. Around 1.5 million miles of natural gas pipelines are already in place throughout the country. This preexisting infrastructure would make it easier to deliver supplies to newly constructed filling stations well beyond those currently available. Also, natural gas is significantly cheaper, costing between half to one third the cost of gasoline.

According to a report from the Edison Electric Foundation and the Brattle Group, building new combined-cycle natural gas plants to generate electricity is significantly cheaper in dollars per kilowatts of capacity added than building new plants for utilizing nuclear, solar, wind, or new coal-combustion (CSS). The report says building a new combined-cycle natural gas plant would cost $1000/KW of capacity added. The most expensive type of new plant would be solar, costing $6,600 for the same capacity increase.

98% of the natural gas the U.S. uses comes from the U.S. and Canada. As stated earlier, there is likely enough in the U.S. for up to 100 years. There is relatively low cost for converting a conventional gasoline engine to run on it. It also burns much cleaner than petroleum and "twice as clean as coal" when burned for electricity.

6. Conclusions

In 1952, the President's Materials Policy Commission examined percentage depletion, and concluded that:

> "...no alternative method of taxation has come to the Commission's attention or could be devised by the Commission which, in its judgment, promises to overcome these limitations and still achieve the desired results, particularly not without seriously dislocating well established capital values and other arrangements in the industries concerned, with highly adverse effects on supply. Taking the practical situation as it finds it, the Commission believes that any radical alteration of existing tax arrangements would be undesirable."

The "limitations" they referred to are the imperfect allotments of the cost of depletion that can occur under percentage depletion. "Desired results," in this case, refers to encouraging the production of American minerals in order to provide the energy to grow our economy and to provide a greater measure of independence and security.

We believe the U.S. would presently be best served by keeping in place the domestic oil and gas tax deductions including percentage depletion, which invests in maximizing domestic oil and natural gas production. We believe this because natural gas is cheap, locally abundant in supply, clean burning, and efficient. As a transportation and electricity generating fuel, it can work in tandem with currently imperfect and experimental technologies like wind and solar. When the wind isn't blowing, the sun isn't shining, or yet to be invented experimental energy storage systems malfunction, natural gas can provide us the uninterrupted electricity we rely upon, cheaply, and cleanly. Investing in the natural gas industry will buy us the time we need for the market to truly perfect alternative energy systems that are presently unreliable.

Raising the tax burden on what are currently America's only reliable energy sources by "38.8 Billion" dollars over the next decade, which will slow domestic development, is not the answer. Those provisions include raising the tax burdens on many of America's most vulnerable retired royalty owners. In our pursuit of an energy policy that encourages domestic production, we must not allow the smallest participants in America's energy production to go unprotected from abuse by the larger ones. The protection that *percentage* depletion provides to them must, itself, be protected.

Percentage depletion is an important incentive for domestic energy development, which helps supply the energy we need to drive our economy while making us less dependent on foreign sources of energy. It does this while simultaneously protecting small time royalty owners, who unlike 'big energy' corporations, can't afford to file *cost* depletion.

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Written Testimony of Anne Steckel
National Biodiesel Board Vice President of Federal Affairs
Submitted to the U.S. Senate Committee on Finance
Tax Reform: Impact on U.S. Energy Policy
June 12, 2012

Executive Summary: Biodiesel is a renewable, low-carbon diesel replacement fuel made from an increasingly diverse mix of feedstocks including agricultural oils, recycled cooking oil, and animal fats. It is the only domestically produced, commercial-scale Advanced Biofuel – as defined by the Environmental Protection Agency (EPA) – that is readily available and accepted nationwide. It meets a strict ASTM fuel specification and is used in existing diesel engines without modification.

In its short history, the biodiesel tax incentive has achieved its desired goal of stimulating U.S. biodiesel production – increasing the domestic manufacturing of a clean-burning, renewable fuel while generating jobs, reducing America's reliance on foreign oil and improving the environment.

When the tax incentive was enacted in 2005, the U.S. produced 112 million gallons of biodiesel. In 2011, with support from the tax incentive and the RFS, the industry set a new production record of nearly 1.1 billion gallons, supporting more than 39,000 jobs across the country while generating at least $628 million in federal, state and local tax revenues, according to a recent economic study [i].

The biodiesel industry is poised to continue that momentum in 2012 so long as Congress and the Administration continue supporting strong policies such as the biodiesel tax incentive for stimulating clean, domestic energy production.

However, the industry's recent success should not be taken for granted, and the recent expiration of the $1 per gallon biodiesel tax incentive poses a significant threat to the industry's continued growth. U.S. biodiesel remains a young and vulnerable industry. In fact, we know from recent history what could happen without the biodiesel tax incentive and a strong Renewable Fuel Standard (RFS). When the tax incentive lapsed in 2010, the result was predictable: Plants closed and thousands of people across the country lost work. Specifically, U.S. biodiesel production plummeted by 42 percent, resulting in the loss of nearly 8,900 jobs and a drop in household income of $485 million.

Only in 2011, after Congress reinstated the tax incentive and the RFS was fully implemented, did the industry regain its footing and begin ramping up production again, with record-breaking success.

With the ongoing economic downturn, now is not the time to allow another industry slump. Under projected expansion by 2015, biodiesel is expected to support more than 74,000 jobs, $4 billion in income, and some $7.3 billion in GDP, according to the economic study.

That growth will be severely jeopardized if Congress does not extend the biodiesel tax incentive, which also applies to bio-jet and renewable diesel production.

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Chairman Baucus and Ranking Member Hatch, I appreciate the opportunity to submit written testimony on behalf of the National Biodiesel Board (NBB) regarding the economic impact of the biodiesel tax incentive.

As producers of America's only commercial-scale Advanced Biofuel that's sold and produced nationwide, the U.S. biodiesel industry looks forward to working constructively with this committee to ensure that our nation's Advanced Biofuel goals are met.

NBB applauds your efforts to review expiring tax provisions to determine how these provisions measure against key metrics such as cost, effectiveness, and job creation. History has shown that well-crafted and efficient tax incentives can be powerful policy mechanisms to achieve the nation's energy objectives and leverage private sector investment to promote the deployment and utilization of new energy resources. This is certainly the case with the tax credit for biodiesel, renewable diesel and bio-jet fuel. As with every other major U.S energy resource, effective tax policy has helped create domestic manufacturing jobs as well as significant economic and energy policy benefits.

Before the biodiesel tax incentive expired on December 31, the U.S. biodiesel industry had a record year of production in 2011, producing nearly 1.1 billion gallons and creating good-paying jobs in nearly every state in the country. This success is in part attributed to the strong federal policies in place encouraging domestic energy production. While we understand the pressures facing Congress, we believe economic conditions are simply too weak today to pull support from a growing American industry that is a rare bright spot in this struggling economy.

The recent expiration of the $1 per gallon biodiesel tax incentive poses a significant threat to the industry's continued growth, economic impact and job creation. Now, as much as ever, the biodiesel industry needs stability and support to continue its remarkable success story, and we encourage Congress to provide a retroactive extension of the biodiesel, renewable diesel, and bio-jet tax credit.

While we understand there is an interest among some to delay processing tax extenders until it can be done within the context of broader tax reform, we are concerned that doing so would indefinitely delay an extension and continue to jeopardize the jobs, investment and economic activity generated by the U.S. biodiesel industry. Biodiesel production already has suffered since the loss of the biodiesel tax incentive nearly six months ago, and we urge Congress to act expeditiously to extend provisions such as the biodiesel tax incentive that enjoy strong bipartisan support. We would welcome the opportunity to participate in a broader discussion of U.S. tax policy, but we believe the U.S. biodiesel industry cannot wait the months and possibly years it could take for Congress to reach a consensus on comprehensive tax reform. Quickly reinstating the expired biodiesel tax incentive would provide needed certainty and protect against future disruptions and the loss of thousands of much-needed jobs.

Background and Industry Overview: Biodiesel is a renewable, low-carbon diesel replacement fuel. The EPA has determined, based on the performance requirements established by the *Energy Independence and Security Act* (EISA) (P.L. 110-140), that domestically produced biodiesel is an Advanced Biofuel under the RFS2 program. In fact, it is the only commercial-scale fuel sold and produced across the United States to achieve this designation.

Biodiesel is made from waste greases such as recycled cooking oil, animal fats and secondary-use agricultural oils, and is refined to meet a specific commercial fuel definition and specification. The fuel

meets the D6751 fuel specification set forth by ASTM International, the official U.S. fuel-certification organization. Biodiesel is one of the most- and best-tested alternative fuels in the country and the only alternative fuel to meet all of the testing requirements of the 1990 amendments to the Clean Air Act. There are approximately 195 domestic and foreign biodiesel plants registered with the EPA, representing a combined production capacity in excess of 3 billion gallons.

Biodiesel is primarily marketed as a five percent (B5) blending component with conventional diesel fuel, but can be used in concentrations up to twenty percent (B20). It is distributed utilizing the existing fuel distribution infrastructure with blending occurring both at fuel terminals and "below the rack" by fuel jobbers.

Status and Background on the Biodiesel Tax Incentive: The biodiesel tax incentive was enacted in 2004 as part of the American Jobs Creation Act (P.L. 108-357) and took effect in 2005. The incentive was subsequently extended through December 31, 2008, as part of the Energy Policy Act of 2005 (P.L. 109-190). H.R. 1424, the Emergency Economic Stabilization Act of 2008 (P.L. 110-343), again extended the incentive for one year through December 31, 2009, at which time the credit expired. After being expired for all of 2010, Congress extended the tax credit through December 31, 2011 (P.L. 111-312).

It expired again on December 31, 2011, and is currently lapsed.

While the impact of this year's expiration are just beginning to be seen, the 2010 expiration of the tax credit had a severely detrimental impact on the domestic biodiesel industry. In fact, the industry's decline resulted in the loss of nearly 8,900 jobs and a drop in household income of $485 million.

The biodiesel tax incentive is designed to encourage the production and use of biodiesel by making the fuel price-competitive with conventional diesel fuel. In general, current law allows taxpayers to claim the biodiesel tax incentive as either a $1.00 per gallon general business income tax credit or as a $1.00 per gallon blenders excise tax credit. To qualify for the biodiesel tax incentive, the fuel must by statute meet both the ASTM D6751 fuel specification and the Environmental Protection Agency's (EPA) registration requirements under Section 211 of the Clean Air Act.

The Internal Revenue Code provides a general business income tax credit to encourage the production and use of biodiesel, renewable diesel and bio-jet fuel. The credit is the sum of three credits – the biodiesel mixture credit; the biodiesel credit; and the small agri-biodiesel producer credit. The biodiesel mixture credit provides a $1.00 per gallon credit for each gallon of biodiesel that is blended with conventional diesel fuel. The biodiesel credit provides $1.00 per gallon for each gallon of pure B100 biodiesel that is used as a fuel. The small agri-biodiesel producer credit is a 10 cents per gallon credit for plants with a production capacity of less than 60 million gallons per year. The credit can be claimed on the first 15 million gallons of production.

Biodiesel Public Policy Benefits: The biodiesel tax incentive has helped achieve the worthwhile policy goal of creating jobs while increasing the production and use of biodiesel in the U.S. In 2004, when the incentive was initially enacted, the U.S. produced 25 million gallons. In 2011, with the tax credit reinstated and with a strong RFS program, the industry produced nearly 1.1 billion gallons. There are compelling public policy benefits associated with the enhanced production and use of biodiesel in the U.S.

Biodiesel Reduces our Dependence on Foreign Oil: Biodiesel can play a major role in expanding domestic refining capacity and reducing our reliance on foreign oil. The 3.6 billion gallons of biodiesel produced in the U.S. since 2005 have displaced an equivalent amount of diesel fuel with a clean-burning, efficient fuel that the EPA estimates reduces lifecycle greenhouse gas emissions by as much as 86 percent compared to petroleum diesel fuel and creates 5.5 units of energy for every unit of energy that is required to produce the fuel.

Biodiesel is Good for the Environment: Biodiesel is an environmentally safe fuel, and is the most viable transportation fuel when measuring its tailpipe emissions, lifecycle carbon emissions and energy balance. Since 2005, biodiesel has reduced lifecycle greenhouse gas emissions by 48.3 billion pounds, the equivalent of removing 4.25 million passenger vehicles from America's roadways.

Biodiesel Reduces Diesel Emissions: Tailpipe emissions from traditional diesel – primarily from trucking fleets, school buses and other vehicles – are a significant health and air quality concern. In an update to its National-Scale Air Toxics Assessment earlier this year, EPA cited diesel exhaust as one of the nation's most dangerous pollutants, saying it is "among the substances that may pose the greatest risk to the U.S. population." Thousands of trucks and buses hit the road every day burning traditional diesel fuel. Substituting higher amounts of biodiesel for traditional diesel fuel is the simplest, most effective way to immediately improve emissions.

The Biodiesel Industry is Creating Jobs and Making a Positive Contribution to the Economy: NBB estimates that the U.S. biodiesel industry supported more than 39,000 jobs in 2011, in all sectors of the economy, and added more than $3.8 billion to the nation's Gross Domestic Product (GDP).

Biodiesel is America's first advanced biofuel and when compared to gasoline, diesel and ethanol, it is at a fundamentally different stage of development and should be treated as a new fuel in the marketplace. The petroleum industry has received a number of tax incentives for many years; and the ethanol industry has been around for decades and had its tax incentive since 1980. In contrast, the biodiesel industry has had commercial-scale production for only about six years, and has had its tax credit only since 2005. The gasoline marketplace is approximately 140 billion gallons, the diesel pool is approximately 60 billion gallons and the ethanol marketplace is producing some 14 billion gallons. By comparison, biodiesel production reached a record 1.1 billion gallons last year. Biodiesel is an up-and-coming industry and is in a far more fragile stage of development.

Conclusion: The biodiesel tax incentive has helped achieve the desired goal of increasing the domestic production and use of biodiesel, and in turn has helped the U.S. realize the energy security, economic and environmental benefits associated with displacing petroleum with domestically produced renewable fuels. These benefits, however, will be jeopardized if Congress does not act in a timely manner to address the immediate issue facing the industry and extend the biodiesel tax incentive.

About NBB: NBB is the national trade association representing the biodiesel industry as the coordinating body for research and development in the U.S. It was founded in 1992, and since that time, NBB has developed into a comprehensive industry association which coordinates and interacts with a broad range of cooperators including industry, government and academia. NBB's membership is made up of biodiesel producers; state, national and international feedstock organizations and feedstock processor organizations; fuel marketers and distributors; and technology providers.

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Chairman Baucus and Ranking Member Hatch, I again appreciate having the opportunity to submit written testimony on this issue of significant importance to the U.S. biodiesel industry. We look forward to serving as a resource for the Committee on issues related to biofuels tax policy as the committee proceeds.

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[i] Cardno ENTRiX June 8, 2011, Economic Impact of Removing the Biodiesel Tax Credit for 2010 and Implementation of RFS2 Targets Through 2015.

Testimony of the Honorable Glenn English
Chief Executive Officer (CEO)
National Rural Electric Cooperative Association
Tax Reform : Impact on U.S. Energy Policy
Submitted for the Record to the
United States Senate Committee on Finance
June 12, 2012

Thank you for the opportunity to testify about programs the Committee should consider as it embarks on tax reform and decides whether to reshape the tax incentives that currently support energy production.

Electric cooperatives and their consumers have, since 2005, utilized the Clean Renewable Energy Bond program (CREBs) to finance renewable projects. Recently, some cooperatives that could not use CREBs have indirectly benefited from the 1603 Treasury Grant Program (TGP). In addition, electric cooperatives have purchased renewable power on contract from private developers claiming the Production Tax Credit (PTC), since the mid-1990s. Co-op experiences with all three of these programs can guide this Committee as it decides the future of renewable incentive policy.

A key principle that should be considered when determing the role of energy credits in tax reform is this: if Congress uses the tax code to direct energy policy, not-for-profit electric cooperatives should be included in any available incentives, such as through the recently expired 1603 Treasury Grant Program or Clean Renewable Energy Bond. Otherwise, the tax code will create a disparity. Co-op consumers in rural America will be unable to fully enjoy the diverse mix of generation resources available in areas co-ops serve, while consumers of investor-owned utilities will benefit from incentives. Moreover, without incentives adapted for not-for-profits, meeting state and federal renewable and environmental mandates will be more costly for members of tax exempt rural electric cooperatives than for consumers of investor-owned utilities (IOUs).

Background on Electric Cooperatives

The National Rural Electric Cooperative Association (NRECA) is the national service organization representing the interests of cooperative electric utilities and their consumers. Electric cooperatives are not-for-profit, private businesses governed by their consumers. These consumers are unique in the electric industry in that they are members of their cooperative ("member-consumers") and therefore own their utility. Today, over 900 electric cooperatives serve 42 million consumers in 47 states. Cooperatives are a unique sector of the electric utility industry, serving an average of just 7 consumers per mile compared with the 35 customers per mile served by investor-owned utilities (IOUs) and 47 customers per mile served by municipal utilities.

To put this in perspective, electric cooperatives serve 12% of the nation's electricity customers -- but maintain 42% of the nation's electricity distribution lines. Annual

cooperative revenue per mile averages only $10,565, while it is more than six times higher for investor-owned utilities, at $62,665 and higher still for municipal utilities, at $86,302 per mile. In summary, cooperatives have far less revenue than the other electricity sectors to support a greater share of the distribution infrastructure.

These numbers illustrate why bringing power to rural areas is a challenging and costly endeavor. The not-for-profit, cooperative business model has been the key to delivering reliable and affordable power to these low density areas. Consistent with Internal Revenue Service requirements, electric cooperatives are democratically governed by locally elected boards of directors, and operate at cost. Any revenue collected above what is needed for the cooperative is returned to all consumer-members on an equitable basis. Benefits received from the federal government, therefore, also flow to the cooperative's members. Given this, electric cooperatives are generally exempt from federal income tax. All electric cooperatives, however, pay state and local property taxes, sales tax and payroll and excise taxes.

Does Renewable Electricity Require Incentives?

Electric cooperatives have a mission to provide reliable, affordable electricity to their consumer-members. Co-ops must balance that mission with compliance with state renewable portfolio mandates and state and federal clean air law. As such, co-ops must consider all available electricity sources to meet new electricity demand. Cooperatives are planning to build 12,800 MW of new electric generation over the next decade, and will have to buy additional generation in the market to meet an annual population growth rate exceeding 1 percent per year in their service territories. These figures do not take into account additional power needed to replace older coal plants that will soon be retired given recent and prospective Environmental Protection Agency (EPA) regulations.

According to the Energy Information Agency (EIA), renewable electricity (excluding renewable hydropower) accounts for 4% of the nation's fuel mix – about double the percentage of renewable energy in the mix prior to the expansion of tax incentives under the Energy Policy Act of 2005. Renewable electricity is generally thought of as distributed generation and is much smaller in scale than a new coal or gas plant. In the case of solar and wind, it is only intermittently available. For these reasons, it cannot replace retired coal plants. Nonetheless, renewable resources are an important part of the "mix" for building the generation necessary to meet future electricity demand while mitigating global greenhouse gas emissions and traditional pollutants that result from fossil fuel generation. This is increasingly important as the Environmental Protection Agency develops more strict standards for power plants.

Given its importance to balancing environmental goals within our nation's fuel mix, some ask why renewable electricity should require a tax incentive or incentive of any kind. For cooperatives, the answer is that renewable electricity will only be developed if it can be done so affordably for consumers. Today, without incentives, renewable electricity is unaffordable compared to natural gas-fired generation. In November 2010, U.S. Energy Information Administration estimated that the overnight capital cost of an

advanced natural gas combined cycle plant is $1,003 per kW of capacity. Not counting current tax subsidies, by way of comparison, an onshore wind project is the most affordable renewable resources at overnight capital costs of $2438 per kW. For other renewables, the cost is even greater. For example, a large solar photovoltaic is $4755 per kW; and a combined cycle biomass plant is $7894 per kW. Although existing tax credits have driven investments in renewable resources, the mission of making the cost of renewable technology comparable to the cost of conventional resources has not yet been completed.

Despite its value in providing a balanced generation profile for utilities, absent incentives, the pace of placing renewable energy in service is likely to slow to a trickle. Yet putting future generation into one basket – likely, natural gas – is risky due to volatile prices. For example, in May of 2008, natural gas prices were $12.41 per thousand cubic feet (TCF). Today, prices are hovering around $5 TCF. The new, lower prices are a result of both the recession and newly discovered domestic gas reserves. However, past experience teaches us that gas is a volatile price input for fuel as home heating, transportation and electricity sectors all may rely on gas. Moreover, utilizing natural gas does not avoid greenhouse gas emissions.

Some argue that mandates are sufficient to drive renewable energy. Thirty-seven states currently have renewable mandates or goals, and 20 of those include cooperatives in these programs. Without tax or other incentives, there will be no tools available to help co-ops meet those goals affordably. The cost of renewable resources will exceed the cost of paying a penalty to the State for failing to build them. Exacerbating this result, many state mandates ultimately require resource development that simply is not achievable given transmission constraints and the quality or availability of renewable resources. These mandates quickly convert to a pure tax on consumers when penalty payments are paid in lieu of actual resource development. For those reasons, NRECA has opposed one-size-fits-all federal renewable portfolio standard and has consistently advocated that the best way to push the envelope on technology remains incentives – whether those incentives are in the tax code, in the form of grants, or through low-cost loan programs.

Experience with the CREB Program

The Clean Renewable Energy Bond (CREB) program was enacted in the 2005 Energy Policy Act with strong bipartisan support, but its funding was permitted to lapse in 2010. It helped cooperatives and other not-for-profits to finance renewable generation projects that would have been eligible for the Production Tax Credit if developed by a for-profit. The bond started as, essentially, a zero interest, term-limited loan. A cooperative would issue a bond; the bondholder would receive principal repayment from the cooperative; and the Federal Treasury would provide a tax credit to the bondholder in lieu of interest the cooperative would otherwise have paid.

A volume cap of $800 million in bonding authority was initially provided with $300 million set aside for electric cooperatives. The volume cap posed a problem for the program. Treasury received $2.5 billion in applications overall in the first year. While an additional $400 million (with $150 million set aside for electric cooperatives) was

provided under the Tax Relief and Health Care Act of 2006, applications still exceeded available funding authorizations.

By contrast, there is no volume cap for the Production Tax Credit, the Investment Tax Credit or the tax grant provided under the American Recovery and Reinvestment Act of 2009 ("stimulus bill"). Attempting to address this disparity through meaningful program funding, the stimulus bill, combined with the Emergency Economic Stabilization Act of 2008 ("economic rescue bill"), added $2.4 billion in bonding authority to the CREBs program, divided equally between electric cooperatives, municipal utilities and non-utility government bodies. These bills also made a series of improvements to the program to make the bonds more marketable, such as the ability to strip the bond from the tax credit and sell them separately, and provided for a 70%/30% shared interest cost between the issuer and the Treasury.

In 2009 and 2010, electric cooperatives received over $600 million in CREBs awards through bond authorizations that were set asides in the two bills. Despite the promise of significant new funding, the program hit a major snag -- the economic downturn. The market for tax credits nearly collapsed. Potential CREBs buyers were demanding significant additional interest from issuers on top of the face value of the bond – an effective interest rate of 8.5%! So, CREBs had already been allocated to projects that were ready to move forward. But the bonds could not be issued, and the projects – and related jobs – were at a standstill.

To rescue these projects, the Committee made a critical improvement to the program in H.R. 2847, the "Hiring Incentives to Restore Employment Act." This new law established a "direct payment" option that allows CREB issuers, such as cooperatives, to receive a direct payment from Treasury designed to reimburse the co-op for 70% of the projected interest cost on these bonds. This option rescued the program from the negative impact of the recession on the market for tax credits, and assured that renewable projects could move forward. Under the conditions that continue to suppress tax appetite in the bond markets, the "direct pay" feature remains an important aspect of the program.

