FIRST IN SERIES ON EFFECT OF FEDERAL TAX LAWS ON THE PRODUCTION, SUPPLY, AND CONSERVATION OF ENERGY

HEARING

BEFORE THE

SUBCOMMITTEE ON SELECT REVENUE MEASURES

OF THE

COMMITTEE ON WAYS AND MEANS
HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

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FIRST IN SERIES ON EFFECT OF FEDERAL TAX LAWS ON THE PRODUCTION, SUPPLY, AND CONSERVATION OF ENERGY

THURSDAY, MAY 3, 2001

HOUSE OF REPRESENTATIVES,
COMMITTEE ON WAYS AND MEANS,
SUBCOMMITTEE ON SELECT REVENUE MEASURES,
Washington, DC.

The Subcommittee met, pursuant to notice, at 10:04 a.m., in room 1100 Longworth House Office Building, Hon. Jim McCrery, (Chairman of the Subcommittee) presiding.

[The advisory announcing the hearing follows:]

ADVISORY

FROM THE COMMITTEE ON WAYS AND MEANS
SUBCOMMITTEE ON SELECT REVENUE MEASURES

FOR IMMEDIATE RELEASE
April 26, 2001
No. SRM–1

CONTACT: (202) 226–5911

McCrery Announces First in a Series of Hearings on the Effect of Federal Tax Laws on the Production, Supply, and Conservation of Energy

Congressman Jim McCrery (R–LA), Chairman, Subcommittee on Select Revenue Measures of the Committee on Ways and Means, today announced that the Subcommittee will hold the first in a series of hearings on the effect of current Federal tax laws on the production, supply, and conservation of energy. **The hearing will take place on Thursday, May 3, 2001, in the main Committee hearing room, 1100 Longworth House Office Building, beginning at 10:00 a.m.**

Oral testimony at this hearing will be from invited witnesses only. Invited witnesses include representatives of the U.S. Department of the Treasury, the U.S. Department of Energy, energy producers, and consumers. However, any individual or organization not scheduled for an oral appearance may submit a written statement for consideration by the Committee and for inclusion in the printed record of the hearing.

BACKGROUND:

The Internal Revenue Code provides several incentives for the domestic production of oil and gas including: (1) expensing of certain exploration and development costs, (2) depletion rules, and (3) a tax credit for enhanced oil recovery costs. The tax code provides incentives for the production of electricity from certain renewable resources, including wind and closed-loop biomass facilities. The tax code also encourages energy conservation by allowing taxpayers to exclude from income the value of certain energy conservation measures provided by a utility company to consumers.

In announcing the hearing, Chairman McCrery stated: "With Summer approaching and gasoline prices on the rise, Americans are becoming increasingly concerned about the energy problems we face. My Subcommittee's review will help explore ways that the tax code can promote sound energy policy which may alleviate these problems."

FOCUS OF THE HEARING:

The hearing will focus on current tax incentives in the Internal Revenue Code for the production and conservation of energy, including expiring and time-limited energy-related tax provisions, such as the suspension of the 100 percent net income limitation for marginal properties, the credit for producing fuel from nonconventional sources, and the credit for electricity produced from certain renewable resources.

DETAILS FOR SUBMISSION OF WRITTEN COMMENTS:

Any person or organization wishing to submit a written statement for the printed record of the hearing should *submit six (6) single-spaced copies of their statement, along with an IBM compatible 3.5-inch diskette in WordPerfect or MS Word format, with their name, address, and hearing date noted on a label*, by the *close of business*, Thursday, May 17, 2001, to Allison Giles, Chief of Staff, Committee on Ways and Means, U.S. House of Representatives, 1102 Longworth House Office Building,

Washington, D.C. 20515. If those filing written statements wish to have their statements distributed to the press and interested public at the hearing, they may deliver 200 additional copies for this purpose to the Subcommittee on Select Revenue Measures office, room 1135 Longworth House Office Building, by close of business the day before the hearing.

FORMATTING REQUIREMENTS:

Each statement presented for printing to the Committee by a witness, any written statement or exhibit submitted for the printed record or any written comments in response to a request for written comments must conform to the guidelines listed below. Any statement or exhibit not in compliance with these guidelines will not be printed, but will be maintained in the Committee files for review and use by the Committee.

1. All statements and any accompanying exhibits for printing must be submitted on an IBM compatible 3.5-inch diskette in WordPerfect or MS Word format, typed in single space and may not exceed a total of 10 pages including attachments. **Witnesses are advised that the Committee will rely on electronic submissions for printing the official hearing record.**

2. Copies of whole documents submitted as exhibit material will not be accepted for printing. Instead, exhibit material should be referenced and quoted or paraphrased. All exhibit material not meeting these specifications will be maintained in the Committee files for review and use by the Committee.

3. A witness appearing at a public hearing, or submitting a statement for the record of a public hearing, or submitting written comments in response to a published request for comments by the Committee, must include on his statement or submission a list of all clients, persons, or organizations on whose behalf the witness appears.

4. A supplemental sheet must accompany each statement listing the name, company, address, telephone and fax numbers where the witness or the designated representative may be reached. This supplemental sheet will not be included in the printed record.

The above restrictions and limitations apply only to material being submitted for printing. Statements and exhibits or supplementary material submitted solely for distribution to the Members, the press, and the public during the course of a public hearing may be submitted in other forms.

Note: All Committee advisaries and news releases are available on the World Wide Web at "http://waysandmeans.house.gov".

The Committee seeks to make its facilities accessible to persons with disabilities. If you are in need of special accommodations, please call 202–225–1721 or 202–226–3411 TTD/TTY in advance of the event (four business days notice is requested). Questions with regard to special accommodation needs in general (including availability of Committee materials in alternative formats) may be directed to the Committee as noted above.

Chairman MCCRERY. The hearing will come to order.

Good morning, everyone. This is the first hearing conducted by the newly reconstituted Select Revenue Measures Subcommittee of the Ways and Means Committee. We will begin our first hearing shortly.

However, we have just been advised that we have one vote on the floor, so I believe before we get into opening statements and into the witnesses, I will recess this morning's hearing just for a few minutes so that the Members may go across the street and

vote. I would ask the Members to vote as quickly as possible and get back to the hearing room, so that we may being.

The Committee is in recess.

[Recess.]

Chairman MCCRERY. The Committee will come to order.

This morning, since it is our first Subcommittee hearing, I'm going to allow any Member of the Subcommittee to make an opening statement. However, after today, I will ask that all Members, except for the chairman and Ranking Member, submit any opening statements in writing for the record.

This morning will be the first in a series of hearings by the Subcommittee, examining how our Tax Code can contribute to a safe and stable supply of energy. Our country continues to struggle with the fact that our domestic energy production does not meet our demand.

The fragile nature of our energy supply is easy to see. We can see it in the rolling blackouts in California and in the spikes in natural gas prices during the winter. Today, as summer approaches and families begin planning vacations, we are becoming increasingly focused and concerned about soaring gasoline prices.

In an effort to avoid the mistakes of the past, it is important we examine all angles of America's energy policy. Today, I hope we will be able to learn more about how the Tax Code affects energy production, exploration, and supply. The focus will be mostly on a review of current law, though I hope our witness, Mr. Mikrut from the Treasury Department, will also discuss the energy-related tax provisions in President Bush's budget.

We will then hear from Miss Mary Hutzler from the Energy Information Administration, who will discuss our current and future energy needs, as well as give us greater insights into how energy is produced and consumed in this country. Her insights will serve the Committee well as we go forward with this inquiry, and I thank her for being with us this morning.

Finally, we will hear from the private sector, the people actually working to secure our energy supply, about three time limit provisions in the Tax Code. First, we will hear testimony about section 29's credit for the production of energy from non-conventional sources, and we will learn more about the section 45 tax credit for wind energy. Also on the subject of section 45, we will hear testimony on how the credit works, or does not work, to encourage the production of electricity from biomass. Finally, we will hear testimony on the expiring Tax Code provision which allows small oil and gas producers to recover their capital costs in excess of their income from a particular property.

Supporters argue that the provision is important in encouraging independent producers to try their luck with marginal wells. It is my hope that this hearing will shed some light on our economy's complex energy problems and begin to explore solutions available to us.

As I stated at the outset, this is only the first in a series of hearings on this important issue. I look forward to working with my colleagues as we wrestle with it.

At this time I am pleased to yield to my Ranking Member, Michael McNulty from New York. Welcome, Michael. It's good to be with you. The floor is yours.

[The opening statement of Chairman McCrery follows:]

Opening Statement of the Hon. Jim McCrery, a Representative From the State of Louisiana, and Chairman, Subcommittee on Select Revenue Measures

Good morning and welcome to the first hearing of the Select Revenue Measures Subcommittee for the 107th Congress. Today will be the first in a series of hearings examining how our tax code can contribute to a safe and stable supply of energy.

Our country continues to struggle with the fact that our domestic energy production does not meet our demand. The fragile nature of our energy supply is easy to see. We can see it in the rolling blackouts in California and in the spikes in natural gas prices during the winter. And today, as summer approaches and families begin planning vacations, we are becoming increasingly focused and concerned about soaring gasoline prices.

In an effort to avoid the mistakes of the past, it is important we examine all angles of America's energy policy. Today, I hope we will be able to learn more about how the tax code affects energy exploration, production, and supply.

The focus will be mostly on a review of current law, though I hope our first witness, Joe Mikrut, Tax Legislative Counsel for the Treasury Department, will also discuss the energy-related tax provisions in President Bush's budget.

We will then hear from Ms. Mary Hutzler, from the Energy Information Administration, who will discuss our current and future energy needs as well as give us greater insights into how energy is produced and consumed in America. Her insights will serve the Committee well as we go forward with this inquiry, and I thank her for being with us this morning.

Finally, we will hear from the private sector—the people actually working to secure our energy supply, about three time-limited provisions in the tax code. First, we will hear testimony about Section 29's credit for the production of energy from non-conventional sources and will learn more about the Section 45 tax credit for wind energy.

Also on the subject of Section 45, we will hear testimony on how the credit works—or does not work—to encourage the production of electricity from biomass.

Finally, we will hear testimony on an expiring tax code provision which allows small oil and gas producers to recover their capital costs in excess of their income from a particular property. Supporters argue the provision is important in encouraging independent producers to try their luck with marginal wells.

It is my hope that this hearing will shed some light on our country's complex energy problems and begin to explore solutions available to us. As I stated at the outset, this is the first in a series of hearings on this important issue and I look forward to working with my colleagues as we wrestle with it.

At this time, I am pleased to yield to my Ranking Member, Mr. McNulty, for an opening statement.

Mr. MCNULTY. Thank you, Mr. Chairman.

Today we discuss an issue of great importance to Americans all over the country: the effect of Federal tax laws on the production, supply and conservation of energy. Before we begin the hearing, I want to officially congratulate our new Subcommittee chairman, Congressman Jim McCrery, for the important role he is assuming on the Committee on Ways and Means during the 107th Congress. It is my pleasure to serve with him on the Select Revenue Measures Subcommittee as the Ranking Member.

I may also interject at this point that Jim and I share a special relationship. Many years ago I accompanied him and his wife, Jonna, on their honeymoon. Beyond that, I will have no further comment.

[Laughter.]

I was a Member of this Subcommittee in earlier years, and I appreciate the role that this Subcommittee can play in evaluating specific tax provisions and in developing appropriate legislative reforms. I know we will be a good team and I look forward to working with Subcommittee chairman McCrery and each of the Subcommittee Members as we proceed to address tax issues of concern to us all.

My constituents in the 21st District of New York know first hand the impact of rising energy costs and how that affects our lives. Many have faced major increases in their monthly heating bills and they are sure to face similarly high utility costs in the coming months, particularly this summer. Businesses are directly impacted by high energy costs in the production of consumer goods and services, and in competing nationally and internationally.

As this Subcommittee considers the role the Tax Code plays in providing adequate incentives for fuel production and conservation, we should keep a focus on the impact the current law has on consumers and businesses. Also, as the Subcommittee continues its series of energy hearings, I would hope that soon we can consider specific legislative proposals to promote energy production and conservation. I have introduced legislation to provide tax incentives for a cutting-edge technology involving the use of fuel cells in creating electricity. This space age technology is ready to come to market as a clean, chemical-free way to increase the supply of electricity on the commercial market.

Mr. Chairman, I look forward to working with you and all of the Members of the Subcommittee, and I thank you for the time.

[The opening statement of Mr. McNulty follows:]

Opening Statement of the Hon. Michael McNulty, a Representative From the State of New York

Today we discuss an issue of great importance to Americans nationwide-the effect of our Federal tax laws on the production, supply and conservation of energy.

Before we begin the hearing, I want to officially congratulate our new Subcommittee Chairman, Congressman Jim McCrery, for the important role he is assuming on the Committee on Ways and Means during the 107th Congress. It is my pleasure to serve with him on the Select Revenue Subcommittee, as the Ranking Member.

I was a Member of this Subcommittee in earlier years and I appreciate the role this Subcommittee can play in evaluating specific tax provisions and in developing appropriate legislative reforms. I know we will be a good team and I look forward to working with Subcommittee Chairman McCrery and each of the Subcommittee Members as we proceed to address tax issues of concern to us all.

My constituents in the 21st Congressional District of New York State know firsthand the impact rising energy costs can have on our lives. Many have faced major increases in their monthly heating bills and are sure to face similarly high utility costs in the coming months, particularly this summer. Businesses are directly impacted by high energy costs in the production of consumer goods and services and in competing nationally and internationally.

As this Subcommittee considers the role the tax code plays in providing adequate incentives for fuel production and conservation, we should keep a focus on the impact the current law has on consumers and businesses.

Also, as the Subcommittee continues its series of energy hearings, I would hope that soon we can consider specific legislative proposals to promote energy production and conservation. I have introduced legislation to provide tax incentives for a cutting edge technology involving the use of fuel cells in creating electricity. This "space age" technology is ready to come to market as a clean, chemical-free way to increase the supply of electricity on the commercial market.

Thank you.

Chairman MCCRERY. Thank you, Mr. McNulty.

I would now ask any other Member who wishes to make an opening statement at this time, to raise your hand. Mr. Foley.

Mr. FOLEY. Thank you, Mr. Chairman. I am delighted to be part of the Subcommittee and I'm delighted that our first order of business is, in fact, to undertake a pertinent discussion relative to the energy policy and opportunities where this Committee may weigh in on options that are available.

I am also delighted that one of my hometown constituents is here, Florida Power and Light, who is going to be testifying on a panel today relative to wind energy. We have supplied every Member of the panel with a tape from ABC News that I think you will find informative.

I also want to take a moment to reiterate Florida's strong opposition to any offshore oil drilling. I know that's not the subject of today's hearing, but the Governor of Florida and I met on Monday, and since we are talking about energy resources, I did want to at least underline his opposition and that of the entire Delegation as we proceed to look for alternative opportunities for energy.

I think again that today presents a unique opportunity to explore the full range of options. I am particularly pleased with Mr. McNulty's comments because I think, as we do further research on fuel cells and those opportunities, we will see a tremendous way in which to reduce our dependency on fossil fuels, finding ways to produce energy in a more efficient and cost-effective manner, and I think that will do a great deal for us in not looking necessarily at always drilling but finding sources that are nonpolluting, nonthreatening, and contribute to the economic and electrical diversification plans of our country.

Thank you, Mr. Chairman.

Chairman MCCRERY. Thank you, Mr. Foley. Mr. Brady.

Mr. BRADY. Thank you, Mr. Chairman.

I, too, want to thank you for your leadership on this issue. I'm excited about this new Subcommittee. As a new Member of Ways and Means, I am hopeful that ultimately we can replace this Tax Code with one much better for our children than the one we've had to live with.

But while we have the "stinker" that we do, it is important that we look at ways to improve it. This issue of energy independence is so important. I think we all know that America has paid an awfully steep price for not having an energy game plan. I know, just within the energy community that I represent in Texas, we have lost 100,000 jobs over the last decade because of this "boom or bust" mentality. That is ten times more jobs than steel, and that's as many jobs as agriculture. We have paid a steep price. In the economy and in our individual homes, we have all paid a price because of the volatility of the market.

The problem is that we're addicted to foreign oil. The approach so far has been to try to convince the dealers to sell us a better street price for this, but the answer is to kick the habit. We can start doing that by encouraging production and encouraging supply, and encouraging conservation as well.

As America starts taking responsibility for our own energy needs, and although last year we saw a number of Members of Congress and the White House releasing a great deal of natural gas, about the price of oil, blaming energy companies for it, I was pleased that, while that was front page news, buried in the pages of the media recently have been the results of two Federal investigations that showed, in fact, the energy companies acted appropriately, that it was supply and demand and environmental regulations that added to the volatility of our prices. So I am real hopeful that we can move on past some of the political issues and start "folksing" together, Republicans and Democrats, on energy independence.

Thank you, Mr. Chairman.

Chairman MCCRERY. Thank you, Mr. Brady. Mr. Ryan.

Mr. RYAN. Thank you, Mr. Chairman.

I, too, want to join my colleagues in thanking you for holding this hearing, and for the first hearing of the Select Revenue Measures Subcommittee. It's very exciting to be here.

As a new Member of the Committee, a new Member of the Subcommittee, I come from an oil-consuming State, Wisconsin. We don't do a lot of oil producing. We consume a lot of oil. Our prices are going through the roof right now.

We have 45 different boutique fuels roaming this country. We have a supply chain that is constrained. We haven't had new refineries built in about 20 years. So I am looking forward to hearing from the administration about different ideas that we can explore to improve our capacity, to steady the supply, and I would like to hear about different ways of spreading out the number, regionalizing the fuels, perhaps. Those are the kinds of answers that we're looking for in Wisconsin, in addition to longer term solutions for renewable cleaner fuels.

I just wanted to thank you for having this hearing. I look forward to the number of energy hearings we're going to have. It's a very important and timely topic affecting all of us, and I want to thank you for that.

Chairman MCCRERY. Thank you, Mr. Ryan.

We have one "interloper" with us today. Mr. Watkins is not a Member of the Subcommittee. However, he is a Member of the full Committee and has, of course, a strong interest in the subject of energy. I recognize Mr. Watkins for any statement he would like to make at this time.

Mr. WATKINS. Thank you, Mr. Chairman. To you and the other Members, thank you for allowing me to come down and join you for this very special Subcommittee and this panel and this subject. It is very timely and is probably in the minds of everyone's pocketbooks throughout this country.

At the appropriate time, Mr. Chairman, I have a special friend who will be on the panel and I would like to introduce him at that time. But thank you for letting me come and be here today.

Chairman MCCRERY. Thank you, Mr. Watkins.

Now, our first witness is Mr. Joseph Mikrut, Tax Legislative Counsel, with the United States Department of the Treasury. Mr. Mikrut, your full written testimony will be submitted for the record. If you would summarize that in five minutes, we would appreciate it. You may proceed.

STATEMENT OF JOSEPH MIKRUT, TAX LEGISLATIVE COUNSEL, U.S. DEPARTMENT OF THE TREASURY

Mr. MIKRUT. Thank you, Mr. Chairman, Mr. McNulty, Members of the Subcommittee. Good morning. It is a pleasure to be here for your inaugural hearing, and I appreciate the opportunity to discuss with you today tax incentives for the production, supply and conservation of energy.

As you noted in your opening remarks, there has been a renewed interest in the role of tax incentives in our National energy policy. The Subcommittee should be commended for taking on this issue at this time.

I would like to begin my testimony with a brief discussion of the general principles that may be relevant in analyzing any energy tax proposal. I will conclude, as you mentioned, Mr. Chairman, with a description of the energy-related tax proposals in the administration's fiscal year 2002 budget.

I would also like to remind the Members of the Subcommittee that an interagency task force, headed by Vice President Cheney, will submit to Congress later this month a plan for a comprehensive national energy policy. This task force is considering additional tax and nontax provisions not contained in the budget proposal. We would be happy to come back and brief you later to the extent there are any additional tax proposals.

The fundamental principle underlying a sound energy policy is that the market should be allowed to function freely and market intervention should be avoided, unless justified by compelling energy security, economic, environmental, or other concerns.

In some instances, markets do not properly value the benefits of certain investments. For example, a market rate of return for investments that increase domestic oil and gas reserves may not reflect the contribution of those investments to ensuring stability in supply and price, thereby reducing U.S. vulnerability to oil supply disruptions. Similarly, market prices may not reflect the benefits of energy produced from clean and renewable energy sources. Individuals and businesses may not invest in energy saving and alternative energy technologies at a level that reflects the benefits provided to society as a whole from such technologies.

For example, if a new technology reduces pollution, this external benefit should be included in decisions on whether to undertake an investment or not. However, private investors only look to private returns and may not invest in such technologies. Thus, they avoid nonprofitable ventures that may benefit society as a whole.

Tax incentives, on the other hand, can and do offset the failure of market prices to signal the desirable level of investment in energy saving technologies because they increase the private return by reducing the aftertax cost of the taxpayer. The increase in private return encourages additional investments in energy saving and environmentally preferable technologies.

The Federal Government has many tools for advancing energy policy goals. One of these is the Internal Revenue Code. Beyond the fundamental issue of whether a tax incentive is justified at all, a number of other, often contradictory considerations must be taken into account. For example, incentives should be appropriately targeted to induce desired activities in a cost-effective manner. Thus,

incentives should be designed to minimize windfalls for investments that would have been made in any event and strive to encourage investment upon the margin.

At the same time, however, incentives that are targeted too narrowly may reduce the cost of only some technologies and leave other technologies behind. This can result in economic inefficiency and will contribute to perceptions that the tax system is unfair and targeted only toward certain taxpayers.

Finally, incentives should also be designed to minimize complexity and avoid unnecessary increases in taxpayer compliance burdens and IRS administrative costs.

The importance of maintaining a strong domestic energy industry has been long recognized and policymakers have balanced the concerns I have just described so that the Internal Revenue Code currently includes a variety of measures to stimulate energy exploration, production, and conservation. Similarly, the administration's budget proposals for fiscal year 2002 contain four tax incentives to extend and modify these present law provisions. I would like to briefly describe these two proposals.

First, under present law, a 1.7 cents per kilowatt hour production credit is provided for electricity produced from certain renewable sources. The administration proposes to extend the credit for electricity produced from wind and biomass for 3 years for properties placed in service before 2005. Moreover, the eligible biomass sources would be expanded from the current law closed-loop biomass to additional open-loop biomass sources. Special rules would apply to biomass facilities placed in service before 2002.

Electricity produced at such facilities from newly eligible sources would be eligible for the credit through 2004, at a 60-percent rate, and electricity produced from newly eligible sources at coal-fired plants would be eligible for the credit through 2004 at a 30-percent rate.

Our second proposal would supplement the present law investment tax credit available for businesses investing in certain energy property. The administration proposes a new tax credit for individuals that purchase solar energy equipment used to generate electricity or heat water. The proposed credit would be equal to 15 percent of the cost of the equipment and its installation, and would be capped at $2,000 per individual, per residence. The credit would apply for water heating equipment placed in service before 2006, and to electric generating systems placed in service before 2008.

Our third proposal deals with nuclear decommissioning funds. Present law provides an accelerated deduction and a favorable tax rate with respect to funds set aside for public utilities for decommissioning nuclear power plants. In recognition of the deregulation of the electricity generating industry, the administration proposes to modify these underlying rules. Specifically, we would eliminate the cost of service requirement; we would clarify that transfers of funds from one taxpayer to another would be nontaxable transactions; we would allow funding up for pre-1984 liabilities; and we would clarify that nuclear decommissioning expenditures are deductible when incurred.

Finally, the last proposal in the administration's fiscal year 2002 budget concerns the 100 percent of net income limitation for per-

centage depletion, which is scheduled to expire at the end of the year. The administration proposes a 1-year extension of the provision suspending this limitation for marginal oil and gas wells. Under the administration's proposal, marginal wells would be continued to be exempt from the limitation during years beginning in 2002. Without such a provision, the percentage depletion limitation for marginal wells will be limited to the income from the property and may discourage development of such properties.

Mr. Chairman, this concludes my prepared testimony. I would be happy to answer any questions you or the Members may have.

[The prepared statement of Mr. Mikrut follows:]

Statement of Joseph Mikrut, Tax Legislative Counsel, U.S. Department of the Treasury

Mr. Chairman, Mr. McNulty, and Members of the Subcommittee:

I appreciate the opportunity to discuss with you today tax incentives for the domestic production of oil and gas and for energy conservation. There has been renewed interest in the role of tax incentives in our national energy policy and I would like to begin my testimony with a discussion of general principles that may be relevant in analyzing particular incentives.

General Principles

The fundamental principle underlying a sound energy policy is that markets should be allowed to function freely and market interventions should be avoided unless justified by compelling energy security, economic, environmental, or other concerns. In some instances, markets may not properly value the benefits of certain investments. For example, a market rate of return for investments that increase domestic oil and gas reserves may not reflect the contribution of those investments to ensuring stability in supply and thereby reducing our vulnerability to oil supply disruptions.

Similarly, market prices may not reflect the environmental damage from the use of fossil fuels or the benefits of energy produced from clean and renewable energy sources. Individuals and businesses may not invest in energy-saving and alternative energy technologies at a level that reflects the benefits the technologies provide to society in excess of their private returns. If a new technology reduces pollution or emissions of greenhouse gases, those "external benefits" should be included in the decision about whether to undertake the investment. But potential investors have an incentive to consider only the private benefits in making decisions. Thus, they avoid technologies that are not profitable even though their total benefits to society exceed their costs. Tax incentives can offset the failure of market prices to signal the desirable level of investment in energy-saving and alternative energy technologies because they increase the private return from the investment by reducing its after-tax cost. The increase in private return encourages additional investment in energy-saving and environmentally preferable technologies.

Beyond the fundamental issue of whether a tax incentive is justified at all, a number of other, often contradictory, considerations must be taken into account in the design of any particular incentive. For example, incentives should be appropriately targeted to induce desired activities in a cost-effective manner. Thus, incentives should be designed to minimize windfalls for investments that would have been made in the absence of an incentive. At the same time, however, incentives that are targeted too narrowly may reduce the cost of only some technologies and discourage investment in other promising approaches. This can result in economic inefficiency and will contribute to perceptions that the tax system is being used inappropriately to pick winners and losers among competing technologies.

In addition, incentives should also be designed to minimize complexity and avoid unnecessary increases in taxpayer compliance burdens and IRS administrative costs.

Increasing Domestic Oil and Gas Production

Before I turn to my discussion of the present tax treatment of oil and gas activities, I would like to provide a brief overview of this sector.

Overview

Oil is an internationally traded commodity with its domestic price set by world supply and demand. Domestic exploration and production activity is affected by the

world price of crude oil. Historically, world oil prices have fluctuated substantially. From 1970 to the early 1980s, there was a fivefold increase in real oil prices. World oil prices fell sharply in 1986 and were relatively more stable from 1986 through 1997. During that period, average refiner acquisition costs ranged from $14.91 to $23.59 in real 1992 dollars. In 1998, however, oil costs to the refiner declined to $12.52 per barrel in nominal dollars ($11.14 per barrel in 1992 dollars), their lowest level in 25 years in real terms. Since 1998, the decline has reversed with refiner acquisition costs (in nominal dollars) rising to $17.51 per barrel in 1999 and $27.69 per barrel in 2000 (the price has since dropped to $26.05 per barrel in February 2001, the latest month for which composite figures are available). The equivalent prices in 1992 dollars are $15.31 per barrel in 1999, $24.28 per barrel in 2000, and $22.03 per barrel in February 2001.

Domestic oil production has been on the decline since the mid-1980s. From 1978 to 1983 oil consumption in the United States also declined, but increasing consumption since 1983 has more than offset this decline. In 2000, domestic oil consumption was 28 percent higher than in 1970. The decline in oil production and increase in consumption have led to an increase in oil imports. Net petroleum (crude and product) imports have risen from approximately 38 percent of consumption in 1988 to 52 percent in 2000.

A similar pattern of large recent price increases and increasing dependence on imports has occurred in the natural gas market. During the second half of the 1990s, spot prices for natural gas exceeded $4.00 per million Btu (MMBtu) in only one month (February 1996). The spot price again exceeded $4.00 per MMBtu in May 2000, rose above $5.00 per MMBtu in September 2000, and exceeded $10.00 per MMBtu for several days last winter. The current spot price is approximately $5.00 per MMBtu.[1]

The United States has large natural gas reserves and was essentially self-sufficient in natural gas until the late 1980s. Since 1986, natural gas consumption has increased by more than 30 percent but natural gas production has increased by only 17 percent. Net imports as a share of consumption nearly quadrupled from 1986 to 2000, rising from 4.2 percent to 15.6 percent. Natural gas from Canada makes up nearly all of the imports into the United States.

Current law tax incentives for oil and gas production

The importance of maintaining a strong domestic energy industry has been long recognized and the Internal Revenue Code includes a variety of measures to stimulate domestic exploration and production. They are generally justified on the ground that they reduce vulnerability to an oil supply disruption through increases in domestic production, reserves, exploration activity, and production capacity. The tax incentives contained in present law address the drop in domestic exploratory drilling that has occurred since the mid-1950s and the continuing loss of production from mature fields and marginal properties.

Incentives for oil and gas production in the form of tax expenditures are estimated to total $9.8 billion for fiscal years 2002 through 2006.[2] They include the nonconventional fuels (i.e., oil produced from shale and tar sands, gas produced from geopressured brine, Devonian shale, coal seams, tight formations, or biomass, and synthetic fuel produced from coal) production credit ($2.4 billion), the enhanced oil recovery credit ($4.4 billion), the allowance of percentage depletion for independent producers and royalty owners, including increased percentage depletion for stripper wells ($2.3 billion), the exception from the passive loss limitation for working interests in oil and gas properties ($100 million), and the expensing of intangible drilling and development costs ($640 million). In addition to those tax expenditures, oil and gas activities have largely been eliminated from the alternative minimum tax. These provisions are described in detail below.

Percentage depletion

Certain costs incurred prior to drilling an oil- or gas-producing property are recovered through the depletion deduction. These include costs of acquiring the lease or other interest in the property, and geological and geophysical costs (in advance of actual drilling). Any taxpayer having an economic interest in a producing property may use the cost depletion method. Under this method, the basis recovery for a tax-

[1] All price references are to the spot price at the Henry Hub and are in nominal dollars.

[2] *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2002,* U.S. Government Printing Office, Washington, DC, 2001, p. 63, These estimates are measured on an "outlay equivalent" basis. They show the amount of outlay that would be required to provide the taxpayer the same after-tax income as would be received through the tax preference. This outlay equivalent measure allows a comparison of the cost of the tax expenditure with that of a direct Federal outlay

able year is proportional to the exhaustion of the property during the year. The cost depletion method does not permit cost recovery deductions that exceed the taxpayer's basis in the property or that are allowable on an accelerated basis. Thus, the deduction for cost depletion is not generally viewed as a tax incentive.

Independent producers and royalty owners (as contrasted to integrated oil companies)[3] may qualify for percentage depletion. A qualifying taxpayer determines the depletion deduction for each oil or gas property under both the percentage depletion method and the cost depletion method and deducts the larger of the two amounts. Under the percentage depletion method, generally 15 percent of the taxpayer's gross income from an oil- or gas-producing property is allowed as a deduction in each taxable year. The amount deducted may not exceed 100 percent of the net income from that property in any year (the "net-income limitation").[4] Additionally, the percentage depletion deduction for all oil and gas properties may not exceed 65 percent of the taxpayer's overall taxable income (determined before such deduction and adjusted for certain loss carrybacks and trust distributions).[5]

A taxpayer may claim percentage depletion with respect to up to 1,000 barrels of average daily production of domestic crude oil or an equivalent amount of domestic natural gas. For producers of both oil and natural gas, this limitation applies on a combined basis. All production owned by businesses under common control and members of the same family must be aggregated; each group is then treated as one producer for application of the 1,000-barrel limitation.

Special percentage depletion provisions apply to oil and gas production from marginal properties. The statutory percentage depletion rate is increased (from the general rate of 15 percent) by one percentage point for each whole dollar that the average price of crude oil (as determined under the provisions of the nonconventional fuels production credit of section 29) for the immediately preceding calendar year is less than $20 per barrel. In no event may the rate of percentage depletion under this provision exceed 25 percent for any taxable year. The increased rate applies for the taxpayer's taxable year which immediately follows a calendar year for which the average crude oil price falls below the $20 floor. To illustrate the application of this provision, the average price of a barrel of crude oil for calendar year 1999 was $15.56; thus, the percentage depletion rate for production from marginal wells was increased by four percent (to 19 percent) for taxable years beginning in 2000. The 100-percent-of-net-income limitation has been suspended for marginal wells for taxable years beginning after December 31, 1997, and before January 1, 2002.

Marginal production is defined for this purpose as domestic crude oil or domestic natural gas which is produced during any taxable year from a property which (1) is a stripper well property for the calendar year in which the taxable year begins, or (2) is a property substantially all of the production from which during such calendar year is heavy oil (i.e., oil that has a weighted average gravity of 20 degrees API or less corrected to 60 degrees Fahrenheit). A stripper well property is any oil or gas property for which daily average production per producing oil or gas well is not more than 15 barrel equivalents in the calendar year during which the taxpayer's taxable year begins.[6] A property qualifies as a stripper well property for a calendar year only if the wells on such property were producing during that period at their maximum efficient rate of flow.

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[3] An independent producer is any producer who is not a "retailer" or "refiner." A retailer is any person who directly, or through a related person, sells oil or natural gas or any product derived therefrom (1) through any retail outlet operated by the taxpayer or related person, or (2) to any person that is obligated to market or distribute such oil or natural gas (or product derived therefrom) under the name of the taxpayer or the related person, or that has the authority to occupy any retail outlet owned by the taxpayer or a related person. Bulk sales of crude oil and natural gas to commercial or industrial users, and bulk sales of aviation fuel to the Department of Defense, are not treated as retail sales for this purpose. Further, a person is not a retailer within the meaning of this provision if the combined gross receipts of that person and all related persons from the retail sale of oil, natural gas, or any product derived therefrom do not exceed $5 million for the taxable year. A refiner is any person who directly or through a related person engages in the refining of crude oil, but only if such person or related person has a refinery run in excess of 50,000 barrels per day on any day during the taxable year.

[4] By contrast, for any other mineral qualifying for the percentage depletion deduction, the deduction may not exceed 50 percent of the taxpayer's taxable income from the depletable property.

[5] Amounts disallowed as a result of this rule may be carried forward and deducted in subsequent taxable years, subject to the 65-percent-of-taxable-income limitation for those years.

[6] Equivalent barrels is computed as the sum of (1) the number of barrels of crude oil produced, and (2) the number of cubic feet of natural gas produced divided by 6,000. If a well produced 10 barrels of crude oil and 12,000 cubic feet of natural gas, its equivalent barrels produced would equal 12 (i.e., 10+(12,000/6,000)).

If a taxpayer's property consists of a partial interest in one or more oil- or gas-producing wells, the determination of whether the property is a stripper well property or a heavy oil property is made with respect to total production from such wells, including the portion of total production attributable to ownership interests other than the taxpayer's. If the property satisfies the requirements of a stripper well property, then each owner receives the benefits of this provision with respect to its allocable share of the production from the property for its taxable year that begins during the calendar year in which the property so qualifies.

The allowance for percentage depletion on production from marginal oil and gas properties is subject to the 1,000-barrel-per-day limitation discussed above. Unless a taxpayer elects otherwise, marginal production is given priority over other production for purposes of utilization of that limitation.

Because percentage depletion, unlike cost depletion, is computed without regard to the taxpayer's basis in the depletable property, cumulative depletion deductions may be far greater than the amount expended by the taxpayer to acquire or develop the property. The excess of the percentage depletion deduction over the deduction for cost depletion is generally viewed as a tax expenditure.

Intangible drilling and development costs

In general, costs that benefit future periods must be capitalized and recovered over such periods for income tax purposes, rather than being expensed in the period the costs are incurred. In addition, the uniform capitalization rules require certain direct and indirect costs allocable to property to be included in inventory or capitalized as part of the basis of such property. In general, the uniform capitalization rules apply to real and tangible personal property produced by the taxpayer or acquired for resale.

Special rules apply to intangible drilling and development costs ("IDCs").[7] Under these special rules, an operator (i.e., a person who holds a working or operating interest in any tract or parcel of land either as a fee owner or under a lease or any other form of contract granting working or operating rights) who pays or incurs IDCs in the development of an oil or gas property located in the United States may elect either to expense or capitalize those costs. The uniform capitalization rules do not apply to otherwise deductible IDCs.

If a taxpayer elects to expense IDCs, the amount of the IDCs is deductible as an expense in the taxable year the cost is paid or incurred. Generally, IDCs that a taxpayer elects to capitalize may be recovered through depletion or depreciation, as appropriate; or in the case of a nonproductive well ("dry hole"), the operator may elect to deduct the costs. In the case of an integrated oil company (i.e., a company that engages, either directly or through a related enterprise, in substantial retailing or refining activities) that has elected to expense IDCs, 30 percent of the IDCs on productive wells must be capitalized and amortized over a 60-month period.[8]

A taxpayer that has elected to deduct IDCs may, nevertheless, elect to capitalize and amortize certain IDCs over a 60-month period beginning with the month the expenditure was paid or incurred. This rule applies on an expenditure-by-expenditure basis; that is, for any particular taxable year, a taxpayer may deduct some portion of its IDCs and capitalize the rest under this provision. This allows the taxpayer to reduce or eliminate IDC adjustments or preferences under the alternative minimum tax.

