

**Statement of  
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United States Department of the Interior  
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Subcommittee on Tax, Finance, and Exports  
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The Effects of High Cost of Natural Gas on Small Businesses and Future Energy  
Technologies  
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Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear here today to discuss the role of the Department of the Interior in meeting America's demand for natural gas and its effect on small businesses and future energy technologies. Our statement will be limited to the role of the Department of the Interior in managing and providing access to energy resources on federal lands.

The Interior Department manages the resources that provide a third of our nation's energy. These resources include fossil fuels, such as coal, oil, and natural gas, as well as renewable sources, such as geothermal steam and wind. Within the Department, several agencies play a significant role in helping America meet its natural gas needs: the Bureau of Land Management (BLM), the Minerals Management Service (MMS), the U.S. Geological Survey (USGS), and the Office of the Assistant Secretary for Indian Affairs. Our testimony today will address the role of each of these agencies, as well as the natural gas provisions in the Energy Policy Act of 2005.

### **Minerals Management Service**

No discussion of our efforts to meet America's natural gas demand would be complete without examining the role of the Minerals Management Service and its management of natural gas resources on the Outer Continental Shelf (OCS). The OCS is a major source of oil and natural gas for the domestic market, contributing more natural gas for U.S. consumption than any state except Texas. As steward of the mineral resources on the 1.76 billion acres of the Nation's OCS, MMS has, in 2005 alone, managed OCS production of more than 3.2 trillion cubic feet (tcf) of natural gas for U.S. consumption.

Today, MMS administers approximately 8,500 leases and oversees approximately 4,000 oil and gas production facilities on the OCS, accounting for 21 percent of our domestic natural gas production. The production of natural gas from the OCS exceeds 10 billion cubic feet per day. Within the next 5 years, offshore production will likely account for more than 23 percent of U.S. natural gas production. The vast majority of new gas production on the OCS is expected to come from new discoveries in the deep water and from deep-gas wells drilled in shallow water – wells drilled to depths as much as 35,000 feet below the floor of the ocean. In Fiscal Year 2004, \$3.3 billion in royalties were paid from OCS natural gas production.

### **The Role of the National Energy Policy (NEP)**

The President's NEP includes directives to diversify and increase energy supplies, encourage conservation, and ensure adequate energy distribution. One of the NEP challenges is to increase energy supplies while protecting the environment. The MMS has implemented a number of NEP directives to increase domestic energy supplies by ensuring continued access to Federal lands for domestic energy development, and by expediting permits and other federal actions necessary for energy-related project approvals.

For example, we are helping to ensure that OCS resources remain a solid contributor to the Nation's energy and economic security by holding OCS lease sales on schedule in available non-moratoria areas. Since March 2001, DOI has held 18 OCS oil and natural gas lease sales on schedule while undertaking a comprehensive consultation process with other Federal agencies, State and local governments, and the public. These sales resulted in leasing of almost 24 million acres of OCS lands for oil and gas exploration and development, and generated about \$3.2 billion dollars in bonus bid revenue (not counting future royalties and rentals) for the U.S. Treasury. Over \$581.8 million in bonus bids were received from OCS Sale 198 (March 2006) alone. The leases issued as a result of these sales will provide additional revenue from rental fees and royalty on any production that may result. These revenues and any new discoveries will contribute funding for our economy and new oil and gas supplies to meet the future energy needs of the nation.

### **MMS and the Energy Policy Act of 2005**

The recently enacted Energy Policy Act of 2005 included 3 provisions creating incentives that are intended to stimulate exploration and production of natural gas in the OCS. These incentives encourage exploration and production in high risk areas: deep gas plays on the shallow shelf, water depths of 2000 meters or more, and development of gas hydrates. In addition, the Energy Policy Act confers upon the Secretary new responsibilities over Federal offshore alternate energy and related-uses of the OCS including wind, wave, current, solar energy, hydrogen generation, and projects that make alternative use of existing oil and natural gas platforms in Federal waters. These projects will help diversify our nation's energy resources.