To sum up cooperatives' success with the program, 210 MW of cooperative renewable power is currently in service financed through CREBs, with another 250 MW poised to come on line under the program. The projects are distributed across 18 states and include solar, wind, geothermal, hydropower, biomass and landfill gas technologies. The map labeled "Attachment A" provides more detail on the projects. Each CREB project merits mention as a success story. The projects are the result of balancing clean energy objectives with the conservative approach imposed by local cooperative Boards of Directors. The Boards emphasize long-term planning, continued affordable rates and prudent use of utility resources. Electric cooperative projects are not built to impress stockholders or follow a trend, but instead, provide affordable, clean, renewable power benefits to local consumers.

Experience with the Production Tax Credit and 1603 Treasury Grant Program

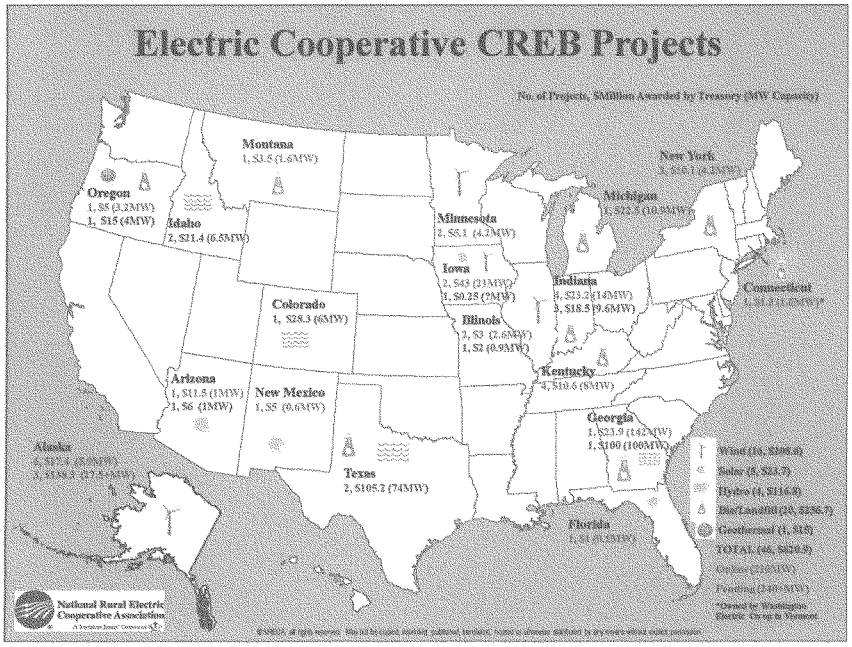
The CREB program is a story of coop ownership of renewable projects. Direct project ownership is the best way for cooperatives to reserve environmental and compliance benefits for their own consumers. Cooperatives also buy a substantial quantity of renewable energy from the market. Overall, cooperatives distribute over 3900 MW of renewable capacity (not counting hydropower). Twenty percent of this is owned by the cooperative, while eighty percent of this capacity is generated by taxpaying entities and then contractually purchased by cooperatives. These sellers are themselves the recipients of the Production Tax Credit (PTC) or, in the case of solar, the Investment Tax Credit (ITC). Cooperatives do not have federal tax liability and therefore cannot use the PTC – but nonetheless, their consumers can benefit indirectly from entities that do. The PTC has never been a complete solution for cooperatives, as the entire value of the PTC is only partially flowed through to the cooperative on contract. So, the PTC does not provide cooperatives with cost-certainty and more importantly, does not enable electric cooperatives to own and develop their own resources. It has been a valuable underpinning in the marketplace for renewable energy for the past decade, although it has suffered some of the same impacts from the recession that hit the CREBs program – a lack of tax appetite for tax credits.

The PTC expansion under the "stimulus bill" created an option to take an Investment Tax Credit -- and then convert the ITC to a tax grant under the "1603 Treasury Grant Program." This mechanism was designed to address the tax appetite barrier affecting the PTC. Under the 1603 Treasury Grant Program (TGP), a renewable developer can receive a grant from Treasury covering 30% of the project's capital costs once it is placed in service. Cooperatives were not included in this program directly, but it has brought cooperatives an opportunity that is proving to be more useful than the PTC. Some cooperatives have formed structures that enable them to indirectly utilize the TGP and own and develop renewable projects. It has been the driver for several significant cooperative renewable projects currently underway.

Conclusion

Whether indirectly through the PTC and 1603 Treasury Grant Program - or directly through CREBs - nearly 100% of the renewable projects that benefit electric cooperative consumers are attributable to tax code incentive programs. Without incentives, development of such renewable projects will grind to a halt. The Committee has important considerations to weigh as they carefully review energy credits in the context of tax reform. Renewable energy development will not "make or break" electric cooperatives as entities, but will shape the extent to which cooperatives rely upon natural gas or other resources in their generation mix, their ability to optimize local resources, and the extent to which cooperative consumers are exposed to environmental compliance costs. Should Congress choose to extend tax incentives like the PTC to drive down the cost of renewable technologies, we urge Congress to also extend programs -- such as Clean Renewable Energy Bonds or the 1603 Treasury Grant Program -- that benefit not-for-profit cooperative consumers.

Attachment A



Economic and Foreign Policy Implications of the Administration's "Dual Capacity Taxpayer" Proposals

July 2010

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Executive Summary

The United States subjects to taxation the "worldwide" income of its residents, including that of U.S.-based companies. To ensure that income earned outside the United States is not taxed twice, however, U.S. tax law permits a credit, or offset, against the taxes otherwise due on that income for foreign income taxes already paid. Without the foreign tax credit ("FTC"), U.S.-based companies would be unable to compete effectively with rivals from foreign countries with territorial tax systems (which exempt companies from tax on their foreign income) or with worldwide tax systems with properly-designed FTC mechanisms that prevent double taxation.

As part of its FY2011 budget, the Obama Administration proposes to deny U.S. multinational companies FTCs for certain foreign taxes paid as "dual capacity taxpayers," thereby actually subjecting those companies to double taxation. A dual capacity taxpayer is a U.S. company that deals with a foreign country as both the sovereign and as the grantor of an economic benefit, such as a concession for developing the country's natural resources. To ensure dual capacity taxpayers cannot claim FTCs for payments that are not taxes, existing rules (the "Dual Capacity Regulations") require taxpayers to prove that a payment qualifies as a tax under U.S. principles and further that no portion of that payment is for the separate economic benefit. Under the Administration's proposal (the "Administration Proposal"), a dual capacity taxpayer that could prove that the payments made were, in fact, qualifying taxes would nevertheless be denied FTCs for the amount of such foreign taxes paid.

The Administration Proposal would achieve the wrong result under the U.S. tax system, harm U.S. companies and jeopardize U.S. strategic interests. In many countries that impose higher taxes on certain activities undertaken by dual capacity taxpayers—including the U.K.—those taxpayers would be partially or completely denied FTCs for foreign taxes actually paid. In the short term, the Administration Proposal would unfairly, and in effect retroactively, subject U.S. dual capacity taxpayers to harmful double taxation on their existing long-term investments. The effect, over the longer term, will be to cede an important U.S. presence in strategic foreign markets to foreign and state-owned competitors, compromising U.S. economic, national security, and foreign policy interests.

Existing Rules Explicitly Prevent Claims of Foreign Tax Credits for "Disguised Royalties"

The Treasury Department and the Internal Revenue Service (the "IRS") developed the current Dual Capacity Regulations to ensure that payments to foreign countries for which U.S. oil companies claim FTCs are taxes in substance, not mere royalties. The culmination of a six-year regulatory project that included temporary regulations, two sets of proposed regulations, and multiple rounds of public comments, the Dual Capacity Regulations draw on decades of case law and IRS rulings to provide a carefully-crafted framework for determining the extent to which a foreign levy payment represents a tax rather than a payment for a specific economic benefit. The Dual Capacity Regulations require dual capacity taxpayers to prove under very strict burdens that a payment to a foreign government constitutes an income or excess profits tax in order to claim a FTC for that payment. Upon challenge by the IRS, a taxpayer bears the entire burden of establishing that the payment is a creditable tax and that no portion of the payment is compensation for access to the mineral resource. Two cases involving excess profits

taxes imposed by Norway and the United Kingdom on petroleum extraction income, *Phillips Petroleum v. Commissioner* and *Exxon v. Commissioner*, illustrate the burden imposed on taxpayers to establish the creditability of taxes paid. In both cases, the U.S. Tax Court ruled that the excess profits tax was a tax, not a royalty as asserted by the IRS.

U.S. Taxpayers Would Face Double Taxation Under the Administration Proposal

Under the Administration Proposal, dual capacity taxpayers would be denied FTCs even if they could prove in court that a particular foreign levy constitutes a tax for U.S. purposes. Where a foreign country maintains a tax that non-dual-capacity taxpayers pay, a dual capacity taxpayer would be denied FTCs for tax payments exceeding the amount it hypothetically would owe if it were not a dual capacity taxpayer. Thus, the taxpayer in the *Phillips* case would be completely denied FTCs for its payments of the Norwegian excess profits tax the Tax Court found to be a creditable tax. That is clearly the wrong result under the tax law, and by denying a taxpayer even the opportunity to present its factual case before a U.S. court, the proposal raises serious due process and fundamental fairness concerns.

Countries' Tax Regimes Reflect Their Own Sovereign Judgments, Not Benefits for U.S. Taxpayers

Contrary to the assumption underlying the Administration Proposal, countries impose taxes for their own economic and political reasons, not to extend benefits to U.S.-based dual capacity taxpayers. Nowhere is this more clearly illustrated than in the case of dual capacity taxpayers in the energy sector, whose operations are necessarily tied to a particular country where the resources are found. Recognizing that, once exploration and production begin, taxpayers' investments are essentially fixed, countries can tax dual capacity taxpayers more heavily with less concern of their moving operations outside the country.

There are a number of other reasons that foreign countries impose higher taxes on U.S.-based dual capacity taxpayers as well. Popular support for high tax rates on "excess profits"—especially profits of foreign companies that benefit from a country's natural resources—also favors taxing dual capacity taxpayers more heavily. In developing countries with minimal administrative resources and a relatively small tax base, there is the additional practical consideration that administering a broad-based income tax is difficult and costly. For such countries, imposing a heavier tax burden on dual capacity taxpayers may be the answer simply because dual capacity taxpayers are easy to tax and have substantial earnings relative to other potential taxpayers.

The Administration Proposal Would Harm U.S. Companies' Long-Term Investments that Benefit Energy Security

The Administration Proposal would harm U.S. companies that have made substantial, long-term investments abroad with the expectation that their foreign taxes would be creditable against U.S. tax liability. Dual capacity taxpayers commit substantial resources to investments requiring an extended period of time to achieve an economic return, on the assumption that the fundamental structure of the tax system will not change. By denying

expected FTCs for foreign taxes actually paid, the Administration Proposal would, with the stroke of a pen, render certain existing foreign investments unprofitable and immediately decrease the value of many others—but only for American companies.

The Administration Proposal Would Compromise U.S. Economic, Trade, National Security, and Foreign Policy Interests

The double taxation resulting from the Administration Proposal would disadvantage U.S.-based companies relative to foreign companies subject to a single level of tax. In many cases, state-owned oil companies, whose interests may be directly opposed to U.S. security interests, would supplant U.S.-based oil companies in foreign oil fields. Ceding control of foreign oil supplies to such foreign competitors would directly harm U.S. energy security in an environment in which the United States imports roughly 60 percent of the oil it consumes. Moreover, the disappearance of U.S. companies from oil-producing countries, including many developing nations, would diminish positive U.S. influence in critical regions of the world. Finally, reduced foreign operations by U.S.-based companies would translate directly into a loss of U.S. jobs supporting those operations and a reduction in domestic economic activity at a crucial stage of U.S. economic recovery.

Table of Contents

Introduction

The purpose of this study is to evaluate the tax and broader economic and foreign policy implications of the Obama Administration's recent proposal to change longstanding tax rules regarding "dual capacity" taxpayers. From a tax policy standpoint, the paper will specifically address whether the dual capacity foreign tax credit rules are serving their purpose or should be changed. From the broader economic and foreign policy standpoint, the paper will evaluate the short and long range effects of changing the dual capacity rules in the manner the Administration has proposed.

The Obama Administration, certain members of Congress, and some commentators have stated that the current foreign tax credit rules for U.S. dual capacity taxpayers confer a benefit on those taxpayers and that the benefit is unwarranted. The benefit asserted is a credit against U.S. income taxes for amounts paid by the dual capacity taxpayer in exchange for its access to "specific economic benefits"—a petroleum concession, for example—that would otherwise be unavailable. If accurate, the benefit would be unwarranted: foreign tax credits are intended to mitigate against double taxation, but there is no double taxation if the payment is for access to a specific economic benefit rather than a tax on income or profits. Some commentators have gone further to suggest that the current foreign tax credit rules confer a "subsidy" on dual capacity taxpayers, particularly those involved in oil and gas development, and that this amounts to a "subsidy" of fossil fuels that should be eliminated and redirected to alternative energy development. The Administration proposes changing the rules to place further restrictions on the ability of dual capacity taxpayers to claim tax credits for certain levies paid to foreign governments in respect of oil and gas operations.

This paper examines in detail the criticism of the Obama Administration and commentators of the current dual capacity rules. The paper evaluates both the existing dual capacity rules and the Obama Administration's proposed revision, assessing their relative merits from an overall international tax policy standpoint. The paper then turns to the economic, energy security, trade, and foreign relations implications of the Administration's proposal,.

The paper begins by outlining the general background necessary to understand the current dual capacity taxpayer rules and the Obama Administration's proposals for changing these rules. This background includes a review of the U.S. international tax system and the role of the foreign tax credit, the history of the dual capacity rules, how those rules fit within the foreign tax credit framework, and the status of the rules as interpreted by the Treasury Department and the courts. With that as context, the paper assesses the current rules, i.e., whether they adequately address the core issue they seek to cover, and the Administration's Proposal, particularly whether the proposed changes are warranted from a tax policy standpoint. It also examines the assertion that the foreign tax credit confers a subsidy on dual capacity taxpayers.

Turning from the tax policy implications of the Administration Proposal, the paper then analyzes whether the changes are in the best economic, national security, and foreign policy interests of the United States. The discussion examines the implications of the proposed changes to the dual capacity rules for economic recovery and longer-term U.S. economic

interests, their effect on long-term U.S. energy security, and their consistency with the Obama Administration's foreign policy goals.

The paper is divided into six sections. Section I provides an overview of the U.S. international tax system and the role of the foreign tax credit in that system. Sections II and III describe the existing regulations governing the extent to which dual capacity taxpayers may claim foreign tax credits (the "Dual Capacity Regulations") and the Administration Proposal, respectively. Sections IV and V evaluate the Dual Capacity Regulations and the Administration Proposal from a tax policy perspective and consider the economic rationale for oil-producing states' use of both royalties and income taxes. Finally, Section VI explores other policy implications of the Administration Proposal, including its consequences for U.S. economic, national security, and foreign policy interests.

In brief, the Administration Proposal represents a substantial departure from long-standing principles that underlie the U.S. international tax system, subjecting the income of U.S.-based oil and gas companies to double taxation. The Administration Proposal would adversely affect the interests of those companies to the benefit of foreign and state-owned oil and gas companies, including some states whose interests may actually be at odds with those of the United States.

I. The U.S. International Tax System and the Role of the Foreign Tax Credit

Under principles of international law, the country in which economic activity occurs—the source country—has primary jurisdiction to tax the activity regardless of the residence of the taxpayer. It is incumbent upon the residence country to mitigate double taxation of the foreign source income. This is achieved by the resident country's exemption of foreign source income from taxation or by its provision of a credit for the taxes its residents pay the source country.[1] The United States follows the second model. It taxes its citizens and residents on their worldwide income and grants foreign tax credits ("FTCs") for source country taxes imposed on that income to mitigate double taxation of their foreign source income. Though worldwide systems of taxation were once common among developed countries, today it is far more common for countries to avoid the problem of double taxation through "territorial" tax systems that exempt their residents' foreign income from home country taxation. The proper functioning of a worldwide tax system depends on the proper functioning of the FTC regime. In the competition for worldwide business opportunities, limits on the FTC that have the effect of depriving U.S. companies of their ability to claim credits for foreign taxes paid will increase their costs, thus disadvantaging them relative to foreign companies subject to a territorial tax system or a properly structured worldwide tax regime.[2]

A. The U.S. "Worldwide" Tax System

Since the original U.S. income tax laws of 1909 and 1913, the United States has maintained a "worldwide" tax system under which residents are taxed on income from all sources. U.S. corporations must pay U.S. tax even on the income of a foreign corporation in which they own a 10 percent-or-greater interest if that foreign corporation (a "CFC") is majority-owned by U.S. corporations that have 10 percent-or-greater interests ("U.S. shareholders"). As a general rule, however, a U.S. shareholder of a CFC is subject to U.S. tax on the CFC's income

only when it is paid to the shareholder as a dividend. The policy of imposing U.S. tax at the time it is repatriated is known as "deferral." Deferral is subject to certain limitations, most notably through a regime called "subpart F," which treats certain mobile and passive income earned by a CFC as paid immediately to the CFC's U.S. shareholders in the form of a constructive dividend subject to U.S. tax.

B. The Foreign Tax Credit in the U.S. System

To relieve the burden of double taxation on U.S. persons' foreign income, the United States since 1918 has permitted U.S. persons a foreign tax credit for foreign "income, war profits, and excess profits" taxes ("income taxes") paid. Congress enacted the foreign tax credit in the Revenue Act of 1918 in response to significant double taxation of U.S. companies.[3] At the time, a U.S. company operating abroad faced not only foreign tax on its foreign income but also a U.S. excess profits tax with rates as high as 60 percent.[4] In 1921, Congress established a limitation on the use of foreign tax credits to ensure that U.S. taxpayers could not use foreign tax credits to offset tax on U.S.-source income.[5] Since those early days of the foreign tax credit, this basic framework of the FTC system has remained essentially intact.

A U.S. corporation may claim foreign tax credits under section 901 for foreign income taxes it pays directly or under section 902 for foreign income taxes paid by foreign corporations in which it owns more than 10 percent of the voting stock.[6] Foreign tax credits also are available under section 903 for non-income taxes imposed in lieu of an otherwise generally imposed income tax.[7]

1. Creditable Taxes (Sections 901 and 903)

U.S. taxpayers may claim FTCs for payments of income taxes or of other taxes that are imposed in lieu of an income tax. To qualify as an income tax described in section 901, a foreign levy must be considered a tax and must have the "predominant character . . . of an income tax in the U.S. sense."[8] To qualify as an "in-lieu-of tax" under section 903, a foreign levy must be considered a tax and must be imposed in substitution for an otherwise generally imposed income tax.[9] Thus, regardless of whether a taxpayer seeks foreign tax credits for a foreign levy payment under section 901 or 903, the first issue it must consider is whether the levy is a tax.

(a) The "Tax" Requirement

A foreign levy is considered a tax if it requires a compulsory payment pursuant to the authority of a foreign country to levy taxes.[10] Whether a payment is a compulsory payment pursuant to a country's tax authority is determined under U.S legal principles, not foreign legal principles. A foreign country's claim that a particular levy is imposed pursuant to its authority to levy taxes is not determinative of the question.[11]

A foreign levy is not imposed pursuant to a country's authority to levy taxes, and thus is not a tax, to the extent the person paying the levy receives a "specific economic benefit" from the country in exchange for the payment. Treas. Reg. § 1.901-2(a)(2)(ii)(B) defines "specific economic benefit" broadly as "an economic benefit that is not made available on substantially the same terms to substantially all persons who are subject to the income tax that is

generally imposed by the foreign country, or, if there is no such generally imposed income tax, an economic benefit that is not made available on substantially the same terms to the population of the country in general." The regulations provide that specific economic benefits include property, services, and a right to use, acquire, or extract resources.[12] Essentially, there is considered to be a specific economic benefit where a taxpayer and a government have a business relationship that is not available on the same terms to all taxpayers. Thus, for example, if the government granted a taxpayer a right to conduct logging in its forests and did not grant all other taxpayers that right, the taxpayer's right to conduct logging would be considered a specific economic benefit even if the taxpayer paid the government for that right.

Taxpayers who are subject to a foreign levy and receive a specific economic benefit from the country imposing the levy are referred to as "dual capacity taxpayers" and are subject to special rules governing creditability of that levy. Those rules, set forth at Treas. Reg. § 1.901-2A and referred to herein as the "Dual Capacity Regulations," determine what portion of a dual capacity taxpayer's payments to foreign governments constitutes creditable taxes. Subsequent case law has given further definition to the boundary between royalties and creditable taxes.[13]

(b) Taxes on Income

A tax is considered an income tax if it satisfies the realization, gross receipts, and net income requirements of Treas. Reg. § 1.901-2(b). To satisfy the realization requirement, a tax should be imposed upon or following an event that would result in realization of income under the Code or, in some cases, in anticipation of such a realization event.[14] The gross receipts requirement is satisfied by a tax that is imposed on the basis of gross receipts (or gross receipts computed under a method that is likely to produce an amount that does not exceed fair market value).[15] A tax satisfies the net income requirement if it permits deductions against gross receipts sufficient to allow recovery of significant costs and expenses incurred in the production of gross receipts (or recovery of significant costs and expenses computed under a method that approximates, or is greater than, recovery of significant costs and expenses).[16]

The ability of a taxpayer to recover costs and expenses of generating gross receipts ensures that an income tax falls only on a business's economic profits. In this sense, an income tax is a tax on the residual return to which a business's equity investors are entitled. By contrast, an income tax does not fall on the portion of the business's receipts that it pays in satisfaction of the fixed return owed its debt holders.

(c) Taxes In Lieu of Income Taxes

A U.S. taxpayer may claim foreign tax credits under section 903 in respect of a tax that is not itself an income tax but is imposed in lieu of an income tax. For such an in-lieu-of tax to give rise to FTCs, the country imposing the tax must also levy a generally imposed income tax or income taxes. Additionally, the in-lieu-of tax must operate in practice as a tax imposed in substitution for, not in addition to, the generally imposed income tax.[17] A taxpayer may claim FTCs in respect of an in-lieu-of tax whether or not the tax bears any resemblance to an income tax. An in-lieu-of tax may be imposed, for example, on gross income, gross receipts or sales, or the number of units produced or exported.[18]

2. General Limitation on Foreign Tax Credit Use (Section 904)

For nearly as long as the United States has permitted a foreign tax credit, taxpayers have been limited in their ability to claim foreign tax credits for foreign taxes imposed at rates higher than the U.S. corporate income tax rate. Specifically, section 904(a) provides that a taxpayer may not claim foreign tax credits in a taxable year exceeding the product of (i) preliminary U.S. tax liability against which the credits are claimed and (ii) the fraction of the taxpayer's income that is derived from foreign sources. In effect, this limitation limits foreign tax credits to the extent that the average foreign tax rate on foreign income subject to the limitation exceeds the U.S. tax rate, currently 35 percent.

Under section 904(d), the foreign tax credit limitation of section 904(a) applies separately with respect to different categories, or "baskets," of income. In 2004, Congress generally reduced the number of baskets from nine to two—i.e., passive category income and general category income. The purpose of applying the section 904(a) limitation to different categories of income is to prevent foreign tax credits attributable to high-taxed general category income from offsetting residual U.S. taxes on typically low-taxed passive category income such as royalties.

