

# Energy Development in the Great Basin

Nora Devoe

*Bureau of Land Management, Nevada State Office, Reno, NV*

## ***International and National Context***

The United States, with less than 5 percent of the world's population, consumes 40 percent of the oil and 23 percent of natural gas annual global production. Fluctuating and rising energy prices can be expected to continue with political instability in producing countries and intensifying supply competition from expanding Asian economies. The United States seeks to increase domestic energy production to maintain energy security and economic stability. The Energy Policy Act (2005) (EPACT) encourages enhanced energy production and energy infrastructure.

Much of EPACT is aimed specifically at federal lands and regulatory processes. This is significant to energy development in the Great Basin because more than 70 percent of the Great Basin is federally administered. Eighty percent of the federal land in the region is managed by the U.S. Department of Interior Bureau of Land Management (BLM). The Department of Interior manages 1/5 of the nation's land, which is estimated to contain 68 percent of U.S. oil and gas reserves and produce 7 percent of the wind energy, one-half of the geothermal energy, and 17 percent of the hydropower generated in the United States (USDI-BLM 2005).

Various EPACT provisions facilitate the development of additional oil (including shale and tar sands), gas, coal (including coke and coke gas), nuclear, geothermal, wind, and solar energy (ICF International 2005) and the siting of related infrastructure. Facilitation includes subsidies, tax credits, accelerated depreciation, guaranteed loans, and increased research funding.

Regulatory facilitation includes streamlined licensing and expansion of the types of facilities that qualify for categorical exclusions from detailed environmental study under the National Environmental Policy Act (NEPA) (for example, Section 390 of EPACT). For example, categorical exclusions apply to projects in existing approved areas that affect pipelines in existing rights-of-way and areas of less than 2 ha (5 acres), as long as they do not affect wetlands, historic resources, or endangered species.

EPACT addresses the reliability and efficiency of electricity distribution, with provisions for identifying, upgrading, developing, and permitting "national interest electric transmission corridors." An energy corridor, which may include multiple pipelines (for example, oil, gas, hydrogen), electricity transmission lines, and related infrastructure such as access and maintenance roads, compressors, and pumping stations, has been proposed to traverse the Great Basin (USDI-BLM webpage 2007c).

## ***Existing energy infrastructure in the Great Basin***

Existing energy infrastructure in the Great Basin includes natural gas, coal, hydro, biomass, solar and geothermal power stations, electricity transmission lines, and gas and oil pipelines. The density of large power plants (with a minimum net summer capacity of 100 megawatts) and transmission lines is low relative to other areas of the country (Energy Information Administration webpage 2007a).

The BLM currently administers about 350 geothermal leases (55 of which are producing geothermal energy) including 34 power plants. In 2003, two new 49-megawatt (MW) geothermal power plants were licensed in California, the first such approvals in over 10 years. Two geothermal power plant expansions and one new 30-MW power plant were approved in Nevada.

Current developed energy source materials in the Great Basin includes one sizeable (greater than 4 million short tons annual production) underground coal mine in Utah (Utah Geological Survey webpage 2007). Historic and contemporary mine sites that include uranium are numerous in the Great Basin (Energy Information Administration webpage 2007b), but Great Basin uranium mines now appear in Nevada (1) and Utah (15). United States uranium production and prices have increased in the last 2 years spurred by EPACT nuclear power provisions and other market factors.

The Great Basin hosts one of the nation's three commercial disposal sites for low-level radioactive waste

located at Clive, UT, about 129 km (80 miles) west of Salt Lake City. This site receives about 99 percent of the nation's class-A waste, over 50 percent of which is DOE-generated (GAO 2004). Over 60 million cubic feet of waste has been deposited at this site since it opened in 1988.

Major oil and gas production areas in eastern Utah, southwest Wyoming and central California surround the Great Basin. Oil fields developed in the Great Basin include areas in east-central Nevada and western and central Utah (USGS 1999, State of Utah webpage 2007b). The state of Nevada (State of Nevada 2007a) lists 13 producing well fields, with many more in Utah.