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[7] IDCs include all expenditures made by an operator for wages, fuel, repairs, hauling, supplies, etc., incident to and necessary for the drilling of wells and the preparation of wells for the production of oil and gas. In addition, IDCs include the cost to operators of any drilling or development work (excluding amounts payable only out of production or gross or net proceeds from production, if the amounts are depletable income to the recipient, and amounts properly allocable to the cost of depreciable property) done by contractors under any form of contract (including a turnkey contract). Such work includes labor, fuel, repairs, hauling, and supplies which are used in the drilling, shooting, and cleaning of wells; in such clearing of ground, draining, road making, surveying, and geological works as are necessary in preparation for the drilling of wells; and in the construction of such derricks, tanks, pipelines, and other physical structures as are necessary for the drilling of wells and the preparation of wells for the production of oil and gas. Generally, IDCs do not include expenses for items which have a salvage value (such as pipes and casings) or items which are part of the acquisition price of an interest in the property.

[8] The IRS has ruled that if an integrated oil company ceases to be an integrated oil company, it may not immediately write off the unamortized portion of the IDCs capitalized under this rule, but instead must continue to amortize those IDCs over the 60-month amortization period.

The election to deduct IDCs applies only to those IDCs associated with domestic properties.[9] For this purpose, the United States includes certain wells drilled offshore.[10]

Intangible drilling costs are a major portion of the costs necessary to locate and develop oil and gas reserves. Because the benefits obtained from these expenditures are of value throughout the life of the project, these costs would be capitalized and recovered over the period of production under generally applicable accounting principles. The acceleration of the deduction for IDCs is viewed as a tax expenditure.

Nonconventional fuels production credit

Taxpayers that produce certain qualifying fuels from nonconventional sources are eligible for a tax credit ("the section 29 credit") equal to $3 per barrel or barrel-of-oil equivalent.[11] Fuels qualifying for the credit must be produced domestically from a well drilled, or a facility treated as placed in service before January 1, 1993.[12] The section 29 credit generally is available for qualified fuels sold to unrelated persons before January 1, 2003.[13]

For purposes of the credit, qualified fuels include: (1) oil produced from shale and tar sands; (2) gas produced from geopressured brine, Devonian shale, coal seams, a tight formation, or biomass (i.e., any organic material other than oil, natural gas, or coal (or any product thereof); and (3) liquid, gaseous, or solid synthetic fuels produced from coal (including lignite), including such fuels when used as feedstocks. The amount of the credit is determined without regard to any production attributable to a property from which gas from Devonian shale, coal seams, geopressured brine, or a tight formation was produced in marketable quantities before 1980.

The amount of the section 29 credit generally is adjusted by an inflation adjustment factor for the calendar year in which the sale occurs.[14] There is no adjustment for inflation in the case of the credit for sales of natural gas produced from a tight formation. The credit begins to phase out if the annual average unregulated wellhead price per barrel of domestic crude oil exceeds $23.50 multiplied by the inflation adjustment factor.[15]

The amount of the section 29 credit allowable with respect to a project is reduced by any unrecaptured business energy tax credit or enhanced oil recovery credit claimed with respect to such project.

As with most other credits, the section 29 credit may not be used to offset alternative minimum tax liability. Any unused section 29 credit generally may not be carried back or forward to another taxable year; however, a taxpayer receives a credit for prior year minimum tax liability to the extent that a section 29 credit is disallowed as a result of the operation of the alternative minimum tax. The credit is limited to what would have been the regular tax liability but for the alternative minimum tax.

The provision provides a significant tax incentive (currently about $6 per barrel of oil equivalent or $1 per thousand cubic feet of natural gas). Coalbed methane and gas from tight formations currently account for most of the credit.

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[9] In the case of IDCs paid or incurred with respect to an oil or gas well located outside of the United States, the costs, at the election of the taxpayer, are either (1) included in adjusted basis for purposes of computing the amount of any deduction allowable for cost depletion or (2) capitalized and amortized ratably over a 10-year period beginning with the taxable year such costs were paid or incurred.

[10] The term "United States" for this purpose includes the seabed and subsoil of those submerged lands that are adjacent to the territorial waters of the United States and over which the United States has exclusive rights, in accordance with international law, with respect to the exploration and exploitation of natural resources (i.e., the Continental Shelf area).

[11] A barrel-of-oil equivalent generally means that amount of the qualifying fuel which has a Btu (British thermal unit) content of 5.8 million.

[12] A facility that produces gas from biomass or produces liquid, gaseous, or solid synthetic fuels from coal (including lignite) generally will be treated as being placed in service before January 1, 1993, if it is placed in service by the taxpayer before July 1, 1998, pursuant to a written binding contract in effect before January 1, 1997. In the case of a facility that produces coke or coke gas, however, this provision applies only if the original use of the facility commences with the taxpayer. Also, the IRS has ruled that production from certain post-1992 "recompletions" of wells that were originally drilled prior to the expiration date of the credit would qualify for the section 29 credit.

[13] If a facility that qualifies for the binding contract rule is originally placed in service after December 31, 1992, production from the facility may qualify for the credit if sold to an unrelated person before January 1, 2008.

[14] The inflation adjustment factor for the 2000 taxable year was 2.0454. Therefore, the inflation-adjusted amount of the credit for that year was $6.14 per barrel or barrel equivalent.

[15] For 2000, the inflation adjusted threshold for onset of the phaseout was $48.07 ($23.50×2.0454) and the average wellhead price for that year was $26.73.

Enhanced oil recovery credit

Taxpayers are permitted to claim a general business credit, which consists of several different components. One component of the general business credit is the enhanced oil recovery credit. The general business credit for a taxable year may not exceed the excess (if any) of the taxpayer's net income tax over the greater of (1) the tentative minimum tax, or (2) 25 percent of so much of the taxpayer's net regular tax liability as exceeds $25,000. Any unused general business credit generally may be carried back one taxable year and carried forward 20 taxable years.

The enhanced oil recovery credit for a taxable year is equal to 15 percent of certain costs attributable to qualified enhanced oil recovery ("EOR") projects undertaken by the taxpayer in the United States during the taxable year. To the extent that a credit is allowed for such costs, the taxpayer must reduce the amount otherwise deductible or required to be capitalized and recovered through depreciation, depletion, or amortization, as appropriate, with respect to the costs. A taxpayer may elect not to have the enhanced oil recovery credit apply for a taxable year.

The amount of the enhanced oil recovery credit is reduced in a taxable year following a calendar year during which the annual average unregulated wellhead price per barrel of domestic crude oil exceeds $28 (adjusted for inflation since 1990).[16] In such a case, the credit would be reduced ratably over a $6 phaseout range.

For purposes of the credit, qualified enhanced oil recovery costs include the following costs which are paid or incurred with respect to a qualified EOR project: (1) the cost of tangible property which is an integral part of the project and with respect to which depreciation or amortization is allowable; (2) IDCs that the taxpayer may elect to deduct;[17] and (3) the cost of tertiary injectants with respect to which a deduction is allowable, whether or not chargeable to capital account.

A qualified EOR project means any project that is located within the United States and involves the application (in accordance with sound engineering principles) of one or more qualifying tertiary recovery methods which can reasonably be expected to result in more than an insignificant increase in the amount of crude oil which ultimately will be recovered. The qualifying tertiary recovery methods generally include the following nine methods: miscible fluid displacement, steam-drive injection, microemulsion flooding, in situ combustion, polymer-augmented water flooding, cyclic-steam injection, alkaline flooding, carbonated water flooding, and immiscible non-hydrocarbon gas displacement, or any other method approved by the IRS. In addition, for purposes of the enhanced oil recovery credit, immiscible non-hydrocarbon gas displacement generally is considered a qualifying tertiary recovery method, even if the gas injected is not carbon dioxide.

A project is not considered a qualified EOR project unless the project's operator submits to the IRS a certification from a petroleum engineer that the project meets the requirements set forth in the preceding paragraph.

The enhanced oil recovery credit is effective for taxable years beginning after December 31, 1990, with respect to costs paid or incurred in EOR projects begun or significantly expanded after that date.

Conventional oil recovery methods do not recover all of a well's oil. Some of the remaining oil can be extracted by unconventional methods, but these methods are generally more costly. At current world oil prices, a large part of the remaining oil in place is uneconomic to recover by unconventional methods. In this environment, the EOR credit can increase recoverable reserves. Although recovering oil using EOR methods is more expensive than recovering it using conventional methods, it may be less expensive than producing oil from new reservoirs. Although the credit could phase out at higher oil prices, it is fully effective at present world oil prices.

Alternative minimum tax

A taxpayer is subject to an alternative minimum tax ("AMT") to the extent that its tentative minimum tax exceeds its regular income tax liability. A corporate taxpayer's tentative minimum tax generally equals 20 percent of its alternative minimum taxable income in excess of an exemption amount. (The marginal AMT rate for a noncorporate taxpayer is 26 or 28 percent, depending on the amount of its alternative minimum taxable income above an exemption amount.) Alternative minimum taxable income ("AMTI") is the taxpayer's taxable income increased by certain tax preferences and adjusted by determining the tax treatment of certain items in a manner which negates the deferral of income resulting from the regular tax treatment of those items.

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[16] The average per-barrel price of crude oil for this purpose is determined in the same manner as for purposes of the section 29 credit.

[17] In the case of an integrated oil company, the credit base includes those IDCs which the taxpayer is required to capitalize.

As a general rule, percentage depletion deductions claimed in excess of the basis of the depletable property constitute an item of tax preference in determining the AMT. In addition, the AMTI of a corporation is increased by an amount equal to 75 percent of the amount by which adjusted current earnings ("ACE") of the corporation exceed AMTI (as determined before this adjustment). In general, ACE means AMTI with additional adjustments that generally follow the rules presently applicable to corporations in computing their earnings and profits. As a general rule a corporation must use the cost depletion method in computing its ACE adjustment. Thus, the difference between a corporation's percentage depletion deduction (if any) claimed for regular tax purposes and its allowable deduction determined under the cost depletion method is factored into its overall ACE adjustment.

Excess percentage depletion deductions related to crude oil and natural gas production are not items of tax preference for AMT purposes. In addition, corporations that are independent oil and gas producers and royalty owners may determine depletion deductions using the percentage depletion method in computing their ACE adjustments.

The difference between the amount of a taxpayer's IDC deductions and the amount which would have been currently deductible had IDC's been capitalized and recovered over a 10-year period may constitute an item of tax preference for the AMT to the extent that this amount exceeds 65 percent of the taxpayer's net income from oil and gas properties for the taxable year (the "excess IDC preference"). In addition, for purposes of computing a corporation's ACE adjustment to the AMT, IDCs are capitalized and amortized over the 60-month period beginning with the month in which they are paid or incurred. The preference does not apply if the taxpayer elects to capitalize and amortize IDCs over a 60-month period for regular tax purposes.

IDC's related to oil and gas wells are generally not taken into account in computing the excess IDC preference of taxpayers that are not integrated oil companies. This treatment does not apply, however, to the extent it would reduce the amount of the taxpayer's AMTI by more than 40 percent of the amount that the taxpayer's AMTI would have been if those IDCs had been taken into account.

In addition, for corporations other than integrated oil companies, there is no ACE adjustment for IDCs with respect to oil and gas wells. That is, such a taxpayer is permitted to use its regular tax method of writing off those IDCs for purposes of computing its adjusted current earnings.

Absent these rules, the incentive effect of the special provisions for oil and gas would be reduced for firms subject to the AMT. These rules, however, effectively eliminate AMT concerns for independent producers.

Passive activity loss and credit rules

A taxpayer's deductions from passive trade or business activities, to the extent they exceed income from all such passive activities of the taxpayer (exclusive of portfolio income), generally may not be deducted against other income.[18] Thus, for example, an individual taxpayer may not deduct losses from a passive activity against income from wages. Losses suspended under this "passive activity loss" limitation are carried forward and treated as deductions from passive activities in the following year, and thus may offset any income from passive activities generated in that later year. Losses from a passive activity may be deducted in full when the taxpayer disposes of its entire interest in that activity to an unrelated party in a transaction in which all realized gain or loss is recognized.

An activity generally is treated as passive if the taxpayer does not materially participate in it. A taxpayer is treated as materially participating in an activity only if the taxpayer is involved in the operations of the activity on a basis which is regular, continuous, and substantial.

A working interest in an oil or gas property generally is not treated as a passive activity, whether or not the taxpayer materially participates in the activities related to that property. This exception from the passive activity rules does not apply if the taxpayer holds the working interest through an entity which limits the liability of the taxpayer with respect to the interest. In addition, if a taxpayer has any loss for any taxable year from a working interest in an oil or gas property which is treated pursuant to this working interest exception as a loss which is not from a passive activity, then any net income from such property (or any property the basis of which is determined in whole or in part by reference to the basis of such property) for any succeeding taxable year is treated as income of the taxpayer which is not from a passive activity.

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[18] This provision applies to individuals, estates, trusts, personal service corporations, and closely held C corporations.

Similar limitations apply to the utilization of tax credits attributable to passive activities. Thus, for example, the passive activity rules (and, consequently, the oil and gas working interest exception to those rules) apply to the nonconventional fuels production credit and the enhanced oil recovery credit. However, if a taxpayer has net income from a working interest in an oil and gas property which is treated as not arising from a passive activity, then any tax credits attributable to the interest in that property would be treated as credits not from a passive activity (and, thus, not subject to the passive activity credit limitation) to the extent that the amount of the credits does not exceed the regular tax liability which is allocable to such net income.

As a result of this exception from the passive loss limitations, owners of working interests in oil and gas properties may use losses from such interests to offset income from other sources.

Tertiary injectants

Taxpayers are allowed to deduct the cost of qualified tertiary injectant expenses for the taxable year. Qualified tertiary injectant expenses are amounts paid or incurred for any tertiary injectant (other than recoverable hydrocarbon injectants) which is used as a part of a tertiary recovery method.

The provision allowing the deduction for qualified tertiary injectant expenses resolves a disagreement between taxpayers (who considered such costs to be IDCs or operating expenses) and the IRS (which considered such costs to be subject to capitalization).

Energy Efficiency and Alternative Energy Sources

Incentives for energy efficiency and alternative energy sources are also essential elements of national energy policy. The continuing strength of our economy over the past two years, despite oil price rises, underscores the dramatic improvements in energy efficiency we have achieved over the past quarter century, as well as the changing economy. While past oil shortages have taken a significant toll on the U.S. economy, the recent increases in oil prices have not affected the economy much. Increased energy efficiency in cars, homes, and manufacturing has helped insulate the economy from these short-term market fluctuations. In 1974, we consumed 15 barrels of oil for every $10,000 of gross domestic product. Today we consume only 8 barrels of oil for the same amount (in constant dollars) of economic output.

Current law tax incentives for energy efficiency and alternative fuels

Tax incentives currently provide an important element of support for energy-efficiency improvements and increased use of renewable and alternative fuels. Current incentives in the form of tax expenditures are estimated to total $1.2 billion for fiscal years 2002 through 2006. They include a tax credit for electric vehicles and expensing for clean-fuel vehicles ($20 million), a tax credit for the production of electricity from wind or biomass and a tax credit for certain solar energy property ($590 million), and an exclusion from gross income for certain energy conservation subsidies provided by public utilities to their customers ($580 million).[19]

Electric and clean-fuel vehicles and clean-fuel vehicle refueling property

A 10-percent tax credit is provided for the cost of a qualified electric vehicle, up to a maximum credit of $4,000. A qualified electric vehicle is a motor vehicle that is powered primarily by an electric motor drawing current from rechargeable batteries, fuel cells, or other portable sources of electric current, the original use of which commences with the taxpayer, and that is acquired for use by the taxpayer and not for resale. The full amount of the credit is available for purchases prior to 2002. The credit begins to phase down in 2002 and does not apply to vehicles placed in service after 2004.

Certain costs of qualified clean-fuel vehicles and clean-fuel vehicle refueling property may be deducted when such property is placed in service. Qualified electric vehicles do not qualify for the clean-fuel vehicle deduction. The deduction begins to phase down in 2002 and does not apply to property placed in service after 2004.

Energy from wind or biomass

A 1.5-cent-per-kilowatt-hour tax credit is provided for electricity produced from wind, "closed-loop" biomass (organic material from a plant that is planted exclusively for purposes of being used at a qualified facility to produce electricity), and poultry waste. The electricity must be sold to an unrelated person and the credit is limited to the first 10 years of production. The credit applies only to facilities

[19] *Analytical Perspectives, Budget of the United States Government, Fiscal Year 2002,* U.S. Government Printing Office, Washington, DC, 2001, p. 63.

placed in service before January 1, 2002. The credit amount is indexed for inflation after 1992.

Solar energy

A 10-percent investment tax credit is provided to businesses for qualifying equipment that uses solar energy to generate electricity, to heat or cool or provide hot water for use in a structure, or to provide solar process heat.

Energy conservation subsidies

Subsidies provided by public utilities to their customers for the purchase or installation of energy conservation measures are excluded from the customers' gross income. An energy conservation measure is any installation or modification primarily designed to reduce consumption of electricity or natural gas or to improve the management of energy demand with respect to a dwelling unit.

Administration proposals

The Administration's budget proposals for fiscal year 2002 include tax incentives for renewable energy resources. The budget also contains proposals to modify the tax treatment of nuclear decommissioning funds related to electricity production and to extend the suspension of the net income limitation applicable to certain oil and gas production. The Administration's proposals are described below.[20]

Electricity from wind and biomass

The Administration proposes to extend the credit for electricity produced from wind and biomass for three years to facilities placed in service before January 1, 2005. In addition, eligible biomass sources would be expanded to include certain biomass from forest-related resources, agricultural sources, and other specified sources. Special rules would apply to biomass facilities placed in service before January 1, 2002. Electricity produced at such facilities from newly eligible sources would be eligible for the credit only from January 1, 2002, through December 31, 2004. The credit for such electricity would be computed at a rate equal to 60 percent of the generally applicable rate. Electricity produced from newly eligible biomass co-fired in coal plants would also be eligible for the credit only from January 1, 2002, through December 31, 2004. The credit for such electricity would be computed at a rate equal to 30 percent of the generally applicable rate.

Residential solar energy systems

The Administration proposes a new tax credit for individuals that purchase solar energy equipment used to generate electricity (photovoltaic equipment) or heat water (solar water heating equipment) for use in a dwelling unit that the individual uses as a residence. The credit would be available only for equipment used exclusively for purposes other than heating swimming pools. The proposed credit would be equal to 15 percent of the cost of the equipment and its installation. The credit would be nonrefundable and an individual would be allowed a lifetime maximum credit of $2,000 per residence for photovoltaic equipment and $2,000 per residence for solar water heating equipment. The credit would apply only to solar water heating equipment placed in service after December 31, 2001, and before January 1, 2006, and to photovoltaic systems placed in service after December 31, 2001, and before January 1, 2008.

Nuclear decommissioning funds

The Administration proposes to repeal the current law provision that limits deductible contributions to a nuclear decommissioning fund to the amount included in the taxpayer's cost of service for ratemaking purposes. Thus, unregulated taxpayers would be allowed a deduction for amounts contributed to a qualified nuclear decommissioning fund. The Administration also proposes to permit funding of all decommissioning costs (including pre-1984 costs) through qualified nuclear decommissioning funds. Contributions to fund pre-1984 costs would be deductible except to the extent a deduction (other than under the qualified fund rules) or an exclusion from income has been previously allowed with respect to those costs. The Administration's proposal would clarify that any transfer of a qualified nuclear decommissioning fund in connection with the transfer of the power plant with which it is associated would be nontaxable and no gain or loss will be recognized by the transferor or transferee as a result of the transfer. In addition, the proposal would permit taxpayers to make deductible contributions to a qualified fund after the end of the

[20] For a more detailed description, see *General Explanations of the Administration's Fiscal Year 2002 Tax Relief Proposals,* Department of the Treasury, April 2001.

nuclear power plant's estimated useful life and would provide that nuclear decommissioning costs are deductible when paid.

Net income limitation on percentage depletion from marginal wells

The Administration proposes a one-year extension of the provision suspending the 100-percent-of-net-income limitation for marginal oil and gas wells. Under the Administration proposal, marginal wells would continue to be exempt from the limitation during taxable years beginning in 2002.

Mr. Chairman, this concludes my prepared testimony. I will be pleased to answer any questions you or other members of the Subcommittee may have.

Chairman MCCRERY. Thank you, Mr. Mikrut.

One of the goals of our energy policy, obviously, is to secure and increase domestic production to try to add to the supply here at home. In the administration's opinion, are the incentives which are currently in the Tax Code helping us to achieve that goal?

Mr. MIKRUT. Well, the administration hasn't proposed to repeal any of the incentives, so implicitly, yes, Mr. Mccrery. In addition, through the budget proposals, we believe that some of these incentives must be supplemented. Those are the four items that I mentioned previously. Vice President Cheney's task force is considering additional supplements, and those will come out later in the month.

We do believe it is important to continue to analyze the current law incentives that are in the Code. Many of these are expiring provisions, so Congress and other policymakers can take this analysis up on a routine basis as the provisions begin to expire and can evaluate to what extent the provisions have provided the desired incentives and to what extent the provisions have to be modified. This is an ongoing process and we welcome the ability to express our views with respect to these provisions, both in hearings like this and at proposed markups.

Chairman MCCRERY. Do you know if Vice President Cheney's task force is going to include any tax proposals in their report?

Mr. MIKRUT. There are several tax proposals that are being considered, but developing a comprehensive national energy policy is very much like a jigsaw puzzle. You have to put in some of the bigger pieces first, dealing directly with energy policy, and then see what's missing. Then you have to determine whether tax incentives can fill in those missing holes.

As such, the analysis isn't done until it's all done, and the extent tax policy needs to supplement some of the basic energy policies is the question that is being considered currently.

Chairman MCCRERY. Do you know when we should expect a report from the task force?

Mr. MIKRUT. I believe the task force hopes to finish by the end of the month, and perhaps by mid-month. So it's very soon, Mr. Chairman.

Chairman MCCRERY. How about the conservation subsidies that you mentioned in your testimony. Can you give us some idea of the impact those have had on conservation?

Mr. MIKRUT. Under current law, Mr. Chairman, there is a conservation subsidy that allows public utilities to give to their residential customers tax-free benefits for certain equipment or weath-

erization or other benefits for energy conservation. We understand that those have been effective with respect to residential properties.

We have also found that some of the renewable fuels provisions have also been effective and, as modified in the President's proposal, we think we should increase production of energy from these renewable sources.

Chairman MCCRERY. Two years ago, we were hearing, from our independent producers particularly, that the low prices were driving them out of business, essentially. Now prices are up and the independent producers who are still in business are doing better.

My question is, do we need, even in times of high prices, the incentives in the tax laws that we have?

Mr. MIKRUT. As I recall, Mr. Chairman, it was almost 2 years ago that the Treasury was testifying before Mr. Houghton's Oversight Subcommittee on this very issue. What came out of the testimony then is that during a period of low prices—and price probably being the major incentive for someone to produce from oil and gas properties—that in a period of low prices, producers will cap marginal wells, and that once a marginal well is capped, it is almost permanently out of service. If it is prohibitively expensive to regenerate that production, that production is permanently lost.

I believe your suggestion that, even in a period of relatively high prices, one should consider whether incentives are necessary to keep such properties producing during a period of low prices, is appropriate. I think the administration proposal to further extend the marginal well net income limitation is a step in that direction.

Chairman MCCRERY. Well, thank you, Mr. Mikrut. In fact, my last question was going to be concerning that provision, which suspends the 100 percent net income limitation. I gather from your response to that question that the administration is convinced that this suspension should continue.

My only question, I guess, would be, if it's so important to encourage continued production from marginal wells, why does the administration only propose a 1-year extension? Why don't we make it permanent?

Mr. MIKRUT. That is one of the issues that will be taken up by the task force. The provisions that will expire this year, including the 100 percent limitation, have been proposed to be extended for 1 year in order to again evaluate whether it is necessary to provide further extensions. But I think the case you're making is something that has to be taken into account, whether a permanent extension is warranted or not.

Chairman MCCRERY. Thank you, Mr. Mikrut. Mr. McNulty.

Mr. MCNULTY. Thank you, Mr. Chairman. Thank you, Mr. Mikrut, for your testimony.

Mr. Mikrut, given the fact that energy conservation incentives have the potential for a more immediate impact than building new power plants, which we also need to do, why isn't there more of an emphasis on the conservation tax incentives, or do you think there will be in the task force report?

Mr. MIKRUT. I think the task force is taking very seriously conservation measures as well as production measures. I think under current projections—and the representative from EIA can tell you

better—that currently it appears that energy demand will be increasing, so we have to address that immediately. Over time, I believe energy conservation will become more and more important. So I think the immediate concern is what's facing us on the short-term horizon, which is increased demand, making sure there's an adequate supply and, over time, to look at the conservation measures.

Mr. MCNULTY. What is your analysis of why energy costs have skyrocketed in recent months? Who's to blame for that?

Mr. MIKRUT. I don't believe it's the result of the tax system, Mr. McNulty, so I'm probably not the right person to answer your question.

Mr. MCNULTY. Do you have any analysis of what to expect over the next year—not assuming anything new is done with regard to the issues we're discussing—but an analysis of what we should look forward to in terms of prices over the next year?

Mr. MIKRUT. Again, Mr. McNulty, I will have to defer to the experts at EIA, who can probably give you a more informed analysis of that question.

Mr. MCNULTY. I have no further questions, Mr. Chairman.

Chairman MCCRERY. Mr. Hayworth.

Mr. HAYWORTH. Mr. Chairman, congratulations on this opening hearing. It's an honor to serve with you on this Subcommittee. Mr. Mikrut, thank you for stopping by.

One of the advantages of seating arrangements, the gentleman from Illinois, Mr. Weller, is a seat-mate of mine on the full Committee as well. We have topics of common interest. In fact, to presage his questioning, he will probably get into the whole area of nuclear decommissioning.

I just wanted to articulate to you, Mr. Mikrut, that I have been working with my colleague from Illinois, as well as Congressmen English, Matsui and Neal, on a legislative package that is designed to address some of the Federal tax consequences of electricity restructuring. Our legislation, the Electric Power Industry Tax Modernization Act, or H.R. 1459, includes the nuclear decommissioning bill that my friend, Mr. Weller, has introduced. My private use bill, tax relief for contributions in aid of construction, had a provision that addresses the use of tax-exempt bonds for transmission facilities.

I forwarded a copy of H.R. 1459 to the Treasury Department, and I hope I can work with Secretary O'Neill and you on these important issues in the days ahead. So I just wanted to let you know that it's down there.

Turning to questions, so many different things have been done, and so many alternative forms of energy have been encouraged. I think when I drive into the neighboring State of California, where there are certainly challenges, to put it euphemistically, about electricity, and I see the windmills there. I'm interested in the wind energy credit. That section 45 tax credit was enacted in 1992.

Could you give us an assessment of the impact that credit has had on the production of energy since that point in time?

Mr. MIKRUT. I think, Mr. Hayworth, in order to analyze the section 45 credit, one has to look not only at how much electricity is being produced from alternative sources but, as well, what sort of additional activity is going on because of the credit.

One of the things that we found is that new production facilities have come on line. Although clearly they are not the predominant sources of production in the United States—predominant production still comes from fossil fuels—-there have been alternative sources of energy developed because of the credit.

In addition, not only have new sources come online, I believe there is more research being done and that the section 45 credit would stimulate research beyond that stimulated by the research (R&E) credit. This research was undertaken because perhaps taxpayers or entrepreneurs thought they could develop a technology that could qualify for the section 45 credit. What we have been able to determine in talking to taxpayers is that they continue, because of these tax incentives, to try to discover new sources of energy.

Mr. HAYWORTH. I thank you, Mr. Mikrut. Mr. Chairman, I have no further questions.

Chairman MCCRERY. Thank you, Mr. Hayworth. Mr. Weller.

Mr. WELLER. Thank you, Mr. Chairman. Let me again commend you for kicking off the first hearing of the Select Revenue Subcommittee on an important issue that we're all facing, particularly back home where we now have gasoline prices well over two dollars in the Chicago area and, of course, inching higher. It certainly tells us what the result is when our Nation fails to have an energy policy over the last decade and why we need one. Of course, the Tax Code does have an impact.

I have been working with my friend, Mr. Foley, on extension of the wind energy tax credit, which is a key part, I believe, in reducing our dependence on imported oil and, of course, looking for alternative sources of energy, particularly in the area of "green power". I am pleased that the administration has included an extension of the wind energy credit in your budget.

Mr. Mikrut, I would like to focus my first question on the area of nuclear decommissioning, an issue in which Representative Cardin and I introduced legislation which was basically included in legislation sent to President Clinton and, unfortunately, vetoed as part of a much larger tax package. Mr. Cardin and I are reintroducing that legislation this week.

Clearly, there is a need for modernizing the tax treatment of nuclear decommissioning funds, particularly on the restructuring in electricity that's going on around the country. We are now having nuclear power plants changing hands and, of course, we need to modernize the tax treatment of those nuclear decommissioning funds. Again, I want to note that the President has included provisions regarding modernizing the treatment of nuclear decommissioning funds in his budget. I believe it's quite similar to what Representative Cardin and I have introduced in the past, and similar to the legislation that we will be reintroducing this week, which is identical to what President Clinton vetoed.

But there are several questions I would like to ask, Mr. Mikrut, in relation to the proposal that the administration included in your budget.

You know, many nuclear power plants were constructed prior to 1984, when the tax laws were changed to allow contributions into qualified funds. The administration's proposal differs from the leg-

islation that Mr. Cardin and I have introduced with respect to how to treat pre-1984 costs.

I was wondering, can you explain why you prefer the administration's approach versus the approach that this Committee has taken in the past?

Mr. MIKRUT. Certainly, Mr. Weller, although I would like to point out where the proposals are very much the same. We think it is very important that amounts that were incurred for decommissioning, or anticipated to be incurred for decommissioning, prior to 1984, should be fully funded. That is the thrust of your bill, Mr. Hayworth's bill, and several other congressional proposals that have come forward. We think it's very important that amounts that have been collected to decommission a nuclear plant in the future, even though that decommissioning relates to pre-1984 periods, should be placed in the funds and get the beneficial treatment that the funds provide.

Clearly, in 1984, when Congress put these rules in, there were certain budget deficit costs that probably prohibited expansion of the provision at that time. But current surpluses allow us to free up some of those tax dollars and put them toward the funds.

I think it is clear, though, that you do not want a one-time hit, so that a large amount of money goes into the fund at one time and becomes deductible all at once. I believe both your bill, H.R. 1459, as well as the administration's proposal, lengthens or stretches out those deductions over a period of years.

I think the only difference is the methodology that we use versus the methodology that you use in computing the deduction. We would like to work with you to see if one is better than the other. Ours is very simple, it's straightforward, it spreads the cost straight line over a ten-year period. Your method, I believe, goes through the former costs of service type calculation, a level funding calculation, that is aplicable to the post-'83 amounts.

Again, I think the difference is not that significant. The significant part is that both proposals allow for the pre-1984 amounts to be fully funded.

Mr. WELLER. Again, we're very anxious to work with you. We appreciate the fact that the administration recognizes the importance of this issue. Nuclear power is a clean way to generate energy and, of course, is a key part of our energy source. It must be part of any new, modern energy policy.

Let me just ask, from a policy standpoint, why you feel that, in facilitating the transfer of nuclear power plant ownership from one entity to another, why a tax-free transfer is so important?

Mr. MIKRUT. We have talked with several taxpayers who were contemplating transfers of nuclear plants, and those types of transfers took all forms. Some were tax free mergers, some were contributions to joint ventures, some were just outright sales of the plants.

But the issue that has come up is what to do with the amounts that are in these funds and what to do with the contingency liability that decommissioning represents in the future. It seems that, especially with respect to some of the taxable transfers, where there is a taxable sale of the plant, such a sale could trigger the

inside buildup in the funds, and that was prohibitive for the transaction and probably stopped the transaction in its tracks.

One can almost view the transfer of the nuclear decommissioning fund and the assumption of that liability as a separate transaction, separate from the plant sale itself. We think it's appropriate to try to match, as present law tries to match, the fund with the contingent liability. Essentially, what is happening is that the transferee is stepping in the shoes of the transferor and to that extend there is no taxable event, because the moneys are still in the fund and they can't be reached except for the decommissioning that will happen several years in the future.

So we thought, in order to facilitate various forms of transfers of generating properties that deregulation will be forcing, that the major stumbling block to transferring the funds should be clarified. The Service has ruled in the past, with respect to certain transactions, that it is a tax-free event. We propose to further effectuate that policy for other types of transactions.

Mr. WELLER. Thank you, Mr. Mikrut.

Mr. Chairman, I have a few more questions. Are we going to have a second chance if we hang around, or is time going to allow for that, or should I just submit my questions and ask him to respond in writing? I have additional questions.

Chairman MCCRERY. Why don't you and I discuss it after Mr. Lewis is recognized.

Mr. WELLER. All right. Thank you, Mr. Chairman.

Chairman MCCRERY. Mr. Lewis.

Mr. LEWIS. Thank you, Mr. Chairman.

I guess my question deals with the ag community and the particular need that we have for biodiesel, ethanol. Will the President, through the report that Mr. Cheney is going to be providing us, will that continue to support the tax credit for the use of those renewable fuels?

Mr. MIKRUT. Mr. Lewis, I clearly can't get ahead of the Vice President and provide what will be in the final plan. As I mentioned before, all the proposals have to be taken in context, and the analysis is not over until it's over.

I can assure you that all the proposals that have been considered in the public forum, in the Congress and by the administration over the last several years are being considered and taken into account and evaluated.

Mr. LEWIS. Thank you.

Chairman MCCRERY. Mr. Foley.

Mr. FOLEY. Thank you very much, Mr. Chairman.

I just wanted to commend the gentleman from Illinois, Mr. Weller, on coauthoring with me the wind energy extension. I think it's a very important public policy area and I appreciate his work on this in years past, and obviously welcome our joint cooperation on this very important bill.

Let me ask you a question relative to section 29 credits, particularly dealing with the size of crushed coal. How do you reconcile the new requirement, or at least the ruling, of one-eighth inch or smaller in size of coal, based on IRS's prior rulings, particularly the many which have provided that taxpayers will use coal fines, run

of mine coals, run of mine coal fines, feedstock from a wide variety of sources, or simply coal without stating a specific coal size?

Mr. MIKRUT. Before I answer directly your question, Mr. Foley, for the benefit of the Members who are not as familiar with the section 29 issue as I know you are, let me give you a bit of background.

Present law provides a tax credit for synthetic fuels produced from coal. The credit is approximately $25 a ton, I believe, under current prices. Late last summer and fall, the Treasury and the IRS received significant correspondence from Members of Congress, Governors of States, and several of our trading partners, that some taxpayers were producing synfuels that may or may not have met former IRS ruling policies and asked us to look into this issue.

Last October, the IRS and Treasury suspended the ruling policy and requested comments before we reinstituted the rulings. Several taxpayers came in and talked to us. We had a frank discussion with them, an open and frank discussion. We studied the matter in great detail and 2 weeks ago we renewed our ruling program.

What we decided is that the policy that we would go forward with was to be consistent with the prior rulings and the standards established by the IRS in 1986, in Revenue Ruling 86–100, requiring a significant chemical change in order to determine whether coal production produces synfuels. We believe this standard was an appropriate interpretation of congressional intent. We also clarified some of the placed in service rules for certain properties that had to be met in 1998.

In evaluating comments, we looked at prior rulings. It seemed to us that the bulk of the rulings dealt with coals that were in a very small state, one-eighth of an inch or less. Since 2 weeks ago, when we issued our ruling, we have received significant comments from many taxpayers that perhaps three-eighths of an inch is a better industry standard. We have asked the industry to come back to us with an additional study. They were very responsive and came back, I think, with it yesterday, so it was within a week.

We do think that they made a point and we're looking to modify the ruling policy that we put forth 2 weeks ago to accommodate what we believe the industry standards are. To be more specific as to your question, we are looking at adopting the three-eighths inch standard.

Mr. FOLEY. That is welcome news, because I understand there is a deadline of May 7th for permanency on this policy. Do you feel we'll be able to capture it by then?

Mr. MIKRUT. We would hope to move very quickly on this, yes, Mr. Foley.

Mr. FOLEY. I think Mr. Hayworth mentioned wind energy. I would like you to elaborate because I, too, was delighted that the President chose to include it in his proposal. Obviously, we feel it is a significant alternative to fossil fuels.

You would anticipate strong support from the administration if, in fact, we extended it in Congress?

Mr. MIKRUT. The administration, in its fiscal year 2002 budget, does have an extension of the wind energy credit through 2004, so yes, Mr. Foley.

Mr. FOLEY. Thank you.

Chairman MCCRERY. Mr. Jefferson.

Mr. JEFFERSON. Thank you, Mr. Chairman.

I'm coming in late, so I hope I don't cover territory that others have already covered, but I want to ask this general question.

To what extent do you think tax incentives are themselves effective and efficient in promoting production, conservation, or whatever the energy policy is directed toward, to what extent do you think tax incentives are effective and efficient in getting that done?

