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Meeting America's Natural Gas Demand: Are We in a Crisis?

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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. The Interior Department manages the resources that provide a third of our nation's energy from coal, oil, natural gas, geothermal steam, and wind. Within the Department, three agencies play a significant role in helping America meet its natural gas needs: the Bureau of Land Management (BLM), the Minerals Management Service (MMS), and the U.S. Geological Survey (USGS). My testimony today will address the role of each of these agencies, as well as the natural gas provisions in the recently-passed Energy Policy Act of 2005, and the impacts of Hurricane Katrina.

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 and 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, increased economic activity and more intensive use of energy in the residential transportation sectors, have resulted in significantly higher demands for energy. Today we import close to 60% of our oil. The Energy Information Agency projects that number to grow to 70% in 20 years. Natural gas demand will grow by 40% 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 environmentally-sound.

Overview of the Onshore Oil and Gas Program

The BLM manages mineral leasing on 700 million acres of land – BLM lands, USFS lands, where federal minerals lie under private surface. 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 21,000 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 eleven percent of the Nation's natural gas and five percent of the Nation's oil, with sales values exceeding \$15.4 billion in Fiscal Year 2004. 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 the largest onshore resource of natural gas in the country and the second largest resource after the Outer Continental Shelf. These onshore basins contain an estimated 139 tcf - enough to 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 2002, 2.1 trillion cubic feet (Tcf) of natural gas were produced from Federal (non-Indian) lands. In Fiscal Years 2003 and 2004, 2.2 Tcf and 3.1 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 2004 308 million cubic feet (MMcf) of natural gas was produced from American Indian lands.

Resource Management Plan Amendments

Before any leasing, APD issuance or actual oil and gas production can occur on public land, the BLM must have a land use plan that allows for that use in that area. All 261 million acres of BLM lands are covered by one of 162 Resource Management Plans. Beginning in 2001, with the direction and support of Congress, the BLM initiated the largest effort in its history to revise or amend all 162 of its Resource Management Plans. To date, the BLM has completed 33 amendments or revisions, with another 60 currently in various stages of completion. Twenty-five (25) of these plans have a significant oil and gas component.

The BLM uses a community-based and highly collaborative approach to planning that complies with the FLPMA, the National Environmental Policy Act (NEPA), and the President's requirements for cooperating agency status for state and local governments. This includes collaboration with specific working groups that focus on resource management plan development. The collaborative process is one in which interested parties, often with widely varied interests, work together to seek solutions with broad support for managing public lands, including issues related to the development of natural gas resources on BLM-managed lands. Resource Advisory Councils (RACs) or their functional equivalents are integral to public involvement and collaboration. The BLM recently revised its planning regulations to require the involvement of state, local and tribal governments as cooperating agencies in the development of its land use plans. Normally, BLM serves as the lead agency, though in some cases, other governmental entities serve with the BLM as joint leads.

Processing of Applications for Permits to Drill (APDS)

The BLM has experienced a greatly increased demand for natural gas drilling permits, and expects a continued high demand, especially in the EPCA basins: Powder River Basin in Wyoming and Montana, the San Juan Basin in New Mexico and Colorado, and the Uinta/Piceance Basins in Colorado and Utah. In addition, recent discoveries in the Greater Green River Basin in southwestern Wyoming and northwestern Colorado will result in additional demand for drilling permits in these areas. The processing of Applications for Permits to Drill (APDs) and offering parcels of Federal land for oil and gas leasing continues to be a major priority for the BLM. Increased funding provided by Congress and management improvements have enabled the BLM to make significant progress in responding to demand. BLM has provided for Plans of Development (PODs) groups of APDs and analysis of multiple APDs in an area for compliance with NEPA and cultural resource protection acts. A July 21, 2005 General Accountability Office report on oil and gas development found these strategies to be a good thing, stating that the bundling of permit applications "can encourage companies to plan their drilling operations more carefully and help BLM better assess the cumulative environmental impacts of drilling activities." In FY 2004, the

BLM processed 7,351 APDs, approving 6,452 (on both Federal and Indian lands). As of September 3, 2005, the BLM had processed approximately 6,928 APDs (about 400 ahead of FY-2004's pace), approved 6,257 APDs (about 600 ahead of FY-2004's pace. By the end of Fiscal Year 2006, the BLM plans to substantially reduce the inventory of APDs pending for more than 60 days to 1,800, a reduction of 20 percent from 2004.

Inspection and Enforcement Functions

In addition to processing APDs, the BLM also inspects oil and gas operations. This function is critical to verifying the proper payment of royalties and ensuring necessary environmental protection. In 2004, BLM inspectors performed nearly 19,000 inspections to ensure compliance with permit stipulations, thereby protecting the environment and human health and safety, and verifying the proper accounting of production from Federal and Indian lands. The BLM finds that most oil and gas operators diligently comply with lease stipulations, conditions or approvals, and operate effective, environmentally-sound exploration and development facilities.

