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Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to appear here today to discuss with you the Department of the Interior's role in managing renewable and other alternative energy resources on the public lands.

Rising gasoline prices and home heating and cooling bills are reminding Americans of how dependent we are on secure, reliable supplies of energy. Energy is vital to expanding our economy and enhancing Americans' quality of life. However, an imbalance exists between our energy consumption and domestic energy production. We are looking at ways to narrow the gap between the amount of energy we use and the amount we produce. There is no single solution, but renewable and other alternative sources are integral components of our energy future.

While the quantity of domestic energy produced from renewable resources is small in comparison to conventional resources, the growing cost of conventional energy resources and the need to diversify our energy portfolio has spurred an increased interest and growth in renewable energy development. The Energy Information Administration's (EIA's) recently released 2006 Annual Energy Outlook estimates that our consumption of renewable fuels will grow from 6 quadrillion BTUs in 2004 to 9.6 quadrillion BTUs in 2025 as a result of advancements in renewable energy technologies, higher fossil fuel prices, State requirements to produce renewable energy, and incentives provided by the Energy Policy Act of 2005. This is an increase of 1.1 quadrillion BTUs more than estimated in EIA's 2005 Annual Energy Outlook. EIA estimates that in 2030 renewable energy will account for over ten percent of our domestic energy production and about seven percent of our consumption. Every little bit counts.

The Department of the Interior, as the manager of over one fifth of the nation's land, has a significant role to play in this projected increase in domestic renewable energy production. Lands managed by the Bureau of Land Management currently supply almost half of the nation's geothermal generation and over 5 percent of domestically installed wind capacity. Recent assessments of the potential for renewable energy production from public lands indicate that these lands can contribute much more to our renewable energy supply. New authorities and provisions in the Energy Policy Act of 2005 have

also given Interior agencies, such as the Minerals Management Service (MMS), Bureau of Land Management (BLM), and the U.S. Geological Survey (USGS), the ability to explore the future development of promising new energy sources such as offshore wind, wave, ocean current, and solar energy.

I will discuss each of these energy sources, as well as alternative sources of fossil energy, and how they are integrated into the Department's energy programs.

Renewable Energy Resources

Wind: The BLM authorizes rights-of-way for the use of public lands for wind energy production sites. The BLM currently administers 22 wind energy right-of-way authorizations on public lands in California and Wyoming that generate a total of about 500 megawatts of electrical power. An additional 78 rights-of-way authorizations have been approved for wind energy site testing and monitoring activities in Arizona, California, Colorado, New Mexico, Utah, Idaho, Wyoming, Nevada, Oregon, Washington and Montana. The extension of the Federal wind energy production tax credit and a variety of State-level tax credits and other incentives have generated significant interest in commercial wind energy projects on the public lands. Over the past 5 years BLM has issued over 90 wind right-of-way authorizations, compared to 4 issued in the previous 5 years. To address the surge in wind energy applications, the BLM prepared a Wind Energy Development Programmatic Environmental Impact Statement (EIS). The final Programmatic EIS, released in June 2005, amended 52 BLM land use plans to provide for wind energy development. It also addressed environmental issues related to wind energy development policies and established Best Management Practices (BMPs) to address standard impacts. This EIS will provide the foundation for environmental analysis of future wind proposals on BLM lands.

In response to new authority under the Energy Policy Act the MMS is working diligently to develop a regulatory program to authorize alternative energy proposals, such as wind, wave and ocean current activities offshore.

Solar: There are no pending applications or existing right-of-way authorizations on BLM public lands for large concentrated solar power (CSP) commercial generating facilities. However, the BLM is prepared to respond to any expressions of industry interest for CSP use of the public lands. The BLM issued a Solar Energy Development Policy in October 2004 that provides guidance to BLM Field Offices for the processing of right-of-way applications for solar energy projects on public lands.