### **OCS Trends**

The strongest trend on the OCS today is the continuing development of the Gulf of Mexico deep water acreage. The U.S. is now in its tenth year of sustained expansion of domestic oil and gas development in the deep water area of the Gulf of Mexico (GOM). Deep water means that the distance from the water's surface to where a drill bit first touches mud is at least 1,000 feet — almost twice the height of the Washington Monument. In fact, industry is now drilling in waters seven to ten thousand feet deep, some 2 miles, and at these depths the engineering challenges increase substantially.

There were no less than nine discoveries of oil and gas in deepwater in the Gulf of Mexico in 2005. At year's end, there were nine rigs drilling in 5,000 feet of water or greater – the “ultra” deepwater zone, compared with seven, one year ago. Anticipated discoveries from these facilities will help sustain production increases in deep water, just as past discoveries will significantly raise production in 2006. We expect that it will be several years before deep water areas of the Gulf of Mexico reach their full potential. The deep water activity in the Gulf of Mexico has been a major success story. Since the beginning of 2000, new discoveries from deep water added over 6.2 billion barrels of oil equivalent (BOE), a 50 percent increase over the total deep water BOE discovered from 1974 to 1999.

As of March 2006, there were 118 deep water hydrocarbon production projects on line. Production from deep water was an estimated 950 thousand barrels of oil per day and 3.8 billion cubic feet of natural gas per day by the end of 2004. Production would have been even greater if not for shut-in production caused by Hurricane Ivan. Production statistics from 2005 will be similarly impacted by Hurricanes Katrina and Rita.

More than 990 exploration wells have been drilled in the deep water Gulf since 1995. At least 126 deep water discoveries have been announced since then. Significantly, in the last seven years, there have been 22 industry-announced discoveries in water depths greater than 7,000 feet (2,134 meters), seven in 2004 alone.

This steady advancement in deep water production over the last decade and for the coming decade would not be possible without major advances in offshore technologies that are truly amazing. Advances that allow remote control of drilling operations from control rooms that are miles away; dynamic positioning of drill ships using multiple engines that are the size of the meeting room we are sitting in; floating production platforms with surface area the size of football fields; anchoring cables to hold facilities in place that are made up of a combination of traditional steel and synthetic materials; pipe laying ships that can lay miles of pipeline in thousands of feet of water. In fact, the Thunder Horse platform incorporated over one hundred technological advancements. The industry ingenuity that we see in deep water is the same approach used in deep shelf drilling operations on the shallow shelf where operators are targeting deep natural gas reservoirs that require drilling 15,000, 20,000 and in some instances 35,000 feet deep through extremely high temperature and pressure conditions. MMS resource estimates point to about 55 Tcf of natural gas in this emerging frontier. Subsea gas production increased more than 110 percent between December 2000 and May 2004.

As we sit here, operators are drilling the Blackbeard project to more than 35,000 feet – over 6.5 miles. This well will take almost a year to drill.

### **OCS Resource Assessments**

In 2006, the MMS completed estimates for undiscovered technically recoverable resources underlying the OCS. The mean estimate is 420 trillion cubic feet (Tcf) of natural gas, which is a 16 percent increase over the 2000 estimate for natural gas as a result of new information obtained from recent exploration in the Gulf of Mexico and revised assessments of new geological concepts in Alaska and on the Atlantic OCS. To put some perspective on the 420 Tcf natural gas resource estimate for offshore production, the Energy Information Administration Annual Energy Outlook 2006 states that “[p]roduction of lower 48 non-associated (NA) onshore conventional natural gas declines from 4.8 trillion cubic feet in 2004 to 4.2 trillion cubic feet in 2030.”

The Nation’s natural gas potential may not rest entirely on conventional gas resources. Scientists are now studying the possibility that a unique ice-like substance may hold the key to future energy resources. Methane hydrates are naturally occurring ice-like solids in which water molecules have trapped gas molecules. Hydrates are found in locations with high pressure and low temperature—over 98 percent of natural gas hydrate resources are estimated to occur in offshore areas under ocean sediments. The USGS estimates that domestic natural gas hydrates in-place resources are 200,000 – 300,000 Tcf. In comparison, the current mean estimate of all untapped technically recoverable U.S. natural gas resources is 1,000 Tcf; U.S. proved natural gas reserves are 200 Tcf; and annual U.S. natural gas consumption is about 22 Tcf. Discovering methods to locate, produce, and transport the gas from hydrate formations to the market are keys to their potential use. The Energy Policy Act of 2005 directs Federal research efforts to this potential new energy source.