Mr. MIKRUT. Mr. Jefferson, this is a question that's the major focus of this hearing. Clearly, I think the most important incentive for energy production is price, and fossil fuels are generally priced on a world market so there is very little that can be done to affect that price. There is very little that can be done through the Internal Revenue Code to affect the world market price. So many of the policies that you can put forth through the Internal Revenue Code work on the edges and work on the margin.

Where they seem to be the most effective is not in dealing necessarily with fossil fuel production, or exploration for those items, but with respect to energy that would otherwise not be tapped into. For example, marginal well production is one area where the Congress has traditionally provided tax incentives, and the administration, in its fiscal year 2002 budget, would provide additional incentives.

In addition, alternative fuels, whether they be wind energy, section 29 qualified energy sources, or section 45 qualified energy sources, is another area that the Internal Revenue Code can be, in certain instances, effective in providing incentives.

Finally, the last thing you mentioned is, of course, conservation. Conservation is another area greatly influenced by price. The higher the price for energy, the more the incentive to conserve without any tax incentives.

But on the margin one can provide incentives for increased conservation. The Congress has done that through the provision of section 136 and exclusion for residential homeowners for conservation measures provided by utilities, as well as other provisions that Congress has considered over the years.

Mr. JEFFERSON. I think I have your answer. It's around the edges, as you say, around the margins. You would leave a program of tax incentives for exploration that wouldn't otherwise take place, in the judgment of the Congress, or alternative fuels, and maybe in conservation in times when prices aren't high; that's kind of how you would generally summarize what you just said, right?

Mr. MIKRUT. Yes, Mr. Jefferson.

Mr. JEFFERSON. So we ought to be looking in areas like that if we're going to try to do something that's effective and efficient with the Tax Code.

I'm sorry I haven't been able to compare them myself, but to what extent do the proposals by the current administration differ from that which the prior administration took in this area?

Mr. MIKRUT. Some of the proposals are very similar. The prior administration also proposed extension of some of the expiring provisions, and also would have allowed the open-loop biomass to qualify for the section 45 credit. They would have also allowed the credit for plants placed in service in prior years at a reduced rate.

The nuclear decommissioning proposal in the Clinton administration was somewhat more limited than to the one currently in the administration's proposal, and was more limited than H.R. 1459, or Mr. Weller's proposal.

There are other areas with respect to hybrid vehicles that the prior administration proposed that were not in the current budget but are being considered by the task force, so you may be seeing those when Vice President Cheney produces his recommendations later this month. The tax credit for residential solar energy was something that was in the prior administration's proposal and has moved forward into the current budget proposal as well.

So, in general, I think many of the proposals that are currently in the administration's budget did have analogues to the prior administration proposals. In addition, there will be further proposals coming forth through the Vice President's task force that may go well beyond those.

Mr. JEFFERSON. Would you characterize the differences as rather small?

Mr. MIKRUT. In some proposals, yes. I mean, there were other——

Mr. JEFFERSON. I mean, any big, new ideas. That's what I'm trying to get at, I guess. Any new, big, blockbuster ideas here that the prior administration did not pursue?

Mr. MIKRUT. There are no major new blockbuster proposals in the fiscal year 2002 budget. However, I think the comprehensive energy policy that the task force is putting together will subsume a lot of the things that were in the budget, and when you see it, you may think they're blockbuster proposals.

Mr. JEFFERSON. One last thing, Mr. Chairman, if I might. The proposals are mostly on the production side, or are there any on the conservation side? Or is it both?

Mr. MIKRUT. I think they're on both.

Mr. JEFFERSON. I'm done. Go ahead. I'm telling the Chairman I'm done. I didn't want to stop you from talking.

Mr. MIKRUT. I think the proposals with respect to the expansion of section 45 and the residential solar systems can be treated as conservation because they conserve the production of fossil fuels. They are alternatives to fossil fuels. Therefore, because you are encouraging production from renewable sources, they're conservation type measures.

Mr. JEFFERSON. I might say that Wes Watkins and I have had some luck over the last several years in getting incentives in stripper wells and marginal wells production that we're very proud of. We continue to support expanding production.

Obviously, with what we know now about how to protect the environment at the same time in doing that, we can introduce these technologies into the expanded production capacity. But we have worked on trying to make sure we have more industry security within our own control than we've had and I think that's very important. I am real proud to have worked with Wes on these things.

Chairman MCCRERY. Mr. Watkins.

Mr. WATKINS. Mr. Chairman, just one comment. It's kind of a big umbrella statement, if I might.

You know, our Nation has not had an energy policy, and it's for a lot of reasons. We can point fingers. And we're at fault. I guess we can take part of the blame here in the U.S. Congress. Past administrations, both Democrat and Republican, have to take part of the blame.

Today, we have two of the most knowledgeable men concerning energy in the White House, George W. Bush and Dick Cheney. I have a lot of faith, that they have a lot of the answers. I know they have an understanding of the energy industry.

It would be a simple mistake and a great failure on our part if we cannot come together and make sure we at least put tax provisions in there that will allow us to develop a quality and quantity of energy, from a variety of sources, throughout this country.

I notice that Dick Cheney said we need 120 to 150 power generating plants. I don't question that at all. It has to be fired by natural gas, coal, or other fossil fuels, and we need to move and we need to make it our utmost priority during this administration, to get a policy to move our country forward.

So, Mr. Chairman, I think this is a very important and timely topic, and we want you to take the message back to the administration, that we hope and pray they will not fail, and that we will be there to try to help them.

Mr. MIKRUT. Thank you, Mr. Watkins.

Chairman MCCRERY. Thank you, Mr. Watkins. I hope you and Mr. Jefferson will continue to work very well together for the interests of energy policy in the United States.

Mr. Weller has one more question, Mr. Mikrut, and then we'll let you go.

Mr. WELLER. Thank you, Mr. Chairman. Mr. Mikrut, thank you for participating in what is a very important hearing today.

I do want to also thank you on the issue that my friend, Mr. Foley, raised regarding crushed coal and your review of those standards. That's good news and it has a positive impact. I believe we can address that issue in an environmentally responsible way. I am glad to hear the good news and look forward to working with you on that issue as well.

The last area of questioning I would like to raise with you is regarding the section 29 tax credit, which was designed to provide incentives for the production of non-conventional fuels. Have you seen an increase in the production of non-conventional fuels over the past 10 years, and what has been the result?

Mr. MIKRUT. I believe there has been an increase in the production of some non-conventional fuels. I believe that our estimate of the current tax expenditure costs—that is, what an outlay cost would be—is about $1.2 billion a year, which is rather significant.

We have seen, again in our study of the section 29 credit, with respect to coal production, that there seems to be an increase in activity in that area. It is not necessarily true that it comes at a decrease in other areas, so I would think, in general, the production of section 29 qualified synfuels has increased over time.

Mr. WELLER. So you believe it has had a positive impact then, from the standpoint of increased production of non-conventional fuels?

Mr. MIKRUT. I believe there has been more credit-qualified production over time.

Mr. WELLER. Do you believe that an extension of this credit could help then, as we look for ways of finding more affordable energy for Americans?

Mr. MIKRUT. Well, with respect to the synfuels from coal, that provision is not scheduled to expire until 2008, so we have a great deal of time to do further analysis to see where we are at that point, what new technologies have come on line, whether we want to reshift the credit toward new technologies rather than paying for old technologies, which may or may not need the credit. There may be some technologies that qualify for the credit that you may no longer want to support at all. You may want to put those resources to a better use.

Again, I think we have some time to do an analysis with respect to that portion of the section 29 credit—until 2008. Another portion of the credit does not expire until 2003, so again, you have some time there. Through hearings like this, and developments of further budgets, we can analyze those portions of the credit as well.

Mr. WELLER. You know, Mr. Mikrut, my experience with various tax credits and other incentives, when they're in a temporary nature, when they sunset over a short period of time, many times, once they're made permanent, or there's a very lengthy extension, there is a greater investment as a result of that because of the tax consequences and business decisionmakers trying to decide on whether to invest their capital look at that long-term consequence. When they know a tax provision is going to be there permanently, or for a long period of time, they are more inclined to use it. That's why extension of the wind energy credit is so important and, of course, why this issue is important.

Let me just ask this. As we look at the energy policy, which we're all anxiously awaiting to come forward from the administration in the next two weeks, do you feel that we have an adequate supply of non-conventional fuels to meet the demand we're looking at? What's your point of view?

Mr. MIKRUT. I think, through the budget proposals, where we're suggesting an extension of alternative fuels, and through the discussions that we've had in looking at some of the proposals that have come forth before the task force, there is a renewed interest in trying to develop fuel production to meet demand in non-conventional ways, or alternative ways. And I think this is an important component.

However, as the Vice President said, it is hard to imagine alternative fuels being the major source of energy production in the near term, but it is something where investments in research and incentives through tax credits may provide a stimulus for the longer term.

Mr. WELLER. Thank you, Mr. Mikrut. Mr. Chairman, thanks for the courtesy of the opportunity to have a second turn. I appreciate it very much, Mr. Chairman. It's a good hearing.

Chairman MCCRERY. Mr. Mikrut, thank you very much for appearing before us today. We will probably be seeing you some more.

Mr. MIKRUT. Thank you, Mr. Chairman.

Chairman MCCRERY. Miss Hutzler is next. Miss Hutzler is Director of the Office of Integrated Analysis and Forecasting, Energy Information Administration, with the United States Department of Energy.

Miss Hutzler, welcome. Your written testimony will be submitted for the record in its entirety, and if you could summarize within about 5 minutes, we would appreciate it. You may proceed.

STATEMENT OF MARY J. HUTZLER, DIRECTOR, OFFICE OF INTEGRATED ANALYSIS AND FORECASTING, ENERGY INFORMATION ADMINISTRATION, U.S. DEPARTMENT OF ENERGY

Ms. HUTZLER. Thank you, Mr. Chairman, and Members of the Subcommittee. I appreciate the opportunity to appear before you today to discuss energy consumption, supply, and efficiency in the United States.

The Energy Information Administration (EIA) is an autonomous statistical and analytical agency within the Department of Energy. We are charged with providing objective, timely and relevant data analysis and projections for the use of the Department, other government agencies, the U.S. Congress as well as the public.

The projections in this testimony are from the Annual Energy Outlook 2001, which provides analysis of domestic energy consumption, supply and prices. These baseline projections are widely used by government agencies, the private sector, and academia for their own analyses. They are not meant to be exact predictions. They represent a likely energy future, giving technological and demographic trends, current laws and regulations, and consumer behavior.

We expect total energy consumption to increase from an estimated 97 quadrillion Btu in 1999 to 127 quadrillion Btu in 2020, an average annual increase of 1.3 percent. This is lower than the growth we have experienced since 1983, when energy consumption grew at a rate of 1.7 percent per year. We have seen energy consumption decline twice in the past 30 years, in the mid-seventies and the early eighties, with both occurring during oil price increases.

Today, petroleum, natural gas, and coal make up about 85 percent of the total energy consumed in the United States. We project that these fossil fuels will increase their share slightly over the next 20 years. Petroleum represents about 40 percent of today's consumption, and is mainly used for transportation fuels and in the industrial sector for petro-chemical feedstocks, plastics, asphalt, and areas where little substitution potential exists.

Coal and natural gas each represent about 23 percent of our current energy consumption. Ninety percent of our coal is used for electricity generation. Natural gas is consumed in the residential and commercial sectors, mainly for space heating, and in the industrial and electricity generation sectors as a boiler and generating fuel. We are expecting a 52-percent increase in natural gas total consumption by 2020.

In this next chart, the inset box shows the expected increase in electricity demand over the next 20 years. To meet that demand, natural gas consumption for electricity generation is projected to triple between now and 2020. We expect natural gas generating

technologies to supply 92 percent of our new capacity over the next 20 years because of their lower capital costs, higher efficiencies, better load following, and shorter construction lead times relative to the other technologies.

Natural gas is expected to increase its share of total generation from 16 percent today to 36 percent in 2020. And coal is expected to decrease its current share of generation from 52 percent to 44 percent.

Nuclear generating capacity is projected to decline through 2020 due to retirements of some existing facilities, for which continued operation is not economical compared to the cost of building a new generating facility. Of the 97 gigawatts of nuclear capacity available in 1999, 26 gigawatts is projected to be retired by 2020, and no new plants are expected to be constructed. As a result, nuclear generation decreases its share from 20 percent today to 11 percent in 2020.

The use of renewable technologies for electricity generation, including cogeneration, is projected to increase slowly, primarily due to moderate expected fossil fuel prices. Most of the growth in renewable electricity generation is expected from biomass, landfill gas, geothermal energy, and wind power. State mandates and other incentives, including the Federal production tax credit for wind generation, encourage most of the growth in renewables in the earlier part of the forecast.

The next chart shows our domestic supply of fuels. Coal is our Nation's most abundant fossil fuel resource, providing 32 percent of our current domestic production. We expect domestic natural gas production to surpass coal by 2015, increasing its share of production from 27 percent today to 35 percent in 2020.

Our domestic petroleum supply is projected to remain roughly flat for the next 20 years, resulting from decreasing crude production and increasing production from natural gas plant liquids and refinery gains. However, because of our increasing demand for petroleum, net imports are expected to increase from their 52 percent share today to 64 percent in 2020.

The lower energy growth rate that we are forecasting for the future is partly a result of improved energy intensity, which is the bottom line on this graph. Energy intensity has declined since 1970, most notably when energy prices have increased rapidly. Between 1970 and 1986, energy intensity declined at an average rate of 2.3 percent per year, as the economy shifted to less energy intensive industries and more efficient technologies.

Without significant price increases, and with the growth of more energy intensive industries, the intensity decline slowed to an average of 1.3 percent per year between 1986 and 1999. Through 2020, we project energy intensity to decline at an average annual rate of 1.6 percent, as efficiency gains and structural shifts in the economy offset growth and demand for energy services.

In conclusion, through 2020, continuing growth in the U.S. economy is expected to stimulate more energy demand, with fossil fuels remaining the dominant source of energy. Renewables are expected to supply 7 percent of our total consumption in 2020, the same share as today. Nuclear is expected to supply a declining share due to retirements of existing capacity.

Thank you, Mr. Chairman, and Members of the Subcommittee. I will be happy to answer any questions you have.

[The prepared statement of Ms. Hutzler follows:]

Statement of Mary J. Hutzler, Director, Office of Integrated Analysis and Forecasting, Energy Information Administration, U.S. Department of Energy

Mr. Chairman and Members of the Subcommittee:

I appreciate the opportunity to appear before you today to discuss the long-term outlook for energy markets in the United States.

The Energy Information Administration (EIA) is an autonomous statistical and analytical agency within the Department of Energy. We are charged with providing objective, timely, and relevant data, analysis, and projections for the use of the Department of Energy, other government agencies, the U.S. Congress and the public. We do not take positions on policy issues, but we do produce data and analysis reports that are meant to help policy makers determine energy policy. Because we have an element of statutory independence with respect to the analyses that we publish, our views are strictly those of EIA. We do not speak for the Department, nor for any particular point of view with respect to energy policy, and our views should not be construed as representing those of the Department or the Administration. However, EIA's baseline projections on energy trends are widely used by government agencies, the private sector, and academia for their own energy analyses.

Each year, EIA publishes the *Annual Energy Outlook*, which provides projections and analysis of domestic energy consumption, supply, prices, and energy-related carbon dioxide emissions through 2020. The projections in this testimony are from the *Annual Energy Outlook 2001* (*AEO2001*), published by EIA in December 2000. These projections are not meant to be exact predictions of the future, but represent a likely energy future, given technological and demographic trends, current laws and regulations, and consumer behavior as derived from known data. EIA recognizes that projections of energy markets are highly uncertain, subject to many random events that cannot be foreseen, such as weather, political disruptions, strikes, and technological breakthroughs. In addition to these short-term phenomena, long-term trends in technology development, demographics, economic growth, and energy resources may evolve along a different path than assumed in the *AEO2001* reference case. Many of these uncertainties are explored through alternative cases in *AEO2001*.

Energy Consumption

Total energy consumption in the United States is projected to increase from 97.1 to 127.0 quadrillion British thermal units (Btu) between 1999 and 2020, an average annual increase of 1.3 percent. Energy consumption increased from 67.9 quadrillion Btu in 1970 to 81.0 quadrillion Btu in 1979, with a downturn in 1974 and 1975 during the first oil price increase. During the early 1980s, energy consumption again declined to 73.3 quadrillion Btu in 1983, due in part to the second oil price increase. Since 1983, energy consumption has been generally increasing, with an average annual increase of 1.8 percent through 2000.

Transportation energy demand is expected to increase at an average annual rate of 1.8 percent to 38.5 quadrillion Btu in 2020 and is the fastest growing end-use sector (Figure 1). The growth in transportation use is driven by 3.6-percent projected annual growth in air travel, the most rapidly increasing transportation mode, and 1.9-percent annual growth in light-duty vehicle travel, the largest component of transportation energy demand, coupled with slow projected growth in vehicle efficiency. The projected growth in travel is a result of continued growth in the economy and in personal income.

Residential and commercial energy consumption is projected to increase at average annual rates of 1.2 and 1.4 percent, respectively, reaching 24.4 quadrillion Btu in 2020 for residential demand and 20.8 quadrillion Btu for commercial demand. Projected economic and population growth leads to expansion of the housing and commercial building stock. In addition, it is expected that the growth in personal income will increase equipment purchases and continue the trend to larger new homes. In both sectors, the growth in demand is led by electricity consumption for a variety of equipment—telecommunications, computers, office equipment, and other appliances. Electricity use is projected to increase at annual rates of 1.9 and 2.0 percent, in the residential and commercial sectors, respectively. Industrial energy demand is projected to increase at an average rate of 1.0 percent per year, reaching 43.4 quadrillion Btu in 2020, as efficiency improvements in the use of energy help to offset growth in manufacturing output.

The projections incorporate promulgated efficiency standards for new energy-using equipment in buildings, as authorized by the National Appliance Energy Conservation Act of 1987 and periodically updated by the Department of Energy, and for motors, as required by the Energy Policy Act of 1992. Since *AEO2001* included only those laws, regulations, and standards in effect as of July 1, 2000, the new standards for residential clothes washers, water heaters, and central air conditioners and heat pumps and commercial heating, cooling, and water heating equipment issued in January 2001 and revised in April are not included. In addition to the impact of efficiency standards, improvements in efficiency are projected as a result of expected technological improvement and market forces.

Petroleum demand is projected to grow at an average rate of 1.4 percent per year through 2020, led by the growth in demand for transportation (Figure 2). Petroleum demand has declined during periods of high oil prices and economic slowdowns, specifically 1973 to 1975, 1978 to 1983, and 1989 to 1991. Since 1991, petroleum consumption has increased at an average annual rate of 1.7 percent, from 16.7 million barrels per day to record levels of 19.5 million barrels per day in 1999 and 2000. Through 2020, consumption of petroleum for transportation uses is projected to increase from about two-thirds to 72 percent of total petroleum demand. Projected growth in travel more than offsets efficiency gains, and expected economic growth increases petroleum use for freight and shipping through 2020.

Natural gas consumption is expected to increase at an average rate of 2.3 percent per year. The demand for natural gas generally declined through most of the 1970s and earlier 1980s but began to increase again after its recent low of 16.2 trillion cubic feet in 1986. Between 1994 and 1999, natural gas demand remained in the range of 21 to 22 trillion cubic feet but increased by 1 trillion cubic feet from 1999 to 2000, reaching a record high of 22.7 trillion cubic feet. In the projections, natural gas consumption is expected to increase in all sectors, but the most rapid growth is for electricity generation, where natural gas use (excluding cogenerators) is projected to grow from 3.8 to 11.3 trillion cubic feet between 1999 and 2020.

Total coal consumption is expected to increase from 1,044 to 1,297 million tons per year between 1999 and 2020, an average annual increase of 1.0 percent. Unlike petroleum and natural gas, coal consumption has generally increased since 1970, growing at an average annual rate of 2.4 percent over the last three decades. In the projections, coal remains the primary fuel for generation, although its share of generation is expected to decline from 51 to 44 percent between 1999 and 2020. About 90 percent of all coal consumption is used for electricity generation.

Total renewable fuel consumption, including ethanol used in gasoline, is projected to increase at an average rate of 1.1 percent per year through 2020. In 2020, about 55 percent of renewable energy is used for electricity generation and the rest for dispersed heating and cooling, industrial uses, and fuel blending. Since 1973, total renewable energy consumption is estimated to have increased from 4.6 quadrillion Btu to 7.1 quadrillion Btu in 2000, with 75 percent of the growth in the use of wood and waste.

Nuclear generating capacity is projected to decline through 2020 due to retirements of some existing facilities, for which continued operation is not economical compared to the cost of a new generating facility. Nuclear generating capacity increased from 7 to 100 gigawatts between 1970 and 1990, peaking at 101 gigawatts in 1996. Between 1970 to 2000, nuclear generation increased from 22 to 754 billion kilowatthours. Of the 97 gigawatts of nuclear capacity available in 1999, 26 gigawatts is projected to be retired by 2020, and no new plants are expected to be constructed by 2020. As a result, nuclear generation is projected to decline by about 21 percent by 2020.

Total electricity consumption is projected to grow by 1.8 percent per year through 2020, led by growth in the residential and commercial sectors (Figure 3). Between 1970 and 2000, the average annual growth in electricity demand was 3.0 percent, and, during the 1960s, electricity demand grew by more than 7 percent per year. Several factors have contributed to the slowing growth in demand, including increased market saturation of electric appliances, improvements in equipment efficiency and utility investments in demand-side management programs, and more stringent equipment efficiency standards. Throughout the forecast, the projected growth in demand for office equipment, personal computers, and other equipment is dampened by slowing growth or reductions in demand for space heating and cooling, refrigeration, water heating, and lighting, the continuing saturation of electricity appliances, the availability and adoption of more efficient equipment, and efficiency standards.

Energy Intensity

Energy intensity, measured as energy use per dollar of gross domestic product (GDP), has declined since 1970, most notably when energy prices have increased rapidly (Figure 4). Between 1970 and 1986, energy intensity declined at an average rate of 2.3 percent per year as the economy shifted to less energy-intensive industries and more efficient technologies. Without significant price increases and with the growth of more energy-intensive industries, intensity declines moderated to an average of 1.5 percent per year between 1986 and 2000. Through 2020, energy intensity is projected to decline at an average rate of 1.6 percent per year as efficiency gains and structural shifts in the economy offset growth in demand for energy services. Energy use per person generally declined from 1970 through the mid-1980s, and then tended to increase as energy prices declined. Per capita energy use is expected to increase slightly through 2020, as efficiency gains only partly offset higher demand for energy services.

Electricity Generation

Generation from both natural gas and coal is projected to increase through 2020 to meet growing demand for electricity and offset the decline in nuclear power expected from retirements of some existing facilities (Figure 5). As noted above, the share of coal generation is expected to decline through 2020 because assumptions about electricity industry restructuring, such as higher cost of capital and shorter financial life of plants, favor the less capital-intensive and more efficient natural gas generation technologies. The natural gas share of total generation is expected to increase from 16 to 36 percent between 1999 and 2020. It is projected that 413 gigawatts of new generating capacity will be needed in the forecast period, including cogeneration. Assuming an average plant size of 300 megawatts, this totals to nearly 1,400 new generating plants. This capacity is needed to meet growing electricity demand and to offset the expected retirements of about 9 percent of current generating capacity. The regions with the greatest capacity additions are the Southeast, Midwest, Texas, and California (Figure 6). Of this new generating capacity, it is projected that 92 percent will be fueled by natural gas, 5 percent by coal, and 3 percent by renewables (Figure 7) because natural gas technologies are generally the least expensive options for new capacity when comparing total generation costs.

The use of renewable technologies for electricity generation, including cogeneration, is projected to increase slowly at an average rate of 0.7 percent per year, primarily due to moderate fossil fuel prices. Most of the projected growth in renewable electricity generation is expected from biomass, landfill gas, geothermal energy, and wind power. State mandates and other incentives, including the Federal production tax credit for generation from wind, encourage much of the growth in renewables in the earlier part of the forecast period. Hydropower is expected to decline slightly through 2020, as output from existing facilities declines, and no large new sites are expected to be available for development.

Energy Supply

Total domestic petroleum supply, including refinery gain and natural gas plant liquids, is projected to remain nearly flat through 2020 (Figure 8). However, domestic crude oil production is projected to decline at an average rate of 0.7 percent per year, from 5.9 million barrels per day in 1999 to 5.1 million barrels per day in 2020. Conventional onshore production in the lower 48 States, which accounted for 44 percent of total U.S. crude oil production in 1999, is projected to decrease to 38 percent in 2020, as production from mature areas declines (Figure 9). Production from Alaska is also expected to decline between 1999 and 2020; however, projected declines in production from most of Alaska's oil fields—particularly Prudhoe Bay, the State's largest producing field—are expected to be offset by production from the National Petroleum Reserve-Alaska, which is projected to begin in 2010. Offshore oil production is projected to range from 1.6 to 2.1 million barrels per day throughout the forecast, and production from enhanced oil recovery is expected to increase later in the forecast period along with the world oil price projections.

As a result of increasing projected petroleum demand, net petroleum imports are expected to rise through 2020, to meet growing demand (Figure 10). Between 1999 and 2020, net imports of petroleum are projected to increase from 51 percent to 64 percent of domestic petroleum demand. In 2020, the United States is expected to require net imports of crude oil and petroleum products totaling 16.5 million barrels per day.

Unlike oil, domestic natural gas production, with its larger and more accessible resource base, is expected to increase from 18.6 trillion cubic feet in 1999 to 29.0 trillion cubic feet in 2020. Increased production comes primarily from lower 48 onshore conventional nonassociated sources, although onshore unconventional produc-

tion (including coalbed methane and low-permeability formations of sandstone and shale) is expected to increase at a faster rate than other sources as a result of technology advances (Figure 11). Offshore production is projected to increase less rapidly than onshore production but remains a major source of domestic supply. Natural gas production from Alaska is projected to increase slightly through 2020, not including gas from the North Slope. Production of associated-dissolved natural gas from lower 48 crude oil reservoirs generally declines in the projections, following the pattern of domestic crude oil production. In order to fill the gap between domestic production and consumption, net natural gas imports are expected to increase from 3.4 trillion cubic feet in 1999 to 5.8 trillion cubic feet in 2020, mostly pipeline natural gas imports from Canada (Figure 12). Net liquefied natural gas imports are projected to increase from 0.1 to 0.7 trillion cubic feet by 2020. Two liquefied natural gas import facilities at Elba Island, Georgia, and Cove Point, Maryland, were expected to reopen in 2003 at the time the *AEO2001* projections were finalized; however, 2002 appears to be a more likely date at this time.

Coal production is expected to increase from 1,100 million tons in 1999 to 1,331 million tons in 2020, an average of 0.9 percent per year, to meet rising domestic demand. From 1999 to 2020, low-sulfur coal production is expected to increase while the production of high- and medium-sulfur coal declines, due to the need to reduce sulfur dioxide emissions from coal-fired electricity plants required by the Clean Air Act Amendments of 1990. As a result, western coal production—the primary source of new low-sulfur coal—is expected to continue its historic growth, reaching 787 million tons in 2020, an annual growth rate of 2.2 percent (Figure 13). Western coal is surface mined and less costly to produce than eastern coal.

Energy Prices

Energy markets and energy prices are subject to much uncertainty. Random events including severe deviations from normal weather, political disruptions, strikes, and failures of vital equipment, such as refineries, generating plants, and pipelines, are all likely occurrences that may cause energy prices to fluctuate from one year to the next or to fluctuate, sometimes dramatically, from the average annual prices presented in *AEO2001*. Because the occurrence and timing of these events cannot be foreseen, the prices projected in *AEO2001* are based upon the expected trends for longer-term demand, supply, and technology development.

At the time the *AEO2001* projections were finalized in September 2000, the average world oil price was projected to increase from $17.26 per barrel in 1999 (1999 dollars) to about $27.60 per barrel in 2000, then fall through 2003 (Figure 14). In 2020, the projected price reaches $22.41 per barrel. At this time EIA is projecting a somewhat slower rate of decline in its *Short-Term Energy Outlook*. World oil demand is expected to increase at an average annual rate of 2.1 percent through 2020; however, projected growth in production in both OPEC and non-OPEC nations leads to relatively slow projected growth of prices through 2020. OPEC oil production is expected to reach 57.6 million barrels per day in 2020, nearly double the 29.9 million barrels per day in 1999. The June 2000 recoverable oil resource assessment by the U.S. Geological Survey raised world resources by about 700 billion barrels from the 1994 assessment. As a result, non-OPEC oil production is expected to increase from 44.8 million barrels per day to 59.5 million barrels per day between 1999 and 2020.

The average wellhead price of natural gas is projected to increase from $2.17 per thousand cubic feet in 1999 to $3.13 per thousand cubic feet in 2020 (Figure 15). Natural gas prices have been high in 2000 and 2001, due to higher than expected demand and to tight supplies, resulting from reduced drilling in reaction to low prices in 1998. At this time, EIA's *Short-Term Energy Outlook* projects natural gas prices to be higher in 2001 and 2002 than at the time the *AEO2001* projections were finalized. The higher prices projected for 2001 and 2002 will result in a longer transition period before natural gas stocks can be sufficiently replenished to cause prices to fall to the long-term price path. In the longer-term projections, technological improvements in natural gas exploration and production are expected to slow price increases.

The average minemouth price of coal is projected to decline from $16.98 per ton in 1999 to $12.70 per ton in 2020 (Figure 16). In a continuation of historical trends, the average price of coal is expected to decline through 2020 due to increasing productivity in mining, a shift to lower-cost western production, and competitive pressures on labor costs.

Average retail electricity prices are projected generally to decline from 6.7 cents per kilowatthour in 1999 to 6.0 cents per kilowatthour in 2020, although they increase slightly at the end of the forecast due to rising projected natural gas prices (Figure 17). Electricity industry restructuring is expected to contribute to lower

prices through reductions in operating and maintenance, administrative, and other costs. At the time the projections were finalized, twenty-four States and the District of Columbia had passed legislation or promulgated regulations to restructure their electricity markets, which is incorporated in the projections.

Carbon Dioxide Emissions

Energy-related carbon dioxide emissions are projected to increase at an average of 1.4 percent per year from 1999 to 2020, reaching 2,041 million metric tons of carbon equivalent, 35 percent higher than in 1999 and 51 percent higher than in 1990 (Figure 18). Projected increases in carbon dioxide emissions primarily result from continued reliance on coal for electricity generation and on petroleum fuels in the transportation sector.

Alternative Cases

In order to show the impact of alternative assumptions concerning the key factors driving energy markets, we include a number of alternative cases in *AEO2001*. Two sets of these cases illustrate the impacts of improved technology in energy-consuming equipment and in the production of oil and gas.

One alternative case assumes more rapid improvement in new technologies for end-use demand, through lower costs, higher efficiencies, and earlier availability for new technologies, relative to the reference case, as well as more rapid improvement in the costs and efficiencies of advanced fossil-fired and new renewable generating technologies. As a result, projected energy demand in 2020 is 8 quadrillion Btu lower than in the reference case (Figure 19). Such technology improvements could result from increased research and development, but should not be considered the most optimistic improvements that could occur with a very aggressive program of research and development. The *AEO2001* reference case assumes continued improvements in technology for both energy consumption and production; however, it is possible that technology could develop at a slower rate. In the 2001 technology case, it is assumed that all future equipment choices will be made from the equipment and vehicles available in 2001, with new building shell and industrial plant efficiencies frozen at 2001 levels. Also, new generating technologies are assumed not to improve over time. In this case, efficiencies improve over the forecast period as new equipment is chosen to replace older stock and the capital stock expands; however, projected energy demand in 2020 is 6 quadrillion Btu higher than in the reference case.

Another alternative case assumes more rapid technological improvement in the exploration and production of petroleum and natural gas. By 2020, these assumed improvements are expected to raise natural gas production by 1.1 trillion cubic feet and raise lower 48 crude oil production by nearly 300 thousand barrels per day compared to the reference case. The more rapid technology progress would also be expected to reduce the average wellhead price of natural gas in the United States from $3.13 per thousand cubic feet (1999 dollars) in the reference case to $2.50 per thousand cubic feet in 2020 (Figure 20). Conversely, slower technological improvements are assumed in another case, which reduce natural gas production by 1.9 trillion cubic feet and reduce lower 48 crude oil production by nearly 400 thousand barrels per day in 2020 relative to the reference case. In this slow technology case, the average wellhead price of natural gas in 2020 reaches $4.23 per thousand cubic feet.

Conclusion

Through 2020, continuing growth in the U.S. economy is expected to stimulate more energy demand, with fossil fuels remaining the dominant source of energy. As a result, our dependence on foreign sources of petroleum is expected to increase and domestic natural gas production and natural gas imports are expected to grow significantly. These forecasts incorporate an expectation of efficiency improvements in both demand and supply although different paths for technological development could lead to slower or more rapid efficiency gains.

Thank you, Mr. Chairman and members of the Subcommittee. I will be happy to answer any questions you may have.