### ***Proposed Energy Infrastructure***

*Power plants and transmission lines*—Twenty-five additional power plants are in various stages of planning in Nevada (State of Nevada webpage 2007b), including 12 geothermal plants, six coal plants, one biomass, one solar, and one wind plant. Thirteen of these plants will have capacity less than 50 MW. California has many power plants under development, but none appears to be in the Great Basin portions of the state (State of California webpage 2007). Oregon has approved siting of two additional gas-fired plants in Klamath County (State of Oregon webpage 2007).

Idaho has a moratorium through April 2008 on permitting new coal-fired plants with capacity exceeding 249 MW. The moratorium does not affect coal-gasification plants. Three coal-burning plants are under development (National Energy Technology Lab webpage 2007). A 200-MW wind farm and right-of-way on public land in south-central Idaho was approved in August, 2006 (USDI-BLM 2006). A 170-MW gas-fired plant and a small geothermal plant are under development. The Associated Press reported in the Idaho Statesman 2/8/07 that land was purchased along the Snake River for construction of a nuclear power plant, but no permitting has been initiated (Wind Energy News website 2007).

New construction (2) and expansion of existing coal-burning plants (2) are underway in Utah. Utah is working with other western states to develop a high voltage transmission line to export its power to the higher-priced Nevada and California markets.

*Oil and gas*—The federal government has leased or offered for lease 92.7 million ha (229 million acres) of public and private land in 12 western states for oil and gas drilling, an area greater than the combined size of Colorado, New Mexico, and Arizona (Environmental Working Group webpage 2007). Approximately 15 million ha (36 million

acres) of federal land were under lease for oil and gas in 2005, but only 5 million ha (12.5 million acres) had been drilled (USDI-BLM website 2007a). Clearly, with EPACT and market incentives, additional drilling and development can be expected on leased lands, particularly for natural gas.

The 2004 discovery of significant amounts of crude oil in Sevier County, central Utah, has raised considerable interest in exploration drilling throughout the region. Seismic testing, one of the early prospecting tools used by oil and gas companies, has become widespread in central Utah (Sanpete, Sevier, Beaver, and Iron counties) since the Covenant Field discovery. Industry has identified the central Nevada thrust belt as a prime area for oil development, with test drilling scheduled under a lease in White Pine County (Curlew Lake Resources website 2007). Oil and gas leasing is expanding in Nevada (USDI BLM webpage 2007e) and throughout the Great Basin.

United States reserves of oil shale are estimated at 1.6 trillion barrels, with Utah holding roughly 320 billion barrels. For tar sands, the U.S. estimate of measured reserves is 22.6 billion barrels, with 11 billion barrels of measured reserves in Utah (State of Utah webpage 2007a). These reserves lie immediately east of the Great Basin. A Programmatic Environmental Impact Statement (PEIS) for large-scale commercial leasing of oil shale and tar sands is being developed (USDI-BLM website 2007b).

*Nuclear Energy*—The U.S. Department of Energy is building the nation's first long-term geologic repository for spent nuclear fuel and high-level radioactive waste at Yucca Mountain on federally administered land about 161 km (100 miles) northwest of Las Vegas. In July 2006, the DOE agreed upon March 31, 2017 as the date to begin accepting waste. The licensing of this facility faces considerable opposition.

The Envirocare waste disposal facility in Clive (Tooele County), UT, has applied to accept classes B and C low-level radioactive waste (more radioactive than its current class-A license allows). Action is pending following the 2005 close of a moratorium on this licensing. A proposal for a high-level waste facility in Skull Valley appears to be at a standstill.

*Solar energy*—Portions of California, Nevada, and Utah rank highest in direct-beam solar radiation in the USA, and potential for increased solar power production is good (Energy Information Administration webpage 2007a). The Great Basin also presents significant potential for further development of wind and geothermal energy. The Great Basin states are actively promoting renewable energy.

*Geothermal energy*—Nevada has large geothermal resources (Shevenell and Garside 2005) and is second only to California in geothermal electricity generation. The geologically active basin-and-range countries in southeastern Oregon, and the Cascades Mountains in western Oregon, are promising sites for geothermal energy development. Geothermal energy leasing is expanding in the Great Basin (USDI-BLM webpage 2007f). Since 2001, the BLM has processed 200 geothermal lease applications, compared to 20 in the preceding 4 years.

*Wind energy.* In the same timeframe, the BLM issued more than 60 rights-of-way and permits for wind energy testing and development, quadrupling the number of authorizations nationwide. As a result of increased interest in wind energy development on public lands, the agency has prepared a programmatic environmental impact statement for wind energy (USDI-BLM website 2007d).