The first preliminary estimate of technically recoverable methane hydrate resource potential on the OCS should be completed next year. The MMS is working closely with the USGS to develop the methodology used in the hydrate assessment. In anticipation of industry’s move to develop natural gas from methane hydrates, MMS is also developing new methods for evaluating the amount of recoverable natural gas from methane hydrates.

### **5-year Oil and Natural Gas Leasing Program**

The OCS Lands Act requires the Secretary of the Interior to prepare and maintain a schedule of proposed oil and gas lease sales on the Federal OCS that is determined to best meet national energy needs for the 5-year period following program approval. The 5-year program specifies the size, timing and location of areas proposed for Federal offshore oil and gas leasing. In order for a lease sale to be held on the OCS, the sale must be included in the 5-year program. To be on this schedule, the area must have been part of the multi-phased analyses required under section 18 of the Outer Continental Shelf Lands Act (OCSLA).

MMS's goal is to develop a program that is responsive to the Nation's energy needs, ensures environmental safeguards, and addresses public concerns. In developing the 5-year program, section 18 of the OCSLA requires that we analyze and compare areas of the OCS in terms of hydrocarbon potential, environmental sensitivity, and other factors. As part of this assessment, MMS solicits and considers input from all stakeholders during multiple stages of the process. The MMS also takes into consideration laws and policies of affected coastal States.

In August 2005, the Department began the process of developing the next 5-Year Oil and Gas Leasing Program 2007-2012 by requesting comments on all OCS areas. On February 8, 2006, the Department announced its draft proposed program for the 5-year OCS Oil and Gas Leasing Program 2007-2012. This was the second step in a five-step process that affords substantial opportunity for public comment. The following is the development schedule for the 2007 – 2012 5-year program:

- August 24, 2005 -- Solicit comments and information (*Federal Register Notice*)
- February 2006 -- Issue draft proposed program, solicit comments (*60-day comment period*)
- Summer 2006 – Issue proposed program and draft EIS, solicit comments (*90-day comment period*)
- Winter 2007 – Issue and deliver to Congress the proposed final program and final EIS for a *60-day period*.
- Spring 2007 – Approve five-year program for July 2007 – June 2012

### **Gulf of Mexico Production Shut In Update**

Hurricanes Katrina and Rita affected the short term production of oil and gas on the OCS. As of June 19, 2006, shut-in oil production was 179,970 barrels of oil per day (BOPD). This shut-in production is equivalent to almost 12 percent of the daily oil production in the Gulf of Mexico, which is currently about 1.5 million BOPD. June 19, 2006's shut-in gas production was 935.67 million cubic feet (MMcf) per day. This shut-in gas production is equivalent to over 9% of the daily gas production in the Gulf of Mexico, which is currently about 10 billion cubic feet (Bcf) per day. The cumulative shut-in oil production for the period between August 26, 2005 and June 19, 2006 is 166,312,453 barrels, which is equivalent to just over 30 percent of the yearly production of oil in the Gulf of Mexico (about 547.5 million barrels). The cumulative shut-in gas production for the same period is 803.604 Bcf, which is equivalent to just over 22 percent of the yearly production of gas in the Gulf of Mexico (about 3.65 Tcf).

### **Bureau of Land Management**

The BLM manages over 261 million acres of public land, primarily in the western United States, and over 700 million acres of federally owned subsurface mineral estate. Its mandate from the Congress through the Federal Land Policy and Management Act of 1976 (FLPMA) is to manage the public lands for multiple uses and to sustain the health,

diversity and productivity of these lands for the use and enjoyment of present and future generations.

The range of activities on the public lands managed by the BLM is as diverse as the land itself. Commercial uses, such as oil and gas production, mineral development, livestock grazing, and timber harvest coexist with various other uses, such as recreation, and cultural and historic preservation. Responsible stewardship of the public lands means the BLM must balance multiple and potentially conflicting uses, including increased demands for recreation, open space and energy production.

Demand for energy in this country has outstripped domestic energy production. Although domestic energy production has nearly doubled in the past 50 years, population growth and increased economic activity have resulted in significantly higher demands for energy. In 2004, we imported close to 58% of our oil. The Energy Information Agency projects that number to grow to 62% by 2030. Natural gas consumption will grow by about 20% in that same time period.