3. Special Limitation on Foreign Tax Credits for Foreign Oil and Gas Taxes (Section 907)

Although the Dual Capacity Regulations serve to distinguish taxes from royalties paid for the extraction of minerals, Congress imposed yet another limitation on creditability of taxes on the income from those activities in section 907. Specifically, section 907(a) limits the amount of "foreign oil and gas taxes" paid in a taxable year for which a taxpayer may claim foreign tax credits to 35 percent of "foreign oil and gas income" earned in that year. Foreign oil and gas taxes generally include otherwise creditable taxes on foreign oil and gas income, which is defined to include taxable income from the extraction of minerals from oil and gas wells and from the processing, transportation, and distribution of minerals and products derived from such minerals.[19] Subject to certain limitations, credits disallowed under section 907(a) in a particular taxable year may be carried back to the immediately preceding taxable year or forward to one of the ten succeeding taxable years.[20]

C. Comparing The U.S. System To Other Models of International Taxation

As described above, the U.S. system of taxation of foreign source income—the taxation of U.S. persons on their worldwide income—depends on the proper functioning of its foreign tax credit regime to avoid double taxation of the foreign source income. Other countries have chosen to implement territorial tax systems that generally exempt their residents from home-country tax on foreign income which minimize concerns about double taxation and the characterization of foreign government claims on their resident's foreign source income.

1. Two Models for Resolving Competing Claims of Taxing Jurisdiction

The tension between countries' competing claims of taxing jurisdiction is evident in the design of all international tax systems. Both the country where an item of income arises

(the "source country") and the country where the beneficial owner of the income resides (the "residence country") have principled claims of taxing jurisdiction. Where these claims are exercised simultaneously, the beneficial owner of the income faces the prospect of double taxation. The two classic models for addressing double taxation are a territorial system that exempts foreign income from home-country tax and a worldwide system, like the U.S. system, that taxes residents' worldwide income but allows a foreign tax credit for foreign taxes paid.

2. The Territorial Alternative

Under a typical territorial system, a country generally imposes no tax, or imposes only a small "toll charge" of a few percentage points, on its residents' foreign income.[21] These countries typically have regimes like the U.S. subpart F regime that impose tax currently at normal tax rates on the passive and mobile income of their residents' foreign subsidiaries. As in the United States, a foreign tax credit is typically available in respect of foreign taxes paid on income that is subject to current tax in the home country.

In recent years, major U.S. trade partners have shifted to territorial tax systems that, as explained below, often give global corporations headquartered in those countries a competitive edge over those headquartered in a country with a worldwide system. Two decades ago, roughly half of Organisation for Economic Cooperation and Development ("OECD") nations had worldwide tax systems.[22] Today, approximately 80 percent of OECD nations have territorial systems.[23] In 2009, both the United Kingdom and Japan, in large part, adopted territorial systems, leaving Ireland, Korea, Poland, Mexico, and the United States as the remaining OECD nations with worldwide tax systems.[24]

3. Economic Implications of the Worldwide vs. Territorial Choice

Properly designed worldwide and territorial systems limit the extent to which companies with foreign-source income incur more than one level of tax on their foreign source income but differ as to what country's tax rate a company ultimately pays. After claiming foreign tax credits for its foreign tax payments, a company subject to a worldwide tax system ultimately pays tax at the greater of its home-country rate or the tax rate of the foreign countries in which it earns income (assuming it can fully credit its foreign income taxes). A company subject to a territorial tax system ultimately pays the tax rate of the countries in which it earns income. Thus, if a company subject to a worldwide system has a home-country tax rate that is higher than the rates in the foreign countries in which it operates, all else equal, that company will have a higher after-tax cost and a correspondingly lower after-tax return from competing outside its home country than do local companies or competitors subject to territorial systems. Like territorial systems, the U.S. FTC regime prevents U.S. companies from garnering any advantage from higher local-country rates. Section 904 limits the FTCs that may be claimed against U.S. tax to the extent they exceed the U.S. corporate tax rate. This limitation prevents companies subject to a high average foreign rate from using foreign tax credits to offset U.S. tax on U.S.-source income.

Worldwide and territorial tax systems reflect competing economic theories regarding taxation of international capital flows. A worldwide system with a foreign tax credit is premised on the notion (referred to as "capital export neutrality") that a company should face the

same tax rate whether operating in its home country or abroad. In contrast, a territorial system is based on the notion (referred to as "capital import neutrality") that all companies operating in a single country should face the same tax rate on their investments in that country. Contemporary research questions the utility of the theories as guiding principle for design of a tax system in a world of complicated economic interactions and relationships.[25]

D. The Importance of the FTC System for International Parity

The foreign tax credit plays an essential role in preventing double taxation of U.S.-based global corporations. Without credits for foreign taxes paid, U.S.-based global corporations would fully bear two levels of tax on their foreign source income. The foreign tax credit regime should ensure that U.S. global corporations are not disadvantaged by multiple levels of tax on that income but have a reasonable chance to compete on the same playing field with locally-based companies in foreign markets and foreign competitors subject to territorial tax systems. That requires permitting a foreign tax credit for the levies on income or profits exacted by foreign governments on the economic activities that occur within their borders.

II. The Dual Capacity Taxpayer Regulations

A properly functioning FTC regime is critical to the ability of U.S. resident taxpayers to compete abroad without the burden of double taxation. In the U.S.'s worldwide system of taxation, concern that costs be properly reflected as costs and not as creditable taxes has led to ongoing efforts to distinguish between payments to foreign governments properly considered "taxes" and payments that are not. Consequently, distinguishing foreign tax payments from other payments is a major focus of the Treasury Regulations governing FTCs. The Dual Capacity Regulations in particular serve as the primary workhorse of the U.S. international tax system's efforts to distinguish creditable taxes from other payments to foreign governments.

A. History of the Dual Capacity Regulations

The current regulations governing creditability of foreign payments—in particular, the Dual Capacity Regulations—grew out of the need to determine what payments by U.S. oil companies to foreign governments should be eligible for foreign tax credits. The issue first garnered concentrated attention in the late 1940s, when world demand for oil was increasing and oil-producing countries began adopting less accommodating positions in negotiating with U.S. companies that operated in foreign oil fields.[26] Following Venezuela's renegotiation of its contracts with foreign oil producers on a "50-50" basis, Saudi Arabia resolved to strike a new bargain with U.S.-based Aramco, which had extracted oil in Saudi Arabia under a concession since the 1930s.[27] By one account, in restructuring its relationship with Aramco, Saudi Arabia specifically took into account the availability of the U.S. foreign tax credit to Aramco.[28] Thus, beginning in 1950, Aramco paid Saudi Arabia a separately stated tax in addition to payments for the right to extract oil under a concession. The Internal Revenue Service (the "IRS") ultimately determined, in the course of auditing Aramco's 1950 tax return, that Aramco's tax payments to Saudi Arabia satisfied the established criteria for a payment to give rise to a foreign tax credit.[29] Other oil-producing countries followed the lead of Saudi Arabia in levying taxes on foreign oil producers that previously paid no separately stated local tax on their extraction and production activities.

After several decades with relatively little controversy about what constitutes a tax, spiking oil prices in the early 1970s prompted the Treasury Department ("Treasury") to re-examine the legal standards for claiming FTCs.[30] With U.S. oil companies paying more taxes than ever to oil-producing countries, Treasury and the IRS began a careful examination of the production sharing agreements between those companies and countries. The first result of that re-examination was a 1976 IRS ruling that certain payments of Indonesian income tax by a U.S. oil company did not qualify for a foreign tax credit.[31] Under the arrangement examined in the ruling, oil in excess of the company's expenditures (up to 40 percent of production) was split between the company and a state-owned corporation that deposited a portion of its oil share in the Indonesian Treasury in fulfillment of the U.S. company's Indonesian tax obligations. The IRS ruled that the U.S. company paid no Indonesian taxes eligible for a foreign tax credit, noting that Indonesia's assured share of production is characteristic of a royalty rather than a tax in the U.S. sense.[32] Two years later, the IRS considered the creditability of Indonesian taxes under a restructured production sharing agreement, ruling that Indonesian income taxes paid on a U.S. oil company's share of extracted oil gave rise to a foreign tax credit.[33] In other rulings, however, the IRS determined that payments to the Libyan and Saudi governments, as well as to the provincial government of Ontario, did not constitute creditable foreign taxes.[34]

While the IRS scrutinized the creditability of particular foreign levies as taxes paid by U.S. oil companies, it also undertook a project to rationalize and articulate in regulations the standards for creditability developed through case law and administrative practice. The first result of that project, 1979 proposed regulations that effectively would have denied any foreign tax credits at all to U.S.-based oil companies, met strong congressional criticism for their severity.[35] Temporary regulations issued in 1980 took a slightly moderated position but still failed to offer a workable framework for distinguishing taxes from royalties. The 1980 temporary regulations started from the presumption that all payments to a foreign government by persons receiving a specific benefit from the government were royalties. Taxpayers could overcome the royalty presumption if the same levy was imposed on persons not receiving a benefit from the government or if the amount paid by the person receiving the benefit was not significantly greater than the amount that would be imposed under an income tax to which non-dual capacity taxpayers are subject.

The 1980 temporary regulations took an all-or-nothing approach to distinguishing taxes from royalties. Accordingly, even if a foreign levy bore all of the traditional indicia of an income tax and a taxpayer paid a reasonable amount for any economic benefit it received, that taxpayer could claim no FTC in respect of the levy unless taxpayers who received no economic benefit from the government faced a comparable tax rate. The final regulations issued in 1983 provided a more realistic and reasonable approach that allows a taxpayer to separate a single payment into its royalty and tax components when necessary rather than leaving the taxpayer with unrelieved double taxation.

B. The General Rules

A central focus of the current section 901 regulations, finalized in 1983, is determining whether and to what extent payments to foreign governments constitute taxes that should give rise to foreign tax credits. The starting point for the inquiry is the definition of a

"tax" at Treas. Reg. § 1.901-2(a)(2), which provides that a foreign levy is not a tax to the extent a person receives a specific economic benefit in exchange for payment of the levy. If only a portion of a payment pursuant to a levy is considered to be in exchange for a specific benefit, the remaining portion of the levy may be considered a tax. As noted, a specific economic benefit means an economic benefit that is not made available on the same terms to other persons subject to the foreign country's generally imposed income tax or, if there is no such general tax, to the country's population in general.[36] The regulations identify a concession to extract petroleum as a specific economic benefit.[37] A person who is subject to a foreign country's levy and receives a specific economic benefit from that country is referred to as a "dual capacity taxpayer." Dual capacity taxpayers must look to the Dual Capacity Regulations of Treas. Reg. § 1.901-2A to determine whether their foreign levy payments are creditable taxes.[38]

The Dual Capacity Regulations may treat a foreign levy payment as exchanged for a specific economic benefit even if the levy applies to both dual capacity taxpayers and other taxpayers. Specifically, Treas. Reg. § 1.902-2A(a)(1) looks to whether a levy that by its terms applies to all taxpayers equally actually applies differently to dual capacity taxpayers in practice. If provisions of a levy only affect dual capacity taxpayers, the levy as applied to dual capacity taxpayers is treated as separate from the levy as applied to other taxpayers. That separate levy must be evaluated under the Dual Capacity Regulations to determine whether any portion is paid in exchange for a specific economic benefit and consequently is not a creditable tax. A levy may be a separate levy with respect to dual capacity taxpayers if, for instance, only dual capacity taxpayers pay the highest levy rate or if the levy specifically denies recovery of certain types of costs that only dual capacity taxpayers incur.[39]

The burden of proof for establishing that a payment to a foreign country is not for a specific economic benefit rests squarely on the taxpayer. The Dual Capacity Regulations refer to a foreign levy that satisfies all of the criteria of section 901 or 903, other than the determination of the specific portion of the levy that is a tax, as a "qualifying levy." A taxpayer claiming FTCs in respect of a qualifying levy payment must apply one of the two specified methods described below to determine the "qualifying amount" of the payment that is not in exchange for a specific benefit and is thus a creditable tax.

C. Methods For Determining the Tax Portion of a Foreign Levy

The Dual Capacity Regulations specify two methods by which a dual capacity taxpayer can satisfy its burden of proof for establishing the "qualifying amount" of a payment that may be treated as paid pursuant to a tax: the facts and circumstances method and the safe harbor method.

1. Facts and Circumstances Method

A dual capacity taxpayer may establish the qualifying amount of a payment that constitutes a tax, rather than a payment for a specific economic benefit, based on the relevant facts and circumstances. The Dual Capacity Regulations offer one example of a demonstration under the facts and circumstances method. In Example 1 of Treas. Reg. § 1.901-2A(c)(2)(ii), a taxpayer demonstrates that although a foreign country's levy only applies to dual capacity taxpayers, the liability of various dual capacity taxpayers under the levy differs from taxpayer to

taxpayer in a way that is unrelated to the specific economic benefit each received. Based on this demonstration, the taxpayer proves that no portion of its levy payment is in exchange for a specific economic benefit.[40]

In applying the facts and circumstances method, neither the methodology nor the results that would obtain under the safe harbor method is considered a relevant fact or circumstance. The IRS will not give such considerations any weight in evaluating the qualifying amount under the facts and circumstances method.[41] Thus, a taxpayer who chooses the facts and circumstances method takes the risk that, if unsuccessful, it will not be permitted to claim any of the taxes it paid as creditable income taxes. It foregoes the safe harbor test and cannot utilize it in any way to provide a "floor" for the amounts claimed.

In *Phillips Petroleum v. Commissioner* ("*Phillips*"), the Tax Court employed a facts and circumstances analysis to conclude that a special charge (the "Special Charge") imposed by Norway on Phillips's offshore petroleum exploitation income was a tax rather than a royalty.[42] In 1975, Norway enacted the Petroleum Tax Act, which imposed the Special Charge on companies that had been operating on Norway's Continental Shelf since as early as 1965 pursuant to licenses from the Norwegian government. Those licenses required licensees to pay an up-front fee, an annual fee, and an annual 10 percent royalty interest payable in barrels of oil. The Special Charge, by contrast, was imposed on all of the income of companies operating on a specified area of the Continental Shelf and allowed deductions for both operating and non-operating expenses. Noting these differences, the Tax Court found that the Special Charge was a tax rather than a royalty paid in exchange for a specific economic benefit. In arriving at this conclusion, the court also noted that (1) Phillips gained no new rights when the Special Charge was imposed; (2) Phillips's royalty payments constituted reasonable compensation for its exploration rights; and (3) Norway's purpose in imposing the charge was to capture excess profits that had arisen due to spiking world oil prices.

The Tax Court also employed the facts and circumstances method in *Exxon Corp. v. Commissioner*, finding that the U.K. Petroleum Revenue Tax ("PRT") paid by Exxon was a tax rather than a payment in exchange for a specific economic benefit.[43] The United Kingdom imposed the PRT in 1975 on oil and gas companies that had been operating in the North Sea under licenses that were issued as early as 1964 and that required upfront and annual fees as well as a 12.5 percent annual royalty. Observing that Exxon received no additional rights upon imposition of the PRT, the Tax Court found the PRT was a creditable tax rather than a royalty. The court noted that Exxon paid substantial and reasonable license fees for its exploration rights and concluded the PRT was effectively an excess profits tax imposed to capture a portion of the profits associated with increased oil prices.

2. Safe Harbor Method

As an alternative to the facts and circumstances method, dual capacity taxpayers may elect to apply the safe harbor method to determine the tax portion of a foreign levy payment. A taxpayer makes a safe harbor election with respect to one or more foreign countries.[44] If a taxpayer has an election in effect for a foreign country, the safe harbor method must be applied to all qualifying levies imposed in the country with respect to which that taxpayer claims FTCs.[45] Once in effect, an election to apply the safe harbor method remains effective for all subsequent

taxable years and can only be revoked with the consent of the IRS Commissioner.[46] The Commissioner generally will approve a request to revoke an election following certain material changes in U.S. or foreign tax law affecting the electing dual capacity taxpayer.[47]

A taxpayer electing the safe harbor method must apply the safe harbor formula specified in the Dual Capacity Regulations. Under that formula, the portion of the qualifying levy payment that constitutes a qualifying amount is calculated as follows:

$$\text{Qualifying Amount} = (A - B - C) * D / (1 - D)$$

where:

A = gross receipts, as determined under Treas. Reg. § 1.901-2A(e)(2)
B = cost and expenses, as determined under Treas. Reg. § 1.901-2A(e)(2)
C = the dual capacity taxpayer's actual payment under the qualifying levy
D = the tax rate, as determined under Treas. Reg. § 1.901-2A(e)(3)

The qualifying amount under this formula equals the tax that would result from applying the specified tax rate (D) to a tax base that includes the dual capacity taxpayer's gross receipts but permits deductions for the taxpayer's actual expenses, including the portion of the qualifying levy payment that is paid in exchange for a specific economic benefit.[48]

In determining gross receipts (A) and costs and expenses (B) for the safe harbor formula, the terms of the qualifying levy are the starting point but may be trumped by the terms of a generally imposed income tax ("general tax") if there is such a tax. In general, gross receipts and allowable deductions are determined under the terms of the qualifying levy unless the terms of the general tax would give a different result, in which case the general tax provisions will be used. Nonetheless, the qualifying levy's provisions will be used if they satisfy the Treas. Reg. § 1.901-2(a) requirement for an income tax. Moreover, even if neither the general tax nor the qualifying levy permits recovery of certain costs necessary for the qualifying levy to satisfy the requirements of an income tax under Treas. Reg. § 1.901-2(a), those costs must be taken into account as part of the "B" term of the safe harbor formula.[49]

The tax rate (D) used in the safe harbor formula is determined by reference to the general tax or the U.S. corporate tax rate. If the country imposing the qualifying levy has a general income tax, the safe harbor tax rate is the rate of the general tax that would apply based on the taxpayer's safe harbor gross receipts (A) reduced by deductions for its cost and expenses (B) and the portion of its qualifying levy payment that is in exchange for a specific economic benefit. If no non-dual capacity taxpayer is subject to that rate of the general tax, however, then the highest general tax rate to which a non-dual capacity taxpayer is actually subject must be used.[50]

Where there is no general tax—meaning the qualifying levy itself must be an income tax to be creditable since section 903 would not apply—the safe harbor amount is determined by the terms of the qualifying levy. In particular, the qualifying amount is still calculated according to the safe harbor formula above, but different parameters are used. Gross

receipts (A) are gross receipts as calculated under the qualifying levy, and costs and expenses (B) are the costs and expenses for which the qualifying levy permits deductions.[51] The tax rate (D) used in the safe harbor formula is the lower of the rate of the qualifying levy and the highest U.S. corporate tax rate.[52]

III. The Obama Administration FY 2011 Budget Proposal

As part of its FY 2011 Budget Proposal, the Obama Administration has proposed replacing the Dual Capacity Regulations with new rules governing whether a dual capacity taxpayer's foreign levy payments may be treated as taxes. As a general rule, a dual capacity taxpayer would be permitted to treat as tax only "that portion of a foreign levy that does not exceed the foreign levy that the taxpayer would pay if it were not a dual capacity taxpayer."[53] As a reason for changing the law, the Green Book asserts that current law "recognizes the distinction between a payment of creditable taxes and a payment in exchange for a specific economic benefit but fails to achieve the appropriate split where, for example, a foreign country imposes a levy only on oil and gas income, or imposes a higher levy on oil and gas income as compared to other income."[54]

While the exact working of the Administration's proposed change is not detailed in the Administration's Budget, the Green Book states that it would deny dual capacity taxpayers credits for taxes that exceed taxes paid by taxpayers that are not dual capacity taxpayers. Instead, dual capacity taxpayers would be permitted to claim foreign tax credits based on the amount of tax, if any, to which they hypothetically would be subject if they were not dual capacity taxpayers. If a foreign country imposes no other tax to which a dual capacity taxpayer would be subject, it appears that the taxpayer would not be permitted to claim any foreign tax credits for payments to that country.

Taxes that are creditable under the current Dual Capacity Regulations would not be creditable under the Administration Proposal. For instance, the dual capacity taxpayer in Example 1 of Treas. Reg. § 1.901-2A(c)(2)(ii) could claim no FTCs even though it proved under the facts and circumstances method that no portion of its foreign levy payment was in exchange for a specific economic benefit. Similarly, where a foreign country imposes a generally applicable tax and a separate levy on a dual capacity taxpayer with the facts of Example 3 of Treas. Reg. § 1.901-2A(c)(2)(ii), that taxpayer could not claim any FTCs in excess of the amount payable under the generally applicable levy even though it could prove under the facts and circumstances method, as in the example, the portion of such excess amount paid under its foreign levy payment that was not in exchange for a specific economic benefit. Further, taxpayers in factual situations precisely like those in Norway and the U.K., which were reviewed by the Tax Court in the *Phillips* and *Exxon* cases and found not to entail an exchange for a specific economic benefit, would not be able to seek such a court determination but instead would be limited to the amounts due under the generally applicable tax.

IV. Tax Policy Evaluation of the Dual Capacity Regulations vs. the Administration Proposal

In crafting the Dual Capacity Regulations, Treasury and the IRS sought to balance the necessity of avoiding double taxation with the necessity of ascertaining that credits are

limited to foreign taxes paid and not extended to other amounts charged by a foreign government. To achieve this balance—or the "appropriate split," in the language of the Green Book—the Dual Capacity Regulations place the burden of proving that a payment is a tax on the taxpayer claiming a foreign tax credit. The split for which the Dual Capacity Regulations provide is important because the foreign tax credit is an essential element of the U.S. international tax system preventing double taxation, not a subsidy as has been suggested by some commentators. The Administration Proposal would upset the balance achieved by the Dual Capacity Regulations, harming U.S. competitiveness in foreign countries where U.S. dual capacity taxpayers operate.

A. The Current Regulations Achieve the "Appropriate Split" By Requiring Taxpayers to Prove That a Foreign Levy Is a Tax

The current Dual Capacity Regulations arose out of the need to distinguish creditable foreign taxes from amounts that, though paid to a foreign sovereign, are royalty payments that are deductible, not creditable as foreign taxes. Treasury issued the final Dual Capacity Regulations in 1983 as the culmination of a six-year process. That process, which followed a series of IRS rulings, produced temporary regulations, two sets of proposed regulations, and multiple rounds of public comments. The resulting final regulations, which draw on decades of case law, offer a carefully-crafted framework for determining the extent to which a foreign levy payment represents a tax rather than a payment for a specific economic benefit.

To prevent claims for foreign tax credits in respect of payments that are royalties in substance, the Dual Capacity Regulations assign the full burden of proof to the taxpayer to demonstrate the portion of any particular payment that constitutes a tax. Dual capacity taxpayers may not simply assume, absent contrary IRS guidance, that a particular foreign levy is a creditable tax. Rather, sustaining a claim for a foreign tax credit requires that a taxpayer be prepared to prove in a court of law the extent to which a payment constitutes a tax. It was the IRS's challenge of a dual capacity taxpayer's claim of foreign tax credits that gave rise to just such a proof in both the *Phillips* and *Exxon* cases. In *Phillips*, the U.S. Tax Court clearly articulated the burden the regulations imposed on the taxpayer, stating that Phillips "must demonstrate that no significant part of the special charge was compensation for a specific economic benefit received."[55]

Courts require a detailed, fact-intensive demonstration that a foreign levy payment is a creditable payment of tax rather than a royalty. In *Phillips*, the Tax Court stated "[w]hen the owner of a mineral interest is a government, the distinction between a royalty interest and a tax can only be determined by an examination of the particularities involved in the imposition of the charges."[56] The court further observed that the "test of creditability rests upon . . . the manner in which the power [to tax] is exercised."[57] Contrary to the view that the Dual Capacity Regulations assign undue import to the formal characteristics and terms of a levy, the *Phillips* court explained that a facts and circumstances analysis required it to "examine the nature and effect of the charge, specifically the manner in which each charge was proposed, drafted, structured, and administered."[58] In both the *Phillips* and *Exxon* cases, the Tax Court went beyond the terms of the foreign levies in question to examine their structure and effect and the context in which they were enacted. This rigorous standard of proof ensures that the "appropriate split" between creditable taxes and deductible royalties is achieved. In fact,

eliminating the facts and circumstances test—as the Administration Proposal would do—would reduce, rather than increase, the chances of obtaining the "appropriate split" the Administration Proposal states is its purpose.