### **Key Issues**

Energy production, development, and use have significant environmental costs, even when best practices and advanced technologies are employed. More energy infrastructure will mean more environmental impacts. Widely recognized costs are air and water pollution, noise, and visual impacts. Infrastructure associated with power plants and energy production, including roads, pipelines, transmission lines, and wells, reduce wildlife habitat and habitat continuity and disrupt seasonal and annual wildlife migration.

Perhaps less obvious environmental hazards include naturally generated radioactive materials brought to the surface by oil, gas, and mineral extraction (USGS 1999), which may be subsequently concentrated in waste streams by further processing. Nuclear power generation produces highly radioactive waste in addition to conventional hazardous materials. The potential disposal of nuclear waste on the edge of the Great Basin raises many health and safety issues in a region where nuclear power is not now commercially generated.

Power production requires large volumes of water under most technologies. As examples, oil shale operations require between one and three barrels of water per barrel of oil produced. A 500-MW coal power plant burns approximately 250 tons per hour of coal while using over 45.4 million liters (12 million gal) per hour of water for cooling and other process requirements (University of California 2007). More than 100 kg of fluids must be extracted, processed, and removed for each kW h of electricity generated from a facility relying on

a geothermal reservoir with hot fluids. The low thermal efficiencies of geothermal power plants result in large requirements for cooling water – greater than five times that needed for a coal-fired plant. Geothermal fluids can contain as much as 250,000 mg/l total dissolved solids. Toxic substances, such as boron and ammonia, are often present in fluids (Layton and Morris 1980). The U.S. Geological Survey (USGS) estimates that thermoelectric generation accounts for approximately 514,816 million liters (136,000 million gal) per day (MGD) of freshwater withdrawals, ranking only slightly behind agricultural irrigation as the largest source of freshwater withdrawals in the United States. Power generation in the semi-arid Great Basin will increasingly compete with other water uses.

### **Management Challenges and Research Needs**

*Minimizing adverse impacts of energy production*—Off-site mitigation, the idea that a disturbance in one place can be off-set by an action in another, has become a popular notion in the face of intensive energy development in Wyoming and the Rocky Mountains. Off-site mitigation programs that successfully address spatial and temporal aspects of wildlife migration, as well as simple habitat requirements, are needed. Continued improvement of low-impact energy development, clean processing technologies, and solar and wind technologies are needed.

Cost-effective, early-warning environmental monitoring that alerts resource managers, elected officials, and the public to changes in air quality, water quality and quantity, habitat quality and connectivity, and other resource values in relation to energy development, production, and consumption are needed. Law and policy that strengthens environmental oversight before, during, and after permitting for energy development and production are needed to facilitate and require timely response to environmental degradation and to define mandatory mitigation or cessation of activity.

The most efficient damage mitigation is to reduce the energy consumption that drives development and production. With populations expanding at rates that far outstrip the national average, the Great Basin has a particular need to explore “smart development” options that include low-pollution, energy-efficient transportation, building design, and land and water use. Further examination of the social aspects of energy consumption and land and water use may elucidate pathways to reduced consumption.



## Existing Programs and Resources

The Western Regional Climate Action Initiative from the governors of California, Arizona, New Mexico, Oregon, and Washington is developing cap-and-trade limitations on greenhouse gas emissions.

Department of Energy/Office of Fossil Energy's National Energy Technology Laboratory (DOE/NETL) has initiated integrated research and development (R&D) of technologies to reduce power plant water use and to minimize impacts of plant operations on water quality. <http://www.netl.doe.gov/about/index.html> [2007, July 17]

The Bren School of Environmental Science and Management, UC Santa Barbara, convened the First Western Forum on Energy and Water Sustainability, March 22-23, 2007. [http://www2.bren.ucsb.edu/~keller/energy-water/first\\_forum.htm](http://www2.bren.ucsb.edu/~keller/energy-water/first_forum.htm) [2007, July 17]

The United States Green Building Council's Leadership in Environmental and Energy Design (LEED) program recognizes low-impact siting and construction of residential and commercial facilities. <http://www.usgbc.org/LEED/> [2007, July 17]