We must find ways to reduce our energy consumption and increase our energy efficiency and domestic energy production. Further, our energy production needs to be secure, affordable, and minimize environmental impacts.

### **Overview of the Onshore Oil and Gas Program**

The Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended, vest responsibility with the BLM for managing oil and gas leasing on approximately 700 million acres of BLM, national forest, and other Federal lands, as well as private lands where the mineral rights have been retained by the Federal Government. The BLM works to ensure that development of mineral resources is in the best interest of the Nation.

The BLM's Oil and Gas Management program is one of the major mineral leasing programs in the Federal government. The BLM administers over 45,000 oil and gas leases, of which 23,000 are currently producing and less than a tenth of 1% of the federal mineral estate is disturbed by oil and gas production operations. Domestic production from the 74,000 Federal and Indian onshore oil and gas wells accounts for 18 percent of the Nation's natural gas and 5 percent of the Nation's oil, with sales values exceeding \$19.6 billion in Fiscal Year 2005. In 2003, we released an Energy Policy and Conservation Act (EPCA) report. This study by BLM, USGS, DOE, USFS done at request of Congress and signed by President Clinton identified 5 EPCA basins in MT, WY, UT, CO and NM as containing an estimated 139 Tcf - enough to the heat 55 million homes for almost 30 years. More than half of these lands are under federal management.

Domestic production of natural gas has been increasing over the last three years. In Fiscal Year 2003, 2.4 trillion cubic feet (Tcf) of natural gas were produced from Federal (non-Indian) lands. In Fiscal Years 2004 and 2005, 2.8 Tcf and 2.9 Tcf, respectively, were produced. In addition to the Federal onshore leases, the BLM supervises the

operational activities of 3,700 producing Indian oil and gas leases. In FY 2005 322 million cubic feet of natural gas were produced from American Indian lands.

While domestic production on public lands has increased over the last three years. It is important to recognize that the BLM manages Federal lands for multiple use under the Federal Land Policy and Management Act of 1976. Energy production is just one of several uses. In addition, the BLM must comply with a host of important environmental laws and associated regulatory processes, which extends the time it takes for energy development to occur on public lands.

### **Processing of Applications for Permits to Drill (APDS)**

The demand for onshore oil and gas is reflected in the dramatic increase in the number of applications for permit to drill (APDs) the BLM receives from one year to the next. The number of APDs received by the BLM has increased every year since 2002, and we anticipate this trend to continue into 2007 and beyond. A recitation of the numbers illustrates this dramatic trend. The BLM received 4,585 APDs in 2002; 5,063 in 2003; 6,979 in 2004; and 8,351 in 2005. Our current projection is that we will receive over 9,700 in 2006 and over 10,500 in 2007. We are proud of the progress we have made in response to this increasing demand; in 2005, we processed 7,736 APDs, a record number. However, despite this significant achievement, it is clear that more needs to be done to improve the APD process.

### **BLM and the Energy Policy Act of 2005**

The Energy Policy Act of 2005 addresses conservation; energy supply from oil, gas, coal and renewable sources (wind, biomass, geothermal and solar); distribution of energy; and research into future forms of energy. The BLM plays a role in each of these areas. The Energy Policy Act of 2005 contains several provisions through which the BLM is working to improve the APD permit approval process, expedite oil and gas leasing on public lands, and ensure environmentally responsible natural gas production on public lands in an environmentally-responsible manner. The Energy Policy Act of 2005 will allow the BLM to continue streamlining efforts in leasing and permitting. The BLM has been working with other regulating agencies to develop a one-stop permitting process for oil and gas activities. The objective of grouping the appropriate agency personnel is to create a more efficient and effective process through which to issue permits for oil and gas activities to interested parties while ensuring that the Nation's energy resources are developed in an environmentally-responsible manner. As our Nation's energy needs continue to increase, the BLM is positioned to do its part in helping to meet that need.

### **Looking to the Future: The Alaska Natural Gas Pipeline**

The BLM is continuing leasing, exploration and development activities in the National Petroleum Reserve-Alaska (NPR-A), an area covering more than 23 million acres in the northwest corner of the state. Development of these oil and gas resources is an important

component of the President's National Energy Policy. The first significant commercial production from the NPR-A is expected as early as 2008.