Figure 1. Energy Consumption by Sector, 1970-2020 (quadrillion Btu)

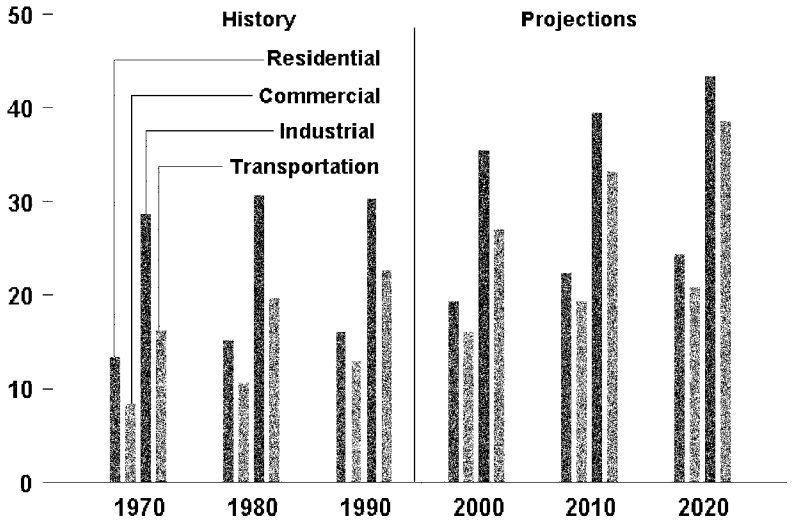


Figure 2. Energy Consumption by Fuel, 1970-2020 (quadrillion Btu)

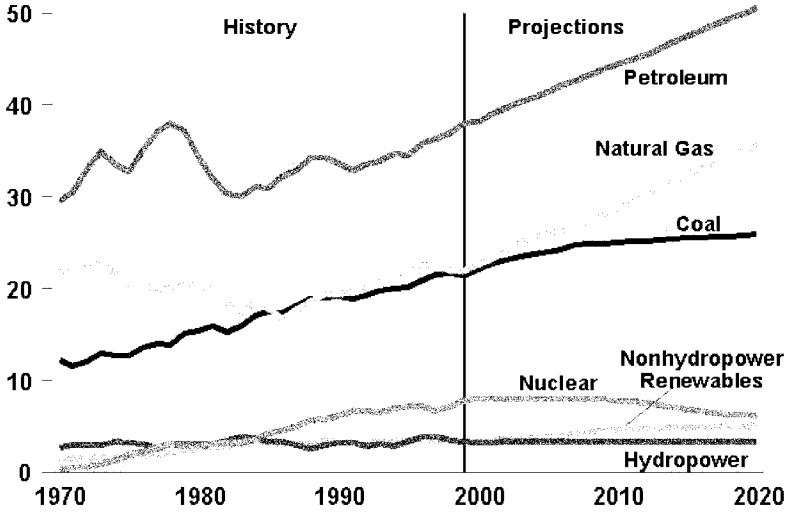


Figure 3. Annual Electricity Sales by Sector, 1970-2020 (billion kilowatthours)

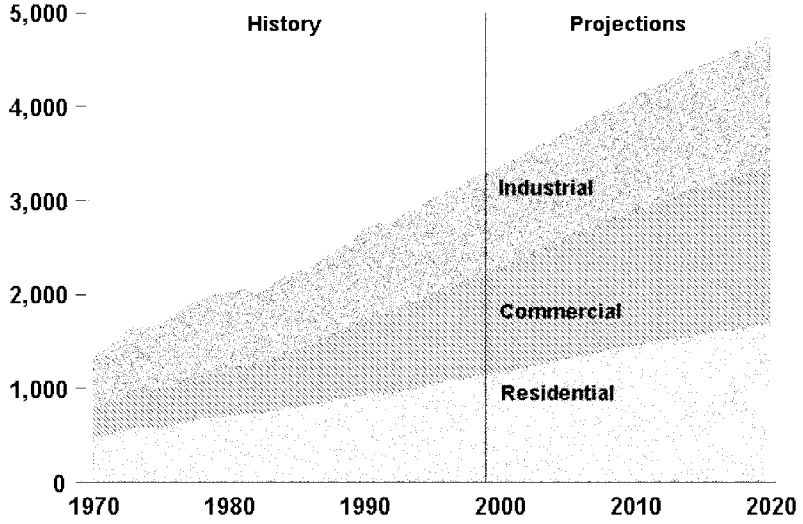


Figure 4. Energy Use per Capita and per Dollar of Gross Domestic Product, 1970-2020 (index, 1970 = 1)

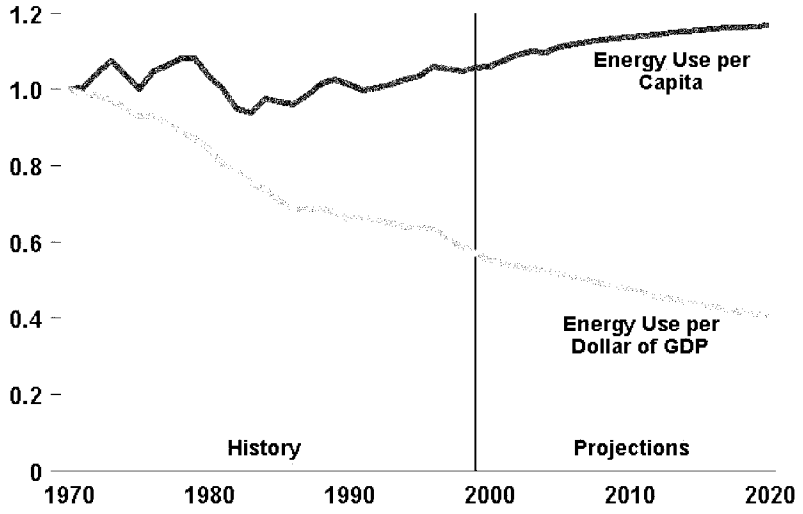


Figure 5. Electricity Generation by Fuel, 1970-2020 (billion kilowatthours)

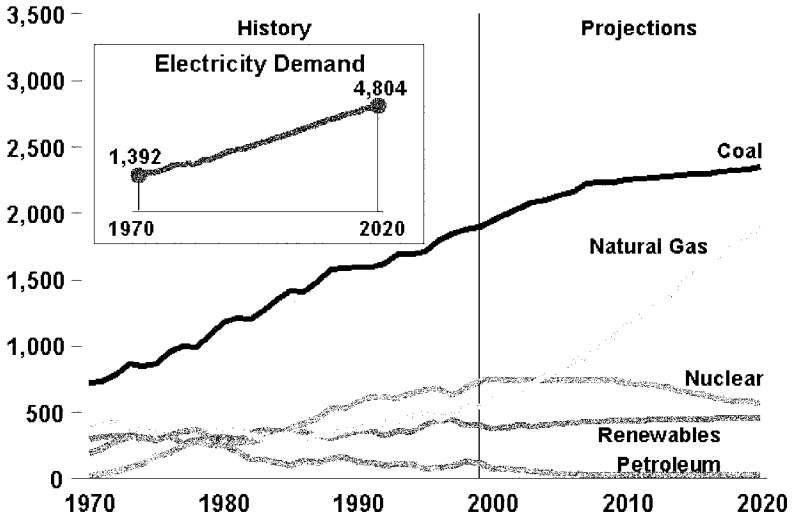


Figure 6. Electricity Generation Capacity Additions by North American Electric Reliability Council Region, 2000-2020 (gigawatts)

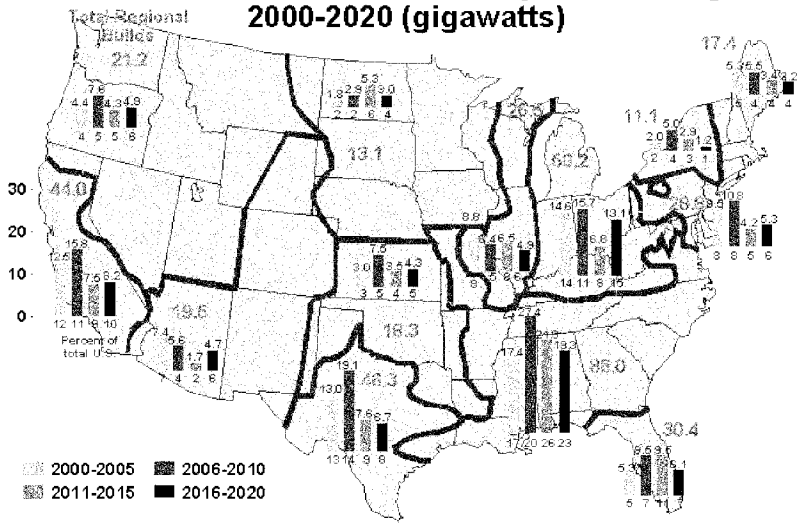


Figure 7. Projected Electricity Generation Capacity Additions by Fuel Type, Including Cogeneration, 2000-2020 (gigawatts)

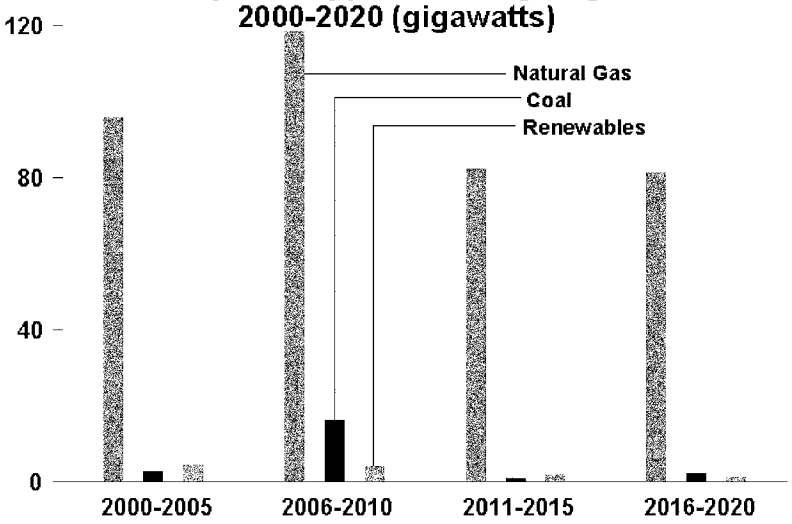


Figure 8. Energy Production by Fuel, 1970-2020 (quadrillion Btu)

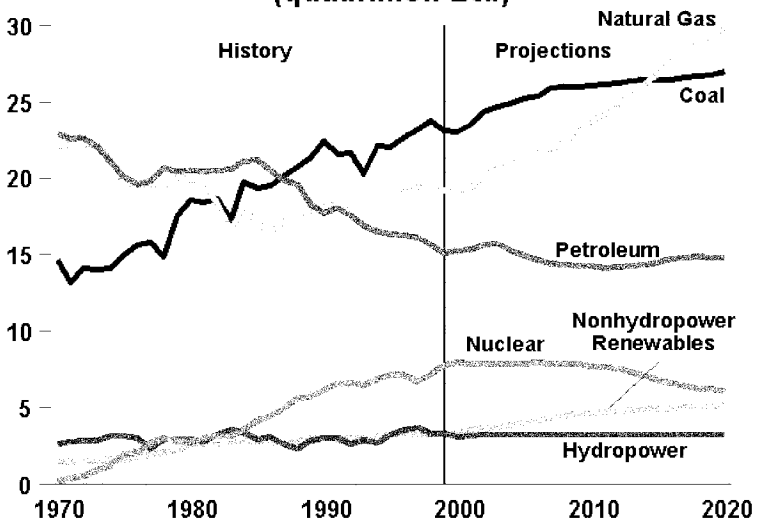


Figure 9. Crude Oil Production by Source, 1970-2020 (million barrels per day)

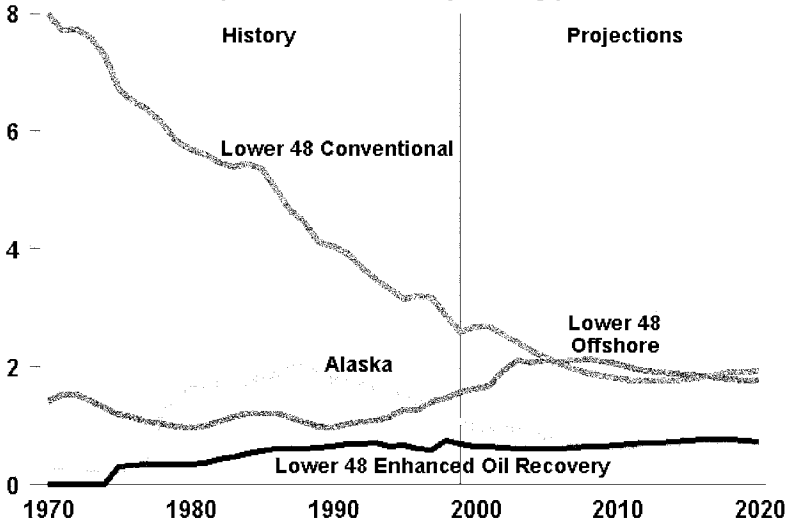


Figure 10. Petroleum Supply, Consumption, and Imports, 1970-2020 (million barrels per day)

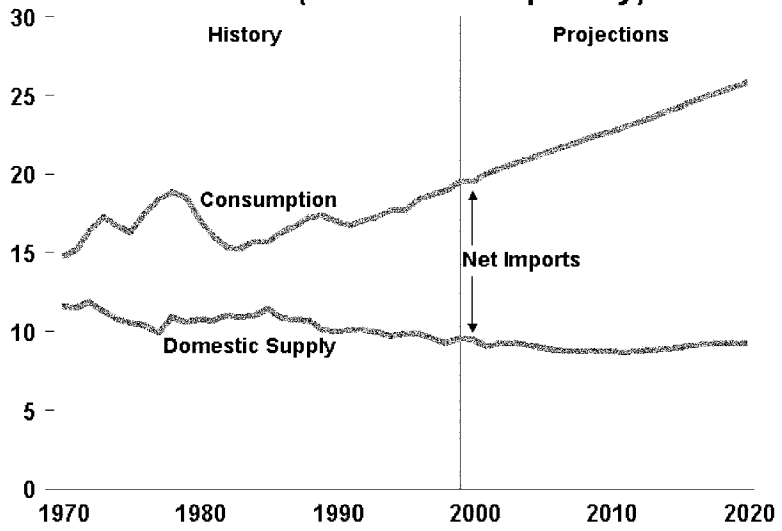


Figure 11. Natural Gas Production by Source, 1990-2020 (trillion cubic feet)

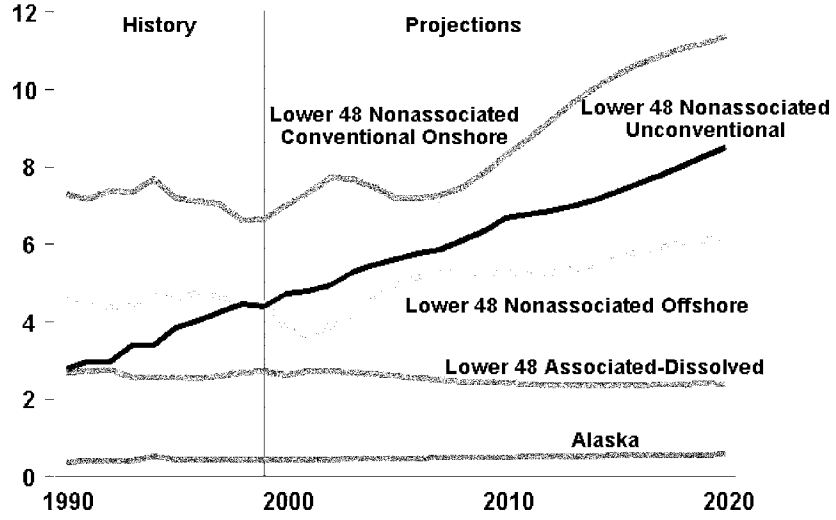


Figure 12. Natural Gas Production, Consumption, and Imports, 1970-2020 (trillion cubic feet)

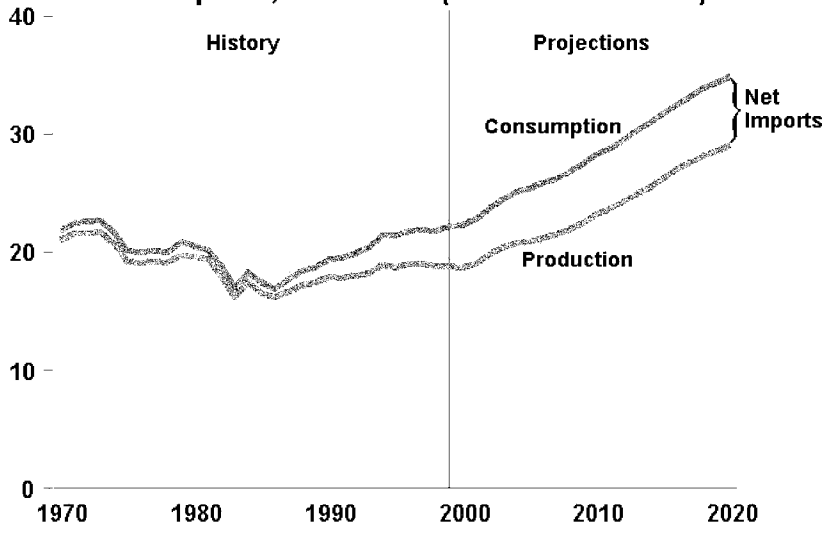


Figure 13. Coal Production by Region, 1970-2020 (million short tons)

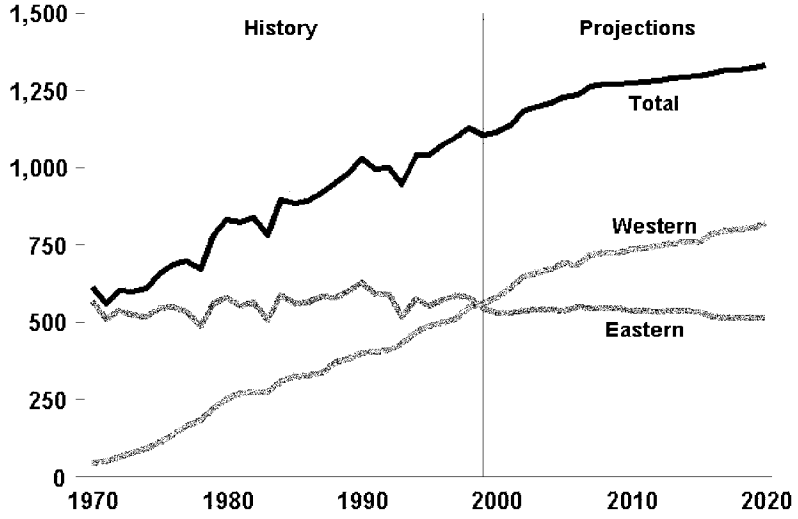


Figure 14. World Oil Price, 1970-2020 (1999 dollars per barrel)

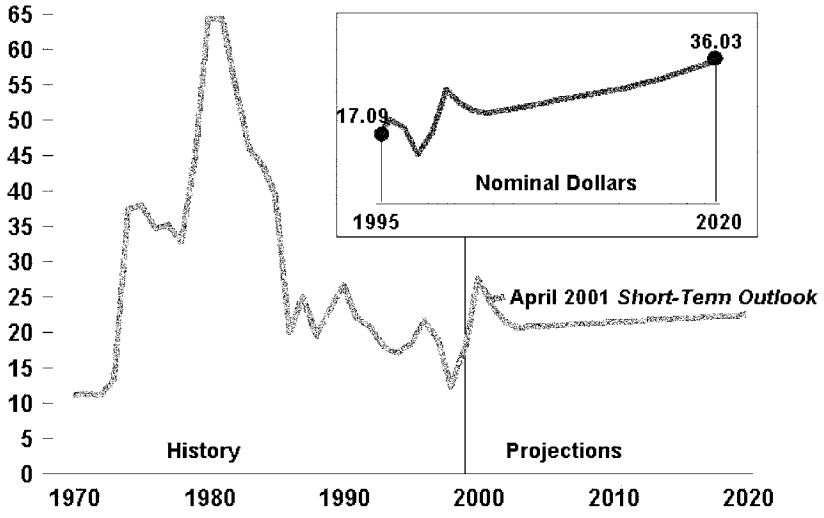


Figure 15. Natural Gas Wellhead Price, 1970-2020
(1999 dollars per thousand cubic feet)

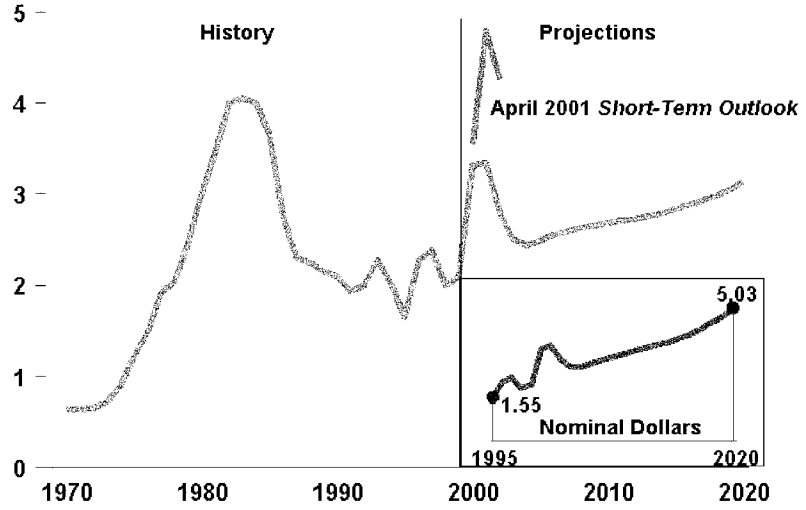


Figure 16. Coal Minemouth Price, 1970-2020
(1999 dollars per ton)

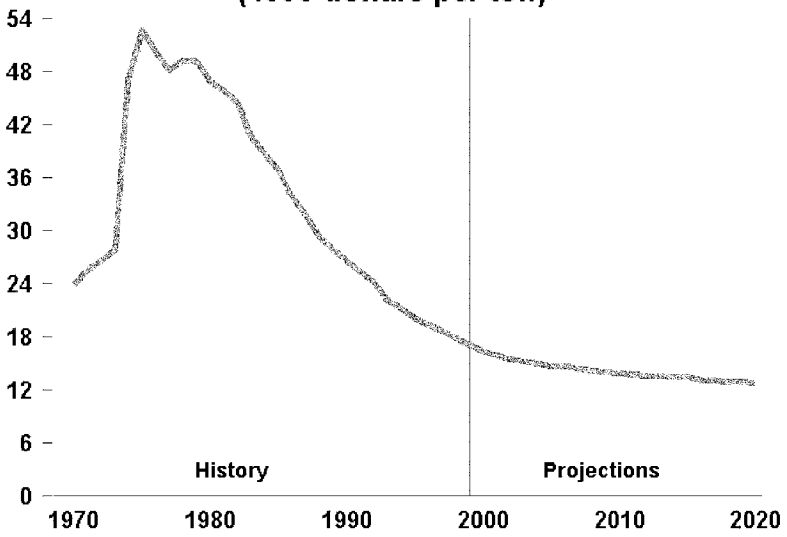


Figure 17. Electricity Price, 1970-2020 (1999 cents per kilowatthour)

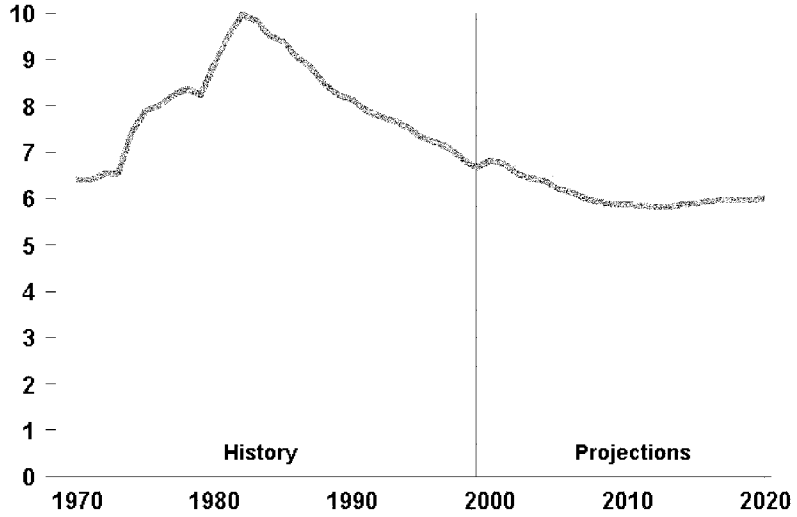


Figure 18. Carbon Dioxide Emissions by Fuel, 2000, 2010, and 2020 (million metric tons carbon equivalent)

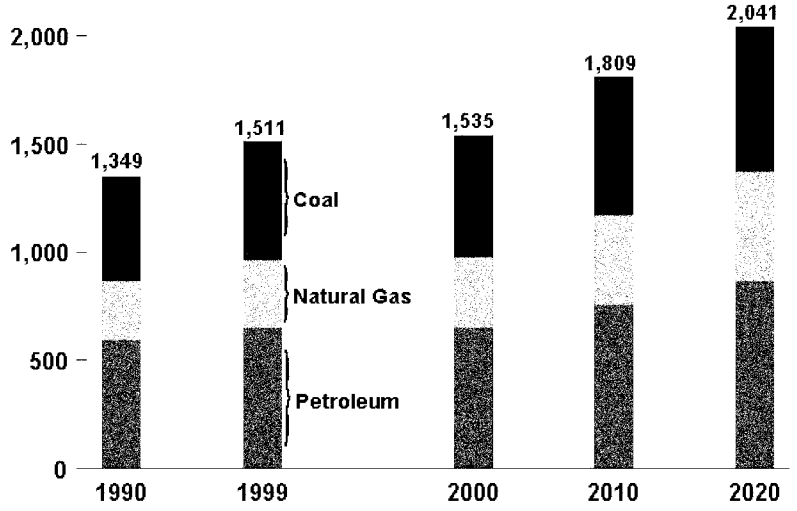


Figure 19. Energy Consumption in Three Technology Cases, 1990-2020 (quadrillion Btu)

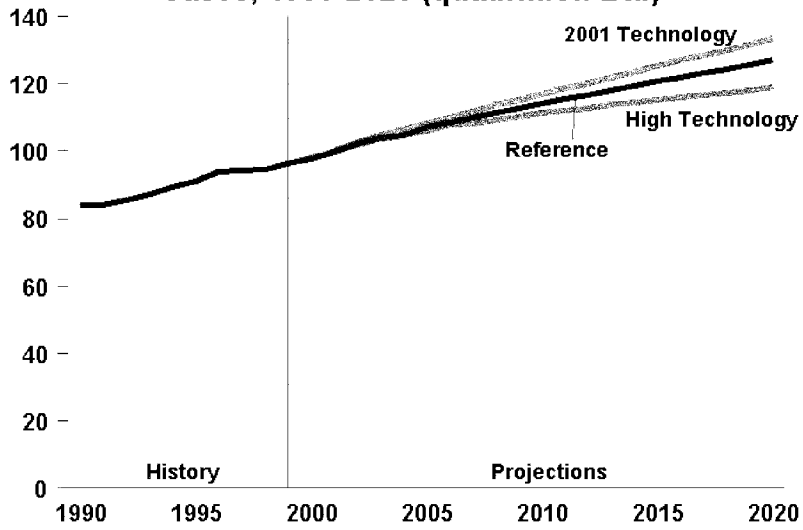
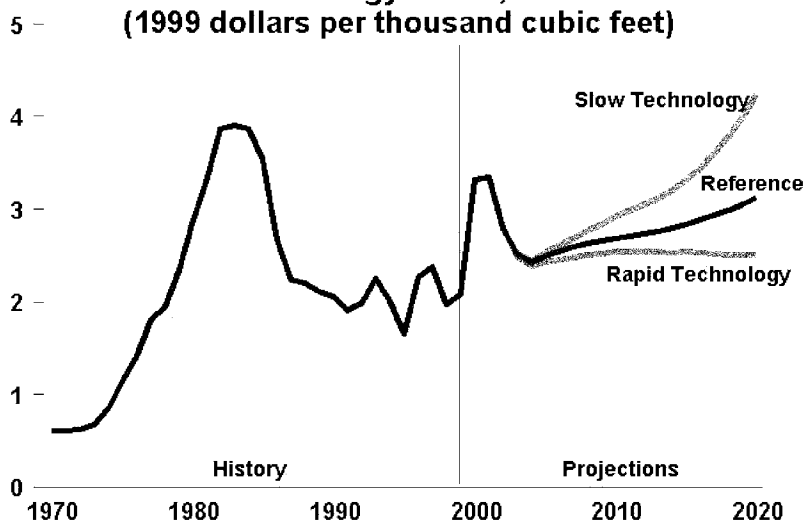


Figure 20. Lower 48 Natural Gas Wellhead Prices in Three Technology Cases, 1970-2020 (1999 dollars per thousand cubic feet)



Chairman McCrery. Thank you, Miss Hutzler.

Before I begin my questioning, I want to say that I read your resume. It's a very impressive resume, and I dare say that you're an expert on energy. So we are pleased to have such a distinguished witness before us to discuss the Nation's energy concerns.

You raise some interesting questions with your charts. Maybe I misunderstood you, so I want you to clarify it. I think you said that renewable sources of energy over the next 20 years will remain relatively flat and that one reason for that is moderate prices for fossil fuels. Is that what you said?

Ms. HUTZLER. Yes, I did. Let me first clarify what I said about renewables. I said their share would stay flat. We do see a slight growth in renewable energy over that period, but its share will remain at 7 percent.

In terms of our fuel prices, we are actually forecasting in the future that the current higher prices that you're seeing today will be coming down. We are seeing actually a declining trend for coal prices in real dollars. In nominal dollars, they will stay about flat.

For natural gas prices, we see them coming down in real dollars to about $2.50 per thousand cubic feet in the year 2004–2005, and then increasing again as demand increases and as we have to drill more difficult wells. Essentially, we're seeing pretty moderate prices in the future, not the high prices that we're seeing at this moment.

Chairman MCCRERY. That's interesting in light of your projections of a fairly steep increase in consumption of petroleum and natural gas, combined with your projection that imported petroleum will grow from 52 percent of consumption to 64 percent of consumption.

What assumptions are you making on our foreign suppliers of petroleum in terms of price?

Ms. HUTZLER. We look at a world oil price in our Reference Case (the projections I have showed you are for the Reference Case) of about $22.40 per barrel in real 1999 dollars for 2020. In nominal dollars, that's about $36 a barrel in the year 2020.

It turns out that there are parts of the world, particularly the OPEC area, where you can get oil out of the ground at a very low cost—two to five dollars a barrel. We see that OPEC's role in the future and the amount of production that it will be having in the future will increase substantially to deal with worldwide demand. We look at this on a worldwide basis, and we see world demand growing from about 77 million barrels per day in 1999 to about 117 million barrels per day in 2020. It is not just us that will be increasing our demand on the oil sector, but it will be other parts of the world as well.

Chairman MCCRERY. That's very interesting. We'll see.

On energy intensity, your chart shows that energy use per dollar of GDP is projected to continue to decline over the next 20 years. Looking at the history from 1970 to 2000, it declined at a fairly steep rate, and you gave us some of the reasons for that.

Do the reasons include conservation as well?

Ms. HUTZLER. When you get higher energy prices—and we saw higher energy prices in that period between 1970 and 1986—that does mean that consumers will turn down their thermostats and

turn to more efficient technology. So that is embedded in the energy intensity measure.

But it also means that there is a movement to structural shifts in the economy, where the economy changes over time, moving from more energy intensive industries to less energy intensive industries in that period.

Chairman MCCRERY. Getting back to the question of supply, do your projections assume, for example, production in ANWR?

Ms. HUTZLER. No. We only assume current laws and regulations, and since that production is not permitted at this point in time, we do not assume ANWR in these projections.

Chairman MCCRERY. I hesitate to ask this, because I don't know the answer, and I don't know what answer you're going to give me. But what is your opinion of the efficacy of our efforts to increase domestic supply in terms of price, in terms of dependency on other sources? Are we fighting a losing battle here? Are we wasting taxpayer dollars in providing incentives for increased exploration, development and so forth? What's your opinion?

Ms. HUTZLER. Our forecasts looked at the most economical way of achieving the demands that we forecast. We forecast both the demands and the supply of energy. In these forecasts, we don't have a shortfall. There is an equilibrium solution based on where we can get our sources of supply and where it's most economical to get those sources of supply.

The United States really doesn't have a comparative advantage in oil today, because we're essentially depleting our oil reserves and resources. As a result, we need to deal with foreign sources in order to meet our demands for oil, unless we do something else in the sectors where we get that demand, which is, for instance, the transportation sector.

It turns out that, certainly in our forecasts, the alternative fuel vehicles do not penetrate, that they're certainly not economic compared to the other vehicles, and they are not the vehicle of choice for consumers today. Consumers in this country look at horsepower rather than looking at efficiency, and they prefer their large automobiles with the higher horsepower. As a result, we put a large strain on demand for oil. With our current resources of oil, we're not going to be able to keep pace with that level.

Chairman MCCRERY. Mr. McNulty.

Mr. MCNULTY. Thank you, Mr. Chairman, and thank you, Miss Hutzler, for your testimony.

If you had to reverse roles with me or the chairman or any other Member of Congress, going home this weekend and facing constituents, and they ask you the question "why were my heating bills so high this winter, and why do the gasoline prices seem to be spiking up as we go into the summer months", what would your answer be?

Ms. HUTZLER. We're going to need to deal with that on a fuel basis, so let me talk about it by fuel type.

In terms of natural gas—and that's part of the larger heating bills that you saw this past winter—we had very low natural gas prices in 1998 and 1999. As a result of those low prices, the producing companies downsized and they didn't do the investments needed when demand spurred. They were not investing in the amount of drilling that was necessary to meet future demand.

We had relatively cold winters compared to the warmer-than-normal winters of the '98 and '99 time period. That demand, plus the extra demand for natural gas that we're seeing because of the generating plants, caused a huge demand for natural gas that wasn't readily available in terms of production.

As a result, we had to take from our storage areas the additional supplies needed to meet that demand which then made the storage go down. That produces a very tight market, and under a tight market situation, prices go up.

What is happening today is that those higher prices mean that we're drilling a whole lot more, and the companies are investing very heavily in drilling. We've seen close to record highs for the amount of drilling that's going on right now. So that's the reason why we anticipate, in the longer run, that the natural gas prices will be coming down.

We are forecasting the year 2001 to be the highest price for natural gas, over five dollars per thousand cubic foot at the wellhead. But then we expect it to come down a bit in 2001, and as I said, in the longer term, come down even further.

Mr. MCNULTY. What about the gasoline prices?

Ms. HUTZLER. The current situation with gasoline prices is that when refineries transition from the heating oil to the gasoline market, they realize that summer is their peak period and they have to run full-out during the summer period. Thus, they try to do some of their maintenance now in order to get ready for that peak period.

There are other issues, too, with refineries. We have this boutique of fuels, which means refineries have to gear up to be producing quite a few varieties of gasoline to meet the different environmental restrictions in different areas of the country. As a result, there were high spot prices and wholesale prices that have now gone into the retail market.

Another situation that we didn't foresee was that demand was actually higher than we had thought it was. We have gotten revised data in, showing that higher demand. Therefore, our demand forecast for the summer is probably going to be higher than we anticipated earlier, which will mean the price is going to probably be slightly higher, when we put out our next Short-Term Energy Outlook, which will come out on Monday.

Mr. MCNULTY. Now, looking toward the future, do you see the same moderation in the future with regard to gasoline prices as you do for the home heating fuel prices?

Ms. HUTZLER. Yes, we do. But most of the moderation is in the situation that we think world oil prices will be lower in the long term than we see them right now. Also, we do see expansion at existing refineries to give us the additional capacity that's needed.

Mr. MCNULTY. Do you see the entire reason for these price spikes the reasons you just gave, or do you see any evidence at all of price gouging?

Ms. HUTZLER. We do not have data to actually be able to investigate that question in detail. What we do see is that the productive capacity is not there for instance, natural gas right now. Therefore, it brings on the tight markets.

With the increased productive capacity that we will be getting from more drilling, we should be able to bring these prices down in the future.

Mr. MCNULTY. Is it correct that, outside of the West, the greatest potential for blackouts and brownouts would be in the New York region?

Ms. HUTZLER. We see New York as being probably the next area to watch, particularly because the New York City area has problems with transmission, getting electricity into that particular area. The city is trying to bring on more capacity by bringing on distributed gas-fired technologies within the area so they don't have to rely on the grid as much. But that doesn't necessarily mean, if they get a very hot peak day this summer, that there might not be some potential for a brownout.

Mr. MCNULTY. And what is your specific view again on the specific subject of today's hearing, which is with regard to energy conservation and production, the role that tax incentives can play?

Ms. HUTZLER. We have looked at tax incentives in a couple of different ways, one of which was that we were asked by two Congressional Committees to take a look at President Clinton's climate change technology initiative, and we did examine that to see what the impact would be on energy use based on those tax incentives.

Essentially, what our analysis indicated is that, for tax incentives to be successful, they need to be of the appropriate size—that is, amount, in terms of reduction. They must be of a certain length of time to make it reasonable for whatever they're trying to spur to have happen, and also that their timing has to be right. In other words, if the tax incentive is there but the technology for which they're directed at is not there, it is not going to give you what you want, which is to try to bring these technologies on so they can stand on their own two feet.

Now, in terms of what we have seen historically, one area that the tax credits have helped significantly is coalbed methane. Back in 1989, we were getting very little production from coalbed methane. Today, coalbed methane is providing about a 7 percent market share in terms of natural gas production. So the tax incentive has seemed to do quite well with that particular technology.

In terms of wind, if you take a look at the amount of wind capacity that has come online between 1994 and 1999, we got just over 900 megawatts of capacity. Between '94 and '97, only about 12 percent of that amount came on time. Eighty-8 percent came on after '97, in '98 and '99, and that was due to the fact that States enacted mandates that required that renewable technologies to come on time. Wind was a choice technology because it also had the tax credit.

We are seeing that, in the next 2 years, wind should double its capacity. It's about 2.6 gigawatts at the end of '99, and we see it doubling to about 5.2. That increase is being spurred by renewable portfolio standards that the States have enacted. The States tell us that they see the renewable mandate as a partnership with the Federal government's tax credits. The two programs are working together to try to promote these technologies.

But prior to the 1997 period, when the States did not have program to push renewables, tax incentives didn't add much renewable capacity.

Mr. MCNULTY. Mr. Chairman, I see my time is up, but could I ask one more quick question?

Chairman MCCRERY. If you like, we can do a second round.

Mr. MCNULTY. Okay.

Chairman MCCRERY. Mr. Ryan.

Mr. RYAN. Thank you, Mr. Chairman.

Miss Hutzler, it is nice to have you here. I represent southeastern Wisconsin, which is facing a very unique problem today. That is, in the Milwaukee/Chicago region, which is an ozone nonattainment area, we have reformulated gas, phase two. We have a unique blend of reformulated gas, phase two, so we're experiencing a tremendous price spike at this time. So I wanted to direct my questions to you on reformulated gas and refinery supply and capacity.

Last year, we experienced a similar price spike, and the EIA produced a study analyzing reformulated gas, and it attributed—and correct me if I'm wrong—I think it attributed the range of the price increase of about 12 to 15 cents of the price per gallon of gas, to the reformulated gas switch over from phase one to phase two.

One of the things I wanted to ask you about is the transformation between the winter blend to the summer blend of gasoline. It had been our understanding, after consulting with the EIA, the EPA and the refineries themselves, that when you switch your tanks from winter to summer blend, on sort of a "cold turkey" basis—May 1st is actually the wholesale date that that takes place—that that injects into the system, which is already in tight supply, a huge supply crunch which causes a spike in price.

What is your opinion on that, and number two, this year we had hoped that we would receive the kind of regulatory relief from a different agency, not DOE, to allow the co-blending of winter and summer fuels to take place between May 1 and June 1, which is when the retail date for reformulated gas has to actually hit the pump. Do you believe that co-blending winter and summer blends during that transition period would have been able to ease the supplies and, therefore, reduce the price?

Ms. HUTZLER. Unfortunately, I'm not a refinery expert. I would prefer to submit the answer to your question for the record.

[The following was subsequently received:]

Transitioning from winter to summer gasoline is one of many factors that could lead to higher gasoline prices in the spring. Since refiners do not want an excess of winter gasoline that they can not sell at the end of the winter season, they wait until the last moment to transition from winter gasoline to summer gasoline. In most parts of the country, the transition could start in April without affecting engine performance. However, it is not economical to make summer gasoline earlier than necessary due to its increased cost. Thus, many refiners wait until the May 1 deadline to make the transition. Allowing refiners to mix seasonal grades during the month of May would probably not make that much difference, since it would most likely still result in refiners waiting to produce summer gasoline with the transition occurring two to four weeks later.

Mr. RYAN. Okay. Let me move to refineries then. At this time, we have six refineries that feed—this is an example that I think can be applied across the country—we have six refineries feeding the Milwaukee region with its gasoline. That's down from seven last year, where the Prime Core refinery shut down. We had a fire this last week in one refinery and that shut down. We have another refinery, the LaMont refinery, that shut down. So now we're at about four refineries, maybe five, if we're lucky to get something back up and running.

Do you believe that these are sufficient problems that need to be addressed on an emergency basis, more or less, and what are the solutions? The problem we're faced with is this: we know we can't pass a bill tomorrow to reduce the price of gas. We know we can't do something tomorrow to flip a switch and improve the supply going into the regions.