Agencies within the Department are also working to advance the use of solar power by using the technology where practicable at numerous facilities in the field. There is significant potential for the installation and use of solar photovoltaic systems at existing and new DOI facilities. The BLM generates a total of 185 Megawatt-hours (MWhr) of electricity from photovoltaic systems each year from over 600 installations. Varied uses of photovoltaics include water pumping, outdoor lighting, communication sites, weather and water monitoring, remote field stations, and visitor centers. Since 1995, BLM has

installed over 130 photovoltaic systems to replace fossil-fuel powered generators. The seasonal nature of the remote facilities and long summer sun hours have made solar energy the most cost effective approach to supplying power to these facilities.

Geothermal: The BLM currently manages 354 geothermal leases, 45 of which are producing. The 45 producing leases provide geothermal energy to 34 power plants. In addition, BLM manages a small number of direct-use leases, which provide an alternative source of energy for greenhouses, fish farms, and other commercial uses. Demand for both electrical power and direct-use from Federal geothermal resources is expected to increase. Over the past 5 years, the BLM has worked diligently to reduce the number of pending geothermal lease applications on public lands. Since 2001, 199 leases have been issued, compared to 25 in the previous 5-year timeframe. In 2004, BLM completed a strategic plan to guide the agency in allocating resources for high priority activities.

The Energy Policy Act of 2005 made comprehensive changes to the Geothermal Steam Act - the authorizing statute for geothermal development on public lands. As a result, the BLM, which authorizes geothermal development on Federal lands, and the MMS, which evaluates and assesses revenues owed to the Federal government from geothermal development, are rewriting their geothermal rules to conform to the statutory changes. The BLM and MMS are coordinating the two rulemaking efforts with a common goal to complete proposed regulations in mid-2006, followed by completion of final regulations by the end of 2006.

Sections 221-237 of the Energy Policy Act of 2005 (EPAct) also require development of an interagency Memorandum of Understanding (MOU) between the BLM and the Forest Service (FS) to improve coordination in the geothermal leasing and permitting process, address leasing backlogs and develop a joint data system for geothermal activity. The BLM and FS have prepared the interagency MOU, which is now being reviewed for final signature.

The USGS began a three year effort starting this year to update a nationwide geothermal resource assessment completed in the 70's. The assessment will include estimates of electric power production potential from identified geothermal systems; estimates of the magnitude and general location of undiscovered geothermal systems; and evaluations of the impact of new geothermal technologies, such as Enhanced Geothermal Systems. The USGS is collaborating with other Federal, State, and local government agencies and the geothermal industry on a number of specific geothermal research projects, including new geothermal technologies, consulting with States developing and implementing Renewable Portfolio Standards (RPS), and providing technical advice to local agencies, Indian tribes and others seeking to develop geothermal projects.

Biomass: The benefits of utilizing biomass are numerous, complementing many of the land management goals and stewardship responsibilities of the Department. Two initiatives, one to prevent catastrophic wildfires and the other to restore rangeland and forest health, encourage the removal of excess or diseased wood debris from forests and rangelands. In some cases, this wood debris can be used as a renewable source of

biomass energy. We have been working to sponsor conferences, participate in workgroups, and form partnerships to identify and remove barriers to biomass utilization.

In 2003, the Departments of the Interior, Agriculture, and Energy signed an MOU agreeing to work together to promote the use of wood biomass. An interagency working group has been established under this MOU and will report to the Biomass Research and Development Board.

The Department has also adopted a standard contract provision that allows for the removal of biomass as part of all forest and rangeland thinning projects or any other contracts that cut vegetation. This contract option is for use by all Interior agencies.

The BLM has developed and is implementing a biomass utilization strategy, the goal of which is to increase the commercial utilization of wood material from forest and woodland restoration, hazardous fuels reduction projects, and rangeland treatments.

In 2005, 71,000 tons of wood by-products were offered through contracts by the BLM. The goal for 2006 is to offer biomass in 10 percent of the BLM's mechanical treatment projects, increasing to 50 percent by 2008. The BLM has also established six demonstration sites to showcase successful biomass projects and transfer lessons learned to others. To help increase the market for materials made of small wood and wood biomass, the agency has added a factor to their procurement solicitations to encourage the purchase of bio-based materials.