The BLM will also participate in the inter-agency activities relating to the siting of an Alaska Natural Gas Pipeline. On October 13, 2004, the President signed into law the Alaska Natural Gas Pipeline Act, (ANGPA), legislation that greatly enhances the prospects for approval of the Alaska Natural Gas Pipeline, which will provide enhanced access to the natural gas supplies on the North Slope of Alaska.

There are currently two Federal rights-of-way granted for an Alaskan gas pipeline: 1) the Alaska Natural Gas Transportation System (ANGTS) project, sponsored by Trans-Canada and issued in 1980; and 2) the Trans-Alaska Gas System (TAGS) project, sponsored by Yukon Pacific Corporation and issued in 1988. Other proposed projects include one sponsored by the North Slope Producers (Conoco Phillips, BP, and Exxon Mobil) and another proposed by the Alaska Gasline Port Authority referred to as the "All Alaska" project.

In order to meet the intent and provisions of the Alaska Natural Gas Pipeline Act, the Federal agencies with jurisdiction have been meeting regularly and are developing an interagency Memorandum of Understanding to define regulatory alignment.

## **The U.S. Geological Survey (USGS)**

This statement would be incomplete without a discussion of the valuable role of USGS. The USGS provides impartial scientific information to advance the understanding of geologically based energy resources to contribute to plans for a secure energy future and to facilitate evaluation and use of resources. These resources include oil, gas, and coal as well as gas hydrates and geothermal.

The USGS has a clearly defined role: (1) to advance the understanding of processes affecting the formation, accumulation, occurrence, and alteration of geologically based energy resources; (2) to conduct scientifically robust assessments of onshore and state offshore U.S. energy resources (pre-development) and international energy resources; (3) to study environmental and human health effects associated with energy resource occurrence, production, and use. Because USGS is non-regulatory and does not have land or resource management responsibilities, USGS is often viewed as an unbiased provider of resource assessments as well as the geology and science underpinning the assessment. The resource assessment results provide impartial scientific information about energy resources and directly support the Department's mission of managing natural resources to promote responsible use and sustain a dynamic economy. Collectively, this information advances the scientific understanding of energy resources, contributes to plans for a balanced and secure energy future, and facilitates the strategic use and evaluation of resources.

The USGS, in its national assessment of undiscovered oil and gas resources onshore and beneath State waters, estimated a total of 622.22 trillion cubic feet (Tcf) of technically



recoverable undiscovered natural gas. This total represents the sum of mean estimates for natural gas in conventional accumulations (307.68 Tcf), in continuous accumulations that include shale gas and tight sandstones (246.97 Tcf), and in continuous accumulations in coalbeds (67.32 Tcf).

The bulk of undiscovered, conventional natural gas resources in the U.S. are located in northern Alaska and the onshore Gulf of Mexico. Most resources of continuous natural gas in shale and tight sandstones are located in Rocky Mountain basins and the Appalachian Basin. Coalbed natural gas resources are concentrated in the San Juan, Powder River, Appalachian, and Black Warrior Basins.

### **Current USGS Gas Hydrate Research Activities**

USGS is recognized globally as a scientific leader in gas hydrate research. Gas hydrates represent a potentially huge energy resource; however, any real contributions to the world's energy supply will depend upon the availability, production feasibility, and cost of extracting methane from the hydrate phase. The overall size and production feasibility of hydrates at any one site are still very much in question. The USGS:

- continuing efforts to assess the recoverability and production characteristics of permafrost-associated natural gas hydrates in the Prudhoe Bay-Kuparuk River area, AK to examine the resource potential and possibly drill and test a viable gas-hydrate prospect. This cost-shared study between the Department of Energy (DOE) and USGS includes technical support and data access from industry and academic cooperators on the North Slope.
- working with BLM and the State of Alaska Department of Natural Resources to assess the resource potential of known and undiscovered gas hydrate and associated conventional gas accumulations on both Federal and State lands in northern Alaska.
- working with MMS to develop a new hydrate resource assessment methodology for offshore hydrates.
- working in partnership with the Directorate General of Hydrocarbons, Ministry of Petroleum and Natural Gas, Government of India to study, drill, and sample gas hydrates along the continental margin of India in order to meet long term goals of developing and implementing a more efficient means of exploiting Indian gas hydrate reserves.
- doing state-of-the-art research on the thermodynamics and geotechnical properties of gas hydrate in support of increasing our understanding of how these resources behave in both terrestrial and marine environments.
- working with the Joint Industry Project in the Gulf of Mexico, to use seismic information to predict and test the occurrence of gas hydrates.