But what are some of the short-term solutions that can be achieved in giving flexibility to have different fuels, perhaps ethanol-based RFG fuels, coming into the region? Is that an alternative? Can the EPA and the DOE give the flexibility to do that?

Number two, what can we do through the incentive area tax policies to incentivize the improved and increased capacity in the construction of new refineries, and is the new source review regulatory scheme a big player in making it much more difficult to produce new refineries?

Ms. HUTZLER. Well, whatever we can do to increase the flexibility to produce these fuels, and to get them into the area, of course, is going to help alleviate the problems. As you indicated, the fire was one problem and that caused a situation with one refinery, and then there have been other issues.

Mr. RYAN. It ripples through, doesn't it?

Ms. HUTZLER. Yes, it certainly does. Of course, that does mean that the markets get tight and you're going to have a higher price spike due to that particular situation. You need to do whatever one is able to do in the short term in order to be able to produce flexibility.

Now, some of the things that you mentioned are areas of producing that flexibility. However, EIA is not a policy organization, so when you bring up what EPA should do, EIA cannot answer.

Mr. RYAN. Sure.

Ms. HUTZLER. That's not our place to answer.

Mr. RYAN. Let me just ask you from an analytical point of view. Do you believe that allowing different fuels into the region at this time, this summer, would help reduce the price?

Ms. HUTZLER. If you provide more flexibility, that generally is the direction it goes in.

Mr. RYAN. How about the ability to improve capacity and construct new refineries? Are there tax incentives that are options that would lead to that? When was the last time a new refinery was built in this country, and is the new source review regulatory structure such that it has been very difficult? Has it led to complications that have dis-incentivized the construction of new refineries?

Ms. HUTZLER. Well, the last large new refinery was built a good 20 years ago. We also saw in the seventies a lot of the small refineries essentially going out of business because it was difficult for them to compete.

We have seen the existing refineries, though, add more capacity, so it's not like we've been totally stagnant. We have had more capacity being added at existing refineries.

It turns out, though, that the environmental situation is a situation that causes problems with bringing new refineries. It is also the situation with the public, where it's the "not in my backyard" syndrome. People just don't want these kinds of refineries or plants in their back yard.

Mr. RYAN. It's fine if we could put them in Illinois. We would be OK with that, I think.

[Laughter.]

Ms. HUTZLER. Of course, those issues are certainly holding back the development, or the building or construction of new refineries.

Mr. RYAN. Do you think specifically the new source review has really been a disincentive in constructing new refineries?

Ms. HUTZLER. I can't answer that question directly because I haven't done an analysis of it, but I will try to get back to you for the record.

[The following was subsequently received:]

There are a number of reasons why a new refinery has not been built in a long time, chief among them is that in the first half of the 1990s, return on investment for major refiners averaged 2.4 percent, improving to 7.2 percent in 1998 and 1999. In addition, it is generally more economic to add capacity at existing refineries than to attempt "green field" construction of a new refinery.

Tighter environmental standards (for air emissions as well as water pollution control) also have added to the cost of building new facilities and may be a factor in encouraging capacity expansion in existing refineries rather than the construction of new ones. None the less, NSR can have an effect on capacity expansion at existing facilities. Some major refining companies have indicated to EIA that New Source Review interpretations have affected capacity expansion at their existing refineries. For example, one company that was considering replacing an old air compressor unit on its catalytic cracker wanted to use a new air compressor unit that would have increased the overall refinery capacity by 5 percent. Because EPA decided that this would fall under NSR, the replacement was not made. This company stated that NSR has caused them to defer investments in replacement equipment and refinery improvements. While EIA has not fully analyzed this issue, it does appear that NSR has had some impact on reducing refinery capacity expansion.

Mr. RYAN. I would appreciate that. Thank you. Thank you, Mr. Chairman.

Chairman MCCRERY. Thank you, Mr. Ryan. Mr. Jefferson.

Mr. JEFFERSON. Good morning. It's still barely morning.

I'm looking at these projections you have on domestic production, which essentially says there may be some variations, with some going up and some going down, but largely it remains flat, right?

Ms. HUTZLER. Domestic production of what fuel?

Mr. JEFFERSON. Domestic production of energy in this country, everything—coal, natural gas, petroleum. When you add them all together, unless I missed it here, it is projected to remain flat, although natural gas and coal production will increase, domestic crude oil production is expected to decrease by 7 percent a year. As

a result, net petroleum imports are expected to increase from 51 to 64 percent to meet domestic petroleum demand.

In other words, what you're telling us is that, down the road, we're going to get worse off with respect to dependency on foreign sources of energy rather than better off, if the assumptions which you're using remain in place. Of course, these projections are based on certain assumptions.

Now, my question is, what assumptions do we have to change, if you will, if domestic production is going to increase, and how can we in the Congress work to support some changes that might bring about different factors for your assuming what will happen in the future with respect to domestic production? How can we increase domestic production, because most of us here are concerned about that. We hope we can do it through the Tax Code or through some energy policy or whatever. But it's a pretty bleak picture if down the road we're going to have more dependency on foreign sources.

So what are the assumptions that have to be in place so that you can say, based on these assumptions, there will be an increase in production on the domestic side rather than a flat projection?

Ms. HUTZLER. First of all, we are saying that only oil is a flat projection. We are showing increased production of coal, and increased production of natural gas.

One could perhaps increase these even more than we forecast. In terms of coal, we have a huge amount of resources in this country of coal. The real question for coal is its demand. Currently, coal is thought of as being not as environmentally clean as its major competitor in the electric utility sector, which is natural gas.

If you're going to build a new generating plant, coal and natural gas are fairly close to being competitors in terms of the cost of a new plant. Their average generation cost is about four cents per kilowatt hour. That's a lot less than renewable technologies.

Mr. JEFFERSON. May I interrupt you there. I understood you said coal production would increase and natural gas production would increase and oil production would decrease—petroleum production would decrease. Nonetheless, we end up with a 64 percent dependency on foreign products. In the end, we simply are depending more on foreign.

So now my question is this and what I want to have you clarify for me. Coal is not a choice source of energy here, because you say the demand isn't there because of the concern of pollutants, I guess, and so on. So let's say that's a problem.

Natural gas now is a cleaner burning fuel. Can increased production in that area make us less dependent on some sources of foreign energy or not?

Ms. HUTZLER. In terms of natural gas, we do expect a large increase in its production and its demand in these particular forecasts. However, we also see more imports of natural gas coming into this country. The percentage share only goes up by 1 percent from now to 2020, from 16 percent to 17 percent. But most of that comes from Canada. It is within the North American continent that we are importing most of the gas.

Mr. JEFFERSON. Is that because we don't have the capacity to produce the amount of natural gas we need or what, or don't have the resources to do it?

Ms. HUTZLER. We expect the production of natural gas to go up a lot in this country to 29 trillion cubic feet, from just under 20 right now. That's a huge increase, but it is all dependent on economics and resources.

We do have a vast resource base of natural gas, at 1200 trillion cubic feet, so that's fairly immense. But the Canadian area is able to produce it cheaper than we are, so we're going to import some of that here. So it is based on relative economics, on what our resource base is, and what it costs to produce it in different areas of the country and of the world, of course, depending on what particular supply source you're looking at.

Mr. JEFFERSON. So a lot of these assumptions that you use to come up with these projections is based on what you expect to happen in the cost of producing this energy in different parts of the world, and how we will respond to those economic issues out there because we want to pay less, if we can, for the fuel that's consumed here.

So that's a thing which we don't have control over, but if it were controlled in some way or other—I don't mean controlled by the government, but if the price were controlled for purposes of our analysis, you will never match the ones in Saudi Arabia, but of course, in Canada, that's quite a different picture.

But one of the reasons why we are projecting, even though we have these huge resources of natural gas, we can't meet the requirements with our own production because of the economics of getting it out of the ground into commerce, as opposed to what we can do in other places, right?

Ms. HUTZLER. Again, it depends on the fuel, yes.

Mr. JEFFERSON.So if we do something here to shorten the cost of it, to make the cost less, then perhaps it would be effective in spurring more domestic production of natural gas to meet the demand, which is going to far outstrip what we do now with respect to meeting the demand of the public, right? So that's one area.

Now, with respect—one last little thing. With respect to oil production, are you saying that we have depleted the resources in the ones we now know about? Is that why we don't expect increases there, or is it also related to the economies of price?

Ms. HUTZLER. We look at a resource base that the USGS and the Mineral Management Service develop. The resource base is quite large for natural gas. The only area where we're seeing depletion effects is in the oil area, for the most part, and that's why we have declining crude oil production.

Mr. JEFFERSON. That's what I'm asking, though. This will be the last thing.

Does it mean that—Let's say we're off the Louisiana coast and you were looking at, let's just say, god forbid, the California coast, or the Florida coast, or the Atlantic coast. When you talk about limitations on oil production, does it mean the universe of oil that we now know to be available to us in reserves in these areas is included in your analysis?

Ms. HUTZLER. Yes.

Mr. JEFFERSON. You include everything. California, this and that, Florida and all the rest of it?

Ms. HUTZLER. Absolutely.

Mr. JEFFERSON. And even then, your analysis is that there's not enough oil around this country to increase our oil production significantly to alter the factors here, even if we open up those areas to production?

Ms. HUTZLER. All non-restricted areas we include right now. We don't include the restricted areas, such as in ANWR. If we included them, we would get more oil production, though I don't think we would be able to meet the demand. It's going to take time to open those areas and to get them at their max production. You might think of seven to 10 years as the time needed to get them to be at their peak production levels.

Chairman MCCRERY. Mr. Jefferson, I had pursued a similar line of questioning earlier. I think the answer that I got was that all the charts that we've been looking at, which project supply of the various sources of energy, are based on current law, which includes current law restrictions on production like in ANWR or off-shore Florida, California and so forth. So Miss Hutzler's projections are based on only the currently available sources for legally producing petroleum.

Ms. HUTZLER. That's correct.

Chairman MCCRERY. So her projections do not include those areas that you were referring to, which may or may not come into play in future generations.

Mr. Watkins, did you want to ask some——

Mr. WATKINS. I have no questions. I would make some comments, but I know we've got another panel and, for the sake of time, I will wait until then. I think you will hear some real live discussion about how incentives can really be of help.

Chairman MCCRERY. Miss Hutzler, two quick questions. How important are independent oil producers, independent oil and gas producers, to our energy supply in this country?

Ms. HUTZLER. Quite important.

Chairman MCCRERY. Could you speak up, please. She said "quite important". Okay.

Ms. HUTZLER. They produced 44 percent of the oil that was produced in 1997, and they produced about 60 percent of the on-shore oil in that particular year.

Chairman MCCRERY. And how about exploration and new wells being drilled on-shore? Is that a fairly high percentage being done by independent producers?

Ms. HUTZLER. I would say so. I don't have the exact figure, though.

Chairman MCCRERY. Vice President Cheney announced that the administration hopes to triple the use of renewable fuels—solar, biomass, and wind power—from filling basically 2 percent of our needs to 6 percent within 20 years.

Do you think, based on your analysis, that this is feasible?

Ms. HUTZLER. Our analysis shows them not growing that far, so they cannot do that without some other help. It would not be economic to do that without some other help.

Chairman MCCRERY. In other words, if we're going to achieve that goal, in your opinion, we're going to need additional incentives to achieve that?

Ms. HUTZLER. That's correct.

Chairman MCCRERY. Thank you. Mr. McNulty.

Mr. MCNULTY. Thank you, Mr. Chairman. Miss Hutzler, thank you again for your testimony today. It is quite helpful. I had one more question.

Have you at all taken a look at the fuel cell technology that companies like Plug Power are working on, and if you have, what is your analysis of their potential for helping us to address our energy shortages?

Ms. HUTZLER. We do have the fuel cell within our forecast. Now, the fuel cell technology we look at is fueled by natural gas. Its capital costs are much higher than the competitive natural gas technologies, i.e., the combined cycle or turbine technology. We get very little penetration of fuel cells. I think by 2020 we get 300 megawatts and that's about it. So right now it is not economical against the competition.

Mr. MCNULTY. Thank you.

Chairman MCCRERY. Miss Hutzler, thank you very much for appearing before us today. We appreciate the good information you brought us.

I will now call our final panel, Mr. Williams, Mr. Morrison, Mr. Carlson and Mr. Wallace, if you will come forward. This panel is composed of Steven R. Williams, President, Petroleum Development Corporation, from Bridgeport, WVA, and Bill Carlson, Vice President, Wheelabrator Environmental Systems, Inc., Anderson, CA.

To introduce our two other panelists, I will refer first to my colleague from Florida, Mr. Foley.

Mr. FOLEY. Thank you very much, Mr. Chairman. Briefly, I wanted to introduce Bob Morrison, who is Vice President of FPL Energy, which is headquartered in my district, one of the largest employers in my congressional district.

They have been in wind energy production since the first farm was created in Altamont Pass, CA in '93. FPL Energy is the largest developer and operator of wind energy facilities in the Nation, with more than 1,500 megawatts out of a total of 2,500 megawatts produced in the United States. They have plants, or at least wind energy facilities, in California, Iowa, Minnesota, Oregon, Texas, Washington and Wisconsin.

We are delighted that he took time away from Jupiter, which some days I would rather be than in Washington, to visit with us today and obviously inform us of not only the productivity of wind energy, but the importance as we approach a balanced energy policy.

Thank you, Mr. Chairman.

Chairman MCCRERY. Thank you, Mr. Foley. Mr. Watkins.

Mr. WATKINS. Thank you, Mr. Chairman, and Members of the Committee.

I am really honored. I just want to say to all of you that it is a real privilege today to have a fellow that I've known for a long, long time. He hails from Seminole, OK. Dan Wallace is the owner of Columbus Oil Co. from Seminole.

To put some importance on it, Mr. Chairman, in Seminole County, at one time, I think the early twenties, they produced one-third of the oil in the world. I say in the world. Dan Wallace, as we

speak right now, as he's here testifying, he is drilling a 4,400 foot well—I think you're down to about 3,600 feet, somewhere close to that. So he's a live, wildcatter, risk taker, who is a domestic producer out there. He knows that tax incentives are things that help make the production go out there, and people like him. So I am glad that Dan Wallace has come from Seminole, OK to be here today.

Thank you, Mr. Chairman.

Chairman MCCRERY. Thank you, Mr. Watkins. Mr. Williams, we will begin with you.

STATEMENT OF STEVEN R. WILLIAMS, PRESIDENT, PETROLEUM DEVELOPMENT CORPORATION, BRIDGEPORT, WEST VIRGINIA

Mr. WILLIAMS. Thank you very much.

Mr. Chairman, Members of the Subcommittee, my name is Steve Williams and I'm the President of Petroleum Development Corp. of Bridgeport, West Virginia. I appreciate the opportunity to be here today to talk to you about the possibility of an extension of the section 29 tax credit for producing fuel from non-conventional resources.

I can speak from personal experience about section 29, which was created in 1980 in a situation not too different from what we find ourselves in right now, with shortages of natural gas and concern over imported oil levels. I have been in the business of producing non-conventional gas since 1982, when I joined Petroleum Development Corporation. We currently operate over 2,000 oil and gas wells in seven States—in the Appalachian Basin, Michigan, and in the Rocky Mountain region—and virtually all of our production is, in fact, from non-conventional sources.

When congress created the section 29 credit in 1980, the goal was to encourage U.S. production from deposits which were difficult and expensive to produce. In fact, much of our remaining onshore resource fits just exactly that description. Congress then felt that non-conventional resources were needed to provide consumers with the energy that they wanted at a reasonable price.

I think one of the really attractive features of the credit, from the standpoint of the taxpayer and consumer, is that it's awarded only for success. It is a production credit that you earn by producing gas from non-conventional sources, and if we don't produce gas, then we get nothing for the risks we take in drilling the wells.

In fact, I think the question was asked earlier whether section 29 was successful in generating the desired result. I think the evidence is very clear that it has been. It has resulted in a significant increase in the amount of production from these difficult-to-produce sources. In addition, it has driven the development of new technologies which have made more resources economic, more resources available, throughout the country. But the section 29 credit is expiring. In fact, it expired for new wells back in 1992, but the credit for the wells that did qualify before that will be expiring or is scheduled to expire at the end of 2002.

I can't speak for every producer, but I do know some of the impacts that expiration will have on my company. First of all, there are wells with remaining reserves that are too expensive to produce

absent the credit. Maybe with five dollar gas prices they would be profitable, but I suspect that price won't be around for too long, and maybe we'll be back in a two dollar gas price scenario again.

Once we plug those wells, as has been pointed out, it is really uneconomical to go back and reopen them and put them back into production, so we will lose whatever remaining resource is in those wells when we plug them.

In the case of my company, we plan no further wells in the Appalachian Basin, where we started from and where we drilled exclusively for almost the first 30 years of our existence. We just can't justify the economic return given the uncertainty of the results of those wells, so we're not drilling there. Many others aren't as well, and we are losing the ability to drill wells in that area as the infrastructure dries up and goes away.

Finally, our availability of capital for drilling wells, whether from non-conventional sources or conventional sources, will be reduced with the loss of the credit.

We know that section 29 has worked historically, and the question also should be asked as to whether it will continue to work in the future. You don't have to take my word for that. Attached to my testimony today is a summary of a study that was prepared by the Gas Technology Institute, which has been analyzing non-conventional fuel issues for 20 years, and Energy and Environmental Analysis, Inc., which was the lead contractor in the 1999 National Petroleum Council study of natural gas supply.

The conclusion of that study is that an extension of section 29 could have a significant impact on consumer prices in the short term as well as in the long term. The study used the NPC study as a base case and examined the impact of a section 29 extension and allowing new wells to qualify for the credit. Several of the key results of that study:

First of all, over the next 15 years, production of non-conventional gas resources must double again if the United States is to meet its demand needs. Also, if we fail to do that, it will result in further increases in the import of oil to fill in that gap, or imports of natural gas from other places to fill that gap.

The study projects that the extension of the section 29 credit could result in an increase in the annual supply of natural gas from non-conventional sources of two trillion cubic feet by 2015, and a total increase in supply of over 15 trillion cubic feet over the same period. And, I think perhaps most importantly, the study projects that the extension of section 29 could result in savings to consumers of more than $100 billion for the cost of the gas that they buy for their needs.

Finally, the study concludes that among the competing sources of additional gas that are out there, section 29 gas is one of the quickest and most effective ways to provide additional supplies because the infrastructure needed to deliver it is already in place.

In conclusion, I would say to you today that there is no single energy supply solution, but we think that section 29 could play an important role in helping to reduce natural gas costs for consumers over the next 15 years, reducing our dependence on imported energy, helping to keep our environment as clean as possible, while

providing the energy that we want and in spurring additional technological innovation over the coming years.

In addition to that, it also has direct impacts on the communities where we live, because in order to achieve that increase in production, we will need to drill another $15 billion worth of wells using services and employment in the communities where we live, all important things to those of us in this room.

I thank you very much, gentlemen, for allowing me to come and speak to you today, and I would certainly be happy to answer any questions I can.

[The prepared statement of Mr. Williams follows:]

Statement of Steven R. Williams, President, Petroleum Development Corporation, Bridgeport, West Virginia

Mr. Chairman and Members of the Subcommittee, my name is Steve Williams, and I'm President of Petroleum Development Corporation, of Bridgeport, West Virginia. I appreciate the opportunity to appear before you today, to talk about the importance of an extension of the Section 29 tax credit for producing fuel from non-conventional sources.

I can speak from experience about the history of Section 29, since I have been in the business of producing hard-to-get natural gas since 1982, soon after the Section 29 tax credit was created in the wake of the widespread energy shortages and deep concern about American dependence on imported oil. My company, PDC, operates 2050 oil and gas wells in seven states—in the Appalachian Basin, Michigan and the Rocky Mountain region—and most of our production is non-conventional.

When Congress created Section 29 in 1980, the goal was to encourage U. S. production from deposits that are unusually difficult and expensive to develop and produce, like the Devonian shale and tight formation wells that PDC drilled and now operates. An important feature is that the credit applies only to actual production - the consumer's tax dollar is spent only after the producer has taken the risk and achieved success.

I know from my years of experience in non-conventional resource development that Section 29 did indeed result in a significant expansion of production from difficult sources, and it helped to drive new advances in production technology. Today, however, the credit applies only to production from wells completed before Dec. 31, 1992, and even for these qualifying wells it is scheduled to expire on Dec. 31, 2002. I know, too, what it will mean for PDC if Section 29 is not extended. Some wells will be shut in, and we will not be doing any further drilling in the Appalachian Basin because the economic return on wells in that region is too uncertain.

Study says that Section 29 could save gas consumers $100 Billion.

I am not asking you to rely on my experience of Section 29, and its impact on natural gas supply, and, of course, on consumer gas prices. Rather, I would like to draw your attention to a recent study undertaken by the Gas Technology Institute, which has been analyzing issues related to non-conventional production for 20 years, and Energy and Environmental Analysis, Inc., which was the lead contractor in the landmark 1999 study of natural gas supply undertaken by the National Petroleum Council.

The GTI/EEA Study, a summary of which is attached to my remarks, makes it clear that an extension of Section 29 could have a significant impact on consumer prices by quickly increasing supply. Using NPC research as the base case, the Study examined the impact of the Section 29 credit on the U.S. gas market, and concluded that:

- Passage of Section 29 in 1980 made it possible for production of non-conventional gas to more than double, and led to innovation in drilling and completion technology.
- Production of non-conventional gas must double, once again, if the U.S. is to meet growing demand. The U.S. now imports 56% of its oil, and that figure is projected to rise to 65% within 15 years.
- Extension of Section 29 to wells drilled through 2010 could increase U.S. gas supply by about 2 trillion cubic feet (Tcf) annually, for a total of more than 15 Tcf by 2015. This increase in supply would translate into lower gas prices, and consumer savings of more that $100 billion in the next 15 years. (And consumers will continue to benefit from expanded supply and technological innovation even after the term projected by the study.)

• Extending the credit will have a significant near-term impact on prices, since Section 29 gas can reach the market more quickly than other major incremental supplies.

There's no single energy supply solution, but Section 29 could play a key role According to the Study, extension of the Section 29 credit offers these important benefits:

• Reduced natural gas costs for consumers, and timely increases in consumer gas supplies.
• Less dependence on imported energy.
• A cleaner environment.
• Technological innovation, at a time when natural gas R&D is otherwise slowing.
• A positive impact on the U.S. economy, including new jobs and demand for $15 billion in materials and services resulting from reliance on U.S. production. And
• Increased state and local severance taxes in 19 states.

The U.S. has large natural gas reserves, but the Section 29 credit is needed to unlock supplies of gas that are currently too expensive or uncertain to develop. While we all know that gas prices are high today, producers—and our bankers and investors—have learned the hard way about price volatility. Without the protection provided by Section 29, we simply cannot make the massive investments needed to produce gas from difficult sources. An extension of Section 29 will play a vital role in encouraging domestic supply, and assuring the availability of natural gas for home heating, high quality power generation, and a growing list of other consumer needs.

I appreciate the opportunity to comment today about the Section 29 tax credit for actual production from challenging formations, and about the importance of Section 29 to the nation's supply of natural gas.

F

Rationale For Section 29 Non-Conventional Gas Tax Credit Extension

March, 2001

Prepared By:

Gas Technology Institute

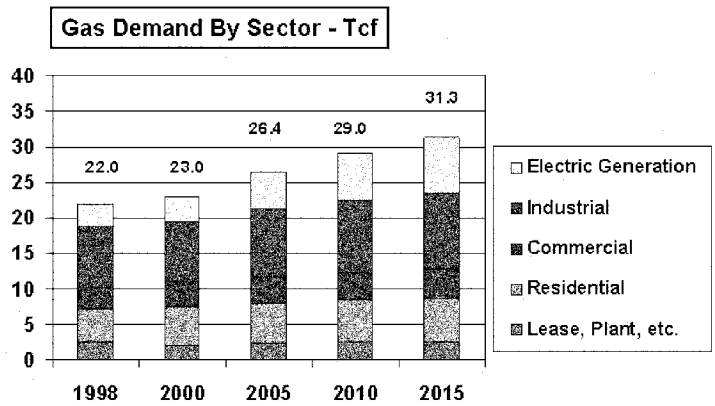
Energy & Environmental Analysis, Inc.

Study Participants

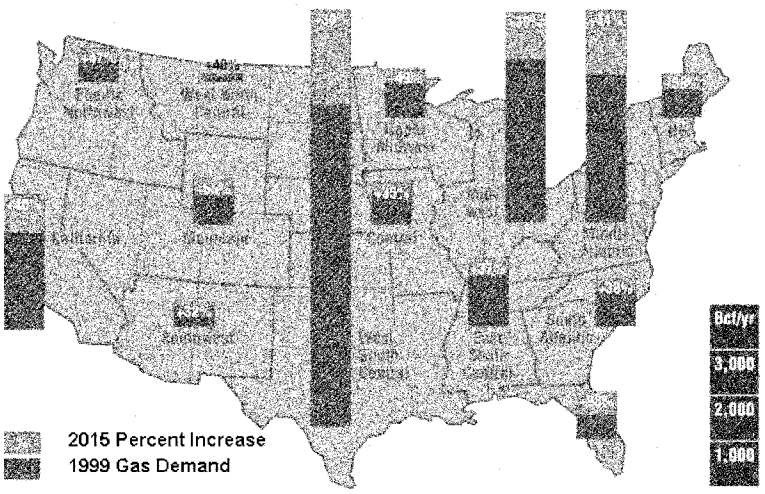
- Study conducted by Gas Technology Institute (GTI) and Energy and Environmental Analysis (EEA)
- GTI has been a leader in non-conventional gas research for two decades
- EEA was the lead contractor for the recent National Petroleum Council natural gas study

U.S. Gas Demand Projection Through 2015

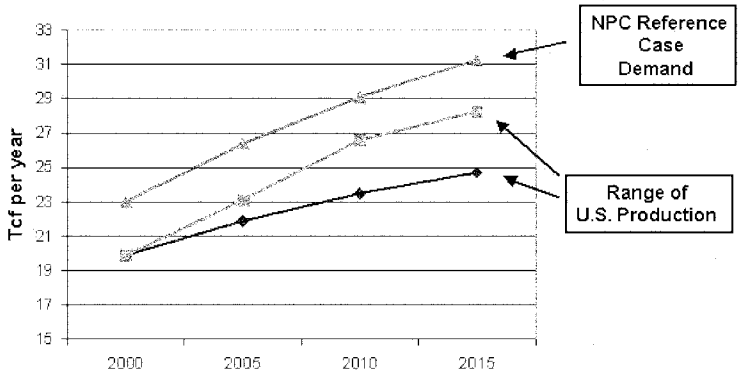
(1999 NPC Reference Case)

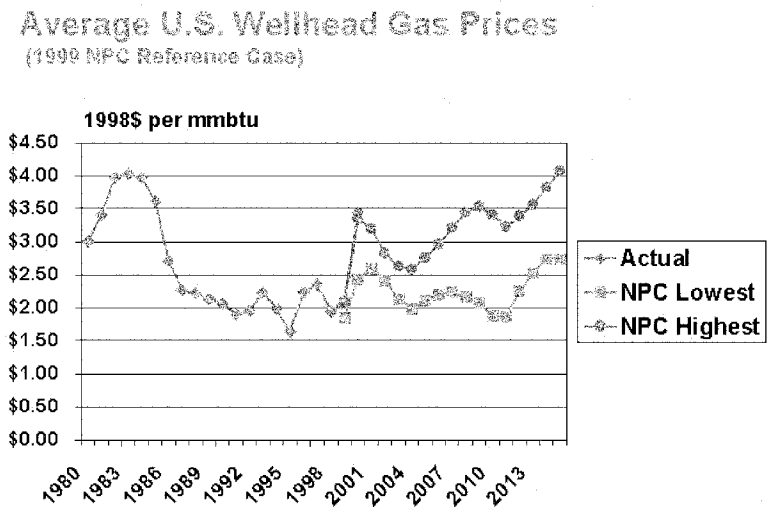


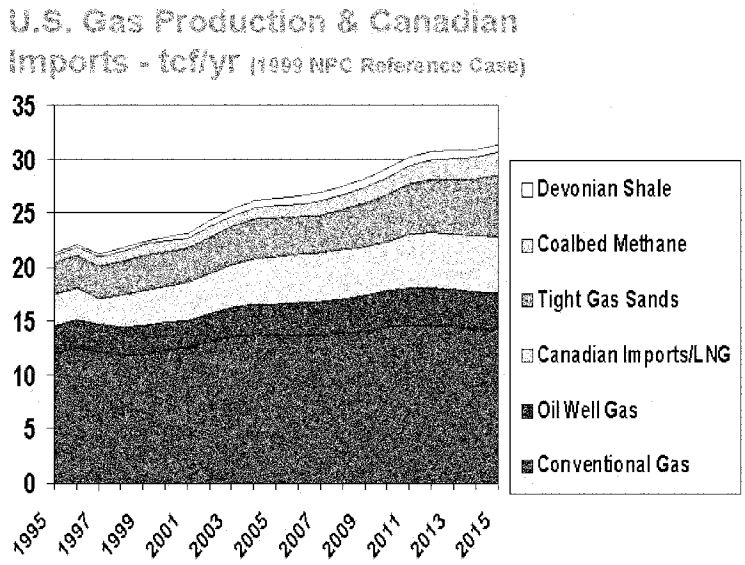
Projected U.S. Gas Demand by Region
(1999 NPC Reference Case)



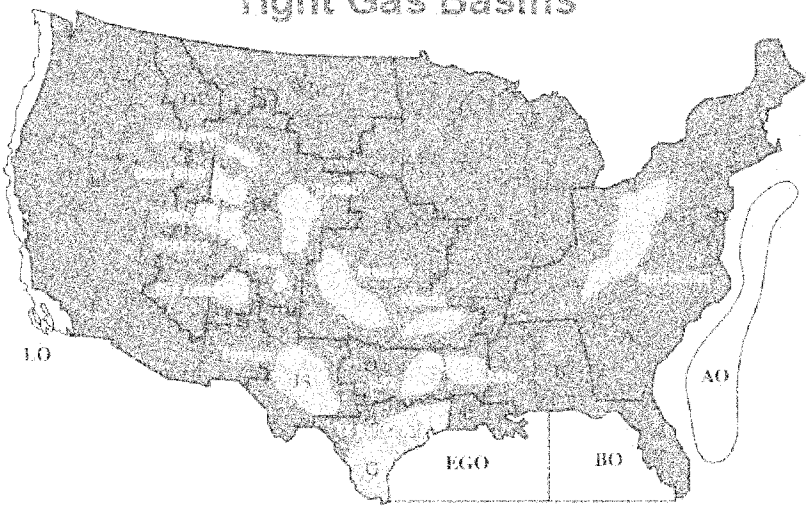
U.S. Gas Demand and Range of U.S. Gas Production (1999 NPC Reference and Other Cases)



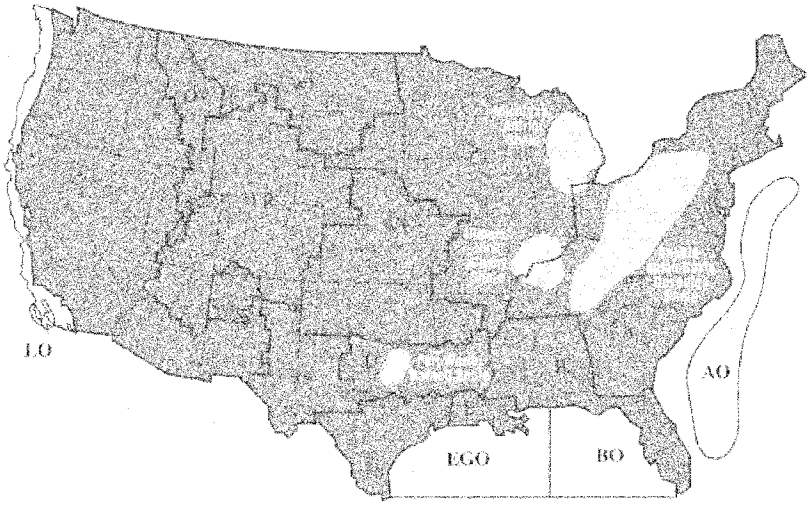

Average U.S. Wellhead Gas Prices
(1999 NPC Reference Case)
1998$ per mmbtu
$4.50
$4.00
$3.50
$3.00
$2.50
$2.00
$1.50
$1.00
$0.50
$0.00
1980
1983
1986
1989
1992
1995
1998
2001
2004
2007
2010
2013
Actual
NPC Lowest
NPC Highest


U.S. Gas Production & Canadian Imports - tcf/yr (1999 NPC Reference Case)
35
30
25
20
15
10
5
0
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
Devonian Shale
Coalbed Methane
Tight Gas Sands
Canadian Imports/LNG
Oil Well Gas
Conventional Gas

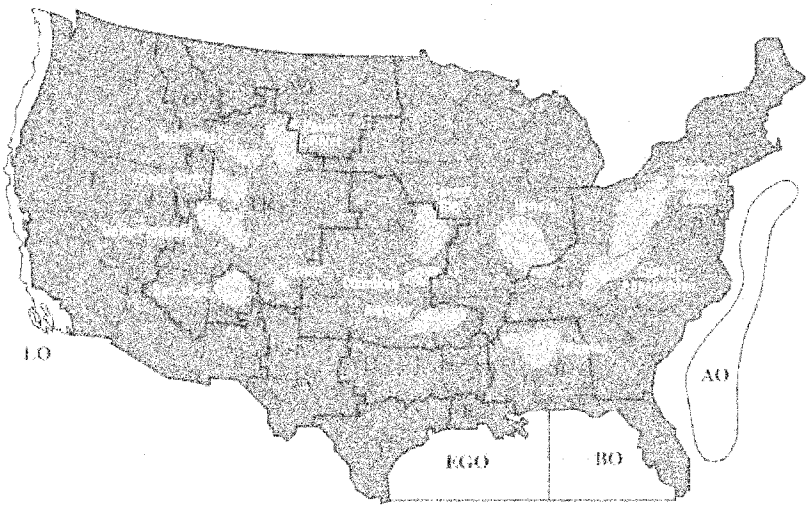
Tight Gas Basins



Shale Basins



Coalbed Methane Basins

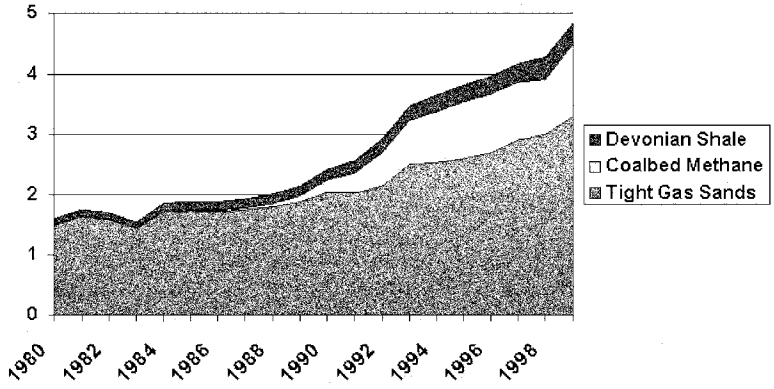


Extra Costs to Develop and Produce Non-conventional Gas

- **Low permeability - will not flow without stimulation**
- **Extra cost components**
  - **fracturing or horizontal drilling**
  - **higher operating costs**
  - **compression to pipeline pressures**

Past Impact of Section 29 Credit

Non-conventional Gas Production - tcf/year



Source: GTI non-conventional gas database developed by EEA, Inc.