In addition, Section 210 of the Energy Policy Act of 2005 authorizes Federal grants for biomass use. The BLM is working with the FS to develop a joint biomass action plan and foster new markets in biomass utilization.

Alternative Sources of Fossil Energy

The Department is also facilitating the development of alternative sources of energy from unconventional fossil fuel resources, such as oil shale and tar sands, gas hydrates, which, while currently uneconomic, present enormous potential for domestic energy production in the years to come.

Oil Shale & Tar Sands: The United States holds the largest known concentration of oil shale in the world, an estimated 1.2 trillion barrels of oil, although it is not known whether the resource is economically recoverable. Furthermore, more than 70 percent of American oil shale is on Federal land, primarily in Colorado, Utah, and Wyoming. If proven to be economic, oil shale resources represent a potentially abundant energy resource that could contribute significantly to the Nation's domestic energy supply.

Beginning in 2004, the BLM initiated an Oil Shale Research, Development and Demonstration (RD&D) program. The RD&D program allows small tracts to be leased for oil shale research, development and demonstration, pursuant to BLM's authority to under the Mineral Leasing Act, 30 U.S.C. 241. Following announcement of the RD&D

program in the Federal Register on June 9, 2005, the BLM received 20 lease nominations, six of which have been selected for further consideration. Following further evaluation and NEPA analysis of the remaining nominations, RD&D lease issuance is anticipated in the summer of 2006.

In Section 369 of the EPAct, Congress directed that the Secretary complete a Programmatic EIS to analyze the impacts of a commercial leasing program for oil shale and tar sands resources on public lands, with an emphasis on the most geologically-prospective lands in Colorado, Utah, and Wyoming. The Oil Shale and Tar Sands Resource Leasing Programmatic EIS that is currently being developed meets this mandate. We have already completed public scoping meetings, and established a Programmatic EIS website.

Upon completion of the Programmatic EIS, the Secretary will publish final regulations establishing commercial oil shale and tar sands leasing programs. The BLM is in the preliminary stages of developing the regulatory framework for a commercial oil shale and tar sands leasing program. In recognition of the potentially significant benefits of oil shale to the Nation, and the level of industry interest witnessed thus far, the Department is working to implement an oil shale development program that could potentially lead to commercial leasing by the end of 2008.

Gas Hydrates: Gas hydrates are naturally occurring solids in which water molecules trap gas molecules (usually methane) in a cage-like structure. Gas hydrates are widespread in permafrost regions and areas offshore and have the potential to contribute significantly to the world's gas supply. The most recent assessment of gas hydrate potential for the United States was done by the USGS in 1995. The agency estimated that the United States had more than 200,000 TCF of in-place gas hydrate resources, compared to current estimates of approximately 1,200 TCF of natural gas from conventional sources. More than 98 percent of this potential resource is believed to exist offshore.

The technology for the production of gas hydrate deposits is not currently commercial. To date, there has been no significant production, commercial or otherwise, from known hydrate deposits. However, commercial production may occur 10 to 15 years in the future.

Research into gas hydrates has been conducted for approximately 25 years, and the level of knowledge about the occurrence and potential recoverability of gas hydrates has evolved. With this new knowledge MMS, in co-operation with the USGS and leading academic researchers, is currently in the process of reassessing the potential quantities of in-place and technically recoverable gas hydrates on the Outer Continental Shelf (OCS).

The MMS has focused its hydrate activities on assessing and evaluating hydrate resources and assuring that industry hydrate exploration and development activities can occur in a safe and an environmentally sound manner. In addition to partnering with USGS in developing a methodology for assessing offshore gas hydrates and performing a new resource assessment, the MMS is also developing a detailed tract-specific methodology

that would be used as the basis to determine fair market value (FMV) assuming production of this resource eventually becomes economic.