## **USGS and the Energy Policy Act of 2005**

Several key Energy Policy Act efforts are already underway within USGS. The USGS is conducting a national geothermal assessment. The USGS assessment work is utilizing new concepts of geothermal resources and new technologies for harnessing geothermal power. The USGS is continuing its oil and gas resource assessments underlying Federal lands (started with the Energy Policy and Conservation Act of 2000). The USGS is working with BLM and U.S. Forest Service (USFS) to conduct a national coal inventory. The USGS is conducting preparatory work for an anticipated start to a national oil shale assessment in FY 2007. While most of this work is not focused on natural gas, use of these resources in the energy mix of the country helps alleviate the need for natural gas to meet all of the electricity needs in the U.S.

Gas hydrate research activities at the USGS are being expanded, because this resource has the potential to make a contribution to the natural gas endowment of the country. Proposed work in FY 2007 will enable USGS to undertake a coordinated effort with BLM and MMS to provide: (1) additional studies in other hydrate-bearing areas of Federal jurisdiction (such as the Gulf of Mexico); (2) a growth in the data processed, interpreted, and made available for hydrate research; and (3) study of the properties of gas hydrates in a variety of geologic and climatic settings to determine those settings and properties of greatest advantage in making hydrates a viable energy resource.

## **The Office of the Assistant Secretary for Indian Affairs**

The Office of Indian Energy and Economic Development within the Assistant Secretary for Indian Affairs' Office has been given the responsibility for promulgating and implementing the regulations for Tribal Energy Resource Agreements, as authorized under Title V of the Energy Policy Act of 2005. Use of these TERAs could provide significant flexibility for tribes that choose to develop their energy resources for economic purposes.

The economic potential of energy and mineral resources in Indian land is significant. The Division of Energy and Minerals Development (DEMD) within the Office of Indian Energy and Economic Development estimated that Indian lands hold the potential to produce over 5.3 billion barrels of oil<sup>1</sup> and 37.9 trillion cubic feet of natural gas.<sup>2</sup>

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<sup>1</sup>This is based on the DEMD's interpretation of U.S. Geological Survey (USGS), *Circular No. 1118*, "1995 National Assessment of United States Oil and Gas Resources." DEMD's assessment of Indian gas and oil resources was based largely on this study, which estimated undiscovered oil prior to 1995. Many technological breakthroughs have occurred in oil exploration and development since 1995. Therefore, DEMD supplemented the USGS estimates with a methodology that acknowledged new oil recovery techniques, such as in-fill and horizontal drilling.

<sup>2</sup> *Id.* In addition to this USGS estimate of undiscovered Indian natural gas, DEMD relied upon *Executive Summary – Assessment of Undiscovered Oil and Gas Resources of the Uinta-Piceance Province of Utah and Colorado*, USGS Uinta-Piceance Assessment Team, USGS Digital Data Series DDS-69-B, 2002; *Natural Gas Resources of the Greater Green River and Wind River Basins of Wyoming, Final Version* – February, 2003, U.S. Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory; *Rocky Mountain Giants*, Colorado School of Mines, Department of Geology and Geological

These estimates of Indian oil and gas are based in part on the amount of oil and gas that the U.S. Geological Survey believes is *technically* recoverable from Indian lands.<sup>3</sup> Because much of Indian land has not seen the same extent of exploratory activity and data collection as adjacent Federal, State, or private land, some petroleum geologists believe that the resource estimates may, in fact, be understated. In addition, Indian Country holds another 53.7 billion tons of recoverable coal.<sup>4</sup>

Renewable energy resources are abundant also. For example, Indian Country encompasses some of the premier wind regimes in the U.S. and has the potential for generation of 535 billion kWh per year (total U.S. electric generation in 2004 was 3,853 billion kWh).<sup>5</sup>

Almost all Indian lands evidence some form of biomass energy potential, from woody biomass from forestlands and bio-diesel and ethanol production from agricultural and silviculture waste to the growing and use of energy crops. We have identified 118 reservations with a high potential for biomass production.