Desert Research Institute (DRI). Two Great Basin research programs that address smart development and alternative futures are at the DRI (Reno and Las Vegas) and Utah State University. DRI also has programs in green energy, environmental monitoring, and ecosystem response to elevated CO<sub>2</sub>. <http://www.dri.edu/> [2007, July 17]

The Great Basin Policy Research Institute at the University of Nevada-Reno conducts research on public policy related to energy, mining, and consumer behavior. [http://www.unr.edu/cla/polisci/faculty/faHerzik/eh\\_gbpri.asp](http://www.unr.edu/cla/polisci/faculty/faHerzik/eh_gbpri.asp) [2007, July 17]

The Great Basin Center for Geothermal Energy at the University of Nevada-Reno conducts research on all aspects of geothermal energy. <http://www.unr.edu/Geothermal/> [2007, July 17]

The Wallace Stegner Center for Land, Resources and the Environment at the University of Utah S.J. Quinney College of Law examines law and policy related to environmental use and preservation. <http://www.law.utah.edu/stegner> [2007, July 17]

Nevada Renewable Energy and Energy Conservation Taskforce, created by the 2001 Nevada Legislature, is a clearinghouse for information and a coordinator of renewable energy and energy conservation activities. <http://www.nevadarenewables.org> [2007, July 17]

The United States Geological Survey has research programs treating mineral resources, energy development, and environmental impacts in the Great Basin and throughout the west. [www.usgs.gov](http://www.usgs.gov) [2007, July 17]

## References

- Curlew Lake Resources. 2007. Webpage of Curlew Lake Resources. Available: [Curlew Lake Resources Webpage](http://www.curlewlake.com) [2007, July 17].
- Energy Information Administration. 2007a. Official Energy Statistics from the U.S. Government. [Homepage of the Energy Information Administration], [Online]. Available: <http://www.eia.doe.gov> [2007, July 17].
- Energy Information Administration. 2007b. Official Energy Statistics from the U.S. Government, Domestic Uranium Production Reports. [Homepage of the Energy Information Administration], [Online]. Available: <http://www.eia.doe.gov/cneaf/nuclear/dupr/dupr.html> [2007, July 17].
- Energy Policy Act. 2005. Public Law 109-58-August 8, 2005. [Homepage of Department of Interior], [Online]. Available: <http://www.doi.gov/iepa/EnergyPolicyActof2005.pdf> [2007, July 17].
- Environmental Working Group. 2007. [Homepage of the Environmental Working Group], [Online]. Available: <http://www.ewg.org/> [2007, July 17].
- ICF International. 2005. Impacts and implications of the 2005 U.S. Energy Policy Act. August 5, 2005. [Homepage of ICF International], [Online]. Available: <http://www.icfi.com/Markets/Energy/Energy-Act/default.asp> [2007, July 17]
- General Accounting Office. 2004. Low-Level Radioactive Waste. GAO-04-604.
- Layton D.W.; Morris, W.F. 1980. Geothermal Power Production Accidental Fluid Releases, Waste Disposal and Water Use. Lawrence Livermore Laboratory, University of California. Unpublished Report. 31 p. Available: [http://www.osti.gov/energycitations/product.biblio.jsp?osti\\_id=5113304&query\\_id=](http://www.osti.gov/energycitations/product.biblio.jsp?osti_id=5113304&query_id=) [2007, July 17].
- National Energy Technology Laboratory. 2007. Information about fossil energy research by the U.S. Department of Energy. [Homepage of the National Technology Laboratory], [Online]. Available: <http://www.netl.doe.gov/about/index.html> [2007, July 17].
- Shevenell, L.; Garside, L.J. 2005. Nevada Geothermal Resources, Second Edition. Map. [Homepage of the Nevada Bureau of Mines and Geology, University of Nevada, Reno], [Online]. Available: <http://www.nbmgs.unr.edu/dox/m1412.pdf> [2007, July 17].
- State of California. 2007. California Energy Commission. (2007, June 20 – last update). Recently On-Line, Approved, Current and Expected Power Plant Licensing Cases (peakers and non peakers). [Homepage of the California Energy Commission], [Online]. Available: [http://www.energy.ca.gov/maps/02\\_SIMP\\_RONLN\\_APRVD\\_CUR\\_EXP\\_PNP.PDF](http://www.energy.ca.gov/maps/02_SIMP_RONLN_APRVD_CUR_EXP_PNP.PDF) [2007, July 17].
- State of Nevada. 2007a. Nevada Commission on Mineral Resources. (2007, July 9-last update). [Homepage Nevada Division of Minerals], [Online]. Available: <http://minerals.state.nv.us/> [2007, July 17].
- State of Nevada. 2007b. Proposed Generation Plants in Nevada. [Homepage of the Public Utilities Commission of Nevada], [Online]. Available: <http://pucweb1.state.nv.us/PUCN/Electric/Proposed-Gen.aspx?AspxAutoDetectCookieSupport=1> [2007, July 17].
- State of Oregon. 2007. Energy Facility Siting. Power Plants in Oregon. [Homepage of the Energy Facility Siting Program], [Online]. Available: <http://oregon.gov/ENERGY/SITING/power.shtml> [2007, July 17].
- State of Utah. 2007a. Governor's Energy Policy. Oil Shale/Tar Sands. [Homepage of the State of Utah, Governor's Energy Policy], [Online]. Available: [http://energy.utah.gov/energy/governors\\_priorities/oil\\_shale\\_tar\\_sands.html](http://energy.utah.gov/energy/governors_priorities/oil_shale_tar_sands.html) [2007, July 17].