The USGS, BLM, and the State of Alaska are currently in the process of reassessing the potential quantities of technically recoverable gas hydrates on the North Slope of Alaska – the first ever technically recoverable resource estimate of its kind. This estimate will support BLM and the Alaska Department of Natural Resources resource management responsibilities.

Working with other Federal agencies, Interior has established goals to (1) improve our understanding of the various aspects of gas hydrate occurrence in the natural environment, (2) improve our detection abilities via various geophysical techniques, including remote sensing, and (3) improve our understanding of potential production techniques and the behavior of hydrates during production, including reservoir performance and fluid behavior.

The MMS and BLM are also implementing provisions in the Energy Policy Act of 2005 to evaluate the circumstances under which royalty incentives for the development of gas hydrates may be appropriate.

Alternate Energy-Related Use Program

Section 388 of The Energy Policy Act of 2005 confers upon the Secretary new responsibilities over Federal offshore alternate energy and related-uses of the OCS. These alternate energy-related use projects include wind, wave, current, solar energy, hydrogen generation, and projects that make alternative use of existing oil and natural gas platforms in Federal waters. This section specifically authorized the Department to: act as the lead agency for Federal offshore alternate energy and related-uses of America's offshore public lands; consult with States and other stakeholders; grant easements, leases, or rights-of way for alternate energy related uses of the Federal OCS; ensure safety and environmental protection; pursue appropriate enforcement actions in the event violations occur; require financial surety to ensure that facilities constructed are properly removed at the end of their economic life; and regulate, monitor, and determine fair return to the Nation.

As a part of the development of an offshore alternate energy program, the MMS is writing rules which will be analyzed as a part of a programmatic Environmental Impact Statement (EIS). Since the focus of the programmatic EIS is on the program and rules, we anticipate that subsequent National Environmental Policy Act (NEPA) documents prepared for site-specific alternate energy-related use projects will tier on this EIS and the Record of Decision. The programmatic EIS will focus on generic impacts from each anticipated type of alternate energy proposal or industry sector based on global knowledge and identify key issues that site-specific assessments should consider. Projections for industry activities will be limited to those anticipated to be pursued within the next 5-7 years; therefore, the impacts of some industry sectors may not be assessed.

The programmatic EIS will also address alternate energy pilot studies and resource evaluation.

Existing Projects

In addition to the authorities outlined above, the Energy Policy Act gave the Secretary lead Federal agency permitting and oversight responsibilities for two existing offshore renewable energy proposals, the Cape Wind and Long Island Power Authority offshore wind projects. The MMS is reviewing each project's application and supporting information and will prepare environmental evaluations as required by law. The Cape Wind project proposes to build 130 wind turbine generators to generate 454 megawatts on Horseshoe Shoal in Nantucket Sound, Massachusetts, about 4.7 miles offshore. The MMS will prepare an environmental impact statement covering those issues associated with the broad mandate outlined in Section 388 of Energy Policy Act and the National Environmental Policy Act. The Long Island Power Authority project proposes to build 40 wind turbines to generate 140 megawatts about 3 to 4 miles off the South Shore of Long Island, New York. Once the MMS determines that the application is complete, preparation of the environmental impact statement will begin.

Conclusion

In conclusion, Mr. Chairman, energy is vital to expanding our economy and enhancing Americans' quality of life, and producing energy from renewable and other alternative domestic resources is a critical component of the Nation's energy portfolio. Lands managed by the Department of the Interior have a major role to play in the diversification of the Nation's energy sources. The Department has been working with other agencies and has taken steps in a variety of scientific endeavors to understand renewable and other alternative energy resources and to help bring them to a place where they may contribute to the energy mix of the country. The BLM and MMS have been working on a variety of fronts to meet industry demand for renewable and other alternative sources of energy. We stand ready to respond to the ever-increasing need for energy development from the resources we manage on behalf of the Nation.

Thank you for the opportunity to highlight a few of the steps the Department has taken to encourage the development of renewable and other alternative energy resources on the public lands. This concludes my testimony. I would be happy to answer any questions you have.