Tribes in Nevada, California, Oregon, North Dakota, and South Dakota, and pueblos in New Mexico also have potential to tap geothermal energy resources, while Indian lands in the Southwest and West present opportunities for solar energy development.

Hydrocarbon production in Indian Country has been significant and has much future potential. Nearly two million acres of Indian lands have already been leased for hydrocarbon energy production. These lands account for about 10% of the oil and natural gas production from federal onshore acreage. In 2004 (the last year for which figures are available), over \$54 million in royalty revenues was reported for Indian oil

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Engineering, M. Ray Thomasson and Fred Meissner; and *1995 Assessment of United States Oil and Gas Resources – Results, Methodology, and Supporting Data*, USGS Digital Data Series DDS-30, Release Two, 1996.

<sup>3</sup> The USGS uses “play analysis” to estimate these volumes. A “play” is a set of discovered or undiscovered oil and gas accumulations that exhibit nearly identical geological characteristics. The utility of “play analysis” is that it correlates hydrocarbon accumulations to known geological features. The volumes derived are calculated from the percentage of each USGS oil and gas play occurring on Indian lands. Based on a probability model, the amounts were calculated for undiscovered oil and gas at a 50-percentile probability of recovery. Oil and gas units were reduced to “Barrels of Oil Equivalent,” based on energy equivalence in BTUs, a standard industry practice.

<sup>4</sup> USGS *Professional Paper No. 1625* and additional calculations using proprietary information from the Office of Indian Energy and Economic Development. Increased coal supplies may quicken conversion of many electric power plants now fueled by natural gas, thus freeing up natural gas stores for other uses, including home heating. Over 90% of power plants built in the last five years are natural gas powered (“Natural Gas Facts,” [www.api.org](http://www.api.org)). However, mine-mouth coal fired power plants on Indian lands could meet future electrical generation demands.

<sup>5</sup> “*Potential Wind Generation From Tribal Lands*,” National Renewable Energy Laboratory, U.S. Department of Energy (DOE). Wind blows in excess of 18 miles per hour across most of the Dakota, Montana, and Wyoming reservations (*World Watch*, “Falling Water, Rising Wind,” Bob Gough, July/August, 2005).

production and over \$200 million for Indian gas production.<sup>6</sup> As of 2000, these lands had produced a total of nearly 1.7 billion barrels of oil (valued at \$15 billion) and 6,507,217,123 mcf of gas (valued at \$8 billion).<sup>7</sup>

However, Indian Country has an additional 15 million acres of still *undeveloped* lands with hydrocarbon potential. These lands are located in sedimentary basins with a long history of hydrocarbon production. Moreover, conventional oil and gas exploration and development that has occurred on Indian lands has generally taken place at shallow to medium depths; millions of acres of such land are relatively under-explored for unconventional and deeper resources.

We have been actively providing technical assistance to various tribes by purchasing and interpreting thousands of miles of 2D seismic data as well as hundreds of square miles of 3D data. These studies have identified numerous prospects, some of which are essentially ready to drill. Some of the prospects still require additional data collection and evaluation to more accurately identify exploratory and development targets.

In addition, the Office of Indian Energy and Economic Development also provide loans and grants to tribes and individual Indians for economic development of their energy resources.

### **Conclusion**

We expect a continuation of the unprecedented demand for energy and minerals leases and permits. Continued access to the environmentally reasonable development of natural gas resources on Federal lands and the OCS will help the nation meet its goals for secure and diverse energy sources. The Department plans to meet this demand by continuing to improve our internal processes, implementing provisions of the Energy Policy Act, and developing program innovations that improve effectiveness and reduce cost.

Thank you for the opportunity to testify today about the Departmental role in meeting America's demand for Natural Gas. We would be happy to answer any questions you have.

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<sup>6</sup> "Reported Royalty Revenue for Fiscal Year 2004," Minerals Management Service, U.S. Department of the Interior.

<sup>7</sup> *Id.*