Extension of Section 29 Credits

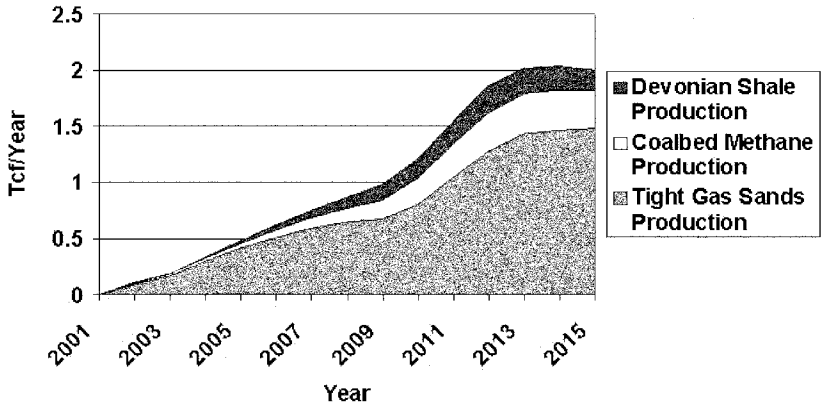
- **Credits for current wells expire at the end of 2002**
- **Proposed legislation would**
  - **Extend credit for currently qualifying wells**
  - **Apply credit to new wells drilled between 2001 and 2010**
- **This would extend the life of existing wells and encourage new development**

Evaluation of Impact

- GTI Hydrocarbon Model was used to evaluate impact of proposed extension
- 1999 NPC Reference Case did not include credit extension
- New case run with credit extension
- Difference with NPC projection is impact of extension; additional gas production and drilling

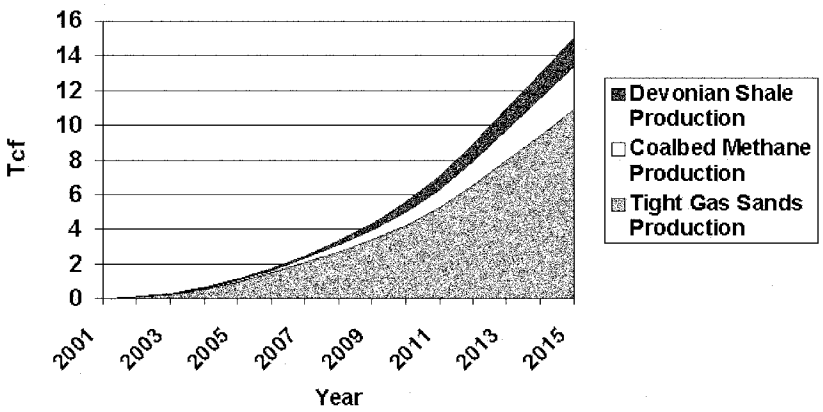
Annual Increase In Non-Conventional Gas Production Resulting From Section 29 Extension

(Incremental Production Above NPC Reference Case)



Cumulative New Non-Conventional Gas Production Resulting From Section 29 Extension

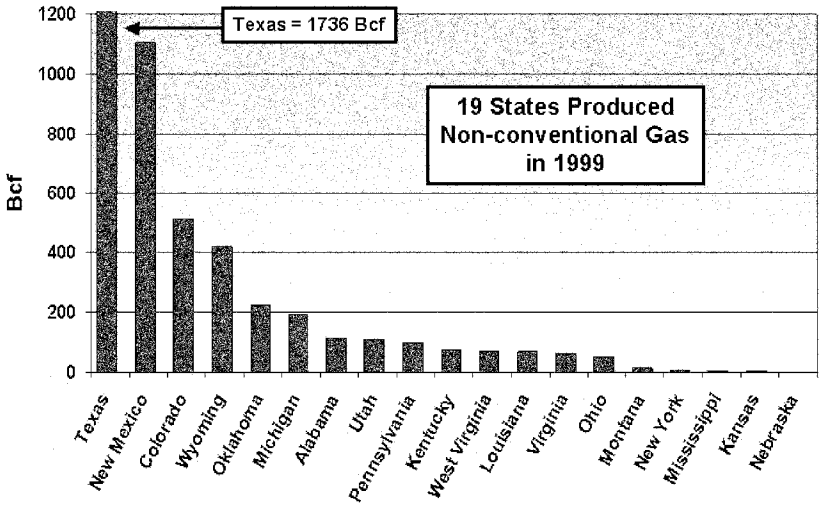
(Incremental Production Above NPC Reference Case)



Consumer Benefits of Credit Extension

- **Credit extension will result in significantly lower gas prices for consumers.**
- **It is estimated that the total savings to consumers through 2015 will exceed $100 billion (nominal $).**
- **This estimate is based upon analysis of similar model runs completed for the NPC study.**

1999 Non-conventional Gas Production By State



Summary

- **A substantial increase in U.S. gas demand is projected by all major market observers**
- **U.S. production is expected to leave a large gap to be filled with gas and oil imports**
- **Section 29 has been successful in boosting non-conventional gas production**
- **The extension is an effective means of adding about 2 tcf per year by 2015**

Summary (continued)

- **The additional gas production would benefit natural gas consumers through lower prices**
- **Additional production also would add to U.S. security through the reduction of energy imports**

Rationale For Section 29 Non-Conventional Gas Tax Credit Extension

▲ Need For Energy and Natural Gas

Total United States energy consumption increased steadily from the end of World War II, reaching 81 quadrillion Btu's (quads) in 1979. After the oil shocks of the 1970's, energy consumption actually declined to 73 quads by 1983, along with a deteriorating economy. Since that time, with a low energy price environment, energy consumption has rebounded, reaching 94 quads in 1998. Reasonably priced natural gas and other forms of energy played a crucial role in expanding our economy and will be critical for future economic growth.

Continued population and economic growth will greatly increase the need for energy. Recently completed studies by the Gas Technology Institute (GTI) project total energy demand growing to 118 quads annually during the next 15 years. Natural gas currently provides approximately 23% of our nation's energy needs, and gas use must increase continuously to meet an expanding economy. Demand for natural gas is projected to grow to over 30 quads (approximately 30 trillion cubic feet or Tcf) annually during the next 15 years. This increase will only be realized if adequate support and focus is placed on our natural gas resources.

Natural gas is this country's most valuable energy resource.

Our domestic natural gas resource is vast. In addition, gas use has real environmental advantages. Increased use of natural gas can decrease our dependence on foreign energy, mitigate greenhouse gas emissions, improve our economy and provide consumers with a better quality of life

If the United States is to realize the environmental, economic, and energy security benefits of natural gas, both "conventional" and "non-conventional" gas resources must be exploited. Non-Conventional gas resources (Tight Gas Sands, Coalbed Methane, Devonian Shale) currently provide about 26 percent of U.S. gas production. In the future, non-conventional gas production will be required to supply 8-10 Tcf of the 30 Tcf needed in the year 2015 - if the U.S. is to enjoy the benefits of increased natural gas usage.

While the 1999 National Petroleum Council study projected increased gas production from coal, shale, and tight gas sands, this was based upon sustained technology improvement and improved well recovery. Research in this area by Gas Technology Institute and the Department of Energy has declined greatly, and it is uncertain how industry will be able to counter the impact of moving into lower quality resources in many areas. Non-conventional resources are technologically challenging and require support for economic production

A Section 29 tax credit extension can provide needed support for non-conventional gas production

▲ Section 29 Credits – History and Past Impact

Section 29 tax credits were created in 1980 on the heels of energy shortages. Natural gas was being limited in its use through Federal and State regulations although the country held a large natural gas resource base.

To address the need for increased gas production, a tax credit for non-conventional gas was created. The tax credit provided a $0.50/Mcf incentive for gas produced from non-conventional gas resources (Tight Gas Sands, Coalbed Methane, Devonian Shale).

The Section 29 Tax Credit Worked.

Total non-conventional gas production more than doubled from 2.0 Tcf in 1990 to 4.8 Tcf by 1999. Coalbed Methane production alone grew from zero to over 1.1 Tcf/year. From 1986 to 1996, 70% of the increase in lower-48 gas production came from non-conventional sources.

This increased activity served as a catalyst for technology development in the areas of drilling and completion. Concurrent with the increased activity, industry learned how to better explore for and produce gas from these resources. Coalbed Methane wells often produce water before significant gas production is realized. This condition is exactly opposite of what is experienced with conventional wells. Coal seams in the San Juan Basin of New Mexico were drilled through and ignored for decades until the Section 29 credit created an incentive to experiment with new production approaches.

Section 29 Milestones

1980	—	Congress creates Section 29 Tax Credit
1982	—	Non-conventional gas production is 1.5 trillion cubic feet per year
1984	—	First significant Coalbed Methane production
1991	—	Devonian Shale production doubles from historic levels
1993	—	Non-conventional gas doubles from historic levels reaching 3 trillion cubic feet
1997	—	Coalbed Methane reaches 1 trillion cubic feet per year
1999	—	Non-conventional gas production totals 4.8 trillion cubic feet per year
1990 to 2000	—	The nation benefits from a decade of stable and fair priced gas supplies
2001	—	Non-conventional gas represents 30% of lower-48 gas well production
2002	—	**Credit will expire without action**
2015	—	The nation needs over 7 trillion cubic feet of non-conventional gas to meet demand

There are very large resources of undeveloped non-conventional gas resources that remain too difficult to develop and will only be produced with ongoing incentives. The current tax credit will expire in 2002. This will disrupt the ongoing progress in developing non-conventional gas resources at a time when the gas consumer, United States economy and our environment need them the most.

▲ Benefits of Extending the Section 29 Tax Credit

Our study shows that non-conventional activity and production will significantly increase with the tax credit extension. This higher activity will be a very important component of increased gas supply and will be crucial to meeting future demand.

Major impacts of an extended tax credit include:

- **Increased Non-conventional Gas Production Of 15 Tcf (cumulative) Over The Time Period 2001 To 2015.**
- **Increased Annual Gas Production Of 2 Tcf/year In The Year 2015, Enough Natural Gas To Heat 22 Million Homes.**
- **Provides Gas Consumers With Over $100 Billion Of Benefit From Reduced Gas Prices.**

The Section 29 extension will create considerable benefits:

- Less dependence on imported energy.
- A cleaner environment.
- Reduced costs and expanded gas supply for consumers.
- Positive impact on local and national economies. New jobs are created as an additional $15 billion in materials and services are needed.
- State severance taxes are increased in at least 19 gas producing states.
- Credit is only available to U.S. producers who actually produce non-conventional gas.

An important aspect of non-conventional development is that the wells do not take long to drill. The location of the resource is well known and a significant infrastructure is already in place to produce and transport the gas to market. New wells can be completed, contributing a substantial volume of new gas deliverability over a period of a few years. This can provide important relief to the current tight gas supply-demand situation.

This past winter clearly demonstrated the absence of any "gas bubble" or cushion in gas deliverability. Tight supplies and early cold weather caused significant increases in gas prices to unacceptable levels. Warmer January weather in parts of the country precluded a late winter gas supply problem that would have dealt another blow to the U.S. economy. Despite the warming weather, gas prices remain high.

▲ Conclusion

Extending the Section 29 tax credit will have a significant impact at a particularly critical time for U.S. gas consumers. Tightening gas supplies and increased demand for natural gas have resulted in much higher end-use prices. The only near term solution that reduces costs and avoids switching to less desirable energy resources is to increase gas supply.

While the U.S. is blessed with a large domestic natural gas resource, it is a maturing resource and technologically more difficult to exploit. Remaining gas resources are found predominately in the deep-water portion of the Gulf of Mexico, within deep portions of geologic basins and within non-conventional resources such as tight gas sands, coalbeds and Devonian Shale.

Non-conventional gas resources can provide additional supply in the near term. They require price support to have this impact. Technology development for these marginal resources has declined significantly in recent years – an unintended victim of natural gas deregulation. The required price support can be found in the form of an extended tax credit.

Tax credits played a major role in increasing non-conventional gas production from 1.0 to 4.8 Tcf/year. This increased production, in turn helped provide for a reliable, secure and fair priced supply of natural gas to U.S. gas consumers throughout the 1990's.

A tax credit extension can have a similar impact during the first decade of the 2000's.

For additional information on the technical study mentioned here, please contact:

Karl F. Perry
Gas Technology Institute
847-768-0911
karl.perry@gastechnology.org

Chairman MCCRERY. Thank you, Mr. Williams. Mr. Morrison.

STATEMENT OF ROBERT MORRISON, VICE PRESIDENT OF BUSINESS DEVELOPMENT, FPL ENERGY, LLC, JUNO BEACH, FLORIDA

Mr. MORRISON. I would like to thank Mr. Foley for introducing me.

Chairman McCrery, Members of the Subcommittee, as Mr. Foley mentioned, my name is Robert Morrison. I am Vice President of Business Development for FPL Energy. FPL Energy is a subsidiary

of FPL Group, one of the largest electric utility holding companies in the United States. Our sister company is Florida Power & Light. It serves south and eastern Florida as a regulated investor-owned electric utility.

I want to thank the chairman and the Members of the Subcommittee for inviting me to testify on behalf of FPL Energy about the importance of extending the wind energy production tax credit. FPL Energy is the largest developer, owner and operator of wind-powered electric generating facilities in the United States. We have more than 1,500 megawatts of wind turbines in operation or under construction in seven States. By the end of 2001, wind-powered generating projects will represent 30 percent of FPL Energy's total generating portfolio. I think we have a map over here that demonstrates where FPL Energy currently owns or is constructing wind projects.

FPL Energy is committed to clean energy sources and strongly believes that, among all the renewable energy technologies, wind energy is the most economically viable and has the best potential to quickly add significant new and clean sources of electric power generation across a broad range of geographic areas in the United States.

I want to commend Representatives Foley, Weller, Matsui, and Thurman for their leadership in introducing H.R. 876 to extend the production tax credit. I also want to thank you, Mr. Chairman, and full Committee Chairman Bill Thomas for your strong support of wind energy.

As I think everyone knows, the PTC provides an inflation adjusted 1.5 cents per kilowatt hour Federal tax credit for electricity produced with new wind turbines for the first 10 years of each turbine's operation. The PTC stimulates new wind projects by assisting the industry in competing with fossil fuels used for electricity generation. We strongly believe that Congress should extend the PTC at the end of this year, as proposed by H.R. 876.

The PTC has proven to be an excellent legislative investment and is a shining example of a Federal policy initiative that has successfully achieved many of its original goals. The PTC has served as a catalyst, stimulating development of many large utility scale wind projects across the United States. With the support of the PTC, the wind industry expects its costs will continue to decline as turbine technology improves and the wind industry is able to realize economies of scale, both in turbine size and manufacturing volumes.

The turbine technology of the 1980s was an infant technology, and the cost of electricity from wind energy during that period of time often exceeded 25 cents per kilowatt hour. In the intervening 20 years, a relatively short period of time in the power generation business, the industry has reduced its costs by a remarkable 80 percent, to a current cost of around 4.5 cents per kilowatt hour, not including the effects of the production tax credit. With increasingly sophisticated turbine designs and manufacturing efficiencies, the wind industry expects the cost of wind energy will continue to decline, until such time in the relatively near future when it can compete directly with fossil fuels without any incentives.

The severe shortage of electricity in the Western United States points to the critical need for the development of new alternative energy sources. Throughout the West, power shortages have led authorities to call for the construction of new power plants. Even with the fastest construction schedules, conventional fossil fuel plants can take several years to bring online. In contrast, environmentally benign new wind plants can often start producing energy in only a matter of months.

In California, for example, if PTC is available, FPL Energy sees the potential to develop new wind projects over the next 18 months in that State which could serve in excess of 400,000 homes, thus alleviating some of the electric supply problems in California.

Nationwide, wind power projects currently represent about 2,500 megawatts of capacity, enough power to meet the electric energy requirements of about 700,000 homes. As shown on the next map here, there are also vast parts of the country that are very suitable for the development of wind projects with an excellent wind resource, and many other parts of the country that have not yet even been explored for the potential to build wind projects in the future.

Also, most of America's farming and ranching regions have promising wind resources. Since wind projects displace only a tiny amount of crop or ranchland, in terms of roads and foundations and the like, lease payments from wind projects serve as a valuable and additional source of diversified and stable income for ranchers, farmers, and other rural landowners. Also, wind projects bring new economic opportunities to the rural areas where they're located, including local tax bases, new manufacturing opportunities, and new construction and operations jobs.

Domestic wind development also provides economic benefits to other sectors of the economy. FPL Energy has components of its wind turbines and wind projects manufactured throughout the United States, including a variety of States—California, Louisiana, Illinois, Wisconsin and Texas, just to name a few.

Since the PTC is directly linked to energy production, the credit is inextricably tied to the financing, permitting and construction of new facilities. With the credit due to expire in only a few months, it is very difficult to adequately plan for anything but the most immediate projects. Longer-term plans are simply prevented by the budgeting, permitting and project construction cycles, all of which are at least 12–18 months long. The immediate extension of the PTC is critical to the continued development of wind power in the United States.

This concludes my hearing testimony. Again, I would like to thank you for the opportunity to provide FPL Energy's testimony.

Thank you very much.

[The prepared statement of Mr. Morrison follows:]

Statement of Robert Morrison, Vice President of Business Development, FPL Energy, LLC, Juno Beach, Florida

I. Introduction

Chairman McCrery, Congressman McNulty, and members of the Subcommittee, my name is Robert Morrison. I am Vice President of Business Development at FPL Energy, LLC. I thank you for providing me the opportunity to appear before you today on behalf of FPL Energy, LLC to talk about the importance of extending the wind energy production tax credit (PTC).

FPL Energy, LLC is the largest developer and operator of wind energy facilities in the nation with more than 1,500 megawatts of wind turbines in operation or under construction in seven states: California, Iowa, Minnesota, Oregon, Texas, Washington and Wisconsin.[1] FPL Energy is a subsidiary of the FPL Group Inc., which is also the parent of Florida Power & Light Company, an investor-owned electric utility that serves approximately 3.8 million customers in Florida.

FPL Energy is committed to clean energy sources and strongly believes that, among all of the renewable energy technologies, wind energy is the most economically viable and has the greatest potential to add significant new, clean electrical power across a broad range of geographic regions in the United States.

I want to commend Representatives Mark Foley (R-FL), Jerry Weller (R-IL), Bob Matsui (D-CA) and Karen Thurman (D-FL) for their commitment to wind power and their leadership in introducing H.R. 876 to extend the wind energy PTC. I also want to thank you, Mr. Chairman, and full Committee Chairman Bill Thomas for your long-term support of the wind industry.

Wind energy is a bipartisan issue that has the broad support of both Republicans and Democrats. In addition to having significant bipartisan support in the House, the PTC has strong support in the Senate under the bipartisan leadership of Finance Committee Chairman Charles Grassley (R-IA) and Senator Kent Conrad (D-ND), and in the White House which included an extension of the PTC in President Bush's FY 2002 Budget.

It is important to note that the current PTC will expire at the end of this year. I hope the House of Representatives will take swift action to extend the PTC by enacting the provisions of H.R. 876. It is FPL Energy's belief that without an extension of the PTC, little or no new utility scale wind power will be developed in the United States past 2001.

II. Background on the Wind Energy PTC

The wind energy PTC, enacted as part of the Energy Policy Act of 1992, provides an inflation-adjusted 1.5 cents/kilowatt-hour (kWh) credit for electricity produced with wind equipment for the first ten years of a project's life. The credit is only available if the wind equipment is located in the United States and electricity is generated and sold in the marketplace. The credit applies to electricity produced by a qualified wind energy facility placed in service after December 3, 1993, and before January 1, 2002.

III. Why We Need a Wind Energy PTC

A. The Wind Energy PTC stimulates new wind development by helping drive down costs, making wind energy an economical source of clean, renewable power

The cost competitiveness of wind generated electric energy has increased dramatically since the inception of the industry in the early 1980s. The wind turbine technology of the 1980s was in its infancy and the cost of wind energy during this time period exceeded 25 cents/kWh. Since that time, however, the wind industry has succeeded in reducing its production costs by a remarkable 80% to the current cost of approximately 4.5 cents/kWh. The 1.5 cent/kWh PTC stimulates new wind power development by assisting the industry in competing with fossil fuel generating sources, which based on historical averages cost around 3.0 cents/kWh.

With the continued support of the PTC, the wind industry expects that its costs will continue to decline as wind turbine technology continues to improve and the industry is able to realize more efficient manufacturing economies of scale. Through further turbine development and manufacturing efficiencies, the wind energy industry anticipates that the cost of wind energy will continue to be reduced until wind can compete head-to-head with fossil fuels without the need for any incentives.

The most significant factor contributing to the dramatic reduction in U.S. wind energy production costs over the last two decades has been the dramatic improvement in turbine efficiency. Since the 1980s, the industry has developed four generations of new and improved turbines, with each generation improving upon its predecessor. As a result, better blade designs, improved computer controls, and extended machine component lives have been achieved, which in turn have reduced the life-cycle costs of energy generated by wind turbines. Proven machine technology has evolved from the 50kWh machines of twenty years ago to the 1,500kWh machines of today that have the capacity to satisfy the energy demands of as many as 525

[1] A map showing the location of FPL Energy's Facilities is attached.

homes.[2] Moreover, new turbines in the range of 2,000 to 3,000 kWh are currently under testing and development, which will further improve the technology's efficiency and reduce wind power costs.

With the support of the PTC, the wind industry anticipates that research and development will continue and turbine costs will continue to decline. We are confident that future generations of wind turbines, along with improved efficiencies in manufacturing economies of scale, will sufficiently lower costs to allow the industry to directly compete with fossil fuel generated power. An extension of the PTC will help the wind industry bridge the gap as it moves closer to direct competition with fossil fuels.

B. The Wind Energy PTC is Helping Develop an Important Alternative Clean Energy Source with Significant Potential to Add New Electrical Generating Capacity

The severe shortage of electricity currently being experienced in the Western United States graphically points to the critical need for Congress to support the development of alternative energy sources in the United States such as wind power. Throughout the West, severe shortages of electricity have led authorities to call for stepped up construction of new power plants. But, even the speediest construction of conventional fossil fuel plants takes years to bring on-line. By contrast, new wind plants can often be brought on-line in months.

For example, in California, where the electricity shortage is the most acute, FPL Energy has identified 525 megawatts (MW) of new wind power potential that it believes could be developed in California over the next twelve months. In addition, FPL Energy estimates it could repower another 100MW at its existing wind plants in California over the next 12 months. Finally, FPL Energy believes there is the potential of at least another 500MW of new wind power at other sites in California that could be developed over the next 18 months. In other words, FPL Energy believes that, if the PTC continues to be available, there is the potential to develop new wind power capacity in California of at least 1,125MW over the next 18 months. This is enough new power to serve approximately 400,000 homes.[3]

Also, along the Washington-Oregon border near Walla Walla, Washington, FPL Energy is currently constructing and expects to have on-line by year-end what will be the world's single largest wind plant. At a capacity of 300MW, FPL Energy's new Stateline Wind Generating Project will produce enough electricity to serve the needs of some 70,000 homes, enough energy to serve about one-third of the residential customers in Portland, Oregon.

C. Wind Power is Green Power That Can Contribute to the Reduction of Greenhouse emissions

Wind-generated electricity is an environmentally friendly form of renewable energy that produces no greenhouse gas emissions or ground water pollution. In fact, a single 750KW wind turbine can displace, by replacing the combustion of fossil fuels, up to 1,500 tons of CO2 emissions per year.

Significant reductions of greenhouse gas emissions in the United States can only be achieved through the combined use of many new, energy-efficient technologies, including those used for the production of renewable energy. The extension of the PTC will assure the continued availability of wind power as a clean, renewable energy source.

D. Wind Power has Significant Economic Growth Potential

1. Domestic

As stated, wind energy has the potential to play a meaningful role in meeting the growing electricity demand in the United States. Wind power projects currently operating across the country generate approximately 2,500MW of electric power—enough energy to serve as many as 700,000 homes—in states as geographically diverse as the following: Alaska, California, Colorado, Hawaii, Iowa, Kansas, Michigan, Minnesota, Nebraska, New Mexico, New York, North Dakota, Oregon, Pennsylvania, Texas, Vermont, Wisconsin, and Wyoming. With the appropriate commitment of resources to wind energy projects, the American Wind Energy Association esti-

[2] One megawatt (MW) (or 1,000 kWhs) of current technology installed wind capacity servces approximaely 300 to 350 homes.

[3] FPL's estimates contained herein are based on its most current research of new wind development potential in California over the next 18 months. The ability to develop this potential could be significantly impacted by economic and regulatory restrictions and/or difficulties, including but not limited to the availability of the wind energy PTC, access to transmission and the ability of power producers to get paid.

mates that wind energy could generate power to as many as 10 million homes by the end of the next decade.

The domestic wind energy market has significant potential for future growth because, as the sophistication of wind energy technology continues to improve, new geographic regions in the United States become suitable for wind energy production. The top twenty states for future wind energy potential include:[4]

STATE	*kWhs (in billions)*
1. North Dakota	1,210
2. Texas	1,190
3. Kansas	1,070
4. South Dakota	1,030
5. Montana	1,020
6. Nebraska	868
7. Wyoming	747
8. Oklahoma	725
9. Minnesota	657
10. Iowa	551
11. Colorado	481
12. New Mexico	435
13. Idaho	73
14. Michigan	65
15. New York	62
16. Illinois	61
17. California	59
18. Wisconsin	58
19. Maine	56
20. Missouri	52

a. Wind Power Projects Can Serve as a Valuable Source of Supplemental Income for Farmers and Ranchers And New Economic Growth Opportunities For Rural Areas

Some of America's most productive farming and ranching regions are also some of the most promising areas for wind development. Since wind projects and farming and ranching are fully compatible—wind plants can operate will little or no displacement of crops or livestock—lease payments made by wind developers can serve as a valuable source of stable, additional income for ranchers and farmers. In Iowa, for example, existing wind farms are currently paying $640,000/year in rent.

Also, importantly, wind projects bring valuable new economic opportunities to areas, often rural, where wind projects are located, including increased local tax bases, new manufacturing opportunities and construction and ongoing operational and maintenance jobs. FPL Energy estimates its new Stateline project will add millions of dollars in revenue to the local Walla Walla, Washington economy, and will create an average of 150 new construction jobs with a peak need of 350 workers, and for on-going operations provide 8 to 15 new full-time jobs and 4 to 7 new part-time jobs.

b. Continued Growth of Domestic Wind Industry will provide economic benefits to other sectors of the U.S. economy

In addition to the benefits cited above which wind plants provide for farmers, ranchers and the rural communities where wind farms are sited, the U.S. wind industry provides many economic benefits to other sectors of the U.S. economy. For example, FPL Energy has its steel wind towers manufactured in Louisiana, Texas, Utah and North Dakota; wind turbines manufactured in Texas, Illinois and California; transformers manufactured in Wisconsin, Pennsylvania and Missouri; and wind turbine components manufactured in Georgia, Washington, Iowa and Colorado.

2. International

The global wind energy market has been growing at a remarkable rate over the last several years and is the world's fastest growing energy technology. The growth of the market offers significant export opportunities for United States wind turbine and component manufacturers. The World Energy Council has estimated that new wind capacity worldwide will amount to $150 to $400 billion worth of new business over the next twenty years. The current worldwide market for wind turbines is ap-

[4] Source: An Assessment of the Available Windy Land Area and Wind Energy Potential in he Contiguous United States, Pacific Northwest Laboratory, 1991. A map showing wind energy resources in the U.S. is attached.

proximately $4 billion per annum, and growing rapidly. Unfortunately, most of this manufacturing capacity, and its attendant job creation, is currently located in Denmark. Experts estimate that as many as 157,000 new jobs could be created if United States wind energy equipment manufacturers are able to capture just 25% of the global wind equipment market over the next ten years. Only by the continued support of its domestic wind energy production through the extension of the wind energy PTC can the United States hope to develop the technology and capability to effectively compete in this growing international market.

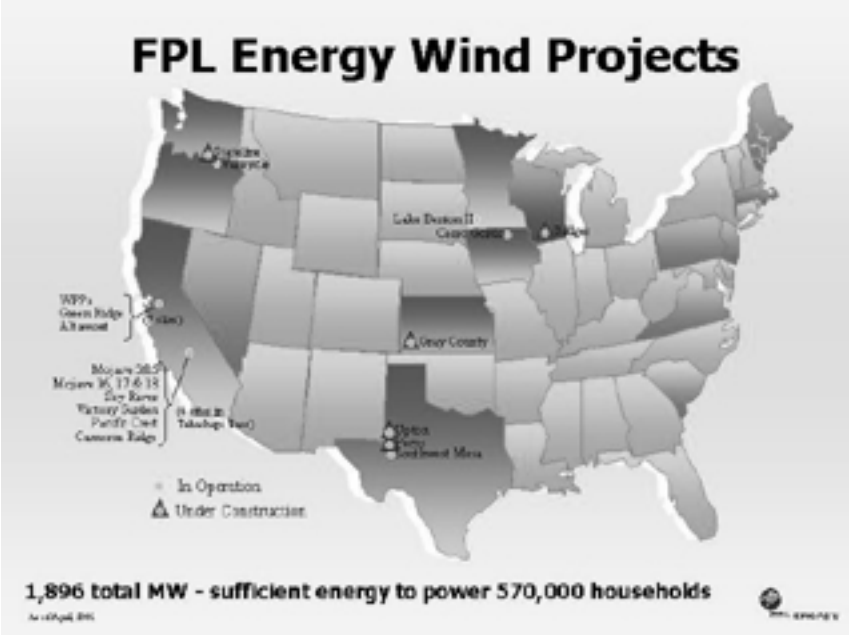
E. The Immediate Extension of the Wind Energy PTC is Critical

Since the wind energy PTC is a production credit available only for energy actually produced from new facilities, the credit is inextricably tied to the financing, permitting and construction of new facilities. With the credit due to expire in less than seven months, January 1, 2002, it is very difficult for wind energy developers plan for new wind power projects post-2001. The immediate extension of the wind energy PTC is therefore critical to the continued development of wind power in the United States.

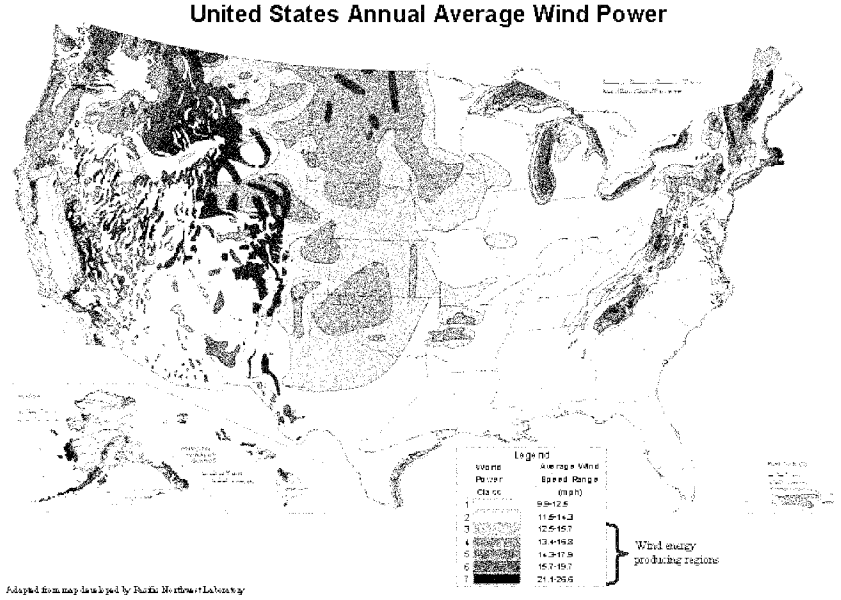
IV. Conclusion

We strongly believe Congress should extend the PTC as proposed in H.R. 876. Since its inception in 1992, the PTC has proven itself to be an excellent investment by the Congress. It has served as a catalyst that has stimulated significant development across the United States of the most viable renewable source of energy: wind power. We believe the extension of the PTC will ensure that FPL Energy and other U.S. energy companies continue to make the investments necessary to ensure the long-term role of wind energy in our national energy mix.

Thank you for providing FPL Energy LLC with this opportunity to appear before you today.



United States Annual Average Wind Power



Chairman MCCRERY. Thank you, Mr. Morrison. Mr. Carlson.

STATEMENT OF WILLIAM H. CARLSON, VICE PRESIDENT AND ALTERNATE ENERGY GROUP GENERAL MANAGER, WHEELABRATOR ENVIRONMENTAL SYSTEMS, INC., ANDERSON, CALIFORNIA, ON BEHALF OF USA BIOMASS POWER PRODUCERS ALLIANCE

Mr. CARLSON. Mr. Chairman, members of the Subcommittee, the USA Biomass Power Producers Alliance, whom I represent today, appreciates the opportunity to testify today in support of President Bush's inclusion in the 2002 budget of a provision allowing existing biomass plants to qualify for the section 45 tax credit. We intend to show why this represents good public policy and how it will be used to increase generation of renewable power from existing biomass plants.

The Alliance represents most of the 100 small biomass power plants spread across 30 States, from California to Maine, and New York to Florida. We dispose of over 22 million tons annually of waste wood from the Nation's agricultural, forestry, and urban wood waste streams, while producing one-half of 1 percent of the Nation's electricity. We combust rice hulls in Louisiana, sugar cane waste in Florida, orchard prunings in California, untreated urban wood in New York and Massachusetts, and forestry waste materials in Michigan, Maine, and the West. In the process, we lower air emissions by 96 percent versus open field burning, free up valuable landfill space, and assist public forest land managers in removing excess fuels to lower fire risks.

Our plants are typically located in rural areas, where we may be both the largest private employer and the largest property taxpayer.

Since 1992, the section 45 tax credit for wind and biomass has provided an inflation-adjusted 1.5 cent per kilowatt hour tax credit. Due to excessively narrow drafting, no biomass plant has even claimed one cent of credit. The existing credit simply does not work for our industry.

The credit applies only to closed-loop biomass, which are agricultural products grown exclusively to produce power. Not one plant has been built utilizing this material as the economics simply will not support the concept. On the other hand, well over 100 open-loop plants were built using clean waste wood and selling to utilities under the auspices of PURPA contracts.

These contracts typically contain ten or more years of known rates based on the utility's own costs, but most of these plants are now beyond that point and struggling to survive in a deregulated market which values price only. As a consequence, nearly 30 percent of the industry has closed its doors since 1994. Already, farmers have resumed open-field burning, wood is going back to landfills, and excess fuel removal in western forests has virtually halted.

So why should the President and this Congress care about saving this small renewable industry, whose electrical output could easily be replaced by a handful of new gas-fired plants? The answer is found in a November, 1999 study by the Department of Energy that sets out to put a dollar value on the environmental benefits of the biomass power industry. The study looked at the alternative fates of waste materials were they not to be combusted in a biomass plant. The conclusion is that the nonelectric environmental benefits of reduced air emissions, landfill avoidance, and improved forest health totaled the equivalent of 11.4 cents per kilowatt hour of biomass power produced. Clearly, the 1.5 cent per kilowatt hour tax credit applied to this technology is a wise investment of public funds with an exceptional return.

The Clinton and Bush administrations clearly recognized these values when they included in the 2001 and 2002 budgets, respectively, the definitional changes that would allow the types of open-loop plants that we operate to qualify for the credit.

Mr. Herger and Mr. Matsui introduced this week a comprehensive bipartisan biomass bill that provides further definition to the President's budget bill. On the Senate side, Senator Grassley has introduced S. 756, a bill virtually identical to the Herger/Matsui bill. Both Republican and Democratic energy bills include the definitional change to biomass and make it available to existing facilities. Clearly, this is a bipartisan issue with broad support.

This tax credit is the appropriate mechanism to stabilize the industry and incentivize additional production. It is only through maximum production from existing plants that the Nation captures the full range of environmental and energy benefits. In current energy markets, most biomass plants operate only a fraction of the time at full capacity, due to the low value of power during off-peak times and the rising cost of fuel with additional production.

The current credit is at the right level of allow virtually all plants to cost-effectively operate at maximum capacity at all times. A lower credit would not accomplish this same level of operation. Quite simply, if you run and produce the environmental benefits for the public, you get the credit.

The current tax credit includes a provision whereby the credit goes away during periods of high power prices. We support that protection against windfall profits and suggest no change.

We ask once again for your support of the President's expansion of the section 45 biomass tax credit, as modified and clarified by the Herger/Matsui bill. We advocate that this expanded credit represents good public policy and is a textbook example of how tax credits can be judiciously used to cost-effectively and simultaneously accomplish the Nation's energy and environmental objectives.

We thank you for this opportunity to testify and welcome your questions.

[The prepared statement of Mr. Carlson follows:]

Statement of William H. Carlson, Vice President and Alternate Energy Group General Manager, Wheelabrator Environmental Systems Inc., Anderson, California, on behalf of USA Biomass Power Producers Alliance

The USA Biomass Power Producers Alliance (USABPPA) applauds the leadership of this subcommittee in holding this hearing and supports the inclusion in President Bush's budget of an expanded definition of biomass that allows existing power plants to qualify for the existing IRC Section 45 tax credit.

The USABPPA represents most of the 90 to 100 small biomass power plants spread across 30 states from California to Maine and New York to Florida. While these plants, in aggregate, provide only about 1/2 of 1% of the nation's electrical energy, they along with other renewables, are central to increasing energy self-reliance and they are integral to proper disposal of the nation's wood waste materials and to achieving our air quality goals and commitments. These plants dispose of over 22,000,000 tons of waste each year from the nation's forestry and agricultural activities and from untreated wood separated from the municipal waste stream. We combust everything from rice hulls in Louisiana, to sugar cane waste in Florida, to orchard prunings in California, to urban wood in New York and Massachusetts, to forestry waste materials in Maine, Michigan and California. In the process we lower air emissions by 96% versus open field burning, provide substantial levels of rural employment, free up valuable landfill space and assist with reducing the massive fire hazard in choked western forests by removal of brush and small trees.

Since 1992 a tax credit has been on the books in Section 45 of the Tax Code that grants an inflation adjusted 1.5 cents/kWh tax credit to wind and biomass facilities. Due to excessively narrow drafting, no biomass plant has claim for one cent of credit under this provision. In other words, the current credit simply does not work for or industry.

The problem is that the credit applies only to "closed loop biomass", which are agricultural products grown exclusively for combustion in a power plant. There has not been a commercially viable undertaking in the U.S. in the nine year life of the credit, as economics simply will not support it, even with the credit. Conversely, since the passage of the Public Utility Regulatory Policy Act (PURPA) in 1978, we have seen the growth of a substantial biomass power industry fueled by the waste products of the nation's agricultural, forestry and urban wood streams.

Initially encouraged by utility contracts featuring 10 years or more of reasonably high rates based on the utility's own costs, and thus not needing a tax credit, the plants are now struggling to survive in a deregulated market where all supply decisions are based purely on price. As a consequence, nearly 30% of the industry has closed its' doors since 1994. With that loss has come the resumption of open field burning of ag wastes, a halt in much needed thinning of overstocked forests and the return of clean urban wood to the landfills. Without this tax credit that erosion will continue. If this happens, tighter air quality controls on industry and the public will be necessary to make up for the improvements provided by the biomass industry.