I'd like to say a few words about the GAOs Inspection and Enforcement report because this issue also is addressed in the energy bill.

The July 21 GAO report on BLM's permitting activities concluded BLM is behind in I and E inspections due to heavy APD workloads. Our I and E staff continues to grow, with the budget for enforcement up \$4.8 million in the last 3 years. We also allocated an additional \$1 million this year to help with monitoring. Field managers are working to prioritize their workforce to meet their environmental inspection and enforcement obligations.

But we still have a hard time finding qualified people and I suspect that's something we share. Until recently, the job market for energy development was not attractive and people chose other careers. Now we are struggling to find petroleum engineers and other technically skilled people to fill vacancies.

The Energy Bill recognizes this and calls on the National Academy of Sciences to study the availability of skilled workers. We are focusing on the GAO report and its identification of the need for I&E.

Looking to the Future: The Alaska Natural Gas Pipeline

In Fiscal Year 2006, the BLM will continue 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 (ConocoPhillips, BP, and ExxonMobil) 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.

BLM and the Energy Policy Act of 2005

The Energy Policy Act of 2005, is a comprehensive piece of energy legislation addressing: 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 has a role to play in each of these areas. Most immediately, however, the Energy Policy Act of 2005 contains several provisions through which the BLM can work to improve the APD permit approval process, expedite oil and gas leasing on public lands, and ensure 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 will work 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.

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 supplier 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, since 1982, managed OCS production of more than 109 tcf of natural gas for U.S. consumption.

Today, MMS administers approximately 8,200 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 of gas 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 is expected to come from deep-water and shallow water deep-gas discoveries – gas found at depths 15,000 to 20,000 and as much as 35,000 feet below the surface. 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 and enhance national energy security 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 the OCS remains a solid contributor to the Nation's energy and economic security by holding OCS lease sales in available non-moratoria areas on schedule. Since May 2001, DOI has held 17 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 to industry 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. Production from leases issued as a result of these

sales will contribute substantially to future domestic oil and gas production that will provide domestic energy to fund our economy and meet the everyday energy needs of our citizens.

The NEP also recommended that we consider economic incentives for environmentally sound offshore oil and gas development where warranted by specific circumstances. The MMS has established a suite of economic incentives to promote new discoveries of oil and gas resources for the Nation and stimulate domestic oil and natural gas production, particularly during these times of tight natural gas supply. For 2001-2005 OCS lease sales, we continued the royalty incentive program—first established by the Deep Water Royalty Relief Act of 1995—to promote interest in deep water leases, and expanded the incentive program to promote development of new natural gas supplies from deep horizons in the Gulf's shallow waters. A new regulation in January 2004 extended the deep gas incentive to leases issued before the incentives were first provided in 2001, in order to promote additional deep drilling for natural gas on the shelf. This was a first – providing incentives on already existing leases - and was done to stimulate additional natural gas in an area where natural gas distribution infrastructure already existed and could deliver any new gas to the market quickly. MMS has also developed policies for extending lease terms to aid in planning wells to be drilled to sub-salt and ultra-deep prospects, accounting for the additional complexity and cost of planning and drilling such wells beneath the salt dome (which distorts and blurs seismic imagery) and at water depths that challenge even the most advanced technologies.

In addition, the MMS has provided economic incentives for all Alaska OCS lease sales to promote leasing interest and encourage oil and gas exploration development in this area of high cost and little infrastructure.

MMS and the Energy Policy Act of 2005

The recently enacted Energy Policy Act of 2005 included 3 provisions providing incentives that are intended to stimulate exploration and production of natural gas in the OCS. These provisions provide royalty reductions in areas with very high costs. These incentives encourage exploration and production in high risk areas during a time of tight supplies and also look to develop new sources of natural gas over the longer term by—

- Adding a third tier of royalty reduction to the current shallow water, deep gas program by eliminating the payment of royalties on the first 35 billion cubic feet of gas produced from wells drilled 20,000 feet or deeper, and increasing the set of eligible leases from those in 200 meters of water or less to leases in 400 meters of water or less.
- Establishing a new category of deep water royalty reduction—no royalties will be due on the first 16 million barrels of oil equivalent production from wells drilled in 2000 meters of water or more.
- Encouraging the development of gas hydrates—a potential source of abundant future natural gas supplies—by specifying up to a 30 billion cubic feet royalty suspension volume for gas produced from hydrates.

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 5 miles, and at these depths the engineering challenges increase geometrically.