B. The Proposal Would Deny a Fundamental Right to U.S. Taxpayers

A basic principle of our worldwide taxation system is that a foreign tax credit for foreign income tax payments is essential to prevent double taxation. The determination of whether a payment is a creditable payment of income tax rather than a royalty is a question of fact. The current regulations recognize this, and the case law fully demonstrates it. A policy that denies the right of a taxpayer to present the underlying facts, and instead pre-determines the outcome irrespective of the facts, is flawed. A policy denying the right to a fair and independent determination of a factually-based issue deprives the taxpayer of the most fundamental of rights, a review by an impartial decision maker. Existing rules place the full burden of proof on the taxpayer to prove its case; in many cases this may be an extreme burden. But where a taxpayer that could meet that burden is denied the right to do so, double taxation occurs. When a taxpayer is denied the opportunity to make such a showing, a fundamental tenet of our system of justice is violated. Sound tax policy requires that neither of these consequences occur, but the Administration Proposal guarantees that both will.

C. The Proposal Would Have Severe Retroactive Implications and Would Undermine Confidence in the Tax System Itself

The current dual capacity rules have been in place for over 25 years. The regulatory history demonstrates that they were the product of great care, designed to in fact achieve the "appropriate result". Far from being skewed in favor of the taxpayer, they actually create a presumption in favor of the government that the taxpayer must overcome. Nevertheless, in full recognition of the burdens in these rules, taxpayers have invested billions of dollars in fair reliance upon them. The Administration Proposal would unilaterally and retroactively change the rules applicable to these investments, reducing their value immediately. This can only be based on the premise that U.S. courts are incapable of addressing this factual issue and achieving the proper result under the law. This is a highly suspect foundation upon which to base a unilateral retroactive destruction of investment value. There is considerable evidence to the contrary and none that supports the premise.

D. The Proposal "Legislates" a Negative: That It Is Never Conceivable That a Foreign Country Could Legitimately Tax One Industry at a Higher Rate Than Another

The implication of the Administration Proposal is that oil and gas income (and income from other dual capacity taxpayers) can never be taxed under an income tax system at a higher rate than other industries. Any higher level of taxation is automatically re-characterized under the proposal as a payment for the resource rather than as an income or excess profit tax. Of course, experience from our own country, as well as the U.K., Norway, and Canada, to name just a few, shows this premise to be demonstrably false. Under the proposal, this clear evidence would be ignored, and this false premise would be applied to every country.

E. The Foreign Tax Credit Is Not a Subsidy

The foreign tax credit is an essential element of the U.S. international tax system that is required to keep U.S.-based companies with global operations from being subject to both U.S. and foreign tax on their income from foreign sources. Some commentators, however, have suggested that the Administration Proposal is justified because the foreign tax credit, as it is applied to oil and gas companies, is a "subsidy."

Contrary to these assertions, the foreign tax credit system applicable to oil and gas activities has none of the characteristics of a subsidy. First, it does not favor petroleum over other sources of energy. Rather, it is an integral component of the U.S. worldwide tax system designed to prevent double taxation and to permit U.S.-based companies to compete with foreign-based companies that are subject to only a single level of tax. Denying U.S.-based companies a credit for their foreign taxes based on the design of the foreign tax system would significantly increase their tax burden and could force them from foreign markets. Second, it would not alter the use of petroleum as an energy source because foreign-based petroleum companies subject to territorial tax systems would fill the gap. Thus, the availability of a foreign tax credit does not induce development of oil fields that would otherwise remain undeveloped and does not likely affect the supply, or the price, of oil, since the latter is determined by supply and demand for oil in world markets. In no sense, then, can the foreign tax credit be considered a petroleum subsidy. Territorial systems of taxation are equally not a subsidy, as indicated by the World Trade Organization's determination that measures intended to avoid double taxation are not prohibited subsidies.[59] Thus, the G-20 announcement of an intention to reduce subsidies for fossil fuels would not require territorial systems to suddenly abandon their systems, nor worldwide credit systems to change the application of their foreign tax credit mechanisms.

If the foreign tax credit were a "subsidy," it would have been classified as a "tax expenditure" by the Joint Committee on Taxation ("JCT") and the Treasury Department. Consistent with the foreign tax credit's fundamental role in the U.S. international tax system, however, neither the JCT nor the Treasury Department categorizes the foreign tax credit as a tax expenditure. The Congressional Budget Act of 1974, which mandates the inclusion of tax expenditures in the budget, describes tax expenditures as "revenue losses attributable to provisions of the Federal tax laws which allow a special exclusion, exemption, or deduction from gross income or which provide a special credit, a preferential rate of tax, or a deferral of liability." Provisions of this type are classified as tax expenditures because they are departures from the basic structure of an income tax—in effect, they are considered subsidies administered through the tax system. Tax expenditures identified by JCT and Treasury include the alternative fuel production credit, the energy investment credit, and the alcohol fuel credit, but *not* the foreign tax credit, which is a basic and essential element of the U.S. worldwide income tax system.

F. The Administration Proposal Would Have Adverse Economic Consequences on U.S.-Based Companies Competing for Natural Resources in the Global Economy

By failing to allow credits for actual taxes paid, the Administration Proposal would saddle dual capacity taxpayers with a higher tax burden than their foreign competitors will bear and a higher tax burden than they should bear under a properly functioning FTC system.

The countries in which the foreign competitors of U.S. oil companies are based either exempt the foreign income of their global companies from home country tax or provide a credit for foreign taxes paid. As a result, these foreign competitors do not bear a second layer of tax on their foreign income. By contrast, the foreign income of a U.S.-based company that is denied credits for its foreign tax payments would face both U.S. tax at a 35 percent rate and foreign tax to the extent of the credits denied.

The result of getting the wrong answer from an FTC standpoint, as the Administration Proposal would do, is that U.S. companies would face significantly higher tax burdens than their foreign competitors rendering them unable to compete in many jurisdictions. Companies make investment decisions based on the expected after-tax returns from their investment options. If the tax burden on a particular investment were significantly higher for U.S. companies than foreign companies, the foreign companies could profitably undertake investments that U.S. companies could not. Where U.S. and foreign companies bid for the right to develop a country's natural resources, the burden of double taxation on U.S. companies would allow foreign companies to outbid the U.S. competition. In countries where there is a substantial difference between a dual capacity taxpayer's actual tax burden and its hypothetical tax burden if it were not a dual capacity taxpayer, the Administration Proposal would impose a substantial level of double taxation on U.S. companies, denying them any realistic prospect of winning the right to develop the country's natural resources.

The consequences when U.S. companies operating abroad bear more tax than foreign competitors is well illustrated by the example of the U.S. shipping industry. In the Tax Reform Act of 1986, Congress repealed deferral for international shipping income. Between 1988 and 1999, the number of U.S.-owned, foreign-flag ships as a percentage of the world merchant fleet declined from 5.6 percent to 2.9 percent.[60] Though other economic factors may have contributed to the decline of the U.S.-based industry at that time, the decline is attributable in no small measure to acquisitions of U.S.-based shipping companies by foreign corporations not subject to tax on their shipping income.[61] The shipping industry experience highlights the risk to U.S. competitiveness of laying a significantly heavier tax burden on U.S. companies than their competitors in foreign markets face. The damage to U.S. companies from the Administration Proposal is potentially much worse than in the shipping industry experience, given that dual capacity taxpayers would face double taxation at high tax rates rather than the mere loss of deferral suffered by the U.S.-based shipping industry. If the Administration Proposal were adopted, U.S. companies could cease to be viable competitors in a variety of strategically important foreign markets where they typically operate as dual capacity taxpayers.

G. Conclusion

The Dual Capacity Regulations were not hastily assembled but, rather, are the product of careful consideration over the course of six years. The rules are highly detailed and rigorous and are designed to address the range of conceivable fact patterns and issues. Ultimately, by placing the burden of proof on the taxpayer claiming foreign tax credits, the Dual Capacity Regulations ensure that the U.S. fisc is not only protected, but in fact is favored, by the careful design and structure of the rules.

The Administration Proposal would abandon the U.S. government's long-standing, carefully conceived, and balanced rules on the creditability of foreign taxes for dual capacity taxpayers. As the Administration Proposal redefines the meaning of tax for dual capacity taxpayers, a payment that would be a tax under existing law, including situations previously considered by the Tax Court, would no longer give rise to a foreign tax credit. The inevitable consequence of this redefinition, the double taxation of dual capacity taxpayers, would hobble U.S. dual capacity taxpayers in their competition with other foreign based companies in the development of key natural resources in the developing world.

V. The Economic Rationale for Oil-Producing States' Use of Both Royalties and Income Taxes

The rationale for the Administration's proposed modification of the dual capacity rules appears to be the assumption that foreign income taxes paid by U.S.-based oil companies in excess of what they would pay under a generally applicable tax, or in their entirety where there is no generally applicable tax, represent royalties in all but name.[62]

Recent testimony of the Assistant Treasury Secretary for Tax Policy before the House Ways and Means Committee asserts that the "foreign levies paid by such companies are in fact in exchange for the right to exploit natural resources (that is, a specific economic benefit) and not an income tax."[63] The Treasury testimony also suggests that, to the extent that foreign governments "have reduced their statutory corporate income tax rates except with respect to oil and gas companies," the reason for adopting the higher rate was to maximize its creditability for U.S. income tax purposes.[64]

In fact, there is a fundamental economic distinction between royalties and income taxes and important reasons why governments both collect royalties and impose income taxes. There are also valid economic rationales for governments' attempts to apply differential rates to earnings derived from oil and gas production.

The reality is that it is the foreign oil-producing state that has a "dual capacity" in its roles as resource owner and as sovereign.[65] There is a clear difference in the amount of revenue that a government, as opposed to the private resource owner, can derive from economic activity associated with the production of oil and gas within its territory. That difference lies in the government's separate sovereign power to tax the income derived from that activity, rather than its character as a resource owner. It is the sovereign's dual capacity that results in the U.S. taxpayer having dual obligations to the sovereign, but that does not mean that the obligations are interchangeable, as the Administration Proposal contends.

A. The Distinction Between Royalties and Income Taxes

Royalties, as Assistant Secretary Mundaca suggested in his testimony, are payments made "in exchange for the right to exploit natural resources."[66] Both the payment and the bundle of rights transferred by the resource owner are fixed by contract well in advance of any actual oil and gas production.[67] The royalty plus other "up front" commitments such as bonus payments, work programs, development obligations, and training requirements (all

hereafter referred to under the term "royalties") reflect full and adequate payment for the right to exploit the resource in light of the risks associated with exploration.

In other words, royalties reflect the price of the bundle of rights the resource holder sells as part of a voluntary exchange.[68] The price (i.e., the royalty requirements) that the resource owner can charge is ultimately determined by market forces—the supply of and demand for the resource or products made from the resource, as well as the bargain ultimately struck between the two parties to the transaction.[69]

Governments face the same challenge in setting royalties as their private sector counterparts. There is a practical limit to the payment they can demand for the right to access the resource in light of the risk associated with exploration that may or may not lead to recoverable quantities of oil and gas.[70] Setting royalty requirements too high discourages investment and leads to the abandonment of wells before the resource is fully utilized.[71] Raising royalties under those circumstances would be uneconomic, regardless of whether the resources are owned publicly or are in private hands.[72]

The circumstances confronting the private resource owner are, however, distinguishable from those facing a government owner in two material respects. These differences reflect both the broader powers, and broader responsibilities, of a government in its role as sovereign rather than its role as resource owner. First, in the case of the private resource owner, the sale of the right to exploit the resource in return for the royalties fixed by contract exhausts both the resource owner's right to the resource and its ability to derive any further income from the resource's exploitation.[73] That, however, is not, true of governments. What that private resource owner lacks is the government's separate sovereign power to tax the income generated by the production of oil and gas. Income taxes, by definition, involve no sale or exchange. They apply solely by virtue of a government's power to compel their payment.[74] Nothing in a government's sale of the "specific economic benefit" associated with the right to exploit the resource limits that sovereign power.[75] Second, the government, unlike the private resource owner, has responsibility for the welfare of its citizenry and for, promoting economic activity within its borders, while at the same time raising the revenue (via taxation in its role as sovereign) to meet these additional responsibilities.

Further, the economic limits that apply to the government's power, as resource owner, to extract revenue from the right to exploit the resource often do not apply to its taxing power. For example, once the lessee or concessionaire has made the capital investment needed to exploit the resource and has begun production, the government no longer faces the constraint it did in the sale of the right to the resource in the first instance.[76] The upfront risk and uncertainty associated with exploration is eliminated.[77] The resource, furthermore, is not moveable, which means that, unlike services facilities or even many manufacturing plants, the capital investment made by the lessee or concessionaire is entirely immobile.[78] The government can, as a result, impose additional taxes while still assuring the lessee or concessionaire a rate of return sufficient to ensure that the resource is fully exhausted.[79] Nonetheless, what the government imposes in that instance is not a disguised royalty for the right to access the resource, but a tax on the economic activity that occurs within its borders.

That underlying distinction between royalties and income taxes animates much of the advice the World Bank and International Monetary Fund have offered oil-producing states regarding the design of their fiscal systems. That analysis recommended states adopt an approach that avoids distorting investment decisions, maximizes the predictability of tax revenue, and allows the government to generate higher overall revenues from the combination of its capacities (i.e., resource owner and sovereign) by focusing its taxing power on the broader base that earnings provide, as opposed to relying solely or predominantly on its role as a resource owner and the royalties it can charge up front for the right to exploit its oil and gas.[80]

B. The Economic Justification for Differential Rates

There are also valid economic reasons for governments to tax earnings from oil and gas production at differential rates. Public finance economists think of the form and rate of taxation in terms of its impact on welfare, with the optimal or "Pareto efficient" allocation of resources being that in which "the only way to make one person better off is to make another person worse off."[81] That naturally focuses the inquiry into the form and rate of taxation on its efficiency measured in terms of its relative distortion of the Pareto efficient allocation (i.e., its "excess burden").[82]

The theory of optimal commodity taxation suggests that governments should select taxes and rates that minimize the excess burden (i.e., cost, both administratively and in terms of opportunities) of raising the required tax revenue.[83] What the theory of optimal commodity taxation suggests for taxing the earnings from oil and gas production is quite different. There, the theory would encourage the use of measures that would allow both greater progressivity and flexibility (i.e., the ability to adjust the rate over time for changes in economic conditions) in order to maximize the revenue the sovereign can derive from economic activity within its borders.[84]

Precisely how progressive the actual rates should be is largely determined by the conventions of the Ramsey rule and its corollary, the inverse elasticity rule, familiar to all public finance economists. The Ramsey rule holds that, "to minimize total excess burden, tax rates should be set so that the percentage reduction in the quantity demand of each commodity is the same."[85] What that has normally been taken to mean is that an optimal commodity tax is one that is specific to the good in question.[86] In other words, conventional welfare economics supplies the rationale for the application of differential tax rates to different commodities when the circumstances warrant.

One important implication of the Ramsey Rule commonly known as the inverse elasticity rule is that, as long as the goods in question are unrelated in consumption, "tax rates should be inversely proportional to elasticities."[87] What that would suggest, in the case of petroleum or other commodities with relatively inelastic demands, is that there are economic circumstances that allow a government to tax the income generated by production and sale of such commodities at higher rates relative to other commodities, labor or capital.

In sum, not only is there a fundamental distinction between the royalties that governments charge for "the right to exploit natural resources" and income taxes imposed on activity within its borders, but the widely understood conventions of welfare economics provide

a rationale for countries, whether they own the resources or not, to impose different rates of taxation on income derived from resource production within their territory—a rationale that simply does not relate to the consequences that may result under the U.S. income tax laws, as the Administration Proposal implies.

C. International Practice in the Taxation of Income from Economic Activity Associated with the Production of Oil and Gas

One normative test for the distinction between royalties and income taxes discussed above is whether governments actually behave in ways consistent with the economic fundamentals outlined above. With few exceptions, both developing and developed oil-producing countries charge royalties as the resource owner for the right to exploit the resource and impose income taxes as the sovereign on the economic activity. They do so, moreover, in a manner consistent with the economic fundamentals outlined above.

1. Fiscal Policy Approaches in Developing Nations

Recent research done for the International Monetary Fund on the design of fiscal policy for oil-producing countries highlights the fact that virtually all developing countries that produce oil impose corporate income taxes as well as royalties.[88] The greater political risk in the developing world reduces the royalty the resource owner can charge for the right to exploit the resource, demonstrating the effect of market forces on the price for access to the resource. Raising the revenues necessary to support the institutions of government then requires the imposition of an income tax on economic activity.

That finding holds important implications for the Administration Proposal. As the Treasury Department is aware, developing nations face major challenges in their attempts to generate the revenue they need for infrastructure, education, health care and a variety of other essential government services indispensable to economic development.[89] Due to the relative size of the informal economy in many developing countries and other features of their markets, the tax base to which many conventional taxes would apply is limited.[90] Poor infrastructure that inhibits development can also inhibit tax collection and compliance efforts.[91] Developing countries frequently lack the institutional capacity in terms of tax administration to ensure that revenues are collected economically and efficiently.[92]

Those challenges impose significant constraints on the fiscal policy choices developing nations can make. They are compelled to be pragmatic in their choices, focusing their limited tax administration resources on the taxpayers and tax bases from which they can most efficiently and effectively generate revenue.[93] Most often, those constraints lead developing countries to focus on major companies, particularly foreign investors, as a source of revenue.[94] From the oil-producing developing country's perspective, foreign-based oil and gas producers have consistently provided an inviting target, often leading to the imposition of a disproportionate tax burden on what U.S. law characterizes as dual capacity taxpayers.[95]

For many of the reasons foreign investors in general are important elements of a developing country's tax base, oil and gas producers are still more attractive as taxpayers. As noted above, once their capital investment is made, foreign oil and gas producers cannot move

their income-generating operations outside of the country, as other foreign investors may. In addition, the oil and gas companies' financial operations are relatively transparent to the government, given that the government already audits the taxpayer's compliance with the terms of its natural resource concession, all of which allows the taxing authority to assess and collect the correct amount of an income tax with minimal additional cost and effort.[96]

What that means for purposes of the analysis outlined above is that, wholly apart from the sound economic reasons for doing so, there are a number of practical factors that may lead oil-producing developing countries to impose significantly higher taxes on income from oil and gas production in their territory. Ensuring that the Administration Proposal takes those factors into account is essential to a sound tax policy choice, both from the perspective of the Treasury and its developing country counterparts.

2. Fiscal Policy Approaches Among OECD Member States

The practice of imposing additional income taxes on the earnings generated by oil and gas production is not limited to developing countries, as the *Phillips* and *Exxon* cases illustrate. Even the United States has a history of imposing excess profits taxes, as the Tax Court observed in *Phillips:*

> Norway's enactment of the PTA is completely in line with its purpose of adding an additional layer of income taxation to an industry that Norway found exceedingly profitable. In 1917, during World War I, our country enacted an excess profits tax, principally to meet the extraordinarily large appropriations urgently needed for military and naval establishments and fortifications. This excess profits tax was imposed in addition to other taxes, specifically, in addition to the general income tax . . . .[97]

The court noted that the United States had imposed a similar excess profits tax at much higher rates during World War II.[98]

What the court's decision highlights is the extent to which industrialized oil-producing countries, like their developing country counterparts, choose to impose both royalties and corporate income taxes on the earnings derived from economic activity related to oil and gas production within their territory. In many instances, the income tax rate applied to oil-related income is, in fact, higher than the normal corporate tax rate, just as the facts in the *Phillips* and *Exxon* cases suggest.

Canada offers another very interesting example and historical perspective. Canada is a country where the federal government does not own the majority of the natural resources; they are owned by the provinces or others. Canada for many years had a tax regime that imposed a separate tax on petroleum and natural gas revenue (the "PGRT"), and the PGRT was in fact found to be creditable in an IRS private letter ruling (PLR 8525122). On the issue of whether the PGRT is a tax under the section 901 regulations, the IRS concluded:

> With respect to section 1.901-2(a)(2)(i) of the Finals Regs., the PGRT is a tax and [the taxpayer] receives no specific economic benefit because [it] is subject to the PGRT whether oil rights are under federal or provincial jurisdiction.

The IRS later reconsidered the issue of the creditability of the Canadian PGRT and, in PLR 9429020, the IRS revoked PLR 8525122. However, the IRS did not revoke the earlier PLR on the basis that the PGRT constituted payment for a specific economic benefit; rather, the IRS revoked the earlier PLR on the basis that the PGRT did not meet the net income requirements of Treas. Reg. § 1.901-2(b)(4) since certain costs were not recoverable under the PGRT. Thus, the IRS did not change its view that the PGRT was a "tax" (rather than compensation for a specific economic benefit).

The PGRT has since been repealed, and Canada has reduced its income tax rates for all taxpayers, but the rates came down more slowly for oil and gas income than for other income, as follows:

Canadian Federal Tax Rates (with Surtax), 2000-2012

Year	General Rate	Resource Rate	Difference
2000	29.1%	29.1%	0.0%
2001	28.1%	29.1%	1.0%
2002	26.1%	29.1%	3.0%
2003	24.1%	28.1%	4.0%
2004	22.1%	27.1%	5.0%
2005	22.1%	26.1%	4.0%
2006	22.1%	24.1%	2.0%
2007	22.1%	22.1%	0.0%
2008	19.5%	19.5%	0.0%
2009	19.0%	19.0%	0.0%
2010	18.0%	18.0%	0.0%
2011	16.5%	16.5%	0.0%
2012	15.0%	15.0%	0.0%

While the tax rates in Canada on oil and gas income have ultimately coincided with the tax rates on non-oil and gas income, the example of Canada firmly illustrates a fact pattern where in many circumstances the taxing authority is *not* the resource owner, but nevertheless makes a determination that taxing oil and gas and other minerals at different rates from other activities is appropriate. The Administration Proposal would suggest that such a tax regime imposed by a foreign country that also happens to be the resource owner is always inappropriate. In fact, one could posit a circumstance where Canada adopted the same rules as the U.K., or a developing country adopted a system similar to Canada's, and the Administration's Proposal would yield totally different results on U.S. tax creditability under these similar regimes. That is the absurdity of the inflexible standard being proposed.

Examples of higher taxes on natural resources are not limited to Canada, the UK, and Norway. In the United States, Alaska maintains a separate income tax regime for oil and gas companies than the regime for other companies. In many cases, the separate regime for oil and

gas companies means those companies bear a higher tax burden than other companies, regardless of whether or not Alaska owns the underlying resource.

One of the relevant features of each of the tax systems is that the taxes apply to oil and gas income regardless of the nationality of the taxpayer. It is unclear why countries would impose special taxes or higher tax rates on non-U.S. taxpayers if the purpose was to allow U.S. companies to credit the payments against their U.S. income tax liability.

Although the United States continues to impose a worldwide system of taxation, most other major countries apply a territorial system that avoids the risk of double taxation by exempting foreign source income from taxation. There would be no reason to impose an income tax in lieu of higher royalties on companies headquartered in states with territorial systems since they would not benefit from the distinction in tax terms and they would incur the significant costs associated with the introduction of an income tax.[99]

The oil-producing governments could have avoided these costs if they could have demanded the equivalent "take" in the form of the royalties they charged as resource owners. Instead, with very few exceptions, each of the foreign governments surveyed by IMF analysts opted to impose an income tax on the companies headquartered in states with territorial systems as well as those headquartered in the United States. Under the theory that undergirds the Administration Proposal, those governments would be engaging in extraordinarily uneconomic behavior. The simpler (and more logical) explanation is the one offered above—that there were limits to what the individual states could exact as resource owners from their oil and gas in the form of royalties. They accepted a royalty to encourage development of the resource and the attendant economic activity, and exercised the sovereign's right to tax that economic activity to generate the revenues necessary to support the institutions of government.

The Administration Proposal fails to recognize that countries impose higher tax rates on particular companies and industries for administrative, political, and economic reasons. This failure means a dual capacity taxpayer would be unable to claim a FTC for a payment that is undeniably a tax, resulting in double taxation of the very sort that the foreign tax credit is designed to prevent. Under the Administration Proposal, this will occur in every situation where a country has no generally imposed income tax or has a "schedular" tax system that taxes particular categories of income at different rates.