There have been price blips across the nation that have stayed the decline temporarily, but the trend continues down. California plants, for example, currently see

high prices all around them in the open market, but see only a modest bump in their prices since most are still under contract to the utilities, and those utilities have not paid them for deliveries from December through March. Maine plants saw a price rise for a few months due to power shortages, but those have since disappeared as large gas-fired plants have come on line, and margins have narrowed as fuel costs have increased.

The question then is why should the President, this Congress and this Subcommittee care about saving this small renewable industry when the whole industry's electrical output could easily be displaced by gas-fired merchant plants that you could count on one hand? The answer is found in a study released in November 1999 by the Department of Energy that set out to put a value on the environmental benefits of the industry. This study (Attachment 1) conducted by the Green Power Institute of Berkeley, California, looked at the alternative fate of waste materials were they not to be used as fuel for a biomass plant. The conclusion reached was that the non-electric environmental benefits of reduced air emissions, landfill avoidance and improved forest health totaled the equivalent of 11.4 cents/kWh of biomass power produced. This striking public benefit is in addition to the domestic energy security, avoidance of fossil fuel use and rural employment benefits shared with other renewable technologies. Interestingly, the "open loop" plants burning waste materials actually have much greater environmental benefits than the "closed loop" concept that has had the tax credit since 1992. The DOE study clearly indicates that the tax credit is not a form of corporate welfare but a wise investment with a substantial return.

The Clinton and Bush Administrations clearly recognized these values when they included in the 2001 and 2002 Budgets, respectively, the definitional changes that would allow the types of "open loop" biomass plants that we currently operate to qualify for the credit.

Fellow members of the House Ways & Means Committee, Mr. Herger and Mr. Matsui introduced, just this week, a comprehensive bipartisan biomass bill, that provides further definition to the President's budget proposal. On the Senate side, Senator Grassley, Chairman of the Senate Finance Committee, has introduced S.756, a bill virtually identical to the Herger/Matsui bill. Senators Collins and Boxer also introduced S.188, another bipartisan biomass bill. This truly is a bipartisan issue, as the comprehensive Senate energy bills of both the Republicans and Democrats have included the same change in definition of biomass and made the credit available to existing facilities.

The Section 45 Wind and Biomass Tax Credit truly is the appropriate mechanism to stabilize the industry and incentivize additional production. It is only through maximum production from existing and currently closed facilities that the nation captures the full range of environmental and energy benefits. In the current energy markets, most biomass plants operate only a fraction of the time at full capacity due to the low value of power during off-peak periods and the rising cost of fuel with additional production. The current credit is at just the right value to allow virtually all plants to operate at full capacity at all times. A lower credit, as has been advocated by some, would not accomplish the objective of maximizing the environmental benefits of the industry. Attachment 2 is our attempt to capture this relationship between marginal fuel cost, electric power value, and impact of tax credit level. Simply, you produce and generate multiple times the environmental benefits; you receive this credit. You don't produce; you receive no credit.

The current Section 45 credit wisely includes a provision whereby the credit disappears during times of high power prices. This would avoid the appearance of windfall profits under certain situations, something we also wish to avoid given the current round of investigations and incriminations against power producers in California. We support the continuance of this safeguard.

We close by asking for your support of the President's expansion of the Section 45 Biomass Tax Credit as modified and clarified by the Herger/Matsui bill. We believe that this expanded credit represents good public policy and is a textbook example of how tax credits can be judiciously used to cost effectively and simultaneously accomplish the nation's energy and environmental goals. On a personal note, as an operator of five of these plants, I look forward to a day, perhaps late in 2001, when I can tell my employees that their plants and their jobs will have a long-term future.

Chairman McCrery. Thank you, Mr. Carlson. Mr. Wallace.

STATEMENT OF DAN WALLACE, OWNER, COLUMBUS OIL COMPANY, SEMINOLE, OKLAHOMA

Mr. WALLACE. Mr. Chairman and Members of the Committee, after that introduction by Congressman Watkins, I feel compelled to tell you I am not J.R. Ewing. [Laughter.]

But I am a blue jean-wearing, boot-wearing, pickup-driving "oily" from Seminole, OK. When invited here, I was invited here to represent that segment of the oil and gas industry known as the independent producer, operating marginal stripper production.

I heard the young lady earlier today testify that we produce about 50 percent of domestic crude barrels, and I suggest to you we probably produce about 70 percent.

I assume we all know what a marginal or a stripper production well is here today. I assume that we're acquainted with Congressman Watkins' introduction of the 100 percent net income tax limitation suspension back in '97, and I assume that we all know what happened to the price of oil in 1998 and '99, after the introduction of the suspension. I would suggest to you that if it was important enough in 1977 and 1997, it's probably more important to you today.

If the question were asked, should we continue the 100 percent net income limitation, the answer should be yes. If one would ask why, the answer should be to encourage the exploration and production of the domestic barrel. If not to increase production, at the least slow the decline curve.

If one was to ask how we would do that, my follow-up to the question would be I think there needs to be a partnership between the government, the private sector, the industry, to encourage the investment of risk capital in the production of the American barrel.

Tax incentives can and will help find the domestic barrel and the domestic natural gas. These efforts will not only help the independent producer, but also will help develop America's reserves. Businessmen and women that make legitimate business decisions must be made on knowns, not hypotheticals, not projections.

In the independent business, we have to live in the real world. We have to get up every morning and put our clothes on and go to work with what is going on in the real world today. What is the price of the commodity? What are the percentages of the investment dollars? Are the rules going to get changed? Is the price going to get changed? That's what we get up and go to work with most every day.

I would suggest to you there are 1,440 minutes in a day, 7 days in a week, and these wells run every day of every week of every year. This is a seven-day-a-week business. The consumption is a 7-day-a-week business. The supply side is the same.

You ask how does the suspension of the 100 percent net income limitation work, how does it affect my bottom line? As Wes said earlier, I'm currently, as of six o'clock this morning, about 3,600 foot deep on a 4,400 foot well. The estimated cost, about $220,000. I got up this morning watching CNBC, and the price of oil drops 4 percent yesterday.

I can assure you, that means something to me. It does not drop my cost. I don't have to explain that to you fellows. I'm sure you've

all been there and done that before, like myself. But that's the world that we independents live in.

I own about 50 percent of this well, and four of my other buddies own the other 50 percent. My backing is my bank. My collateral at my bank is my stripper and marginal production. That's what they hold the mortgage on, for me to get the money. In case I can't come up with the money, at least I can go borrow the money and pay my 50 percent of this well. The other four guys, I can tell you, are the same way. If not this well, it will be the next well.

I can also tell you for a fact that this is the first well that I have drilled in about 12 years. One would ask, well, why is that? I suppose you're going to get around to asking that later on. Pretty simple logic is the answer to where the independent is.

I would also suggest to you that, in the past 15 years—and people are going to talk about the infrastructure, and I've heard some of the speakers today talk about it. Let me tell you one of the most important things. The infrastructure that's being lost in this country is about 70 percent of the independent producers who have either bellied up, gone broke, got out of the business, second generation, let's sell out and quit fighting it, take what we can get safe, and let's go on down the road and retire.

That's all the knowledge, all the experience. There is not a university in this country that can teach the things that the independent producer must know before he takes his risk dollars, or maybe somebody else's risk dollars, and puts them to work. There is not a book in any library. That's the infrastructure that's being lost, the independent producer.

I would suggest to you that behind me the generation will skip. There won't be an aggressive, risk-taking, gambling generation in numbers behind my particular generation in the independent sector.

My particular well that I just alluded to represents about four independent producers. If you would take the thousands of independent producers across the country and divide four into it, I think you will find there are literally hundreds of wells being drilled by the independent today. I can also tell you that only in the last 3 years this country has lost another 10 percent of its daily pipe-line runs. That's the infrastructure.

If you want to fix the problem in this country, from the people that do things—we're not much as talkers, although I have sat here and talked quite a bit. But I think we are the doers. That's the consensus of the independent producer.

Thank you.

[The prepared statement of Mr. Wallace follows:]

Statement of Dan Wallace, Owner, Columbus Oil Company, Seminole, Oklahoma

My name is Dan Wallace, owner of Columbus Oil Company, located in Seminole, Oklahoma. I am an Independent Oil Producer. And I am here to represent the segment of the oil and gas industry known as the Independent Producer. I have been invited to testify today to the impact of the federal tax laws on the production and supply of oil and gas from marginal wells.

The term marginal production means domestic oil or gas production during any taxable year. This includes stripper well properties that are defined as: "The average daily production of oil or gas from producing wells on a property that is equivalent to 15 barrels or less per well per taxable year."

In 1997, Congressman Wes Watkins added language in the tax bill that suspended the 100% net income limitation for marginal properties. And, this year, President Bush included the extension of this suspension in his budget proposal to Congress.

This suspension provides needed incentive to invest risk capital dollars in the business. If the question is "Do we continue the suspension of the 100% Net Income Limitation?"

The answer should be YES.

The question now becomes "Why should the suspension of the 100% Net Income Limitation be continued?"

One of the answers to this question should be "so the government can encourage the oil and gas industry to increase domestic production in order to stop or slow the decline curve." In turn reducing this country's reliance on foreign imports.

The follow-up question to why should be "how do we support extending the suspension of the 100% Net Income Limitation?"

The answer to how should be "so government can work effectively with the private sector to achieve positive results." By offering a variety of incentives to the Independent Producer to return those risk dollars to slow or stop the steep decline curve of not only oil and gas, but the even steeper decline of the Independents Producers active in America today. Thousands of Independent Producers across America have been forced out of business over the past decade due to declining or non-existing profits.

Tax incentives can and will help create an environment that will offer the possibility of a profit through the spending of risk capital.

These efforts will not only be for the Independent Producer's benefit but for the opportunity to develop America's oil and gas reserves as well. The opportunity will be created out of need for these energy-producing commodities. Businessmen and women can make better decisions based on knowns with a strong message from our government that there is a future with some stability in the energy business.

Tax incentives must be part of a long-term plan by our government if we are to reverse the current trend of inadequate energy supplies.

Let us not forget all wells become marginal at some point. Marginal production is the foundation the Independent Producer works from to finance their operations.If you ask "How does the suspension of the 100% Net Income Limitation affect my bottom line today?"

My answer is. "Today I am currently drilling a 4400′ well in Hughes County, Oklahoma. It is located on the Oliphant Ranch twenty miles from my office in proven oil and gas country. The estimated cost of this drilling project is $220,000.00. Marginal and Stripper production is the collateral used at a local bank to fund my 50% of this project. Local independent producers in this joint venture fund the remaining 50% from their Marginal and Stripper production.I suggest you multiply this well times a few thousand other Independent Producers and you will find hundreds of wells being drilled as I speak.

What is currently being done is working to keep this industry active and there is your proof.

Government and industry together can make a difference.

I urge you EXTEND THE SUSPENSION of the 100% Net Income Limitation.

Thank you for your time and this opportunity to speak on behalf of other Independent Producers.

Chairman MCCRERY. Thank you, Mr. Wallace.

Mr. Wallace, with respect to the suspension of the 100 percent net income provision, did that suspension allow you to keep open some wells that you otherwise might have capped?

Mr. WALLACE. No question about it. No question about it. I can't say enough about that, and I can't say enough about any tax incentive that is offered in this particular industry.

Seriously, you must be dealing with some knowns. The incentives offered us, if not taken away, are the knowns. Whenever we create the budget in which we're going to try to operate on with the forthcoming year, it's a very volatile market and we don't know what the price of the commodity is going to be.

Chairman MCCRERY. If you had capped those wells rather than keeping them in production, would you have been able to just go back out in the field and open them up when the prices got back up?

Mr. WALLACE. No, sir. I heard somebody testify earlier, something about the capping of wells, the plugging of wells. That's a serious problem. That is not going to fix this problem today, but that is a problem that needs some consideration down the road.

I would suggest there be some technology looked into on how to plug a well. Maybe not the old conventional method that we've used for the last 50 years. Maybe that's not the best. That's in the event you want to go back.

Chairman MCCRERY. Now that prices have rebounded, what role does the suspension of the net income limitation play in developing capital and directing that to new production?

Mr. WALLACE. An excellent question. It provides the opportunity to take some profits from some profitable leases, wells, properties, and go back and rework those stripper wells, to try to improve them from possibly a three-barrels a day well to a five- or six-barrels a day well. That's the opportunity it offers you, the incentive to put those dollars at risk back into the business.

Chairman MCCRERY. Do you do your own taxes, Mr. Wallace?

Mr. WALLACE. No, sir. I'm fortunate enough to have a CPA in my office, who's been with me for 20-some years.

Chairman MCCRERY. Do you talk with your CPA about your taxes?

Mr. WALLACE. I think my CPA runs the business, rather than me, sometimes.

Chairman MCCRERY. Have you ever talked with your CPA about the effects of the alternative minimum tax——

Mr. WALLACE. I'm sorry?

Chairman MCCRERY. Have you ever talked with your CPA about the effects of the alternative minimum tax on your business?

Mr. WALLACE. Yes.

Chairman MCCRERY. And what does he tell you?

Mr. WALLACE. He doesn't much care for it.

Chairman MCCRERY. He doesn't much care for it. Have you gotten into any of the detail as to why he doesn't care for it?

Mr. WALLACE. Well, again—not in detail. I'm not an accountant and, after 20-some years—We have a lot of one-on-one conversations, I can assure you.

Chairman MCCRERY. I'm sure you do.

Mr. WALLACE. I don't try to tell him how to run the Tax Code, and he doesn't tell me how to run an oil well. But we have discussions. As far as me being well-versed, no.

Chairman MCCRERY. Well, allow me to just say, gentlemen on the Subcommittee, we need to take a look at the AMT and the effect it has on independent producers, because it is a very serious impediment to independent producers having reliable income. In fact, it's a very perverse influence on the production of oil by independents because, in bad times, it punishes them. If they're having bad years, income-wise, the alternative minimum tax actually punishes those independent producers at the worst possible time, driving some of them out of business and certainly preventing them

from reinvesting in the ground, so to speak. So that may be something we'll have to get into in another hearing.

Mr. Williams, according to a study by the Gas Technology Institute that you referenced, non-conventional gas production tripled in the past 20 years, growing from about 1.5 trillion cubic feet per year in 1980 to about 4.6 trillion cubic feet currently.

Can you offer us any insight on the role that the section 29 credit played in this increase?

Mr. WILLIAMS. Certainly. I'm pretty intimately involved with it, and have been for a number of years. I think it absolutely played a key role in that increase.

I think maybe you could look at coalbed methane as the best example. In 1980, there was no effective coalbed methane production in the United States. In fact, through most of the eighties, it remained at relatively low levels. It was in direct response to the section 29 credit that people were willing to go out and take the additional risk to attempt to produce a formation that had never been produced before, effectively and economically.

That same kind of risk taking also applied to tight formation gas and Devonian shale, because of the additional incentive and security provided by the credit. Wells were drilled that wouldn't have been drilled; new techniques for drilling wells and producing wells, were developed that made wells that would not have been economic even with the credit 20 years ago very economic today, or much more economic.

I see that as a possibility for the future. I absolutely think that reinstating the credit would encourage our industry to take those kind of chances again. You know, over the last 10 years, we've been living on our past laurels, going back in, completing the drilling of fields that were started before that, and doing less and less exploratory work. These kind of incentives help to take away some level of the risk. Basically, they help to ameliorate the price risk to some degree. It just reduces the number of risks that you have got to deal with before you decide to put your money in the ground.

Chairman MCCRERY. Thank you. Mr. McNulty.

Mr. MCNULTY. Thank you, Mr. Chairman. I want to thank Mr. Williams, Mr. Morrison, Mr. Carlson and Mr. Wallace for their assistance today. I'm just going to ask one question of Mr. Morrison.

In my opinion, there is tremendous merit in pursuing alternative sources of energy, particularly wind power. I noted in your testimony that you had some estimates about how much production could be increased given the proper resources. I want to get a handle on what you really mean by that and what would you consider to be the proper resources necessary in order to fulfill the vision that you have for wind power in the future, and if you could quantify what that actually would be in the end, if you could give some kind of a guess of your vision of what percentage of our energy supply could eventually come from wind power.

Mr. MORRISON. Sure. With respect to what is required to facilitate wind becoming a significant source of energy in the United States, I think the credit for the next few years is of essential importance.

As I alluded to in my testimony, the price of this energy has decreased dramatically, and we are now approaching the point where

wind is (with the PTC) directly competitive with fossil fuels. I think the cost of the technology will continue to decrease as turbine sizes continue to get larger, which makes them more efficient because there's less steel, less copper, etc., per kilowatt hour that comes out of the turbines.

Additionally, most of the manufacturing of these machines currently occurs in Denmark. I am sure that, if there is a stable, long-term American market, that manufacturing will shift to the United States. There will be factories built in the United States and components will be sourced in the United States, gear-boxes, generators, and so on, which are currently manufactured in European factories. So with a stable, long-term American market, I think we will have tremendous growth and tremendous efficiencies and increasingly reduced costs in this business to the point where wind will be directly competitive with fossil resources.

With respect to what my guess is—and it's nothing more than a guess—as to what this technology could eventually provide in the way of electricity generation in the United States, west of the Mississippi is probably where most of the resource is. It is also where the land usage patterns are amenable to large-scale utility wind farms. Also, it just has population densities that are favorable for wind.

In that respect, I think it's interesting to draw a parallel to Denmark, where this technology has been around for a similar amount of time as it's been in the United States, but in Denmark it has benefited from a stable, long-term policy. The Danes currently provide about 15 percent of their national electricity from wind, and they're targeting a third by, I believe, the year 2012.

West of the Mississippi, I think this technology could easily provide 10 percent of the electricity consumed in that region. With favorable public policies and some luck on the technology side, it would be upward of 15 percent. In the East it would be slightly less because the population densities are higher.

Wind will be a small percentage piece of the puzzle in solving the Nation's environmental and energy problems, but nevertheless, 10 percent of the electric energy consumed west of the Mississippi is an enormous absolute quantity of energy. In particular, as a marginal percentage of new capacity added, wind would be substantially greater than that.

This technology is not going to generate 40 percent of the energy in this country. Nevertheless, it's an important piece of the puzzle.

Mr. MCNULTY. Thank you very much. I thank all the panelists, and thank you, Mr. Chairman.

Chairman MCCRERY. Mr. Weller.

Mr. WELLER. Thank you, Mr. Chairman. This has been as good panel.

I would comment to Mr. Wallace that your Representative in Congress, my friend Wes Watkins, has been talking about these little guys and gals that are independent oil people back home, and it's nice to have you before the Committee today. Wes does a good job of speaking out for you, and it is nice to see, West, that you brought one of them. You brought a live one here and we appreciate Mr. Wallace being a part of this today.

There are a couple of questions I would like to direct first to Mr. Williams. You were talking about the section 29 tax credit and the role it plays, particularly in addressing the additional cost of non-conventional fuels, making that a competitive solution as we look for ways to increase domestic sources of energy.

According to the statistics that the chairman pointed out, about the increase in non-conventional gas production tripling over the last 20 years, do you feel today that we have reached the peak? Do you feel that we have an adequate supply of non-conventional fuels, or do you feel there's an opportunity to continually increase the amount of non-conventional fuels that could be made available as a result of the section 29 tax credit?

Mr. WILLIAMS. Certainly, I do think there's a great opportunity to continue to increase the supplies of non-conventional sources. In fact, I think it's essential that supplies of non-conventional sources continue to be increased. I have not seen any long-term supply model that doesn't have them playing a significant part in the future supplies.

The reality is that the amount of conventional resources available domestically is declining. We have developed more of our conventional resources because they're more economic and easier to develop. So more and more, what's left is non-conventional. If you want to have an adequate supply, that's where it's going to have to come from. But I certainly think we have developed some of the technologies to develop what's there, but there is certainly room for improvement over the coming years.

Mr. WELLER. What do you see as additional barriers to increasing non-conventional fuels that we need to address in the Congress? When you look at the Tax Code, not with just section 29, are there any other provisions in the Tax Code that have an impact on the production of non-conventional fuels?

Mr. WILLIAMS. The net income limitation is an issue, and the alternative minimum tax is very much an issue. I would point out that the chairman is absolutely correct, that when prices are low and our profits are lowest the alternative minimum tax has the most adverse impact. When profits are high, we tend to be not under the alternative minimum tax umbrella. Certainly that's been the experience with my company, and myself personally, with my own investments in the wells that we drill.

But I think, even beyond the Tax Code, one of the big issues is access. The more we cut off potential areas of development around the country from access for oil and gas development, the less resources will be available.

My company recently had an experience with denied access in Utah. We leased some land on a Federal lease and started to work putting together the permits for it. Initially we were delayed waiting for eagle nesting season to end. By the time that was done, the former President's roadless initiative had taken effect, or had been proposed, and we're sort of sitting and waiting to see whether we will even be able to get access to the land that we've already leased. I think that's a major issue for our industry.

Generally, I think there are a number of provisions in the Tax Code that are very helpful in the formation of capital. Capital formation is absolutely essential to our industry. Whether it's the

small wells, one well that you're drilling for yourself, or a company like mine that goes out and accesses capital through public markets, in addition to our own money, having a project that has a reasonable level of risk and an acceptable rate of return is essential. With the price volatility that we've seen in the last decade, it becomes very difficult to do.

Mr. WELLER. Thank you, Mr. Williams.

Mr. Morrison, the wind energy tax credit, of course, I'm one of those who believes very strongly that it needs to be extended and that it's a key incentive as we look for alternative ways of generating electricity, something that's in shortage in California and elsewhere in this country. Of course, green power is a good thing.

You indicated—I believe the statistic you used was about 700,000 homes today are essentially provided electricity as a result of wind power, and there's a potential for continued growth, but it's not the ultimate solution.

A similar question as I asked Mr. Williams. Besides extension of the wind energy tax credit, are there other provisions in the Tax Code which have an impact on wind energy that we should be taking a look at?

Mr. MORRISON. Wind currently qualifies for the 5-year Modified Accelerated Cost Recovery (MACRS) makers treatment, and that clearly enhances the economics of wind projects, so I think that's an important attribute.

Other than that, I think the PTC to-date have facilitated the development of many of these wind projects which have been quite successful. I think that all we are asking for is time to allow us to have the technology further mature so that we don't need these incentives any more. That's basically what you heard in some of my testimony.

Mr. WELLER. Thank you, Mr. Morrison. I see my time has expired, Mr. Chairman. Thank you.

Chairman MCCRERY. Thank you, Mr. Weller. Mr. Neal.

Mr. NEAL. Thank you, Mr. Chairman. I have a question for Mr. Carlson.

Could you give me a range of items that would be covered by the proposal to extend the biomass credit to open-loop businesses, particularly in the northeast?

Mr. CARLSON. Yes, Mr. Neal. I will do that.

The definitional changes that we seek are something that we have worked on now for about 3 years, and involved a wide range of parties, including environmental groups, Treasury officials, others here in Washington, D.C., to try to get these definitional changes as narrow as possible in order to keep the cost to the Treasury down but broad enough to encompass the materials that we use.

Basically, they fall into three categories, and all of these are somewhat applicable to the northeast. The first is forestry waste materials. These are things like sawmill residues and the brush that is removed from thinning a lot of the overstocked woods that we find now that we have, particularly in the western States, but specifically it limits the materials from, for instance, old growth timber, which is not included in the definition.

Second, in the agricultural arena, all of the by-products of agriculture, such as shells and pits and stems and stocks of agricultural products, would be included within the definitional change that we seek.

Thirdly would be materials out of the urban wood stream, which would probably be most applicable to the more heavily populated areas of the northeast. This would be things like pallets and dunnage, tree trimmings, those kinds of materials, but specifically excluding, because of the parties that we have collaborated with, any treated or painted materials that might have some hazardous substances associated with them, and excluding paper materials that would typically be available for recycling.

So we're trying to find that slice of the market where there are materials that could be put to good use, that would have no other use, but would not usurp materials that would have a higher use somewhere else in the recycling realm.

Mr. NEAL. Well, given the rising price of electricity, what is the value to the public of extending this credit to the open loop biomass plants?

Mr. CARLSON. The rise in electricity, as you referred to, is probably primarily referring to the California market again, because that's the market that has seen the most rise recently. In that market, for instance—and there are numerous biomass plants in California, actually the largest location for these plants—virtually none of those plants have seen that rise in electricity. They are still under contract to utilities.

In fact, the problems that have been engendered by the high prices in California are actually more of a problem to the biomass producers there than they are an opportunity, because they haven't been paid for their December 2000 through March 2001 production.

What you will find is that in other areas of the country there has been no price rise. In fact, the next largest concentration of plants is in Maine, and the prices in Maine are very low, to the point where the plants there are suffering greatly.

The nice thing about the section 45 credit, as it's currently written, is that it has this provision that it phases out as electricity prices go up, so there is not the potential for windfall profits. In fact, when it reaches a fairly high level, the credit is gone altogether. So it really has a self-limiting mechanism that is very appropriate for this type of a credit.

Mr. NEAL. Thanks for your testimony, Mr. Carlson. I agree with you. Thank you, Mr. Chairman.

Chairman MCCRERY. Thank you, Mr. Neal.

Mr. Morrison, as you pointed out, I have supported the wind credit in the past. However, this is a question that we have to ask, I think, and I'm going to give you an opportunity to answer it.

Because we are seeing a rise in the price of electricity, I think it's intuitive to conclude that, if the price gets so high, then you guys don't need a credit. How do you answer that right now?

Mr. MORRISON. We have a couple of charts that I think would be illustrative here. We have made some comparisons with the price of natural gas rather than a direct comparison with market prices of electricity because electricity markets are fractured and somewhat difficult to make direct comparisons to. So we regard the mar-

ginal competitor for wind-generated energy as being natural gas, as the gas gets transformed through a combined cycle generating plant into electricity.

The chart on the left provides some historical and forecasted data for the price of natural gas. I think it's rather similar to some of the charts that the people from DOE presented today. I don't think there is anything particularly different from what we're showing from what was earlier presented.

On the left, in blue, is the historical price of natural gas on an inflation-adjusted basis at Henry Hub, based on the NYMEX contract. On the right in red is a similar forecasted Henry Hub price, which represents an average of forecasts from five nationally recognized energy forecasting firms.

I think what is clearly most conspicuous about the graph is that, if one considers historical trends and future forecasts—admittedly, they're just forecasts—we're in the middle of what appears to be an unprecedented spike in the price of natural gas.

Similarly, the chart on the right-hand side, which is all historical data over a much shorter time period, from May of 2000 through May of 2001, which is actual traded prices for the NYMEX contract for Henry Hub deliveries for natural gas, again we reached a tremendous spike in January, where we got to $10 per mm Btu, but immediately after that, we have seen the price of natural gas come down.

I think it is our belief, and I think it's generally the belief of most people in the energy business today, that prices we see today, while they may be good for producers and also good for generators of wind energy, they're not going to last, that supply will, expand to meet increased demand and that prices will decline in the future. Wind still needs a bit of time yet, with incentives, to perfect its technology to the point where it can compete on the basis of the sorts of forecasted prices for natural gas that we see here.

Chairman MCCRERY. Thank you for that explanation.

You also mentioned in your testimony that you foresee a day when wind energy could be competitive in the market without the tax incentive. Do you have any idea when that might occur?

Mr. MORRISON. It is certainly not in our business plan to come up here and get an extension every 3 years. Again, it's a bit of a guess, but in my conversations with turbine manufacturers and other people who are technically savvy in the business, I think the general expectation is that five to seven years is the sort of timeframe that we need before we can be directly competitive.

The turbine manufacturers that I know have internal targets where, on a year-by-year basis, they target reductions in the cost of turbines, from manufacturing efficiencies, and supply chain efficiencies, on the order of five percent per annum.

In addition, every time a new turbine model is introduced, which occurs about once every 18 months or 2 years, they target a 10-percent reduction in the cost of the turbines. Turbine costs are about 75 percent of the total cost of a wind generation facility, so a 5 percent per annum decrease, in addition to a 10 percent per new model decrease, pretty rapidly leads to some significant price decreases in the cost of the equipment and, therefore, the cost of the energy coming out of the equipment.

Chairman MCCRERY. Thank you. Mr. Watkins.

Mr. WATKINS. Thank you, Mr. Chairman.

You know, we talk about national energy policy. That has a different meaning for different people, I know. We see a lot of the peaks and valleys in the price of energy, and we yell out in the oil patch when it gets so low, and when it gets too high, the consumers are yelling, saying we have to do something. So, in my opinion, we need to try to stabilize a pricing system, stabilize it so that it can become more predictable.

Again, I'm excited, because I think we have some people who understand at the White House the need for this, and also may have some knowledge about how to do that.

Mr. Chairman, this has been a very informative panel, and I would like to have each one to state what tax provision—if you could just wave a magic wand, what tax provision in a national energy policy would each of you like to see, like the top one or two tax provisions that would allow you to increase production, stabilize and move forward?

Mr. Williams, we'll start with you and then move to Mr. Wallace.

Mr. WILLIAMS. I can't speak to wind power since I know nothing about it, so I will stick to oil and gas, if that's OK with you.

Mr. WATKINS. You stick to each of your industries. I figure that's why you're in that business.

Mr. WILLIAMS. Choosing just two measures that make a lot of sense in the oil and gas industry—certainly, I would have to put section 29 in there. I do think it focuses on the resources, the high cost resources, and helps pull them into the mix where they might not be there otherwise.

Another measure that I think makes a lot of sense would be a marginal well tax credit, because it reaches out and helps keep the wells that might otherwise be abandoned and a resource that would be lost permanently available in the mix going down the road. I think those would be my top two choices.

Mr. WATKINS. Thank you. Mr. Morrison.

Mr. MORRISON. I think for the wind industry, what we would most like would be a long-term extension—and by that I mean a five- to 7-year extension—of the section 45 credits. That's all.

Mr. WATKINS. That would probably do it for the wind industry. All right. Mr. Carlson.

Mr. CARLSON. Mr. Watkins, I would certainly second what Mr. Morrison just said. We are actually excited to be here today, because for the first time our industry is being included in section 45 in the President's budget, where we have been excluded because of definition before. This is virtually the perfect credit to incentivize our industry, because we are fairly unique, in that the more we run, the more expensive our fuel source becomes, because it needs to be hauled further distances to arrive at the plant for proper disposal.

This credit, as a production tax credit, really allows us to take what is a relatively low-cost power market for many hours of the week—even though we may get high prices, for instance, during a hot day in the summer time—and for months on end in the fall and the spring, and particularly when prices are extremely low—this credit will build a floor under the industry so that we can still be

incentivized to go procure the fuel that we need to run these plants at full capacity.

So this is the type of incentive that our industry needs, the section 45 tax credit included in the President's budget, because as I mentioned, it has this self-limiting mechanism whereby don't get it when the prices are high, but when you need it the most, it's there for you so that you can procure the fuel that you need.

Mr. WATKINS. To help stabilize that, a little more predictable, right?

Mr. CARLSON. Absolutely.

Mr. WATKINS. Mr. Wallace, my friend from the oil patch.

Mr. WALLACE. Wes, if I wanted to approach this problem from a tax angle, I would probably do it on some sort of a sliding scale, tied to the price of oil, what is the lifting cost. Everybody wants to talk about the price of oil, but nobody wants to talk about what it costs to produce it, the lifting cost. That's the key to domestic production, the lifting cost.

I would tie it to some sort of a sliding scale. If you're making a profit and you don't plow part of it back into the production of America's oil and gas, I would probably tax you pretty good. I would just take a good, common sense approach, and the boys out there making obscene profits, we're going to tax you or you're going to go get us another barrel. That's probably what I would come up with.

The State of Oklahoma, 9- or 10 dollar oil, I was involved a little bit in that a couple of years ago. They removed all their tax to save the wells. We all know the gross production tax helped pay the bills in the State of Oklahoma. That's how serious it got with them, and that's the serious attitude they took.

If I were these people, I would declare war on them. I would roll up my shirt sleeves and go to work.

Mr. WATKINS. That's an excellent point. I think, for the consumer as well as the producer, over and over—I've been out in the oil patches and have visited with friends. All they are looking for is some kind of predictability, some stability, so that they can go borrow that money and know if they may have a shot at paying it back.

Mr. WALLACE. That's the key.

Mr. WATKINS. That's the sliding scale on tax credits, another bill that I've introduced along the way—and I noticed, Mr. Carlson, biomass is getting quite a bit of interest in some of the farm land around the country. But I think it's just exactly that in the oil patch.

Most of the people love it, they're working at it, but it is shocking when you realize we've lost 70 percent of the producers, independent producers, and that's not counting the skilled workers, that infrastructure that we've lost out in the oil patch, where today I would predict it would be difficult to get geared back up to increase that production that we have to have in order to get there.

If I'm hearing what they're saying to me, as I make the rounds and have a chance to visit along the way, I know it seems that way in our neck of the woods.

I want to thank all of you for being here, but I want to especially thank my friend, Dan Wallace, who is just exactly what he de-

scribed. He's out there, he may have that CPA, but I'll tell you, I'll bet he's keeping an eye on that bottom line. But he's out there making sure that rig is running, making it work, and like this morning, calling and finding that it's down to 3,600 feet and he has still got about 600 feet or more to go before that well is complete. Dan, we wish you much success on that well.

Mr. WALLACE. Thank you, Wes.

Mr. WATKINS. Let me just ask, how many wells do you have overall?

Mr. WALLACE. We're probably operating right at 50 wells today, a carryover from '98 and '99—let me just share this with you. I don't care if you're an independent or a major. You take the calendar years of '98 and '99, your gross, $19.60 a barrel, less taxes, less royalty, you operated for 24 months at $14.60 a barrel. Now, start trying to pay your bills, take care of your family, and look for a barrel of oil on $14? It's not going to happen.

If you take the next calendar year, 2000, add it to that, you've got the same thing. We have operated for over 3 years out there at cost. No question.

Mr. WATKINS. No question about it. Thank you, Mr. Chairman. It was a very, very valuable meeting.

Chairman MCCRERY. Thank you, Mr. Watkins. Mr. McNulty.

Mr. MCNULTY. Thank you, Mr. Chairman. I just want to express my gratitude to all of those who gave testimony today, to thank you for calling this very important hearing. I noted that every single Member of the Subcommittee participated in the hearing, and that's an indication of how important this subject is.

Finally, Mr. Chairman, I look forward to our next hearing, which will also be on this subject, and at that hearing I intend to steal a play from Wes Watkins' playbook and bring a couple of my constituents to talk about fuel cell technology.

Thank you, Mr. Chairman.

Mr. WATKINS. We look forward to that.

Chairman MCCRERY. Thank you, gentlemen, for your testimony today. We appreciate it very much. And to all of you who participated in today's hearing, thank you for coming and being such a polite audience. We look forward to our next hearing.

[Whereupon, at 1:05 p.m., the hearing was adjourned.]

[Submissions for the record follow:]

Statement of Charles Fritts, Vice President, Government Relations, American Gas Association

I. Introduction

The American Gas Association ("AGA") appreciates the opportunity to present its views on the role of federal tax law in addressing the energy situation currently faced by the nation. AGA represents 185 local natural gas distribution companies, which deliver natural gas to approximately 60 million customers throughout the United States. AGA member companies serve more than 90 percent of America's gas consumers, and AGA member companies are located in every one of the United States.

II. Executive Summary

Events of the last year have made clear the importance to consumers and the economy of adequate and reliable supplies of reasonably priced natural gas. Providing the natural gas that the American economy demands will require providing incentives to bring the plentiful reserves of North American natural gas to produc-

tion and to deliver that gas to end-use consumers. To that end, AGA believes that federal tax legislation should:

• Provide incentives for the investment of $150 billion that will be necessary to ensure the infrastructure required to serve this natural gas market, including:

• Seven-year depreciation for new natural gas infrastructure

• Expensing of natural gas storage facilities

• Repeal of the tax on Contributions in Aid of Construction

• Provide incentives to produce the vast, untapped reserves of natural gas, particularly those reserves that might not otherwise be produced, that will be necessary to serve a market that will consume in excess of 30 Trillion cubic feet per year. AGA particularly endorses proposals to extend the tax credit provided under Section 29 of the Internal Revenue Code for certain "nontraditional" sources of natural gas.

• Provide incentives for new energy technologies such as distributed generation, combined heat and power, and natural gas cooling.

III. Tax Incentives Are Necessary to Ensure Required Gas Infrastructure

As AGA will explain in further detail below, events in energy markets over the last year have strongly underscored the need for a comprehensive national energy policy that will ensure that sufficient gas supplies are brought forth to meet the projected growing demand for this clean and readily available fuel. Producing gas from the ground is, however, only the beginning of providing the energy that consumers require. In most instances the gas must then be moved hundreds or thousands of miles through large-diameter, high-pressure transmission lines. It is often stored underground during the off-season to be delivered in the peak season. After delivery by the interstate pipeline company, the pressure of the gas is reduced, and it is transported through miles of local distribution lines. Often local distribution companies will own underground gas storage to meet the needs of their temperature-sensitive customers.

AGA's members are engaged in the local distribution of natural gas. They have an interest, as will also be explained below, in making certain that adequate supplies of natural gas are available for consumers. But their most direct interest is in ensuring that adequate infrastructure is in the ground to serve their end-use customers. Secondarily, they have an interest in making sure that sufficient interstate pipeline infrastructure exists to transmit the requisite volumes of gas from the producing areas to the market areas.