In 2004, operators announced 14 new deep water producing projects and 15 new deep water discoveries. Anticipated production from these facilities will help sustain production increases in deep water, and will dramatically 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 continued use of royalty incentives in the deep waters of

the Gulf is intended to keep industry moving forward on new technologies and exploring deeper water frontiers. The deep water activity in the Gulf of Mexico has been a major success story. Deep water gas production is up 407 percent and oil production has risen 386 percent since 1996.

There are now about 150 deep water discoveries of which more than 107 are producing. This has helped to increase total offshore production from 980,000 barrels per day in 1995 to 1.5 million barrels per day in 2005. Additional deep water rigs are being built or moved to the Gulf from other parts of the world.

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 recently deployed Thunder Horse platform incorporated over one hundred technological advancements — things that had not been done before.

The industry ingenuity that we see in deep water is the same approach that is being used in deep shelf drilling operations on the traditional 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 estimates point to about 55 Tcf of natural gas in this emerging frontier.

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 2003, the MMS completed an interim update of estimates for undiscovered technically recoverable resources underlying the OCS. The mean estimate is 406 trillion cubic feet (Tcf) of natural gas, which is a 12 percent increase since 2000 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 406 Tcf natural gas resource estimate for offshore production, the Energy Information Administration Annual Energy Outlook 2005 states that “[p]roduction of lower 48 nonassociated (NA) conventional natural gas declines from 9.5 trillion cubic feet in 2003 to 8.6 trillion cubic feet in 2025.”

The Nation’s energy potential may not rest entirely on conventional hydrocarbon resources. Scientists are now studying the possibility that a unique and puzzling frozen "ice" crystal 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 ocean sediments. The USGS estimates that domestic natural gas hydrates in-place is 320.222 Tcf. In comparison, as of 1997, the mean estimate of all untapped technically recoverable U.S. natural gas resources was 1,301 Tcf, U.S. proved natural gas reserves were 167 Tcf, and annual U.S. natural gas consumption was about 22 Tcf. Discovering methods to locate, produce and transport the gas from formations to the market are key to their potential use. The Energy Bill directs Federal research efforts to this potential new energy source.

The next MMS resource assessment is scheduled to be completed this fall. 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 take into consideration laws and policies of affected coastal States.

MMS has begun the process for development of a new program for 2007–2012, and issued a request for information in August. In seeking public comment, Secretary Norton reaffirmed the Bush Administration's pledge not to conduct any new leasing under the 2007-2012 five-year plan within 100 miles of Florida's coast, in the Eastern Gulf of Mexico Planning Area. MMS is also asking the public to comment specifically on whether the existing withdrawals or moratoria should be modified or expanded to include other areas in the OCS; and whether the Interior Department should work with Congress to develop gas-only leases. Throughout the process of developing a new 5 year program, MMS requests comments from states, local and tribal governments, American Indian and Native Alaskan organizations, the oil and gas industry, federal agencies, environmental and other interest organizations, as well as the general public. Consultation with affected parties also occurs at the local level through MMS regional offices.

Katrina Update

Hurricane Katrina has affected the short term production of oil and gas on the OCS. However industry is rapidly repairing the offshore infrastructure and resuming operations. As of September 12, 2005, natural gas production had resumed to 62% of pre-hurricane levels less than two weeks after Katrina. It is important to note that industry is still assessing the amount of repairs and time frames for restoring production from certain facilities. These estimates are time consuming due to the complexity of the operations and the interconnected network of infrastructure required to bring offshore production onshore. Thus far, reports show that about 90 percent of Gulf of Mexico production didn't suffer significant damage offshore. However, it is important to note that onshore support facilities and infrastructure sustained serious damage. Many of these facilities do not have electricity, are located in standing water, and sustained wind damage. These facilities are important locations for industry workers, inspectors, and the materials and supplies that will be needed to repair offshore pipelines and platforms. Others are needed to handle the oil and gas that comes ashore from the OCS. The availability of these vital support facilities will be a critical factor in the recovery of OCS production.

We do not expect Hurricane Katrina to significantly affect the long term trends or prospects of natural gas in the Gulf of Mexico. Deep shelf gas and deep water will continue to increase their contributions to domestic production over the next decade, and the Alaska OCS and methane hydrates offer potentially greater long term opportunities.

The U.S. Geological Survey (USGS)

The USGS, which is responsible for assessing the nation's undiscovered oil and gas resources onshore and beneath State waters, estimates a total of 633.1 trillion cubic feet (TCF) of technically recoverable undiscovered natural gas. This total represents the sum of mean estimates for natural gas in conventional accumulations (308.9 TCF), in continuous accumulations that include shale gas and tight sandstones (256.7 TCF), and in continuous accumulations in coalbeds (67.5 TCF).

The bulk of undiscovered, conventional natural gas resources 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.

Conclusion

We expect to see a continuation of the unprecedented demand for energy and minerals leases and permits. Continued access to the environmentally sound 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 unprecedented 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. I would be happy to answer any questions you have.