D. U.S. Practice with Respect to the Sale of Natural Resources and the Imposition of Taxes on Income Derived from their Exploitation

The United States' own practice with respect to the taxation of income derived from economic activity associated with the production of oil and gas contradicts the assumptions underlying the Administration Proposal. Plainly, the imposition of an income tax on U.S. oil and gas producers in lieu of higher royalties has no impact on the creditability of those payments under the foreign tax credit provisions of the Code. To the extent that the United States, like all of the other oil-producing states mentioned above, imposes an income tax on the earnings of U.S. oil and gas companies generated on U.S. territory wholly apart from the royalties charged for the right to exploit U.S. oil and gas resources, it would suggest that there must be some economic

rationale for the royalties and tax rates the United States' employs other than the creditability of the tax payments under the FTC provisions of the Internal Revenue Code.

In fact, the United States' practice is identical to that of the other oil-producing states discussed above. The United States applies royalties to the sale of its resources and separately taxes the corporate earnings generated by oil and gas production within its territory. Thus, for example, in the case of offshore oil leases, the Department of Interior auctions the leases subject to royalty payments on post-lease production.[100] But, the payment of the initial bidding price for the lease and the payment of royalties does not exempt the oil companies from the obligation to pay the corporate income tax.

Further, one need only recall the U.S. experience under the Windfall Profits Tax. The tax applied a higher rate of income tax to the earnings of the oil companies that were otherwise still obliged to pay the fees, royalties and normal rate of corporate tax, similar to the current situation in many oil-producing countries today.

Although the Windfall Profits Tax has been repealed,[101] U.S. oil and gas producers remain subject to a higher rate of tax under current law than all other production and manufacturing firms because they are denied a portion of the section 199 production activities deduction, which effectively reduces the tax rate paid by other companies by three percentage points.[102]

Significantly, the Administration itself has proposed full elimination of section 199 for oil and gas companies, which would lift the separate tax rate applied to income derived from oil and gas production still higher. Recent action and the Administration's current section 199 proposal are completely at odds with the notion that the reason foreign governments impose higher rates of taxation on earnings from oil and gas production is to assist U.S. companies in crediting those taxes against their U.S. income tax liability. To the contrary, they represent an effort to increase the government's take from the earnings generated by oil and gas production within the reach of their taxing power, not returns to the U.S. government in its role as resource owner.

In short, the United States' own practice with respect to the sale of oil and gas contradicts the assumption underlying the Administration Proposal. What U.S. practice reflects is the economic policy any state has for imposing the royalties it can as a resource owner and exercising its sovereign power to impose corporate income taxes on the resulting economic activity within its territory.

VI. Other Policy Implications of the Dual Capacity Proposal

In today's global economy, decisions with respect to taxation must be made in the broader context of U.S. economic, foreign policy, and national security concerns. Globalization has erased the distinction between domestic and international economic policy, so, even if it were once possible to make economic policy decisions based solely on domestic considerations, that is no longer the case. The domestic economic policy choices the U.S. government makes define economic outcomes for U.S.-based companies and their workers who compete in an increasingly globalized world economy.

Nowhere is this new dimension shaping U.S. economic policy more evident than in the case of a strategic asset like oil. Access to adequate supplies of oil is essential for the competitiveness of the U.S. economy in both the short and long term. The contours of the global oil market shape our economic destiny. That imposes a significant standard of care on decisions the U.S. government takes with respect to the development of its own industry and the sector globally.

Wholly apart from the tax policy reasons discussed above, there are a number of other factors that urge caution with respect to the Administration Proposal. The following discussion highlights the economic, national security, and foreign policy concerns that the proposal raises.

A. Implications for U.S. Economic Interests

Because the Administration Proposal virtually guarantees that the income of U.S.-based oil and gas producers will be subject to double taxation, it will have sharply negative consequences for U.S. economic interests in both the short- and longer-term.

In the near term, exposing U.S.-based oil and gas companies' income to double taxation would conflict directly with what the Director of the National Economic Council, Dr. Lawrence Summers, has stressed is the Obama Administration's single most important priority—"bringing about economic recovery."[103] U.S.-based oil and gas producers contributed an estimated $323 billion to GDP in 2008.[104] According to the narrowest definition of employment used by the Bureau of Labor Statistics, U.S. oil and gas companies employ 160,000 Americans directly in their own extraction operations and account for a far greater impact on hiring within the broader reach of their domestic supply chains.[105] A recent study by PriceWaterhouseCoopers for the American Petroleum Institute estimated that "the U.S. oil and natural gas industry's total employment contribution to the national economy amounted to 9.2 million full-time and part-time jobs, accounting for 5.2 percent of the total employment in the country."[106]

It is axiomatic that taxing an activity yields less of it. Raising taxes on U.S. companies at this stage in the recovery will necessarily reduce the contribution they can make to a sustained recovery in terms of their ability to boost both business investment and hiring.[107] Nowhere does that economic logic apply with greater force than in capital-intensive industries like energy.[108] Exposing U.S.-based oil and gas companies' income to double taxation will necessarily limit their ability to accumulate capital relative to their competition and reduce their likelihood of winning bids and making the investments that drive both economic growth and employment.[109]

The Administration's own energy tax proposals reinforce that conclusion. The Administration has, in the past year, proposed a number of tax incentives for the development of alternative sources of energy. Each of those proposals is predicated on the fact that lowering the tax take will increase the return to such investments and encourage the entrepreneurial activity essential to the development of a less vulnerable, more sustainable energy future. Unfortunately, the converse is true as well. Subjecting the foreign source income of U.S.-based oil companies to

double taxation will raise the effective tax rate on their income with obvious consequences for their ability to contribute to U.S. economic growth and employment in the short run.

As Dr. Summers has stressed on several occasions, "[p]roducing recovery . . . will depend upon the choices we make now," both with respect to taxes and spending. Exposing U.S.-based oil and gas companies' income to double-taxation and putting at risk the millions of American jobs directly or indirectly supported by the U.S. oil and gas industry would seem to fall squarely within the category of choices to which Dr. Summers alluded.

The Administration Proposal is also at odds with President Obama's near-term goal of doubling U.S. exports over the next five years.[110] The President established that goal as part of the National Export Initiative he launched in his 2010 State of the Union Address, emphasizing the need "to seek new markets aggressively, just as our competitors are," linking that effort directly to his aim of promoting economic recovery, and suggesting that the success of his initiative would "support two million jobs in America."[111]

A competitive U.S.-based oil and gas industry would undoubtedly prove a major contributor to the President's goal. The industry is a major exporter of both goods and services, accounting for direct exports of goods and services amounting to $63.4 billion in 2009 and directly and indirectly supports millions of U.S. jobs.[112] Exposing the income U.S.-based oil and gas companies derive from their overseas operations to double-taxation is certain to undermine their global competitiveness and their ability to "seek new markets aggressively" and contribute to the President's objective of doubling U.S. exports in five years.

Equally important, exposing U.S.-based oil and gas companies' income to double taxation erodes their ability to serve as a platform for the exports of a wide array of other U.S. producers of goods and services, from drilling rigs to heavy equipment to cutting-edge exploration technology and services. Globalization has fundamentally altered the nature of international trade and the basis of competition.[113] American producers of both goods and services increasingly depend on industry leaders like those in the U.S.-based oil and gas industry to serve as systems integrators of a broad array of goods and services that flow through their supply chains to world markets. Most U.S. manufacturers and service providers now export through their connection to such supply chains, rather than directly to customers abroad.[114] In eroding the export competitiveness of U.S.-based oil and gas companies, the Administration Proposal is also eroding the competitiveness of U.S.-based producers of goods and services that depend on U.S.-based oil and gas companies for their own access to world markets.

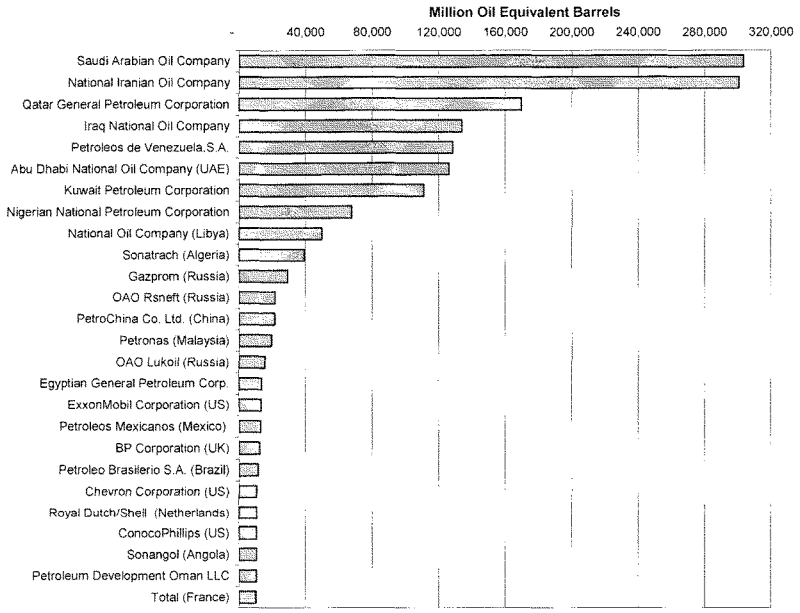
In other words, the Administration Proposal would undermine the U.S.-based oil and gas industry's ability to contribute to the current economic recovery both through its impact on the companies' own operations and through the broader impact on the U.S. producers of goods and services in their domestic and global supply chains.

As important as the potential impact of raising taxes on U.S. oil and gas producers may be in the short run given the current economic outlook, the longer-term consequences are even more troubling. Oil makes up 37 percent of total U.S. energy consumption.[115] The United States has long since passed the point of peak domestic oil production and the overseas

operations of U.S.-based oil companies provide a vital link to a strategically important resource as a result. Limiting their ability to compete in overseas markets by exposing their income to double taxation weakens that vital link.

Today, state-owned national oil companies ("NOCs") account for roughly 90 percent of world oil reserves and 73 percent of global oil production.[116] NOCs now make up the 7 largest oil companies in the world and 25 of the top 50.[117] The accompanying graph illustrates the relative dominance of NOCs, as compared to U.S.-based oil companies, in world energy production.

World's Largest Oil and Gas Companies by Production, 2007



Source: PetroStrategies, Inc.,
http://www.petrostrategies.org/Links/Worlds_Largest_Oil_and_Gas_Companies_Sites.htm.

Plainly, the economic interests of the NOCs are not always compatible with those of the United States. Despite the moderating influences of individual governments, such as Saudi Arabia, the NOC's basic economic interest lies in maximizing the return on the oil they own or expanding their access to additional oil supplies and market share in downstream markets at the expense of U.S.-based oil companies. The proposed changes to the dual capacity taxpayer rules undoubtedly would handicap U.S.-based companies' ability to compete with both the NOCs and

privately held foreign-based companies for the development of oil resources globally. That has significant consequences for the individual companies to be sure. But, the broader effect is to make the United States more dependent on foreign state-owned energy companies for access to a strategic resource vital to the U.S. economy.[118]

Viewed in that light, the Administration Proposal to subject U.S.-based oil companies' income to double taxation raises broader questions about the United States' global economic engagement and its ability to secure its economic, foreign policy and national security interests.

In 2009, world oil production was nearly 31 billion barrels, which amounts to approximately $1.9 trillion in value at the 2009 average price per barrel.[119] Because of their influence on inflation and interest rates, energy prices actually have a broader economic impact than the size of the sector alone would suggest, even as significant as that share is. They play a critical role in macroeconomic policymaking and, ultimately, in the prospects for the sustained economic growth that is the Administration's top priority.

The growth of state-owned energy companies at the expense of American firms raises risks for U.S. well-being that reach beyond the future competitiveness of energy firms like ExxonMobil, Chevron, Conoco-Phillips, Occidental Petroleum, Hess, Marathon, Anadarko and other U.S.-based companies and the access they provide to a vital resource. What the growing influence of the NOCs represents is a far less transparent global economy that puts America's long-term economic interests at risk.[120]

In short, the Administration Proposal would not only weaken the vital link between the U.S. economy and all-important energy resources that the overseas operations of U.S. oil and gas producers provide, but would also reinforce trends that risk creating a far less transparent global economy and one that is far less friendly for all U.S. companies and their workers.

B. National Security and Foreign Policy Concerns

The Administration Proposal may also hold serious implications for U.S. national security and foreign policy interests. Diminishing the ability of U.S. companies to compete in world energy markets would increase U.S. dependence on less reliable sources of supply for the most important strategic commodity in the global economy. In effect, the Administration Proposal would reinforce the state-owned oil companies' role as gatekeepers to this strategic resource.

To understand why, it helps to put U.S. energy consumption in perspective. The United States consumes 25 percent of the oil produced in the world but produces only 10 percent of the total.[121] The United States imports roughly 60 percent of what it consumes.[122] While the United States imports less oil from the Persian Gulf than it does from Canada, the Persian Gulf exporters hold a significant share of the world export market, virtually all of the "swing capacity" in terms of available supply, and the ability to affect prices globally, as a consequence.[123]

The gap between what the United States consumes and what it produces plainly raises U.S. vulnerability to disruptions in supply.[124] Equally important, the concentration of oil production in a politically unstable region of the world raises the risk of disruption and of economic dislocation even if the United States' own imports from the Gulf are not as significant as is commonly thought.[125]

The increasing concentration of world energy markets in a limited number of state-owned companies adds a new dimension to the national security equation. Rather than creating a separate threat, what the concentration of market power in the hands of the NOCs does is amplify the potential vulnerabilities. Ultimately, the threat posed by our dependence on foreign oil arises less from the scarcity of the resource than it does from those who control its access.[126]

That is why the increasing dominance of the global energy sector by state-owned national oil companies is of a greater immediate concern than the absolute limits on global oil resources or their distribution. The fact is that the countries that "control the bulk of global oil reserves limit ownership and often restrict production to state-owned oil companies" and those companies' strategic goals are "driven by political rather than commercial concerns."[127]

To the extent that the Administration Proposal risks subjecting the income of U.S. oil and gas producers to double taxation, it will necessarily diminish their ability to compete in global energy markets. Disabling U.S.-based oil companies from competing in global oil markets and ceding control over access to a strategic resource to entities that are, at best, opaque and, at worst, controlled by governments inimical to U.S. national security interests should give the Administration and Congress pause.

Apart from the concerns the Administration Proposal raises with respect to U.S. economic and national security interests, it also appears to run counter to U.S. foreign policy goals in two important respects. First, contrary to the Administration's stated goal of improving the United States' standing in the world community by pursuing a policy of mutual respect, the Administration's dual capacity proposal disregards the decisions of foreign governments in what can only be described as a core area of their sovereignty—the power to tax income-producing activities within their jurisdiction as they see fit. Second, the Administration Proposal's impact on the competitiveness of U.S.-based oil and gas companies erodes the positive role they play in many developing countries, which would appear to conflict directly with the President's stated goal of making economic development a pillar of U.S. foreign policy.

President Obama came to office promising to change the way the United States deals with foreign nations.[128] Since taking the oath of office, the President has continued to sound that basic theme—a commitment to a foreign policy that respects the sovereignty of other nations and looks first to cooperation, rather than confrontation.[129] He explicitly committed the United States to a foreign policy "respectful of the sovereignty of nations and the rule of law."[130]

The Administration's conduct of U.S. foreign affairs, including its international economic policy, has reflected the President's respect for the sovereignty of other countries and for the norms of international law. The most salient example involves an issue directly within the

purview of the Treasury Department. On April 3, Treasury Secretary Timothy Geithner delayed the issuance of the congressionally mandated report on exchange rate policy in the face of a letter from 130 members of Congress expressly calling on him to find that China was manipulating its currency, the renminbi, by maintaining a fixed exchange rate pegged to the U.S. dollar.[131]

White House officials expressed the Administration's support for Secretary Geithner's decision.[132] President Obama went further in explaining the rationale behind the Administration's decision, emphasizing that, while he believed, as an economic matter, that China should float the renminbi, he nonetheless understood that "China rightly sees the issue of currency as a sovereign issue."[133]

President Obama's concern for China's sovereignty provides a helpful benchmark for examining the Administration's dual capacity proposal. Like China's exchange rate policy, the determinations of foreign governments with respect to their own tax policy indisputably represent what President Obama called "a sovereign issue."[134] Seen in that light, both Secretary Geithner's decision and the President's explanation of the Administration's rationale for acknowledging China's sovereign interests regarding its exchange rate policy suggest that the Treasury should give credence to the tax policy choices of other sovereign governments, particularly where, as discussed above, there are ample economic reasons for those choices.

The Administration Proposal on dual capacity taxpayers does the opposite. The stated rationale for the proposal implies that any fiscal policy decision made by a foreign sovereign within its own prescriptive jurisdiction is suspect if it has any bearing on the U.S. tax liability of a U.S. taxpayer.[135] The claim that income taxes imposed by two allies—the United Kingdom and Qatar—were nothing more than disguised royalties and that the two countries' tax policies were being set for the benefit of U.S.-based oil companies seems particularly at odds with the President's objective of conducting a foreign policy "respectful of the sovereignty of nations and the rule of law."[136] The claim also contrasts with Secretary of State Hillary Clinton's recent praise of Qatar as "a friend and ally of the United States" and declaration that "the partnership between our two countries is a model of the new beginning based on mutual respect and mutual interest that the President called for in Cairo.[137]

It is worth highlighting what the reasoning behind the Administration Proposal implies in that regard. The logic behind the proposal suggests that all of the payments made by U.S.-based oil and gas companies are simply different devices by which the foreign government derives its share of the economic rent made available by the exploitation of a natural resource. If that were the case, the Administration Proposal ultimately reflects an attempt to divert those economic rents to U.S. coffers, rather than benefiting the resource owner.[138] Seen in that light, the gravamen of the dispute is ultimately between the United States' Treasury and the resource-owner over the right to tax the revenue accruing to the development of another nation's natural resources—an action fundamentally at odds with President Obama's pursuit of a foreign policy based on respect for sovereignty and the rule of international law.

Beyond the disrespect it implies for the sovereignty of the foreign government under international law, the Administration Proposal undercuts President Obama's professed goal of making economic development one of the pillars of his foreign policy.[139] In a recent

major speech at the Center for Global Development, Secretary of State Hillary Clinton amplified the President's commitment to development, outlining the Administration's approach in greater detail.[140] The baseline approach would adopt "a model of development based on partnership, not patronage."[141] The goal would be to "work in partnership with developing countries that take the lead in designing and implementing evidence-based strategies with clear goals" —countries that demonstrate "a commitment to development by practicing good governance, rooting out corruption, making their own financial contributions to their own development" and practicing "sound economic policies."[142]

The underlying logic of the Administration's dual capacity proposal is at odds with those professed goals. The proposal would discourage U.S.-based companies from investing in developing countries, depriving both countries of the economic benefits of such a partnership. Further, it would eliminate a key basis, i.e., the presence of well-managed companies subject to the highest legal, financial, and corporate governance standards, for constructively influencing the adoption of similar standards by these nations.

The competitive implications of the Administration Proposal reinforce that conclusion. From a developing country's perspective, the benefit of having U.S.-based oil and gas companies involved in the development of their natural resources is not only the cutting edge technology, economic efficiency and environmentally conscious production processes they bring; it is also the transparency the U.S. companies introduce into the local economy. U.S.-based companies operate under the highest standards in the world in terms of financial reporting, including the internal controls required by the U.S. Foreign Corrupt Practices Act ("FCPA"). The FCPA compels U.S.-based companies to apply the same standards to their local suppliers, thereby significantly narrowing the opportunity for bribery, kickbacks and other forms of corruption throughout a resource-dependent developing economy.

The net effect of undermining the competitiveness of U.S.-based oil and gas companies is to cede the development of energy resources in developing countries to foreign-based oil and gas companies that are only subject to a single level of taxation and to the state-owned firms that already dominate global energy production. The state-owned firms are not obliged to operate under the strict standards required by U.S. law with respect to the transparency of their operations and their corporate governance. Limiting the reach of U.S. standards of transparency and corporate governance by undermining the competitiveness of U.S.-based oil and gas companies will do nothing to contribute to greater openness and transparency in the markets in which they currently operate. The net effect will be to exacerbate, rather than diminish, the enduring "resource curse" that afflicts developing countries that depend heavily on the oil and gas industry to drive economic growth and fund their development strategy.

In short, the underlying logic of the Administration Proposal would appear to undermine the goals of good governance that both President Obama and Secretary Clinton have said should animate the United States' approach to economic development globally.

[1] *See* ALI, Federal Income Tax Project, International Aspects of United States Income Taxation, Proposals on United States Taxation of Foreign Persons and of the Foreign Income of United States Persons 6-7 (1987); *and* Restatement (Third) of the Foreign Relations Law of the United States 413 (1987).

[2] In contrast to many other tax credits, which incentivize certain behavior by reducing the otherwise proper tax liability of the taxpayer who engages in the activity to which the credit relates, the foreign tax credit exists to ensure that taxpayers do not pay more tax than is appropriate—i.e., to ensure that taxpayers are not subject to two levels of tax on the same income. In this sense, the foreign tax credit merely corrects a defect that would otherwise exist in a tax system where a taxpayer's foreign income is subject to both foreign and home-country tax.

[3] *See* Michael J. Graetz and Michael M. O'Hear, *The "Original Intent" of U.S. International Taxation*, 46 Duke L.J. 1021, 1046-47.

[4] *Id.* at 1047.

[5] Revenue Act of 1921, ch. 136, § 222(a)(5), 42 Stat. 227 (1921).

[6] §§ 901 and 902.

[7] § 903.

[8] Treas. Reg. § 1.901-2(a)(3).

[9] Treas. Reg. § 1.903-1(a).

[10] Treas. Reg. § 1.901-2(a)(2)(i).

[11] *Id.*

[12] Treas. Reg. § 1.901-2(a)(2)(ii)(B).

[13] *See, e.g.*, Phillips Petroleum Co. v. Commissioner, 104 T.C. 256 (1995).

[14] Treas. Reg. § 1.901-2(b)(2).

[15] Treas. Reg. § 1.901-2(b)(3).

[16] Treas. Reg. § 1.901-2(b)(4).

[17] Treas. Reg. § 1.903-1(b).

[18] Treas. Reg. § 1.903-1(a).

[19] § 907(b) and (c).

[20] § 907(f).

[21] In general, countries impose this "toll charge" as a rough-justice substitute for disallowing deductions for expenses related to generating foreign income that is exempt from home-country tax. *See* John M. Samuels, *American Tax Isolationism*, 123 Tax Notes 1593, 1594 (June 29, 2009).

[22] Robert Carroll, *The Importance of Tax Deferral and A Lower Tax Rate* (Tax Foundation Special Report No. 174, 2010), *available at* http://www.taxfoundation.org/files/sr174.pdf.

[23] *Id.*

[24] *Id.*

[25] *See. e.g.*, Mihir A. Desai and James R. Hines, *Evaluating International Tax Reform*, 56 Nat'l Tax J. 487 (2003).

[26] *See* Daniel Yergin, The Prize: The Epic Quest for Oil, Money, and Power 427-431 (1992).

[27] *Id.* at 427.

[28] *Id.* at 429.

[29] *Id.*

[30] Joesph Isenbergh, *The Foreign Tax Credit: Royalties, Subsidies, and Creditable Taxes* 39 Tax L. Rev. 227, 249-50 (1984).

[31] Rev. Rul. 76-215, 1976-1 C.B. 194.

[32] *Id.*

[33] Rev. Rul. 78-222, 1978-1 C.B. 232.

[34] Rev. Rul. 78-61, 1978-1 C.B. 221; Rev. Rul. 78-62, 1978-1 C.B. 226; Rev. Rul. 78-63, 1978-1 C.B. 228.

[35] Isenbergh, *supra* note 30, at 261.

[36] Treas. Reg. § 1.901-2(a)(2)(ii)(B).