Adequate natural gas is in the ground; it is simply necessary to assure that it is produced to meet the needs of our growing economy. Natural gas supply is, however, only half of the solution. Once natural gas is produced, it is necessary, as discussed previously, to have adequate infrastructure (typically in the ground) to deliver it to residential, commercial and industrial customers. Should overall natural gas demand in the years ahead reach the 30 to 35 Tcf level, significant capital investment will be required. The recent Fueling the Future study by the American Gas Foundation, as well as a study by the National Petroleum Council, project that $150 billion in natural gas infrastructure will have to be constructed to deliver those supplies of gas to consumers. Roughly $100 billion in infrastructure will be required for local distribution company service and $50 billion will be required for interstate pipeline companies. Without this investment in infrastructure the projected market demand for natural gas may not be served.

Tax incentives for infrastructure can provide natural gas pipelines and distributors with the additional incentive to place these necessary facilities in the ground. They can also provide the spur for investors to invest in the federal- and state-regulated utilities that provide the vast majority of natural gas service in the United States. These utilities are generally regulated as to the rates they can charge. As such they tend not to secure the types of entrepreneurial returns that readily attract capital. Yet it is clear that significant amounts of capital must be secured to serve the natural gas market that most forecasters expect to materialize.

To this end, AGA supports seven-year accelerated depreciation for new natural gas infrastructure. This would include gas transmission, gas storage, and gas distribution facilities. On average over the past 15 years, local gas distribution infrastructure investment has been $3 to $5 billion per year. This pace will simply be inadequate to provide the infrastructure that AGA believes will be necessary to support projected consumer demand for natural gas. More rapid tax depreciation for these needed new facilities will provide the necessary impetus for investment in this infrastructure.

AGA also supports proposals to permit expensing natural gas storage costs. Natural gas storage has been increasingly important over the last ten years in permitting local distribution companies to acquire gas during periods of low prices and deliver the gas to their customers during higher-priced periods. Such facilities are,

during conditions such as those that have existed recently, even more important tools in dampening retail price volatility for consumers. Providing full expensing of natural gas storage facilities will give the critical impetus necessary to bring more such facilities online, with concomitant consumer benefits in the form of lower delivered gas prices overall. This approach is particularly important if competing fuels are accorded such tax treatment so that tax law does not artificially skew the choice among fuels.

Another area for tax reform that will benefit energy consumers is correcting the tax treatment of contributions in aid of construction (CIAC). At present a new customer (either residential or a residential developer) that seeks to connect to the natural gas system is often required to pay a hookup fee that the utility uses as an offset to the costs of making the connection. Under present law local distribution companies are taxed on these contributions. In fairness, they should be treated as contributions of capital to the natural gas system. This CIAC tax works as a disincentive to new gas connections. As a result it discourages additional gas usage, even though that fuel is the most environmentally benign fuel available, is usually the most economic fuel, and is almost always procured from North American sources.

AGA urges Congress to take constructive action to ensure that the needs of America's gas consumers are met by providing tax incentives for needed new energy infrastructure.

IV. America's Current Energy Situation

Ample, reliable energy supplies at affordable prices are critical to providing economic and national security for America and its citizens. Energy is consumed in every sector of our economy. There is virtually no business entity in the United States that does not rely upon energy in order to operate. Our economy cannot grow, and, indeed, cannot maintain its present vitality, without assurances of adequate, reliable, and reasonably priced supplies of energy. Continued economic stability and growth are inexorably tied to the nation's energy supply. Economic stability and growth are, in turn, keys to continued full employment, growth in national wealth, and the important state and federal tax revenues that are so essential to funding important government social, public safety, and defense programs.

The intermittent California electric blackouts this year have dramatically raised public awareness of these issues. Additionally, energy costs in most areas of the country have risen significantly, including gasoline, electricity, and natural gas. These events have caused both businesses and consumers increasingly to realize that reliable and reasonably priced energy are required to support our economic vitality as well as the many comforts and necessities that Americans have come both to enjoy and to expect in the postwar era. Energy is more in the public mind now than it has been at any time in the last twenty years.

The Federal Government occupies a critical position in the current energy situation. By conceiving, enacting, and implementing a comprehensive national energy policy, the government presently has a unique opportunity to ensure that America will enjoy reliable and reasonably priced energy for many years to come. A sound energy policy will lead to continued prosperity and employment for America's citizens. Although a comprehensive national energy policy will have many elements, a key component will be a prudent, measured tax policy. Sound tax policy will play a critical role in driving a national energy policy.

America has significant reserves of domestic energy. The events of the last year, however, make plain that we must do more to bring these ample energy supplies to production and to expand the infrastructure that is necessary to deliver that energy to the places that demand it. Not much more than a year ago the price of natural gas was approximately $2.50 per million British Thermal Units ("Btu") at Henry Hub in Louisiana. In the last several months the Henry Hub price has been about $5.00 per million Btus. At the height of the winter the price reached $10 per million Btus. This price movement indicates the tightness in the marketplace and it reflects the sensitivity to changes in production and consumption levels. As a result, most American natural gas consumers experienced significant, unwelcome increases in the natural gas bills over this past year.

The increase in natural gas prices resulted from supply, demand, and weather. Drilling for natural gas declined in 1998 and 1999 in response to extremely low prices. Demand for natural gas continued to grow with the robust condition of the economy as well as the public's recognition of the economic and environmental benefits of natural gas. As a result, natural gas prices began to rise in the spring of 2000. In November and December of 2000 record cold weather hit many parts of the country. All of these factors together led to very high natural gas bills for most consumers in America.

V. The Future Energy Supply and Demand

The United States has enormous untapped reserves of natural gas. It is widely believed that in excess of 1200 Trillion Cubic Feet (Tcf) of natural gas—or a 60-year supply at current levels of production—are available in North America. Current proved reserves are approximately 170 Tcf. At present the United States consumes approximately 23 Tcf annually. Virtually all projections suggest that over the coming decades U.S. consumption will top 30 Tcf.

The experience of the past year makes plain that available natural gas production and current natural gas demand are closely matched. The behavior of natural gas prices over the last twelve months strongly suggests that very little incremental supply of gas is presently available in the market place. In other words, the "gas bubble" of the last ten or more years is a thing of the past.

Recent gas prices have spurred record new drilling for natural gas, and some of those supplies are already coming on line. Yet there is reason to be concerned whether there will be production of the volumes of natural gas that most commentators believe the market will require in the coming decade and beyond. Should natural gas production not keep up with growing demand, the result will be significant price volatility and generally higher prices. The trajectory of the last year in terms of prices and supplies could well accelerate if supplies do not keep pace.

A comprehensive national energy policy must ensure that adequate supplies of natural gas are produced and that adequate infrastructure is in place to deliver that gas to consumers. Federal tax law can perform an important function in ensuring that the energy needs of consumers and businesses are met in the years ahead.

VI. Reasonable Tax Incentives Are Necessary to Ensure Adequate Supplies of Gas

AGA member companies distribute natural gas to America's residential, commercial, and industrial consumers. That natural gas is usually purchased from others, most often natural gas producers or energy marketers. AGA member companies do not make a profit on the sale of gas to consumers; rather they earn their revenues from distributing that gas to end users. Accordingly, AGA member companies do not have an economic stake in gas production or gas prices. Rather, their interest, like that of their customers, is in ensuring that ample supplies of gas are reliably available and at reasonable prices.

AGA believes strongly that the Federal Government, including the Congress, must take affirmative steps to assure adequate future gas supplies to meet consumer needs. AGA defers, however, to those most directly involved in this end of the business—natural gas producers. AGA traditionally has left it to that segment of the industry to make the specific legislative and regulatory proposals that are necessary to ensure adequate gas supplies. Notwithstanding this fact, AGA supports legislative initiatives to promote sufficient gas supplies.

AGA generally supports a number of proposals made by the producer community to spur increased gas production. For example, AGA supports those who urge that Section 29 of the Internal Revenue Code, providing incentives for "nontraditional" gas production, be extended. The history of Section 29 makes clear that it has brought forth major volumes of natural gas that would not, in all likelihood, have been produced otherwise. (It is interesting to speculate as to prices this past winter had Section 29 never been enacted.) Similarly, AGA endorses tax incentives for production from marginal wells. Such incentives will bring to market volumes of gas that might otherwise remain forever in the ground.

A very large volume of the United States gas consumption is produced by smaller independent gas producers. These producers do not enjoy access to New York, London, and Hong Kong capital markets. Rather, they are dependent for their activities upon convincing local and regional banks to extend them financing or, more likely, their own cash flow. Modest tax incentives for these types of producers can provide important benefits for the nation. For example, proposals to expense (rather than capitalize) geological and geophysical costs and shut-in royalty payments can provide producers with significantly increased cash flow. Similarly, proposals to permit ten-year carryback for percentage depletion can be of major assistance, particularly to small independent producers.

AGA generally supports reasonable and well considered tax incentives of this sort that will have a genuine impact in bringing to market more of America's significant natural gas resources.

VII. Tax Incentives Are Necessary to Encourage New Energy Technologies

AGA also supports tax incentives for new energy technologies such as distributed generation, combined heat and power, and gas cooling. Distributed generation in particular warrants close Congressional attention. Onsite power generation has many benefits. It removes load from the electric transmission and distribution grid,

averting congestion and additional construction of new transmission facilities. It also obviates the need to build new central station power plants. Moreover, it tends to draw on the natural gas transmission system at offpeak times, providing additional natural gas load without the need for additional gas facilities, thus leading to lower unit costs for all gas customers.

VIII. Conclusion

Natural gas is the right fuel at the right time to solve many of the nation's energy problems. AGA believes that the federal government should take whatever steps it can to bring this fuel to America's consumers right now. It can do so by encouraging the construction of the natural gas infrastructure that will be necessary to meet projected natural gas demand by consumers. It can do so by encouraging the production of natural gas, particularly from sources that might not otherwise be produced. It can do so by supporting new technologies that utilize natural gas in new and efficient means. Tax incentives should be adopted to promote all of these ends.

Statement of the Electric Vehicle Association of the Americas

Introduction

This testimony is presented on behalf of the Electric Vehicle Association of the Americas (EVAA), a national non-profit organization of electric and other energy providers, vehicle manufacturers and suppliers, state and local governments and other entities that have joined together to advocate greater use of electricity as a transportation fuel. A complete membership list is attached. A principal activity of the association is to advocate the adoption of incentive-based policies and programs to facilitate the development and use of electric modes of transportation.

The Role of Electricity in the National Transportation System

The Association believes that use of electricity as a fuel offers significant advantages in transportation applications. Electricity is inexpensive, stable and generated from a variety of domestic fuels. Electric transportation technologies present our nation with an important means for reducing our dependency on foreign petroleum and increasing the diversity of fuels relied upon in the transportation sector. During the last energy crisis in 1973, only 36 percent of oil used in the U.S. was imported. Today, the U.S. imports 19.1 million barrels of foreign oil per day and the U.S. Department of Energy reports that net imports of petroleum in the year 2001 will account for 54 percent of total U.S. petroleum demand—an increase of 18 percentage points from 1973. And in the next twenty years, the Energy Information Administration (EIA) predicts that this nation's demand for oil will increase by an additional 33 percent. EIA also predicts that gasoline prices—already at $2.00 per gallon in some regions of the country—could spike even higher during the summer peak-driving season.

It is clear that the need for this country to transition to the use of alternative fuels is more critical than ever. A wide variety of transportation modes—individual passenger and light-duty vehicles—and heavy-duty vehicles, like buses and trolleys—can and should be powered by electricity—an abundant, clean, and domestically produced energy resource. All of the technologies mentioned above will reduce pollution, reduce our dependency on imported oil, and improve the quality of life in many of our cities and towns, while maintaining our high degree of mobility.

In addition to diversifying sources of transportation "fuels," air quality considerations also are requiring municipal transit operators to consider the use of alternative fuel technologies as a means to reduce emissions and achieve air quality goals. Nearly 100 cities in the United States do not meet federally established air quality standards. For many urban areas, electric transportation may be a particularly important means to substantially reduce emissions of mobile source pollutants, including volatile organic compounds and oxides of nitrogen that are the precursors of smog. Electric cars and buses are truly "zero emission" transportation modes. They produce no tailpipe emissions and generate insignificant, ancillary emissions during operations. They also have the added benefit of mitigating noise pollution and improving efficiency.

The State of Electric Drive Technologies

While each major automobile manufacturer, domestic and foreign, now has offered battery-electric vehicles (BEVs) for sale and/or lease on a limited basis, these products entered the market later than anticipated, and subsequently, the market has not developed as quickly as envisioned by industry and government. Since 1996, a

total of 4,017 BEVs have been leased and/or sold in the United States. Additionally, there are approximately 200 battery electric buses in operation throughout the United States. Some automakers also have begun to develop and market small, neighborhood electric vehicles (NEVs) that have applications in planned communities, college campuses, in station car applications, and other urban settings where space and travel distances are limited. Finally, there is growing use of non-road and industrial EVs, especially at airports located in urban areas.

Hybrid electric vehicles (HEVs) also are making inroads in the marketplace. To date, Honda and Toyota have leased and/or sold over 12,480 HEVs in the United States and other automobile manufacturers have announced plans to introduce hybrids into the marketplace in the next two to three years. There also is an interest among environmentalists, regulators, the electric utility industry and others to pursue development of grid-connected hybrid technologies as a means to improve the environmental performance of such technologies.

Fuel cell electric vehicles (FCEVs), which harness the chemical energy of hydrogen and oxygen to generate electricity, have the potential to change the way we think about energy and transportation. Fuel cells are more efficient than other technologies that rely on direct combustion, and they produce zero, or near zero emissions. All of the major automakers are investing heavily to develop fuel cell technology and each has announced plans to offer fuel cell vehicles to the commercial marketplace by the end of the decade.

Because EVs of all types are radically different from their internal combustion engine (ICE) counterparts, there are several challenges that must be overcome. Today, the challenges to the increased use of electric modes of transportation remain the cost of the vehicles, the limited availability of charging infrastructure, and consumer awareness and acceptance of the technology. For example, in order to achieve the range standard (100 miles per charge) that industry believes is necessary for BEVs to be commercially successful, the vehicles must use advanced batteries, such as nickel metal hydride, that are far more expensive and add to the incremental cost of the vehicle.

Also, as is the case with BEVs and FCEVs, a new infrastructure system—whether it is electric chargers or hydrogen refueling stations—must be developed to support these technologies. There will be a significant cost associated with building a sufficient number of electric chargers and hydrogen refueling stations.

The Need for Federal Tax Incentives

The Energy Policy Act of 1992 (P.L. 102-486 "EPAct") recognized the benefits that can be gained by using alternative fuels and electric modes of transportation by including modest, targeted tax credits for battery, fuel cell and certain hybrid-electric vehicles and supporting infrastructure. However, these tax credits are scheduled to begin phasing-out in 2002 and to expire in 2004. This timing will not provide the necessary incentives to support the introduction of these electric drive technologies.

EVAA believes that targeted tax incentives can be the most effective means by which government could help assure that electric drive technologies are successfully introduced into the marketplace. While the Association believes that incentives should be limited in their scope and duration, they must be available, and sufficient now and in the immediate future, as these new and dramatically different technologies are being introduced to consumers. Without this critical, immediate assistance, it is unlikely that we will reap the full potential of environmental and energy benefits promised by widespread use of electric modes of transportation.

Many Members of Congress—Republicans as well as Democrats—have recognized the role that limited and targeted tax incentives can play in overcoming the current market barriers to assure large-scale commercialization of electric drive technologies. EVAA applauds the leadership several members of this Committee—specifically Representatives Mac Collins (R-GA), John Lewis (D-GA), Dave Camp (R-MI), and Sander Levin (D-MI)—have provided in years past to pursue legislation that provides the types of modest tax incentives necessary to make these advanced technology vehicles more affordable and acceptable in the marketplace.

To date, three bills that seek to address this country's energy dilemma have been introduced in the Senate during the 107th Congress. Senator Frank Murkowski (R-AK), Chairman of the Senate Energy and Natural Resources Committee, has introduced the National Energy Security Act of 2001 (S. 389). Senator Jeff Bingaman (D-NM), Ranking Member of the Senate Energy and Natural Resources Committee, has introduced the Comprehensive and Balanced Energy Policy Act of 2001 (S. 597). And, Senator Orrin Hatch (R-UT) has introduced the Clean Efficient Automobiles Resulting from Advanced Car Technologies Act of 2001 (S. 760, the CLEAR Act). All three proposals include—in whole or in part—tax incentives to encourage the purchase and use of electric vehicles and other advanced transportation technologies

and supporting infrastructure. (See attachment for a summary of the major provisions of these bills.)

Comprehensive energy legislation also is being discussed in the House, and it is clear that policymakers are focusing on the important role that advanced transportation technologies can, and must, play in the development of a sound national energy policy. Just this week, the Democratic Caucus' Energy Task Force released its blueprint for addressing the nation's energy dilemma. Also, Representative David Camp (R-MI) introduced the Clean Efficient Automobiles Resulting from Advanced Car Technologies Act of 2001 (H.R. 1864—the CLEAR Act), companion legislation identical to the bill introduced by Senator Hatch in the Senate.

As gasoline prices continue to rise and Congress moves forward with energy legislation, EVAA urges you to look beyond the benefits gained by increasing supply, to the energy security and environmental benefits gained by supporting modest, consumer-based tax incentives for electric drive technologies.

Attachments

Electric Vehicle Association of the Americas—Membership List

May 1, 2001

Advanced Vehicle Systems	**Hydro-Quebec**
Air Products and Chemicals, Inc.	IMPCO Technologies Inc.
American Honda Motor Company,Inc.	International Lead Zinc Research Organization, Inc.
American MagLev Technologies, Inc.	Long Island Power Authority
Amercian Public Power Association	Massachusetts Division of Energy Resources
Avestor (Hydro Quebec)	Maxwell Energy Products
Atlantic Center for the Environment	Mid-Del Lewis Eubanks AVTS
Ballard Power Systems	National Rural Electric Cooperative Association
Carolina EV Coalition	New York State Technology Enterprise Corporation
CEREVEH	Nissan North America/Nissan R&D
Chattanooga Area Regional Transportation Authority	Northeast Sustainable Energy Association (NESEA)
CITELEC	NYSERDA
City of Atlanta/Bureau of Motor Transport Services	PSA Peugeot-Citroen/USTR
City of Burbank	Sacramento Municipal Utility District
City of New York	SAFT America, Inc.
Copper Development Association	Salt River Project
Curtis Instruments	Saminco
Dynasty Motorcar Corporation	San Bernardino Associated Governments
Ecostar Electric Drive Systems	Solectria Corporation
Electricité de France	Southern California Economic Partnership
Electric Vehicle Infrastructure	**Southern California Edison Company**
Electric Vehicle Association of Canada	**Southern Company/Georgia Power Company**
Electric Vehicle Association of Great Britain	Technologies M4
Enova Systems	Tennessee Valley Authority
ERIM	Texaco, Inc.
Florida Power and Light Company	3M
Ford Motor Company	Tokyo Electric Power Company
Global Electric MotorCars, LLC	TotalEV
	Toyota Motor Corporation
	Toyota Motor Sales USA
	Unique Mobility, Inc.
	University of California, Davis/ITS
	University of South Florida
	US Department of Energy
	Volkswagen
	York Technical College

Bold denotes EVAA Board member.

[An additional attachment is being retained in the Committee files.]

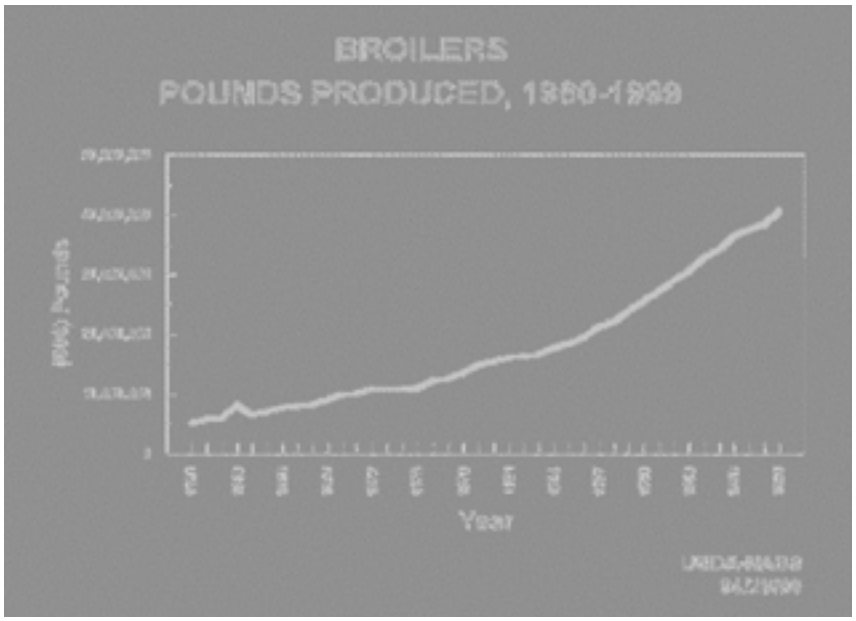
Statement of Rupert J. Fraser, Chief Executive Officer, Fibrowatt LLC, Yardley, Pennsylvania

In 1999, Congress extended the Section 45 tax credit for electricity production from wind and other closed-loop biomass to include poultry waste, the manure and bedding materials also known as "poultry litter." This credit encouraged development of poultry litterfired power plants which could provide renewable electricity and an environmentally sensitive alternative to traditional land application of poultry litter, which is needed to address water and air pollution concerns. Currently, two poultry litterfired power plants are in planning stages but will not be in service by the December 31, 2001 expiration date of the current Section 45 credit.

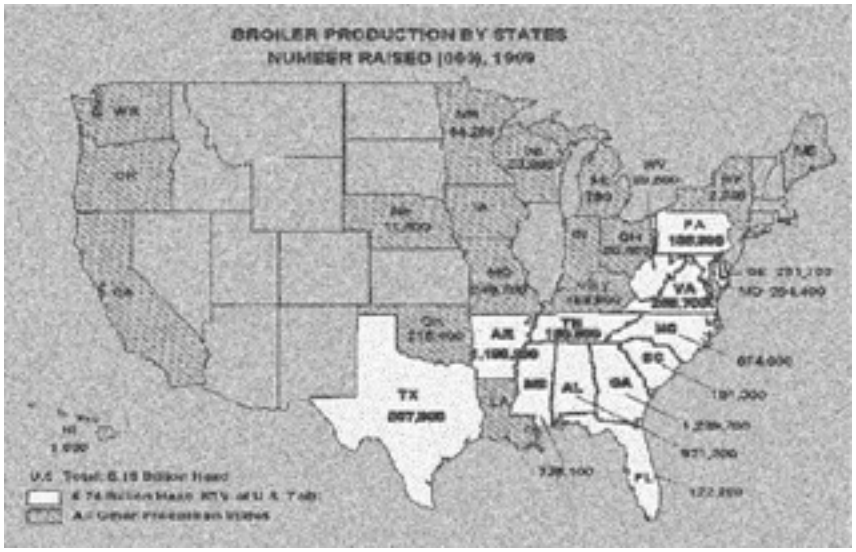
We urge the Subcommittee to extend the Section 45 poultry waste production credit for five years, as provided in H.R. 1657 by Congressmen Herger and Matsui and S. 756 by Senator Grassley. Extension of the credit is needed to incentivize production of renewable energy from the estimated 20 million tons produced annually as an alternative to land application and address the increasing environmental issues associated with land application.

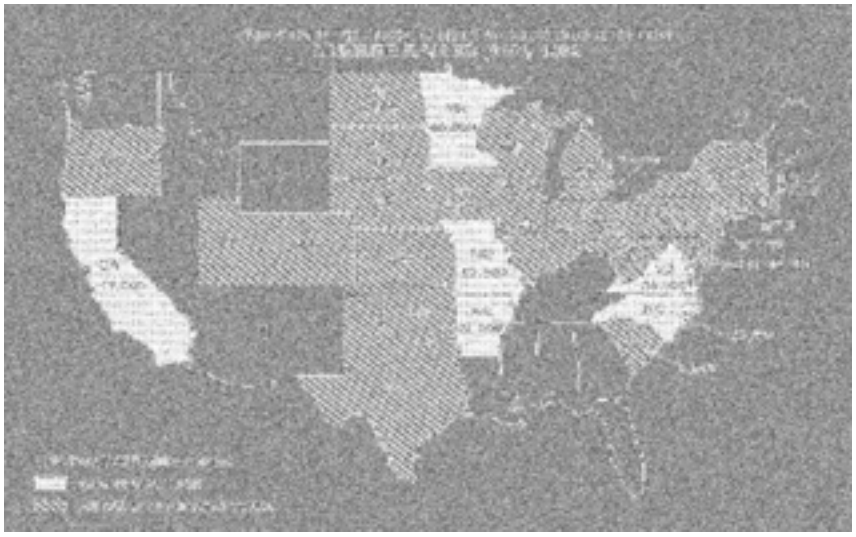
Poultry Production has Tripled

The U.S. has the largest, most advanced poultry industry in the world. Since 1973, U.S. poultry production has tripled and continues to grow at about 5% per year.



In 2000, the U.S. produced 8.23 billion broilers and 270 million turkeys. The average American purchases about 98 pounds of poultry annually. Forty-two states produce chicken and turkey including Georgia, Arkansas, North Carolina, Mississippi, Texas, Minnesota, Alabama, Louisiana, Maryland, Delaware, Virginia, Oklahoma, and California.





Environmental Effects

To increase production and gain economies of scale, feeding operations have concentrated in smaller geographic areas and have resulted in the generation of over 20 million tons of litter a year. Traditionally, poultry litter has been used as a fertilizer on farm fields. Although litter is a good fertilizer, certain lands have received too much manure and have become overloaded with nutrients such as phosphorus and nitrogen. When these nutrients mix with water runoff, they can cause water pollution problems such as algae blooms, pfiesteria, and eutrophication.

Poultry producers throughout the U.S. are now facing increasingly stringent environmental regulation of manure utilization at federal, state and local levels. Poultry farmers are seeking out alternative, environmentally sensitive ways to use poultry litter to complement the use of manure as fertilizer.

Electricity Generation: A Proven Alternative

Fibrowatt LLC is a U.S. developer of biomassfired power plants, based in Philadelphia, using technology pioneered by its shareholder Fibrowatt Ltd. Fibrowatt Ltd. has successfully built the world's first three power plants in the U.K. to use poultry litter and agricultural biomass as fuel, burning over 850,000 tons a year to generate a total of 65MW—enough electricity for over 150,000 homes. Fibrowatt expects to start construction soon for its 50 MW plant in rural Minnesota, which plans to use about 500,000 tons of poultry litter and about 150,000 tons of other biomass a year. The plant is anticipated to be operational by the end of 2002.

The poultry industry nationwide has shown significant interest in using litter to generate electricity because this technology offers a long-term and reliable manure utilization option for farmers. Generation of electricity from poultry litter is a proven, large-volume alternative. When poultry litter and agricultural biomass are combusted to produce electricity, an ash is produced, the volume of which is around 10% of the original. This ash can be sold as a fertilizer and contains potassium, phosphorus and other essential minerals. Excessive and over-concentrated volumes of poultry litter are thus reduced in size to transportable proportions.

Fibrowatt obtains poultry litter from surrounding farms and purchases other forms of biomass from local sources. Operations begin on the farm, where Fibrowatt and poultry farmers coordinate litter cleanout for barns. Then the litter is transported in tightly covered trucks to the plant's fuel hall, where it is kept at negative pressure to prevent the escape of odors. Inside, the furnace burns the litter and other biomass fuels at very high temperatures, heating water in a boiler to produce steam, which drives a turbine and generator.

The Need for Renewable Electricity

Industry experts in several states are predicting a shortfall in future electrical supply. The production of renewable energy from poultry litter not only helps America to meet that shortfall but also offers diversification of fuel sources within the power market. This is important if the U.S. is to become less reliant on polluting fossil fuels and foreign oil supplies.

Benefits

Like other renewable energy projects, poultry litter-fired power plants have greenhouse gas benefits because they recycle carbon dioxide and can reduce methane and nitrous oxide emissions to the atmosphere. For example, a 50 MW plant reduces carbon dioxide emissions by an amount equivalent to taking 500,000 cars off the road.

In addition, use of poultry litter for electricity generation provides local sources of electricity while addressing environmental issues of concern to poultry growing areas of the U.S.

The benefits of a large-volume alternative to land application include:

- reduction of water and air pollution resulting from land spreading of manure,
- sustainable agriculture by enabling poultry growers to maintain levels of production while complying with increased regulation of land spreading of manure,
- skilled, reliable jobs for rural residents, as a 50 MW plants employs about 35 people and creates about 175 indirect jobs,
- local production of electricity,
- reduction of carbon dioxide and other greenhouse gases,
- improvement of poultry biosecurity, and
- support for rural communities.

Conclusion

The Section 45 tax credit is needed because, like other biomass plants, poultry litterfired plants cannot compete in price with traditional fossil fuel plants. This is because (a) fossil fuel plants have economies of scale not available to poultry litterfired plants, whose size is determined by the amount of locally available litter, (b) the capital costs of fossil fuel plants may be fully amortized, whereas the technologies and facilities to combust poultry litter are new and involve substantial capital investment, and (c) fossil fuel technology has had 100 years of government support and subsidy worldwide which has enabled it to come much further down the cost curve than any renewable power technology. The Section 45 tax credit is needed to level the playing field, particularly in those states where no renewable portfolio mandate has been enacted.

Fibrowatt stands ready to invest in future plants to produce renewable electricity while providing a viable, reliable alternative to land application of poultry litter. For

this to happen, extension of the expiring production tax credit for poultry waste is needed so that poultry litter generated electricity can compete in price with fossil fuel electricity. Thank you for your consideration.

Statement of John H. Skinner, Ph.D., Executive Director and Chief Executive Officer, Solid Waste Association of North America (SWANA), Silver Spring, Maryland

On behalf of the Solid Waste Association of North America (SWANA), I appreciate the opportunity to submit this written statement for the record of the Subcommittee's hearing on current tax incentives and their role in the nation's energy policy. SWANA would like to commend you, and the members of your Subcommittee, for holding this timely hearing in light of the critical efforts of the Bush Administration and this Congress to develop sound energy policies to allow our nation to maintain its economic vitality and self-sufficiency. The association urges the Subcommittee to support tax incentives, such as the I.R.C. Section 29 nonconventional fuel production credit or an amended I.R.C. Section 45 tax credit, that encourage the solid waste management industry to produce energy as an adjunct to its handling of the millions of tons of municipal solid waste (MSW) generated by the country's households and businesses.

SWANA and MSW as a Source of Energy

SWANA, an association of over 6500 solid waste management professionals, companies and government agencies in the United States and Canada, has as its mission the advancement of environmentally and economically sound solid waste management practices. The association has long recognized that development of energy from municipal solid waste can be done reliably, while resulting in more efficient solid waste management, resource recovery, cleaner air quality, and reduced potential for global climate change. Accordingly, SWANA has advocated the two types of energy production that are identified with solid waste management: (i) projects at which MSW is directly combusted to produce electricity, also known as waste-to-energy (WTE) projects, and (ii) projects that collect landfill gas, naturally generated at a landfill as the waste decomposes, and utilize the gas as a fuel, either to produce electricity or to supplement local natural gas supplies, known as LFG-to-energy projects or simply "LFG projects."

Currently, WTE projects and LFG projects provide energy to over 2 million homes and businesses. Both result in an energy resource that is sustainable, diverse, environmentally positive and local. The multitude of benefits provided by the use of MSW to generate energy is unique among renewables. WTE and LFG projects together have the potential to generate a significant portion of the nation's electricity as further technological innovations are developed and public appreciation of their benefits grows. SWANA continues to believe that federal policies should be adopted to encourage our nation to diversify energy production against risks of an uncertain future and to continue to develop supplements to fossil fuel generation. Providing tax incentives for WTE and LFG project development should clearly be part of such federal policies.

Landfill Gas to Energy Projects and the Section 29 Tax Credit

- Benefits of LFG Projects

A medium sized landfill can generate more than 300 billion BTUs of methane gas a year, which, if converted to electricity, could annually provide 3.0 MWs of capacity, enough to serve the yearly electrical needs of 3000 households. Projects at larger landfills have generated as much as 50 MWs of electric power. Typically, LFG-to-electricity projects are located in urban areas allowing them to serve as distributed power sources to help improve the reliability of the region's power grid. The methane gas could also be used directly as a supplement to natural gas supplies. Existing "direct-use" LFG projects are providing the gas for commercial heating, as boiler fuel at industrial installations, as an alternative fuel for various vehicle fleets, and, recently, as a hydrogen source for fuel cells. Many of the "direct-use" LFG projects are dispersed in the urban centers of our nation and provide a viable back up to local natural gas supplies.

LFG projects provide society with several "external benefits" in addition to the domestic energy supply. Specifically, if not controlled and flared, LFG can pose a fire hazard, is odorous, impairs local air quality, and would add, for each ton of methane emitted, an equivalent of 21 tons of CO_2 into the global atmosphere. Consequently, each of these impacts is eliminated when a LFG project is constructed and operated.

• Section 29 Tax Credit

The tax credit for the production of nonconventional fuels for provided under Section 29 has been the key impetus for the solid waste management industry constructing and operating more than 300 LFG projects around the country. Under Section 29, taxpayers that produce certain qualifying fuels from nonconventional sources, including "gas from biomass," are eligible for a tax credit until 2008 (or 2003 if the project was installed before 1993) equal to $3 per barrel or barrel-of-oil equivalent (adjusted for inflation) as long as the gas is sold as a fuel to an unrelated party. The tax credit provided the incentive to make LFG projects economically feasible. However, since June 30, 1998, the deadline under Section 29 by which LFG projects must be "placed in service" to qualify for the credit, no new LFG projects have been planned and constructed.

For reasons unrelated to LFG projects, Congress to date has not extended the Section 29 tax credit. Unfortunately, without the continued availability of the Section 29 tax credit, private investors have been reluctant to undertake development of LFG projects at more than 700 additional landfills identified by the Environmental Protection Agency as producing sufficient volumes of LFG. Consequently, the nation faces the real loss of valuable domestic and renewable energy resource the recovery of which is simple, proven and has no negative impact on the environment.

The Section 45 Tax Credit

Section 45 currently provides a 1.5¢/kw-hr tax credit for electricity generated by wind, closed-loop biomass (organic material from a plant that is planted exclusively for purposes of being used to generate electricity) or poultry waste. The tax credit is provided for the first 10 years of production if such electricity is sold to an unrelated party. In response to Congress' unwillingness to extend the Section 29 tax credit, the landfill gas industry has targeted Section 45 as a possible substitute.

Ironically, several pieces of legislation were introduced during the 105th and 106th Sessions of Congress amending Section 45 to add additional renewable energy sources as qualified fuels that expressly excluded MSW and LFG. SWANA strongly believes that any recommendation to include tax credits for encouraging renewable energy development as part of our nation's energy policy should ensure that tax incentives are provided on a "renewable source neutral" basis. A free market government should not pick winners and losers among renewable energy sources. Accordingly, landfill gas and waste to energy projects should not be placed at a disadvantage in the energy policy.

The "renewable source neutral" approach has been embraced by Senator Frank Murkowski in his recently introduced S 389, the National Energy Security Act of 2001. That bill, among its many other provisions, expands the list of qualified fuels under Section 45 and extends operative dates to include all renewable energy sources, including LFG and MSW. In an attempt to duplicate the incentive provided by Section 29, under S 389 both LFG-to-electricity projects and LFG "direct gas use" projects are qualified facilities. In the case of these latter type of projects where the gas is sold for direct use, the 1.5¢/kw-hr tax credit is applied to the "kilowatt-hour equivalents" contained in the particular volume of gas calculated on a 10,000 BTU per kilowatt-hour basis. The Energy Security Tax Incentive Act of 2001, S 596, introduced by Senator Jeff Bingaman, also expands the list of qualified fuels in Section 45 to include landfill gas and MSW.

In the House, Congressman Dave Camp will soon introduce legislation to duplicate the Section 45 provision for LFG projects contained in Senator Murkowski's bill. That legislation is intended to compliment bills introduced by other House Members each of who would add a specific renewable energy resource as a qualified fuel under Section 45. SWANA urges the the Subcommittee to act on these bills and to do so in a "renewable source neutral" manner.

Conclusion

The Subcommittee has an opportunity to significantly impact the development of a new energy policy for the nation. Use of the tax code to encourage energy-related private investment is justified by the compelling energy security, economic and environmental concerns facing our nation currently and in the foreseeable future. Specifically, a tax incentive for energy production through the combustion of MSW or the utilization of LFG would allow the nation to not only benefit from increased domestic energy supplies, but to also realize the many consequent environmental and resource conservation benefits. SWANA urges the Subcommittee to support extension of the Section 29 tax credit for LFG projects or, in the alternative, to add LFG projects producing electricity and LFG projects providing the gas for direct use as qualified facilities for purposes of the Section 45 tax credit. In addition, SWANA urges the Subcommittee to support adding waste-to-energy projects that combust

MSW to generate electricity as qualified facilities under Section 45. I appreciate very much this opportunity to present SWANA's views.

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