State of Utah. 2007b. Oil and gas well locator. [Homepage of Utah Automated Geographic Reference Center], [Online]. Available: <http://atlas.utah.gov/oilgaswells2/viewer.htm> [2007, July 17].

University of California, Santa Barbara. 2007. First Western Forum on Energy & Water Sustainability. [Homepage of the UCSB School of Environmental Science and Management], [Online]. Available: [http://www2.bren.ucsb.edu/~keller/energy-water/first\\_forum.htm](http://www2.bren.ucsb.edu/~keller/energy-water/first_forum.htm) [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2005. (June 21-last update). News. Environmental study supports plans to facilitate wind energy development on public lands. [Homepage USDI Bureau of Land Management], [Online]. Available: [http://www.blm.gov/nhp/news/releases/pages/2005/pr050621\\_wind.htm](http://www.blm.gov/nhp/news/releases/pages/2005/pr050621_wind.htm) [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2006. (August 16-last update). News. Bureau of Land Management Announces Final Approval of Wind Energy Project in Idaho. [Homepage USDI Bureau of Land Management], [Online]. Available: [http://www.blm.gov/nhp/news/releases/pages/2006/pr060815\\_windenergy-id.htm](http://www.blm.gov/nhp/news/releases/pages/2006/pr060815_windenergy-id.htm) [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2007a. Land and mineral records maintained by the BLM located under LR2000. [Homepage USDI Bureau of Land Management], [Online]. Available: <http://www.blm.gov> [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2007b. Oil Shale and Tar Sands Leasing Programmatic EIS. [Homepages of the USDI Bureau of Land Management, Oil Shale and Tar Sands Leasing Program EIS Information Center, managed by the Argonne National Laboratory], [Online]. Available: <http://ostseis.anl.gov/> [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2007c. West-wide Energy Corridor Programmatic EIS. [Homepage of USDI-BLM West-wide Energy Corridor Programmatic EIS Information Center], [Online]. Available: <http://corridoreis.anl.gov/> [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2007d. Wind Energy Development. Webpage of the USDA BLM Wind Energy Development Programmatic EIS Information Center, managed by the Argonne National Laboratory. [Homepage USDI Bureau of Land Management], [Online]. Available: <http://windeis.anl.gov/> [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2007e. Nevada State Office. Nevada BLM Oil and Gas Lease Sale Information. [Homepage of the Nevada State Office of the Bureau of Land Management], [Online]. Available: [http://www.nv.blm.gov/minerals/oil\\_and\\_gas/O&G\\_Sales\\_2006.htm](http://www.nv.blm.gov/minerals/oil_and_gas/O&G_Sales_2006.htm) [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. 2007f. Nevada State Office. Geothermal Resources – Energy and Minerals Management on Public Lands in Nevada. [Homepage of the Nevada State Office of the Bureau of Land Management], [Online]. Available: <http://www.nv.blm.gov/minerals/geothermal/index.htm> [2007, July 17].