[37] *Id.*

[38] Treas. Reg. § 1.901-2(a)(2)(ii)(A).

[39] Treas. Reg. § 1.901-2A(a).

[40] *See* Treas. Reg. § 1.901-2A(c)(2)(ii), Ex. 1.

[41] Treas. Reg. § 1.901-2A(c)(2)(i).

[42] 104 T.C. 256 (1995).

[43] 113 T.C. 338 (1999).

[44] Treas. Reg. § 1.901-2A(d)(1).

[45] *Id.*

[46] Treas. Reg. § 1.901-2A(d)(4).

[47] *Id.*

[48] In the safe harbor formula, observe that C = Cr + Ct, where:

Cr = the portion of the qualifying levy payment that is a royalty, and

Ct = the portion of the qualifying levy payment that is a qualifying amount.

Then the safe harbor formula can be re-expressed as follows:

Ct = (A – B – C) * D / (1 – D)

Ct = (A – B – Cr – Ct) * D / (1 – D)

$Ct = (A - B - Cr) * D / (1 - D) - Cr * D / (1 - D)$

$Ct * (1 + D / (1 - D)) = (A - B - Cr) * D / (1 - D)$

$Ct / (1 - D) = (A - B - Cr) * D / (1 - D)$

$Ct = (A - B - Cr) * D$

Thus, the safe harbor formula applies the tax rate D to a tax base that begins with gross receipts and permits deductions for a taxpayer's expenses, including the portion of the qualifying payment that constitutes a royalty.

[49] Treas. Reg. § 1.901-2A(e)(2).

[50] Treas. Reg. § 1.901-2A(e)(3).

[51] Treas. Reg. § 1.901-2A(e)(5).

[52] Treas. Reg. § 1.901-2A(e)(5).

[53] Department of the Treasury, General Explanations of the Administration's Fiscal Year 2011 Revenue Proposals 49 (2010) ("Green Book").

[54] *Id.*

[55] Although *Phillips* was decided under the temporary regulations issued in 1980, those regulations were more stringent than the final regulations issued in 1983. In fact, the Tax Court relied on its reasoning in *Phillips* in analyzing the facts and circumstances in *Exxon*, which was decided under the final regulations.

[56] 104 T.C. at 295.

[57] *Id.*

[58] *Id.*

[59] *See* World Trade Organization, Agreement on Subsidies and Countervailing Measures, Annex I.

[60] Ken Kies, *A Perfect Experiment: 'Deferral' and the U.S. Shipping Industry*, Tax Notes 1151, 1152 (Sept. 24, 2007).

[61] *Id.*

[62] Statement of Michael F. Mundaca, Assistant Secretary (Tax Policy), Department of the Treasury, Before the Committee on Ways and Means (Apr. 14, 2010) ("Mundaca Testimony").

[63] *Id.*

[64] *Id.*

[65] Alexander Kemp summarized the "dual role of government" in his comprehensive survey of the collection of petroleum rents globally, noting that governments "[i]n their capacity as landowners [] attempt to collect economic rents," whereas, "[i]n their capacity as tax-levying authorities they levy taxes on petroleum exploitation and other corporate activities in the knowledge that the measures are not specifically directed at economic rents." Kemp at 86-87. It is precisely the dual role of the state that lies at the root of much of the confusion regarding the distinction between royalties and income taxes. Properly understood, a royalty is simply a factor payment made by the oil and gas producer to the resource owner and readily distinguishable from taxes on that ground. R. Conrad, Z. Shalizi & J. Syme, *Issues in Evaluating Tax and Payment Arrangements for Publicly Owned Minerals* 8-9 (The World Bank, Working Paper No. 496, Aug. 1990).

[66] Royalties as conventionally defined "constituted the reward of the landlord for allowing exploitation of a resource he owns." A. Kemp, *Petroleum Rent Collection Around the World* (1987) ("Kemp") 91. As both Assistant Secretary Mundaca's testimony implies and the definition makes clear, the concept of a royalty relates to the property rights inherent in resource holder's ownership, regardless of whether the resource owner is a private party or a sovereign government.

[67] Like any resource owner, governments "grant exploration, development and production rights in particular areas or blocks by means of concession or contracts, depending on their legal systems." S. Tordo, *Fiscal Systems for Hydrocarbons—Design Issues* 7 (The World Bank, Working Paper No. 123, 2007) ("Tordo").

[68] Put another way, "[o]wners seek compensation for rights awarded to recover and market the resources to which they hold title" and the "[p]ayments made to owners for these rights are often called royalties, to distinguish them from other taxation instruments." G. Watkins, *Atlantic Petroleum Royalties: Fair Deal or Raw Deal* 2 (The Atlantic Institute for Market Studies Oil and Gas, Paper No. 2, June 2001). *See also* Kemp at 11-12.

[69] The terms reflect "the risk of investment activities in a country" at the time the terms of the contract are fixed. Tordo at 8.

[70] Norway's experience with its North Sea oil discoveries is instructive in this regard. At the outset, Norwegian geologists thought it "highly improbable" any oil would be found on the Norwegian continental shelf. R. Hannesson, *Petroleum Economics—Issues and Strategies of Oil and Natural Gas Production* (1998) ("Hannesson") 114. In fact, it required considerable exploration to find anything of value. *Id.* Unsurprisingly, Norway's initial regime "reflected the uncertainty surrounding the prospects on the Norwegian shelf," which led the Norwegian government to fix the initial royalty rate at 10 percent due to its concern that "the Norwegian shelf would not be attractive enough for foreign investors." *Id.*

[71] Because royalties must be paid regardless of the profitability of a particular project, they can constitute a major deterrent to investment; equally, by "increasing the economic cut-off rate, royalties reduce the economic life of a project." *Id.* Neither outcome is in the government owner's interest.

[72] As analysis done for the International Monetary Fund puts it, "[s]ince the investment may not take place in the absence of the fiscal incentives, the government would be better off collecting some revenue under a more lenient regime, rather than none under a tax regime that may discourage investment." T. Baunsgaard, *A Primer on Mineral Taxation*, International Monetary Fund (2001) ("Baunsgaard") 1.

[73] In the ordinary course of oil and gas leasing arrangements, the lessee "obtains the right to enter the landowner's property to search for, develop, produce and take title to oil and gas," and the lessor is "compensated with a royalty on oil and gas produced from the land." D. Pierce, *The Missing Link in Royalty Analysis: An Essay on the Resolution of Royalty Disputes*, 5 Texas Wesleyan L. Rev. (1999) 185-192, 185. The lessor forfeits its rights to the oil with the passage of title, leaving the royalty as "the primary source of landowner compensation." *Id.* For the private land owner, the only means of increasing its return on the production of oil and gas at that point is through an increase in the volume of oil produced or an increase in the value of the production. *Id.* Both of those factors lie outside the control of the lessor. *Id.* In other words, any income the government derives beyond what it receives in terms of royalties for the access to the resource emanates from its taxing power.

[75] As an emolument of state sovereignty, the power to tax "in its very nature acknowledges no limits and may be carried to any extent which the government may find expedient." R. Goode, *Government Finance in Developing Countries* (1984) 5.

[76] The dynamic that limited the government's ability as a resource owner to demand a greater return in the form of royalties wanes as "the bargaining power and relative strength of the investors' and the host government's positions shift during the cycle of petroleum exploration and development." Tordo at 4; *see also* S. Brinsmead, Oil Concession Contracts and the Problem of Hold-Up (July 2007) ("Lock-in can expose international oil companies to 'hold-up', where the host State attempts to renegotiate to appropriate more of the returns than was previously agreed especially after significant oil reserves have been discovered.").

[77] *Id.* (noting that "geological risk begins to diminish after a discovery" and the uncertainty that limited the government's ability to impose higher royalties at the point of initial sale of the resource dissipates).

[78] *Id.* (highlighting the fact that, "[b]y the time production commences, capital investment is a sunk cost, and facilities installed in foreign countries represent a source of vulnerability to the investor"); *see also* W. Hogan, F. Sturzenegger & L. Tai, *Contracts in natural resources: a primer* (Oct. 6, 2007) ("Hogan, et al.") 2 ("The investment is sunk because it is specific to each field or mine. Compared to many other industries, extractive industry ventures are extremely site-specific. Most of the capital used for one project cannot easily be shifted to another one, nor can it be used for other purposes than for resource recovery.")

[79] Again, the Norwegian example cited above is instructive. Once it became "clear that there were profitable finds on the Norwegian shelf," the Norwegian Ministry of Petroleum and Energy raised the royalty to 16 percent on new licences. Hannesson at 114. But, the Norwegian Parliament also responded to the increased profitability of oil and gas production from existing license in the wake of the first oil embargo imposed by members of the Organization of Petroleum Exporting Countries ("OPEC") in 1973 by introducing a special tax on income. *Id.* That income tax was raised in successive stages from 25 percent to 35 percent while global petroleum prices remained at high levels for the ensuing decade. *Id.*

[80] Tordo at 13-15 (stressing the need for flexibility and incorporating fiscal instruments that "permit[ ] capturing a greater share of the revenue during periods of high profits," while "avoid[ing] the introduction of distorting effects," all of which points in the direction of taxes imposed on earnings, rather than an over-reliance on royalties).

[81] H. Rosen & T. Gayer, *Public Finance*, 8th ed. (2008) ("Rosen & Gayer") 35.

[82] *Id.* at 331.

[83] W. Gentry, *Optimal Taxation, in* The Encyclopedia of Taxation and Tax Policy, Urban Institute (J. Cordes, R. Ebel, & J. Gravelle eds., 1999) ("Gentry") 307; *see also* H. Lind & R. Granqvist, *A Note on the Concept of Excess Burden*, 40 Econ. Analysis & Policy 63 (Mar. 2010) ("A common view among economists is that the marginal cost of taxes is high, because taxes have side effects. Taxes often entail "excess burden", or "deadweight loss.").

[84] That logic applies with particular force in the case of government taxation related to oil and gas production within its territory. As one experienced industry analyst has put it, the "further downstream from gross revenues a government levies taxes, the more progressive the system becomes." D. Johnston, *International Petroleum Fiscal Systems and Production Sharing Contracts* (1994) ("Johnston") 8.

[85] Rosen & Gayer at 354-57; *see also* Gentry at 307.

[86] *Id.*

[87] *Id.*

[88] E. Sunley, T. Baunsgaard, & D. Simard, *Revenue from the Oil and Gas Sector: Issues and Country Experience, in* Fiscal Policy Formulation and Implementation in Oil-Producing Countries, International Monetary Fund (J. Davis, R. Ossowski, & A. Fedelino eds., 2003) ("Sunley, et al.") 170-171.

[89] J. Davis, R. Ossowski, & A. Fedelino, *Fiscal Challenges in Oil-Producing Countries: An Overview, in Fiscal Policy Formulation and Implementation in Oil-Producing Countries*, International Monetary Fund (J. Davis, R. Ossowski, & A. Fedelino eds., 2003) 1-2.

[90] Developing countries simply may not have a substantial local tax base from which large amounts of revenue can be extracted at a reasonable administrative cost. Personal income taxes are difficult to administer and collect in developed countries due to the relative size of the informal economy and the agricultural sector, which is regarded as difficult to tax. *Id.* at 82. In practice, the base of such taxes may consist primarily of the wages of

public sector employees. R. Avi-Yohan & Y. Margalioth, *Taxation in Developing Countries: Some Recent Support and Challenges to the Conventional View*, 27 Va. Tax Rev. 1,2 (2007). Moreover, because income tax collection may depend on wage withholding, difficulties arise even in collecting from the wealthy, whose income is not typically paid in the form of wages. R.M. Bird & E.M. Zolt, *Tax Policy in Emerging Countries*, 26 Environment and Planning 73, 81 (2008).

[91] Bird & Zolt, *supra* note 90, at 76; *see also* V. Tanzi & H. Zee, *Tax Policy for Emerging Markets: Developing Countries* 3-4 (International Monetary Fund, Working Paper No. 00/35, 2000) ("Tanzi & Zee") ("In part as a consequence of the structure of the economy, and in part as a result of low literacy and low human capital, it is difficult to combine all the ingredients that make for a good tax administration.").

[92] A necessary element for taxing effectively is a tax administration with qualified officials and information collection and storage systems—resources that many developing countries have struggled to acquire. Bird & Zolt, *supra* note 90, at 83; Tanzi & Zee, *supra* note 90, at 3. An even bigger potential challenge in many developing countries is preserving tax administrators and tax administration from corruption, which can erode citizens' confidence in the tax system and willingness to voluntarily comply with collection efforts..

[93] As leading economists on the International Monetary Fund's tax staff explain, "tax policy is often the art of the possible rather than the pursuit of the optimal." Tanzi & Zee, *supra* note 90, at 4. That often leads countries to "develop tax systems that allow them to exploit whatever options they have rather than develop modern and efficient tax systems." *Id.*

[94] As the World Bank's former chief economist has explained, "[l]arge corporations represent an attractive target for taxation" because "[t]heir profits are often substantial and they are required to comply with statutory accounting requirements from which the majority of small farmers and traders are exempt." R. Burgess & N. Stern, *Taxation and Development*, 31 J. of Econ. Literature, No. 2 (June 1993) 762-830, 777.

[95] *See, e.g.*, Isenbergh, *supra* note 30, at 248.

[96] From the oil-producing developing country's perspective, allocating a large share of a developing country's tax burden to multinational companies that exploit natural resources may yield benefits beyond the dollar value of the taxes paid by those companies. The taxes paid by resource-exploiting firms help legitimize and gain public acceptance for the relationship between the host government and the foreign enterprise and for the presence of the foreign enterprise in the country. Given the widely acknowledged value associated with natural resource exploitation, it is important that the public recognize that the foreign company is not only paying for the right to develop and utilize the country's natural resources but is also paying a share of its profits in the form of income taxes (explaining the shift among developing countries from a reliance on royalties toward income taxes). A widespread sentiment in favor of a progressive tax system is further support for subjecting resource-exploiting companies to relatively high tax rates. In developing countries, heavily taxing profitable foreign companies—particularly those companies that are viewed as profiting by exploiting the country's natural resources—may be a political precondition for taxing anyone else. It is understandable that a developing country's citizens might not be satisfied that a foreign oil company merely pays a royalty for the use of the resources it exploits, and even taxing such companies at the rates local companies can afford may be viewed as inadequate.

[97] 104 T.C. at 315-16.

[98] *Id.* at 316.

[99] The first involves administrative costs that must be borne by both the government and the taxpayer.99 The second flows from the added complexity of an income tax system, combined with the limited institutional resources that many developing countries have to administer an income tax system.99 That combination raises information barriers and uncertainty—implicit economic costs that ultimately reduce the earnings of taxpayers, the revenue the government collects, and, ultimately, the growth and dynamism of an economy.

[100] The U.S. Mineral Management Service ("MMS") auctions the right to explore and drill for oil and gas on federal lands on the outer continental shelf ("OCS"), which accounts for roughly one-third of all U.S.

production. P. Haile, K. Hendricks, & R. Porter, Recent U.S. Offshore Oil and Gas Lease Bidding: A Progress Report (29) 1 ("Recent U.S. Offshore Oil and Gas Leases"). The winning bidder pays a "bonus" on the date of sale and takes the lease subject to the payment of royalties on revenues it earns from post-sale production. *Id.*

[101] Omnibus Trade and Competitiveness Act of 1988, Pub. L. No. 100-418, 102 Stat. 1107 (1988).

[102] American Jobs Creation Act of 2004, Pub. L. No. 108-357, 118 Stat. 1421 (2004).

[103] Remarks of Lawrence H. Summers, Director of the National Economic Council, Responding to an Historic Economic Crisis: The Obama Program, Brookings Institution, Washington, D.C. (Mar. 13, 2009) ("Summers Remarks").

[104] Bureau of Economic Analysis, Gross Output by Industry (May 25, 2010), *available at* http://bea.gov/industry. The $323 billion estimate includes both the direct value added, and intermediate goods used, by the oil and gas industry.

[105] Bureau of Labor Statistics, May 2009 National Industry-Specific Occupational Employment and Wage Estimates, *available at* http://www.bls.gov/oes/current/naics4_211100.htm.

[106] PriceWaterhouseCoopers, The Economic Impacts of the Oil and Natural Gas Industry on the U.S. Economy: Employment, Labor Income and Value Added (September 8, 2009).

[107] *See, e.g.*, Joint Rep. No. 105-393 (1997) (articulating the basic proposition that raising taxes reduces economic activity); *see further* C. Romer & D. Romer, *The Macroeconomic Effects of Tax Changes: Estimates Based on a New Measure of Fiscal Shocks* (2007) ("Romer & Romer") 41 (suggesting that a "tax increase of one percent of GDP lowers real GDP by roughly three percent").

[108] Innovative work by Dr. Summers has highlighted the positive correlation between investments in capital equipment and economic growth. *See* J. B. De Long & L. Summers, *Equipment Investment and Economic Growth, The Quarterly Journal of Economics* (May 1991) (concluding that "each extra percent of GDP invested in equipment is associated with an increase in GDP growth of one third of a percentage point per year" and suggesting that the association is causal—i.e., higher capital equipment investment stimulates stronger economic growth). The converse is also true. Recent studies of the impact of "higher effective corporate income taxes" suggest that it is "associated with lower investment in manufacturing," which as Dr. Summers' work suggests, would yield significantly lower economic growth overall. *See, e.g.*, S. Djankov, T. Ganser, C. McLiesh, R. Ramalho, & A. Shleifer, *The Effect of Corporate Taxes on Investment and Entrepreneurship* (Mar. 2009).

[109] *See, e.g.*, Y. Lee & R. Gordon, *Tax Structure and Economic Growth*, J. of Public Econ. 89, 1027 (July 15, 2004) 1 (indicating that "increases in corporate tax rates lead to lower future growth rates within countries," whereas "a cut in the corporate tax rate by 10 percentage points will raise the annual growth rate by one to two percentage points"); J. Cullen & R. Gordon, *Taxes and Entrepreneurial Activity: Theory and Evidence for the U.S.* 36 (Nat'l Bureau of Econ. Research, Working Paper No. 9015, June 2002) (highlighting the particularly pronounced impact tax policy, whether increases or cuts, has on entrepreneurial activity and, as a consequence, on economic growth).

[110] President Barack Obama, State of the Union Address (January 27, 2010).

[111] *Id.*

[112] Bureau of Economic Analysis, U.S. International Transactions Accounts Data, *available at* http://www.bea.gov/international/bp_web/simple.cfm?anon=509047&table_id=20&area_id=3.

[113] G. Aldonas, Globalization and the American Worker – Negotiating a New Social Contract (2009) 63-64.

[114] *Id.*

[115] U.S. Energy Information Administration, Monthly Energy Review, *available at* http://www.eia.doe.gov/emeu/mer/overview.html.

[116] D. McPherson, *National Oil Companies: Evolution, Issues, Outlook, in* Fiscal Policy Formulation and Implementation in Oil-Producing Countries (J. Davis, R. Ossowski, and A. Fedelino, eds., 2003), International Monetary Fund ("McPherson") 186.

[117] C. Hoyos, *A New Era of Nationalism—The New Seven Sisters in Energy*, Financial Times, June 19, 2007; *see also* McPherson at 186.

[118] Those risks to U.S. interests are simply a function of the NOCs' economic objectives. It is also true, however, that the NOCs are owned by governments that are often, at best, neutral toward the United States and its economic, national security and foreign policy interests. At worst, some NOCs are owned by states that view their interests as diametrically opposed to those of the United States and its citizens. (e.g., Islamic Republic of Iran; Venezuela, etc.).

[119] *See* U.S. Energy Information Administration, International Energy Statistics, *available at* http://tonto.eia.doe.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=5&pid=53&aid=1; U.S. Energy Information Administration, Short-Term Energy Outlook, *available at* http://www.eia.doe.gov/emeu/steo/pub/.

[120] Given the importance that transparency plays in global energy markets and more broadly in the global economy, the United States' interest in having American firms subject to U.S. legal and accounting standards actively engaged in global energy markets would seem obvious. The opacity of state-owned firms undercuts the transparent functioning of the most important of global markets. According to research done recently for the IMF, weak governance has seriously undermined the performance of NOCs as well as contributing to a culture of corruption. McPherson at 190. Few of the NOCs publish accounts consistent with internationally accepted accounting standards; almost none are independently audited. *Id.* Having U.S. companies subject to U.S. legal and accounting standards actively engaged in global energy markets ensures the transparency of those markets. By exposing U.S.-based oil companies' income to double taxation, the Administration Proposal undercuts their competitiveness and, as a consequence, their ability to drive transparency in global energy markets increasingly dominated by state-owned national oil companies. Ceding a larger share of the global energy market to state-owned energy companies would erode the efficiency of global energy markets, making all global markets less efficient.

[121] K. Crane, et al., Imported Oil and U.S. National Security (RAND Corporation 2009) ("Rand") 9.

[122] *Id.* at 6. The volume of U.S. imports of oil, gross or net, is the most commonly cited measurement of U.S. energy dependence. The U.S. Energy Information Administration has regularly published a measure of oil import dependence since 1979. *See. e.g.*, Energy Information Administration, Monthly Energy Review (April 2010). That number has risen steadily from 1967 onward.

[123] *See. e.g.*, General Accounting Office, Energy Security: Evaluating U.S. Vulnerability to Oil Supply Disruptions and Options for Mitigating Their Effects (Dec. 1996), Table V.1: Concentration of World Oil Production at 103 (highlighting the concentration of oil production in the Persian Gulf). The Persian Gulf percentage of world oil production, which declined from 1976 to 1985, has been generally rising since then and is expected to continue rising for the foreseeable future. *Id.*

[124] The recent Rand Corporation study of U.S. dependence on oil imports identified a number of potential threats that flow from our vulnerability to disruptions in supply, including, *inter alia*, (1) potential supply disruptions that could drive world oil prices higher and result in a significant dislocation of U.S. economic activity, precipitating an economic recession; (2) use of major oil exporters' control over swing capacity to "manipulate exports to influence other countries in ways inimical to U.S. interests"; (3) increasing competition for oil supplies that could "exacerbate international tensions or disrupt international oil markets"; and (4) use of the revenues that higher oil prices generate to "thwart U.S. policy goals" or finance a direct security threat to the United States (e.g., through support for terrorist groups). Rand, *supra* note 121, at 2.

[125] That was, in fact, the conclusion of the U.S. Department of Commerce in response to a petition by the Independent Petroleum Association of America under section 232 of the Trade Act of 1974. U.S. Department of Commerce, The Effect on the National Security of Imports of Crude Oil and Refined Petroleum Products, An Investigation Conducted Under Section 232 of the Trade Expansion Act of 1962, as Amended (Nov. 1999). The Department concluded that the nation's growing reliance on low-cost crude from unstable foreign sources threatens national security by increasing U.S. economic vulnerability to oil supply disruptions. *Id.*

[126] L. Magueri, The Age of Oil (2006) 202-206 (emphasizing that the scarcity of energy, like any resource, ultimately depends on a series of political and economic choices, which boils down to a question of who decides issues of access).

[127] Rand, *supra* note 121, at 16.

[128] In his inaugural address, the President committed himself to a foreign policy informed by "the tempering qualities of humility and restraint"—"one based on mutual interest and mutual respect." President Barack Obama, Inaugural Address (Jan. 21, 2009). The President stressed that our power "doesn't entitle us to do as we please," but instead called on America to lead by "the force of our example." *Id.*

[129] In his well-received speech at Cairo University this past year, for example, the President indicated that he sought "a new beginning between the United States and Muslims around the world, one based on mutual interest and mutual respect." President Barack Obama, Remarks by the President on a New Beginning, Cairo Univ., Cairo, Egypt (June 4, 2009).

[130] *Id.*

[131] Statement of Treasury Secretary Geithner On the Report to Congress on International Economic and Exchange Rate Policies, Department of Treasury Press Release (April 3, 2010). The report would otherwise have been due on April 15. *Id.* Under section 3004(b) of the Omnibus Trade and Competitiveness Act of 1988, the Secretary of the Treasury must analyze the exchange rate policies of foreign countries and determine whether such countries are manipulating their currencies to gain an unfair trade advantage. Pub. L. No. 100-418, § 3004(b), 102 Stat. 1372, *et seq.*, 22 U.S.C. § 5304(b). When the Secretary finds a country has manipulated currency, the Act requires Treasury to initiate negotiations with the country to ensure a foreign currency exchange rate adjustment that would eliminate the unfair trade advantage conferred. *Id.* Section 3005 of the Act obliges the Secretary to report to Congress on his findings with respect to the international economic policies of our trading partners, including their exchange rate policies. Pub. L. No. 100-418, § 3005, 102 Stat. 1372, *et seq.*, 22 U.S.C. § 5305. The 130-member letter to Secretary Geithner expressly asked him to find that China had engaged in currency manipulation consistent with the terms of the 1988 Act. *See, e.g.*, *Congress letter urges action on renminbi*, The Financial Times, Mar. 15, 2010, *available at* http://www.ft.com/cms/s/0/af1268ca-304a-11df-8734-00144feabdc0.html.

[132] The Secretary's rationale for ignoring the legislatively imposed deadline for the report was consistent with President Obama's cooperative approach to foreign policy—it highlighted a series of upcoming meetings over the course of the next three months that would be "critical to bringing about policies that will help create a stronger, more sustainable, and more balanced global economy." *Id.* The Secretary concluded that those cooperative fora would provide "the best avenue for advancing U.S. interests at this time." *Id.* NEC Director Lawrence Summers affirmed Secretary Geithner's judgment, indicating that "it was the right one," and underscoring that economic issues, rather than operating in a separate realm, "have to be at the center and will be at the center of our diplomacy." Summers: China Currency Report Not Tied to Iran, ABC News (Apr. 4, 2010), http://blogs.abcnews.com/politicalpunch/2010/04/summers-china-currency-report-not-tied-to-iran-.html; *see also* Briefing by White House Press Secretary Robert Gibbs (Apr. 6, 2010) (suggesting that "the best thing to do is let Secretary Geithner and others work through this process in these upcoming meetings and evaluate where we are").

[133] *Chinese president maintains that outsiders don't influence currency policy*, The Washington Post, Apr. 13, 2010, *available at* http://www.washingtonpost.com/wp-dyn/content/article/2010/04/13/AR2010041304075.html.

[134] The power to tax is one of the basic emoluments of state sovereignty under international law. While there are significant questions under international law about the legitimate reach of a state's prescriptive jurisdiction (largely driven by the extraterritorial reach of U.S. law), there is no dispute regarding a sovereign's power to tax activities or the income derived from them within its own territory. *See, e.g.*, D. Ring, *What's at Stake in the Sovereignty Debate?: International Tax and the Nation-State*, 49 Vir. J. Int'l Law 155-233, 157 (highlighting the "particular strength to the claims for tax sovereignty and the assertion of tax's special status" as a core element of state sovereignty under international law).

[135] Implicitly, the Administration's proposal appears to stand for the proposition that a foreign government's power to tax income derived from operations in its own territory is somehow limited by the effect those sovereign choices might have under U.S. law. The Administration seems to suggest that a determination by the United Kingdom or Qatar to tax one type of activity or business within their jurisdiction at a higher rate than others is an "illegitimate" use of their taxing powers because of its consequences for U.S.-based companies under U.S. tax law. That assumption conflicts directly with the applicable norms of international law — norms that were, in the main, articulated by the United States in its own economic interest.

[136] Mundaca Testimony, *supra* note 62. While Assistant Secretary Mundaca's testimony does not single out other countries by name, it is clear that the application of the Administration's proposal and the potential affront to other sovereign states is far broader than just the United Kingdom and Qatar alone.

[137] The Hon. Hillary Rodham Clinton, Secretary of State, Remarks with Qatar Prime Minister Sheikh Hamad Bin Jassim Bin Jabr Al-Thani After Their Meeting (Jan. 4, 2010).

[138] The United States' diversion of economic rents was, in fact, one of the main reasons for Saudi Arabia's initial imposition of an income tax. In the early 1950s, Saudi oil was sold subject to a long-term arrangement for a fixed royalty. See D. Yergin, The Prize – The Epic Quest for Oil, Money, and Power (1991) 427-431. Saudi Arabia also faced a competitive environment that limited its ability to raise its royalty even if it chose to abrogate the existing agreement. *Id.* The Saudis nonetheless needed to raise additional revenue to fund their economic development objectives. *Id.* They recognized that the existing fiscal arrangements under which Saudi Arabia charged a royalty as a resource owner, but did not impose a tax on the economic activity associated with the development of the resource, meant that the resulting income was subject to U.S. tax alone by virtue of the U.S. system of worldwide taxation. *Id.* What that implies, under the logic of the Administration Proposal, is that the U.S. system of worldwide taxation ensured that the United States, rather than the resource owner, Saudi Arabia, received the vast majority of the economic rents flowing from the development of Saudi oil.

[139] President Obama signaled his intent to make economic development—the effort to encourage sustainable economic growth benefiting the poorest nations of the world— a pillar of American foreign policy in his inaugural address. President Barack Obama, Inaugural Address (Jan. 21, 2009). The President's commitment to economic development has manifested itself in a variety of ways. President Obama has also used his various summit meetings with other heads of state during his first year in office to advance aspects of a new development agenda. .

[140] The Hon. Hillary Rodham Clinton, Secretary of State, Remarks on Development in the 21st Century, Center for Global Development (Jan. 6, 2010). According to Secretary Clinton, the Administration views development as "a strategic, economic, and moral imperative —as central to advancing American interests and solving global problems as diplomacy and defense." *Id.* Arguing that the current challenge confronting American foreign policy "demands a new approach" to development, Secretary Clinton said that the Administration was "working to elevate development and integrate it more closely with defense and diplomacy in the field," with the goal of making development a "central pillar of all that we do in our foreign policy." *Id.*

[141] *Id.*

[142] Secretary Clinton said that the Administration's approach would "highlight[] the difference between aid and investment.". She stated that the Administration viewed aid as "a vital tool, especially as an emergency response," but that the goal of the Administration's development policy was, "through strategic investments . . . to put ourselves out of the aid business except for emergencies." At a practical level, the Secretary indicated that

the Administration would focus on strategic sectors, targeting "investment and develop technical excellence in a few key areas, like health, agriculture, security, education, energy, and local governance." The Secretary also indicated that the Administration's goal was "to rebuild USAID into the world's premier development agency."

Statement of the Residential Energy Efficient Tax Credit Industry Coalition

before the

Senate Committee on Finance

Committee on Finance
United States Senate

on

"Tax Reform: Impact on U.S. Energy Policy"

June 12, 2012

2025 M St, NW, Suite 800 | Washington, DC 20036 | Phone: 202-367-1280

As the trade associations representing manufacturers, distributors, retailers, remodelers, installers and contractors bringing energy-efficient products to homeowners, we would like to thank Chairman Baucus, Ranking Member Hatch and the members of the Committee for the opportunity to provide this statement regarding our nation's energy tax policy and the vital role it plays increasing energy efficiency and job creation. We are particularly appreciative of the Committee's interest in examining the goals and implementation of energy tax incentives. Our testimony will comment in general on the goals of energy efficiency in buildings and specifically on the importance of the 25C tax credit to attaining the dual objectives of saving energy and spurring investment in U.S. job creation.

Meeting Our Nation's Energy Goals Through Energy Efficiency

While much has been said and written about reducing our nation's reliance on foreign oil and investing in renewable energy technologies—both important goals—not as much attention has been paid to the dramatic impact that improving the energy efficiency of existing buildings could have on reducing energy consumption, and, as a result, reducing our dependence on foreign oil and other fossil fuels.

40 percent of all energy consumed in the U.S. is consumed by residential and commercial buildings, while U.S. buildings alone accounted for 8 percent of global energy consumption in 2008.[1] Any national energy tax policy needs to make replacing these inefficient windows and doors a major component if we are to make a dent in the overall efficiency of our nation's residential and commercial building stock.

The 25C Residential Energy Efficient Tax Credit

Enacted as part of the Energy Policy Act of 2005, the original purpose of the Residential Energy Efficient Tax Credit (IRC 25C) was to save energy. However, in recent years, the 25C incentives have achieved two compelling national goals:

- Saving energy by making energy efficient home improvements more affordable for a wide spectrum of the American public; and
- Saving thousands of U.S. manufacturing and construction jobs.

We believe that a properly focused residential tax credit can efficiently and effectively spur private investment in energy saving measures. While niche populations utilize other tax credits, the 25C tax credit is broad-based. By all accounts, it was hugely popular with the American homeowner, particularly the middle class, in 2009 and 2010. Internal Revenue Service (IRS) preliminary data for 2009 shows that taxpayers with adjusted gross income of under $100,000 claimed two-thirds of the credit.[2]

Also known as the Nonbusiness Energy Property Credit, 25C provides a credit to homeowners who make qualified energy efficiency improvements, including windows, doors and skylights, to an existing residence. The residential energy efficiency tax credit was drastically reduced at the end of 2010[3] and expired at the end of 2011. Our member companies actively promoted and their customers benefited from the higher tax credit levels that were in place from 2009 to 2010,

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[1] 2010 Building Energy Data Book, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy,
[2] Individual Tax Returns Preliminary Data, 2009, Statistics of Income Bulletin, Winter 2011. Michael Parrisi
[3] Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010, Sec. 710, Credit for Nonbusiness Energy Property.

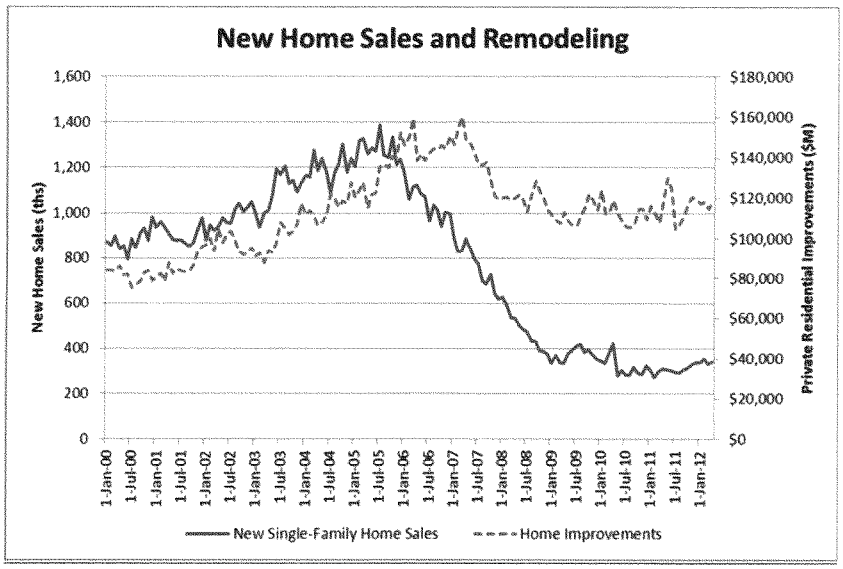
sustaining jobs in our industries during the otherwise dire new home and retrofit construction downturn.

As most are aware, the nation's housing industry is mired in a slump. This has resulted in over a one-third decline in employment in our industry since 2005.[4] Further, private residential investment remains near record low levels at only 2.6 percent of gross domestic product for the first quarter of 2012—in comparison to its historic average of approximately 5 percent.[5]

As a result, there has been a demonstrable shift in the last few years to the remodeling and retrofit market, spurred in part by the 25C tax credit. The 25C tax credit in effect for 2009-2010 was tremendously successful in supporting the associated industry and its workers during the worst housing downturn since World War II. The tax credit can be directly tied in our industry to the preservation and creation of American jobs and keeping plants and production lines open.

This shift to the remodeling and retrofit market is evident in comparison to new home sales over the past five years. While total remodeling activity declined somewhat, it certainly weathered the economic downturn much better than new home construction, in large part due to the 25C energy tax incentives Congress enacted in 2009.

The following chart plots new home sales (left axis) and private residential improvements (right axis). The data indicate that remodeling expenditures fared better over the 2008 through 2011 period than new home sales. The tax credit program provided a floor on remodeling activity, which has declined only 26 percent since its peak compared to 75 percent for new home sales.



[4] U.S. Bureau of Labor Statistics data
[5] U.S. Bureau of Economic Analysis data

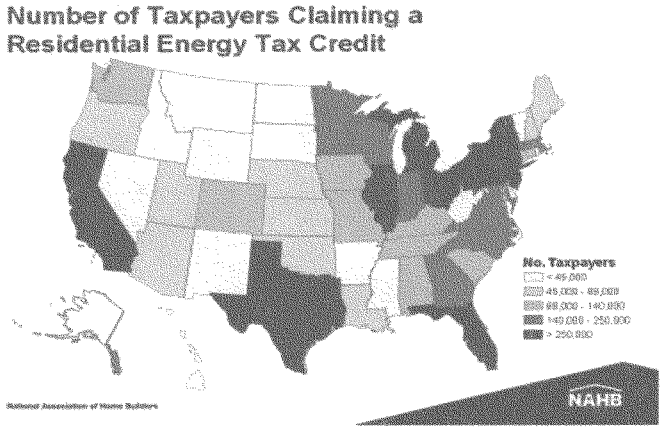
Economic Impact of the Residential Energy Efficient Tax Credit

Using the 2009 IRS tax data, the net economic impacts of the 25C tax credit programs from a remodeling perspective are significant (setting aside the long-run energy efficiency benefits for homeowners).

- For tax year 2009, IRS data indicates $25.1 billion of remodeling expenses in connection with the section 25C tax credit
- The National Association of Home Builders (NAHB) estimates that this level of remodeling activity was associated with 278,610 full-time jobs
  - 135,540 of these jobs were in the construction and remodeling sectors
- Homeowners received a tax benefit of $5.17 billion from the 25C credit
- 93 percent of taxpayers claiming the energy credit had adjusted gross income of $200,000 or less

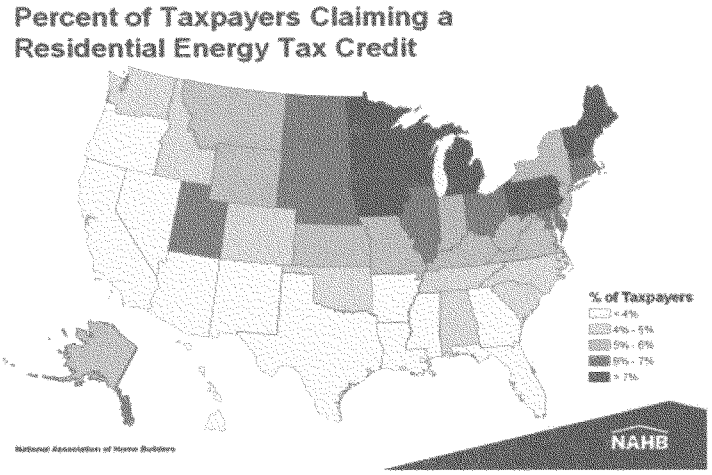
The 25C credit is claimed on the same tax form (5695) as a similar remodeling credit, the section 25D credit, which provides a nonrefundable 30 percent tax credit to consumers for the purchase and installation of certain power production property for a home. Typical uses include solar, geothermal, fuel cells, and small wind energy. The credit is uncapped, meaning that all qualified expenses may be claimed. Labor costs are eligible, and unlike section 25C, the section 25D credit can be claimed against the AMT.[6]

The map below tracks the number of taxpayers in each state that claimed either or both the 25C and 25D tax credit, although NAHB estimates that nearly 90 percent of claims were 25C related. Intuitively, larger states in terms of population had larger numbers of taxpayers claiming the credits.

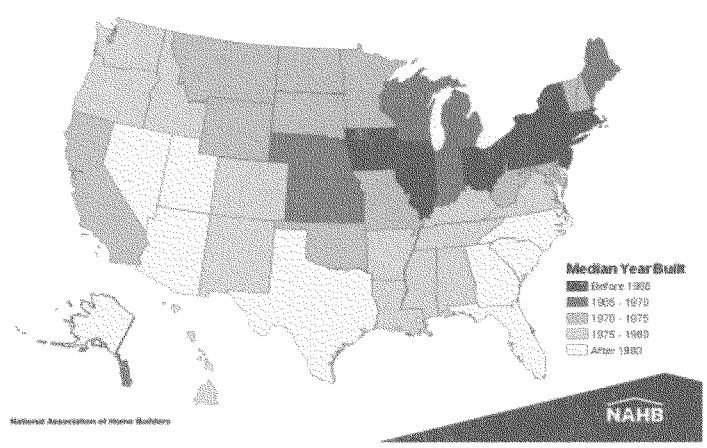


[6] Although the tax code does not allow taxpayers to claim section the 25C credit against the AMT, the annual AMT "patch" typically allows taxpayers to claim section 25C and other personal, nonrefundable tax credits against AMT. The simple, straightforward approach used in section 25D offers a model for improving the section 25C tax credit. A 30% tax credit that includes labor costs and is automatically AMT-preferred is simple, straightforward and effective.

In the next map, a slightly different picture emerges. This map presents the percentage of taxpayers in each state who claimed either or both the 25C and 25D tax credits in 2009. A clear concentration of tax credit use can be seen for states in the Northeast and upper Midwest. Why? There are two leading explanations. First, homeowners in states in cold weather climates have more to gain from energy-efficient improvements in terms of reduced utility bills. However, there is no reason to believe that warm weather homes could not also benefit from energy-efficient improvements.



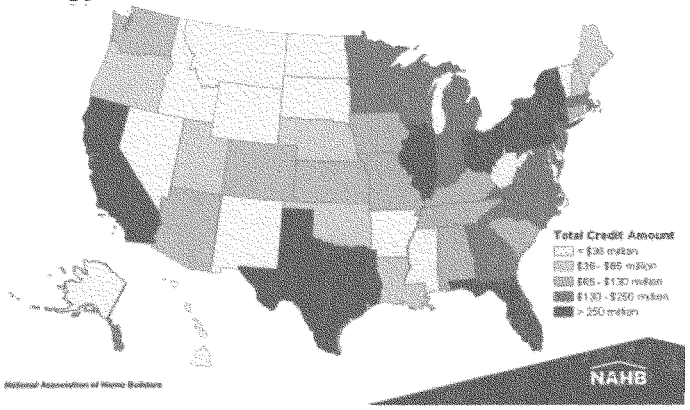
Thus, the second explanation, and the stronger one, is that the states with relatively more common use of the energy tax credits also contain older homes. The following map details the median year of construction for housing units in each state, and there is indeed a rough correlation between tax credit use and older housing with concentrations of both in many northern states.



A homeowner with a 50-year-old home is much more likely to improve their residence than a homeowner who has purchased a newly constructed home, with new construction more common in the southern part of the nation.

The last map tracks the total amount of the tax credits claimed. Overall, in 2009 taxpayers claimed nearly $5.9 billion in 25C and 25D tax credits. For the two tax credits combined, ***93 percent of tax credit claims were made by taxpayers who had an adjusted gross income of no more than $200,000***, which is indicative of a middle class tax program.

Total Amount of Residential Energy Tax Credit Claimed



With respect to the 25C credit for energy-efficient remodeling of existing homes, the IRS data indicates a total of $25.1 billion of qualified expenditures in 2009.

Because the tax credit in 2009 was limited to $1,500 per taxpayer, not all of this activity was generated by the credit. In fact, according to the IRS data, just a little more than 71 percent of these costs ($5.404 billion versus potential $7.539 billion) were allowed in the 25C calculation due to the $1,500 limit. Moreover, due to other tax rules, only $5.172 billion of the $5.404 billion were allowed as realized 25C tax credits.

The first portion of the 25C credit usage is related to energy-efficient building envelope improvements, with 13 percent of the 25C claims associated with insulation, 34 percent with windows and skylights, 9 percent with doors and another 9 percent with qualified roofing materials. The second part of the credit dealt with energy-saving appliance installation, with 16 percent of the total 25C claims connected to qualified heat pumps, air conditioners, water heaters and biomass-burning stoves and fireplace inserts; 17 percent with qualified natural gas, propane, oil furnaces or hot water boilers; 3 percent with advanced main air circulating fans used with a natural gas, propane or oil furnace.

An economic impact model has been developed by NAHB that enables estimating total employment and economic income impacts from home building and remodeling.[7] The model

[7] http://www.nahb.org/generic.aspx?sectionID=734&genericContentID=103543&channelID=311

uses Bureau of Economic Analysis (BEA) data and BEA input-output tables to generate economic impacts by sector. The following table presents the impacts that result from $100,000 of remodeling activity.

Income and Employment Impacts of Remodeling on the U.S. Economy

	Number of Full-time Jobs	Wages and Salaries	Proprietors' Income	Corporate Profits	Total Income
$100,000 Spent on Remodeling					
All industries	**1.11**	**$52,709**	**$13,810**	**$16,147**	**$82,667**
Construction	0.54	$25,573	$6,601	$4,232	$36,406
Manufacturing	0.18	$8,136	$824	$4,529	$13,489
Wholesale and retail, Transportation and warehousing	0.16	$6,432	$849	$2,307	$9,588
Finance and insurance	0.02	$1,487	$71	$1,459	$3,017
Real estate and rental and leasing	0.01	$315	$1,652	$758	$2,725
Professional, Management, administrative services	0.12	$6,970	$2,191	$764	$9,924
Other services	0.09	$3,797	$1,623	$2,098	$7,518

Source: NAHB estimates, based primarily on data from the U.S. Bureau of Economic Analysis.

The jobs are measured on a full-time equivalent (FTE) basis. Thus, NAHB estimates that every $100,000 of remodeling activity creates 1.11 jobs on an FTE basis. 48.6 percent of those jobs are in the construction and remodeling sector.[8]

Putting all the data together, the IRS data and the NAHB economic impact model indicate that for 2009, a total of 278,610 full-time jobs were in connection with the 25C credit—135,540 of these jobs were in the construction and remodeling sectors. The program supported approximately $13.2 billion in wages for these workers and $7.5 billion in net business income.

Treasury Inspector General Report on Residential Energy Credits

On April 19, 2011, the U.S. Department of Treasury Inspector General for Tax Administration issued a report on the residential energy efficient tax credits (IRC 25C and 25D) and came to the conclusion that inadequate processes were in place to verify eligibility for the credits. Specifically, the report stated that:

> *The IRS **cannot verify** [emphasis added] whether individuals claiming Residential Energy Credits are entitled to them at the time their tax returns are processed. The IRS does not require individuals to provide any third-party documentation supporting the purchase of qualifying home improvement products and/or costs associated with making energy efficiency improvements and whether these qualified purchases and/or improvements were made to their principal residences.*[9]

[8] The Direct Impact of Home Building and Remodeling on the U.S. Economy. NAHB Economics.

[9] "Processes Were Not Established to Verify Eligibility for Residential Energy Credits," Treasury Inspector General for Tax Administration, Reference Number 2011-41-038, April 19, 2011

While the report did note a number of deficiencies with the IRS process for establishing verification of eligibility for the credit, some of the credits claimed are legitimate despite the inability to establish eligibility for the credit. In addition, the IRS notes that it can improve its processes to add additional safeguards and improve its ability to verify eligibility. We stand ready to assist the government in making sure that the credit is only going to those who truly deserve the benefit.

To that end, the coalition has recommended consumer-friendly verification techniques to the IRS with the goal of improving the system for assuring that the tax credit claimed on returns are actually for qualifying energy efficient improvements. Currently, no documentation is provided on tax returns about the qualifying product. Taxpayers must maintain documentation in the event of an audit.

There are a variety of methods that should be explored to provide an identifying number or code that could be included on tax returns to help the IRS establish the eligibility of a product for the tax credit, which could be implemented for use with electronic filing. The coalition will continue to work with Congress and the IRS to improve the system of product verification.