U.S. Geological Survey. 1999. Naturally Occurring Radioactive Materials (NORM) in Produced Water and Oil Field Equipment- An Issue for the Energy Industry. Fact Sheet. FS-142-99 September 1999. Available: <http://pubs.usgs.gov/fs/fs-0142-99/fs-0142-99.pdf> [2007, July 17].

Utah Geological Survey. 2007. *Utah Energy and Mineral Statistics*. [Homepage of Utah Geological Survey], [Online]. Available: <http://geology.utah.gov/sep/energydata/index.htm> [2007, July 17].

Wind Energy News. 2007. Bureau of Land Management Announces Final Approval of Wind Energy Project in Idaho. [Homepage of Wind Energy News], [Online]. Available: <http://windenergynews.blogspot.com/2006/08/bureau-of-land-management-announces.html> [2007, July 17].

## Additional Information on Energy Development

Anna, L.O.; Roberts, L.N.R.; Potter, C.J.; Charpentier, R.R.; Cook, T.; Klett, T.R.; Pollastro, R.M.; Schenk, C.J. 2005. Assessment of Undiscovered Oil and Gas Resources of the Eastern Great Basin Province, 2005: U.S. Geological Survey Fact Sheet FS-2005-3053, 4 p. Available: <http://pubs.usgs.gov/fs/2005/3053/> [2007, July 17].

Barker, C.E.; Fouch, T.D.; Grow, J.A.; Peterson, J.A. 1995. Western Great Basin Province (018). In: Gautier, D. L.; Dolton, G.L.; Takahashi, K.I.; Varnes, K.L., eds. 1995 National Assessment of United States Oil and Gas Resources--Results, Methodology, and Supporting Data: U.S. Geological Survey Digital Data Series DDS-30, Release 2, one CD-ROM. Available: <http://certmapper.cr.usgs.gov/data/noga95/prov18/text/prov18.pdf> [2007, July 17].

Gautier, D.L.; Dolton, G.L.; Takahashi, K.I.; Varnes, K.L., eds. 1995. National Assessment of United States Oil and Gas Resources—Results, Methodology, and Supporting Data: U.S. Geological Survey Digital Data Series DDS-30, release 2, one CD-ROM.

Coal Utilization Research Council, Goals, Activities, and Accomplishments. [Homepages of Coal Utilization Research Council], [Online]. Available: <http://www.coal.org/content/goals.htm> [2007, July 17].

Energy Information Administration, Official Energy Statistics from the U.S. Government. [Homepage of the Energy Information Administration], [Online]. Available: <http://www.eia.doe.gov> [2007, July 17].

Peterson, J.A.; Grow, J.A. 1995. Eastern Great Basin Province (019). In: Gautier, D. L.; Dolton, G.L.; Takahashi K.I.; Varnes, K.L., eds. 1995 National Assessment of United States Oil and Gas Resources—Results, Methodology, and Supporting Data: U.S. Geological Survey Digital Data Series DDS-30, Release 2, one CD-ROM. Available: <http://certmapper.cr.usgs.gov/data/noga95/prov19/text/prov19.pdf> [2007, July 17].

U.S. Department of Energy, Energy Efficiency and Renewable Energy. Available: [Homepage of U.S. Department of Energy], [Online]. Available: <http://www.eere.energy.gov/> [2007, July 17].

U.S. Department of Interior, Bureau of Land Management, Energy Policy Act of 2005, Selected Key BLM Actions Related to the Energy Policy Act. [Homepage of Bureau of Land Management], [Online]. Available: [http://www.blm.gov/wo/st/en/prog/energy/epca\\_chart.html](http://www.blm.gov/wo/st/en/prog/energy/epca_chart.html) [2007, July 17].

U.S. Department of Interior, Bureau of Land Management. EPCA Phase II Inventory, EPCA Phase II Report. *Scientific Inventory of Onshore Federal Lands' Oil and Gas Resources and the Extent and Nature of Restrictions or Impediments to Their Development – Phase II Cumulative Inventory*. December 15, 2006. [Homepage of the Bureau of Land Management], [Online]. Available: <http://www.blm.gov/epca/> [2007, July 17].

World Information Service on Energy. Uranium Project. [Homepage of World Information Service on Energy], [Online]. Available: <http://www.WISE-uranium.org> [2007, July 17].