Conclusion

The program has created and preserved America jobs and promoted energy efficiency by helping owners of existing homes afford higher efficiency windows, doors, HVAC systems, hot water heaters, roofing and insulation. We are deeply concerned that the loss of this incentive before the housing market recovers would lead to substantial job losses.

The residential energy efficiency tax credit has broad support across the remodeling and retrofit market. A total of 34 businesses and associations sent a letter in December 2011 to the Committee on Finance supporting a robust extension of the 25C tax credit, knowing the $1,000 level would effectively leverage consumer activity and job preservation. A copy of the letter is Included in the appendix of this statement.

As the Committee on Finance evaluates the merits of the 25C tax credit, the data illustrates the program has had a powerful and positive impact on employment and extending the incentives until the housing market further stabilizes will protect American jobs.

Supporting Industry Associations

Air Conditioning Contractors of America
Air-Conditioning, Heating and Refrigeration Institute
Asphalt Roofing Manufacturers Association
Biomass Thermal Energy Council
Insulation Contractors Association of America
Hearth, Patio & Barbecue Association
Heating, Air Conditioning & Refrigeration Distributors International
Metal Contractors Association
National Association of Home Builders
National Association of the Remodeling Industry
National Electrical Manufacturers Association
National Lumber & Building Material Dealers Association
National Roofing Contractors Association
New England Fuel Institute
Oilheat Manufacturers Association
Plumbing-Heating-Cooling Contractors—National Association
Pellet Fuels Institute
Petroleum Marketers Association of America
Retail Industry Leaders Association
Roof Coatings Manufacturers Association
Spray Polyurethane Foam Alliance
Tile Roofing Institute
Window & Door Manufacturers Association

For More Information Contact

Ben Gann
Director of Legislative Affairs, Window & Door Manufacturers Association
(202) 367-2346
bgann@wdma.com

Appendix

Residential Energy Efficient Tax Credit Industry Coalition

December 8, 2011

The Honorable Harry Reid
Senate Majority Leader
S-221, United States Capitol
Washington, D.C. 20510

The Honorable Mitch McConnell
Senate Minority Leader
S-230, United States Capitol
Washington, D.C. 20510

The Honorable Max Baucus
Chairman, Committee on Finance
219 Dirksen Senate Office Building
Washington, D.C. 20510

The Honorable Orrin Hatch
Ranking Member, Committee on Finance
219 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Majority Leader Reid, Minority Leader McConnell, Chairman Baucus and Ranking Member Hatch:

As companies and associations representing manufacturers, retailers, builders and contractors in the housing and residential energy retrofit industry, we are writing to urge your support for an extension at the $1,000 level for the residential energy efficiency (25C) tax credit set to expire at the end of the year. The 25C tax credit creates and preserves American jobs and promotes energy efficiency by helping owners of existing homes afford higher efficiency windows, doors, HVAC systems, hot water heaters, roofing and insulation. We are deeply concerned that the loss of this incentive before the housing market recovers would lead to substantial job losses.

Residential remodeling activity spurred by the 25C tax credit in 2009 and 2010 was critical to maintaining our economic vitality. In 2009, Internal Revenue Service data indicates American taxpayers reported spending $25.1 billion on remodeling costs associated with the tax credit. Moreover, the program supported 278,610 jobs (135,540 of which were in the construction and remodeling sectors), approximately $13.2 billion in wages and $7.5 billion in net business income according to analysis by the National Association of Home Builders. In addition, 25C is truly a middle-class tax credit. In 2009, over two-thirds of the households claiming the credit had adjusted gross income of $100,000 or less.

Further, private residential investment as a percent of gross domestic product set another record low of 2.4 percent in the third quarter of 2011—in comparison to its historic average of approximately 5 percent. The 25C tax credit has provided a needed floor on remodeling activity, declining 32% since its peak compared to 76% for new home sales. It creates jobs and benefits homeowners by reducing their energy use, lowering their energy bills and improving their homes.

Again, we urge your support for a robust extension of the 25C tax credit, knowing the $1,000 level would effectively leverage consumer activity and job preservation. We believe that the program has had a powerful and positive impact on employment and extending the incentives until the housing market further stabilizes will protect American jobs.

Thank you for your consideration. We look forward to working with you to include an extension of the residential energy efficiency credit in tax legislation before the end of the year.

Sincerely,

Air Conditioning Contractors of America
Air-Conditioning, Heating and Refrigeration Institute
Andersen Corporation
A.O. Smith
Asphalt Roofing Manufacturers Association
Champion Window Manufacturing Company
Council of North American Insulation Manufacturers Association
Fortune Home and Security
Guardian Industries
Heating, Air Conditioning & Refrigeration Distributors International
The Home Depot, Inc.
Ingersoll Rand
Insulation Contractors Association of America
JELD-WEN, inc.
Lennox International, Inc.
Lowe's Companies, Inc.
National Association of Home Builders
National Association of Manufacturers
National Association of the Remodeling Industry
National Electrical Manufacturers Association
National Lumber and Building Material Dealers Association
National Roofing Contractors Association
New England Fuel Institute
Pella Corporation
Petroleum Marketers Association of America
Plumbing-Heating-Cooling Contractors—National Association
Regal Beloit
Retail Industry Leaders Association
Rheem Manufacturing Company
Roof Coatings Manufacturers Association
Spray Polyurethane Foam Alliance
Tile Roofing Institute
United Technologies Corporation
Window and Door Manufacturers Association

cc: Senate Committee on Finance members

STATEMENT FOR THE RECORD

RHONE RESCH, PRESIDENT & CEO

SOLAR ENERGY INDUSTRIES ASSOCIATION

SUBMITTED TO THE

U.S. SENATE COMMITTEE ON FINANCE

HEARING ON

TAX REFORM: IMPACT ON U.S. ENERGY POLICY

JUNE 12, 2012

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Chairman Baucus, Ranking Member Hatch and members of the committee:

The Solar Energy Industries Association (SEIA) is the national trade association for the U.S. solar energy industry. On behalf of our 1,100 member companies and the more than 100,000 American taxpayers employed by the solar industry, I appreciate having the opportunity to submit a statement for the record on the important topic of how tax reform will impact U.S. energy policy. On behalf of America's solar energy industry, I would like to highlight the important and constructive role that federal tax incentives have played in helping expand the deployment and use of renewable energy.

Introduction

Access to a diverse, abundant, reliable and affordable supply of energy is in the national interest. Accordingly, federal policy has for decades provided a legislative and regulatory framework that has helped every major source of energy utilized in the U.S. today reach commercial scale. The recognition that smart policy can play a vital role in developing new domestic energy resources has contributed significantly to America's long-term economic prosperity and growth.

Similarly, history has shown that well-crafted and efficient federal tax incentives can be powerful policy mechanisms to promote the nation's energy objectives and leverage private sector investment for the deployment and utilization of new energy resources. This is clearly the case with federal tax incentives designed to promote the expanded deployment and use of solar energy technologies.

Since the enactment of the 30 percent commercial and residential solar Investment Tax Credit ("ITC") in 2005 and the 1603 Treasury Program ("1603") in 2009, domestic deployment of solar has increased seven-fold; the cost to consumers has significantly dropped; and we have developed a domestic industry value chain that today employs over 100,000 Americans. By any objective measure, these important incentives are doing exactly what they were meant to do – allow our nation to reap the significant energy, economic and environmental benefits associated with utilizing our abundant solar resources.

When compared to other sources of energy – both conventional and renewable – the duration of federal support for solar has been brief. The solar ITC is the primary federal policy that encourages the deployment of solar technology. Since the ITC took effect in 2006, the industry has made significant and concrete strides towards grid parity. If current trends continue and costs continue to drop on account of economies of scale, improved technology and enhanced efficiencies, the solar industry's need for federal policy support will be shorter than virtually any other domestic energy source.

Ultimately, it is the entrepreneurs in America's solar industry – from the scientists that are developing more efficient and cost-effective solar technologies to the market innovators that

are providing new financing options that make solar more affordable for consumers – that are responsible for the rapid growth and reduced costs that are the hallmarks of America's solar industry. Stable, reliable and well-structured tax policy provides the framework that allows for this market-driven innovation. If policymakers have the foresight to retain these highly effective tax policies, this short-term investment will yield significant long-term benefits.

Background on the Solar Investment Tax Credit

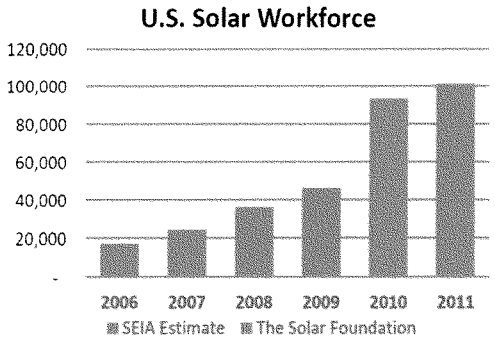
The *Energy Policy Act of 2005* (P.L. 109-58) created tax incentives for solar energy – a 30 percent ITC for commercial and residential solar energy systems that applied from January 1, 2006, through December 31, 2007. These credits were extended for one additional year in December 2006 by the *Tax Relief and Health Care Act of 2006* (P.L. 109-432). In 2007, global investment in clean energy topped $100 billion, with solar energy as the leading clean energy technology for venture capital and private equity investment. The solar ITC helped to create unprecedented growth in the U.S. solar industry from 2006-2007. The amount of solar electric capacity installed in 2007 was double that installed in 2006.

The *Emergency Economic Stabilization Act of 2008* (P.L. 110-343) included an eight-year extension of the commercial and residential solar ITC, eliminated the monetary cap for residential solar electric installations, and permitted utilities and alternative minimum tax (AMT) filers to utilize the credits. Under current law, the solar ITC is set to expire on December 31, 2016.

Solar Investment Tax Credit a Resounding Policy Success

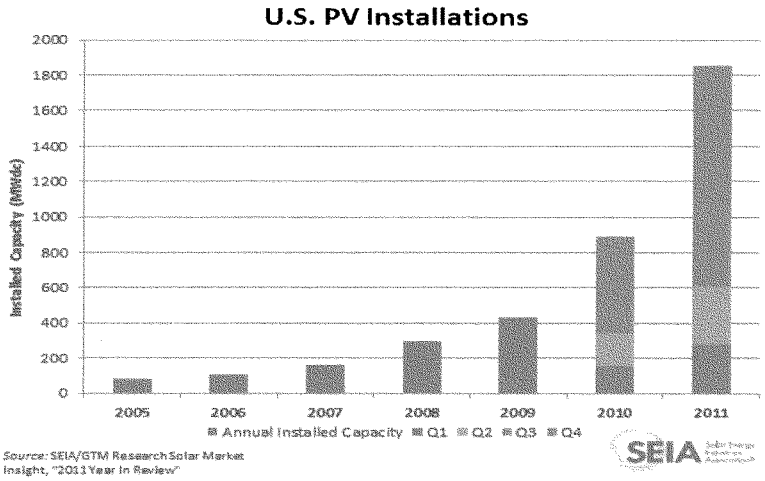
An Engine for U.S. Job Creation

Due in large part to the availability of the multi-year ITC, the solar industry grew by 109% in 2011 compared to the previous year, making it one of the fastest growing industry sectors in the U.S. economy. Today, the solar industry employs more than 100,000 Americans, more than double the number in 2009. They work at more than 5,600 companies, the vast majority being small businesses, in all 50 states. Additional job growth is expected as the industry continues to grow in the future.



Increasing U.S. Solar Installations

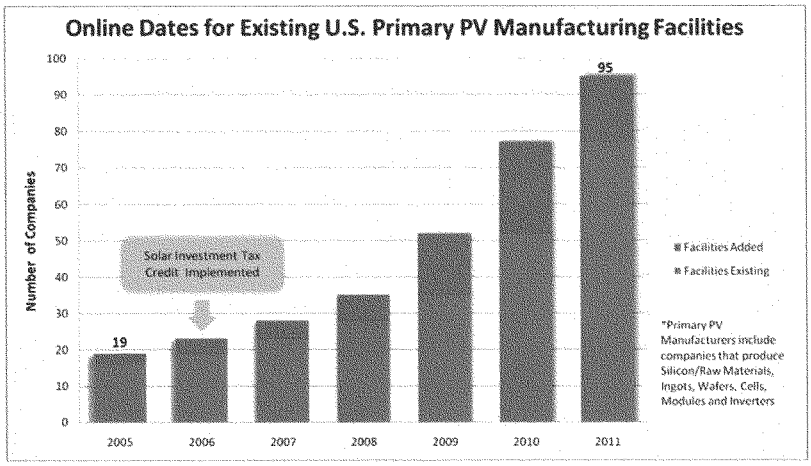
The market certainty provided by a multiple-year extension of the solar ITC has accelerated the deployment of solar in the U.S. Since the solar ITC was implemented in 2006, the total amount of solar generating capacity deployed has grown more than seven-fold. During this same time period, PV capacity has grown by nearly seventeen-fold. Cumulative solar capacity in the U.S. now exceeds 4,460 megawatts ("MW"), enough to power more than 700,000 homes. In 2011, the U.S. installed 1,855 MW of PV capacity, up from 887 MW in 2010.



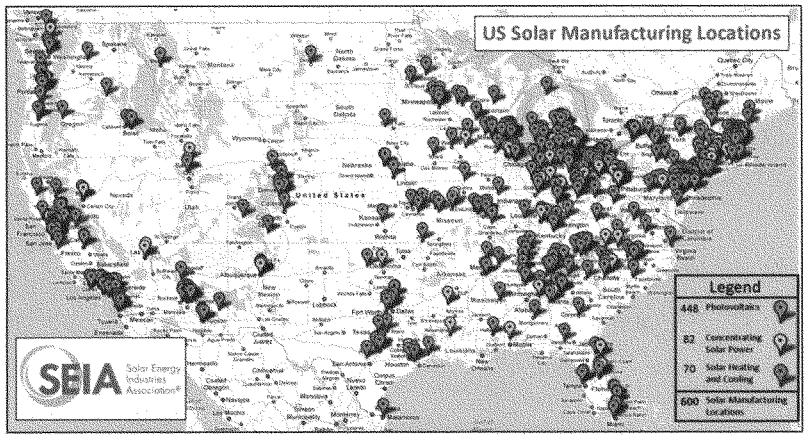
Growing U.S. Solar Manufacturing Capacity

The sharp growth in project installations after passage of the ITC occurred in tandem with expanding U.S. solar manufacturing. As annual installed generating capacity grew each year, U.S. PV panel production increased from 134 MW in 2005 to 865 MW in 2011.

Today, there are at least 95 domestic facilities in 26 states currently manufacturing PV primary components, including solar-grade polysilicon, ingots, wafers, cells, solar modules, and inverters. But only 19 of those facilities were operating in 2005 – a five-fold increase in the United States in the last six years.



Glass and steel manufacturers are also important members of the solar value chain, providing essential components for utility-scale solar power plants, including CSP projects currently under construction in the U.S. Southwest. Overall, there are 600 domestic manufacturing facilities in the solar value chain.



Without question, solar energy is a competitive, global industry. U.S. manufacturers exported to Europe and other foreign markets in the past and increasingly serve U.S. developers in response to the ITC jump-starting project construction here at home.

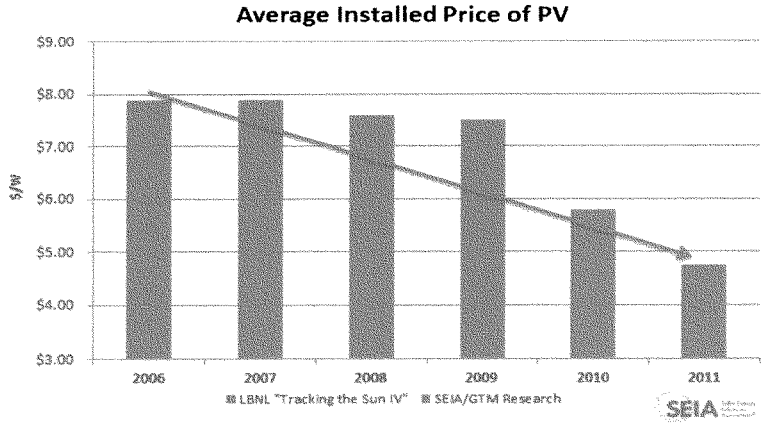
The ITC thus has a positive ripple effect that reaches beyond project development to enable growth and maturation of the broader solar supply chain. New solar manufacturing facilities opened in 2011 in Arizona, Illinois, Kentucky, Michigan, Mississippi, North Carolina, Nevada, New York, Ohio, Pennsylvania, Texas, Vermont, Washington and Wisconsin. Solar manufacturing expansion will continue in 2012 and 2013, as major new facilities come online in Arizona, Colorado, Indiana, Massachusetts, Mississippi, North Carolina, Nevada, New York, Ohio, Oregon, Pennsylvania, South Carolina and Tennessee.

As U.S. manufacturers compete with companies around the globe, the ITC is a critical policy mechanism to ensure robust demand for solar energy components in the U.S. market.

The Falling Cost of Solar for Consumers

The existence of the ITC through 2016 provides market certainty for companies to develop long-term investments in manufacturing capacity that drives competition, technological innovation, and ultimately lowers costs for consumers.

In 2011 alone, the price of solar panels dropped by 50%, and costs continue to fall, making solar even more affordable for residential and business consumers. In addition, innovative financing options for consumers, such as third-party leases and power purchase agreements ("PPAs"), have removed financial barriers and made it easier for consumers to choose solar. This is part of an ongoing trend that has shown consistent declines in solar pricing in the marketplace.

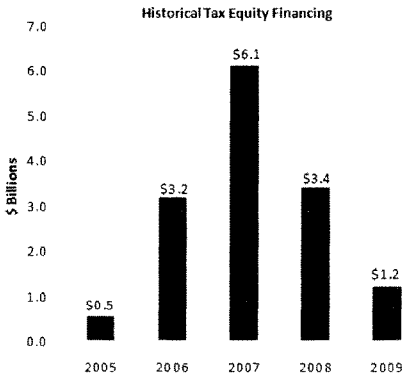


Importance of Tax Equity Financing and Credit Liquidity

The 2008 economic crisis rendered solar and other renewable energy tax incentives of little immediate value. Prior to the financial crisis, many utility-scale renewable energy projects relied upon third-party tax equity investors to monetize the value of federal renewable energy incentives. The economic downturn drastically reduced the availability of tax equity, severely limiting the financing available for renewable energy projects.

Tax equity is the term used to describe the passive financing of an asset or project by large tax-paying entities that can utilize tax incentives to offset their tax liabilities. Tax equity investors in renewable energy projects receive a return on investment based not only on the income from the asset or project, but also on federal income tax preferences (through the utilization of tax credits). Renewable energy developers themselves typically do not have sufficient taxable income to benefit directly from these tax credits and must partner with tax equity investors in order to finance projects. For example, they participate in a partnership structure in which ownership of the project is transferred from the tax equity investor to the developer-owner once the tax benefits are realized. Leasing structures akin to those commonly found in many sectors of the economy are also utilized.

The pool of tax equity investors is typically limited to the largest and most sophisticated financial firms and utilities, and the 2008 economic crisis significantly reduced the market demand among these entities for tax equity. A report released by the Bipartisan Policy Center on March 22, 2011, noted that the number of tax equity investors in renewable energy projects declined from approximately 20 in 2007 to 13 in 2008 and only 11 in 2009. The associated decline in overall tax equity financing provided to renewable energy projects was equally dramatic, falling from $6.1 billion in 2007 to $3.4 billion in 2008 and $1.2 billion in 2009.



Sources: U.S. Department of The Treasury, US Partnership for Renewable Energy Finance, and Leasing Tax Equity Market Participants

Section 1603 Treasury Program

The Section 1603 Treasury Program ("1603") was enacted in 2009 and extended in 2010 to address the lack of tax equity available to finance renewable energy projects. The program lapsed at the end of 2011, though solar projects that commenced construction before the end of last year and are placed in service before the expiration of the solar ITC in 2016 are eligible under the program.

It is important to note that under the 1603 program, the government does not pick winners and losers – it simply allows taxpayers to receive a federal grant in lieu of taking an existing energy tax credit they are otherwise entitled to claim. This merely constitutes a change to the timing of when an existing energy tax incentive can be utilized. This change in timing, however, provides the liquidity needed for the further development of domestic energy projects.

Section 1603 Treasury Program Has Been a Proven Success

1603 is structured in a technology neutral manner that encourages the development of a wide variety of domestic energy technologies including: biomass; combined heat and power; fuel cells; geothermal; hydropower; landfill gas; marine hydrokinetic; microturbine; municipal solid waste; wind and solar.

Since its enactment, the National Renewable Energy Laboratory's ("NREL") preliminary analysis conservatively estimates that 1603 has supported an average of 52,000 to 75,000 jobs over the period analyzed. The program has leveraged $27.1 billion in private sector investment to support over 34,000 domestic projects utilizing a wide range of energy technologies in all 50 states. As of May 2012, awards to more than 33,000 domestic solar projects leveraged over $5.44 billion in private sector investment for projects in 49 states.

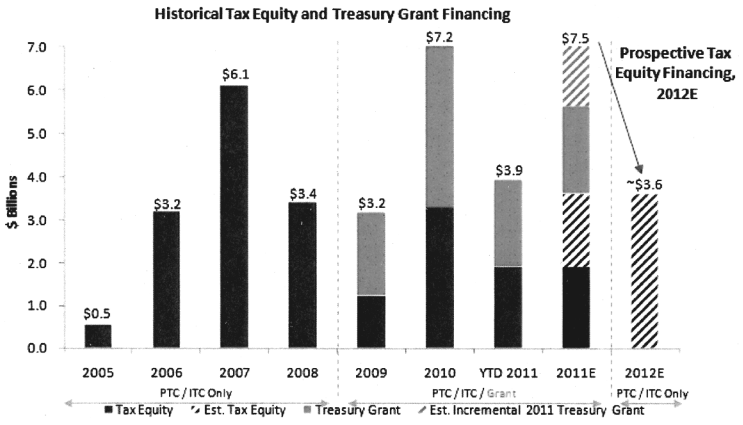
It is important to note that 1603 is particularly helpful for small businesses that are the nation's engine of economic growth and job creation. These businesses typically do not have the resources or scale to enter into complicated tax equity financing transactions. By virtue of its structure, 1603 allows small solar businesses and project developers to monetize the underlying solar ITC to finance the development of worthwhile distributed generation projects. The fact that the average 1603 award for a solar project is less than $150,000 demonstrates that small businesses are effectively utilizing the program.

Congress Should Extend the Section 1603 Program

Though the tax equity market has modestly improved, there remains a need for 1603. Access to tax equity financing has still not recovered to the levels available prior to the recession, and the rates of return that are being demanded in today's marketplace by investors remain prohibitively high. In December 2011, tax equity investors in solar projects required returns from 7.5% to as high as 17% compared to pre-recession levels of 6% to the low teens.

Due to global economic conditions, a large gap persists between the total amount of financing that renewable energy developers need to fully realize the benefits of continued expansion of domestic solar projects and available tax equity financing. Expiration of 1603 is projected to reduce the availability of tax equity financing from an estimated $7.5 billion in 2011 to approximately $3.6 billion in 2012 – a reduction of more than 50%. This will stifle job creation and severely restrict the market's ability to leverage private sector capital to finance new

domestic energy projects. Therefore, to continue this successful, job-creating program, SEIA encourages Congress to extend 1603.



Sources: U.S. Department of The Treasury, US Partnership for Renewable Energy Finance, Leading Tax Equity Market Participants

Conclusion

As the brief duration of federal solar tax incentives demonstrates, effective federal tax policy can yield significant energy and economic policy benefits. As Congress considers tax reform, SEIA and the U.S. solar industry look forward to working constructively with policymakers to craft effective tax policy that is consistent with the nation's energy and economic policy objectives.

Again, Chairman Baucus, Ranking Member Hatch and members of the committee, I appreciate having the opportunity to submit a statement for the record for this important hearing.

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